

ASSESSING THE CLIMATE VULNERABILITIES OF SYRIAN IMMIGRANTS
LIVING IN ISTANBUL FROM A CLIMATE JUSTICE PERSPECTIVE

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY



BY
ELİF BENGİ GÜNEŞ

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
CITY PLANNING IN CITY AND REGIONAL PLANNING

SEPTEMBER 2023

Approval of the thesis:

**ASSESSING THE CLIMATE VULNERABILITIES OF SYRIAN
IMMIGRANTS LIVING IN ISTANBUL FROM A CLIMATE JUSTICE
PERSPECTIVE**

submitted by **ELİF BENGİ GÜNEŞ** in partial fulfillment of the requirements for
the degree of **Master of Science in City Planning in City and Regional Planning,**
Middle East Technical University by,

Prof. Dr. Halil Kalıpçılar
Dean, Graduate School of **Natural and Applied Sciences**

Prof. Dr. Emine Yetişkul Şenbil
Head of the Department, **City and Regional Planning**

Prof. Dr. Osman Balaban
Supervisor, **City and Regional Planning Dept., METU**

Examining Committee Members:

Prof. Dr. Nil Uzun
City and Regional Planning, METU

Prof. Dr. Osman Balaban
City and Regional Planning, METU

Assoc. Prof. Dr. Ender Peker
City and Regional Planning, METU

Assoc. Prof. Dr. Tayfun Salihoğlu
City and Regional Planning, Gebze Technical University

Assist. Prof. Dr. Sinan Erensü
Sociology, Boğaziçi University

Date: 08.09.2023



I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last name: Elif Bengi Güneş

Signature:

ABSTRACT

ASSESSING THE CLIMATE VULNERABILITIES OF SYRIAN IMMIGRANTS LIVING IN ISTANBUL FROM A CLIMATE JUSTICE PERSPECTIVE

Güneş, Elif Bengi

Master of Science, City Planning in City and Regional Planning

Supervisor: Prof. Dr. Osman Balaban

September 2023, 197 pages

As global climate change reveals restrictions on the equal distribution of fundamental rights and emission rights, its consideration as a social and political issue has led to the emergence of the climate justice concept. The inequalities chronically deepened by climate change are becoming more visible for specific groups. Environmental risks affect marginalized groups such as low-income communities, people with disabilities, women, and migrants, although they contribute least to the crisis. Migrant groups are more susceptible to community-scale climate change risks due to intersectionality. The study's main objective is to provide an analysis that measures the adaptive capacity and vulnerability of Syrian migrants in Istanbul, which hosts the largest migrant population in Turkey.

The study primarily identified neighborhoods with excessive exposure to climate impacts with macro-scale maps. Accordingly, systematic data on migrants' vulnerabilities were collected through interviews in selected districts. The field study found that Syrians are vulnerable to climate risks due to insufficient income, limited and indirect disaster experience, lack of social status, risk knowledge and awareness,

corporate inaccessibility, and language obstacles. These disempowering factors cause them to live mostly in critical areas and unplanned settlements of Istanbul due to climatic hazards and have constrained coping skills and tools. Consistent qualitative analysis on how the gradual presence of Syrians in Istanbul can overlap with future climate risks is expected to raise the issue of social justice in addressing climate change in Turkey and stimulate necessary adaptation policies for disadvantaged groups.

Keywords: Climate Justice, Social Justice, Climate Vulnerability, Forced Migration, Syrians

ÖZ

İSTANBUL’DA YAŞAYAN SURİYELİ GÖÇMENLERİN İKLİM KIRILGANLIKLARININ İKLİM ADALETİ PERSPEKTİFİNDEN DEĞERLENDİRİLMESİ

Güneş, Elif Bengi
Yüksek Lisans, Şehir Planlama, Şehir ve Bölge Planlama
Tez Yöneticisi: Prof. Dr. Osman Balaban

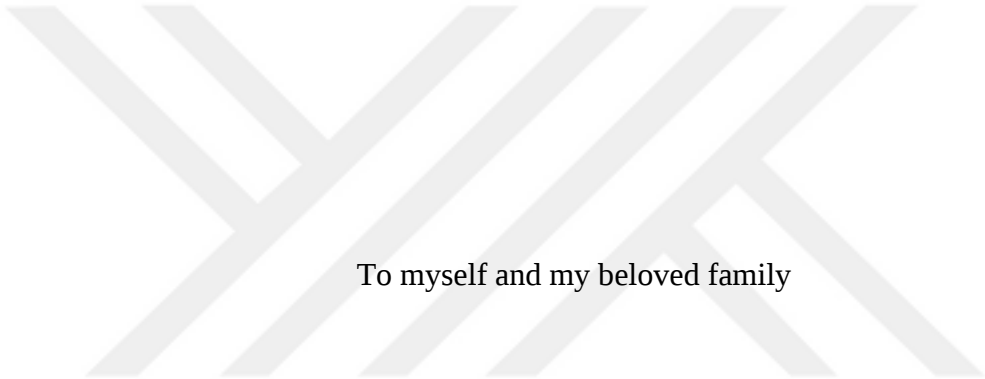
Eylül 2023, 197 sayfa

Küresel iklim değişikliğinin temel hakların ve emisyon haklarının eşit dağılımına yönelik kısıtlamalar ortaya çıkarması sonucunda toplumsal ve politik bir konu olarak değerlendirilmesi iklim adaleti kavramının ortaya atılmasına sebep olmuştur. İklim değişikliğinin kronik olarak derinleştirdiği eşitsizlikler belirli gruplar için daha görünür hale gelmektedir. Çevresel riskler düşük gelirli topluluklar, engelliler, kadınlar ve göçmenler gibi marjinal grupları krize çok az katkı koymalarına rağmen çok daha fazla etkilemektedir. İklim değişikliğinin topluluk ölçeğinde yarattığı kırılganlıklar, kesişimsellik nedeniyle göçmen grupları görece daha savunmasız hale getirmektedir. Çalışmanın en temel amacı, Türkiye’de en fazla göçmen nüfusunu barındıran İstanbul’daki Suriyeli göçmenlerin iklim değişikliğine uyum kapasitesini ve etkilenebilirliklerini ölçen bir analiz sunmaktır.

Çalışmada öncelikli olarak makro ölçekli haritalar ile iklimsel etki maruziyeti fazla olan mahalleler belirlenmiştir. Bu doğrultuda, seçilen bölgelerde yapılan görüşmeler yoluyla göçmenlerin hassasiyetlerine ilişkin sistematik veriler toplanmıştır. Saha çalışması, Suriyelilerin yetersiz gelir, sınırlı ve dolaylı afet deneyimi, sosyal statü, risk bilgisi ve farkındalık eksikliği, kurumsal ulaşılmazlık ve dil engelleri nedeniyle iklim risklerine karşı savunmasız olduklarını ortaya koymuştur. Bu güçsüzleştirici

faktörler, iklimsel tehlikeler konusunda çoğunlukla İstanbul'un kritik bölgelerinde ve plansız yerleşim yerlerinde yaşamalarına ve başa çıkma becerileri ve araçlarının kısıtlı olmasına neden olmaktadır. Suriyelilerin İstanbul'daki kademeli varoluşlarının gelecekteki iklim riskleriyle nasıl örtüşebileceğine dair tutarlı niteliksel çözümlerlerin, Türkiye'de iklim değişikliğinin ele alınmasında sosyal adalet konusunu gündeme getirmesi ve dezavantajlı göçmen gruplar için gerekli uyum politikalarının üretilmesini teşvik etmesi beklenmektedir.

Anahtar Kelimeler: İklim Adaleti, Sosyal Adalet, İklim Kırılganlığı, Zorunlu Göç, Suriyeliler



To myself and my beloved family

ACKNOWLEDGEMENTS

First and foremost, words cannot express my gratitude to my supervisor, Prof. Dr. Osman Balaban whose profound knowledge, friendly support, and encouragement thoroughly guided my study. Without his advice and invaluable help, this research would not have been possible. His guidance, advice, criticism, and encouragement throughout the research helped me all the time in writing this thesis.

I would like to extend my sincere thanks to my examining committee members; Prof. Dr. Nil Uzun, Assoc. Prof. Dr. Ender Peker, Assoc. Prof. Dr. Tayfun Salihoğlu and Assist. Prof. Dr. Sinan Erensü for their contributions, valuable feedback, and the time they patiently devoted.

I am deeply grateful to Nour Maki for fulfilling the role of the interpreter and facilitating the development of an honest connection between me and the participants. Additionally, I extend my appreciation for providing companionship during the lengthy field trips.

My deepest thanks and gratitude go to my dearest family for their belief in me. My father, Macit Güneş, has always had my back. He has facilitated every step I have taken throughout my life with his solution-oriented approach. My mother, Ümran Güneş, has comforted and guided me. Her ethical values woven with her determined and steadfast stance have always been a source of inspiration for me.

I would also like to express my special gratitude to my friends, Sunay Bilge and Çağla Hansu for their technical and emotional support. I was able to consult them for all my questions and problems throughout the process. I owe my innermost thanks to Hasan Mert Yerlikaya, for his support, motivation, and cheering me up during every stage of this thesis. I appreciate him for all of his sensibilities and tolerance. I would be remiss in not mentioning my office mates. I owe my thanks for their sincere help, late-minute feedback, and moral support.

TABLE OF CONTENTS

ABSTRACT.....	v
ÖZ	vii
ACKNOWLEDGEMENTS	x
TABLE OF CONTENTS.....	xi
LIST OF TABLES	xv
LIST OF FIGURES	xvi
LIST OF ABBREVIATIONS	xviii
CHAPTERS	
1 INTRODUCTION	1
1.1 Problem Definition and Significance of the Study.....	3
1.2 Gaps in Knowledge	4
1.3 Aim of the Study and Research Questions.....	6
1.4 Research Agenda and Methodology	7
1.5 The Structure of the Thesis	8
2 CLIMATE PROBLEM, TURKEY, AND ISTANBUL	11
2.1 An Overview of the Climate Problem.....	11
2.2 The Issue of Climate Change in Turkey.....	14
2.2.1 International Politics, Commitments, and Adaptation.....	15
2.2.2 Climate Justice and Environmental Research in Turkey	18
2.2.2.1 Environmental Justice, Ecosystem, and Sustainability.....	19
2.2.2.2 Vulnerable Groups, Gender Inequality, and Immigration	21
2.2.2.3 The Role of Local Governments and Right to the City	23

2.3	The Reality of Climate Crisis in Istanbul	24
2.3.1	Heat Wave and Urban Heat Island	26
2.3.2	Rising Temperatures and Drought.....	27
2.3.3	Excessive Precipitation, Hail, Flood, and Sea Level Rise.....	27
2.4	Last Words for the Chapter.....	28
3	CLIMATE CHANGE, SOCIAL JUSTICE, AND IMMIGRANTS	29
3.1	Framing Climate Justice	29
3.1.1	The Idea of Climate Justice	30
3.1.2	Urban Climate Justice.....	33
3.1.3	Classification of Climate Justice	36
3.1.3.1	Procedural Climate Justice	36
3.1.3.2	Distributive Climate Justice	37
3.1.3.3	Corrective Climate Justice	38
3.1.3.4	Recognition & Misrecognition.....	39
3.1.3.5	Intergenerational Climate Justice	40
3.1.3.6	Capabilities Approach	41
3.1.3.7	Right to the City	41
3.2	Social Justice Aspects in the Context of Climate Policy	43
3.2.1	The Intersection of Social and Climate Justice	43
3.2.2	Social Inequalities Driven by Climate Change	48
3.3	Immigrants' Climate Vulnerability Framework	51
3.3.1	Reflections of the Social Justice Norm on Immigrants	52
3.3.2	Climate Justice and Vulnerability of Migrated People.....	54
3.3.3	Disempowering Parameters and Criteria.....	59

3.4	Last Words for the Chapter	64
4	MIGRATION OF SYRIANS TO TURKEY AND ISTANBUL	65
4.1	Migration Phenomenon in Turkey	65
4.1.1	Main Features & Institutional Structure of Migration in Turkey	66
4.1.2	Special regulations for Syrian immigrants.....	70
4.2	Developments After the Civil War.....	74
4.2.1	Migration Process of Syrians After the War.....	74
4.2.2	General Profile of Syrians in Istanbul.....	80
4.2.3	Spatial Choices and Interactions	83
4.3	Last Words for the Chapter	86
5	CASE STUDY: CLIMATE VULNERABILITY OF SYRIANS IN ISTANBUL	87
5.1	Methodology of the Case Study	87
5.1.1	Case Selection and Research Area.....	87
5.1.2	Data Collection and Research Design.....	88
5.1.3	Spatial Analysis Phase	94
5.1.4	Sampling and Interview Phase.....	96
5.2	Analysis Results and Findings	99
5.2.1	Spatial Analysis of Climate Vulnerability	99
5.2.1.1	Environmental Vulnerabilities and Climate Impacts.....	99
5.2.1.2	Climate Vulnerability Scoring of Neighborhoods.....	106
5.2.2	The Findings of Field Study	113
5.2.2.1	Demographic Information of the Participants	113
5.2.2.2	Thematic Analysis of Interviews	115

5.2.2.3	Legal Security	120
5.2.2.4	Solidarity Pathways.....	121
5.2.2.5	Language Barriers	123
5.2.2.6	Worsening Education and Working Conditions	126
5.2.2.7	Financial Impossibility	129
5.2.2.8	Housing Conditions.....	130
5.2.2.9	Accessibility to Urban Services	133
5.2.2.10	Risk Awareness	140
5.2.2.11	Disaster Experience & Preparedness	143
6	CONCLUSION	147
6.1	Overview and Discussion	147
6.1.1	Summary and Assessment of the Findings.....	147
6.1.2	Concluding Remarks on Urban Planning, Public Policy and Equity.....	158
6.2	Scope, and Limitations of the Study	162
6.3	Recommendations for Future Research and Institutions	163
	REFERENCES	167
	INTERNET RESOURCES	191
	APPENDICES.....	195
A.	Semi-structured Interview Form.....	195

LIST OF TABLES

TABLES

<i>Table 3.1</i> Matrix of indicators for climate vulnerability and researchers	63
<i>Table 5.1</i> Sources of spatial mapping and scoring data.....	90
<i>Table 5.2</i> Distribution matrix of the most severe extreme weather events.....	101
<i>Table 5.3</i> Scoring of neighborhoods according to environmental vulnerability factors.....	108
<i>Table 5.4</i> Characteristics of Syrian migrants interviewed in the field.....	113
<i>Table 5.5</i> Total number and percentage of interview outcomes arranged by themes	118
<i>Table 5.6</i> The relationship between the respondents' relationship with Turks and receiving help and support from them	123
<i>Table 5.7</i> The relationship between language barriers in receiving public services and establishing social relationships according to the participants' level of Turkish	124
<i>Table 5.8</i> The relationship between participants' level of Turkish language proficiency and length of stay in Turkey	126
<i>Table 5.9</i> Individual assessment of financial adequacy according to monthly household income	130
<i>Table 5.10</i> The relationship between those with housing-related complaints and length of stay in Turkey and income status	133
<i>Table 6.1</i> A brief synopsis of the findings derived from the qualitative analysis..	156

LIST OF FIGURES

FIGURES

<i>Figure 1.1</i> General structure of the thesis	9
<i>Figure 3.1</i> The three-dimensional climate justice pyramid as viewed from (a) directly above; and (b) obliquely below	32
<i>Figure 3.2</i> The scope and relationality of the intersection between climate change and social justice.....	45
<i>Figure 3.3</i> A theoretical framework outlining how social inequality and climate change interact.....	49
<i>Figure 3.4</i> Multidimensional vulnerability is driven by intersecting dimensions of inequality and socio-economic pathways	55
<i>Figure 4.1</i> Syrian Refugees by Country of Residence (6.6 million).....	76
<i>Figure 4.2</i> Provincial Breakdown Syrian Refugees in Turkey, UNHCR Turkey 2022	77
<i>Figure 4.3</i> Problems Faced by Syrian Refugees in Turkey by Gender	79
<i>Figure 4.4</i> Syrians Under Temporary Protection Based on Age Groups in Istanbul	80
<i>Figure 4.5</i> Syrians Under Temporary Protection Based on Years in Istanbul	81
<i>Figure 4.6</i> Istanbul Migrant Distribution Map.....	83
<i>Figure 4.7</i> Number of Syrians by the province of residence in Istanbul	84
<i>Figure 4.8</i> The ratio of Syrians to Indigenous Population in Istanbul	85
<i>Figure 5.1</i> Research design and methodological framework of the whole study ...	93
<i>Figure 5.2</i> Framework of the semi-structured questionnaire	97
<i>Figure 5.3</i> Spatial distribution of climate change impacts in Istanbul.....	103
<i>Figure 5.4</i> Spatial distribution of built environment elements affecting climate change adaptation in Istanbul	104
<i>Figure 5.5</i> The most vulnerable neighborhoods identified for fieldwork	112
<i>Figure 5.6</i> Distribution of the interviewees according to their demographic and economic characteristics.....	114

<i>Figure 5.7</i> Relational diagram of thematic analysis of interviews and codified outputs.....	117
<i>Figure 5.8</i> Individual assessment of education and job status change	128
<i>Figure 5.9</i> Distribution of common complaints about the physical conditions of the dwelling.....	132
<i>Figure 5.10</i> Spatial analysis of size and distance parameters of active green areas	134
<i>Figure 5.11</i> Spatiotemporal analysis of neighborhoods from well-equipped hospitals	139
<i>Figure 5.12</i> Individual assessment of the extent to which EWE are seen as a problem	140
<i>Figure 6.1</i> Diagram summarizing the social and institutional relations of Syrian immigrants	149
<i>Figure 6.2</i> Diagram summarizing the correlation of Syrian migrants' housing and working conditions with vulnerabilities and institutionalization.....	151
<i>Figure 6.3</i> Diagram summarizing the level of knowledge, negligence, and awareness of Syrian migrants against environmental hazards.....	154

LIST OF ABBREVIATIONS

ABBREVIATIONS

ABPRS:	Address-Based Population Registration System
BİMTAŞ:	Boğaziçi Landscape Construction Consultancy Technical Services Industry Trade Inc.
COP:	Conference of Parties
DEMP:	Disaster and Emergency Management Presidency (<i>Afet ve Acil Durum Yönetimi Başkanlığı</i>) (AFAD)
DGMM:	(Republic of Turkey) Directorate General of Migration Management
EPA:	Environmental Protection Agency
EU:	European Union
EWE:	Extreme Weather Events
FHC:	Family Health Centers
GDM:	The General Directorate of Meteorology
GIS:	Geographic Information System
ICC:	Istanbul City Council
IMM:	İstanbul Metropolitan Municipality (<i>İstanbul Büyükşehir Belediyesi</i>)
IOM:	International Organization for Migration
IPCC:	International Panel on Climate Change
IPDDE:	Istanbul Provincial Directorate of Disaster and Emergency (<i>İstanbul Valiliği İl Afet ve Acil Durum Müdürlüğü</i>)
IWSA:	Istanbul Water and Sewerage Administration
MHC:	Migrant Health Centers

MoAF:	(Republic of Turkey) Ministry of Agriculture and Forestry
MoEUCC:	(Republic of Turkey) Ministry of Environment, Urbanization, and Climate Change
NGO:	Non-governmental Organizations
OECD:	Organization for Economic Cooperation and Development
OHCHR:	Office of the High Commissioner for Human Rights
PHA:	Public Housing Administration (<i>Toplu Konut İdaresi Başkanlığı</i>)
PPP:	Polluter Pays Principle
SDG:	Sustainable Development Goals
SHW:	State Hydraulic Works
TURKSTAT:	Turkish Statistical Institute (<i>Türkiye İstatistik Kurumu</i>) (<i>TÜİK</i>)
UN:	United Nations
UNDP:	United Nations Development Programme
UNEP:	United Nations Environment Programme
UNFCCC:	United Nations Framework Convention on Climate Change
UNHCR:	United Nations High Commissioner for Refugees
UNHRC:	The United Nations Human Rights Council
WCED:	(United Nations) World Commission on Environment and Development
WHO:	World Health Organization

CHAPTER 1

INTRODUCTION

As Jane Jacobs (1961) says, “*Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody.*” Hence, there will always be a struggle for justice when the city does not give people what is rightfully theirs. Climate justice is politics; it is action, it is unifying, it is global, it is instrumental, and it is the future of humanity. Climate change, one of the greatest threats to cities, increasingly creates social justice gaps as it further endangers disadvantaged populations and limits their livelihoods. If climate change cannot be kept below 1.5-2°C by mitigation procedures, humanity will be plunged into catastrophe, and the increasing visibility of social inequalities will generate new types of crises. Most fundamentally, while rich countries have a great capacity to deal with significant consequences despite being the top emitters, low- and middle-income countries have the opposite experience. The process that began with the global climate justice discussion has centered on more localized urban climate justice.

Cities contain various problems and solutions in terms of shelter, food safety, human health, employment, and social life and offer services in these areas in a wide range, the severe effects of climate change on these sectors will cause serious crises (IPCC, 2014a). The social inequalities experienced by urban communities and the impacts of climate change are not distributed proportionally. The injustice pressure of climate change on societies is characterized by a multiplier effect that amplifies inequalities and similarly fails to protect the rights of the socially and economically disadvantaged. As the Global Report on Human Settlements, Cities, and Climate Change articulates, the more affluent in our society are less vulnerable, with the

impacts of climate change felt strongest by the most marginalized groups, which include (but are not limited to) the urban poor, children, women, and the elderly (UN, 2020).

Like climate change, international migration is rising dramatically, and migration has become a significant issue for the whole world. On the one hand, while climate refugees are increasingly concentrated from climate-changing and sensitive regions to different countries and cities, on the other hand, individual and mass migration is also concentrated for a wide range of political, political, economic, and social reasons. At the end of 2021, the total number of people worldwide who have been forced to leave their homes due to conflict, violence, terror, fear of persecution, and human rights violations reached 89.3 million. (World Bank, 2021). This situation clearly expresses the intensity of international and national migration flows. Turkey is also a country in a position where the issue of migration is often discussed. As well as internal migration, it constantly encounters with foreign migration. Turkey hosts the largest number of refugees globally, with a figure of around 3.6 million. (UNHCR, 2022).

Regardless of the reason they have left where they are accustomed, immigrants are among the groups most affected by climate injustice in their new settlements. Several researchers have found that forcibly displaced individuals and communities are more prone to risky conditions, morbidity, and poor health. This thesis addresses the impacts of climate change on social justice at provincial and local levels across the immigrant community. It highlights its assumptions about society and immigrant vulnerability by scaling up the intense collision between climate justice and social justice. The study's literature section offers a broad scan background and primarily focuses on inequalities caused by climate change in urban areas and the theory of urban climate justice. It also provides examples of migrants' struggle for life and adaptation from an environmental perspective and evaluates them from a climate justice perspective.

1.1 Problem Definition and Significance of the Study

The challenges of climate change and inequality frequently discussed worldwide, are increasingly exacerbated but have long been dealt with separately. Climate change's unequal and devastating effects are most felt by the city's most marginalized groups, including people with low incomes, children, women, and older people. Injustice manifests itself when the most disadvantaged groups face a disproportionate share of the harmful consequences of climate change, and there is a compulsion to adapt with little capital (Paavola & Adger, 2006).

In recent years, there have been studies addressing the unfair distribution of climate change impacts on populations and bringing this debate, particularly to the local scale, but in practice, the translation of this into action has remained somewhat limited (Barrett, 2013). The best strategy when developing capacity for adaptation to climate change is for public officials working with community-based groups to act with climate policies that can reduce social inequality (Cohen, 2018). Moreover, some academics have highlighted the fundamental flaws in democratic decision-making, especially those that can increase vulnerabilities or hinder mitigation, as elites also have more right to speak on climate change issues while being the least harmed.

According to the idea of "slow violence," defined by Nixon (2011), which emerged because of ignorance and neglect towards marginal groups, vulnerable groups are slowly and incomprehensibly confronted with injustice in a crisis that ruins human lives. Although climate change has emerged as an environmental crisis in its essence, it has also raised serious problems of social inequality. The bloated feeling of climate injustice by immigrants is associated with discriminatory policies in cities, especially where they are not visible and not sufficiently recognized by state and official bodies. (Chu & Michael, 2018). Méndez et al. (2020) point out that more information about immigrants needs to be integrated into disaster policies. Identifying their needs and problems and assessing their own ways of adapting, if any, will play a critical role in ensuring climate justice.

Migrant groups have less land and resource ownership, weak educational backgrounds, and fewer opportunities to access decent housing, institutional support, information, and health services (Barrett, 2013; Flanagan et al., 2011). This vulnerability of migrants poses a major constraint on their ability to take precautions and adapt to climate change. Notwithstanding migration as a viable adaptation strategy, severe climate implications at the destination might have major ramifications for vulnerable migrants due to the bilateral interplay between population and climate change. As a result, it is critical to comprehend and analyze the new environmental concerns and dangers in immigrant communities in a methodical manner (Hari et al., 2021).

1.2 Gaps in Knowledge

When the studies carried out under the title of climate change in the world and the policies in the climate action plans are examined, it is inferred that the discussions on climate justice have just been introduced. While climate justice did not find enough space for itself alongside climate change which has been intensively discussed in the academic community since the 1980s. Today, the issue is at least mentioned and has drawn attention. Accepting disadvantaged social groups and acknowledging the inequitable structure within this framework includes many studies, especially in combination with adaptation-oriented solutions (Newell et al., 2020). Nonetheless, they have examined the dimension of justice superficially by focusing on theories of environmental and social justice (Santos, 2017).

Even though urban climate justice and local government policies have been examined from various dimensions in the literature, these debates have remained quite theoretical, and there is a gap in terms of research on how climate mitigation policies can achieve climate justice in practice (Bulkeley et al., 2014). Many academic and scientific strategies and action plans are currently in use, where the urgent need for action to prevent climate change is not based on community-led solutions, including well-being, and where fair policies, local communities,

indigenous peoples, and the global poor are omitted. Determinations about how climate change may affect different groups and communities in different ways remained limited in terms of scope (Islam & Winkel, 2017). Similarly, academic studies on the relationship between climate change and migrants are still limited.

The studies are mainly addressed in the context of climate victims forced to migrate and environmental impacts. However, the injustice regarding the environmental problems faced by migrant groups who have given up living in their homeland for different reasons in their new settlements and new countries is much less discussed. Studies on Syrians in Turkey have been conducted on specific topics and scopes, but due to the size of the population and the diversity of problems, there is a need for studies that include new perspectives and dimensions (Doğan et al., 2020). Although most studies on Syrians include discussions such as adaptation and social exclusion, they do not include the scope of climate problems.

Little is known about how Syrians living in Turkey perceive climate change and extreme events, how it affects their lives, and whether they are taking action to adapt. For this reason, it is expected that a huge gap can be filled by dealing with immigrants, who are a quite susceptible group, together with a problem that will shape the future of the world, such as climate change, and by investigating how climate injustice affects the way immigrants live. The city of Istanbul is the country's most populous region, hosting almost 20% of Turkey's population and, therefore, highly representative.

Moreover, Istanbul, which receives high levels of migration, both internal and external, is also home to nearly 1 million Syrians. On the other hand, studies and data indicate that it will be heavily affected by the climate crisis. Investigating and evaluating the topic of climate justice at the urban and community level is critical to concretize both existing and future social and environmental issues in Turkey. Moreover, exploring how to rectify the unequal distribution of negative climatic impacts on populations through logical and flexible utilitarian policies is anticipated to make a substantial contribution to the research.

1.3 Aim of the Study and Research Questions

As the most invisible and unrecognized groups of societies, migrants face significant challenges even in their daily lives. In particular, it is inevitable that they intensely experience a devastating justice issue such as climate change. This study aims to pursue in-depth research on the vulnerability of migrants, one of the most vulnerable groups, against the effects of climate change. It aims first to discuss the social justice dimension of climate change and how it affects vulnerable migrant groups and then present an analysis that measures the adaptive capacity and vulnerability of Syrian migrants in Istanbul. In other words, it aims to identify the challenges that migrants are facing and may encounter in the future and to reveal the predictors that may cause them in terms of climate justice.

The study puts forward two hypotheses:

The **first hypothesis** of the study is that migrants will be disproportionately affected by the consequences of climate change due to their multiple vulnerabilities and low adaptive capacities.

The **second hypothesis** is that migrants live in the most vulnerable areas of the city in terms of exposure to climate change and, thus, are at higher risk of loss and damage.

Within the scope of this research and in light of the hypotheses, the main research questions were elaborated and concretized for the target group on the basis of a specific case. They can be formulated as follows:

- How vulnerable are Syrian immigrants living in Istanbul to climate change?
What city-based factors affect their climate vulnerability?
- To what extent and how do the neighborhoods and houses where Syrian immigrants reside affect their vulnerability?

Within the scope of this research, the sub-research questions can be formulated as follows:

- What social, economic, and climatic challenges do Syrian migrants face in their destinations that deepen their climate vulnerability?
- To what extent are Syrian migrants aware of extreme weather events and climatic risks?
- Do Syrian migrants' experiences of weather and climatic events affect their risk perceptions and sense of security?
- Do institutional measures in terms of housing, employment, and health have an impact on improving the situation of Syrian immigrants?

1.4 Research Agenda and Methodology

The research design and methodology were developed by deploying the research questions and hypotheses described in Section 1.3. A qualitative study method was mainly used to answer these questions, peer closely at the interview data, take a case-by-case approach, and identify the interactions showing how they are related. The research involves both quantitative and qualitative aspects and follows a case-based analysis approach (Bazeley, 2018). A people-centered and interpretive approach was adopted throughout the process. The study uses phenomenology, one of the qualitative research patterns. Phenomenology clarifies the facts that we are aware of but do not have in-depth and detailed information (Yıldırım & Şimşek, 2016). This study aims to reveal the results of Syrian migrants' experiences regarding the vulnerability variables in the literature, especially in case studies on climatic events.

The study was conducted in three stages: literature research, field selection analysis, and field research. While searching for an answer to the research question, the most crucial step and the first stage that explains the profundity of the study is to address the issue theoretically and to compile scientific discussions in the academic literature. Denzin (1978, p.291) and Bouchard (1976, p.268) argue that a

methodological combination of using a variety of methods to analyze the same or similar phenomena and events can produce more consistent and coherent results (Please see **Chapter 5.1** for a detailed case-study methodology). Since qualitative research can provide flexibility in research design, it supports the use of multiple methods and ensures diversity in reaching the scope and purpose of the research (Creswell, 2007; Yıldırım & Şimşek, 2016).

In the second phase, a macro-scale vulnerability map was produced using secondary data to “identify the most vulnerable neighborhoods in Istanbul where Syrians live in large numbers.” At this stage, climatic data from Istanbul were compiled and associated with the neighborhoods where Syrians live intensively. Through spatial analysis and mapping, it was aimed to understand climatic risks in a broader context and to develop insights into risk factors by integrating various data. From the data acquired from this map, a conclusion was made using the equal-weighted score approach to evaluate the vulnerability factors reported.

In the third stage, to achieve the objective of “understanding the vulnerability factors and climate adaptation capacities of Syrian migrants,” field studies were carried out in 12 neighborhoods identified in the second stage as environmentally risky and densely populated by Syrians. The study was shaped to determine the challenges that may increase the environmental vulnerability of Syrians through the city of Istanbul, to spatially reveal their climatic exposure, and to draw conclusions through discourses. Sixty people were interviewed, and the semi-structured form included open-ended questions, a Likert-type scale, and several yes-no questions.

1.5 The Structure of the Thesis

This study consists of six main chapters, including an introduction and a conclusion (summarized in Figure 1.1). The first chapter, the introduction, presents the problem definition, gaps in the literature, the study’s aims, the research questions, and the study’s general framework of methodology.

The second part of the study first provides a brief overview on the issue of climate change and conveys the reflections of the climate problem in Turkey in precise discourse. It presents experiences in Turkey and Istanbul, explaining in detail how the dual structure of prevention and adaptation relates to climate justice and examines climate justice and environmental justice studies in Turkey. This chapter highlights the imbalances in the distribution of the negative impacts of climate change and how adaptation is also a matter of equitable distribution. Finally, this section presents the existing and upcoming negative impacts of climate change for the city of Istanbul, which has been selected for the case study.

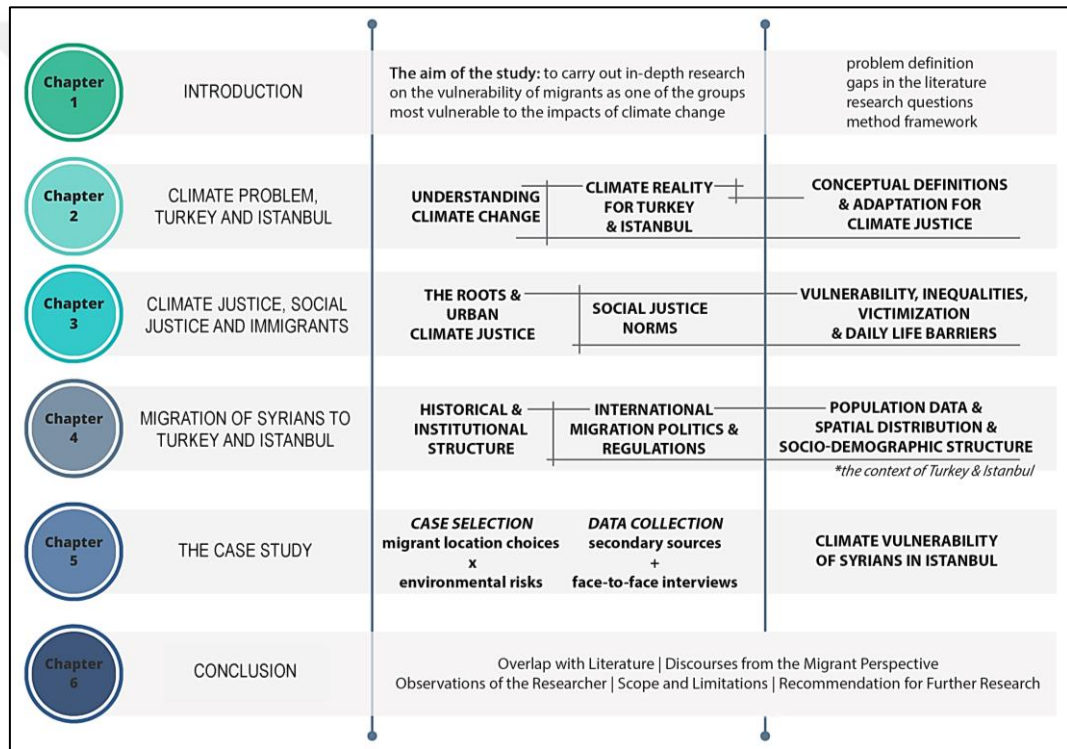


Figure 1.1 General structure of the thesis (Prepared by the author)

The third part of the study first deals with climate justice from a theoretical framework, including its historical background, definitional aspects and classifications that include discussions on justice perspectives. It also explains in detail the transition from global climate justice to the problem of urban climate justice, which constitutes the scope of the study. After that, this chapter emphasizes the strong interaction and convergence between social justice and climate justice.

Finally, the chapter clarifies, from the perspective of climate events, what social justice norms represent for migrant groups, as well as the injustices, victimizations, and hurdles migrants face on a daily basis. Intensively, the study reviews a certain number of disaster and climate studies on migrants in different countries and studies examining the role of race/ethnicity in protection from hazards.

The fourth part of the study begins by presenting international migration policies in the Republic of Turkey, historical and organizational configuration, and special legal arrangements for Syrians. Then, in order to describe the migration process that commenced after the Syrian civil war, the chapter synthesized various sources to reveal issues related to the daily plight of the focus group. The chapter also covers some numerical data for the contexts of Istanbul and Turkey and details the demographic pattern of Syrians. Finally, there is information on how Syrians in Istanbul have chosen to relocate and what kind of lifestyle they experience.

The fifth chapter of the study presents the case study in its entirety. In the context of Istanbul, the study took place in 12 neighborhoods selected from the highly climate-sensitive districts. The first phase of this chapter includes a methodology section that explains the case selection, research field, data collection, and analysis methods in detail. The other parts of the chapter, overall, analytically assess the environmental weaknesses of migrant location choices and include qualitative and quantitative analyses of how the gradual presence of Syrians in Istanbul may overlap with future climate risks.

The concluding chapter critically discusses all the research findings and systematizes their relationship with the existing literature. It assesses the legibility of urban climate justice through marginalized migrant groups. The relationships, similarities, and differences between migrants' perceptions and experiences and the researcher's predictions and conclusions are highlighted. The chapter also explains the study's main limitations and scope to shed light on future research. Finally, the closing remarks discuss adaptation measures and policy recommendations that can improve the climate vulnerability of migrants and other vulnerable groups.

CHAPTER 2

CLIMATE PROBLEM, TURKEY, AND ISTANBUL

2.1 An Overview of the Climate Problem

To examine climate injustice disputes and comprehend how equitable practices have evolved, one must first grasp the idea of climate, the causes of climate change, and the integrity between climate change and global-local scale relationality. Thus, understanding the character of climate as naturally tending to change, but recognizing the fact that in the post-industrial era, it has been transformed by human influence into an incident in which national-level consequences reach a global scale, proves the embedded role of governance.

Climate change is a phenomenon that has existed almost as long as the age of the earth. Climate change can occur due to natural internal processes and external factors or due to anthropogenic, i.e., human-induced land use changes. Billions of years ago, the greenhouse effect began to be observed as a result of changes in the energy coming from the Sun. After the infrared rays emitted by the Sun reach the earth, they hit the earth and heat the land and seas, while some of them are reflected back (Berger & Tricot, 1992). However, greenhouse gases in the atmosphere interfere with the reflection process and cause the radiation to be absorbed. This is associated with excessive retention of heat in a layer.

An increase in the atmospheric concentration of greenhouse gases, such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases, leads to a corresponding rise in the amount of heat retained inside the Earth's atmosphere. The primary concern for the climate system is to achieve a state of balance with regard to atmospheric gases. Nevertheless, the current phenomenon of climate

change is a unique occurrence in which a sentient species has deliberately instigated a transformative alteration, encompassing a distinct set of processes. The advent of the Industrial Revolution has led to a rise in human activities that resulted in the degradation of natural environments and an overall expansion across many sectors. This has subsequently contributed to the escalation of greenhouse gas emissions and, consequently, the phenomenon of global climate change.

Climate change is associated with effects such as the amount of greenhouse gases in the atmosphere, more frequently and severely seen extreme weather events such as rising temperatures, rising water levels, melting of glaciers, drought, severe hurricanes, flood events, as well as energy, transportation, wildlife, air quality, agriculture and food safety, and human health (IPCC, 2007). Although these have undesirable consequences, perhaps the most critical dilemma is that the sequence of all these negativities threatens ecosystems, plant and animal existence, and naturally human life is also at risk. Undoubtedly, it is evident that there exist substantial transformations that have a direct or indirect influence on socio-economic domains, ecological frameworks, and human existence at a worldwide level. Furthermore, these alterations are anticipated to escalate in more pronounced manifestations.

The rise in temperatures has resulted in several notable and recurring consequences, including alterations in hydrological cycles, the melting of land and sea glaciers, the elevation of sea levels, the intensification of storms, the heightened occurrence and severity of weather events, the occurrence of drought and desertification, and the escalation of epidemics (IPCC, 2014a). According to the United Nations (2020), forthcoming temperature rises will also contribute to the occurrence of heightened heat waves, increased levels of food insecurity, amplified water shortages, degradation of ecosystems, and the exacerbation of prevailing issues such as hunger and poverty. Climate change is projected to adversely affect several aspects such as the availability of clean water, clean air, social stability, adequate housing, and food security.

Diverse investments, for instance, transportation systems, water storage capacity, flood protection, enhanced structures, as well as modifying behavioral patterns, such as crop replacement, reducing water use, livelihood diversification, and facilitating migration, are manifestations of adaptive measures (Paavola & Adger, 2006). Increasing negative effects affect the quality of life and welfare of society, increase migration and hunger problems, trigger the spread of epidemic diseases, and cause the gaps in terms of social injustices to diverge gradually (Doğru & Gökalp Alica, 2019). The field of climate change research and its correlation with political superficiality highlight the existence of an insecure and unpredictable environment, underscoring the importance of abandoning the concept of limitless economic expansion in favor of a global framework that promotes fairness and impartiality (Meikle et al., 2016).

The global environmental challenges persist with a sense of immediacy and demand immediate attention. Urban regions are susceptible to extreme weather conditions due to factors such as dense populations, integrated infrastructure networks, and escalating environmental challenges, making cities a significant focal point for climate adaptation efforts (Mehdi, 2006). Interactions between spatially and temporally distinct human and natural processes profoundly affect the quality of life, economy, sustainability, and social equity (Haase et al., 2018). Climate change, which is the result of uncontrolled human activities taken into action with unsustainable approaches, now responds to humanity as a “crisis” in the 21st century. At the point where these effects are moving from crisis to disaster, it is extremely important to focus on cities and urban planning and develop strategies in a way that leaves no one behind. The solution lies in creating urban spaces that are durable to vulnerabilities and creating climate-resilient and climate-just cities that can respond effectively and quickly to shocks, stresses, and crises.

2.2 The Issue of Climate Change in Turkey

Turkey, characterized by a semi-arid climate, is anticipated to be among the nations most susceptible to the impacts of global warming. Notably, the desert belt in the southern region of the country is progressively shifting towards the north. In a pessimistic scenario, it is anticipated that several important consequences would occur, including less snow cover, alterations in seasonal surface runoff patterns, elevated temperatures, biodiversity loss, degradation of forested regions, abrupt precipitation events, diminished natural resources and water availability, as well as increased erosion and desertification.

According to the findings derived from model outputs of global climate change emission scenarios, the Mediterranean Basin, encompassing Turkey, would experience significant adverse impacts as a result of this crisis, mostly attributable to alterations in temperature and precipitation patterns (IPCC, 2007). Turkey is now experiencing a range of challenges due to the effects of climate change. These include elevated temperatures, forest fires, intense and prolonged rains resulting in casualties and property damage, disruptions in the agriculture industry, and exacerbation of water scarcity issues through drought conditions. According to the Ministry of Agriculture and Forestry (MoAF, 2020), Turkey experienced a total of 935 instances of extreme weather occurrences in the year 2019.

Many of the predictions of climate impacts are now being challenged by a much stronger need for adaptation, with unequal distribution of impacts and discourses that certain groups would bear the brunt. In Turkey, resolving climate-related injustices, particularly in agriculture, energy, and urbanization, will aid in combating climate-related injustices. While issues such as diminishing water resources, increased risk of drought, agriculture, nutrition and food security, energy access, and lagging renewable energy production are the top priority problem areas that climate change will bring about in Turkey, their severity will not be distributed equally across all communities (Doğru & Gökalp Alica, 2019, pp.34-45).

2.2.1 International Politics, Commitments, and Adaptation

Turkey acceded to the UNFCCC in 2004, a period of 12 years following its initiation for signing. This perspective aligns with Turkey's developmental objectives since it recognizes climate change as a matter of foreign policy. The Kyoto Protocol¹ sought to maintain climate stability in an environment of insecurity due to the mandatory and high level of commitments for Annex I countries and an approach based on a year-to-year penalty system² and the extra financial obligations of Annex II countries. In 2009, Turkey ratified the Kyoto Protocol. Notwithstanding these advancements, it has evaded accountability by refraining from establishing a target for reducing emissions. Turkey's inclusion in both the Annex I list, which imposes a responsibility for mitigation, and the Annex II list, which offers financial, technological, and capacity-building assistance to developing nations, has resulted in Turkey adopting a cautious approach in a complex process and failing to effectively raise awareness about climate change (Karakaya, 2016).

Turkey has had challenges in effectively engaging in efforts to combat climate change since the 1990s. The decisions made by the nation regarding transportation, industrial policies, energy, and urban planning have not yielded substantial advancements in mitigating climate change. Rather, they can be regarded as modest preliminary measures towards addressing this pressing issue. Turkey has adopted a somewhat passive stance in the realm of climate politics, displaying a degree of disregard towards its own role in generating greenhouse gas emissions. Turkey's greenhouse gas emissions have experienced a significant increase of more than 135%

¹ Kyoto's Annex I list includes, within the UNFCCC regime, countries that embody the members of OECD and the countries with Economies in Transition (EIT). Developing countries are designated as the non-annex countries. Annex II countries refer to Annex I countries without EIT and are responsible for paying the costs of developing (non-annex) countries.

² For example, an Annex I country that did not adhere to the protocol targets was subject to a penalty of 30% more reduction obligation in the following period because it failed to achieve the required emission reduction achievement.

since 1990, mostly attributed to fuel combustion in the energy and industrial sectors (MoEU, 2017, p.11, as cited in Kaymaz & Tut, 2020).

It is worth noting that while Turkey's emissions remain lower than those of developed nations, the observed upward trend is a cause for concern. In 2009, during COP15 and following discussions, the entity in question persistently refused to acknowledge its responsibilities, while simultaneously endeavoring to uphold a stance of neutrality. Turkey's status and involvement in international climate governance remain uncertain due to its delayed implementation of adaption measures and environmental initiatives. Currently, there is a lack of adequate support and resources, particularly in terms of costs and opportunities, which presents a significant problem for policymakers in the nation (Karakaya, 2016).

In 2010, Turkey implemented the National Climate Change Strategy (2010-2020) and followed it up with the Climate Change Action Plan (2011-2023) in 2011 (Albayrak & Atasayan, 2017, as cited in Aydın & Genç, 2023). Some municipalities have initiated the development of Climate Change Action Plans, with some having already finished this process. However, for these endeavors to be properly executed, it is imperative to enhance bottom-up engagement and ensure transparent and responsive government. Simultaneously, in order to guarantee the long-term viability of both mitigation and adaptation strategies, it is imperative to enhance the capabilities of local government entities, embrace a socio-political and eco-centric perspective, and undertake comprehensive assessments of spatial and social vulnerabilities.

In line with the thirteenth SDG, “Take urgent action to combat climate change and its impacts,” various strategy documents and action plans have been prepared in Turkey based on energy efficiency, drought, risk reduction, development, flood control, recycling, disaster response, climate change, adaptation (Aydın & Genç, 2023). On a more administrative level, in 2021, the “Ministry of Environment and Urbanization” was renamed as the “Ministry of Environment, Urbanization, and Climate Change”. While this led to changes in the internal-administrative structure,

it paved the way for the ministry to develop new objectives for legislative changes and strategic decisions in the field of environment and settlements. In the context of Turkey, there exists a prevailing inclination towards formulating policies that capitalize on and adjust to the phenomenon of climate change (Kaymaz & Tut, 2020). While this approach may present some answers and advantages in relation to economic progress, it lacks depth in social and ideological aspects, hence neglecting other factors.

It can be ascertained that Turkey will indeed encounter environmental ramifications. However, the severity of these repercussions and their disproportionate influence on some segments of the population may be attributed to deficiencies in urban planning attitudes, local knowledge, national climate policies, and climate adaption strategies. In urban settings, the issue is further compounded by several irrational practices, including the escalation of building activities and uncontrolled expansion of cities in response to population growth, inadequate land utilization in susceptible regions, non-scientific decision-making in site allocation, and illicit development in riverbed areas. However, it is essential to consider the potential for significant loss and damage in Turkey due to a lack of information and limited management capacity in relation to the impact of epidemics spread by vectors and adaptation efforts. This includes areas such as prevention, identification of individuals who are heat intolerant, health service capacity, awareness raising, and implementing measures to enhance comfort (Kurnaz, 2023).

In Turkey, measures to be taken to mitigate the impacts of climate change are in the background, while adaptation can be prioritized a bit more. However, in terms of adaptation, more emphasis is placed on structural measures such as protecting forest areas, green technologies, and sustainable resource management, even though their applicability is quite small. The significance of climate justice measures is often undervalued, leading to a disregard for the circumstances faced by disadvantaged populations and the unequal distribution of benefits among different social groups resulting from adaptation programs. Prompt attention to these concerns has the ability to mitigate the exacerbation of social problems in light of climate change.

Climate migration is anticipated to emerge as a prominent danger for Turkey in relation to adaptation-related concerns. Given Turkey's geographical location along migratory routes, it is imperative for the government to proactively address the management of climate refugees in response to escalating temperatures and overcrowding in countries situated to the south (Kurnaz, 2023).

2.2.2 Climate Justice and Environmental Research in Turkey

In spite of the paucity of academic research on climate justice in Turkey in recent years, it is possible to assert that there has been a growing academic interest in the subject matter. Particularly, the number of studies addressing the concept of “climate justice” apart from environmental justice has increased in 2018 and beyond. The focus of research has been on the role of local governments in the struggle against climate change and their egalitarian policies, the levels of effect felt by various social groups on climate change, and the relationship between gender inequality and climate change. Nonetheless, there are significantly fewer studies that initiate or expand the discussion on a particular marginalized group, event, sector, or region.

While studies in the field of climate justice in Turkey have addressed climate justice in the context of themes such as gender inequality, environmental justice, equality in social rights, the right to the city, ensuring social justice, and advocacy in social welfare policies, a more theoretical approach has been adopted in terms of study structure. In other words, the vast majority of these studies have not been conducted as case studies or focused on a specific issue or group but rather have been solved on the basis of evaluating the existing literature and proposing small-scale models for Turkey. Indeed, findings on how climate change may affect disparate groups and communities differently have been limited in scope and geographical context (Doğru & Gökalp Alica, 2019, pp.42-44). Nevertheless, research on climate justice in Turkey has made substantial contributions to this field. They have emphasized the responsibility of local governments to address climate change and have helped raise awareness of the social effects of climate change. Simultaneously, particularly in

Turkey, where gender inequality is obviously recognized as a critical social problem, the focus on its relationship with another crisis, climate change, has disclosed an additional significant research area.

2.2.2.1 Environmental Justice, Ecosystem, and Sustainability

Ethemcan Turhan (2017), who works in numerous fields, including climate change, activism, climate justice, and the post-pandemic climate crisis in Turkey, argues that there are still gaps in terms of research and practice on climate policies in Turkey and that a large population of conscious individuals is required for any change to occur. Turhan (2017) emphasizes that the transition to a low-carbon economy will be realized through energy democracy and climate justice in Turkey, which prioritizes investing primarily in the energy sector. However, it is not sufficient to be satisfied with it though; similar principles should be applied to sectors such as urbanization, agriculture, and mining.

In Turkey, global and national climate change solutions can indirectly relate to sustainable development objectives by considering economic and atmospheric justice together. The sustainable development policies of the UN should be reevaluated so as not to produce economic injustice, and the social and political impacts of the ecological crisis should be tackled from an inequalities perspective (Tuğaç, 2018). International conventions and initiatives also emphasize the connection between climate action and human rights. In academic research in Turkey, the concept of environmental justice in addressing the disparities of underprivileged populations has gained prominence. Through knowledge, advocacy, social support, and counseling tools, social services adopting an eco-social perspective can contribute to guaranteeing environmental justice (Kaya Örk & Çömez Polat, 2022).

Criticizing the anthropocentric and capital-oriented nature of policies and legal responses to the climate crisis in Turkey (Özlüer et al., 2016), it is emphasized that

an eco-systemic approach should be adopted, and inequalities should be addressed within an ethical framework (Tuğaç, 2018). Considering that the impacts of climate change are contextually differentiated by the diversity of geographical location, gender roles, social inequalities, and economic order, actors need to produce laws, strategies, and policies by taking these factors into account (Akkuş, 2021). The effects are community- and region-specific and provoke other crises, such as war or unemployment. The connection between the Syrian civil war and the drought of 2007-2008 demonstrates that the effects of climate change may lead to more complex and larger crises. As these phenomena deepen social, economic, cultural, and historical weaknesses, they will bring about more diverse risks and injustices in Turkey and other geographies, as in Syria (Turhan, 2017).

The ecological and social movements of small communities in Turkey, albeit still few in number and on a small scale, to make their voices heard against particular environmental problems represent outstanding efforts and can take the form of various associations, struggles, actions, and revolts. For example, the protest against the thermal power plant, which started to be established in Gerze after 2010 as an environmental justice issue, continued with the foundation of various platforms in regions such as Amasra, Osmaniye, Yalova, Karabiga, and eventually the Climate Justice Coordination began to operate in the region in a more organized manner (Özlüer et al., 2016). Currently, efforts are ongoing to elevate these small-scale activities to the national level and give them a louder voice. In contrast, the state should generate strong policies with a more rights-based approach and protective policies incorporating ethical values (Aslan, 2022). In this respect, ecological balance and human rights should be prioritized in rebuilding settlements; civil society organizations and public institutions should provide awareness and information; and support tools should be designed to provide social services to vulnerable communities (Doruk, 2022).

Doğru and Gökalp Alica (2019) prepared the study titled “Economic, Social, and Ecological Justice in Climate Struggle” in 2019 as part of the “Supporting Joint Efforts in the Field of Climate Change Project (iklimIN),” and it can be regarded as

one of the most critical guides prepared within the context of climate justice in Turkey. In this study, the concept is discussed alongside a vast array of subject areas, including disaster management, future generations, gender, class inequalities, agriculture and food sector, and international negotiations. As the foundation of climate justice, significant instances of environmental justice are included. One of these is the explosion of Ümraniye Hekimbaşı garbage dump in 1993. The fact that this landfill is located in a region where land and housing prices are low and where poor and low-income groups live is an imperative issue of injustice (Doğru & Gökalp Alica, 2019, p.9).

2.2.2.2 Vulnerable Groups, Gender Inequality, and Immigration

Research in Turkey recognizes that the impacts of climate change will not be felt equally by all, that some groups and regions are vulnerable to environmental impacts, and that their access to resources and adaptive capacities are limited. There is a valuable case study conducted by Doruk (2022), facilitated by the Green Thinking Association, following the Bozkurt flood disaster in the Western Black Sea Region. According to the field outputs, it was reported that there were many vulnerable individuals who had to live in containers and had various difficulties related to post-disaster life. For example, women's difficulties in being on the streets due to the loss of space, the loss of motivation, and job loss they experienced as a result of the destruction of the stands where they used to sell what they produced with their labor before the disaster, bring to light the problems in gender equality (Doruk, 2022).

Women's rights and gender inequality have entered the frame of climate justice literature in Turkey. Some researchers have drawn attention to the visibility of gender roles in climate change policy. Tatgin (2019) emphasizes the integration of gender issues into climate policies, the protection of women's rights, and the social contextualization of gender analyses, arguing that a more collective and universal context of climate justice can be achieved, and this radical transformation can lead to more humane solutions. While gender roles cause women and LGBT+ individuals

to remain in the background in many branches of daily life, they also suppress them in preparation, adaptation, and recovery in the processes before and after climate disasters (Doruk, 2022; Külçür, 2022).

The recent influx of people fleeing their homes, as a new form of migration characterized as climate refugees³, due to the effects of climate change is a prominent political issue that requires immediate attention on a global scale. To protect these increasingly vulnerable migrant groups, international actors must take a cross-border approach, and more equitable commitments to sustainable development plans are required (Biter, 2018). Since the number of people forced to flee their homes due to climate change is expected to rise, preparations must be made for their protection and permanent settlement worldwide (Balcılar, 2022).

Turkey has been welcoming internal and external migration movements for about 70 years, and with the addition of the Syrian War, it is facing severe negativities and has to carry heavy burdens (Atauz, 2022). Rapid and unplanned development in cities, loss of qualified areas, and dispersed and disconnected from the urban culture of migrants reflect Turkey's migration and urban policies that have still not been resolved for many years. In this case, cities will not be prepared for future migration flows in terms of demographic status and structure. Moreover, as long as climate refugees continue to be ignored, more severe difficulties will be on the horizon for Turkey and other countries in a similar position. Turkey is not sufficiently resilient, and its cities are ill-prepared to accommodate such mass migration and large populations (Balcılar, 2022).

³ UNHCR does not fully support the term “climate refugee”, explaining that it is more appropriate to refer to “displaced persons in the context of disasters and climate change” instead (URL 1).

2.2.2.3 The Role of Local Governments and Right to the City

The development of a climate justice culture and the incorporation of principles of public participation and transparency into the investments and strategies of local governments, especially in order not to leave anyone behind, have been deemed necessary (Tuğaç, 2018; Sarıkoç Yıldırım, 2020). In this way, it can be possible for voiceless people to make themselves heard, identify problem areas, and become visible. Despite the fact that climate justice debates in Turkey are mentioned in some academic studies, institutional documents, and reports of civil society organizations, they cannot be addressed comprehensively, especially by local governments, which have the authority in the closest position to the society. This involves a process that emphasizes the cause-and-effect relationships of climate change and focuses on more technical solutions.

The tools that can be developed to adapt to climate change should be adopted by individuals and supported by the public, but this awareness has not yet matured in Turkey. For example, in Turkey, the institutions and organizations that groups who are victims of environmental injustice can turn to are both severely limited and unorganized, and they are weak in regulating social justice as they do not have holistic policies (Kaya Örk & Çömez Polat, 2022). Sarıkoç Yıldırım (2020) found that the justice dimension is ignored in the energy and climate change action plans of municipalities in Turkey and that the inequalities arising from the crisis lead to more social injustice and inequalities due to deficiencies in local politics. In this way, climate justice research in Turkey concentrates on and relies on this aspect of local governments, even though relatively few entities can achieve this. Ultimately, this is a direct result of local administrations' lack of awareness, resources, and capacity (Sarıkoç Yıldırım, 2020).

Studies focusing on urban climate justice in Turkey bring up debates on the urban dweller's right to the city and defend the dominant view of the urban dweller in policy-making processes and practices. With an essential mediating and organizing role, local governments regulate many urban operations like hygiene, sanitation,

transport, design solutions, access to clean water, as well as social services, close relations with the public, and combating personal limitations such as poverty and disability. In this way, they could be a leading contributor to reducing greenhouse gas emissions and providing equitable services in appropriate locations. However, few municipalities in Turkey have taken significant steps to address climate change over the years. In addition, their technical capacity to attenuate the effects of natural disasters such as floods and droughts is quite limited, as are their management tools (Aslan, 2022).

Municipalities that do not explicitly emphasize social justice refer to certain social inequalities and differences in adaptation and make references to the imbalanced distribution of impacts on income groups and sectors but do not develop a plan for solution-oriented actions (Sarıkoç Yıldırım, 2020). A recent study by Kıymaz (2023) revealed that the awareness and sensitivity of local governments on intersectionality, the social vulnerability of women, children, and people experiencing poverty, and intergenerational justice have increased slightly. According to interviews with six local governments, vulnerability policies are characterized by the concepts of justice, equality, and just transition, and put more emphasis on certain areas such as food, education, disaster crisis, agriculture, and violence (Kıymaz, 2023). Yet, the municipalities chosen as a sample are quantitatively finite and may not represent all local entities in Turkey with different visionary structures, interests, and perspectives regarding socio-cultural, geographical, and political thought.

2.3 The Reality of Climate Crisis in Istanbul

For many years, Istanbul has become Turkey's investment and financial center due to its geographical location, deep-rooted history, cultural structure, and economic development potential, as well as a focus on national and international migration due to the business opportunities it offers. However, the unplanned and uncontrolled realization of these developments has triggered the city's continuous growth, making its unplanned stratification inevitable and increasing environmental pressure (Kaya,

2018). With the speculative pressures of Istanbul's mega projects, notably the 3rd Bridge, 3rd Airport, and Canal Istanbul, urban land becomes environmentally weaker and natural ecosystems are directly affected. In parallel with rent-oriented developments, the expansion of industry, the planning of new highways, settlement patterns, and concretized areas are also factors that change the climate of the region. The dense residential areas and the northward growth direction of the urban macroform also reinforce this negative interaction.

Both population growth and urban sprawl dramatically alter local climate, and land use and land cover can disrupt biological and ecological cycles (Grimm et al., 2008). The quality and energy-efficient operation of the built environment in urban areas is critical. These components play a prominent role in regulating the side effects of atmospheric changes caused by climate change. In regions experiencing rapid urbanization and economic transformation, people face significant challenges regarding sensitivity and capacity (Garschagen & Romero-Lankao, 2015). In Istanbul, the pursuit or compulsion of excessive growth has led to environmental degradation and ignorance of potential risks. This has condemned Istanbul to climate change and made it particularly difficult for informal settlements to respond. Unplanned urbanization exacerbates the urban heat island effect, creates flood-prone areas, leads to inadequate ventilation, and counteracts the natural structure of the land surface.

Neoliberal policies, rent-seeking developments, and megaprojects are causing changes in various climate patterns such as land use, humidity, gas and energy fluxes, soil moisture and temperature, evaporation and transpiration, frost and winds (İlhan et al., 2014, pp.34-36). According to the Climate Scenarios Report (IMM, 2018a, pp.23-25), climate change in Istanbul may cause many changes, such as temperature increases due to global warming (1-4.5°C on average per year), a decrease in cool days, the hottest day exceeding 40 degrees, long periods of drought, a rise in the intensity of extreme precipitation and associated floods, and a decrease in summer precipitation.

2.3.1 Heat Wave and Urban Heat Island

GDM defines a heat wave as a case when the daily maximum temperature in Turkey is 3-5 degrees above the historical average (at least 30 years) and continues for at least three consecutive days⁴ (Şahin, 2019; ICC, 2020). Due to the heat island effect in the city, it is expected that the number of days with temperatures above 40 °C will increase in the summer months, hot nights will appear at a high rate, and the number of frosty days will decrease from 19 to around 4-14 (IMM, 2018a, p.109). By the definition of the EPA, heat islands refer to regions where high temperatures occur in dense urban areas lacking green space, as structures such as buildings, roads, and other infrastructure absorb the sun's heat more than natural landscapes, as it were forests and bodies of water (URL 2). The components of building density and total vegetation cover provide a way of quantifying the severity of the heat island (İlhan et al., 2014, p.37).

Because of urbanization and dense construction throughout Istanbul, the temperatures expected to rise due to climate change will be felt more intensely and escalate rapidly. Density in both transportation infrastructure and building layout prevents the sun's rays from being absorbed as they cut off contact with soil and vegetation, and human building materials cause the surface to heat up more. Station measurements have shown that there is a temperature overlap with the urban transformation zones, which significantly affects the temperature increase (IMM, 2018a, p.108). Due to the urban heat island effect created by the planning approach of the building stock in Istanbul, temperatures are 5-7°C higher in areas with dense construction, and heat waves will inevitably be felt more (ICC, 2020).

⁴ Although there are different definitions for a heat wave in the literature due to regional variations in climate, socio-demographic structure, and adaptation to the changing climate, in its most general form, it defines consecutive days of exposure to dangerous or deadly heat within a certain period of time, above seasonal norms (Şahin, 2019). According to the definition of the World Meteorological Organization, a heat wave is defined as a daily temperature increase of 5 degrees above the average temperature for 5 consecutive days. (URL 3)

2.3.2 Rising Temperatures and Drought

There is a high probability of significant effects of climate change in Istanbul, such as temperature increases due to global warming, a decrease in cool days, and the hottest day exceeding 40 °C. Even according to the optimistic scenario (RCP2.6), the average temperature increase in Istanbul will be above 1 °C, and when all scenarios are considered, it is reported to rise between 1 and 5 °C relative to the current average (IMM, 2018a, p.95). Especially when compared to the 1990-2005 period, the proportion of cool days will gradually decrease, and by the end of the century, there will not even be a day that meets the definition of a cool day (IMM, 2018a, p.95). These changes and imbalances in temperatures are obviously associated with an upsurge in drought.

In the past, Istanbul experienced serious drought problems in 2007-2008 and had difficulty meeting its water demands. In the following periods, the below-average precipitation continued to maintain the gravity of the situation until today (İlhan et al., 2014, p.22). Mega projects are also large-scale problem areas that will deepen the problems of drought and water supply. Istanbul's water and related problems are fundamentally related to the severe drought that will impose on the physical environment and directly on human health and the risk of unsustainable solutions in water management (İlhan et al., 2014, p.26).

2.3.3 Excessive Precipitation, Hail, Flood, and Sea Level Rise

Urban floods, which have been on the rise due to climate change, pose significant risks, especially for Izmir, Istanbul, Bursa, Ankara, and Kocaeli (MoEUCC, 2021, p.178). Istanbul has a high degree of risk of flooding, inundation, and flood disasters due to faulty decisions made in urbanization and town planning in the last 30-40 years (IPDDE, 2022, p.179). According to the RCP2.6 scenario, although there is no drastic change in precipitation for Istanbul, it is estimated that there will be a decline in precipitation as moving toward the pessimistic scenarios and that the amount of

this reduction will correspond to a value of approximately 12% by the end of the century (IMM, 2018b, p.96). However, even though there is a drop in rainfall, the intensity of the precipitation is gradually rising to a level that can trigger more and more damage.

In the last 5 years, a total of 23 cases of severe flooding have occurred within the borders of Istanbul (IMM, 2021). Five streams in the “most dangerous” category, namely Kurbağalidere, Kağıthane, Küçüksu, Alibeyköy, and Ayamama, have been identified as flood-prone areas in Istanbul (Tanyaş et al., 2013, p.40). Flash floods caused by changes in rainfall due to severe and frequent climate change in and around Istanbul can be attributed to some reasons as follows: “Zoning and building in floodplains, application of covered streams, alteration of streambeds, non-application of plinth wall elevation in basements and ground floors of houses, rapid urbanization, population density in disaster-prone areas, expropriation of floodplain zones, special use and building permits” (IPDDE, 2022, p.182).

2.4 Last Words for the Chapter

In this section, the basics of the climate problem and the issue of climate change in Turkey are discussed first and foremost. Prevention and adaptation are the two most important dimensions of climate change. The issue of vulnerabilities is directly related to adaptation and climate justice. The issue of being negatively affected by climate change is not the same for all segments of society. Some segments of society have lower adaptive capacity and resilience than others. These groups are defined as disadvantaged groups. Migrants who are forced to change their places of residence and who do not have adequate protection in their new environments are vulnerable to climate change and climate change is also a social justice issue for these groups. This thesis addresses climate change as a justice issue and discusses it through a field study on migrants. The next chapter discusses climate change with the dimension of social justice, in relation to social justice and with a special focus on migrants.

CHAPTER 3

CLIMATE CHANGE, SOCIAL JUSTICE, AND IMMIGRANTS

3.1 Framing Climate Justice

Studies on global climate justice have been carried out since the 1990s and international and local conferences have increased; however, they are inadequate in number or scope (Bulkeley et al., 2014). Nevertheless, the theoretical framework to which the roots of climate justice are tied can be explained by reliance on social contracts, legal processes, the rule of law, resource allocation, and equality of opportunity. Climate justice fundamentally functions as a mechanism that secures society's welfare, defends individuals' rights and capabilities, and strives for individual development and the integrity of the community. Different societies have not been able to equally develop capacity for environmental problems due to causalities such as environmental conditions, socio-economic status, country of birth, income inequality, and educational level.

The role of governments, discussion, unity, and collaborative action are crucial and top-priority activities for attaining substantial and persistent gains in climate justice. Thus, fair pursuits for local communities and organizations through legal reforms may end with producing both near-term entry points and longer-term proposals. The perception of social movement collective action frames as unfair frames have gained prominence, and the identification of unstable social conditions has emerged as an objective. The environmental justice movement also focuses on the disproportionate effects of climate change on vulnerable groups and even the injustice of their inability to participate in policy-making processes (Sicotte & Brulle, 2017).

3.1.1 The Idea of Climate Justice

In North Carolina, when soil disposal containing PCB⁵ threatened the health of a community, particularly African Americans, in 1982, “environmental justice” was initiated by activists and political leaders organizing around civil rights (Schlosberg & Collins, 2014). As a core problem theme, environmental justice considers disparities caused by race, ethnicity, and color distribution. The earliest movements to arise in the United States quickly extended across all regions and expanded their influence. Climate justice conversations might be viewed as a case that develops from environmental justice discussions and finally converges (Goodman, 2009; Islam & Winkel, 2017).

Determining the fragility of societies under environmental justice rule and its relationship with environmental damage has changed the understanding of the social dimension of climate change and played a significant role in the formation of climate justice (Preston et al., 2014). Climate justice refers to a semblance in which environmental justice expands physically and politically and is a sub-part of it in form. Although the environmental justice movement is criticized for having local or grassroots underpinnings, the adaptation process may be seen as a systematic organization that commences with the individual and impacts society. In this scenario, the environmental justice view can act as a preceptive and facilitating guide for the adaptation principles of climate justice.

The term “climate justice” was used for the first time, in academic literature, in the book written by Edith Brown Weiss, “In Fairness to Future Generations: International Law, Common Patrimony and Intergenerational Equity” in 1989, and the changing effects of climate change over generations began to be questioned (Schlosberg & Collins, 2014). The term is also reported to have been used politically

⁵ Polychlorinated Biphenyls (PCBs) are dangerous and carcinogenic man-made organic chemicals and compounds that have been previously used in industrial sector (URL 4).

in 1995 by American indigenous activist Tom Goldtooth (Mary Robinson Foundation, 2013, p.12). It is difficult or even impossible to find a quite general comprehension of climate justice in earlier studies. According to time and place, the expression of climate justice might vary from person to person and even within the same human mind (Thorp, 2014, p.127).

Academics, civil rights activists, social actors, political figures, expert environmentalists, and other members of society may have diverse perspectives on or interpretations of this evolving idea. This new understanding of justice is more forthcoming with the heterogeneous character and ought to be considered as an intricate action rather than distinguishing it, and this viewpoint should be the launching point for the disputation (Boran, 2019). To be sure, climate justice is an inexorably apparent and swarmed field of strategy and scholastic review, yet it contains an intensity of work and research because of its degree and cutoff points of trouble, its financial aspect, and its nearby relation to human turn of events (Newell et al., 2020).

Climate Justice embarked upon to mold towards the end of the 1990s in terms of meaning, although not in origin. The first reference work accepted in 1999, the report titled “Greenhouse Gangsters Against Climate Justice” prepared by Kenny Bruno and his colleagues, tackled climate change from the perspective of climate justice and examined this concept in depth, including various definitions and several experts’ views (Schlosberg & Collins, 2014). The authors of this study refer to climate change as “the largest environmental justice issue of all time,” underlining the similarity between the two concepts in terms of their respective social and environmental concerns. In other words, while environmental justice primarily addresses local issues, climate justice expands in scope and uses social sensitivity as a criterion. Contrarily, climate justice continually relies on global strategy and the division of labor, while environmental justice is restricted to local and dispersed conflicts (Bulkeley & Newell, 2015, pp.68-71; Bulkeley et al., 2013).

Local movements for climate justice also include highly successful advocacy and initiatives, but they can only become more effective if they occur under the aegis of an international unity of struggle and response. The three-dimensional conceptualization of climate justice (Figure 3.1) put forward by Bulkeley and his colleagues (2014) guides the advancement of climate justice executive practices and understanding which fair pathways ought to be met and which equity or fairness approaches ought to be followed. The entry points of this pyramid address the urban-scale interventions of climate change from the perspective of justice, and this reflects the idea of climate justice for policy and practice (Bulkeley et al., 2014).

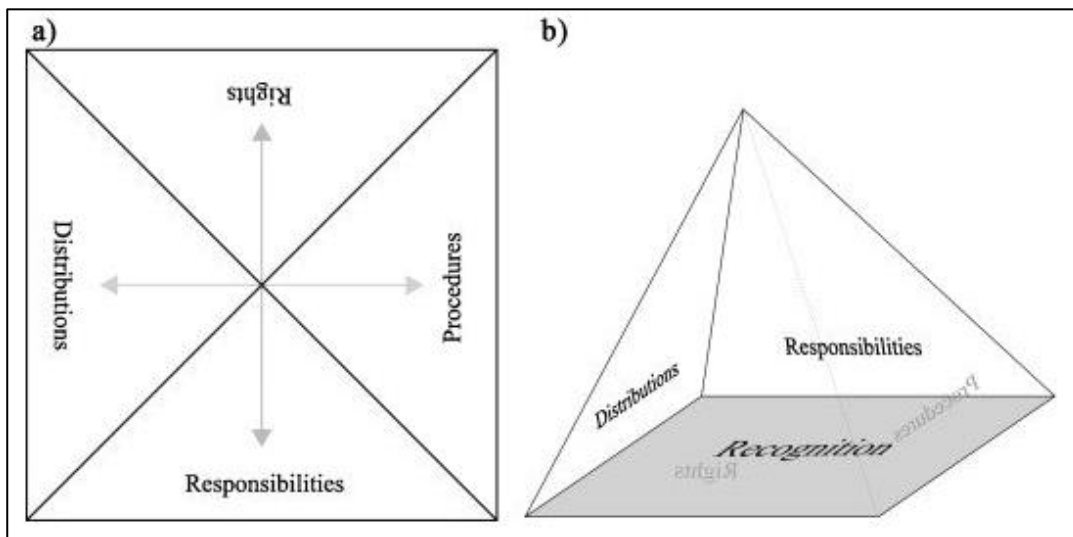


Figure 3.1 The three-dimensional climate justice pyramid as viewed from (a) directly above; and (b) obliquely below (Bulkeley et al., 2014)

If belatedly, climate justice has entered politics in several nations, particularly wealthy countries, where it is now a prominent issue. Since the Paris Agreement, many studies, conferences, and seminars now discuss an essential dimension of climate change as justice. This increasingly widespread idea represents a process that is pushed to put the results of the climate justice pyramid into practice, to associate it with a basic concept of recognition, and then to involve policymakers, many actors, and organizations in the process along with the marginalized (Bulkeley et al., 2013, Santos, 2017).

In summary, climate justice encompasses a series of movements that have developed to eliminate the dangerous consequences of climate change and protect the vulnerable from these effects, as well as to resolve the inequalities created by the fossil fuel industries (OHCHR, 2020a; Schlosberg & Collins, 2014). This issue has started to attract attention as an extension of the social and environmental justice flows that are currently being discussed due to the fossil fuel industry (Jafry, 2019, p.2). Afterward, due to the fiasco of the COP15 Summit held in Copenhagen in 2009 on the climate governance side, the term managed to find a much broader debate in the political arena (Bruno et al., 1999; Schlosberg & Collins, 2014). The concept mainly follows the social and environmental justice movements and is closely related to the activism tradition (Meikle et al., 2016).

Climate justice not only seeks to address the equitable distribution of climate change impacts and inequalities but also defines a large-scale political issue regarding greenhouse gas emissions affecting the entire planet by making a global call for the whole world (Meikle et al., 2016). For sure, as environmental justice aims, it adopts the search for a just solution to environmental impacts regardless of race, religion, origin, or income, but it seeks more than those. Instead of dealing with point-based responses or focusing on a single space-time period, it embraces a broad range of timeless behaviors.

3.1.2 Urban Climate Justice

When considered on a global scale, the concept of urban climate justice has come to the fore after the social movement flows discussed in the literature as environmental justice since the 1980s, considering the effects of climate change on disadvantaged communities within the scope of human rights as a justice issue (Doğru & Gökalp, 2019; Sicotte & Brulle, 2017). Differences in exposure, susceptibility, and coping capacities of governments and communities cause the impact levels of climate change to fluctuate across countries and to inhabit varied experiences in urban areas (UN, 2020). In other words, the direct or indirect, irreversible, and inevitable

consequences of climate change are not felt in the same way by every country, every society, and every individual. The disproportionate impact distribution should be dealt with fairly and reconsidered in all social and environmental dimensions. Otherwise, the ongoing crisis will lead to increasing inequalities at local, national, and international scales, leaving specific segments of societies and underdeveloped countries behind (Gajjar et al., 2019; UN, 2020).

Romero-Lankao and Dodman (2011) define urbanized areas as “hotbeds of greenhouse gas emissions and vulnerability” and point to cities as the source of climate problems, but on the other hand, they do not ignore the fact that they are the main solution. Cities have become leading climate actors with their role in mitigating the devastating effects of climate change and preparing communities for future crises, as well as providing climate governance and managing the tools necessary to achieve a range of adaptation goals, building bridges between national and local governments, and promoting urban transformation. (Betsill & Bulkeley, 2006; Bulkeley & Newell, 2015; Puppim de Oliveira, 2009). The city’s role in climate management has become more and more effective with the increase of the impact of climate change and the development of discussions in that direction. Developing urban responses to climate change, applying principles of justice, and conducting vulnerability and impact analyses include city governments’ active role (Betsill & Bulkeley, 2006; Bulkeley et al., 2014).

Drawing upon a range of conceptual frameworks and theoretical perspectives on justice, the concept of urban climate justice seeks to promote equitable and practical resolutions that foster well-being for both human and non-human entities, as well as future generations. In terms of environmental justice, it focuses on environmental problems, air pollution, and land use inequalities between different communities. In particular, it aims to rectify the inequitable allocation of green spaces and urban amenities inside cities, thereby ensuring that all individuals can avail themselves of these resources. In the realm of social justice, the main goal is to ensure the safeguarding of marginalized populations and the mitigation of socio-economic disparities. Additionally, it addresses the strategies for ensuring climate adaptation

in economically disadvantaged groups and explores methods for effectively involving them in mitigation endeavors. In support of this, it considers the participation of all segments of society in the climate struggle process but supports a prioritized preparation for the representation of vulnerable groups.

Cities are at the center of climate justice because the multi-layered socio-economic structure and dense settlement pattern reveal a problem associated with a case of inequality (Bulkeley & Betsill, 2013). Hence, the presence of socio-economic stratification within urban areas, the spatial disadvantage experienced by low-income groups and minorities, and the unequal allocation of urban resources emerge as major concerns that contribute to the exacerbation of urban climatic injustice. The lack of effective governance in urban areas to address disparities ultimately results in an uneven distribution of climate consequences across regions and social groups. Chu and Michael (2018) define urban climate injustice in terms of heightened susceptibility to environmental harm resulting from various factors, such as a destabilized political setting and social networks, sharp social disparities and class tensions, as well as precarious employment prospects, limited availability of public services, disruption of financial supplies, and forced displacement.

Debates on the right to the city take a new pattern in the field of urban climate governance and lead to hot arguments. The differentiation of vulnerability levels from one individual to another and from a group to a local level is in a cause-effect relationship with societal inequalities. If cities cannot cope with their vulnerability to climate change, the exposure of the people living in the towns rises to a great extent. Increasing inequalities and urban problems, especially spatial segregation, and social classes, deepen this situation even more. The social justice criteria, which list society's rights and obligations and establish its place in the adaptation and mitigation processes, round out the scope of urban climate governance (Bulkeley et al., 2013; Revi, 2008; Schlosberg, 2012).

3.1.3 Classification of Climate Justice

Numerous scholars have discussed climate justice theoretically, philosophically, or morally, as a form of distribution, with various justice discourses, and references have also been made to other justice categories. The primary reason for this is that each conception of justice offers multifarious approaches to achieving climate justice. However, despite the various confusions of perception and interpretation, the common point is that each notion focuses on equality and justice in the cause-effect scheme of climate change (Jafry, 2019, p.3). Thanks to the arguments put forward by theorists working on urban and social justice, such as Harvey (1973), Lefebvre (1996), Shue (1999), Fraser (2000), climate justice is based on various conceptualizations and concretizations, that are with the remarks on procedural justice, distributive justice, corrective justice, recognition, intergenerational justice, capabilities approach, right to the city, and ecological perspective.

3.1.3.1 Procedural Climate Justice

Procedural justice has a structure that questions and evaluates the characteristics and decision forms of a system, institution, or government leaders themselves (Folger & Konovsky, 1989). These decisions ultimately cover issues such as recognition, participation, and delegation of authority and pay attention to the approach and positioning of the procedural parties in this process (Paavola & Adger, 2006). Procedural climate justice presupposes straightforward, transparent decision-making and explicable practices at the phases of impact appraisal and generating solutions (Newell et al., 2020). Generally, it encompasses a set of rules, laws, and policies and determines who will have a voice. In addition, impartiality, transparent decision-making, public participation, and respect for moral and ethical values represent such an understanding of justice (Sovacool et al., 2019).

Paavola and Adger (2006) state that procedural justice is a more secure footing, especially for those who cannot be heard, because it is responsible for protecting

their interests through legitimacy. Holland (2017) emphasizes that it is vital for vulnerable groups to have political power and argues that assessing their effects on the policy-making process is extremely important in determining the root causes of vulnerabilities and the necessary steps for adaptation (as cited in Bulkeley et al., 2014). Underprivileged groups should use their right to make their own voices while making decisions for their interests. At this point, local authorities have a significant role as the closest administrative unit to the public.

3.1.3.2 Distributive Climate Justice

Meyer (2013) justifies the results of climate change by correcting the unbalanced and disproportionate distribution of the benefits obtained without being deserved and proposes distribution justice to eliminate the unequal effects of historical emissions. Contrary to procedural justice, distributive justice focuses on the results a lot more and gives importance to the level of satisfaction (Folger & Konovsky, 1989). In other words, it questions whether the distribution is fair and the accuracy of the evaluation. In this way, when there is an unequal distribution of decisions, and resources and rules cannot be presented fairly to society, it seeks a way to ensure balance. With its distributor role, justice develops a view of how good and evil are shared between communities and how it takes place in the context of time and space (Sovacool et al., 2019). In terms of climate change, this is related to how the distribution of cost and benefit will be because it provides answers to climate justice questions that center on how resources are used in a world with carbon constraints, who have more urgent needs, and the relationship of responsibilities to past accumulations (Newell et al., 2020).

While distributive justice is perceived as the direct distribution of resources, procedural justice examines which transactions and methods are used in making decisions related to distribution and continuum (Folger & Konovsky, 1989). After all, it can be said that procedural justice matches with an understanding of the attitude and pursues fairways to form a sequence of decisions. Paavola and Adger (2002)

state that environmental decisions and climate governance should combine distributive and procedural justice. Finding answers to the growing disparities brought about by the problems of vulnerability, inadequate capacity for adaptation, and unequal allocation of rising requirements becomes challenging with a single justice interpretation. Also, the matter of cost, benefit, and burden sharing comes to the fore, and both justice classes need to be intertwined in national cohesion planning (Adger et al., 2006, p.202).

3.1.3.3 Corrective Climate Justice

According to Weinrib (2002), the philosophical purpose of corrective justice is the notion that the faulty party compensates the victim for the wrongdoer's losses by restoring the rights, obligations, and status quo in a balanced manner. The principle of corrective justice defends that those who contribute the most to the climate change problem have a duty to take responsibility for their actions and redress the damage they have caused. The epitome of this form of justice is legal litigation and campaigns that seek to hold fossil fuel companies and other polluting nations accountable for their role in causing climate change.

The principles of distributive justice and corrective justice are similar, but they are forms of justice that differ somewhat in terms of functioning. It is essential to mention the relationship between the two in the impact of climate justice on society. Norms regarding distributive justice advocate the fair distribution of responsibility, not equality, by considering income inequalities (Boran, 2019). Thus, it is accepted that those with more assets and wealth should bear more burdens without being bound by responsibility. Corrective justice and distributive justice have a dual structure, inseparable and not mutually exclusive, that the differential burden distribution between rich and less wealthy countries is a justifiable argument (Meyer, 2013; Shue, 1999).

3.1.3.4 Recognition & Misrecognition

Nancy Fraser (2000), one of the pioneers in her work on recognition, argues that the requirements of distributive justice can be met with recognition, and this transition begins. In fact, the recognition of identities in society allows distribution procedures to be carried out to the necessary places decently, attentively, and commensurately. It resembles equal advocacy in some ways but necessitates identifying the vulnerable by documenting layers of difference. This idea promotes a widespread sense of equality among all members of society. A reciprocal relationship is represented, where everyone sees each other as equal, defines each other equally, and is not excluded (Newell et al., 2020). In climate change policies at the local level, the cultural injustices that have already existed in cities should be considered to ensure the rights of oppressed groups such as the working class, women, and ethnic minorities (Bulkeley et al. 2014; Cohen, 2018; Islam & Winkel, 2017).

Fraser (1997, p.14) uses the term misrecognition in the sense of the economic institutionalization of social commitment created by social and cultural value patterns and suggests that this will ultimately create a psychological trauma or status problem for a particular community. According to Fraser's misrecognition typology, specific segments become increasingly vulnerable in the face of firm authority with stereotypical judgments, and thus invisible peoples may emerge (Schlosberg, 2012). Therefore, the opportunity for equal participation and the right of voice to unrecognized individuals and specific ignored segments will also be denied. Recognition and misrecognition allow everyone to have a voice on the political plane by evaluating the multifaceted climate justice problem from a more sensitive framework, and it accepts cultural changes and geographical boundaries (Preston & Carr, 2018).

3.1.3.5 Intergenerational Climate Justice

It is controversial how justice will properly be provided for those who cannot speak for themselves among decision-makers. The intergenerational understanding of environmental and climate justice directly relates to sustainability principles. The most effective and primary action for the future of future generations should be to protect and improve “natural capital” (Newell et al., 2020). Sustainable development conceptually came to life for the first time in 1987 with the report “Our Common Future,” also known as the Brundtland Report, prepared by the WCED. The report defines sustainable development as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, pp.51-71).

Unfortunately, children have little say in society and are highly influenced by their parents’ decisions, actions, and responsibilities. Sanson and Burke (2020) suggest that this situation represents a form of structural violence, and they note that studies focused on children and climate, in particular, have also shown a significant increase in numbers. Besides people must represent the voice of those who will be born in the following years. Otherwise, they will suffer the climate crisis turning into a disaster without any fault of their own. The fact that children will be the ones to endure the worst impacts of climate change is crucial for this view (Meikle et al., 2016).

The most apparent priority of intergenerational equality is to protect the current generation’s preferences and quality conditions and ensure accessibility (Newell et al., 2020). For example, it may be impossible to access clean water and food in the future, or it may not be possible to live in the housing units produced under today’s conditions in the weather conditions of the future. Therefore, even if there is access to resources and consumer goods, there is a risk that its quality will not be as it is today, but just enough to sustain life. Meyer (2013) associates today’s people’s welfare with the past’s industrial activities and the negativities that future people may experience with the responsibility of both generations and states that the present measures should compensate for the future’s prosperity.

3.1.3.6 Capabilities Approach

Given the fact that human behavior degrades and neglects the natural environment, it is inevitable that lack of participation and action negatively impacts environmental sustainability and upheaves the interests of both present and future generations (Sen, 2009, p.48). Schlosberg (2012) argues that the capabilities approach is closely related to the ecological perspective. The notion that human behavior determines the future of human beings shows the potential power of the role of talents and capacities in promoting justice and halting climate change in direct proportion. The main focus is on individual advantages and the ability of individuals to obtain “combinations of valued functionings” to organize society and, ultimately, what a person can actually do (Sen, 2009, pp.232-236).

Developing a view of people’s abilities and social realities in a community leads to the right direction of the understanding of justice and equality analysis branches out to a wide variety of topics to be studied. The adaptability of people living in coastal areas, those living in unplanned settlements, and those with infrastructure deficiencies and limited-service access is an extremely important micro-criterion. The capabilities approach offers suitable instruments for determining the needs, qualifications, and continuance of such vulnerable individuals’ everyday lives while also devoting the essential atmosphere for their participation in policymaking (Schlosberg, 2012). In this respect, the capabilities approach is intertwined with recognition, so much so that it includes it but also embraces more. Pragmatically, this theoretical vision considers many more goals and a holistic perception from process to outcome.

3.1.3.7 Right to the City

When looking at the impacts and consequences of climate change, the social and economic repercussions on society are unfair and demonstrate injustice (Goodman, 2009; Preston et al., 2014), but it is not only a moral but also a universal human right

matter that compels legitimate approach (Thorp, 2014). Urban climate justice, which scales climate justice to the local scale, is based on a spatial justice approach. The reflection of spatial justice in the city is shaped by Henri Lefebvre's 'right to the city' theory⁶ and an aspect of justice similarly questioned by theorists such as David Harvey. The right to the city offers city dwellers equal access to all opportunities and potentials and the right to participate in urban decisions.

Harvey (1973) regarded the socio-environmental structure as a significant urban dynamic for a just city and argued that it is not the influence of capitalism that should be embodied in the formation of the city but the influence of community and the individual heart. Similarly, for Lefebvre (1996), the right to the city is not primarily about having access to resources or the principle of material equality but rather about having a voice or representation as an individual in the decision-making for the city. In other words, the right to the city is more than measuring individuals' access to city resources; instead, it allocates the right to everyone who lives in it to be able to shape it at will and with the heart.

The urban dweller, who has never been at the decision-making table, is now forced to endure environmental problems they perhaps never desired to cause. Whereas urban and rights inquiry seeks to understand who the city is for, whom it serves, and how inhabitants benefit from urban assets, urban and climate justice allows these questions to shift somewhat. Climate change adaptation and mitigation is a socio-spatial problem. Measures taken by city governments in the name of smart growth, especially land use strategies, can address concerns of right to the city issues such as improving quality of life and reducing greenhouse gases (Cohen, 2018). As such, the effects of climate change and climate policies are not equally distributed in urban areas.

⁶ In his 1968 book *Le Droit à la ville*, Henri Lefebvre first brought forward this idea, indeed as a slogan. Since then, social movements, thinkers, and progressive local authorities have adopted it as a call to action.

3.2 Social Justice Aspects in the Context of Climate Policy

Over the last 30-40 years, theories have developed emphasizing the impact of social inequalities on vulnerability to disasters and environmental stresses (Cutter & Finch, 2008; Fatemi et al., 2017). Traditionally, forecasting and modeling of the implications of climate change and their regional distribution and assessment have failed to produce a schema for how people's changing social dynamics in the face of environmental hazards may lead to susceptibilities. As such, it becomes crucial to act with bottom-up reference and to consider a minor scale, the human scale, in planning (Pandey & Jha, 2012).

When a community develops the capacity to withstand stress and problems, its social resilience increases, which refers to the operationalization of a socio-cultural system (Cutter et al., 2003). It is necessary to upturn the resilience of the vulnerable at the individual and community levels. It is inevitable that through social cohesion and building strong community ties, social resilience will grow, and vulnerabilities will be reduced or effectively managed. On the other hand, social resilience and the reduction of social vulnerabilities have spatial counterparts at the urban and ecosystem levels (Oliver-Smith et al., 2012, p.19). Therefore, efforts to adapt and ameliorate only through the individual or a local community may weaken the achievement of desired results. Social justice is supported by the umbrella of climate justice in discussions under climate change. Also, it is addressed in a relational framework as the focus of increased research and climate policy action.

3.2.1 The Intersection of Social and Climate Justice

Under the shadow of its immensity in scope and globality in scale, the fact that climate change is also a matter of place-based social justice has been hidden in the dark for many years. However, while reflections of inequality are becoming more prominent with many other urban problems, it is also argued that climate change deepens social inequalities. Although climate change is a collective challenge for all

humanity (Swaine, 2009), the strong assumption that those who contribute the least to this problem are those most affected (Harding, 2016) clearly explains the social justice dimension of the climate crisis. Social contrasts, financial position, and political or social alienation in society can all influence one's degree of vulnerability (Balaban et al., 2021, pp.34-35). One of the primary ways for vulnerable groups to cope with risky situations is to participate in society without being deprived of social assistance.

Climate justice, especially when viewed chronologically, was first used on an international level, encompassing issues of inequalities and the distribution of responsibility that are inversely proportional to the economic development of countries. Later, the concepts of urban climate justice and social justice have much more frequently dominated the literature when attention is sought to draw attention to an area where community and human rights concerns overlap with the consequences of climate change (Figure 3.2). The theme of social justice, on the other hand, is an arena that existed long before climate justice, where research has been conducted for many years, whose theories have been accepted, and which is quite advanced philosophically, and it is a function that strengthens the results to be produced for climate justice (Preston et al., 2014).

While climate justice is sometimes seen as a bridge between environmental justice and social justice in the literature, it is sometimes proposed as a new idea emerging from the combination of environmental justice and social justice. Nevertheless, ignoring the temporal difference, all these justice components can be explained more accurately if the idea that they are constantly intertwined and can be considered a sub-aspect of the other is taken as a basis. Having said that, more research needs to be done on the combination of climate justice and social justice to build future scenarios and social modeling against climate impacts.

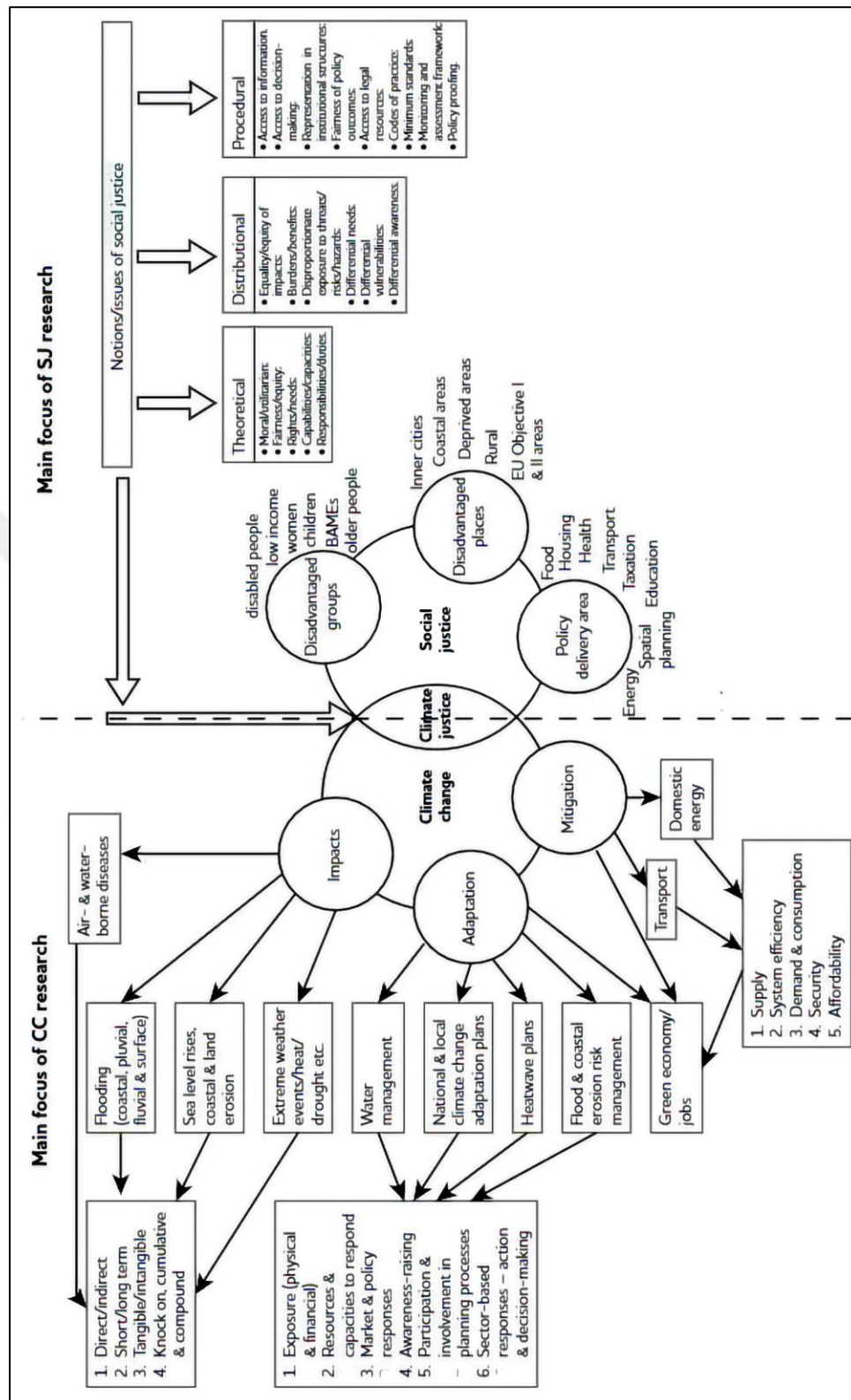


Figure 3.2 The scope and relationality of the intersection between climate change and social justice (Preston et al., 2014)

In a sense, this entails caring for the experiences and needs of disproportionate climate-affected people, i.e., marginalized groups such as women, older people, indigenous peoples, migrants, and those in the Global South, who have limited access to decision-making processes. While it is often emphasized in vulnerability research that people are not equally affected by hazards, it is especially felt by the poor and racial minorities. Children, the elderly, the disabled, and women among these groups have to cope with greater risks due to multiple exposure and vulnerability (Flanagan et al., 2011). From a social justice perspective that considers the interests and vulnerabilities of individuals and communities, Paavola and Adger (2002) recognize that adaptation to climate change is a socio-political rather than a technical problem. In broad terms, adaptation becomes a mechanism that involves managing a social process and requires individual participation in social practices.

R. Kasperson and J. Kasperson (2001) argue that the measure of damage from climate change is determined by the vulnerability and physical resilience of the system, as well as its capacity to adapt to changing climatic conditions. In other words, if a community's level of adaptive capacity is small and its sensitivity is high, they are much more likely to be the most brutal hit. Those of low socio-economic status in rich countries and those already poor in low- or middle-income countries bear the greatest risk and suffer disproportionately (Davies et al., 2018; Donner & Rodríguez, 2008; IPCC, 2014a). Marginalized and completely excluded groups often have to cope with poverty, and their multiple deprivations increase their daily risk factors, with a tendency towards greater impoverishment (Eriksen & O'Brien, 2007; Olsson et al., 2014). Wisner et al. (2004, p.11) provide a specific definition of vulnerability by referring to "characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from a hazard." For Adger (1999), vulnerability to climate change impacts is tightly linked to social status/assets, institutional decision-making and structuring, livelihood diversity, income levels, and income distribution. Therefore, social justice distribution is a key agenda influencing the trajectory of climate adaptive capacity and vulnerability (R. E. Kasperson & J. E. Kasperson, 2001; Preston et al., 2014).

Harlan et al. (2015) define inequality as a condition that symbolizes unearned rights for dependent social groups and leads to their permanent exposure to climate change and similar risks. One of the simplest examples of this is the impact of urbanization and socio-demographic differences in the distribution of social justice. Vulnerable urban dwellers living in high-risk areas are exposed to environmental effects, toxic emissions, flood risks, polluted air, and industrial growth, while high-income groups living in privileged neighborhoods have the right to choose to live in more ecologically sustainable areas, away from industrial activities, and in places where the impact of climatic risks is reduced (i.e., higher than sea level, less heat island effect, away from riverbeds). For example, an SES-indexed study in Canada found that disadvantaged community groups are geographically affected by flood hazards (Chakraborty et al., 2020). In this case, climatic and environmental justice reflects social inequalities.

Schlosberg and Collins (2014) situate adaptation processes at the intersection of climate justice, environmental justice, and social justice and argue that just adaptation needs to be addressed through a social justice framework to address socio-economic and cultural status inequalities. It has been recognized that environmental justice remains at the heart of the injustices posed by climate change. In the United States, local protests have accused polluters of causing social injustices, particularly in terms of quality of life and fundamental rights. As the principles of democratic participation and environmental sustainability have been disregarded, socio-economic inequalities and problems of exclusion have increased. All these challenging arenas have accelerated the search for social justice like never before and have served as the main engine for climate justice. Adopting a socio-ecological approach to the integrated interrogation of climate change and environmental justice, Salleh (2010) argues that climate justice can be achieved by addressing the underlying structures of power and inequality that contribute to environmental degradation and climate change and by transitioning to a more just economy that targets planetary health and human well-being.

3.2.2 Social Inequalities Driven by Climate Change

The effects of climate change take a much more severe form in particular communities or segregated communes. This is ultimately a consequence of the marginalization, exclusion, and vulnerability of these groups within society. While activities that lead to greenhouse gas accumulation are far more beneficial to advantaged communities, existing inequalities expose certain groups to sanctions that may make them more susceptible to climate change (Adger et al., 2006; Islam & Winkel, 2017; Newell et al., 2020). Both environmental damage and the inequities that add to the security flaws of those people must be lessened by effective climate action and policies. It is necessary to analyze the pressure of inequality on climate change impacts through climate policies and precisely identify societies' vulnerabilities. Hereupon, Shue (1999) states that the way to ensure fair cooperation is primarily to simplify the issue of equality to a shared viewpoint.

Climate vulnerability is expressed both in terms of inequalities between governments and between communities within a state. A positive correlation exists between inequalities and greenhouse gas emissions per capita, leading to a growing climate change problem (Islam & Winkel, 2017). On the other hand, climate change has a detrimental effect on hunger and poverty (Bruno et al., 1999). Thus, the matter of inequalities is a driving force that triggers climate change to turn into a crisis; however, at the same time, climate change is a crisis that causes imbalances to worsen even more. In other words, climate change produces new inequalities and magnifies existing ones (Meikle et al., 2016). It, therefore, works as a two-sided and simultaneous system that rushes up each other. If equity becomes a central goal of climate governance, the struggle will have greater relevance and feasibility, and some will reap the benefits while others will be able to adapt to the new climate without being left behind.

Poorer countries are over-exposed to natural disasters and face the barriers of inadequate finance and knowledge to manage shocks. On the other hand, their

experience of each environmental event pushes them further into negativity and exacerbates the already unfavorable conditions of those in need (Figure 3.3). This geographical injustice explains the association of climate change with social inequalities globally. There should also be an acceptance that equity is the product of a trade-off between achieving economic development in poorer countries and protecting the environment (Shue, 1998). Governments incur greater debt and burden by not reducing the dominant power of the fossil fuel industry and avoiding the cost of reducing greenhouse gas emissions. They should recognize that the inequalities deepened by climate change will uncover social and spatial issues. Due to climate hazards, marginal and impoverished communities are compelled to accept expanding disparities and continue to experience indirect losses since they are not factored into strategies for economic prosperity (Figure 3.3).

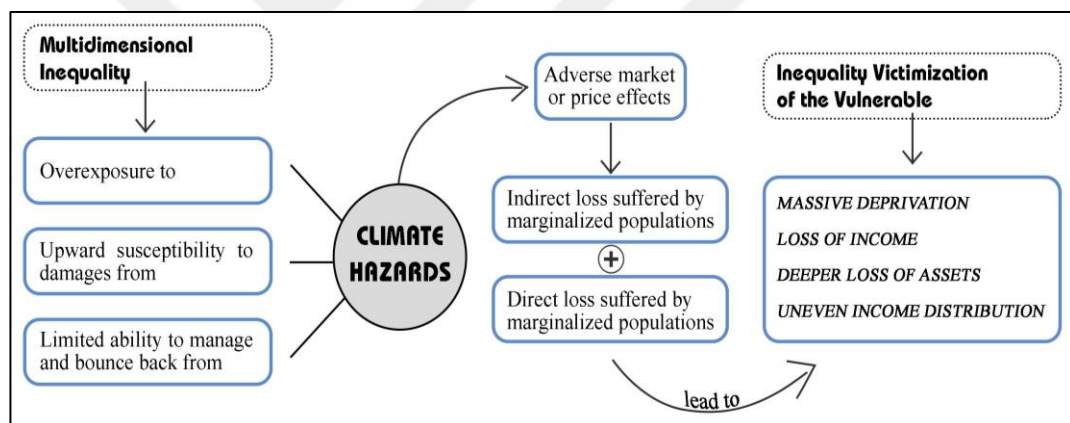


Figure 3.3 A theoretical framework outlining how social inequality and climate change interact (produced by reinforcing the schemes from Islam & Winkel, 2017)

The inequalities that cause the differential impacts of climate change hazards on societies can be expressed in two ways. First, the location of housing and workplaces, and the quality of workplaces, lead to exposure, which is determined by the economy that causes inequality, affecting location and livelihoods (Gajjar et al., 2019; Islam & Winkel, 2017). Disadvantaged groups may have chosen, or may have been forced to choose, coastal areas, slum areas, areas prone to natural disasters, and areas with low land value in the city as their living space. Those who want to provide for their families may still be willing to work in outdoor environments or find jobs in regions

with climate hazards. For example, in a case study in Northern Ghana, temperature and humidity sensors and heat stress monitors revealed that these farmers were exposed to extreme heat stress, and their health was negatively affected (Frimpong et al., 2016). Moreover, homeless people and people without access to safe housing are more susceptible to weather events such as floods, earthquakes, tsunamis, hurricanes, and cyclones (OHCHR, 2020b).

Second, one clear result of inequality is how it affects marginalized populations' capacity to respond to and adapt to changing conditions (Cutter & Finch, 2008; Emrich & Cutter, 2011; Islam & Winkel, 2017; Morrow, 1999). For example, those above a certain income bracket who can afford air conditioning in their homes, or cool off in their pools, have a superior advantage against rising temperatures, and heat stress is less or more manageable than others. Racial and ethnic differences are factors of climate vulnerability in underdeveloped and developed countries, as they also coincide with poverty (Islam & Winkel, 2017). In many regions of Latin America, evidence suggests that low-income Afro-Latinos and indigenous groups are disproportionately affected by climate impacts (IPCC, 2014a, p.810). During the extreme heatwave in California in 2006, African-American, Latino, and Hispanic groups were found to have visited emergency services intensively (Knowlton et al., 2009). In the flood disasters that took place in the Canterbury region of New Zealand in 2021, it was observed that African Americans were unable to cope with traumatic experiences and left the region in large numbers because they suffered severe loss and damage (Uekusa & Matthewman, 2017).

In addition to the uncertain conditions of extreme weather events that increase in intensity and frequency, climate stimuli that conflict with human systems cause amplified loss and damage for the vulnerable, making it more difficult for them to cope (Oliver-Smith et al., 2012, pp.18-30). Besides, from a governance-oriented perspective, risk management or action plans that consult the communities' sensitivity and housing rights are quite insufficient (OHCHR, 2020a). Therefore, whether climatic factors are included in city plans, the existence of a climate action plan and the presence of disaster or emergency action plans stand out as initiatives

that determine the level of institutional vulnerability (Kaya, 2018). Underdeveloped countries are more hypersensitive than developed countries. Islam and Winkel (2017) give the example of the despair of low-lying and low-income island countries in the face of superstructure investment measures such as sea walls taken by a high-income country like the Netherlands against sea level rise.

3.3 Immigrants' Climate Vulnerability Framework

The ways in which people migrate can be on an individual basis, as a community, or in larger masses (Aksoy, 2012). Since this affects their location choices, social interactions, and decision-making networks from the beginning, it can weaken their defense mechanisms and solidarity in their new places. Although immigrants are frequently seen as a threat in societies, it is also genuine that they are commonly the most dynamic and entrepreneurial members and also have helped to foster economic development, the establishment of nation-states, and the enlargement of cultural life (Doğan et al., 2020, p.8). However, they can also be subjected to pressures of exclusion and experience disenfranchisement, often without being aware of it. This excludes them from social acceptance, especially in developing countries. Migrants' limited rights make it difficult to cope with crises, including climate change impacts.

Conducting impact assessments of individuals and communities concretely addresses the problem of the unequal share of climate risks and employs a vulnerability approach (Rumbach & Kudva, 2011). At its core, vulnerability is influenced by political and social marginalization and can result from a lack of social and physical resources. Refugee and irregular migrant groups in poverty-stricken countries have limited opportunities in terms of legal rights. Migrant groups thus have to grapple with inadequacies as they cannot utilize resources to eliminate the climatic stresses they suffer. This compounds their vulnerability to a high level. To summarize, vulnerability is the result of environmental sensitivity, which describes the extent to which a person or object is exposed to risk and how that risk harms a system (Cutter et al., 2008, p.599).

3.3.1 Reflections of the Social Justice Norm on Immigrants

Throughout history, migration has played a primary role in the processes of socialization and politicization in states and similar formations (Tuncel & Ekici, 2019). The phenomenon of migration is a way of re-establishing or co-creating ties with space and time. Whether forced or voluntary, people make a unique effort to adapt to the changing environment, synthesize their identity with the testimony of the new place, and begin to experience social life in a natural process. At the place of destination, migrants tend to integrate into society or become part of it while at the same time transferring their cultural accumulation (Castels & Miller, 1998) to the place, the people, the community, and the time in which they are inhabiting.

Often living in extreme poverty, migrants are among the most defenseless populations⁷ in the face of a variety of perilous and delicate occurrences, such as wars, epidemics, economic crises, and climate change. When looking at why migrants are immensely vulnerable, they have to live in an environment that is entirely dissimilar to their home environment in terms of cultural, social, daily habits, basic rights, language, fundamental rights, and legal protection (Kumar, 2011; Uekusa & Matthewman, 2017). In this case, what they had in their previous lives before migration was a privilege for them. On the other hand, they have to live under unsatisfactory conditions in terms of obtaining essential public services, meeting specific needs, and accessing housing and medical and social services (Borjas & Crisp, 2005, p.53, 309; Cutter et al., 2003; Donner & Rodríguez, 2008; Gajjar et al., 2019).

⁷ A number of studies on social vulnerability emphasize that the ethnicity factor constitutes an underpinning fracture and that migrants embody a lean population profile. For further information about how migrants are regarded as among the most vulnerable populations, see for example Cutter & Finch (2008), Emrich & Cutter (2011), Eriksen & O'Brien (2007), Donner & Rodríguez (2008), Fatemi et al. (2017), Gajjar et al. (2019), Kuran et al. (2020), Sharkey (2007).

Immigrants are highly victimized by the risk of legal sanctions, such as deportation, arrest, and exploitation (Borjas & Crisp, 2005, p.308; Ziersch et al., 2017). For example, surveys of immigrants in Mumbai revealed a fear of the police at a rate of 72%, and some of the interviewees in the study reported that they described the police and authorized local actors as exploitative rather than protective (Santha et al., 2015). Ordinarily, the support, solidarity, and protection that they were naturally endowed with are not as evident and strong as before in their new place of origin. On the other hand, being unable to speak the country's language of immigration, cultural differences, lack of sense of belonging, new social order, and laws are also factors that make it tough to cease to be a diseased group when viewed from the perspective of immigrants.

Most migrants from different ethnic groups and racialized groups live in low-income rental housing clusters, and often their housing is in fairly poor condition and may be damaged (Chu & Michael, 2018; Cutter et al., 2003; Flanagan et al., 2011; Gajjar et al., 2019; Morrow, 1999). To illustrate, the residences of refugees and asylum seekers in South Australia have been found to be of low quality, overcrowded, deficient in heating and cooling capacity, lacking the supply of clean water, unhygienic, unsafe, remote from social connections, and lacking in essential amenities (Ziersch et al., 2017). This leaves them severely insecure against natural disasters (Carter-Pokras et al., 2007).

Certainly, social inequalities are not only manifested in migrants' choice of flimsy housing and unsafe locations. On the whole, they can also be disempowered by distinctive political sanctions, community character, and social profiles. Hence, for sustainable climate management, alterations in income segregation, demographics, and cultural norms that drive social vulnerability should be assessed for each immigrant community by following a bottom-up approach (Lee, 2014). Social vulnerability includes concerns arising from social character forms and related prejudice and discrimination, while economic vulnerability is characterized by criteria based on more quantitative resources such as environmental safety, poor quality housing, and income level (Ye & Aldrich, 2020).

3.3.2 Climate Justice and Vulnerability of Migrated People

Context and community specificities clearly influence climate change impacts, stressors, and climate management. Factors such as geographical characteristics, economic sectors, and resource capacity lead countries to face different consequences and struggle in different ways. On the other hand, although there are similar implications and limitations in countries with similar climatic characteristics and transformation processes, societies' dynamic infrastructure, multiple cultures, and political phases require a much more in-depth analysis (Ajani & van der Geest, 2021). For people with low incomes, the risks posed by climate change have become a threat multiplier that both restricts their means of existence and disrupts their daily life flows (IPCC, 2014b).

Climate change exterminates the access to matters that are indispensable for human life, such as water, food, health, land, and resource use, even for those who live in abundance, that is, the whole world (Gajjar et al., 2019). According to a report by the UNHRC (2009), between 2000 and 2004 alone, approximately 262 million people per year were affected by climate-related disasters, and almost all of them (98%) were victims in developing countries. According to UNDP (2022), even with moderate mitigation, an estimated 40 million people could die, mostly people living in developing countries, and human life will be exposed to the severe consequences of climate change under all circumstances. Moreover, disasters exacerbate inequalities already experienced and will continue to worsen (Méndez et al., 2020).

Growing levels of inequality are not only a side-effect of weather and climate but also the interplay of multiple deprivation-related effects at context-specific intersections of gender, age, race, class, caste, indigeneity, and disability (Donner & Rodríguez, 2008; Emrich & Cutter, 2011; Morrow, 1999; Wisner et al., 2004, pp.12-15) embedded in unequal power structures (Olsson et al., 2014). These forms of communal characters may cause migrants to experience withdrawal in coping with climatic hazards (Balaban et al., 2021: 39). This is also known as *intersectionality* in social sciences (Figure 3.4).

This concept can be said to explain the effects of social inequality and systematic injustice on the lives of specific individuals (Méndez et al., 2020). The intersectional perspective addresses multiple social inequalities beyond demographic forms such as race and gender and integrates them into problem areas such as sustainable development, climate change, natural disasters, and environmental crises (Amorim-Maia et al., 2022; Kuran et al., 2020). The social vulnerability clarifies that certain populations and groups, particularly those with unequal access to information, opportunities, and resources, will be exposed to the multiplier effects of extreme events and stresses.

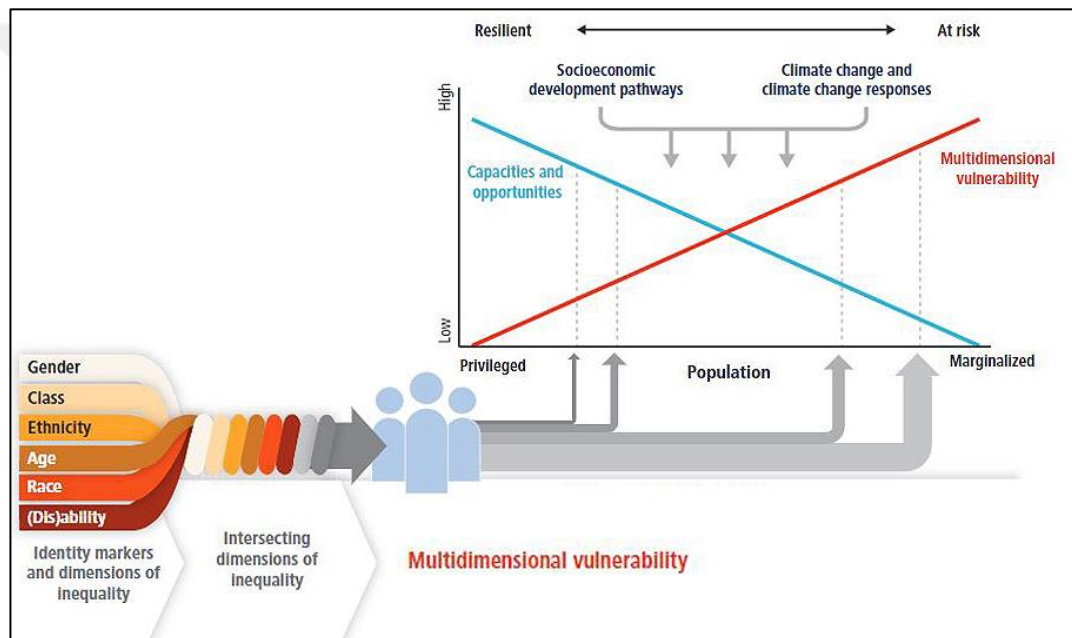


Figure 3.4 Multidimensional vulnerability is driven by intersecting dimensions of inequality and socio-economic pathways (Olsson et al., 2014)

To illustrate this expression of inequality with a more practical example, a case study examining the human impacts of Hurricane Katrina explains the relationship between income, resources, race and age differences, and susceptibility between blacks and whites (Sharkey, 2007). According to the study's primary findings, the mortality rate of black victims was double that of white victims, and it was argued that their low income may have influenced their evacuation from the city and forced them to live in substandard housing in flood-prone neighborhoods. Neighborhoods

with high rates of death and missing residents were found to be 80% African American. However, pointing to the presence of a high proportion of older adults in the area, it was determined that this influenced mortality rates and that both black and elderly populations were exposed to more adverse outcomes than white and elderly groups at a superior rate. The results of vulnerability and sensitivity demonstrated by the Katrina tragedy show that, in fact, two crucial demographic characteristics - race and age - make individuals feeble to hazards.

First and foremost, due to demographic intersectionality, the capacity to tackle migrant women, older people, and people with disabilities is quite limited. The isolated lives and lack of activity of older people living alone can weaken their social circles and reduce contact with their families, making them more invisible to the authorities (Kuran et al., 2020). Indeed, older adults are considered to be the most vulnerable group against the shock of heat waves. Migrants or elderly populations of migrant origin may be more at risk of heat waves, be less prepared for disasters, and be well-informed about risks (Davies et al., 2018; Hansen et al., 2013; Méndez et al., 2020). People with disabilities are also vulnerable against disasters, sometimes due to their dependency on others and sometimes due to their special care needs (Morrow, 1999). For example, it would be difficult for an individual in a wheelchair to leave the area alone in an emergency, and even with someone's support, it may prevent a flexible and smooth escape. Individuals with visual or hearing disabilities may have difficulty in monitoring, understanding, and perceiving emergency news and calls. Moreover, the vulnerability of people with physical or mental disabilities may also apply to populations with chronic illnesses and female family members, whether sick or disabled (Lee, 2014). For example, women migrants frequently apply to UNHCR for protection and status, which indicates that they are likely to be more victimized than men (Borjas & Crisp, 2005, p.347).

Adopting inclusive climate policies and adaptation interventions should be a priority for policymakers in order to protect migrant communities exposed to multiple vulnerabilities (Eriksen & O'Brien, 2007; Méndez et al., 2020; Santha et al., 2015). Yet, for migrant individuals, not only demographic disadvantages such as being poor

or being female, elderly but also socio-dynamic, socio-cultural, and political deprivations are compounded (Please see **Chapter 3.3.3** for detailed explanation and examples). For migrants with diverse, complex, and heterogeneous backgrounds and stories, instead of observing security gaps and squeezing them into a uniform mold, all authorities should plan actions and determine policies using empirical methods that can meet their particular needs and specialize on the basis of intersectionality (Kuran et al., 2020). Family structure, coping capacities, access to monetary resources, built environment, occupation, and social vulnerability are commonly used contextual socio-economic indicators in the literature (Chakraborty et al., 2020; Revi, 2008).

Some neighborhoods are becoming increasingly environmentally fragile due to low household incomes, low levels of education, lack of knowledge and culture, and the allocation of resources and investments to privileged urban areas, and social groups living in these unhealthy urban areas tend to be more racially and ethnically diverse (Amorim-Maia et al., 2022). Likewise, migrants and minorities who are impoverished, poorly educated, and belong to an ethnic group are more likely to live in hotter neighborhoods (Hansen et al., 2013). According to a spatial study in Oklahoma, urban heat island measurements in different zones showed that areas of the city with older housing stock were more prone to hot weather while at the same time lacking air conditioning and ventilation (Basara et al., 2010). On the other hand, the urban core is disproportionately populated by poor, elderly, and minority racial groups who are forced to embrace negative impacts.

It is also known that people in certain occupational groups and self-employed (i.e., agricultural laborers, construction workers, beggars, peddlers) are more exposed to heat stress, and migrants work in similar jobs that demand cheap labor. It is recognized that female migrants are much more defenseless against hazards than male migrants. For example, in Japan, Korea, China, and the Philippines, migrant women are often unable to seek help and have difficulty sharing their feelings before tsunamis and various disasters due to oppression, discrimination, language barriers, and social ostracization due to cultural differences (Uekusa & Matthewman, 2017).

Maldonado et al. (2015) document that foreign-born Hispanics are far more uninformed than many US-born non-Hispanic whites about available flood/hurricane risk protection, rescue assistance, and the extent of these hazards.

Uncontrolled urbanization processes inevitably set the ground for inequalities, poverty, and economic and ecological crisis and increase human vulnerability to multidimensional harms (Garschagen & Romero-Lankao, 2015). Spatial segregation is a disturbing red alarm in industrial cities that emerges as a corollary of uneven economic development and lack of social integration. This more explicitly restricts migrants' livelihood security, resources, and access to the most basic rights and public assets (Xu & Takahashi, 2021). In this case, migrant groups are not only facing more significant challenges, but their socio-economic circuits are also unable to generate solutions. Although they are partially capable of devising alternative pathways and developing their own adaptation mechanisms, relocation in both inter-state and international migration can lead to the deprivation of certain rights.

It is also argued that community participation of the invisible increases in the aftermath of disasters and that disaster aid efforts carried out by specific segments of society strengthen the communication of isolated communities (Uekusa & Matthewman, 2017). Thus, such disasters have the potential to 'make visible,' but it is unfair to anticipate a disaster experience for the marginalized to be internalized by society. Moreover, the validity of this visibility paradigm in all contexts and communities is somewhat questionable. A keynote on disaster planning and vulnerable groups is right along with susceptibility and lower coping capacities of subordinated populations; when such severe events affect the vulnerable, they reach the scale of a catastrophic disaster (Davies et al., 2018).

Identifying and systematically assessing the main problems and climate risks experienced by migrants in their new settlements in destination points due to climate change is a highly binding equitable action (Hari et al., 2021). Recognizing migrant communities, embracing migrants in disaster planning, and supporting the efforts of civil society organizations are among the first steps to be taken (Hultgren & Stevis,

2020). While planning to combat climate change, it is critical for a fair implementation that vulnerable migrant groups, who lack resources and have not yet fully accomplished their social adaptation, must be prioritized (Hari et al., 2021). Moreover, these groups remain insecure and defenseless during and after a disaster. Economic precarity, fear of deportation, and inadequate transportation issues may make it difficult for these vulnerable populations to seek and receive medical help or legal assistance (Méndez et al., 2020).

3.3.3 Disempowering Parameters and Criteria

The challenges that migrants face in trying to eliminate or mitigate climatic impacts are complex and multifaceted. However, at the most basic level, lack of access to resources and legal protection, cultural barriers, and socio-political discrimination exacerbate migrants' plight. Complementing these, low socio-economic status, poor language barriers, high tenancy rates, lack of information (Maldonado et al., 2015; Xu & Takahashi, 2021), social protection schemes, inadequate access to political representation, exploitative labor (Chu & Michael, 2018; Kumar, 2011; Santha et al., 2015), working outdoors in extreme temperatures, and deficient livelihoods or income property (Lynn et al., 2011, p.24; Revi, 2008) are intersecting and risk-enhancing factors for migrant groups against such disaster events. In the midst of all these problems, the limited strategies of governments and organizations toward migrants can severely separate them from local communities. People should be able to turn to official institutions to communicate their needs and request help and assistance. Giving citizens certain legal rights builds a great deal of trust.

Essentially, immigrants may be excluded and marginalized within the community due to their status and lack of language, which in turn can lead to inadequate resource access and solidarity problems. Since collective action and defense mechanisms are directly related to the strength of local ties and community cooperation, migrants who lose these bonds face obstacles in both countering risks and accessing basic services such as education and health (Chu & Michael, 2018). People with low levels

of education are not provided with adequate tools to manage disasters and calamities, and legal-bureaucratic barriers make it challenging to take control of their conditions (Morrow 1999). One of the first and most urgent shortcomings for migrants is the absence of legal protection from governments that would allow them to access the services, information, and resources they need to protect themselves from environmental damage. Access to financial, social, and technological assets can assist migrants in mitigating the impacts of climate change, but sometimes even humanitarian needs such as water, sanitation, and electricity are inaccessible. Davies et al. (2018) stated that racially discriminated groups are disempowered primarily due to their poor adaptability, as well as unequal distribution of exposure reduction and disaster recovery capability.

While the devastating consequences of disasters have a dramatically remarkable impact on migrants, their adaptation affects their sensitivity depending on a number of social criteria (Chu & Michael, 2018; Méndez et al., 2020; Ziersch et al., 2017; Xu & Takahashi, 2021). Migrants are often at risk of health and safety risks due to overcrowding and unhygienic conditions, as well as inadequate services, provisions, supplies, and resources (Kumar, 2011). This applies to the working conditions of some workers, which may, in turn, pose further weaknesses. For instance, wildfire smoke from the Thomas Fire in California was predominantly active in agricultural workers' living and working areas, but migrant workers were reportedly exposed to heavy smoke because they did not have access to N95 masks (Méndez et al., 2020). In addition, researchers, who state that rescue efforts and allocations of resources were directed primarily to the affluent, found that undocumented migrants were not eligible for federal aid and disaster funding. They also pointed out that those migrants, including indigenous people, were unhardy as they lacked emergency information in their mother tongue.

Exposure, institutional inertia, resource dependency, and weak social networks are consequential and internal determinants of vulnerability (Adger, 1999; Wisner et al., 2004). Resource dependency is an expression of the extent to which people and communities rely on a resource and limited access to resources for migrant groups

deepens their vulnerability (Xu & Takahashi, 2021). Dependence on a single resource diminishes resilience and severely affects adaptability (Chakraborty, 2020; Lee, 2014; Lynn et al., 2011, p.29). A case study of immigrants in Indian megacities suggests that climate-induced hotspots in migrants' living spaces cause severe discomfort and health problems, and again, scarcity of resources is seen as the main problem that makes immigrants highly vulnerable to this danger (Hari et al., 2021). A diversity of livelihoods provides stability and security, leading to stronger resilience against hazards and environmental impacts (Xu & Takahashi, 2021). Building social networks and strengthening solidarity contributes significantly to knowledge access, resource utilization, a sense of community, social cohesion, a feeling of belonging, welfare awareness, and security (Mpanje et al., 2018). Thus, it is one of the key factors that strengthen adaptability.

The level of education affects the components of environmental vulnerability and climate vulnerability, generating a positive atmosphere. That is related to the fact that as the level of education rises, one's capacity to acquire knowledge about disasters increases, as well as the opportunities to prepare and adapt oneself to the post-disaster recovery process (Davies et al., 2018; Fatemi et al., 2017; Gajjar et al., 2019). Due to a lack of access to education, foreign nationality is also associated with risk perceptions toward natural hazards (Adeola, 2007), and immigrants tend to have less information (Carter-Pokras et al., 2007). Being able to get reliable information from individuals and organizations and having access to emergency calls and instructions through the media and television is a highly crucial form of individual disaster management.

The opposite leads to disruption in handling catastrophic calamities. For example, most immigrants who moved to the United States from Latin America and Asia have challenges in seeking primary and secondary information about disasters and various hazards due to their limited English proficiency (Flanagan et al., 2011). While they cannot take necessary precautions before the hazard due to language deficiency, at the same time, they may not be able to perceive what is happening around them during a disaster and act with institutionalized knowledge. They tend to behave only

instinctively. They may also have to rely on their family members, close relatives, and local social networks to obtain urgent updates (Morrow, 1999). Nevertheless, solid social contacts may develop a model of adaptation for disadvantaged groups and enhance their climate vulnerability. Social networks can increase community motivation, encourage resource pooling, and foster emotional attachment and solidarity (Mpanje et al., 2018; Santha et al., 2015).

According to Table 3.1, researchers working in the fields of climate vulnerability, social vulnerability, and environmental change recognize that difficulties in access to financial, physical, public, and social resources and resource dependency are major vulnerability factors. In addition, socio-economic status, social characteristics (age, gender, disability, chronic illness, origin, and race), and special needs population (chronic illness, physical-psychological disability, old age, being female) are frequently discussed as vulnerability drivers. Considering the relationship between climate justice and social justice, studies in line with those have been analyzed, and most of them are dominated by the discourses that race, ethnicity, and immigration profoundly contribute to vulnerability (Table 3.1).

Table 3.1 Matrix of indicators for climate vulnerability and researchers (Prepared by the author)

Researchers		Adger (1999)	Morrow (1999)	Cutter et al. (2003)	Eriksen & O'Brien (2007)	Sharkey (2007)	Cutter & Finch (2008)	Donner & Rodriguez (2008)	Revi (2008)	Emrich & Cutter (2011)	Flanagan et al. (2011)	Kumar (2011)	Lynn et al. (2011)	Rumbach & Kudva (2011)	Pandey & Jha (2012)	Hansen et al. (2013)	Lee (2014)	Maldonado et al. (2015)	Fatemi et al. (2017)	Ukusa & Matthwman (2017)	Ziersch et al. (2017)	Chu & Michael (2018)	Davies et al. (2018)	Gajjar et al. (2019)	Chakraborty (2020)	Kuran et al. (2020)	Mendez et al. (2020)	Ye & Aldrich (2020)	Ajani & van der Geest (2021)	Hart et al. (2021)	Xu & Takahashi (2021)	Amorim-Maia et al. (2022)	Number of studies including the indicator	
Indicators of Climate Vulnerability	Inadequate access to resources and public services / Resource dependency																																	31
	Economic insecurity / Socio-economic status / Insufficient household income																																	30
	Social characteristics / Special needs population / Demographics																																	25
	Unprotected housing rights / Poor housing comfort / High number of households																																	24
	Low level of education / Restricted access to education																																	23
	Lack of social solidarity and networks / Marginalization / Discrimination																																	22
	Deficient urban infrastructure / Poor quality built environment / Neighbourhood																																	20
	Language minorities / Language barriers																																	19
	Lack of health insurance / High medical visits / Bad health status																																	19
	Risk perception / Lack of knowledge and awareness / Limited access to information																																	16
	Employment status and conditions / Low-paying jobs / Domestic-service jobs																																	16
	Lack of authority and political power / Limited access to rights / Misrecognition																																	15
	Lack of disaster memory, experience and disaster preparedness																																	13
	Fear of deportation / Institutional insecurity																																	11
	Studies that identify race, ethnicity and migration as vulnerability																																	
	Studies on disaster vulnerability and social vulnerabilities of climate adaptation																																	
	Studies addressing climate vulnerability of migrants																																	

3.4 Last Words for the Chapter

The climate crisis is a significant concern and a subject of social equity for diverse migrant communities. The migrant population in Turkey most profoundly affected by this issue consists of Syrian individuals who were compelled to seek asylum in Turkey following the occurrence of the civil war. This thesis examines the vulnerability of Syrian refugees residing in Istanbul to the impacts of climate change, as well as their exposure to various forms of social injustice. The subsequent chapter (Chapter 4) provides a concise overview of Turkey's migration history, its position within the migration network, and its policies pertaining to international migration. Nevertheless, due to the substantial influx of Syrians into the nation under exceptional circumstances, they have introduced certain unique laws. This section encompasses legal advancements pertaining to individuals of Syrian origin. Ultimately, this study furnishes an exhaustive compilation of pertinent information and empirical evidence pertaining to Syrian migrants residing in both Turkey and Istanbul.

CHAPTER 4

MIGRATION OF SYRIANS TO TURKEY AND ISTANBUL

4.1 Migration Phenomenon in Turkey

Migration movements have been increasing in the world, primarily due to the effects of war, internal conflicts, terrorist incidents, and climate change in recent times. The phenomenon of migration has always been a viable and existing means of survival since the existence of humankind. Similarly, Turkey has tended to receive migration throughout history and has encountered mass migration at various periods, often for various reasons. Because of its geographical position, it is exposed to mass migration as well as individual migration due to both internal unrest in neighboring countries and its geopolitical location connecting Europe and Asia (Shaherhawasli & Güvençer, 2021, p.4). As migration flows have continued intensively since the 80s, it has maintained its position as a receiving country in the global migration network.

Iran, Guinea, Kenya, Indonesia, Thailand, Pakistan, and Turkey are shown as examples of transit countries (Borjas & Crisp, 2005, p.53; İçduygu & Yüksek, 2012). Turkey is a transit destination for asylum seekers and refugees and symbolizes a valuable staging area for waiting as it forms the migration corridor between Asia and Europe. With its strategic location and sectoral profile, Istanbul is a hub for both transit and internal and external migration, where the desire for settlement is overloaded. As a transit country for migrants wishing to settle in EU countries (İçduygu & Yüksek, 2012), Turkey became a gateway for around 100,000 migrants in the early 2000s (İçduygu et al., 2014, p.235). In 2016, around 390,432 refugees and migrants, mostly Syrians, crossed into EU countries by sea and land (IOM, 2019, p.6).

4.1.1 Main Features & Institutional Structure of Migration in Turkey

As the dynamics of urbanization began to gain momentum in the global world, waves of rural-urban migration and international migration movements converged. In today's globalized world, the number of permanent foreign migrants that states host as a result of the migrations they receive and transmit has risen significantly. Since the 1980s, when Turkey has faced an influx of migrants, especially from its compatriots, it has hosted them permanently or temporarily and offered them certain rights. As a result, the country, which has become a transition zone, has had a close relationship with the concepts of transit and irregular migrants. In addition, the pressure of urbanization under the impact of industrialization and neo-liberalization has also intensified in Turkey, with the rural population gradually declining and contributing enormously to the urban population.

Although Turkey is a country that plays an active role in migration mobility and has seen a series of legal regulation movements over the years, it has not been able to adopt a comprehensive and transparent approach and produce robust policies (Aktel & Kaygısız, 2018; İçduygu et al., 2014, pp.319-327). It has only been progressed through fragmented regulations and legal frameworks of administrative units (Şentürk, 2020). In the Republic of Turkey, which implemented an open-door policy after the Syrian crisis, refugees preferred to move to cities instead of camps, which led to uncontrolled migration management and made it extremely difficult to register them systematically. The adaptation policies implemented by the government at the beginning of the crisis could not be adapted to the new conditions emerging in the following period created by the newly settled migrants, and the policies could not be transformed as desired (Shaherhawasli & Güvençer, 2021, p.15).

International migration and the administrative and formative development of the migration phenomenon are analyzed in Turkey's migration literature in three different periods/stages. The first period starts from the developments in the Ottoman period, especially in the Early Republican period in 1923, when the effects of nation-state formation and kinship were at the forefront; the second period includes the

period of labor migration to Europe when modernity became more heated; and the third period includes the period after 1990, when permanent migration and transit migration took place, and the effects of globalization became more severe (Bayındır Goularas & Sunata, 2015, p.16; İçduygu et al., 2014, p.48; Aksoy, 2012).

Some authors consider a fourth period as covering the events that took place after 2011, with the migrants fleeing to Turkey due to being victimized by the Syrian civil war. This series of events is considered a period in itself because it took place on a mass scale, was prominently featured on the Turkish political agenda, and had severe social, legal, and socio-economic consequences. When going back to the Ottoman Empire, there was a series of events based on the regulations of the Settlement Law of 1934, in which ‘cognate’ based migrations, especially from the Balkans and the Caucasus, were dominant, and non-Muslims were forcibly displaced (Bayındır Goularas & Sunata, 2015, p.17). In the Republican era, a path diverging from the immigration policies of the Ottoman Empire was followed with the understanding of cultural partnership coming to the fore rather than the aim of creating a unity of religion, ethnicity, race, lineage, and sect (Çavuşoğlu, 2007, p.132, as cited in Aktel & Kaygısız, 2018). Nevertheless, until the 1960s, the perception of the unity of ethnic origin and religion continued to be influential in population movements.

In the early years of the Republic, the migration of non-Muslims from the country and the migration of Turks and Muslims from other countries to Turkey in line with the cognate approach took the form of institutionalization (Güleç, 2015). The Second World War paved the way for the recovery and reconstruction of Western European countries, and these states met their industrial needs and employment goals with labor migrants from developing countries (Aksoy, 2012; Güleç, 2015; İçduygu et al., 2014, p.57). This explains why labor migration started to gain more rhythm in the post-1960 period. In the 1960s-1990s, it is known that the familiarity of outward migration affected Turkey and that there were flows to new countries through various means such as family reunification, refugee, and labor migration (Bayındır Goularas & Sunata, 2015, p.18).

In the twentieth century, in light of the developments in Europe, an economic, social, and political transformation took place across the world, and the growing popularity of the nation-state mobilized international migration as it gained global functionality in economic terms (İçduygu et al., 2014, p.49). After the 1980s, migration movements started to take place in different types, gained a new dimension in terms of quality, and intensively encountered inward movements of asylum seekers and irregular migrants (Güleç, 2015). After the 1990s, Turkey has been intensively surrounded by the tools of globalization and has also experienced a new process in which technological developments have soared, developments in the communication and transportation sectors have surged, and as a result, Turkey has also started to receive migration from Western countries with the attraction of the tourism sector (Aksoy, 2012). The years that coincided with the end of the twentieth century and the beginning of the twenty-first century marked the beginning of an era of migration (Castles & Miller, 1998, p.3).

The 2000s was a period of intensive migration management and governance reforms. In this period, new policies, legal regulations, and fundamental changes took place in Turkey, which continued to maintain its position as a transit country in line with EU legislation, and issues and problem areas related to migration frequently appeared on the political agenda (İçduygu et al. 2014, p.14; İçduygu & Yüksek, 2012, p.453). On 19 May 2003, the adoption of the “New Accession Partnership Document” and on 25 March 2005, the adoption of the “National Action Plan on Asylum and Migration” are seen as practical steps towards the prevention of illegal migration and the regulation and supervision of reception and readmission procedures (Güleç, 2015). In 2004, Turkey became a member of the International Organization for Migration and joined a substantive cooperation network to control global migration mobility and inclusion in the international migration regime (Aktel & Kaygısız, 2018). Published on June 22, 2006, “The Ministry of Interior Implementation Instruction” includes explanations and regulations on the rights and obligations of refugees and asylum seekers (Güleç, 2015).

Castles and Miller (1998, p.1) emphasize that migration processes can produce new political patterns by developing a structure that is resistant to the established formation and politics. Looking at the structural set-up of Turkey's migration management, four main government stakeholders come together: the Ministry of Interior; the Ministry of Family, Labor, and Social Services; the Ministry of Culture and Tourism; and the Ministry of Foreign Affairs. The Security and Foreign Policies Board, the Social Policies Board, and the Local Governance Policies Board are structures that advise on migration under the Presidency (Salihoğlu, 2021). In addition to the participation of institutions and organizations such as DEMP (AFAD), Red Crescent (Kızılay), and PHA (TOKİ) in migration management, provincial directorates of migration administration and provincial directorates of disaster emergency at the local level also carry out social assistance and emergency response activities (Kara & Dönmez Kara, 2015).

Since the founding of the Republic, institutionalization actions have been taken, and practices have been increased in the management and regulation of migration movements in Turkey (İçduygu et al., 2014, p.48). Nevertheless, there are still unresolved problems in international migration management today. The biggest factors are the lack of a proactive role of some states, weak international communication, and abstentionist approaches. In addition, their refraining from making legal arrangements has caused these movements to be organized with a public-based understanding of order at the national level (Aktel & Kaygısız, 2018). Effective migration management involves better democracy, new reforms, and regulations in health, education, economic structure, and social cohesion.

The fact that various institutions and organizations of different scales operate in specific service areas and the lack of understanding between actors has led to poor coordination (Kahraman & Tanıyıcı, 2018; Tuncel & Ekici, 2019). As migration gains momentum in relation to government control and law enforcement, this does not prevent it from being a political issue, and politicians tend to securitize it on the assumption that migration poses a risk to the state (Borjas & Crisp, 2005, p.145). Turkey's migration management is dominated by national security issues, whereas a

public policy approach in which sub-headings such as economic development are less of a priority (Salihoğlu, 2021). Moreover, it is not yet seen that the justice phenomenon is addressed at the legal level together with migration issues.

Although migration issues and legal enforcement are policy areas attributed to the central state and regulated according to the laws and rules of states, some duties and responsibilities are also fulfilled at the local level (Cordonier Segger, 2016). Indeed, lower levels of government possess the potential to effectively coordinate and facilitate the execution of migration policy and cultivate social understanding and honesty due to their proximity to migrants. Decentralization in migration management is crucial for sustaining policies and mechanisms of trust and control. In Turkey, “The Fellow Citizen Law under Article 13 of Municipal Law No. 5393” defines the legal right to access the services provided by the municipality to which one belongs. Furthermore, the article attributes to municipalities the task of developing social relations between fellow citizens and protecting cultural values, and they should also take responsibility for the inclusion of refugees and making them feel part of the community (Erdoğan et al., 2021, pp.77-79; Şentürk, 2020).

4.1.2 Special regulations for Syrian immigrants

After the migrant shock, Turkey, as a host country, has attempted to make several legal and institutional arrangements to manage its new challenging situation (Doğan et al., 2020, p.8). In order to provide a legal basis for the growing Syrian population, the “Directive on the Reception and Accommodation of Citizens of the Syrian Arab Republic and Stateless Persons Residing in the Syrian Arab Republic who came to Turkey for Mass Asylum” was issued on March 30, 2012. With this development, it was accepted that Syrians should be under temporary protection. Subsequently, the Law on Foreigners and International Protection No. 6458, which entered into force on 11 April 2013, was enacted, and the DGMM was established within the central government (Doğan et al., 2020, p.8; Kara & Dönmez Kara, 2015; Tuncel & Ekici, 2019).

Despite Turkey's expectations that the war would soon end and Syrians would return to their country, the exact opposite occurred, leading to the inadequacy of the institutional arrangements. Accordingly, the "temporary protection" status was determined by the regulation dated October 22, 2014, which was prepared within the scope of the law in question and published in the Official Gazette No. 29153, and this development covers all Syrians who have been living in Turkey since April 28, 2011 (Şentürk, 2020). The regulation, which had to be amended due to the arrival of Syrians and their indefinite stay, paved the way for foreigners who will come to the country for any compelling reason to be under temporary protection subject to the decision of the Council of Ministers. The protectionist structure in Turkish migration history has continued with alternative statuses like temporary guests, sensitivities regarding the fight against irregular migration have maintained their importance, and new regulations have shaped migration management over time (Baykal & Yılmaz, 2020).

According to Article 105 of Law No. 6458, the Migration Policies Board, which operates within the Ministry of Interior, is a central institution making decisions on migration (Kara & Dönmez Kara, 2015). According to the same article, the Board convenes upon the call of and under the leadership of the Ministry of Interior, with the participation of the undersecretaries of the Ministries of Family and Social Policies, Labor and Social Security, Foreign Affairs, European Union, Health, Finance, Finance, National Education, Culture and Tourism, Transportation, Maritime Affairs and Communications, the Director General of Migration Management and the President of Turks Abroad and Related Communities. This law has a unique place in light of the developments throughout the history of migration and migration management in Turkey. The law aims to provide a general and inclusive purpose by "specifying the procedures and principles regarding the protection requests of foreigners living in Turkey, as well as the powers, duties, and responsibilities of the DGMM established under the Ministry of Interior" (DGMM, 2017, p.35).

The most significant trace of the act in Turkish Law is that it defines the mutual understanding of migrants and existing residents in an effort to bring the notion of ‘harmony’ into society, but no additional obligations are specified (Şentürk, 2020). Legally, for sure, it is a positive initiative to promote social cohesion and strive for society’s integrity and tranquility for every living individual. Nevertheless, leaving this ‘task’ to the discretion of the society and the person is not meaningful, especially considering that negative and skeptical attitudes towards Syrian migrants still persist in Turkey, and it will not be possible to mention a self-functioning harmonization mechanism. For the social adaptation of migrants and refugees and the development of relations of reciprocal sympathy in the urban area, both local governments and the services provided by various non-governmental organizations make a qualified contribution (Erdoğan et al., 2021, p.32).

Projects developed in cooperation with municipalities and NGOs can facilitate the integration of foreign migrants while also playing an essential role in generating resources (Kaya Erdoğan et al., 2022). In Istanbul, in addition to the successful integration efforts of Zeytinburnu Municipality long before the arrival of Syrian migrants, Şişli and Sultanbeyli Municipalities also targeted to provide strong policies at the local level (Karakaya Polat & Lowndes, 2021, as cited in Kaya Erdoğan et al., 2022). NGOs have been rendering notable services for Syrian migrants since their arrival and have also been instrumental in international activities. By establishing relations with the state, cooperating with institutions and organizations, and actively participating in social assistance, they are leading the way in protecting the rights of migrants, supporting their lives, and helping them to be aware and informed. Therefore, it should be in the consciousness of central and local governments to facilitate NGOs that support migrants to such an extent to access information about them and to be open and prepared to ensure cooperation in possible crises and problems (Erdoğan, 2015, pp.341-342; Şimşek, 2017).

Regarding human rights, there are conceptual conflicts between the situation of foreigners in Turkey and the statuses that can regulate their lives. The terms asylum seeker, refugee, conditional refugee, subsidiary protection, temporary protection,

irregular migrant, and forced migration are frequently mentioned in migration mobility research and international public opinion, but their legal and political distinctions are often confused. In its most general form, the Law on Foreigners and International Protection introduced three principal protection statuses: refugee, conditional refugee, and subsidiary protection (Şentürk, 2020).⁸ In terms of human rights, there are conceptual conflicts between the situation of foreigners in Turkey and the statuses that can regulate their lives.

The terms asylum seeker, refugee, conditional refugee, subsidiary protection, temporary protection, irregular migrant, and forced migration are frequently mentioned in migration mobility research and international public opinion, but their legal and political distinctions are often confused. These statuses are some forms of protection in which asylum-seekers are evaluated individually, and their most prominent distinction from temporary protection is this limitation. Syrians, essentially given temporary protection as a distinct type, are sometimes misleadingly defined. Due to social and legal gaps and urgent protection measures, it was necessary to enact the Temporary Protection Regulation in 2014, and Syrian refugees were granted “temporary protection” status⁹, which entitles them to certain rights in areas such as education, health, and employment (Doğan et al., 2020, p.8).

⁸ In the Geneva Convention of 1951 on the legal status of refugees, refugee status for post-World War II asylum-seekers is defined as “someone who is unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion as a result of events occurring in Europe before 1 January 1951.” Due to its geographical reservation, Turkey aims to include asylum-seekers from outside Europe with the term conditional refugee. However, there is no legal provision for the term asylum seeker in Turkey. People who are at risk of death within the borders of their own country, who face threat, inhumane treatment, or torture, are granted subsidiary protection status depending on the individual's life story and their legal security is ensured in the protective country (Şentürk, 2020).

⁹ Article 91 of Law No. 6458 defines temporary protection status as follows: “Temporary protection may be granted to foreigners who have been forced to leave their country, who are unable to return to the country from which they left, who arrive at or cross our borders in a mass influx in search of urgent and temporary protection.”

According to the definition of the IOM, migration is “the movement of a person or group of people across an international border or within a state, and population movements in which people relocate, regardless of duration, nature or cause.” This includes migrating refugees, displaced persons, economic migrants, and people moving for different purposes, such as family reunification. UNHCR defines a migrant as a person who resides in another country for more than one year, regardless of whether it is voluntary or involuntary, the reason for settlement, the means of migration used, and whether it belongs to the regular or irregular migration group (URL 5). Considering the widespread use in the literature, it was deemed appropriate to use the term ‘Syrian migrants’ throughout the study, which defines a more inclusive group and does not deepen the legal framework. Refugee law, the scope of temporary protection, and the legislative background were not addressed in the data collected or in the literature review for this thesis. More essentially, bureaucratic, and social situations of Syrians that may affect their relationship with environmental vulnerabilities were taken into consideration, human rights were focused on, and country policies and their effects that may be related to the issue were emphasized.

4.2 Developments After the Civil War

4.2.1 Migration Process of Syrians After the War

While the onset of the civil war can be ascribed to many causes, there is one that should be taken seriously as a warning and a signal to the whole world. Due to climate change, the drought and thirst problem in Syria has led to a serious crisis in living standards, impoverishing the population, and putting pressure on society (Femia & Werrell, 2012). Pointing to water shortages caused by climate instability in Syria, Former US Vice President Al Gore states that climate change is “the underlying story of what caused the gates of hell to open in Syria” (Dinshaw, 2015).

In their study, Kelley, and colleagues (2015) cite an interview by Friedman (2013) published in the New York Times, in which a displaced Syrian farmer is asked whether he thinks the conflict is related to the drought:

“Of course. The drought and unemployment were important in pushing people toward revolution. When the drought happened, we could handle it for two years, and then we said, ‘It is enough.’”

Civil unrest does not have to be based on a simple and observable cause. It is often the result of accumulated problems triggered by a spark. For countries in the Middle East, Africa, and some in Asia, the risks of conflict driven by cracks in state governance and corruption are likely to be exacerbated by drought and the associated problems of water and food shortages (Femia & Werrell, 2012). It is worth noting that societal conflicts also blazed out the Syrian civil war.¹⁰ At this juncture, socio-economic problems, environmental factors, how the government handles the deterioration in agriculture, and rural-urban internal migration flow reveal a unique reflection.

The conflicts around Turkey’s geopolitical location, which changed their course after 2010, brought the country face to face with the reality of mass migration and disrupted its administrative service capacities in terms of governance (MoEUCC, 2021, p.43). Starting in 2011 in Tunisia and spreading to many Arab countries, the movements for democracy and freedom, dubbed the Arab Spring, turned into a great war after spreading to Syria, causing a major crisis in the country (Baykal & Yılmaz, 2020; Güleç, 2015; Shaherhawasli & Güvençer, 2021, p.3). In response, people began to cross the border to Turkey, which is an emergency escape zone and a bridge to Europe. In 2011, around 10,000 Syrians entered the country.

¹⁰ For supplementary scientific information claiming the climate change problems in the Fertile Crescent and the relationship between the Syrian civil war and the climate-conflict composition, please see Kelley et al. (2015). See particularly Femia & Werrell (2012) for extensive and comprehensive information on the validation of Syria-climate conflict thesis and the discussion of supporting/opposing views.

Turkey implemented an open-door policy, assuming that they would return soon, and characterized them as “guests” with temporary protection status, which has no legal equivalent (Shaherhawasli & Güvençer, 2021, p.3). The number of registered Syrian migrants in Turkey exceeded 2.5 million by the end of 2015, 3.4 million by the end of 2017, and 3.5 million by the end of 2019. Looking at the distribution of the Syrian population seeking asylum outside Syria, according to data as of December 31, 2020, Turkey is the country hosting the largest number of Syrians with 56 percent (3 million 641 thousand), Lebanon (865 thousand) with 13 percent, Jordan (662 thousand) with 10 percent (Figure 4.1). As of March 16, 2023, a total of 3 million 447 thousand 837 Syrians were living in Turkey (TURKSTAT, 2022). Together with the unregistered ones, this figure is estimated to be close to 4-4.5 million. 98.7% of these individuals live in cities (DGMM, 2022).

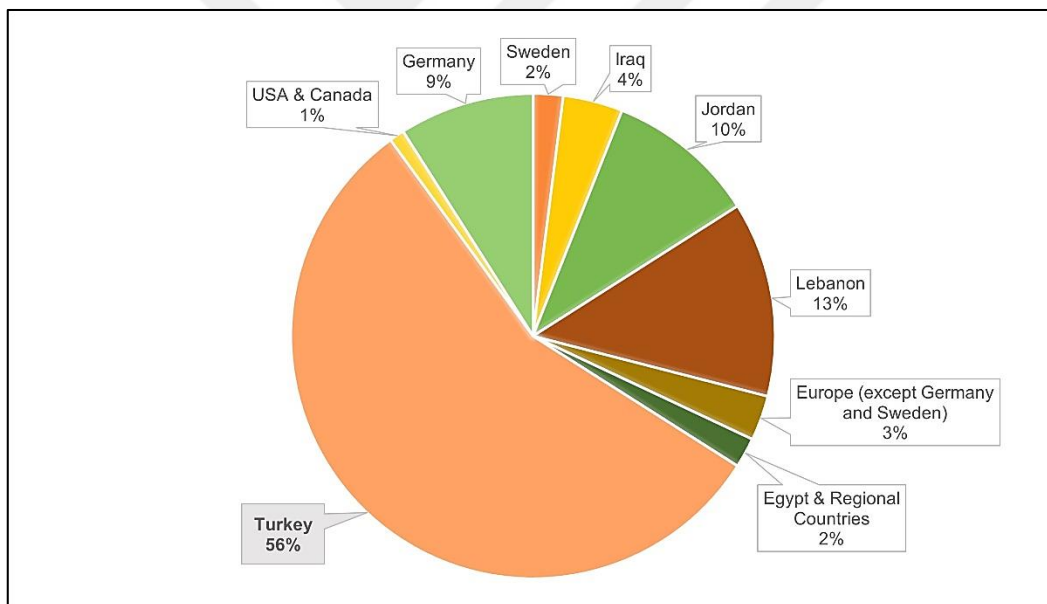


Figure 4.1 Syrian Refugees by Country of Residence (6.6 million) (UNHCR, 2020)

DGMM, Population, and Citizenship Affairs announced on December 19, 2022, that 223,881 Syrians were granted Turkish Citizenship (URL 6). A demographic assessment of the Syrian population in Turkey shows that the majority of the arrivals are children and young people. As the elderly population is small and the average

age¹¹ is 22.13, there are many Syrian migrants of working age (MoEUCC, 2021, p.44). For many Syrians, the guest status of temporary protection does not fulfill their aspirations because they are getting more and more used to living in Turkey. Thus, there is a tendency to stay permanently increases despite all positive and negative conditions and new lives are built here through work, marriage, and education. The fact that about 40% of Syrians living outside the camps have a favorable view of establishing kinship relations with Turks (DEMP, 2017) also shows that they desire to stay settled.

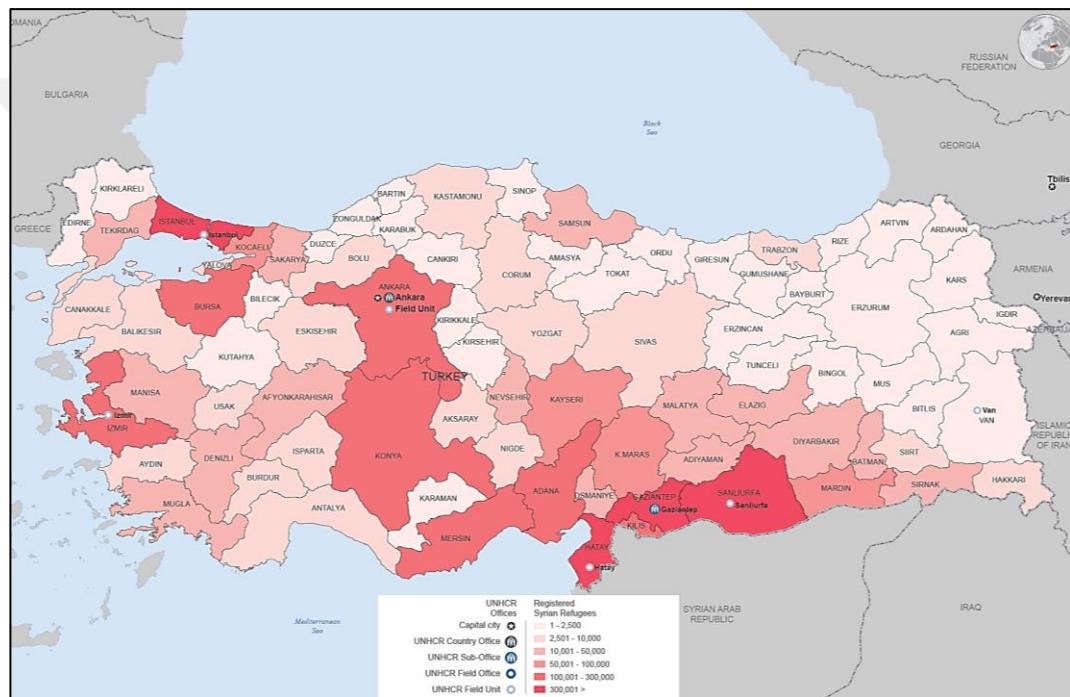


Figure 4.2 Provincial Breakdown Syrian Refugees in Turkey, UNHCR Turkey 2022 (URL 7)

The distribution of Syrian migrants to cities across Turkey has not been evenly dispersed (Figure 4.2). Especially metropolitan cities have seen a much higher influx of migrants. The distribution to cities is primarily in the form of dense settlements in border cities such as Hatay, Gaziantep, Kilis, and Mardin due to past mutual

¹¹ The average age of Syrians is 22-23 years, while the average age of Turkish citizens is computed as 32-33 years (Doğan et al., 2020).

relations, kinship ties, and the influence of regular migrants (Figure 4.2). In addition, there is a second dimension of relocations to cities such as Izmir, Istanbul, Bursa, Adana, and Konya, which can offer more economic opportunities in a rush for a livelihood (Figure 4.2). In these spatially dense cities, new socio-spatial patterns have been emerging. In parallel with that, housing densities, demand, and consequently, rental prices have increased, and new land use patterns have emerged.

With the gradual end of their stay as guests, Syrian migrants have begun to look for work, which is the only way they can sustain their lives in Turkey. The number of Syrians with work permits is around 35,000, but the number of Syrians who work unofficially and have established themselves in the market is thought to be around 1 million (Şentürk, 2020). One of the most apparent reasons is that employers can buy labor cheaply, meaning that Syrians are forced to work uninsured, unregistered, and for embarrassingly low salaries. Syrians who agree to work long hours without much expectation become indispensable to them. Another problem for Syrians coming to Turkey is the uncertainty of their right to education and the unfavorable conditions created by the longer-term conditions (Erdoğan, 2015, p.323). Solving language and integration problems should have been a priority in existing public schools.

Although there are more solution-oriented projects and studies on Syrians in border cities, the same has not been valid for other cities, especially Istanbul, and the influx of migrants has been chiefly addressed in terms of security problems and social cohesion dynamics (Kahraman & Tanıyıcı, 2018). While it is known that migration and asylum frequently bring up issues of social security, crime, and cohesion, it is an explicit declaration that since the arrival of Syrians, similar debates have emerged for Turkish society, such as the duration of their stay, citizenship rights, access to basic services, and local ties with society (Şimşek & İçduygu, 2017). The temporary protection regulation promises to facilitate access to health, education, social assistance, and the labor market for those with an identity document. Nonetheless, the legal regulations fail to meet their needs due to inequalities such as deprivation of basic rights, victimization of discrimination, economic disempowerment, and harsh living conditions (i.e., difficulty in finding a job, high rents, social insecurity)

(Şimşek, 2017). Similarly, despite efforts at the legal level to solve some problems, they have few tools, especially in overcoming the language barrier, ensuring social acknowledgment, and providing official assurances.

Due to their temporary protection status, Syrians always withdraw themselves for fear of not being able to exist locally and experience the fear of displacement (Shaherhawasli & Güvençer, 2021, p.6). This status affects their lifestyles, causing them to be vigilant while working, spending leisure time, or receiving a service. While addressing the climate vulnerability of migrants is necessary to propose a fair and humane solution in climate action plans and future risk scenarios, Turkey's migration and migrant policies have led to a deadlock in which refugees, asylum seekers, and migrants are seen as the problem rather than the victim and are condemned to be ignored by both society and the state. Although the fact that Syrians belong to the same religion as the resident population initially made it possible to ignore other negativities or to reduce the impact of differences, problems such as the gradual deterioration of the economy, political discourses, and the salience of cultural differences (Tuncel & Ekici, 2019) have led to the triggering of opposition and intolerance behaviors (Figure 4.3).

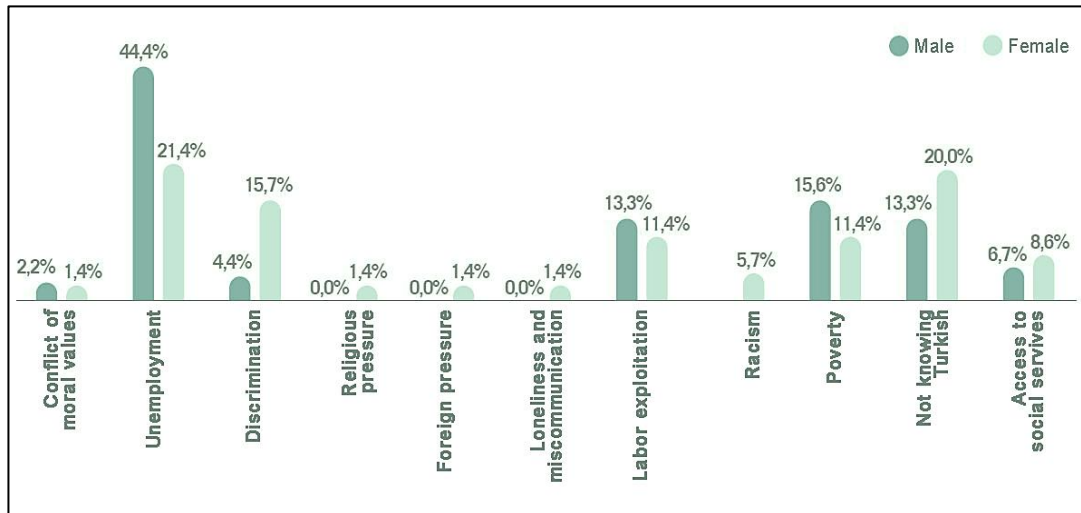


Figure 4.3 Problems Faced by Syrian Refugees in Turkey by Gender (Kaya & Kırac, 2016)

4.2.2 General Profile of Syrians in Istanbul

When the distribution of migrants to Turkey in 2020 was analyzed by provinces, Istanbul was the one that received the highest number of migrants at 45.3% and sent the highest number of migrants at 42.5% (IPDDE, 2022, p.59). Syrian nationals constitute the largest migrant group in Istanbul (IOM, 2019, p.11). Compared to the Turkish population in general, Syrians are younger and more fertile in terms of age, less educated in terms of profession, and tend to work in jobs that do not require qualifications. Ethnically, the majority of Syrians living in Turkey and Istanbul are of Arab origin, but there are also minorities of Turkmen and Kurdish origin. A breakdown of Syrians by age group shows that there is a significant concentration in the 18-64 age group, with the elderly making up a relatively small proportion of the population (Figure 4.4). In this case, it is seen that there is a great mass of people of working age and in the fertile period. With an average household size of 5.11 people, mostly two families can live together, and sometimes this number can even increase to four or more (Kaya & Kırac, 2016). According to the ABPRS data, the average household size in 2019 was calculated as 3.35 for Turkey and 3.33 for Istanbul.

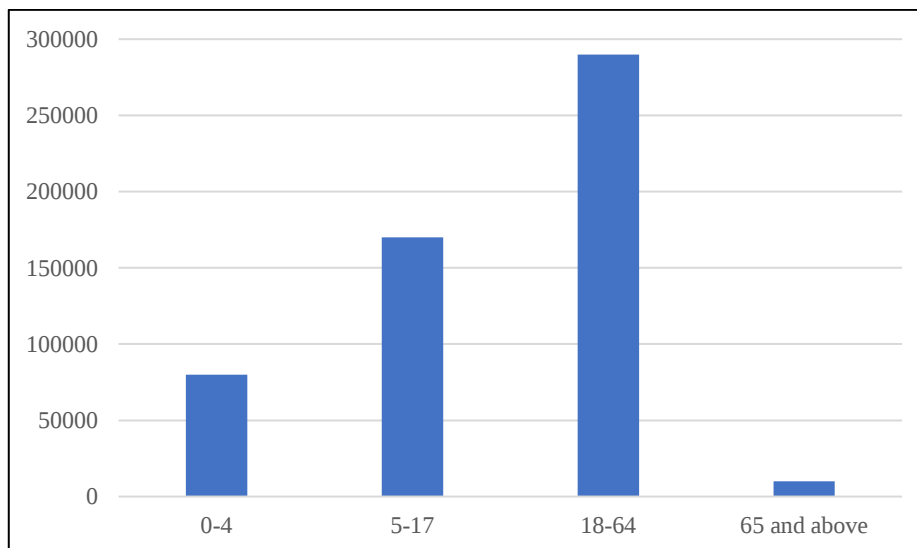


Figure 4.4 Syrians Under Temporary Protection Based on Age Groups in Istanbul
(IPDDE, 2022)

According to TURKSTAT (2022), the current population of Istanbul is 15 million 840 thousand 900 people. According to the official website of the Directorate General of Migration Management (2022), a total of 1 million 310 thousand foreigners are in the city legally, 764 thousand of whom are regular migrants with residence permits. As of August, there were 550,466 Syrians under “temporary protection” status in Istanbul (DGMM, 2022). According to studies by the IOM, the number of Syrians in Istanbul is estimated to be close to 1 million when unregistered migrants are included (Morgül et al., 2021). According to this figure, the ratio of Syrian asylum-seekers living in Istanbul to the local population exceeds 6.4 percent.

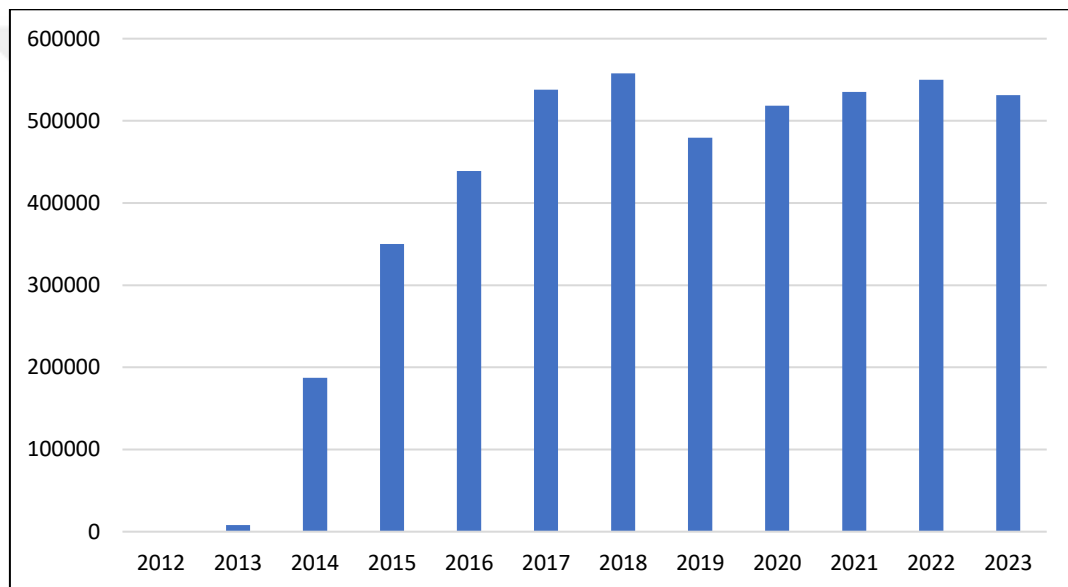


Figure 4.5 Syrians Under Temporary Protection Based on Years in Istanbul (IPDDE, 2022)

Public reactions have naturally been triggered by both the gradual indigenization of the migrant population and social and political events, populist discourses, and media perception. According to data from the DGMM, as of April 19, 2023, there are 3 million 411 thousand registered Syrians in Turkey, while there are 531,098 registered Syrians in Istanbul. Therefore, it is seen that the Syrian population in the city has started to decrease, albeit slowly (Figure 4.5). Although Syrian migrants started to enter the country with the open-door policy, certain steps were taken in 2016 to prevent the high Syrian population in metropolitan areas. After 2019, Syrians registered outside of Istanbul began to be expelled from the city, and in 2021,

restrictions were imposed on the issuance of residence permits to foreigners in Fatih and Esenyurt districts (Morgül et al., 2021).

Lack of identity and language skills poses problems for Syrian migrants in official offices and in accessing the most basic services such as health and education (Güneş Aslan & Güngör, 2019). In particular, given the large number of migrants in Istanbul who do not have an identity, the fear of security and deportation adds to their multiple vulnerabilities. Moreover, despite their shared religious and historical values, Turkish citizens residing in Istanbul have a distant stance toward Syrian residents of the city and do not hesitate to define them as ‘others’ (Morgül et al., 2021, p.13). Thus, the reactions of the locals lead the majority of Syrian migrants toward a desire to remain silent. The problems experienced by Syrian migrants living in Istanbul are mostly reported as not knowing Turkish, livelihood difficulties, abuse, institutional insecurity, lack of self-sufficiency, limited access to services, and discrimination (Doğan et al., 2020, pp.14-15; Güneş Aslan & Güngör, 2019).

All these multiple vulnerability issues, coupled with the demographic vulnerability of Syrians as women, disabled, elderly, and children, can leave them behind in the fight against and management of environmental impact and climatic change due to their lack of awareness and knowledge. Therefore, steps should be taken toward well-being for all, with benefits such as public health and safety, natural resource management, and new employment opportunities. The vast majority of migrants in Turkey are employed informally, or their labor is bought for meager wages. This situation threatens their social and health security. Although industrially developed Istanbul maintains its attractiveness as an employment center for Syrian migrants, what it offers them is not enough to make a decent living. They are unable to have healthy housing and social life in this city due to the much higher cost of living and challenging working conditions.

4.2.3 Spatial Choices and Interactions

Istanbul is a city where foreigners from many different racial and ethnic backgrounds, mainly Syrians, reside. External migration to Istanbul has predominantly occurred in the historical peninsula, i.e., in the city's old center and the depressed areas. On the other hand, Syrians have tended to spread much more throughout the city, and they have had the opportunity to choose multiple locations, albeit in different balances, and have attempted to blend in with the local population in various neighborhoods in many districts. Migrants prefer run-down, old, and run-down areas of the city and neighborhoods where housing prices are affordable. In addition, the units they live in are mostly abandoned buildings, industrial zones, basement apartments, bachelor rooms, and cheap hostels.

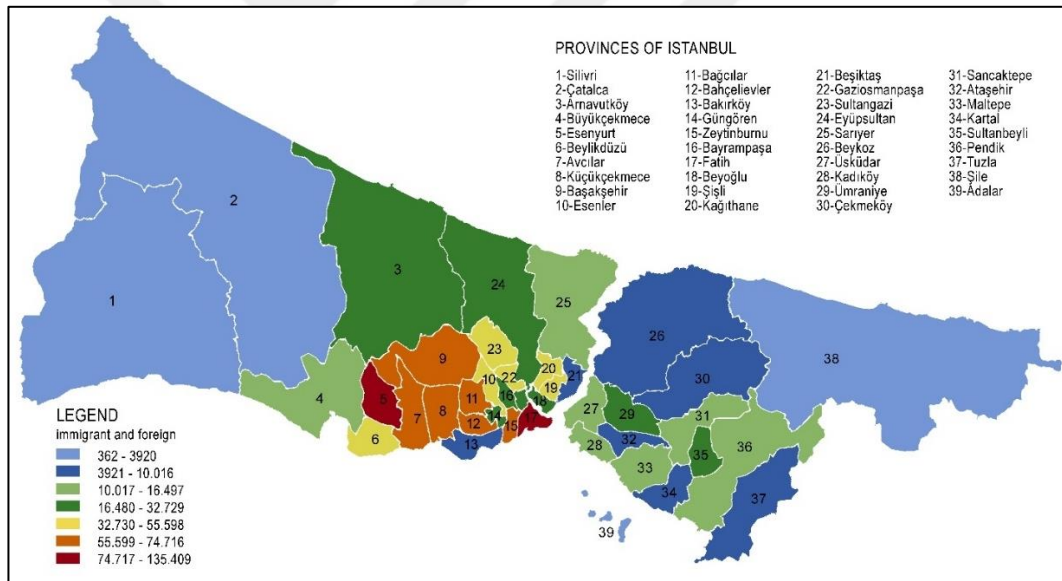


Figure 4.6 Istanbul Migrant Distribution Map (The map made by IPDDE (2022) using December 2021 data from the DGMM was regenerated by the author)

The distribution of the foreign population within the city has been non-homogeneous in various districts and neighborhoods for reasons such as job opportunities, social networks, social context, and past continuities. Esenyurt and Fatih are the districts of Istanbul that host the highest number of foreign nationals (Figure 4.6). Similarly, on the European side, Avcılar, Küçükçekmece, Başakşehir, Bahçelievler, Zeytinburnu,

Kağıthane, and Bağcılar are the districts with the highest foreign population. On the Anatolian side, the number of migrants is much lower.

Like all foreign populations, the dispersion in Istanbul is significantly more concentrated on the European side. The top 3 districts with the highest number of Syrians are Esenyurt (127,210), Fatih (80,920), and Bağcılar (79,305) (Figure 4.7). With exceptions such as Başakşehir, Beyoğlu, and Fatih, Syrian migrants generally live on the periphery of the city, in more decentralized districts and in neighborhoods where low-income groups are clustered (Figure 4.7) (Morgül et al., 2021, p.12). The total number of Syrians in each of the districts of Arnavutköy, Başakşehir, Esenyurt, Küçükçekmece, Bağcılar, Esenler, Fatih, Sultangazi is over 40 thousand. On the other hand, the top three districts harboring the highest number of Syrians in proportion to their population are Fatih (18.54%), Beyoğlu (17.05%), and Arnavutköy (16.35%) on the European side (Figure 4.8). When the proportion of the migrant population to district population is analyzed, Fatih, Başakşehir, Zeytinburnu, and Küçükçekmece, with Esenyurt again having the highest proportion, harbor a sizeable migrant population (IPDDE, 2022, p.60).

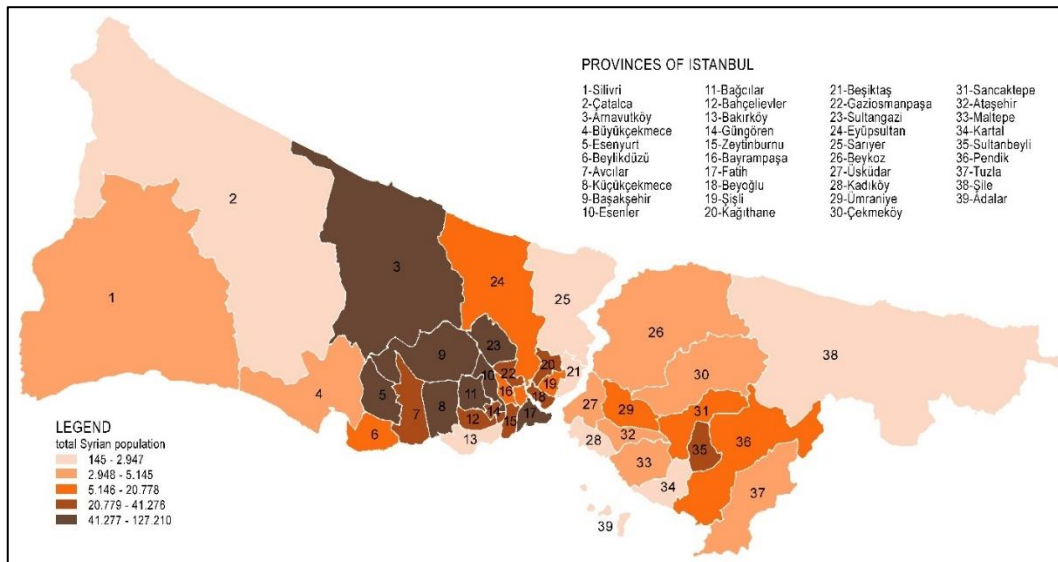


Figure 4.7 Number of Syrians by the province of residence in Istanbul (The map produced by IOM (2019) was regenerated by the author.)

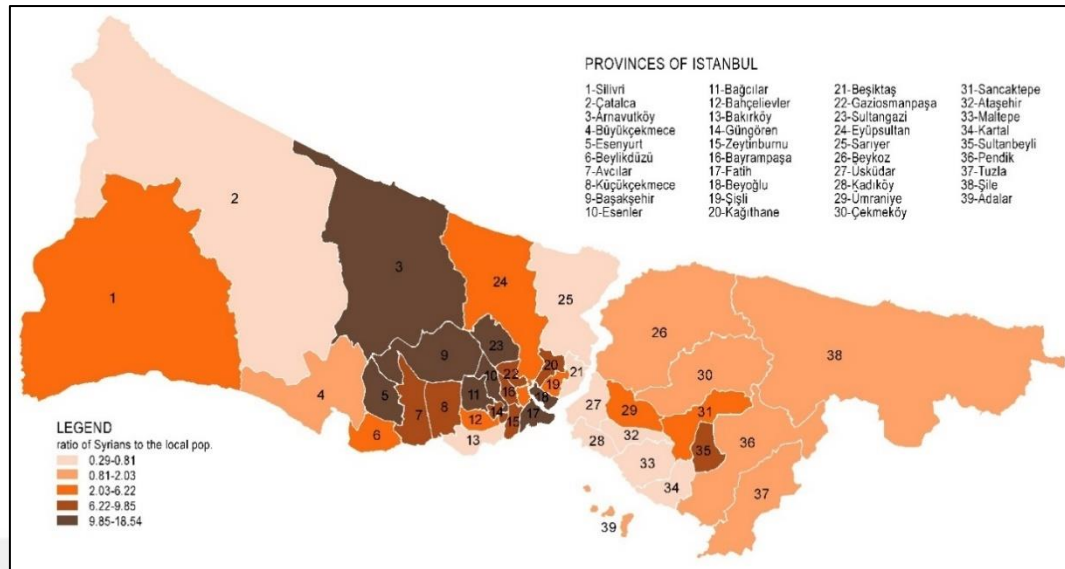


Figure 4.8 The ratio of Syrians to Indigenous Population in Istanbul (The map produced by IOM (2019) was regenerated by the author.)

The distribution of Syrians varies depending on the spatial organization, economic structure, cultural differences, and class distinctions in Istanbul districts. Syrian migrants have primarily settled in areas with cheap rents. On the other hand, since they have more chances to work in the industrial, textile, building, and construction sectors, they are more condensed in areas close to these employment areas. For this reason, Bağcılar, Esenyurt, Gaziosmanpaşa, Arnavutköy, and Sultanbeyli are the districts where they have settled the most. Syrians, concentrated in certain provinces in Istanbul, mostly live in unfavorable conditions. Municipalities, associations, and non-governmental organizations sometimes organize various aid and social cohesion campaigns and events for Syrians in Istanbul. However, these are fairly limited in terms of scope and maintainability. The neighborhoods where Syrians live in Istanbul can be found in disaster-prone areas, unplanned coastal areas, densely urbanized areas or peripheral settlements, and areas of ghettoization. In addition, the distance between their workplaces and homes can bring them additional problems.

Syrians necessarily prefer unhealthy and environmentally risky neighborhoods where rents are affordable, often in basements where conditions worsen. Their experiences of social exclusion and discrimination, as well as their migration

networks among themselves, can influence their spatial location choices and lead to a tendency toward ghettoization (Doğan et al., 2020, pp.15-23). Generally, Syrians living on the European side are located in old buildings, run-down urban areas, and areas with cheap rents. Despite the low quality of housing, the lack of public services and infrastructure, and the functional and physical inadequacy of the built environment, migrants continue to live invisibly, with financial difficulties and without support in these depressed neighborhoods and areas (Karasu & Aksungur, 2022).

4.3 Last Words for the Chapter

So far, academic discussion has continuously centered upon the vulnerability paradigm and the transformative effects induced by climate change. The preceding section underscored the greater susceptibility of migrants and elucidated their inadequate resources, comprehension, and recognition in addressing climate change with respect to certain factors. This section provided an overview of migration policy in Turkey and examines the circumstances of Syrian individuals within the nation, with a particular focus on the city of Istanbul. The inclusion of observations on the general distribution and spatial selection phases in geography is highly relevant, particularly when considering socio-economic and demographic data.

Throughout the comprehensive literature review, this study has synthesized information pertaining to the issue of climate change, environmental conditions, and climate justice in Turkey, the interplay between social vulnerabilities and climate justice, vulnerability among migrants, regulations and data concerning Syrians, and the overall scope of the thesis. The subsequent chapter delves into the subject of climate vulnerability among migrants, focusing on specific geographical and social dimensions. This analysis is conducted by means of a case study. The subsequent chapter will commence by providing methodological elucidations and thereafter provide the findings derived from the field investigation.

CHAPTER 5

CASE STUDY: CLIMATE VULNERABILITY OF SYRIANS IN ISTANBUL

5.1 Methodology of the Case Study

5.1.1 Case Selection and Research Area

This study addresses the issue of climate vulnerability of migrants in the context of Syrians, focusing on the context of Istanbul. There are coherent reasons behind the selection of this case. First, the climate crisis is recognized as one of the initial causes of the Syrian Civil War and migration. There are several publications that link to the Syrian civil war and drought issue (explained in Chapter 4.2.1). Therefore, Syrians are subjected to *double victimization*. Political and environmental events in their places of origin, as well as emerging inequalities and climatic vulnerabilities in their destinations, pose additional challenges for them.

Secondly, they have been living in Turkey long enough to be able to observe and draw reliable conclusions, and they are likely to face a number of socio-spatial, economic, and social influences. Women, children, and elderly family members are notably vulnerable as they have left their homes. For example, when comparing Afghan and Pakistani migrants, it is seen that the young male population comes to the country in large numbers. In addition to the hardships that coincide with their demographic characteristics, this migrant group also experiences racial discrimination, exploitation, economic difficulties, language proficiency, and fear of deportation in daily life.

Furthermore, Istanbul hosts both the largest foreign population in Turkey and the largest Syrian population. With high rates of internal and external migration, Istanbul

has a large Syrian population of around 500,000, while there is strong evidence that the city will be severely affected by the climate crisis. Istanbul has a vital place in Turkey due to its population and economic activities. The city is home to a massive local and foreign population and is heterogeneous in terms of class, ethnicity, lifestyle, and political attitudes. It has long been argued that the city of Istanbul has been characterized by unplanned urbanization, a development brought about by industrialization and the impact of internal migration flows that began in the 1950s.

The city has had difficulty in meeting the housing demand of the growing population due to internal and external migration and has not made it possible for the newly arriving low-income social group to benefit from any existing housing stock. For this reason, the process, which commenced with squatting and haphazard settlement, has now become a victim of unplanned urbanization as a result of the construction that has emerged as a result of the elite's prioritization of meeting the demand for new housing and the attempt to become a financial center. Due to the built environment pressure on the ecological setting, megacities, in particular, will have to endure devastating consequences. On top of this, the skewed class structure of society will also confront the disproportionate distribution of climate impacts.

5.1.2 Data Collection and Research Design

A case study is a methodological approach that can be conducted through multiple sources of information (e.g., interviews, methods, questionnaires, documents, focus groups) and provides insights into realistic views, experiences, and limitations of ordinary life (Creswell, 2007). This thesis is organized as *a collective/multiple case study*. According to this type, the inquirer chooses a specific topic or concern and aims to explain it through different research sites with various programs (Stake, 1995). The case study process can be designed in a variety of ways, but the most important step is the effective and accurate implementation of the data collection to be carried out specific to the focused topic, place, or group. The data collection process of the research proceeded in two stages: pre-field and fieldwork.

Firstly, in the pre-field phase, spatial analysis and mapping were conducted to understand climatic risks in a broader context and to develop insights into risk factors by integrating various data. In the mixed-method study, the document analysis method (Yıldırım & Şimşek, 2016) and the data mapping method (Bazeley, 2018) by linking qualitative and qualitative data with visualization are used in accordance with the researcher's purpose. In this research, secondary data was collected and analyzed regarding the findings on the relationship between migrant living spaces and climatic hazards, which the first phase aimed to interrogate. With the document analysis method, first of all, qualified academic studies, official reports, and institutional documents were examined in detail in order to determine how environmental impacts and specific vulnerabilities in Istanbul are distributed in the neighborhoods where Syrians live intensively. News websites and reliable internet sources were also used to support them.

GIS data of various institutions (BİMTAŞ, IMM, SHW), reports (IMM, DEMP, IPDDE, ISWA), news sources, theses, spatial data production engines (Climate Central, Land Monitoring) were used as data collection tools (Table 5.1). Flood risk areas and severe weather events and dates representing climate-related impacts, green areas, and areas unsuitable for construction in relation to the built environment were combined with information obtained from both GIS data and reports. The spatial impact of the urban heat island was produced by analyzing Landsat 8 OLI/TIRS satellite imagery provided by the United States Geological Survey (USGS) using ArcMap software. The satellite image used for this analysis was selected from July 2020, when the temperature was high and the cloud cover was low.

Table 5.1 Sources of spatial mapping and scoring data

Data	Data Source
Climate effects (areal data / regional level)	
Stream and Stream Corridors	EU-Hydro - River Network Database, Version 1.3 Land Monitoring Service
Sea Level Rise	Climate Central, Coastal Risk Screening Tool (coastal.climatecentral.org)
Urban Heat Island	Produced by the author. Input Data Set: Landsat 8 OLI/TIRS satellite image (01/07/2020 180/031 Path/Row) + Thermal image band values + Spectral radiance values + Sensor brightness temperature value + Ground surface diffusivity + Vegetation cover + Land roughness + Normalized difference vegetation index (NDVI) Software: ArcMap 10.5
Flood Risk	IPDDE (2022) - Provincial Disaster Risk Reduction Plan BİMTAŞ (Boğaziçi Landscape Construction Consultancy Technical Services Industry Trade Inc.) (2015) - GIS Data IWSA (Istanbul Water and Sewerage Administration) (2016) - GIS Data SHW (State Hydraulic Works) (2016) - GIS Data
Extreme Weather Events (focal-point data/neighborhood or district level)	
Storm/Tornado Events	Various news websites (URL8-URL66) Tanyaş et al. (2013) - Istanbul Province Disaster Logistics Plan Guide
Flood Events	Various news websites (URL8-URL66) IWSA (İSKİ) official website IPDDE (2022) - Provincial Disaster Risk Reduction Plan Turoğlu (2011) - Flashfloods and Floods in İstanbul
Hail Events	Various news websites (URL8-URL66) IPDDE (2022) - Provincial Disaster Risk Reduction Plan
Social and Green Infrastructure (areal or numerical data / regional, district, and neighborhood level)	
Health Facilities	IMM (Istanbul Metropolitan Municipality), GIS Directorate (2016) - GIS Data IMM, Superstructure Projects Directorate (2014) - GIS Data Ministry of Health, Istanbul Provincial Health Directorate (2022) - Health Facilities Categories and Areas (m ²) IMM (2022) - Health Facilities Total Area (m ²)
Green Areas (only parks included)	BİMTAŞ (2015) - GIS Data IMM, Department of Parks, Gardens and Green Areas - GIS Data + Green areas map modeling (https://yesil.istanbul/yesil-alan-haritasi) Google Earth Pro - Square meter calculation
Irregularly Developed Residential Areas	BİMTAŞ (2015) - GIS Data IMM (2006) - Spatial Distribution Analysis of Housing Settlement Areas Report
Demographic Structure (numerical data/neighborhood or district level)	
Average Household Size	TURKSTAT (2022) (data for all neighborhoods)
Population Density	TURKSTAT (2022) (data for all neighborhoods)
Monthly Household Income	Governorship of İstanbul (2020) (data for the districts)
Institutional Capacity (written data/district level)	
Climate Action Plan/ Initiative/Workshop	Official websites of district municipalities

The district-level extreme weather events were identified by following the dates and event definitions stated in the disaster research reports of relevant institutions (Table 5.1). Additionally, a set of 20 significant dates spanning 20 years (2002-2022) emerged as prominent. To obtain more comprehensive data at the neighborhood level, an initial scan was conducted periodically on multiple news sources and websites within the specified date range. The search engine was utilized to conduct searches for each event by inputting “the respective event name and the date” as search terms. Consequently, the process of identifying neighborhood names involved the examination of news articles pertaining to the specific extreme weather occurrence. Subsequently, the search process was further refined by the utilization of a search engine, whereby users inputted the combination of the “neighborhood name and event name” as search terms. In addition, a comprehensive inquiry was undertaken by employing the search terms “neighborhood name and event date” and “neighborhood name, event name, and the date”. This approach effectively eliminates the issue of missing and inaccessible information.

All these visual, verbal and numerical data from different sources were brought together by the researcher in a way to provide visual integrity in accordance with the map format. In the macro-level maps produced by the author, these data are overlapped in a multi-layered manner and are expected to reveal the regions where risks are concentrated. The neighborhoods where Syrians live densely were identified through projects, reports, institutional data, and news sources. Afterward, confirmation was obtained by contacting the mukhtars of each neighborhood by phone. In addition to spatial data, data on the average number of households, population density, and average monthly household income, which show the vulnerabilities in the population structure, were added in the equal-weighted scoring phase. Since addressing climate change institutionally and solving it in the local context is an extremely important step, the fact that municipalities have a climate action plan or have initiated preparations for it was also examined and evaluated.

Secondly, for the fieldwork, it is planned to collect primary data in the form of interviews to perceive the challenges, inequalities, and daily life practices of Syrians that may affect their climate vulnerability. It is important to uncover buried information that cannot be obtained from written and printed sources. Thus, it was aimed to shape the interview with the questions prepared by the researcher in light of the knowledge from the literature, with the additional information provided by the participants and the instant evaluation of the answers. Considering the importance of establishing sincere communication and trust with migrant groups that may have social reservations, the interviews were conducted face-to-face. In-person interviews also have high response rates, provide a wider communication channel, allow for follow-up questions, and allow for additional time to take notes (Vanderstoep & Johnston, 2009, pp.88-89).

A total of 60 Syrians, 34 men, and 26 women, were interviewed. The interviews were conducted in a semi-structured format and included open-ended questions and yes-no questions on specific topics. Interviews were carried out both in Turkish and in Arabic with the help of an interpreter. Interviews conducted in Arabic were instantly translated into Turkish, and any opinions, ideas, and details that could guide the study were noted down by the researcher. Afterward, additional information and key details were revealed through the audio recordings. All participants were over 18 and lived in the neighborhoods selected for the fieldwork. As a result of the spatial analysis, 12 neighborhoods were identified, aiming to reach 5 people in each of them with the snowball method. Each of the participants belonged to a different household and was not restricted by profile types such as being the head of the family or being a parent. During the fieldwork, a total of 82 Syrian migrants were told about the interview topic and process and expected to participate, but some of them refused to be interviewed due to lack of time, reluctance, fear, and insecurity. The 60 interviewees verbally agreed to participate. The interviews were completed in 12 days between 10.01.2023-05.04.2023.

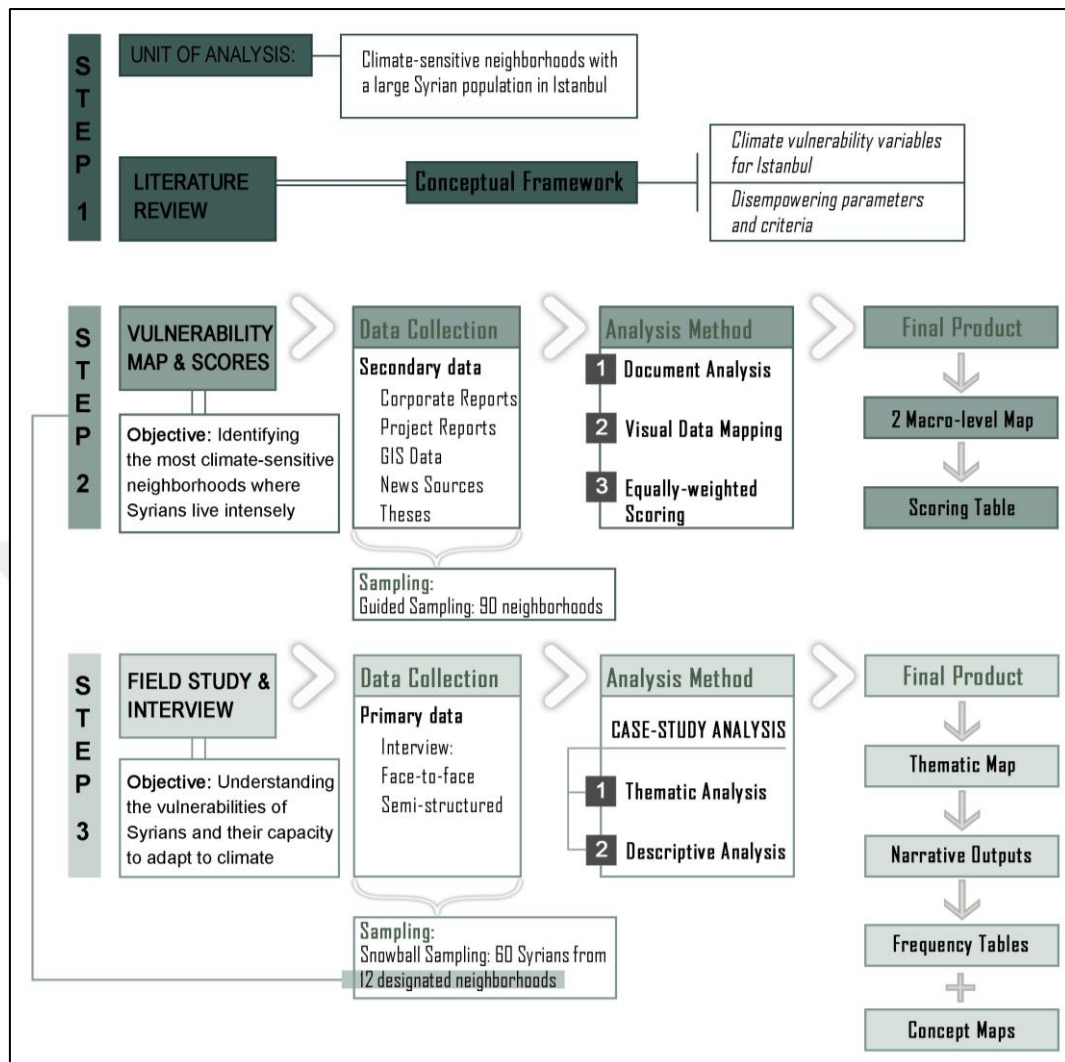


Figure 5.1 Research design and methodological framework of the whole study

In sum, this study entirely encompasses three main research phases. Figure 5.1 presents the research design focusing on all these stages and process inputs. The literature review (Step 1) provides an in-depth understanding of the topic, sheds light on the disempowering parameters for migrants and neighborhoods and provides a framework for the next steps. The vulnerability map and field study phases (Step 1 & Step 2) involve different objectives, data collection, and sampling techniques. In addition, they contribute to the scientific results of the study by producing distinct final products with the use of distinct analysis methods.

5.1.3 Spatial Analysis Phase

Hardoy (1995) emphasizes the lack of studies and specific methodologies for addressing risks and assessing environmental conditions in poor urban areas. Hardoy and Pandiella (2009) ask the fundamental questions:

1. Who live in places exposed to direct or indirect climate impacts,
2. Who live in places lacking the infrastructure to mitigate these risks,
3. Who live in low-quality housing that will face the greatest risks,
4. Who lack the knowledge, capacity, and opportunity for urgent action.

Such questions need to be asked to understand climate change vulnerability in urban areas. Due to the lack of suitable housing in cities, housing options for low-income groups remain very limited. As a result, low-income groups and migrants in deep poverty may be forced to settle in residential areas where the impacts of extreme weather events are more devastating. Therefore, this study seeks to answer the question, “To what extent and how do the neighborhoods and houses where Syrian immigrants reside affect their vulnerability?”

By combining and mapping the secondary data obtained, the regional distribution of climate change impacts at the neighborhood and district level has been visualized and supported by matching with the findings in the literature. The result is maps that reflect both the impacts of climate change and the built environment and access to facilities (See **Chapter 5.2.1.1**). The produced maps reveal a tangible picture of regional overlaps with adverse climatic outcomes and the geographical distribution of climate change at the neighborhood and district levels. However, since it was necessary to determine neighborhood-specific vulnerability values, visual and written data were quantified with the equal-weighted scoring method. As a result, it is assumed that the neighborhoods with the highest scores are more endangered.

While forming the scoring table, the parameters that constitute environmental vulnerability were evaluated, and it was aimed to reveal whether the neighborhoods carry climatic risks or not. Accordingly, if a neighborhood has a vulnerability

parameter identified (See **Chapter 5.2.1.2**), it receives a score of 1, meaning that it is at risk in terms of this criterion. Conversely, if a score of 0 is given, it means that this problem may not exist in this neighborhood and does not pose a serious risk. Neighborhoods with the highest overall score are expected to be located relatively closer to the critical threshold.

The three main climatic impacts - sea level rise, urban heat island, and flood risk - were identified based on neighborhood boundaries. In determining vulnerability to extreme weather events, firstly, critical dates for Istanbul and events that have been recorded as severe weather events were identified from institutional documents and reports. Accordingly, the districts that were severely affected by floods, storms, or hail on a certain date are marked in Table 5.2 (in Chapter 5.2.1.1). In this district-based assessment, the total number of events in the district was compared to the average, those above the average obtained 1, and those below the average obtained 0. Not limited to the district-based extreme weather event record, a different method was used at the neighborhood level. The status of each neighborhood in terms of whether it was damaged by storms, floods, or hail was reviewed, and 1 point was added according to the presence of a past event record.

Parameters related to the built environment and green infrastructure cover inadequate health facilities, lack of green space, and irregularly developed residential areas. Vulnerability in terms of health facilities is identified by access to secondary and tertiary public hospitals that can provide comprehensive services and tools. Neighborhoods with limited spatial accessibility to these facilities are given a score of 1. When the insufficiency of green space is evaluated according to the 10 m² standard as per the Spatial Plans Construction Regulation, there are no neighborhoods in Istanbul that reach this standard in terms of active green space. For this reason, the relevant neighborhoods were scored according to the average as a result of the comparison between them. The irregular settlement data obtained from the relevant institutions are proportioned to the surface area of each neighborhood, and neighborhoods with more than 50% irregular settlement tendency received 1 point.

5.1.4 Sampling and Interview Phase

This case study includes two different sampling techniques for both research phases. In the first phase, the spatial analysis phase, the determination of the neighborhoods to be studied was made through *a guided sample selection technique*. Considering the universe as the neighborhoods where Syrians live, for the purposes of the research, instead of a sample representing the universe, information was collected by conducting field research in the subgroups (M. Sencer & Y. Sencer, 1978, p.486) that is, in the neighborhoods that are considered to reflect the research problem most clearly. For example, when a neighborhood where Syrians live is selected, if this area is less dangerous in terms of climatic risks, then most of the questions to be asked within the scope of the research are meaningless. At the same time, the density of the Syrian population in the neighborhoods was also an essential criterion for making comments on examining social lifestyles, ways of solidarity, and collective location choices.

In the second phase, the fieldwork, interviews in selected neighborhoods were conducted using *a snowball sampling technique*. Snowball sampling is useful for hard-to-reach groups that are marginalized by society and facilitates the selection of people with specific characteristics appropriate to the research context (Vanderstoep & Johnston, 2009, p.27). The individuals that make up the universe are a group that is difficult to reach because they belong to a certain origin and due to problems such as exclusion and lack of identity. Therefore, the study was completed by going to the appropriate sample neighborhoods and reaching a sufficient number of other Syrian migrants with the guidance of the first interviewees.

The content and structure of the interview form are based on the outputs and categorization of specific parameters of case studies around the world. The form covers a wide range of topics (Figure 5.2), including demographic characteristics (gender, age, education, family size), migration status (year of arrival, neighborhood choice), socio-economic status (household income, physical conditions of housing), disaster experiences (climatic events experienced, measures taken), risk awareness

(level of knowledge), social solidarity (neighborhood relations, institutional trust) (Appendix A). Interviews were subjected to detailed analysis to address experiences of climate risks, poverty, and environmental vulnerabilities and to describe the challenges they face (Chu & Michael, 2018).

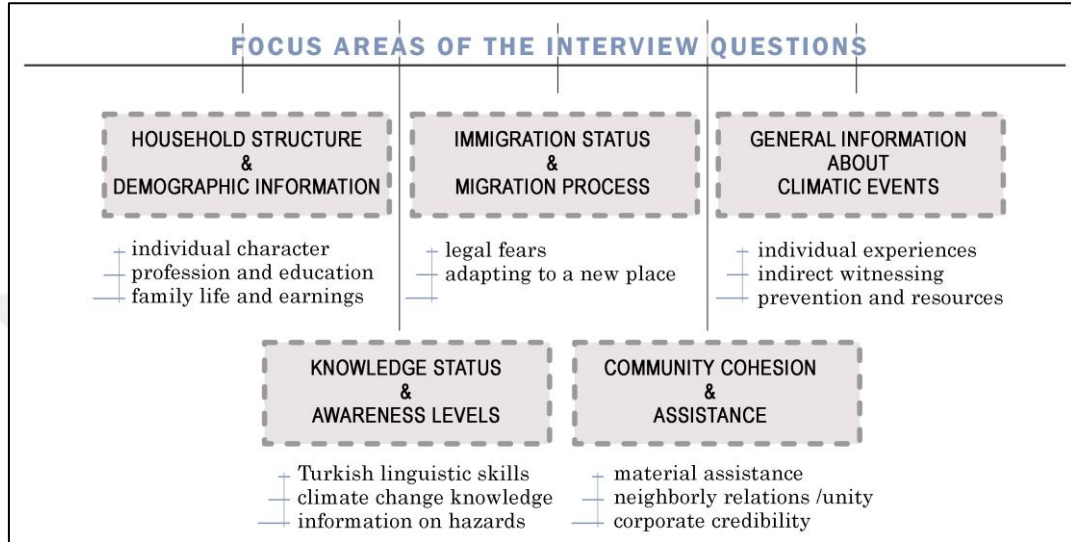


Figure 5.2 Framework of the semi-structured questionnaire

Thematic and descriptive analysis was applied to the data obtained from the interviews. Braun and Clarke (2006) define thematic analysis as a method of identifying, analyzing, organizing, describing, and reporting recurring themes in a data set. Responses with similar characteristics in the interviews were first re-coded by bringing them together, and frequency values were calculated. Qualitative coding was used to group the interview data into categories and themes and to combine data with identical attributes instead of statistical analysis techniques (Lincoln & Guba, 1985, p.347). Following an iterative approach, a thematic framework was created to synthesize the data.

All encoded responses were categorized under various themes in relation to the literature and interviews. Data mapping can be used to systematically conduct thematic analysis. *The mind mapping* method developed by Buzan (2003) was used to visually describe the correlations between qualitative data. In this way, key concepts emanating from a central topic spread radially from a small number of

internal branches to a large number of external branches. In data analysis, the best way is to distinguish groups, themes, sub-themes, and keywords and to identify hierarchical relationships between these phrases and combine them into a common mind map.

Wolcott (1994) advocates three basic approaches to data analysis:

1. An analysis approach that adopts the way of description by using direct quotations and stays loyal to data authenticity
2. A systematic analysis approach with explanations for causality-based results, including the first approach, the descriptive approach
3. An analysis approach that is grounded on the first two analysis approaches and enriched by the inclusion of the researcher's own interpretations into the analysis

In this research, the third analysis approach was adopted to avoid disadvantages such as complexity, data loss, overgeneralization, and disconnectedness that may arise from a single analysis method. After the general framework created by thematic analysis, there are quantitative and qualitative descriptors, including conceptual maps, direct quotes, scatter plots, descriptive statistics, the researcher's own notes, and frequency values to support the codified discourses and sub-categories. While thematic analysis focuses on classifying and organizing data, descriptive analysis focuses on more clearly understanding, explaining, and summarizing the characteristics of the data.

This method provides information about trends, distributions, meanings, and relationships in the content of coded categories (Bazeley, 2018, p.114, pp.296-297). Therefore, for a clearer understanding of the data, descriptive analysis was used as a complement. Stories were used both to include and directly evaluate quotations and to elicit perspectives on a topic. One of the main tools used for descriptive analysis was concept mapping, developed by Novak and Gowin (1984). In this way, the basic concepts emerging from the data can be organized hierarchically, and the cross-connections between them can be identified.

5.2 Analysis Results and Findings

5.2.1 Spatial Analysis of Climate Vulnerability

5.2.1.1 Environmental Vulnerabilities and Climate Impacts

It is estimated that the city of Istanbul will experience significant impacts such as temperature increases between 1 and 4.5°C on average, extreme dry days and months, sea level rise, frequent flooding events, increased storm and hail events, irregular and heavy rainfall, and an increase in the urban heat island effect (IMM, 2018b, p.23-25). In addition to the threat of existing and potential climate impacts, the dense and uncontrolled growth of the city and the horizontal and vertical coverage of the urban landscape with hard, impermeable, and artificial materials actually limit the tools that the city can use to mitigate and minimize these impacts. For the city government to respond to these impacts and prepare the city for climate change will require a multi-faceted and comprehensive effort. In particular, the city largely lacks green infrastructure components to absorb runoff, provide airflow, remove harmful gases, and absorb surface runoff to alleviate extreme heat (ICC, 2020). In addition, green infrastructure components are not homogeneously distributed at the district level in proportion to the population. This may be more of an issue for districts that are more vulnerable to climatic events.

Istanbul is experiencing extreme weather events with escalating frequency, causing serious loss of life and property. According to the Turkey Meteorological Disasters Assessment Report, the top three most intense and frequent weather events for the Marmara Region are storm-tornado, flood-flash flood, and hail-deluge (MoEUCC, 2021, pp.84-85). The report also states that more than 250 meteorological disasters have occurred in Istanbul since 2010. These events were examined to identify the environmental vulnerabilities of the neighborhoods where Syrians live densely. After obtaining the extreme weather events recorded in the last 20 years through various sources, 20 critical dates are highlighted for events that are out of the normal

course as a result of climate change (Tanyaş et al., 2013; IPDDE, 2022; Turoğlu, 2011). Since 2002, the occurrence of the three most active weather events for Istanbul by districts is presented in Table 5.2. The districts of Bahçelievler, Beyoğlu, Küçükçekmece and Şişli, and Bağcılar, in the first place, stand out as vulnerable to extreme weather events with above-average exposure.

The heat island effect, sea level rise, and severe floods are common climatic phenomena in Istanbul and have profound adverse consequences on the city. Urban areas with dense urbanization, such as Esenler, Bayrampaşa, Bağcılar, and Güngören, are more exposed to the heat island effect. Areas with dense vegetation stand out as regions where temperatures are lower. Especially on the Anatolian side, there is less heat island effect. The results also identified the central southern parts of the province as the region with the most intense heat island phenomenon. In addition, unplanned urbanization prevents sea breezes from reaching inland areas, and the urban heat island effect is exacerbated by high urbanization, which prevents ventilation and makes inland areas warmer (IMM, 2018a, p.120).

Table 5.2 Distribution matrix of the most severe extreme weather events recorded in the last 20 years by districts (Prepared by the author)

	9 Aug. 2002	26 Aug. 2008	8-10 Sep. 2009	18 April 2012	20 May 2012	3 June 2014	7 Aug. 2014	19 Feb. 2015	18 July 2017	27 July 2017	11 Sep. 2018	18 June 2020	23 June 2020	29 Sep. 2020	8 Feb. 2021	22 March 2021	29 Nov. 2021	10 July 2022	15 Aug. 2022	26 Aug. 2022	Number of Events
ARNAVUTKÖY																					7
AVCILAR																					9
BAĞCILAR																					16
BAHÇELİEVLER																					14
BAŞAKŞEHİR																					8
BEYOĞLU																					13
ESENLER																					8
ESENYURT																					12
FATİH																					7
GAZİOSMANPAŞA																					10
GÜNGÖREN																					6
KAĞITHANE																					13
KÜÇÜKÇEKMECE																					12
SULTANGAZİ																					9
ZEYTİNBURNU																					9
LEGEND																					10.2

Istanbul experiences numerous floods and inundations every year, depending on the intensity of rainfall. Looking at the severe floods and inundations that occurred in the city at certain time intervals between 2002 and 2022, it is found that the districts of Üsküdar, Bağcılar, Eyüp, Gaziosmanpaşa, Esenyurt, Avcılar, Esenler, Küçükçekmece are particularly affected, Büyükçekmece, Bayrampaşa, and Bahçelievler are frequently mentioned, and the floods that occurred in these regions due to heavy rains in different years caused flooding of houses, damage to workplaces, loss of life, and injuries (IPDDE, 2022, pp.110-111; Tanyaş et al., 2013, pp.28-40). For example, the 2009 Ayamama Creek flood in Istanbul caused serious losses due to heavy rainfall and storms, negatively affecting daily life and proving that the center of Istanbul is extremely vulnerable to similar climatic events (IMM, 2018b, p.118). These regions can be observed in Figure 5.3 and Figure 5.4 as areas with flood-prone stream beds.

Since Istanbul is a city with coasts on the Marmara Sea and the Black Sea and a Bosphorus connecting them, it is in a geography that will also be affected by sea level rise. According to the best-case scenario from climate change models, an increase of 1-3 meters will not spread to very large areas but will generally affect the Marmara coast. Üsküdar coast, Istanbul harbor, Kadıköy coast, parts of the Golden Horn, Yenikapı, Zeytinburnu, Ataköy, Maltepe, Pendik, and Tuzla are the coastal areas that will be most affected (IMM, 2018b, p.113). It is known that low-lying, low-elevation areas, including marinas and shipyards, will be negatively affected by this change. Figure 5.3 shows the distribution and overlap of major climatic impacts according to districts with large Syrian populations, and the extreme weather event hotspots in Table 5.2 are also highlighted. Neighborhoods with a high concentration of Syrians are marked with dark pink borders.

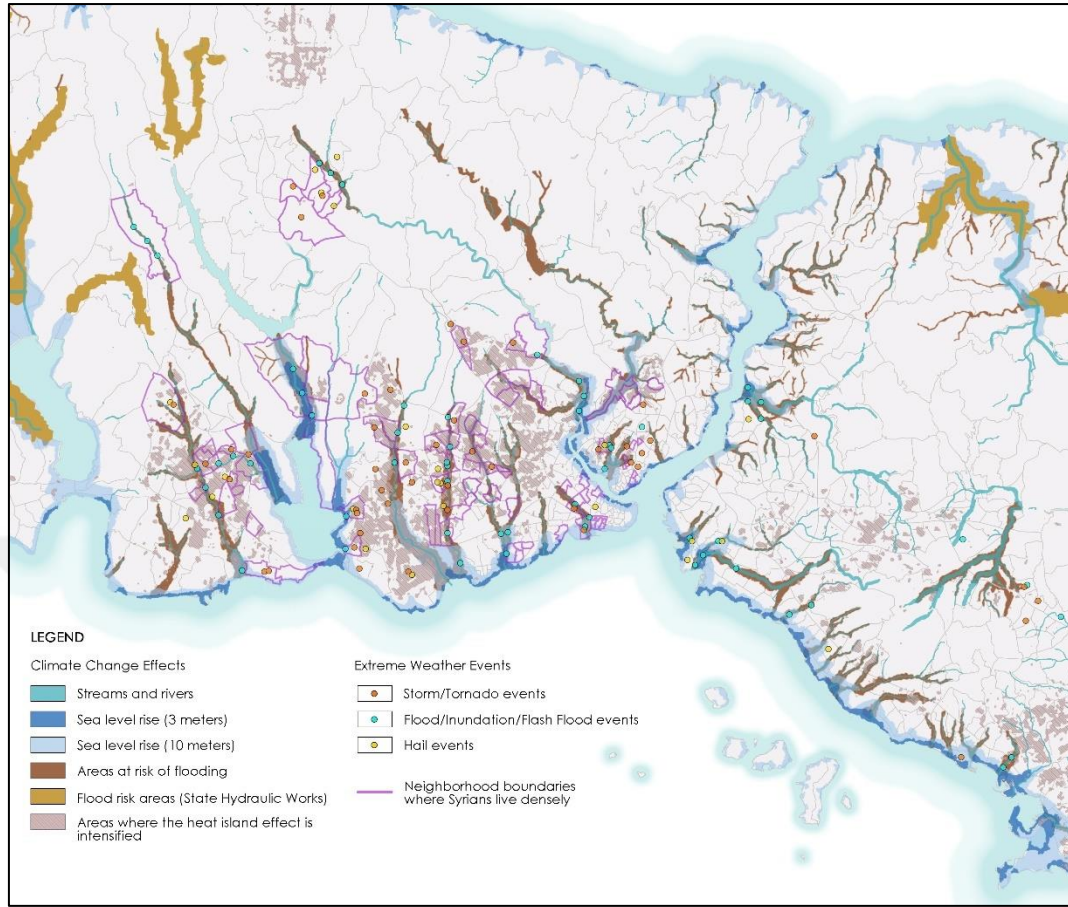


Figure 5.3 Spatial distribution of climate change impacts in Istanbul (Prepared by the author)

The local-environmental vulnerability of neighborhoods is also related to whether there is a regular built environment and planning and the lack of active green space. In Istanbul, the impacts of climate change will be felt most in areas with unplanned and irregular settlements (IMM, 2018b, p.120). The districts that are not suitable for construction, where there are high-rise buildings, mostly inhabited by river beds, and where there is a density of disorderly and illegal construction, are concentrated in Esenler, Bayrampaşa, Bağcılar, Beyoğlu and Güngören, Küçükçekmece districts.

Şile and Beykoz districts have by far the highest per capita green area size, both because they are less populated than other districts and because large-scale open-green areas such as nature parks and urban parks are concentrated in these districts. These two districts are followed by Adalar, Silivri, Eyüp, Çatalca, Sarıyer, Arnavutköy, and Çekmeköy. Districts with open and green areas of less than 1 m²

per capita are Bağcılar, Başakşehir, Esenler, Bahçelievler, Esenyurt, Küçükçekmece, and Sultangazi. These districts both host a dense migrant population and are rather feeble in providing environmental services. For these districts with poor-quality built environments, the lack of active green spaces and necessary urban voids overlap. The lack of green space was quantified numerically based on the average of the neighborhoods, and the map results support that finding. Unplanned, dense, and irregular settlements are among the factors that maximize the climatic vulnerability of Istanbul. In this regard, a significant portion of Istanbul's built-up areas have irregular settlements (Figure 5.4). In addition, unplanned construction is a critical problem in neighborhoods and districts where Syrians live in higher concentrations.

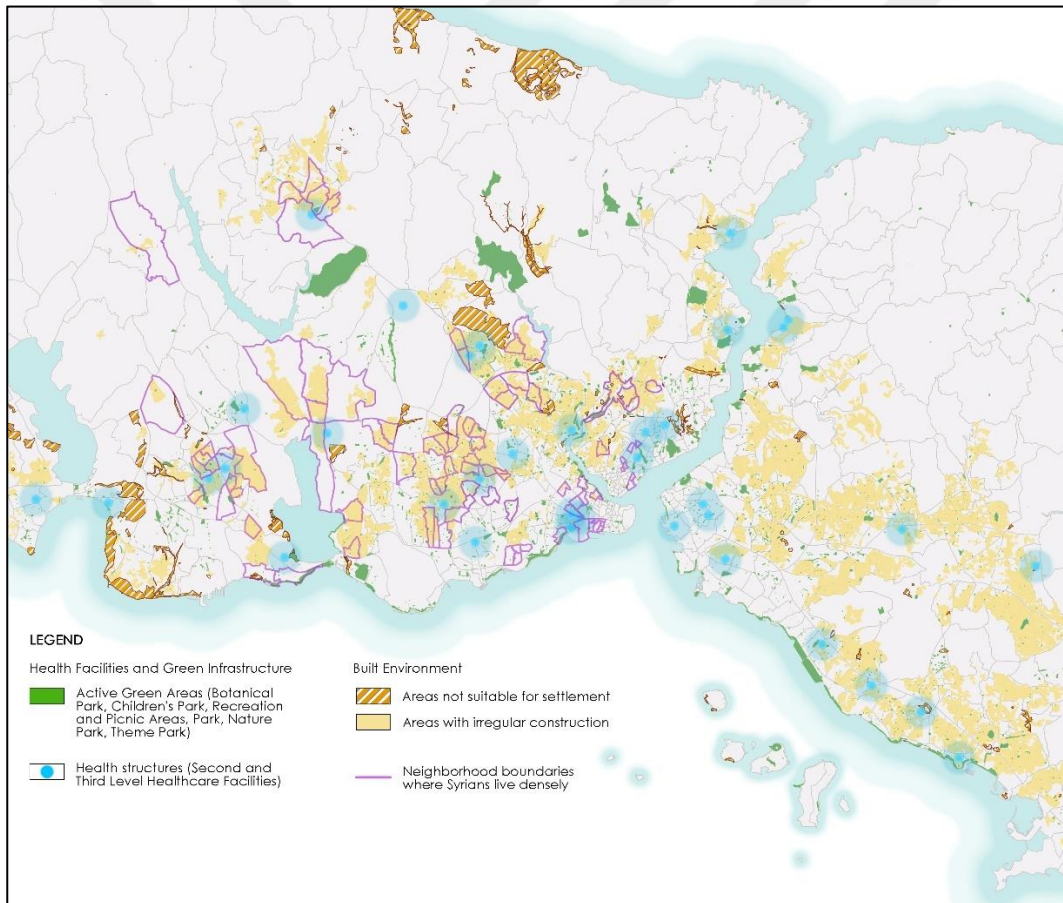


Figure 5.4 Spatial distribution of built environment elements affecting climate change adaptation in Istanbul (Prepared by the author)

In terms of climate justice, access to health services, being able to receive treatment in health facilities before, during, and after disasters, and requesting assistance are of utmost importance. Access to this fundamental right, which is frequently mentioned in studies on climate justice and climate victims, has the risk of causing problems for Syrians who may be climate victims in Istanbul. For this reason, Figure 5.4 shows secondary and tertiary public health facilities. It was deemed appropriate for this study that health facilities are publicly owned, and public hospitals are considered for migrants who mostly have low income. At the same time, these facilities are hospitals that have the capacity to serve the district in terms of capacity and have more resources in terms of equipment and materials. The map did not include specialized health facilities such as family health centers, dental hospitals, gynecology and pediatrics hospitals, and only secondary health care facilities classified as “General Hospital” by the Ministry of Health.

According to IMM 2017 data (URL 67), Fatih, Şişli, Bakırköy, Zeytinburnu, Bahçelievler, Küçükçekmece, Üsküdar, Kadıköy, Pendik, and Kartal are the districts with the highest amount of health facility areas. In terms of minimum unit area¹², Fatih, Şişli, and Bakırköy are well above the Istanbul average. Since these districts have large university hospitals and public education and research hospitals, they have a wider range of services. The districts with the most inadequate health services are Avcılar, Güngören, Başakşehir, Esenler, Esenyurt, Kağıthane, and Sultanbeyli. In these districts, the area of health facilities per capita is as low as 0.04 m². Since the focus of this study is on these specific neighborhoods and districts, when all analysis variables are evaluated, it can be said that Syrian migrants and their families are disadvantaged in terms of location choices.

¹² According to the Spatial Plans and Construction Regulation of the Zoning Law No. 3194 published in the Official Gazette No. 29030, the minimum area size for health facilities is determined as 1.50 m² per person.

5.2.1.2 Climate Vulnerability Scoring of Neighborhoods

After the data collection, compilation, and mapping processes, a score table was created for the neighborhoods where Syrians live densely in order to identify the districts with a high-hazard history (Table 5.3). In this table, climate impacts and built environment parameters shown spatially on the map were quantified and evaluated. In addition, when evaluating extreme weather events, firstly, the hazard history of the district in which the neighborhood is located was taken into consideration, and scoring was made according to the average score in Table 5.2 (on page 125). Then, the records of storm, flood, and hail events for each neighborhood were also examined, and point vulnerabilities were added to the table as points. In addition to spatial parameters, demographic structure and institutional capacity parameters in the neighborhood that affect climate vulnerability and adaptation were also presented as inputs during the scoring phase.

For each neighborhood, the risk of sea level rise, urban heat island, and flooding in Figure 5.3 was examined, and if the neighborhoods were identified as having these hazards, they received 1 point in Table 5.3. For built environment elements, neighborhoods located in districts that were primarily identified as inadequate in terms of health facilities again received 1 point. At this stage, the square meter per capita standard is not taken as a basis because the municipality data includes the total area of all health facilities. Since the priority issue in terms of climatic disaster is the provision of emergency aid and response at full capacity, access to a secondary or tertiary health facility in the district where the neighborhood is located was assessed.

For the lack of green space, neighborhoods that are already unable to meet the 10 m² standard, being well below the Istanbul average, are scored as an element of environmental vulnerability. The average amount of active green space per capita for the neighborhoods included in the study is 0.97 m². Neighborhoods above the average received a score of 0, and those below received a score of 1 as a result of a comparative assessment.

Since the frequency of extreme weather events in the district also poses a risk to the neighborhood, they are scored separately. In support of Figure 5.3, Avcılar, Bahçelievler, Bağcılar, Beyoğlu, Esenyurt, Esenyurt, Küçükçekmece, and Şişli districts have above-average extreme weather event records, so the neighborhoods in these districts received 1 point (Table 5.3). Finally, 1 point was added for extreme weather events that caused loss of life and property at the neighborhood level. In terms of demographic structure, the TURKSTAT (2022) data were obtained at the neighborhood scale for average household size and population density. Istanbul Governorship's 2020 data was assessed at the district level for monthly household income. Scoring was done by calculating the averages of the neighborhoods and districts and then calculating those below and above the average.

Finally, in terms of institutional capacity, the existence of efforts on climate change in a district is considered critical in terms of measures to be taken against the impacts that may be seen in the district and community preparedness. For this reason, the existence of a climate change action plan, energy action plan, or adaptation plan for each district with relevant neighborhoods was reviewed. In addition, attention was also paid to whether the district municipality is in the process of preparing an action plan. Accordingly, districts without such an action plan received a score of 1, and districts with such an action plan received a score of 0 (Table 5.3).

Table 5.3 Scoring of neighborhoods according to environmental vulnerability factors

Name of the Province	Name of the Neighborhood	Climate effects (areal) (CE)			Social and Green Infrastructure (areal/numerical) (SGI)			EWE* (level of province)			EWE* (level of neighborhood)			Demographic Structure (numerical)		Institutional Capacity	
		Sea Level Rise	Urban Heat Island	Flood Risk	Paucity of Health Facilities	Inadequacy by Healthcare Standard	Lack of Green Areas	Irregularly Developed Residential Areas	SE/ FE/ HE*	SE*	FE*	HE*	HE*	Average Household Size	Population Density	Monthly Household Income	Climate Action Plan/ Initiative/ Workshop
ARNAVUTKÖY	Anadolu	0	0	0	0	1	0	1	0	1	0	1	0	1	1	1	1
	Arnavutköy Merkez	0	0	0	0	1	1	0	0	1	0	0	1	0	0	1	1
	Hacımköy	0	0	1	0	1	1	0	0	0	0	0	0	1	0	1	1
	İslambey	0	0	1	0	1	1	1	0	0	1	1	1	1	0	1	1
	Mustafa Kemal Paşa	0	0	0	0	1	1	1	0	1	0	0	1	1	0	1	1
	Yunus Emre	0	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1
AVCILAR	Ambarlı	1	0	1	0	1	1	0	0	1	1	0	1	1	1	1	0
	Denizköşkler	1	0	0	0	1	1	0	0	0	0	0	1	1	1	1	0
	Mustafa Kemalpaşa	0	1	0	0	1	0	1	0	0	0	0	1	1	1	1	0
	Tahtakale	1	1	1	0	1	0	1	0	1	0	0	1	1	0	1	0
BAĞCILAR	Barbaros	1	0	0	0	1	1	1	1	0	0	1	1	1	1	1	0
	Çınar	0	1	0	0	1	1	1	1	0	0	0	1	1	1	1	0
	15 Temmuz	0	1	1	0	1	1	1	1	1	1	0	1	1	1	1	0
	Fatih	0	1	1	0	1	1	1	1	0	1	0	1	1	1	1	0
	Demirkapı	0	1	0	0	1	1	1	1	0	0	0	1	1	1	1	0
	Kazım Karabekir	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0
BAHÇELİEVLER	Kemalpaşa	0	1	1	0	1	1	1	1	0	1	0	1	1	1	1	0
	Yavuz Selim	0	1	1	0	1	1	1	1	0	1	0	1	1	1	1	0
	100.yıl	0	1	1	0	1	0	0	1	1	0	0	1	1	1	1	0
	Hürriyet	1	1	0	0	1	1	1	1	1	0	0	1	1	1	0	1
	Soğanlı	1	0	1	0	1	1	1	1	0	1	0	1	1	1	0	1
	Şirinevler	0	1	1	0	1	1	0	1	0	1	0	1	1	1	0	1
	Zafer	1	1	0	0	1	1	1	1	0	0	0	1	1	1	0	1

Table 5.3 (continued)

BAŞAKŞEHİR	Altınşehir	1	0	1	0	1	1	1	1	0	0	1	0	1	0	0	1	8
	Güvercintepe	1	1	1	0	1	1	1	1	0	0	1	0	1	0	0	1	9
	Şahintepe	1	0	1	0	1	1	1	1	0	0	1	0	1	0	0	1	8
	Zıya Gökalp	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	1	5
	Piyalepaşa	0	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0	11
BEYOĞLU	Yenişehir	0	1	1	0	1	1	0	1	0	0	0	0	1	0	0	0	6
	Bülbul	0	0	1	0	1	1	1	1	1	0	0	0	1	0	0	0	7
	Çukur	0	0	0	0	1	1	1	1	0	0	0	0	1	0	0	0	5
	Cihangir	0	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	4
	Kılıçlı Paşa	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3
ESENLER	Birlik	0	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	10
	Davutpaşa	0	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	9
	Fatih	0	1	1	1	1	1	1	1	0	1	0	0	1	1	1	1	11
	Havaalanı	0	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	10
	Minar Sinan	0	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	10
ESENİYURT	Nine Hatun	0	1	1	1	1	1	1	1	0	1	0	0	1	1	1	1	11
	Turgut Reis	0	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	10
	Akçaburgaz	0	0	1	0	1	1	1	0	1	1	1	1	1	0	1	1	10
	Bağlarçeşme	0	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	12
	Çınar	0	1	0	0	1	1	1	1	0	0	0	1	1	1	1	1	9
FATİH	İncirtepe	0	1	0	0	1	1	1	1	1	0	0	0	1	1	1	1	9
	İnönü	0	1	0	0	1	1	1	1	1	0	0	1	1	1	1	1	10
	Mehterçeşme	0	1	1	0	1	0	1	1	0	1	0	1	1	1	1	1	10
	Örnek	0	1	0	0	1	1	1	1	1	0	0	0	1	1	1	1	9
	Pınar	0	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	12
FATİH	Süleymaniye	0	1	0	0	1	1	0	1	0	0	0	1	1	1	1	1	8
	Zafer	0	0	1	0	1	0	0	1	0	1	0	0	0	1	1	1	6
	Balat	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
	Cibali	1	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	4
	Yavuz Sinan	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
FATİH	Molla Gürani	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	4
	Akşemsettin	0	0	1	0	0	1	0	0	0	1	0	0	1	0	0	0	4
	Ali Kuşçu	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	3
	Aksaray	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	5
	Karaşürük	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	3

Table 5.3 (continued)

FATİH	Koca Mustafa Paşa	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	Katip Kasım	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	Meşihpaşa	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
	Mimar Kemalettin	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	Nişanca	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3
	Saraç İshak	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
	Muhsine Hatun	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	Barbaros Hayrettin	0	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	7
	Karadeniz	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	9
	Karayolları	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	9
	Kazım Karabekir	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	8
	Güneştepe	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	8
	Mareşal Çakmak	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	8
GÜNGÖREN	Sanayi	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	9
	Tozkoşan	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7
	Çağlayan	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	13
KAĞITHANE	Çeliktepe	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	7
	Hürriyet	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6
	Merkez	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	11
KÜÇÜKÇEKMECE	Atatürk	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	9
	Mehmet Akif	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	10
	Yarınburgaz	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6
SULTANGAZİ	Kanarya	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	13
	Cennet	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	10
	Sultançiftliği	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	8
ZEYTİNBURNU	Gazi	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	9
	Zübeyde Hanım	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	7
	İsmetpaşa	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	9
ZEYTİNBURNU	Gökaltı	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6
	Yaşlıtepe	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	7
	Nuri Paşa	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6
ZEYTİNBURNU	Sümer	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	9

*EWE: Extreme Weather Events, SE: Storm Events, FE: Flood Events, HE: Hail Events

As a result of the analyses, it has been observed that certain neighborhoods and regions in Istanbul are more vulnerable to hazards by spatially examining the regions where Syrian migrants live intensively, climatic risks, and urban components that can play a momentous role in alleviating these risks. The total vulnerability score according to the identified variables is calculated as 15. Accordingly, the neighborhoods in Fatih mostly scored between 1 and 5 (average: 2.6), the lowest score level, and were found to have the least environmental vulnerability among all neighborhoods.

Arnavutköy, Avcılar, and Zeytinburnu districts are relatively less affected by climatic factors. The average scores of the neighborhoods in these districts are respectively 7.3, 6.75, and 7, although they are below the average score of 7.5 for all neighborhoods. Therefore, it can be concluded that these districts also experience an average level of vulnerability. At the district level, the districts with the highest level of vulnerability (above the average score of 7.5 and a minimum score of 9) are Bağcılar, Bahçelievler, Esenler, Esenyurt, Kağıthane, and Küçükçekmece.

In addition to the findings at the district level, the scoring for a total of 90 neighborhoods revealed the neighborhoods in Istanbul with the highest vulnerability for migrants when the places where migrants live densely and the exposure to climatic hazards are combined. In order to identify the neighborhoods where the fieldwork would be conducted, one or two neighborhoods with a score of 10 or above were selected from districts with a high average score. Exceptionally, although the average score of the Beyoğlu district was low, the Piyalepaşa neighborhood was included in the field study as it showed a different result from the other district neighborhoods with 11 points. In total, 12 neighborhoods from 7 districts were identified as the most vulnerable areas and selected for fieldwork (Figure 5.5).

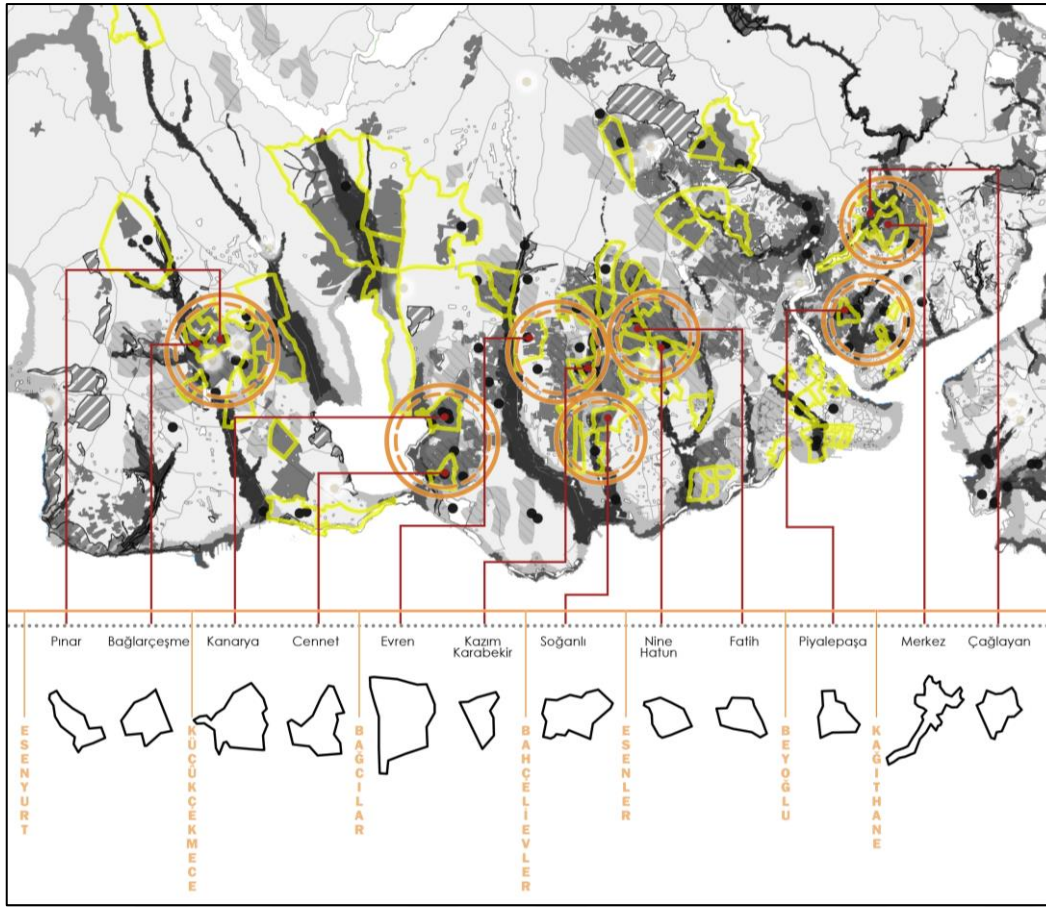


Figure 5.5 The most vulnerable neighborhoods identified for fieldwork

When the living spaces of Syrians in Istanbul and environmental vulnerability factors overlap, these neighborhoods emerge as the areas posing the highest risk as a result of both spatial and quantitative analysis. By categorizing the map data as negative and positive, the effects whose presence causes risk are expressed in dark tones, while the effects whose absence causes risk are expressed in light tones (Figure 5.5). Thus, the overlapping darker negative effects for densely populated neighborhoods inhabited by Syrian migrants also support the data in Table 5.3.

5.2.2 The Findings of Field Study

5.2.2.1 Demographic Information of the Participants

Table 5.4 presents the summary of the basic information for participant immigrants. In the study conducted with 60 respondents, interviews were mostly conducted with young or middle-aged adults. The average number of households is 5.55, considerably higher than the Istanbul average (3.2) (TURKSTAT, 2022). This figure is similar to academic studies conducted with Syrians. A maximum of 14 people and a minimum of 2 people live in a single house. Those with 8 or more households may consist of 2 or 3 families.

Table 5.4 Characteristics of Syrian migrants interviewed in the field

Character Item	General Feature	Details
Migration type	Mass migration	Migration in large masses from different parts of Syria due to the war, 1500-2000 km away from Istanbul
Average age	Mostly young and middle-aged adults	29% for the age from 18 to 24, 28% from 35-44, 25% from 25 to 34, 18% over 45
Average households	Above the average of Istanbul (>3.33)	The average number of households is 5.55. Highest 14 people - Lowest 2 people
Education level	Medium education level	The rate of graduates from high school is 41.7%, from middle school 25%, from primary school 20%, from university 10%, and 3.3% are illiterate.
Monthly total income	Close to minimum wage*	The total amount of money earned by all households is 5501-11000 TL (On January 10 th : 293 \$; 273 € - 587\$; 546 € / On April 5 th : 286 \$; 261 € - 572 \$; 523 €)
Form of migration	Long-term or permanent	Be willing to stay longer and live in Turkey for an average period of 8 years. Minimum 2 and maximum 12 years
Work change	Mostly community and personal service jobs	Workers in the service sector with low incomes
Housing tenure	Renters	Participants are all tenants
Average rent	Low rent values	50% pays between 2501-5000 TL, 31.7% pays 2500 TL or below

*Minimum wage was 8,506.80 TL (The calculation based on the exchange rate is applied to the start and end date of the fieldwork: (January 10th) 453.06 \$; 422.41 € - (April 5th) 442.60 \$; 404.12 € during the period which the interviews were going on.

Education level is at an average level. Middle and high school graduates have the highest rate (Figure 5.6). There are few university graduates, and they are those who completed their education in Syria. The duration of stay of the participant migrants in Turkey covers an average period of 8 years, and most of them stated that they are satisfied with their stay and do not want to return. Most of the migrants stated that they had started working in Turkey even if they had not been employed in Syria, while those working in Syria had changed sectors. They work at low wages, especially in unskilled jobs that do not require qualifications, in the craftsmanship and personal service sectors (e.g., porter, hairdresser, tailor, carpenter, textile worker). Those engaged in the trade who managed to rent a shop to run their own business also said they earn little.

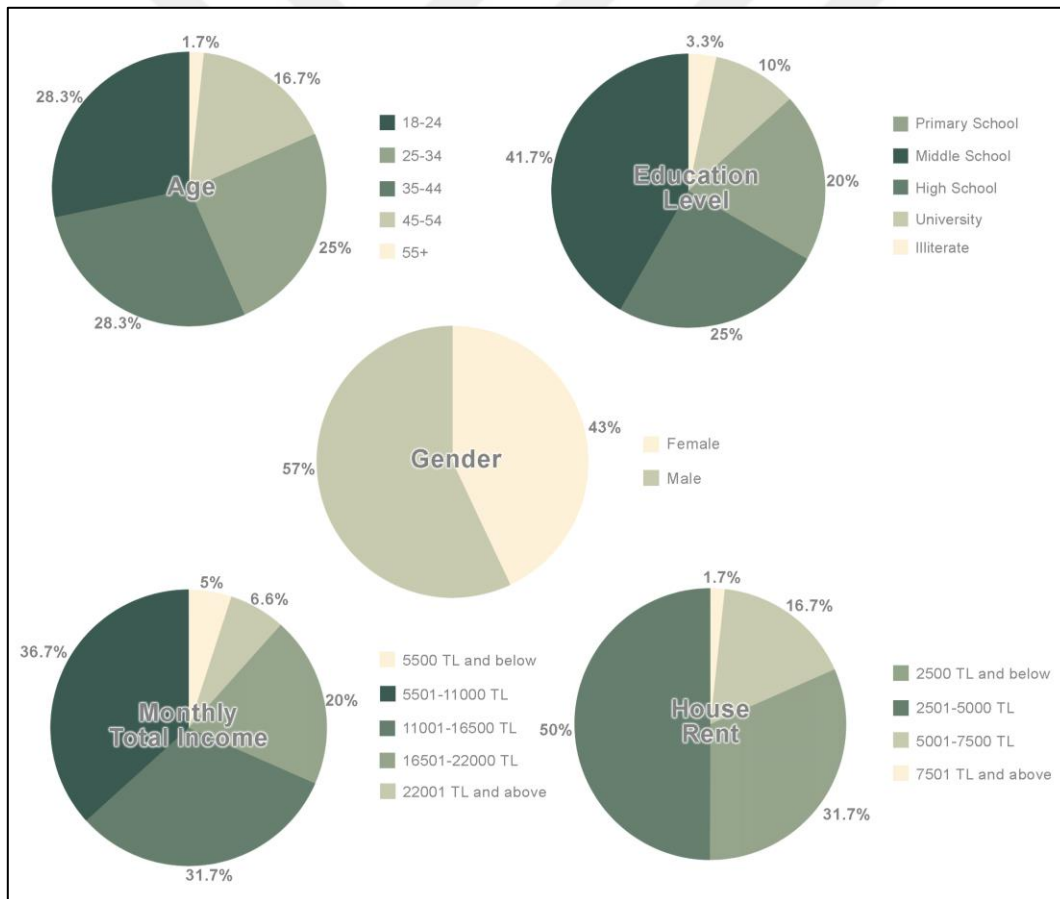


Figure 5.6 Distribution of the interviewees according to their demographic and economic characteristics (Prepared by the author)

The average monthly total household income of the respondents predominantly falls in the 5501-11000 TL range, followed by the 11000-16500 TL range (Figure 5.6). This range is slightly below and a little above the minimum wage. In terms of exchange rates, based on two dates during the fieldwork period, income ranges between \$290 and \$570 or €270 and €520 on average. The minimum wage is constantly changing and depreciating at around \$450 and €410. In the USA, the minimum wage in 2023 was at least \$1160 and, at most \$2400, depending on the state (URL 68). In Europe, the minimum wage varies widely from country to country, with a maximum of €2387 and an average of €1030 (URL 69).

These figures are well above those in Turkey, and considering that migrants generally earn minimum wage and below, it can be assumed that their purchasing power is quite low. With a large number of people in their homes, they are at a disadvantage in terms of financial resources. One of the first and foremost findings of the fieldwork is that the lack of livelihood is a serious problem. Although the study was conducted in different districts and neighborhoods and with people from various occupational groups, the fact that most of the family income is around the minimum wage gives clues to the low-income status of Syrian migrants. All the participants are renters, and 80% of them pay rent below 5000 TL (\$267; €248 - \$260; €238) (Figure 5.6). This means that more than half of the household income is spent on rent.

5.2.2.2 Thematic Analysis of Interviews

All of the interviews were categorized based on the researcher's notes, interview forms, and audio recordings and classified according to the outputs in the literature. Figure 5.7 presents descriptively the outcomes of the second stage of the study, the semi-structured interviews, which emerged from the coding of certain discourses common to the answers of all participants. Accordingly, at the very beginning, there are 4 main research area categories based on literature and 9 key themes within the framework of the questions prepared accordingly.

In the branches, there are 17 sub-themes that group the interview responses. All the boxes seen in relation to these themes are representations of the coded interview outputs. These are defined and colored in two separate groups as outputs that overlap or diverge with case studies and theoretical studies in the literature. From this point of view, in addition to the results that fully support the academic literature, unique discussions that are slightly different for the case of Turkey have emerged.

Table 5.5 shows the frequencies and percentages of all coded outputs. While mostly answers above 50% are included, there are rarely discourses that show striking results, albeit with a lower frequency. For open-ended questions, there is no simple answer, but participants expressed some thoughts and made explanations. For closed-ended questions (yes-no and Likert-type), there are simple answers. For this reason, this table has been prepared according to the people who are the subjects of the questions. Since not every question asked was applicable and meaningful for every individual, the number of people asked changed. The frequency of mention was taken into account in open-ended questions and the frequency of response in closed-ended questions.

In the remainder of the study, firstly, the interview findings are explained descriptively and in detail through data, quotations, statistics, and discourses by adhering to the themes and sub-themes presented by thematic analysis. In this way, it is firstly aimed to provide a clear understanding of all coded outputs, to trace salient details about the interviews, and to perceive the connections within the thematic framework. Then, in the conclusion chapter, a clear and coherent summary of all analysis results and findings is presented in a holistic manner, including contextual interpretations of the thematic analysis and an explanation of the study's links with the literature and its unique aspects.

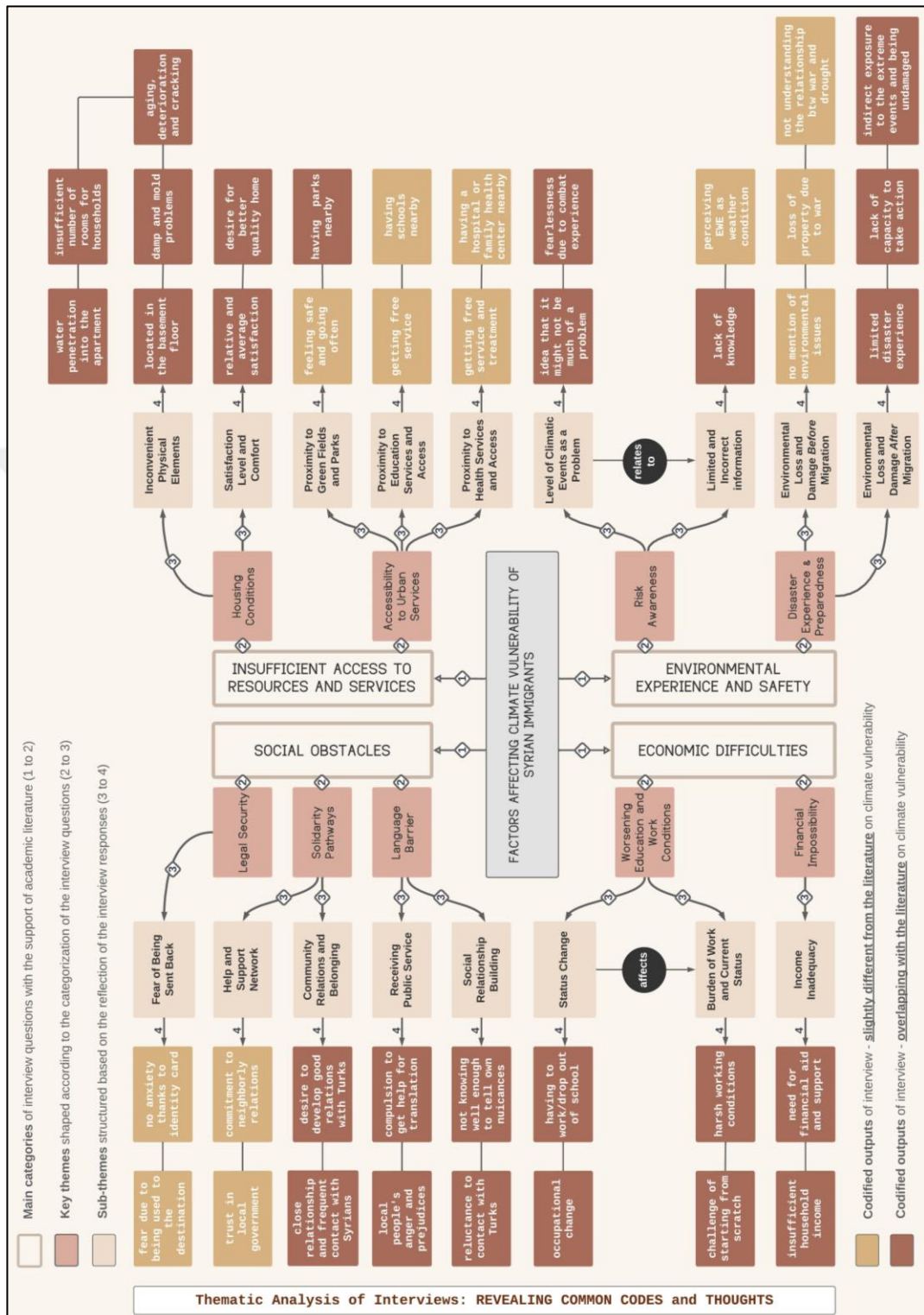


Figure 5.7 Relational diagram of thematic analysis of interviews and codified outputs
(Prepared by the author)

Table 5.5 Total number and percentage of interview outcomes arranged by themes

Main Research Categories	Key Themes	Sub-Themes	Codified Outputs	n frequency of response/ mention	% percentage of response/ mention	Question Type	Explanation (The brackets in the frequency column indicate how many people were asked the question)
SOCIAL OBSTACLES	Legal Security	Fear of Being Sent Back	<i>no anxiety thanks to identity card</i>	32 (53)	60	Open-ended	5 people have no identification card; 2 people have citizenship.
			<i>no wish due to being used to the destination</i>	25 (60)	42	Yes-no	60 people responded.
	Language Barrier	Receiving Public Service	<i>compulsion to help for translation</i>	25 (37)	68	Open-ended	Calculated based on 37 respondents who speak Turkish less than 50%.
			<i>local people's anger and prejudices</i>	25 (60)	42	Open-ended	Those who speak the language are also subjected to racist attitudes.
			<i>not knowing well enough to tell own nuances</i>	27 (37)	73	Open-ended	Calculated based on 37 respondents who speak Turkish less than 50%.
	Social Relationship Building		<i>reluctance to contact with Turks</i>	23 (37)	62	Open-ended	Calculated based on 37 respondents who speak Turkish less than 50%.
			<i>close relationship and frequent contact with Syrians</i>	42 (60)	70	Open-ended	60 people mentioned it.
			<i>desire to develop good relations with Turks</i>	22 (60)	37	Open-ended	60 people mentioned it.
	Solidarity Pathways	Help and Support Network	<i>commitment to neighborhood relations</i>	Syrian: 45/ Turkish: 16 (60)	Syrian: 75/ Turkish: 27	Open-ended	60 people mentioned regarding who can help during a disaster.
			<i>trust in local government</i>	31 (60)	52	Open-ended	60 people mentioned regarding who can help during a disaster.
ECONOMIC DIFFICULTIES	Worsening Education and Work Conditions	Status Change	<i>having to work/drop out of school</i>	20 (25)	80	Open-ended	Calculated based on 25 people who attended school while in Syria.
			<i>occupational change</i>	26 (35)	74	Open-ended	Calculated based on 35 individuals who were working while in Syria.
	Burden of Work and Current Status		<i>harsh working conditions</i>	27 (48)	56	Open-ended	Calculated based on 48 individuals who are/were working in Turkey.
			<i>challenge of starting from scratch</i>	15 (60)	25	Open-ended	60 people mentioned it.
			<i>need for financial aid and support</i>	40 (60)	67	Yes-no	60 people responded.
	Financial Impossibility	Income Inadequacy	<i>insufficient household income</i>	37 (60)	62	Likert scale	60 people responded.

Table 5.5 (continued)

DISASTER EXPERIENCE AND SAFETY	Risk Awareness	Level of Climatic Events as a Problem	<i>idea that it might not be much of a problem</i>	38 (60)	63	Likert scale	60 people responded.
		Limited and Incorrect Information	<i>fearlessness due to combat experience</i>	32 (60)	53	Open-ended	60 people mentioned it.
			<i>lack of knowledge</i>	53 (60)	88	Yes-no	60 people responded.
			<i>perceiving EWE as weather condition</i>	37 (60)	62	Open-ended	60 people mentioned it.
	Disaster Memory and Preparedness	Environmental Loss and Damage Before Migration	<i>not understanding the relationship btw war and drought</i>	56 (60)	93	Likert scale	60 people responded.
			<i>no mention of environmental issues</i>	55 (60)	92	Yes-no	60 people responded.
			<i>loss of property due to war</i>	34 (60)	57	Open-ended	60 people mentioned it.
			<i>limited disaster experience</i>	18 (60)	30	Open-ended	60 people mentioned it.
	Housing Conditions	Environmental Loss and Damage After Migration	<i>indirect exposure to the extreme events and undamaged</i>	14 (60)	23	Open-ended	60 people mentioned it.
			<i>low capacity to take action</i>	60 (60)	100	Open-ended	There are no applicable measures for all 60 people.
INSUFFICIENT ACCESS TO RESOURCES AND SERVICES		Satisfaction Level and Comfort	<i>relative and average satisfaction</i>	38 (60)	63	Likert scale	60 people responded.
			<i>desire for better quality home</i>	34 (60)	57	Open-ended	60 people mentioned it.
		<i>located in the basement floor</i>	22 (60)	37	Open-ended	60 people mentioned it.	
		<i>damp and mold problems</i>	25 (60)	42	Open-ended	60 people mentioned it.	
		<i>aging, deterioration and cracking</i>	42 (60)	70	Open-ended	60 people mentioned it.	
		<i>water penetration into the apartment</i>	16 (25)	64	Open-ended	Calculated for 25 people living in the basement or ground floor.	
		<i>insufficient number of rooms for households</i>	27 (60)	45	Open-ended	60 people mentioned it.	
		<i>feeling safe and going often</i>	35 (60)	58	Yes-no	60 people responded.	
		<i>having parks nearby</i>	48 (60)	80	Yes-no	60 people responded.	
		<i>getting free service</i>	60 (60)	100	Yes-no	Even those without children or with children not at school age responded.	
Accessibility to Urban Services		<i>having schools nearby</i>	50 (60)	83	Yes-no	60 people responded.	
		<i>getting free service and treatment</i>	56 (60)	93	Yes-no	60 people responded.	
		<i>having a hospital or family health center nearby</i>	47 (60)	78	Yes-no	60 people responded.	

5.2.2.3 Legal Security

Responses regarding the fear of being sent back were coded as **“fear due to being used to the destination, no anxiety thanks to an identity card.”** 32 respondents (60% within 53 people with identification cards) stated that they do not have such a fear because they have an ID card. 28 respondents (46.6%) expressed that they were so used to living in Turkey and Istanbul that they were afraid of being sent back. However, there was no mention of any apprehension about being detained or receiving any urban services. However, there was no mention of any fear of being detained or of receiving any urban services. Only 5 people (out of 28) said that they also experienced some fear due to lack of identity.

Expression of a participant who is afraid of being sent back due to getting used to the new place:

“We are accustomed to this place as a family. Our work and home are here now. Our friends and relatives we know from Syria are also here. We also get along with our Turkish neighbors. We have nothing left in Syria. I really do not want to go back.”

Participant 46, female, 20, tailor

The biggest problem posed by the fear of repatriation in terms of climate vulnerability is discussed in climate justice studies as reservations in receiving institutional assistance and public services. In this case study, it was observed that the presence of this concern did not have an impact on the participants' receipt of basic services and did not cause any anxiety, such as fear of going out and going to public institutions. Only 5 participants who do not have an ID card and 3 participants who stated that one of their family members does not have an ID card, for example, mentioned that they could not go to public hospitals for health services, but they are treated in a private hospital by forcing their conditions or are cured by a Syrian doctor they know in the neighborhood. In this respect, having an identity provides a great

advantage in accessing urban-public services. Yet, lack of identification or living in a place other than the city to which Syrian immigrants' registrations belong does not seem to cause excessive legal fears.

5.2.2.4 Solidarity Pathways

Relations established with the community were predominantly defined through ties with Syrian neighbors and relatives. Responses to this theme were coded as **“close relationship and frequent contact with Syrians, desire to develop good relations with Turks.”** Relations with the community were predominantly defined in terms of the ties formed with Syrian neighbors and relatives. 58 participants (98%) stated that they get along well or extremely well with Syrians. Out of the total, 42 participants (70%) reported having significantly stronger interpersonal bonds and a higher frequency of in-person interactions.

39 participants (65%) expressed that they generally get along well with Turks. Nevertheless, it was stated that those who met with Turks frequently were few, and those who stated that they got along well with Turks mostly developed their relations through the actions of meetings due to work or just greetings and conversations with people for everyday needs. There were only 12 respondents (20%) who developed strong neighborly relations with Turks and made home visits. Those who do not get along well with Turks or do not meet them frequently mention the problem of *racism* and therefore prefer not to interact with them. Nevertheless, there are 22 respondents (37%) who would like to be close to Turks and think that they would be happy to get together with them socially.

Expression of a participant who refused to communicate with Turks:

“Some of the Turks are racist. That’s why we don’t want to meet much anyway. We do not prefer to talk to them. We are better with Syrians; we have neighbors and relatives.”

Participant 27, female, 52, housewife

Expression of a participant explaining her close relationship with Syrians and her communication with Turks:

“When we first arrived, Turks treated us really badly. Now it is not that bad, they are not bad when we encounter them, but it still cannot be too sincere. I have many Syrian friends, and we see each other all the time, but I only have one Turkish friend. We see each other occasionally.”

Participant 37, female, 49, housewife

The fact that Syrians have been living together with Turks for many years but still have a weak sense of social belonging may be due to mutual trust and racial differences. The lack of improvement in relations between Turks and Syrians can be attributed to both linguistic difficulties and cultural differences. Despite having a good level of Turkish language skills, social cohesion can be a problem, and Syrians may be limited within their own communities. Close relations with Syrians have also been an effective criterion for location choices during the migration process. The most frequently cited reason (close to 70%) for choosing their neighborhood was the presence of Syrian relatives or friends in the area.

The responses regarding the first people and institutions to receive help in case of emergencies and disasters highlighted the codes of **“commitment to neighborly relations and trust in local government.”** 45 participants (75%) stated that they could ask for help from their Syrian relatives and neighbors, 31 participants (52%) stated that they could get help from the municipality, and 16 participants (27%) stated that they could ask for help from their Turkish neighbors. Trust in central state institutions and civil society organizations is extremely low. Some of the respondents emphasized that the first people who could come to their aid would be their neighbors who are in their immediate surroundings and with whom they meet frequently. There were 8 participants (13%) who stated that only divine power could save them due to their religious beliefs. Although this situation is relatively less frequently mentioned, it is likely to lead to a lack of precaution and absolute waiting in the face of chaotic, dangerous, and large-scale events.

The remarks of a participant who expressed her views on rescue and aid:

“We have Syrian neighbors and relatives. Of course, they can help, but there is nothing much to do after it comes from God. What can you do when everyone is worried about their own troubles? Only God can save us.”

Participant 25, female, 23, housewife

Table 5.6 The relationship between the respondents' relationship with Turks and receiving help and support from them

Relations with the Turks in the neighborhood		Help from Turkish neighbors		
		Yes	No	Total
Very well or good	n	16	23	39
	%	41.0%	58.9%	100.0%
Very bad or bad	n	2	19	21
	%	9.5%	90.5%	100.0%

16 respondents (41% within 39 participants who stated that they get along well with Turks) thought that they could ask for help from them, while 23 of them (59% within 39 participants) thought that they would not be able to get this kind of support (Table 5.6). 19 individuals (90.5% within 21 respondents who experience discord in their relations with the Turkish population) hold the belief that any appeal for assistance made to them will remain unaddressed (Table 5.6). One of the most important factors affecting this attitude is that the relationships established are not intimate and do not have a firm foundation. The trust in neighborly relations is mostly directed toward the Syrian acquaintances with whom they feel closest. The trust in Syrian neighbors to ask for help in emergencies and the belief that they will respond in kind has developed due to their frequent meetings and feelings of nationalist solidarity.

5.2.2.5 Language Barriers

When the impact of the language barrier on receiving public services was measured, it was found that participants with good Turkish level (100% within 23 people who know Turkish more than 50%) did not experience difficulties, but participants with

poor Turkish level (67.6% within 37 people who know Turkish less than 50%) experienced challenges (within Turkish level) due to “**compulsion to help for translation, local people’s anger and prejudices.**” (Table 5.7).

With regard to seeing getting help as a challenge, one participant stated the following:

“For me, not knowing the language is really problematic. I can’t speak Turkish myself; I always have to find an interpreter, or someone in my family who speaks the language has to be with me.”

Participant 41, female, 20, beauty salon worker

The statements regarding the lack of acceptance and prejudices by the local people:

“I speak Turkish well, it is enough, but Turks are a bit judgmental toward us. Even if I speak Turkish, this situation does not change. Even the stares disturb us when we encounter them in the hospital or outside.”

Participant 49, female, 35, housewife

“There is no problem because of the language, but since I am Syrian, they do not treat me well in such places. There are certain prejudices against us. That’s why I always hesitate; I don’t want to go.”

Participant 36, female, 19, shop assistant

Table 5.7 The relationship between language barriers in receiving public services and establishing social relationships according to the participants’ level of Turkish

Turkish Level	Language barrier in benefiting from public services			The impact of Turkish on social relations			
	Yes	No	Total	Positive	Negative	Total	
Good (%50+)	n	0	23	23	21	2	23
	%	0.0%	100.0%	38.3%	91.3%	8.7%	100.0%
Bad (%50-)	n	25	12	37	17	20	37
	%	67.6%	32.4%	61.7%	45.9%	54.1%	100.0%

When the impact of language barrier on establishing social relations was measured, it was found that 21 participants with good Turkish level (91.3% within 23 people who know more than 50%) reported that language knowledge had a positive impact on their social relations, but 20 participants with poor Turkish level (54.1% within 37 people who know less than 50%) had specific difficulties due to “**not knowing well enough to tell own nuisances, reluctance to contact with Turks**” (Tablo 5.8). In addition, 24 participants (65% within 37 people who know less than 50%) stated that although they know little Turkish, with some help (i.e., a family member who knows better, support from translation applications), they can at least maintain daily communication.

The views of two participants who were afraid to communicate and who lagged in social relations because they could not express their problems:

“Because I don’t speak the language, I can’t speak even when I need to. I can never explain my problems. I always need someone to translate. I can’t interact with Turkish customers much; for example, my colleagues always help me.”

Participant 40, female, 32, shop assistant

“I am very embarrassed when I try to talk to someone. I am afraid to talk to Turks. Sometimes they look at me strangely, and I feel embarrassed when I cannot explain myself. Not knowing the language affects me very badly. Living here and not being able to speak their language makes me feel bad. The more we don’t understand each other, the more we stay away.”

Participant 32, female, 28, hairdresser

Table 5.8 The relationship between participants' level of Turkish language proficiency and length of stay in Turkey

Turkish Level		Number of years in Turkey					Total
		1-4	5-9	10-14	<8	≥8	
Good (%50+)	n	0	13	10	4	19	23
	%	0.0%	33.3%	55.6%	23.5%	44.2%	100.0%
Bad (%50-)	n	3	26	8	13	24	37
	%	100.0%	66.7%	44.4%	76.5%	55.8%	100.0%

Table 5.8 provides information on the distribution between Turkish language proficiency level and length of stay in Turkey. Looking at the length of stay in Turkey of those who do not speak Turkish well, 26 of those who have been living in Turkey for 5-9 years (66.7% within 39 people) have a Turkish proficiency level below 50%. 8 of those who have been in Turkey for more than 10 years (44.4% within 18 people) still have a low level of Turkish. The average length of stay in Turkey is 8 years. There are 17 respondents (28.4%) who have been living in the country for less than 8 years and 43 respondents (71.6%) who have been living in the country for 8 or more years. Accordingly, 24 of those who have been in Turkey for more than 8 years (55.8% within 43 people) and 13 of those who have been in Turkey for less than 8 years (76.5% within 17 people) do not speak Turkish at a sufficient level. Therefore, although they have been in Turkey for a long time and do not desire to return, they clearly experience language difficulties. In this respect, it is strongly believed that this is probably a public policy issue and that Syrians do not receive much help in language development.

5.2.2.6 Worsening Education and Working Conditions

Participants expressed in different ways that there were compulsory status changes in the field of profession and education after migration. These difficulties are characterized by the discourses of “**having to work/dropping out of school, occupational change.**” There were 20 participants who stated that they, their children, or siblings had to leave their education unfinished when they came to

Turkey. This figure corresponds to 80% of the 25 respondents who have a declaration about the school in Syria.

The inability to continue education for various reasons after forced migration has placed a serious constraint on the young population. 18 people (90% within 20 participants who dropped out of school) started to work temporarily or permanently. While there are those who left their education incomplete mostly to provide financial support to the family, there are also a small number of participants who could not continue their education due to a lack of Turkish language skills. 26 respondents (74% within 35 participants who had been working in Syria) stated that they had to change their profession, while 7 respondents stated that there was no change, but their situation worsened because they earned less and were more tired.

The expressions of the two participants who had to work after coming to Turkey:

“I was studying Literature in Syria, I wanted to finish university, but it was not possible. After the war, I came here and started working.”

Participant 13, female, 36, pharmacy technician

“When I came here, my education was interrupted. I dropped out of school because I had to support my family. I started working in this beauty parlor, but the money I get is very little, and we have no insurance. It is also a tiring job. Sometimes I have to work until 8 or 9 p.m. I want to find another job.”

Participant 41, female, 20, beauty salon worker

The changed conditions in professional and daily life after migration stand out as challenges defined as **“harsh working conditions and the challenge of starting from scratch.”** 27 respondents (56% within 48 respondents who are/were working in Turkey), complained that working conditions in Turkey have become harsher and described conditions that center around more strenuous work, lower earnings, and negative reactions from people. In addition, 12 respondents (25% within 48 respondents) offered a more positive approach, stating that job opportunities in Turkey were better than in Syria and that they were happier and more satisfied with

their jobs. This depends on a variety of factors such as past experiences, occupational accumulation, level of education, and financial resources from Syria.

The difficulties experienced in the aftermath of forced migration in economic terms show that, from an occupational perspective, working conditions have worsened, and from an educational perspective, the concern for livelihood has become a higher priority (Figure 5.8). Participants' individual assessments focus particularly on the deterioration in working conditions and the abandonment of high school and university education. Specifically, 15 people (25% within 60 participants) who experienced or described all these issues more deeply mentioned that they had started life from scratch and that the most challenging process was to rebuild everything.

One participant highlighted the difficulty of rebuilding their lives:

"I was a shoe seller in Syria. Here I had to work with whatever I could find for a long time. I worked in a restaurant; I worked as a waitress. I was a courier for a while. I could barely open a shop, at last, thank God...I lost my job, my house, my car...We went back 10 years and started our lives from scratch."

Participant 43, male, 42, grocer

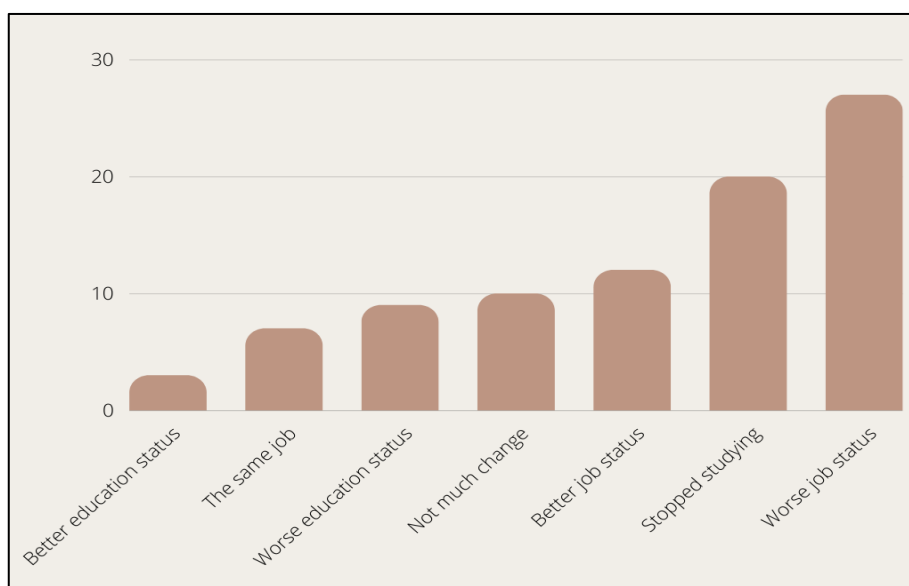


Figure 5.8 Individual assessment of education and job status change

5.2.2.7 Financial Impossibility

The participants' discourses on income inadequacy are concentrated on the statements of **“demand for financial aid and support, insufficient household income.”** Within 60 participants, the number of people who have received assistance from a person or organization before is 27 (45%), and 33 people (55%) have not. The aid received was mostly financial aid from the Red Crescent when they first arrived after the war. With the cessation of this financial support, migrants' demand has increased, and their financial power has been further restricted. Those who continue to receive aid at present are able to receive support in the form of charity or loans from people in their close circles through solidarity. Assessments of the adequacy of household income show that 37 people (62%) think that their household income is not enough, 14 people (23%) think that it is barely enough and they are just trying to get by, and 9 people (15%) think that it is enough. In addition to all these, a total of 40 people (67% within 60 participants) stated that they needed additional financial income or aid support and that an additional income would be good for them.

The remarks of a participant complaining about the insufficiency of household income:

“Well, it is not enough for us at all. There are two of us working at home, but we are a big family, there are 8 of us, it is not enough. When we couldn't make a living anyway, we moved in with my brother-in-law and sister. We have my mother's medical expenses and the children's school expenses. We also need a lot of groceries. Sometimes I do extra work when I can.”

Participant 24, male, 37, porter

Based on the minimum wage, 20 respondents (80% within 25 participants whose total household income is below the minimum wage) and 17 respondents (48.6% within 35 participants whose total household income is above the minimum wage) state that this income is not sufficient at all to meet their needs (Table 5.9).

Considering that the average household size is 5.55, it should be considered quite normal that household income is not sufficient. Of the 35 participants who reported a household income of 8500 TL and above, 27 of them have 2 or more people working in their households. Total household income was reported as a maximum of 25,000 TL. Therefore, it can be inferred that Syrian migrants are mostly employed for minimum wage or much less.

Table 5.9 Individual assessment of financial adequacy according to monthly household income

		Level of income to meet basic needs			Total
		Enough	Slightly enough	Not enough	
Monthly total household income	8500 TL and below	0	5	20	25
	Above 8500 TL	9	9	17	35
Total		9	14	37	60

While financial constraints are a serious obstacle for migrants to meet their daily needs and basic living expenses, they also stand out as one of the reasons for social and environmental maladaptation. Migrants who are forced to spend their incomes only on basic needs are unlikely to prioritize any environmental contribution or adaptation efforts and allocate resources.

5.2.2.8 Housing Conditions

With the questions asked about the housing conditions of the participants, it was tried to understand the quality of the living units that migrants can afford in different district neighborhoods, their satisfaction levels, and the level of housing adaptability to climate change. The responses under the theme of satisfaction level and comfort were labeled as “**relative and average satisfaction and desire for a better quality home.**” Participants defined their level of satisfaction mostly as *somewhat satisfied*. Along with complaints, they are grateful for where they are and somehow live and continue their lives.

Although the housing has physical deficiencies, the most important criterion for the participants is a house that can be a nest for their families and will not strain the budget too much in terms of rent. Therefore, satisfaction level does not indicate that housing conditions are good. Among 60 respondents, there are only 3 people (5%) who are absolutely satisfied with their homes, 38 people (63%) who are somewhat satisfied, and 6 people (10%) who are undecided. A total of 13 people stated (22%) that they were not satisfied with their homes at all. Among all participants, 34 people (57%) stated that they would like to live in a better quality, newer, bigger house and that they could do so if they could afford it.

The deficiencies frequently mentioned in the discourse on the inconvenient physical characteristics of the dwelling were coded as **“located in the basement, damp and mold problems, aging, deterioration and cracking, water penetration into the apartment, insufficient number of rooms for households”** (Figure 5.9). Syrians who have to live in old apartment buildings often experience aging, deterioration, and cracking problems, and 42 people (70%) complained about this. In addition, 22 (37%) participants’ housing units are on the basement floor. They mentioned problems such as lack of light and lack of air. In addition, 16 respondents (64% within 22 people with basement floor flats) reported that water enters the apartment during rainy weather. Similarly, 25 people (42%) mentioned mold and damp problems. Finally, insufficient number of rooms, especially in houses with a high number of households, was another reason for complaint. 27 respondents (45%) with a minimum household size of 4 stated that the number of rooms was not enough for the whole family.

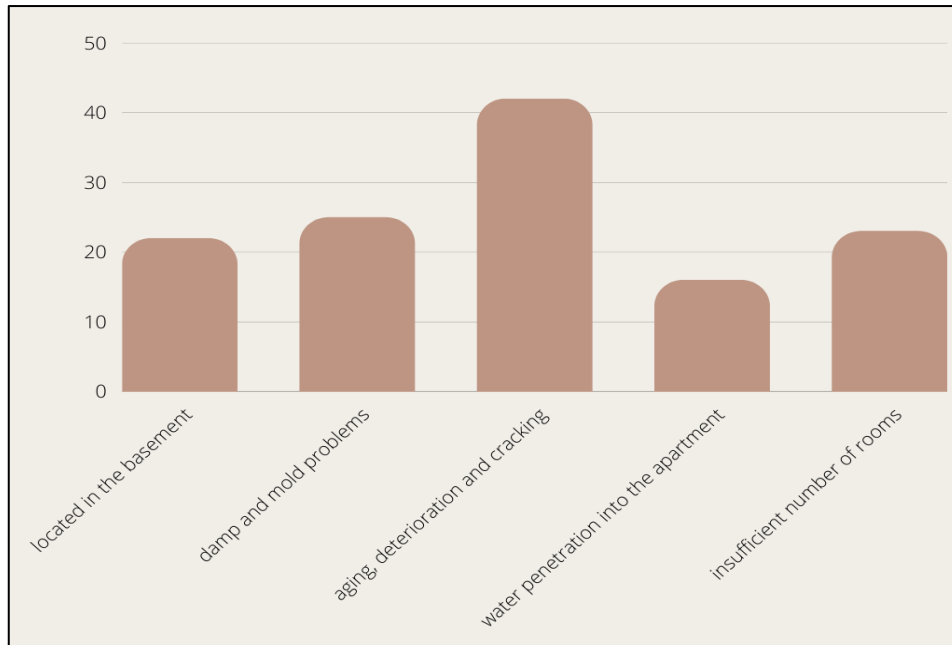


Figure 5.9 Distribution of common complaints about the physical conditions of the dwelling

The overlap between the presence of complaints about any factor independent of satisfaction with housing and the length of stay in Turkey and income status was analyzed (Table 5.10). Of the 51 respondents (85%) who expressed negativity about their housing, 49 (96% within 51 people) have been living in Turkey for a minimum of 5 years. Considering that the average length of stay is 8 years, it is noteworthy that the number of complaints about housing has not decreased, and the problems have not been solved. Among the 18 respondents (30%) who have been living in Turkey for more than 10 years and have become more settled, only 2 of them are absolutely satisfied, and 16 (89% within 18 people) of them still have problems, indicating that the situation has become chronic.

Those who have been living for 10-14 years and those with complaints have changed their homes at least 2 times (average: 2.75 for the 10-14 years group). All respondents with 3 or more house changes have at least one complaint and have been living in Turkey for an average of 8.25 years. 26 participants (43%) in households earning 8500 TL and below have been living in Turkey for 9 years on average and have changed their houses 3.2 times (at least 2 times). Among these respondents,

there are only 2 participants who do not have any complaints. The complaint rate for this group is 92.5%. 34 participants (57%) in households earning 8500 TL and above have been living in Turkey for 7.5 years on average, and the average number of house changes is 2.5. The complaint rate is close to 80% for this group.

Table 5.10 The relationship between those with housing-related complaints and length of stay in Turkey and income status

		Number of years in Turkey				Monthly total household income		
		1-4	5-9	10-14	Total	8500 TL and below	Above 8500 TL	Total
Complaints about the home, regardless of satisfaction level	Yes	2	33	16	51	24	27	51
	No	1	6	2	9	2	7	9
Total		3	39	18	60	26	34	60

5.2.2.9 Accessibility to Urban Services

To measure participants' access to resources and services, questions were asked about accessible services in the vicinity of their dwellings. There are three categories: Proximity to green fields and parks, proximity to education services and access, and proximity to health services and access. Responses under the theme of proximity to green fields and parks were codified as “**feeling safe and going often, having parks nearby.**” 48 of the participants stated that parks were close to their homes, and 35 of them stated that they felt secure. According to the data obtained during the spatial analysis phase of the study for site selection before the interviews, the green space adequacy of the neighborhoods was much below the average in terms of square meters per capita. Therefore, the opinions of a high percentage of participants that green areas are close to their homes were also checked after the interviews with a more detailed spatial analysis (Figure 5.10).

According to the Spatial Plans and Construction Regulation of the Zoning Law No. 3194 published in the Official Gazette No. 29030, approximately 500 meters is considered a walkable distance for playgrounds, playgrounds, open neighborhood sports areas, and parks. Concentric circular thresholds of 500, 750, and 1000 meters were considered in the analysis in order to be able to see the maximum impact zone and the active green areas likely to be used by the interviewees (Figure 5.10). This also enables the perception of distances of 500 meters from the boundary points of the area. This analysis shows that active green areas are fairly limited within a radius of 500 meters from the borders and centers of the neighborhoods.

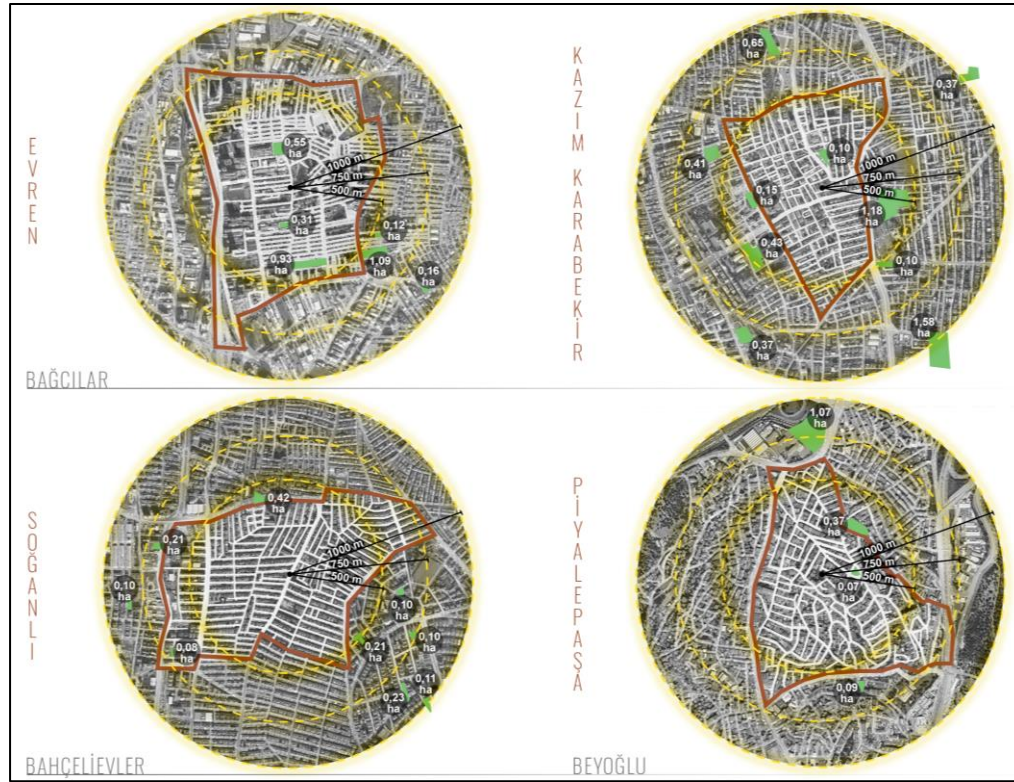


Figure 5.10 Spatial analysis of size and distance parameters of active green areas
(Prepared by the author)

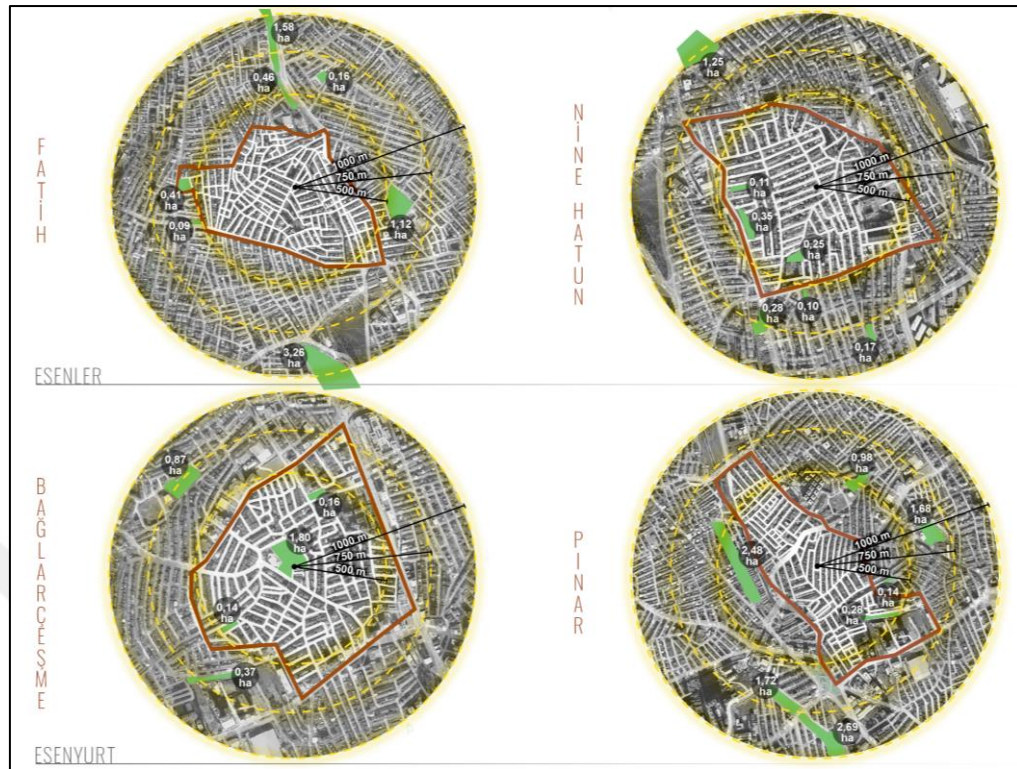


Figure 5.10 (continued) (Prepared by the author)

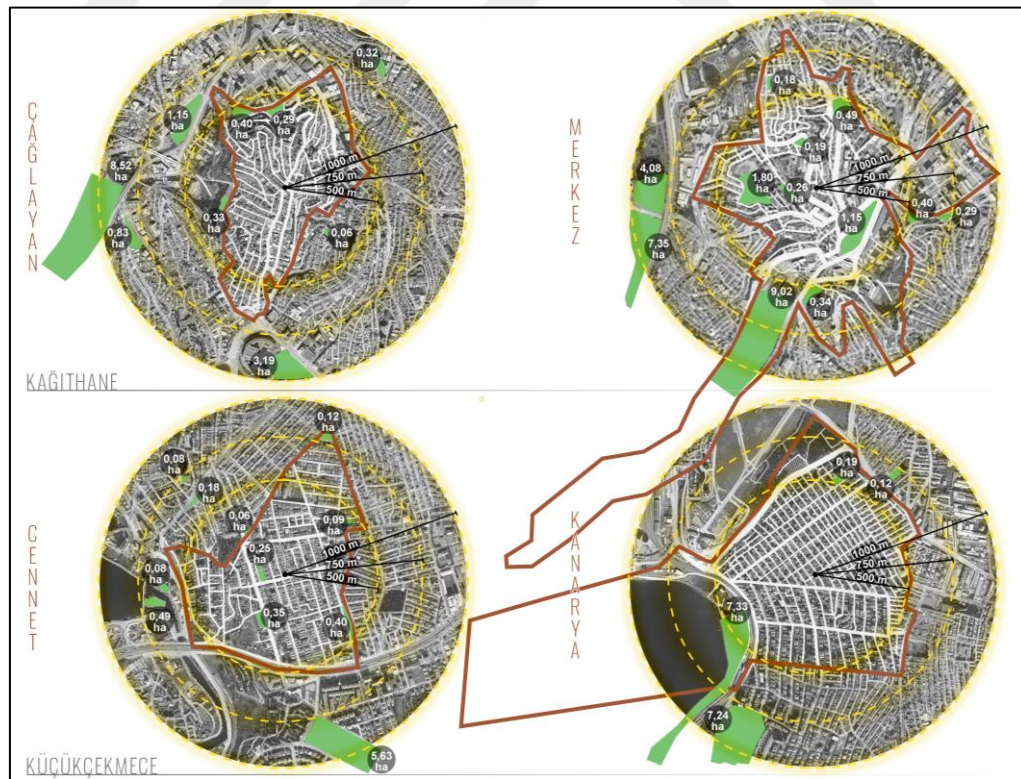


Figure 5.10 (continued) (Prepared by the author)

The Merkez neighborhood of the Kağıthane district has the greenest areas at a distance of 500 meters from the center. It has 3.89 hectares within 500 meters and 25.55 hectares within 1000 meters (Figure 5.10). In the general spatial analysis in the first stage, it is in a better condition in terms of accessibility than the other neighborhoods, as it is above the average among the 90 neighborhoods examined at the beginning, with 7.70 m² per capita. It is the only neighborhood that is above average among the 12 neighborhoods included in the interview phase.

The Çağlayan neighborhood of Kağıthane, like the Merkez neighborhood, has relatively higher quality and more green space due to the large-scale urban parks in its immediate vicinity. Likewise, the Kanarya and Cennet neighborhoods in Küçükçekmece do not offer much green space service at distances of 500 and 750 meters but are supported by large urban parks located nearby (Figure 5.10). When the situation of the other 8 neighborhoods in terms of green space accessibility is examined, it is noticed that there is not enough green space both in number and size within a walkable distance (Figure 5.10).

The results are linearly consistent with the macro-scale map results. It is also confirmed that this service provision is not sufficiently available in the detailed lower-scale maps. This does not coincide with the answers given by the participants. Therefore, the views of the participants may have been conveyed positively due to differences in frequency of use patterns, low expectations, and past habits. The scarcity and lack of access to green spaces, which are critical for mitigating climate change impacts, create a multiplier effect for Syrian migrants.

The responses under the theme of education services and access were encoded as “**getting free service, having schools nearby.**” 50 participants (83%) stated that schools are close by, and 60 of them (100%) stated that children can receive free education in these public schools. The presence of primary, secondary, and high school buildings in the neighborhoods is not lacking, as revealed in the examinations before and after the interview phase and confirmed during the field trips.

For the most part, physical accessibility of education services in Turkey is not a problem in *urban areas*. However, there can be social and economic accessibility challenges for both native and migrant populations. For example, 27 participants (64% within 42 people those with children of school age) expressed that their children face difficulties and worries due to language and cultural problems. This situation causes the most difficulties in understanding their lessons and making friends. In addition, 15 participants (35% within 42 people those with children of school age) stated that even if they send their children to school, they have economic difficulties and frequently mentioned school expenses. Moreover, a participant who stated that his child should have received special education but had to de-enroll due to economic reasons confirms the seriousness of this situation.

Two participants pointed to the economic and social accessibility problems in education:

“My child has a mental disability and uses a device. That is why he needs to go to a private school but believe me; it is very expensive. I sent him to school for 2 years when he came here, but I had to take him out. I started sending him to a regular public school, but he has problems there, too, because he cannot adapt to his friends. We probably won’t send him again at the end of this year.”

Participant 43, male, 42, grocer

“Things have been worse here in terms of education. Mostly because of the language because my children had a hard time at first. Now it is a bit better because they learned Turkish at school, but they still hesitate because of Turkish families and friends. I don’t know, we are used to living here, but we are still different nationalities; it is not easy.”

Participant 49, female, 35, housewife

Responses under the theme of health services and access were encoded as “**getting free service and treatment, having a hospital or family health center nearby.**”

47 of the participants (78%) mentioned having a hospital or family health center near their homes. 56 participants (93%) stated that they could get free service and treatment. 4 people (6.6%) stated that they had access to health services, but since they did not have an ID card, they could get this service from a private hospital for a fee. The situation was expressed in the same way for 3 participants who stated that one of their family members did not have an ID card.

As in the case of education services, it was observed that social problems remain beyond the access problem. 24 participants (40%) expressed their problems related to language and cultural problems in relation to health services. From time to time, they stated that they could be subjected to bullying at the hospital and school because they were Syrian. In addition, the inability to speak Turkish also makes it difficult for them to communicate. This was one of the issues mentioned directly when asking questions about language proficiency.

The expression of a participant who has access to urban services but experiences social distress:

“There is a park and a school nearby. I always take the children to the park. Sometimes they can treat us badly because we are Syrian. I don’t know Turkish very well anyway, my wife knows it better, and the children are just learning it. They don’t have Turkish friends now, and they feel sad and don’t understand why.”

Participant 57, male, 37, cashier

In the spatial analysis phase of the study conducted for site selection before the interviews, vulnerability to health services was determined according to the presence of hospitals providing secondary and tertiary health services in the district. Although full-fledged hospitals serve a large-scale area, at this stage, the accessibility of the neighborhoods to these facilities was examined in detail because being able to reach

the hospital quickly for emergencies would be extremely lifesaving. The vast majority of participants expressed that they did not have any problems in terms of views on financial accessibility. There is a family health center in all 12 neighborhoods where fieldwork was conducted. The transportation of these neighborhoods to major hospitals was evaluated in terms of distance in km and time by car, public transportation, and on foot. For this analysis, the Google Maps application was used, and the time interval of 15:00-16:00 was taken as a basis, considering traffic and public transportation schedules.

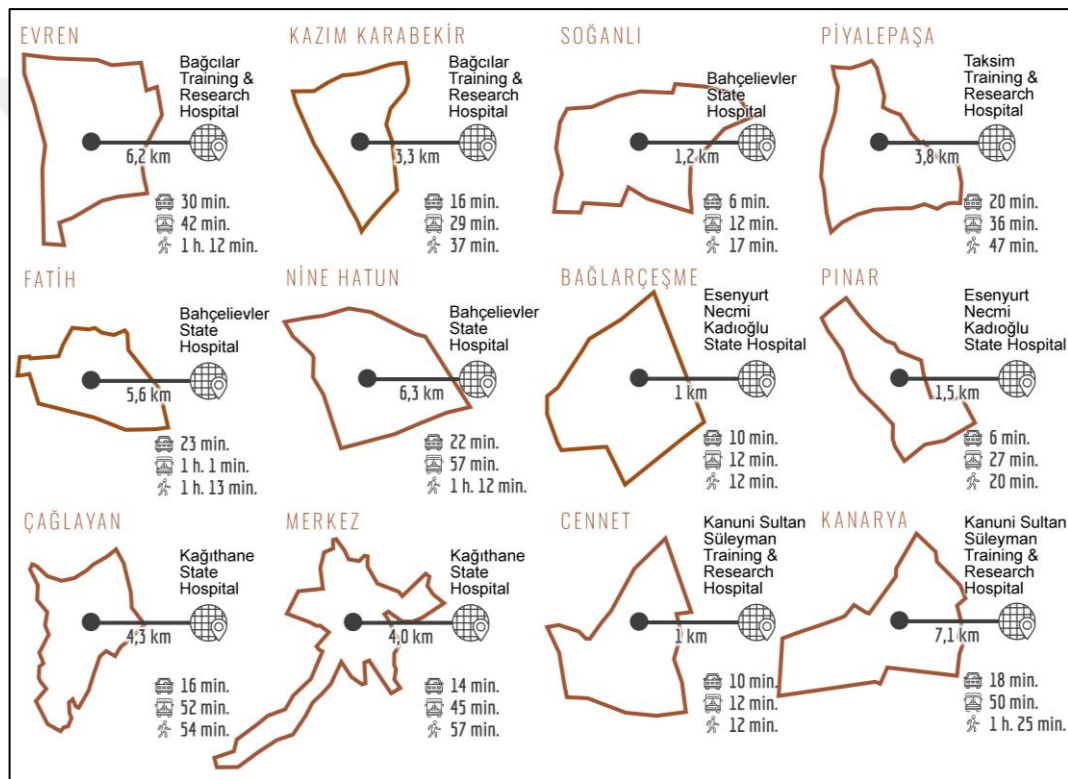


Figure 5.11 Spatiotemporal analysis of neighborhoods from well-equipped hospitals

(Prepared by the author)

Kanarya neighborhood is physically the farthest away from the nearest public hospital, while the Bağlarçeşme neighborhood is the closest (Figure 5.11). It is not within walking distance and is also quite far away by public transportation. On the other hand, the Bağlarçeşme neighborhood can be reached by every means of transportation in a maximum of 12 minutes. This is the result of a locational

advantage. In general, the average time to reach the 12 neighborhoods is 16 minutes by car, 36 minutes by public transportation, and 46 minutes on foot (Figure 5.11). The average distance of hospitals to neighborhoods is approximately 4 km. Considering these averages, it is seen that it is not easy for hospitals in cases requiring comprehensive treatment and emergency intervention for migrants belonging to low-income groups who are expected to have low car ownership. Although the answers given by the participants point to easy physical and financial access, it is possible to say that only free-of-charge treatment services can be confirmed. This may be related to the use of nearby family health centers during daily medical problems, but it may also be related to low expectations.

5.2.2.10 Risk Awareness

The extent to which the participants see climate change-related disasters and weather events as a problem revealed common results, including **“idea that it might not be much of a problem, fearlessness due to combat experience.”** 38 of the participants (63%) do not see such events as a problem and only 7 people (11%) emphasized that they could be very problematic (Figure 5.12). Moreover, 32 participants (53%) who did not see it as a problem specifically emphasized the war. Participants said that the war created much worse consequences and that they experienced fear so deeply. They indicated that they were not afraid of what would happen to them in the future.

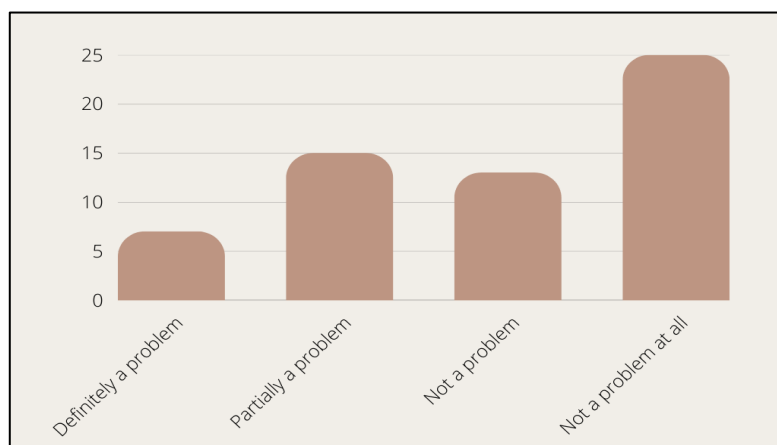


Figure 5.12 Individual assessment of the extent to which EWE are seen as a problem

The expression of a participant expressing his fearlessness because of the battle experience:

“I don’t think these things are a problem at all. This is the weather, it rains, and it shines. After the war, all these are insignificant. We saw bombs exploding; we lost our relatives; we escaped from the chaos. What else can scare us.”

Participant 44, male, 26, carpenter

It was found that the participants had limited knowledge capacity toward climate change and extreme weather events and tended to have misinformation. In this regard, some interview responses were categorized with codes such as **“lack of knowledge and perceiving EWE as weather condition.”** It was observed that 53 of the participants (88%) had no knowledge about climatic events, extreme weather events, disasters, or hazards that may occur in their regions. The other 7 people emphasized that they had information and stated that they sometimes heard about such events from the news and sometimes from their surroundings.

Although a total of 25 participants initially expressed that they had information, it was revealed through follow-up questions that 18 of them limited their knowledge on the subject to regular weather conditions and did not have any information on climatic disasters. Apart from this, there are 19 participants who reported that they only follow the weather forecast directly. Therefore, in the answers of a total of 37 respondents (62%), the perception of weather stands out when it comes to climatic events.

Examples of participants’ views on climatic hazards that may occur in the region:

“Sometimes we hear about situations like storms from the news or social media...I don’t know much about the weather in the neighborhood. There is snow and rain, of course. Sometimes the roads are very waterlogged.”

Participant 14, male, 30, shop assistant

“I know some of the risks in Istanbul, I don’t know the local area, but I have seen storms, I have witnessed hail. I have been caught outside because of my work.”

Participant 24, male, 37, porter

“Maybe it can happen, but not only in this region. It can happen anywhere in Istanbul. After all, it is a weather event. I know as much as we hear on the news, I follow the news.”

Participant 30, female, 25, shop assistant

“I mean, I don’t know much about this area. I try to follow the weather.”

Participant 38, male, 41, cashier

According to the answers given by the participants, the attitudes during the interviews and the impressions of the researcher revealed that the participants were not aware of the risks in the region, some of the participants followed the weather information in Istanbul, but they had no idea about the relationship with climate change and the severity, extent, and damages that weather events could reach. In addition, there were 5 participants who interpreted the perception of risk in the region only through earthquakes.

Whether the participants had access to news and emergency calls in their own language was also measured during the interviews. It is essential to understand whether the language barrier is the limitation in access to information for migrant participants whose Turkish level is below average. As a matter of fact, it was observed that migrants did not have such a restriction. Interviewees stated that they frequently use television and social media tools and that this is how they access information. They are able to follow the events in daily life, sometimes with Arabic subtitles and sometimes directly through Arabic channels and social media accounts.

Participants who saw climate change and extreme weather events as a problem expressed their fears due to flooding and witnessing someone else being injured by a falling object during a storm. In this case, even a limited or one-time experience can change the perception of risk. In the interviews, there were some people who talked about frightening and destructive effects and their limited experience, despite the low frequency.

The words of a participant conveying this aspect of extreme weather events:

“We never know what will happen in Istanbul. The weather changes a lot here. It rains a lot. It feels a bit dangerous to me. I told you that our house was flooded 2-3 years ago, and it rained a lot. So these events are scary; anything can happen.”

Participant 26, female, 48, housewife

Finally, some of the participants emphasized their religious beliefs in their answers. Participants who did not see climatic disasters as a problem said that these are natural events, that they come from God, and that there is nothing to be done. In a way, this emphasizes the notion of fatalism and normalizes the issue for Syrian migrants. In this case, they are likely to fall behind in taking precautions, risk perception, and adaptation.

5.2.2.11 Disaster Experience & Preparedness

Understanding the pre- and post-migration experiences of the participants regarding disasters and weather events related to climate change, their views and perception levels toward these events, and the existence and capacity of the measures they use to cope with them was seen as one of the most important stages of the research. In this way, it is expected that findings on what kind of experiences they have had in their neighborhoods and the extent to which those who have not had such experiences have concerns and information about the future will be revealed.

Frequent responses to questions about the pre-migration period were encoded as “**not understanding the relationship between war and drought, loss of property due to war, no mention of environmental issues.**” 56 of the participants (93%) strongly emphasized that they did not think there was any relationship between the civil war and drought. In addition to comments that the war was solely politically motivated, responses on climate change were quite narrow, and lack of knowledge was again prominent. Only 4 people (6.6%) provided comments suggesting that there might be a relationship and that they might agree with this to some extent.

Only 5 of the participants (8%) stated that they had experienced a real weather-related disaster in Syria. In this sense, it is seen that the experience of extreme weather-related disasters before migration was limited. The first response of the participants to the question asked to understand their pre-migration environmental disaster experience was that their house and themselves were damaged. In the follow-up question, which was directed due to the attitudes during the interview, it was revealed that the reasons for giving this answer were the destruction of houses because of the war, damage to their vehicles, or injuries as the output of memory independent of climatic events. 55 respondents (92%) did not mention an environmental situation at all. Instead, 34 respondents (57%) specifically mentioned having suffered loss and damage in connection with the war.

The answers to the questions for the post-migration process were encoded as “**limited disaster experience, indirect exposure to the extreme weather events and being undamaged, lack of capacity to take action.**” 18 respondents (30%) mentioned that they or one of their family members experienced difficulties related to extreme weather events such as floods, hail, or extreme heat.

There are differentiated experiences such as flooding/infiltration of the house in the basement due to excessive rainfall or flooding (n:11), an elderly family member being affected in very hot weather/blood pressure drop (n:4), being affected by rain, hail, and storms while working outdoors due to their profession (n:3), going to the hospital due to allergies of a child in hot weather (n:1). 14 people shared some key

insights, indicating that they had indirectly witnessed these events even though they did not directly experience any difficulties. For example, there were participants who stated that they witnessed or heard about an event that was not experienced by them but by a neighbor or an acquaintance (n:5).

The expression of a participant who stated that he had no experience of disasters other than war before migration on his indirect exposure after migration:

“I didn’t experience anything like a loss in Istanbul, but here there are much more severe rain and hail events; I witness it. It feels a bit scary.”

Participant 51, male, 32, store clerk

Participants with experience mainly experienced flooding and inundation events. Some of the opinions expressed in this regard are as follows:

“Our house is in the basement. Sometimes water can enter, but especially 1-2 years ago, on a stormy, rainy day, a lot of water penetrated. Our carpets and furniture have all sunk. We went to live with a relative for a few days.”

Participant 23, male, 49, food supplier

“In Syria, my house was in the basement, so when it rained a lot, it would flood...We are also affected by rainfall here. This time our house is on the ground floor, but when it rains again, water enters through the windows, our building is very old. The windows shake when there is a strong breeze.”

Participant 41, female, 20, beauty salon worker

The remarks of a participant who had experience with storms and suffered losses but did not see extreme weather events as a problem:

“There was a storm 2 years ago. It damaged the roof of our shop a bit. Thank God nothing happened to anyone, but it cost us a little bit... I mean, I think it is a normal situation, such things can happen to people, but it doesn’t happen very often anyway. There is nothing to do, after all.”

Participant 50, male, 26, carpenter

The expressions of two participant who found the incidents normal and said that there was no problem:

“I have never had a problem before; they are all normal situations. Of course, there is rain and snow here, but it is quite usual, so it does not cause a problem.”

Participant 52, male, 38, grocer

“The weather in Istanbul is different, it rains a lot in winter. I came across floods here 4-5 years ago but thank God nothing happened. I think the temperature is not as high as it is in Syria...Our building is new so I have no fear, weather changes can always happen. It's normal”

Participant 30, female, 25, store clerk

CHAPTER 6

CONCLUSION

6.1 Overview and Discussion

6.1.1 Summary and Assessment of the Findings

The findings from the analysis of the interviews confirm the factors that influence the climate vulnerability of migrants. The findings, which overlap with the literature, reveal the vulnerability of migrants exposed to social injustice in the face of climate change, although they can be codified in other words in terms of discourse. This case study has reached factual conclusions in terms of factors including the impact of language barriers in accessing services and social relations, weak relations with locals and lack of solidarity, economic insecurity, lack of resources due to low income, difficult working conditions, poor quality of housing and environment, low-risk awareness and climate knowledge.

While some studies strictly confirm resource constraints for vulnerable groups in accessing health, food, and education (Adeola, 2007; Barrett, 2013; Borjas & Crisp, 2005, p.53, 309; Chu & Michael, 2018; Flanagan et al., 2011), the situation in Turkey is marked by tangible and legal access to definite urban services. Thanks to the juridical provisions of the central government, Syrians receiving temporary protection are issued identification cards and have access to health and education facilities in the city in which they are registered. Even though Syrian migrants are not yet recognized as members of Turkish society, they are able to use state-provided resources to receive some essential services. However, this is not a sufficient solution on its own. In addition to the provision of these services, social barriers also play a

prominent role (Adger, 1999; Lee, 2014; Lynn et al., 2011, p.29; Wisner et al., 2004). Lack of language (Güneş Aslan & Güngör, 2019; Kumar, 2011; Morrow, 1999), cultural adaptation and social issues (Chu & Michael, 2018; Flanagan et al., 2011), and financial hardships (Méndez et al., 2020; Xu & Takahashi, 2021) may make it difficult for them to receive these services and legal assistance. In this regard, institutional support has not yet been increased, and fundamental requirements are being met with superficial solutions.

The fear of deportation discourages migrants from participating in social life, requesting assistance, and applying for health and education services (Borjas & Crisp, 2005, p.308; Ziersch et al., 2017). Yet, it has been observed that Syrian migrants do not have such concerns because they are under temporary protection, have lived in Turkey for many years, possess an identity, and have access to fundamental services. This hesitation is more of a concern that they do not wish to return to their country because they have become habituated to Turkey, and there are still perceptions that they are not welcome in the media and the society in which they reside. This concern is slightly distinct and intensifies for migrants who lack an identity. It is evident that the impact of repatriation anxiety on climatic vulnerability varies according to identity ownership and the possession of specific legal rights.

The involvement and social connections within a community, particularly among marginalized populations and individuals who have been displaced, serve as a platform for resilience during periods of calamity and upheaval (Chu & Michael, 2018; Mpanje et al., 2018; Uekusa & Matthewman, 2017). These community engagement and relationships can significantly contribute to the process of recovery and foster collaborative efforts in providing assistance. In terms of assistance and solidarity, migrants always have weakened relationships with local communities (Lee, 2014; Santha et al., 2015) because they also struggle with a sense of belonging. Similar circumstances have been discovered to apply to Syrian migrants. In reality, relations with Turks lack sincerity and solidarity, but significant ties have been forged with Syrians due to their shared history and experiences, and they are

recognized as the first people to whom they can turn for assistance in an emergency. This is a benefit that can facilitate their cooperation and unity in the climate struggle.

According to the findings of the study, the presence of relatives and acquaintances from Syria and the existence of other Syrian migrants have a significant impact on the decision of where to reside. The selection of a location is heavily influenced by the desire for social comfort, the search for previous connections, and the simplicity of forming new relationships. In actuality, these decisions made out of fear of exclusion and insecurity play a major part in reducing vulnerability, as establishing social ties is a crucial indicator of adaptation and strengthens social solidarity. Nevertheless, the ability of migrants to effectively respond and adjust to such crises, both collectively and individually, is constrained (Chu & Michael, 2018; Davies et al., 2018; Méndez et al., 2020; Ziersch et al., 2017; Xu & Takahashi, 2021). This study involving Syrian migrants emphasizes the issue of poor adaptability as seen by the insufficiency of current or potential strategies for avoiding hazardous disasters. The group discussed the recommendation of remaining at home as a protective step in the event of a calamity, with no other viable alternatives being identified.

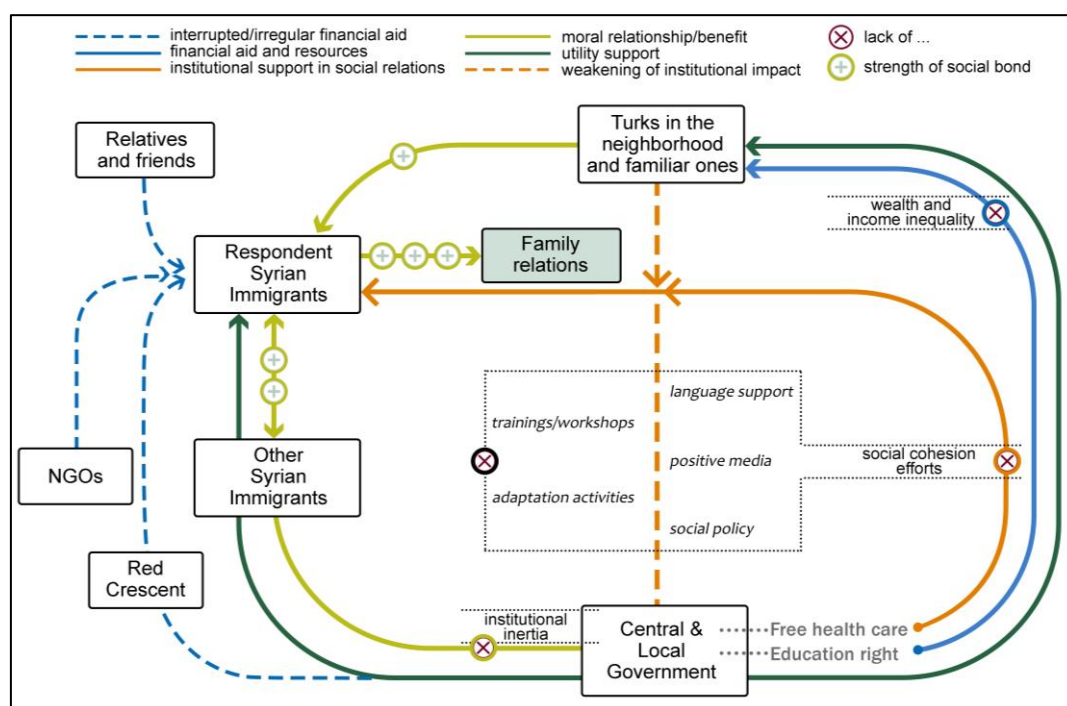


Figure 6.1 Diagram summarizing the social and institutional relations of Syrian immigrants

Migrants from Syria establish close connections primarily within their own communities but have difficulty forming strong bonds with Turks (Figure 6.1). For daily necessities, they are more likely to have formal relationships. Constant contact with Turks and neighborhood ties are not particularly robust. The dread of Turks and fear of exclusion are also the greatest social obstacles. As a consequence of this categorization, exclusion, and lack of trust and community cohesion, migrants face climatic vulnerability challenges. These criteria impair not only social cohesion but also climate adaptation efforts. The language barrier as a significant factor in climate and disaster vulnerability (Flanagan et al., 2011; Maldonado et al., 2015; Uekusa & Matthewman, 2017; Xu & Takahashi, 2021), in addition to the lack of social acceptability, forces this group to remain within its own community. The fact that Syrian migrants continue to struggle with the language despite their prolonged stay in Turkey is indicative of institutional support issues. Although it is acknowledged that the state and civil society have an essential function in the provision of services such as health and education, there are signs that they are absent from language education and social inclusion policies (Figure 6.1).

Trust in state institutions is nearly nonexistent for migrant groups (Chu & Michael, 2018; Donner & Rodríguez, 2008; Kumar, 2011). This has been found to be strongly confirmed for Syrians in Istanbul, whereas attitudes toward local administrations are more moderate. This is not due to simple access and communication with these institutions but rather because it is believed that their work can be monitored on-site and their support for emergencies can be made available in these regions. Since communication between local authorities and migrants is indirect and top-down, there are communication difficulties (Figure 6.1). On the other hand, despite the fact that Syrians cannot participate in decision-making processes and cannot appeal to municipalities for their needs, they believe that the local administration will assist the region in an emergency. They adhere to the standard services provided by these institutions. This is corroborated by respondents who talked about the municipality's interventions after extreme rainfall or storms.

Scientific study on migrants has emphasized the issue of housing access and the prevalence of substandard and unsatisfactory housing conditions as a persistent and fundamental challenge faced by this population (Borjas & Crisp, 2005, p.53,309; Cutter et al., 2003; Donner & Rodríguez, 2008; Gajjar et al., 2019; Islam & Winkel, 2017). This phenomenon serves as a clear indication of the susceptibility to social, environmental, and economic risks in light of ongoing fluctuations in climate patterns. The living units of migrants often entail exposure to environmental hazards within spatially marginalized regions, frequently characterized by concentrated clusters in economically affordable localities (Chu & Michael, 2018; Flanagan et al., 2011; Gajjar et al., 2019; Morrow, 1999). Likewise, the housing problem constitutes both a social vulnerability for Syrian migrants and an element of weakness in the face of climatic disasters (Figure 6.2).

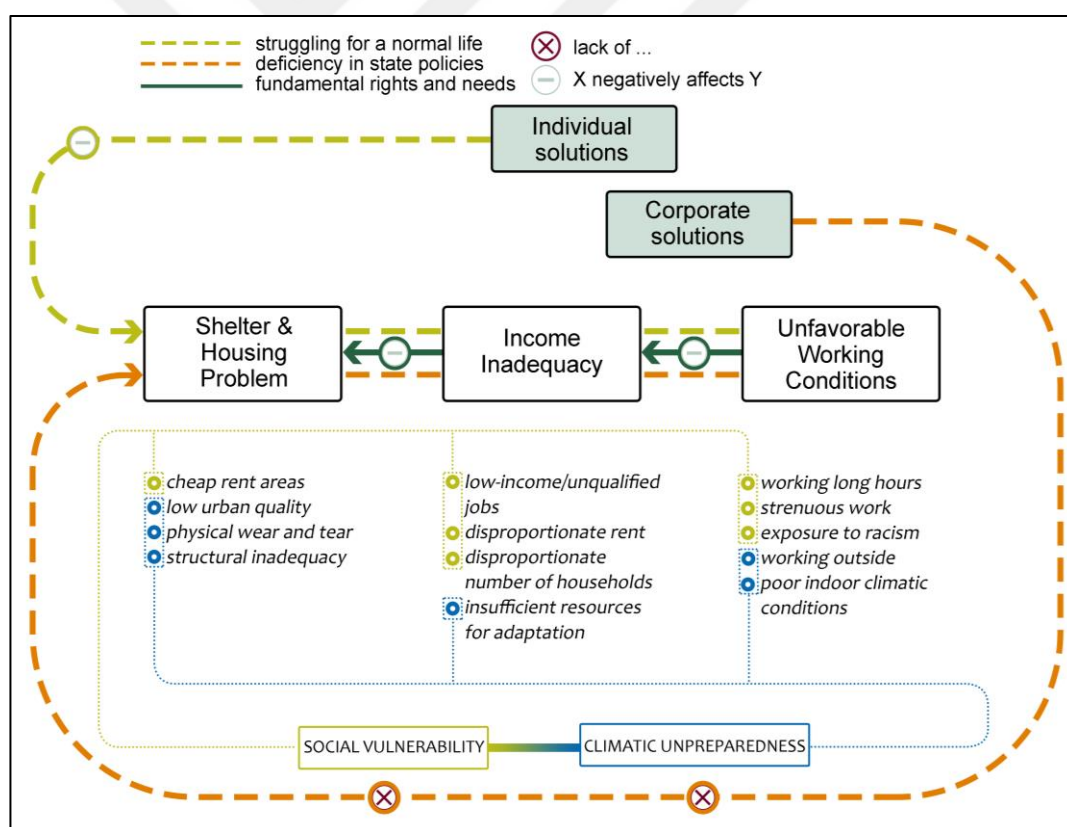


Figure 6.2 Diagram summarizing the correlation of Syrian migrants' housing and working conditions with vulnerabilities and institutionalization

In the interviews, questions about the physical conditions of housing received negative responses. In reality, the majority of participants in Istanbul reside in low-rent neighborhoods. Under typical circumstances, rent and housing issues are an ongoing and major topic on Turkey's agenda. Regrettably, there are no inclusive policies and sustainable housing solutions in Turkey. The scenario is even more dire and uncontrollable for migrants. In this regard, a critical issue arises for which institutional support is ineffective. As a result of the fact that many migrants in Istanbul reside in inexpensive hostel rooms, abandoned or dilapidated areas, and on the streets, the issue goes beyond accommodation complaints.

As with accommodation, institutional support for working conditions is lacking (Figure 6.2). In addition to harsher working conditions, there have been changes in circumstances, such as the inability to continue working and falling out of education. Clearly, solidarity networks do not contribute to this. While Syrian relatives and acquaintances were instrumental in selecting a neighborhood and locating suitable accommodation, this was not the case when it came to finding employment. At the occupational level, outdoor workers and unskilled laborers are more susceptible to climatic events (Lynn et al., 2011, p.24; Revi, 2008). Migrants from Syria are similarly disadvantaged in this regard (Figure 6.2). Syrian individuals residing in Turkey frequently have challenges related to unemployment, often necessitating their engagement in informal jobs characterized by demanding outdoor conditions, such as paper gathering, scrap collecting, and portering (Kaya & Kırac, 2016; Şimşek, 2017). During the conducted interviews, the participants belonging to this particular category were limited in number. However, their individual accounts pertaining to extreme weather events and daily weather conditions served to validate their susceptibility.

Limited household income is a significant barrier to both emergency response and social services (Davies et al., 2018; Donner & Rodríguez, 2008; Eriksen & O'Brien, 2007; Olsson et al., 2014; Sharkey, 2007; Ye & Aldrich, 2020). Participants in this study frequently stated that their income was insufficient even for basic expenses and that they were working in low-income jobs. Migrants are therefore unlikely to

prioritize any environmental contribution or adaptation efforts. The finding that individuals in Turkey have chosen to discontinue their education suggests that the pursuit of revenue-generating has assumed greater importance, relegating education to a secondary role in their lives. Moreover, given that Syrians are generally a low-educated profile and less likely to send their children to school, it is difficult to adjust culturally to society and reach the opportunity to acquire knowledge and awareness about issues such as natural disasters, climate change, and capacity development.

Unlike the participants of previous case studies addressing the climate vulnerability of migrants (See for example Davies et al., 2018; Donner & Rodríguez, 2008, Maldonado et al., 2015; Méndez et al., 2020; Sharkey, 2007; Uekusa & Matthewman, 2017; Xu & Takahashi, 2021), environmental issues were not mentioned at all during the pre-migration period in the interviews with Syrian migrants, but the war-related loss and destruction situation was frequently discussed. The fact that Syrian migrants experienced a distinct extreme event than other migrant groups influences their perspectives on climate change and environmental events. For instance, although it is discussed scientifically that drought is also a contributing factor to the Syrian Civil War (Femia & Werrell, 2012; Kelley et al., 2015), the participants make no sense of this relationship. Migrants from Syria believe that climatic events will not pose an immense problem. This is primarily due to their fatalistic mindset and perceptions of normalization. The overwhelming majority of participants regard the aforementioned occurrences (such as excessive rainfall, floods, storms, and droughts) to be normal and place them in the category of weather. On the other hand, the fact that they have not yet had very traumatic experiences may also explain why they do not view climate change-related events as of great importance.

There are findings that migrants tend to be less informed due to their level of education (Carter-Pokras et al., 2007; Kumar, 2011; Xu & Takahashi, 2021) and that they do not have access to adequate tools for pre-disaster preparedness and adaptation and post-disaster recovery (Davies et al., 2018; Fatemi et al., 2017; Gajjar et al., 2019). In addition, this situation narrows their perception and awareness of

climate change, natural hazards, and urban risks (Adeola, 2007; Maldonado et al., 2015; Mpanje et al. 2018). In parallel with these claims, for Syrian immigrants, the nonchalance toward climate change and related events is also associated with a lack of knowledge and consciousness (Figure 6.3). The most basic example of this is the perception of extreme weather events as a daily weather change and the assessment of the situation by perceiving the disaster as an earthquake despite the usage of the term “climatic disaster.” The fact that people who have experienced an extreme weather event or disaster do not see such events as a problem can be interpreted as their low awareness and lack of knowledge about the dimensions that disasters can potentially reach. This confirms that low levels of education also emerged as an important risk perception factor (Figure 6.3). The migrants’ deficit in knowledge also led to a limited depth of discussions in the interviews.

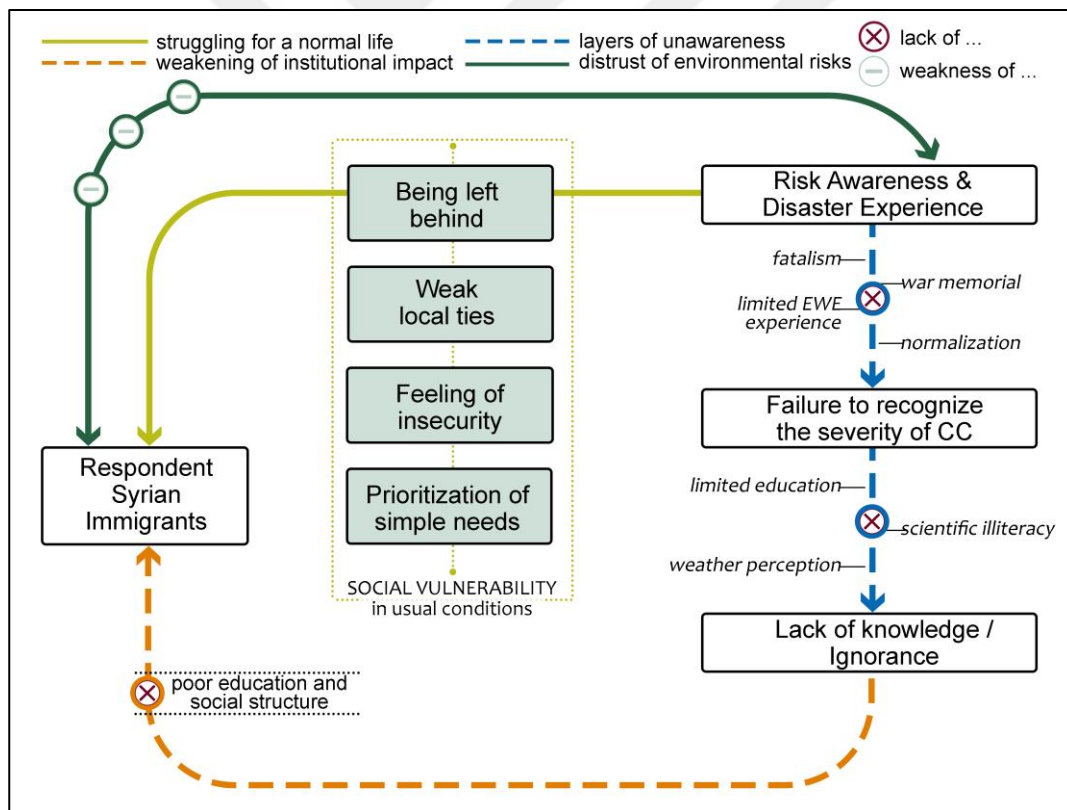


Figure 6.3 Diagram summarizing the level of knowledge, negligence, and awareness of Syrian migrants against environmental hazards

One of the most striking findings of this case study is that migrants believe nothing is worse than battle, even if it is a violent weather event. In other words, a specific past experience of the Syrian migrant group has had an enormous effect on their risk perception (Figure 6.3). Syrian refugees exhibit a notable degree of resilience due to their experiences in conflict-ridden environments, which often lead them to adopt a simplified approach to various aspects of life. Hence, their ability to discern the magnitude of climate change is limited. Indeed, the occurrence of such an incident serves to enhance resilience to a certain extent, while simultaneously impeding efforts towards disaster preparedness. Whilst their mental resilience is worthy, their tendency to disregard warnings and neglect preparations is concerning.

Migrants, who suffer from limited political engagement, inadequate social support, and a lack of recognition, experience a sense of exclusion from society, resulting in feelings of insecurity and a dearth of institutional affiliations (Chu & Michael, 2018; Kumar, 2011; Méndez et al., 2020; Santha et al., 2015). The participants of this study, who define themselves as being left behind in a variety of ways and do not feel secure, wish to continue living in this location. This may be due primarily to their familiarity with the environment and the trauma they suffered in their pasts. During interviews, the reality that Syrian migrants have not yet fully integrated into society and feel apprehensive demonstrates that they are somewhat cognizant of their social fragility. Nevertheless, ignorance of current extreme events in the context of climate change and future risks may render them unprepared and disinterested.

Migrants' socio-economic status, housing conditions, employment opportunities, access to services, and social lives have a significant impact on their vulnerability to climate change. In the case of Turkey, there are institutional support deficits in housing, participation, and language, but support in health and education is of exceptional value. This is primarily facilitated by aid money from international organizations. It should be noted, however, that the issue is not merely a financial one. Governments at the federal, state, and local levels, in collaboration with non-governmental organizations, must develop innovative and targeted instruments for migrant participation and resource management.

Table 6.1 A brief synopsis of the findings derived from the qualitative analysis

Main Finding Themes	Social Vulnerability/Resilience Outcomes	Outcomes on the Impact of Climate Vulnerability
Health and Education	Free service access with institutional support but social barriers persist	• Medical assistance and response in times of disaster and crisis; • Community awareness and social cohesion constraints persist in new generations
Housing and Shelter	Suitable and healthy housing shortage problem in risky, run-down neighborhoods with poor urban services	• Increased vulnerability due to neighborhood and housing preferences; • Possibility of facing severe environmental risks frequently; • Housing not physically adapted to the changing climate
Labor and Employment	Working in unskilled jobs with low income, harsh working conditions or not being able to find a job	• Situations that create sensitivity to climate conditions; • Inability to make adaptation efforts due to lack of income; • Prioritization of resource allocation to basic needs.
Language Barrier	Low level of language skills despite being in Turkey for many years and hindering communication	• Not being able to access emergency calls and news or being informed late; • Weakening local relations and not being able to participate in neighborhood unity; • Being excluded from urban environments and being left without tools in times of crisis
Deportation	Lack of widespread concern about deportation due to identity ownership and living in the same region for many years	• Lack of reservations while receiving urban services; • Not being afraid to go out/get health services in case of a disaster
Lack of Knowledge	Insufficient understanding on the precise delineation, underlying factors, extent, and many facets of climate change and occurrences of extreme weather	• Comfort created by ignorance and lack of awareness; • Failure to adapt and take precautions due to lack of knowledge
Perception of the Problem	Increased social resilience resulting from the war, when individuals perceive a reduced likelihood of encountering severe adversities subsequent to navigating a significant event	• Failure to perceive the severity and seriousness; • Simplify the extent of climate change; • Indifference towards climatic events due to mental resilience
Solidarity and Social Cohesion	The absence of intimate connections with individuals from the local community and the limited bonds of solidarity within their own social group	• Failure to integrate limits unity and solidarity against future risks; • Failure to benefit from aid branches as a result of local relations

Table 6.1 presents the outcomes constructed from the systematic organization of the plentiful findings obtained from the case study conducted within the qualitative research. The table provides a concise summary of the social vulnerability, resilience building, and exposure to climate injustice experienced by Syrian migrants in Istanbul. This research contributes to the emergence of social justice issues and problem areas in Istanbul, Turkey, where Syrian migrants may experience environmental vulnerability as a result of climate injustice. Due to diverse prior traumas and social dynamics, migrants have multiple vulnerabilities that differentiate their susceptibility to climate change. The purpose of this study is to investigate the capacity of migrants to deal with the hazards they confront and may face in the future, as well as the underlying causes of their adaptation indicators.

In conclusion, all three hypotheses of this study were tested and confirmed by the spatial analysis and interview outputs:

The **first hypothesis** is that *migrants will be disproportionately affected by the consequences of climate change due to their multiple vulnerabilities and low adaptive capacities.*

The purpose of the interviews was to understand the current situation of migrants from a variety of perspectives, including legal protection, forms of solidarity, language difficulties, education and employment status, financial difficulties, housing conditions, risk perceptions and knowledge, and disaster experiences. In this regard, it is evident that migrants are not especially aware of climatic hazards, which has an effect on their sense of environmental safety. Neither adaptation measures nor efforts are implemented. Indirectly, these situations are caused by their deteriorating educational and employment status, poor socio-economic and housing conditions, lack of language skills, and fragile interpersonal connections. While institutional measures are already inadequate, migrants' invisibility can exacerbate the situation. Due to their multiple vulnerabilities and limited adaptability, migrants are, therefore, severely exposed to the effects of climate change.

The **second hypothesis** of the study is that *migrants live in the most vulnerable areas of the city in terms of environmental exposure and, thus are at higher risk of loss and damage.*

When the places where migrants live densely are examined, it is seen that both climatic risks are concentrated in these regions, and urban built environment services may be deficient. In addition, it was also found that there are problems related to the demographic structure in their regions that may increase the impacts of climate change. In the assessment of institutional governance, environmental activities are not considered to be lacking for all migrant settlements, but where they are not, they are considered to affect the vulnerability of these areas. Based on all these outputs, migrant settlements are located in risky areas of the city in terms of environmental exposure.

6.1.2 Concluding Remarks on Urban Planning, Public Policy and Equity

While climate justice negotiations consistently refer to the nation-state, North, South, developed countries, developing countries, and development, they should instead be addressed through cooperation at different scales and levels in a multi-stage process where procedural justice choices are enabled (Bulkeley et al., 2013). The primary error in the democratic decision-making process is that elites cause inordinate climate change implications, despite being the least affected group. Herewith, municipal governments, as the entities closest to the citizens, should address the gaps in their attitude and expertise in order to come up with a more inclusive-participatory policy by involving vulnerable groups in planning and decision-making processes.

Individuals who have social vulnerability encounter ongoing challenges in their daily lives and are more susceptible to the impacts of hazardous climatic occurrences. In contrast, migrants have more significant effects as a result of several economic and social reasons. Individuals both have a lack of access to resources and are disregarded in social settings. The inability to integrate into local societies inherently constrains their capacity for adaptability. In addition, it is common for states and municipal governments to dedicate money and prioritize protective initiatives toward elites and indigenous populations. The preservation of migrants' rights is always confined to a narrow space. It is imperative to promptly implement measures aimed at ensuring equitable protection for all individuals against both the immediate and lasting repercussions of a crucial and catastrophic occurrence, such as climate change. The mitigation of climate change and the equitable management of its irreversible consequences need comprehensive action at both local and global levels.

Urban planning is a discipline that encompasses the systematic management of many processes, including identification, analysis, intervention, and decision-making, in addressing local issues pertaining to climate justice. The implementation and execution of this process can be carried out through local government, state policy, and international organizations. According to Puppim de Oliveira (2009), local governments possess the autonomy to independently formulate policy

implementation strategies and provide adaptable solutions in practical scenarios. While it is not feasible to discuss the complete autonomy of local governments in Turkey, there are still certain mechanisms in place that possess the ability to act in urban areas promptly. Urban services that contribute to greenhouse gas emissions can be effectively managed, while also implementing social policies and regulations to address inequities and poverty inside the city.

Local administrations in Turkey prioritize fiscal concerns, and there is a notable lack of engagement in climate change initiatives among these entities. In this particular instance, asserting that the requisite actions to address urban climate justice have not yet been undertaken is accurate. However, the circumstances can be ameliorated by emphasizing a concerted effort that encompasses marginalized populations and concerns of equity. The country of Turkey currently faces a deficiency in specialized urban planning instruments. The inclusion of vulnerable people, particularly migrants, in urban planning to mitigate the impacts of climate change and catastrophic crises is an often overlooked aspect. In truth, the significance of urban planning in the governance and advancement of cities should not solely be evaluated in spatial terms but also in relation to community dynamics and human aspects.

In urban areas, it is primarily the responsibility of urban managers to implement and execute mitigation and adaptation policies. This involves implementing transformative measures in various urban services, including but not limited to energy, transportation, waste management, and zoning plans. Additionally, urban managers must actively engage in the adaptation process by providing enhanced social services. These services may encompass activities such as raising awareness about climate change, identifying vulnerable populations, and facilitating community education initiatives.

The phenomenon of migrants exhibiting a preference for residing among individuals who share similar backgrounds and characteristics can potentially give rise to challenges pertaining to the principles of climate justice. This phenomenon occurs due to the internalization that occurs during the transition process. The concepts of

participation in decision-making processes and community representation are well recognized in the context of urban climate justice (Bulkeley et al., 2014). However, it is important to note that migratory groups are often excluded from these procedures. Consequently, it is anticipated that they will encounter greater disadvantages in the prioritization by the city administration.

The proliferation of sub-aggregation presents an essential barrier to the pursuit of climate justice. The aforementioned circumstance, which presents a notable hazard, reinforces institutional interventions by inciting the formation of closed groups. Migrants frequently reside in regions characterized by vulnerabilities stemming from shortcomings in urban planning, including insufficient infrastructure, non-adherence to building regulations, development over riverbeds, and inadequate provision of urban services. This aligns with the issue of poverty in particular. The local administrations in Turkey have neglected to address these drawbacks in settlement patterns, as they have failed to implement any significant measures to ameliorate them over an extended period of time. Moreover, the neglect to incorporate the principles of participation and multi-actor, which are fundamental aspects of urban planning, have detrimental effects on both the political representation of marginalized individuals and the exclusion of those who possess comprehensive perspectives and innovative solutions.

Through urban planning, managers and experts can support the climate-smart transformation of high-risk and informal areas, conduct multi-hazard risk analyses, use new architectural methods, and make the system more resilient through landscape planning. While some cities have emphasized participation incentives for vulnerable groups in policymaking and implementation (Johnson & Blackburn, 2014), this maturation period has not yet occurred in Turkey, and the problems of these groups have not yet been on the national agenda at the level where politics and policy are intertwined. The field of urban planning does not solely encompass regulatory and remedial responsibilities but rather relies on the involvement of capable players for effective implementation.

If the competent authorities grant local governments greater autonomy and freedom in Turkey, it is likely that urban planning techniques will be expanded. Various measures can be taken to improve the situation of vulnerable groups vis-à-vis environmental risks, such as building better quality buildings and neighborhoods, building in accordance with zoning legislation, planning green belts, urban forests, and afforestation. Indeed, the establishment of partnerships with civil society organizations and the utilization of international financial methods can significantly contribute to the enhancement of process management in a more sustainable, expeditious, and efficient manner. One of the primary challenges faced by vulnerable groups pertains to economic worries and unemployment. In order to address this issue, it is imperative to implement local and regional planning strategies aimed at creating novel opportunities and employment prospects.

As Turkey is experiencing economic contraction, it has difficulties not only in realizing an ecology-based transformation but even in providing basic public services. In fact, one of its most pressing concerns is destitution and unemployment. Most of the problems that citizens currently confront are the result of inequalities, and cities need to do more to address them. This should include reform-oriented and radical solutions that take into consideration the particular needs of marginalized groups. Turkey has significant deficiencies in integrating various segments of society into healthy housing environments, decent employment, and social relationships. The regions where ghettoization is observed from a more egalitarian and publicist perspective should be integrated into the entirety of the city and urban life as one of the first stages of the climate justice-related adaptation model. In addition, efforts should be prioritized to reduce this tendency toward segregation, and social cohesion should be given special consideration. This is a humanitarian preparation for numerous urban crises, including climate change, for all marginalized groups, including migrants, the impoverished, individuals with disabilities, and women.

6.2 Scope, and Limitations of the Study

The main limitations of this study are the limited research on climate change and its impacts on Istanbul, the lack of data on climate justice efforts in other cities to compare the data produced in Istanbul, and the lack of access to secondary data from institutions. In addition, more research will be needed that addresses the interactions at the focus of the study beyond race and ethnicity. This is because for policymakers to identify the most vulnerable populations and develop solutions aimed at overcoming disaster inequalities, the scope needs to be expanded to include other groups.

The concepts of climate governance, climate justice, and climate vulnerability discussed in the scope of this study are limited to Istanbul and Syrian migrants. Nevertheless, this limitation sheds a strong scientific light on the issue of the climate vulnerability of migrants. The social and environmental challenges experienced, and the regional location vulnerabilities are explained in detail in terms of climate justice. Due to temporal, spatial, and material constraints, this study was conducted with a limited number of people through specific interviews. In this respect, it is also known that the systematic approach of the study can be carried out by obtaining more detailed data in a longer and more comprehensive process.

In spatial maps, which is the first stage of the study after the literature section, the climate effects determined at the provincial level may vary regionally due to topographic mobility, vegetation cover and other morphological features on the surface. Although this was taken into consideration in the study, climate data for Istanbul as a whole was used due to the fact that regional models are not frequently produced and are difficult to access. During the second stage of the study, the interviews, the first limitation was the difficulty of traveling to the neighborhoods identified in the Istanbul metropolis. Although this was overcome by the means of the researcher, it is an issue worth considering for a more comprehensive study.

The primary constraint of this study, which impacts the phase of data collecting, is to the group under investigation being a migratory population. Immigrants constitute a social group characterized by significant levels of distrust and a tendency to refrain from sharing data, even when participating in research investigations. In this sense, the accompaniment of a Syrian interpreter who translated the Arabic language helped to overcome this limitation and supported the researcher in establishing a bond of trust. On the contrary, it is believed that the challenge of interacting with those who lack proficiency in Turkish or do not speak the language may have resulted in specific details being concealed or kept undisclosed. The absence of awareness and engagement among Syrian migrants about climate change and environmental concerns was seen as a major obstacle to deepening the discourse.

6.3 Recommendations for Future Research and Institutions

Although climate justice is being discussed more frequently in the academic literature and political environment, it still does not provide a sufficient basis for issues such as just transition, development policy, urban environment, marginalized groups, use of natural resources, future generations, and financial outcomes. There is no search for a holistic, feasible, and sustainable response to climate justice, which has been the focus of international negotiations, sanctions by some states, and academic studies.

The problems of harmonization and integration between plans, which are expected to be taken care of in the discipline of urban planning, require flexible physical planning, considering migration policies and changing populations, and planning in a way that is strong in terms of adaptation, developed in terms of public service capacity, and that the choice of settlement and location is based on population and employment policies. The biggest constraint to addressing climate injustice and mitigating climate change-related impacts is the financial challenge. Where financial circumstances are not favorable, creative solutions can solve the problem. Therefore,

both a mitigation strategy and addressing the adaptation challenges of a disadvantaged community should seek more than just financial resources.

The main recommendations for all these discussions are as follows:

For future academic and scientific studies:

- Future studies need to give feedback to urban climate policies and plans in the context of climate justice and consider social equity issues as part of climate change governance and even as an ethical value.
- More informative and strategy-oriented studies should be done on the role and improvement of urban policy and institutional aspects in regulating social and economic factors for migrants and other marginalized communities.
- There is a need to increase research on what can be done to increase the adaptive capacity of vulnerable communities. Many studies focusing on adaptation-oriented solutions should be put forward by recognizing disadvantaged social groups and anticipating the inequitable structure within this framework.
- Undertaking a process of comparative analysis between migrants and locals is an essential endeavor aimed at effectively discerning injustices and identifying precise proceedings, needs, and demands. By employing this approach, the many issues faced by communities may be resolved with optimal efficiency and effectiveness.
- Future work with migrant groups should examine the social vulnerability of migrants elsewhere and, in particular, the patterns of settlement and social character, with more reference to multiple vulnerabilities. In fact, conducting studies with a migrant group that has been exposed to severe climatic disaster experiences will provide a better understanding of vulnerability patterns. At this point, expanding the types of risk under the heading of disaster hazard will provide a different framework as it will include more factors.

- The interface between poverty and vulnerability should be emphasized, and the implications of multiple vulnerabilities arising from these relationships for reducing vulnerability to climate change should be discussed in future studies.

For all organizations and institutions:

- The solutions offered by states and, subsequently, in Turkey for climate change need to be updated to provide guidance for eliminating the structural consequences of marginalization and erasing forms of social injustice.
- Responsibilities such as participatory approaches, community training, building trust with government institutions, and increasing emergency measures should come into play.
- Solutions and actions to address the problems of communities must be under the umbrella of governance. The issue of climate justice covers a multifaceted and wide range of problematic sectors. Therefore, a multi-level and transversal governance model should be adopted in the healthy execution of this process.
- Politicians and leaders often see things from an economic perspective. As trusted agents of social order, they need to take a pragmatic approach, not only from a strategic and managerial self-interest perspective but also from ethical principles, moral values, and humanitarian sentiments.
- In urban plans and climate action plans, it is important to act with a preliminary evaluation plan in the form of analysis, estimation, and modeling on how, in which areas, and in what way investments will be made, for whom they will benefit, how the benefits will be distributed fairly, and how a solution that is a win-win for everyone will be realized. In doing so, the local context should be considered, and a community-based approach should be presented.

- For communities living in areas of high environmental vulnerability and high social vulnerability, the development of recognition procedures and policies, and planning tools to reduce their risks should be prioritized.
- The tasks, burdens, and benefits of addressing climate justice in cities may and should vary. Nevertheless, this is a discussion on an urban scale, and that these differences emerge as a requirement of the unique methods, skills, and visions of city administrations.
- Multi-level governance and institutional factors have the potential to eliminate substantial obstacles to enhancing social interactions. Work should be done to boost the societal acceptance of migrants and to determine their requirements.
- Local community-based climate change and disaster training or drills can be one of the steps of the solution based on the cooperation of the municipality, civil society organizations, and the public. In addition, making it a part of compulsory education would eliminate financial constraints for governments and could be an effective solution as a service that disadvantaged groups can access more easily.

REFERENCES

- Adeola, F. O. (2007). Nativity and environmental risk perception: An empirical study of native-born and foreign-born residents of USA. *Human Ecology Review*, 14. Retrieved December 12, 2022, from <https://www.researchgate.net/publication/254722745>
- Adger, W. N. (1999). Social vulnerability to climate change and extremes in coastal Vietnam. *World Development*, 27(2), 249-269. [https://doi.org/10.1016/s0305-750x\(98\)00136-3](https://doi.org/10.1016/s0305-750x(98)00136-3)
- Adger, W. N., Paavola, J., Huq, S., & Mace, M. J. (Eds.). (2006). *Fairness in adaptation to climate change*. Massachusetts Institute of Technology (MIT).
- Ajani, A., & van der Geest, K. (2021). Climate change in rural Pakistan: Evidence and experiences from a people-centered perspective. *Sustainability Science*, 16(6), 1999–2011. <https://doi.org/10.1007/s11625-021-01036-4>
- Akkuş, A. (2021). Küresel Güney bağlamında iklim etiği ve iklim adaleti uygulamaları. *Cappadocia Journal of Area Studies (CJAS)*, 3(2), 200–215. <https://doi.org/10.38154/cjas.17>
- Aksoy, Z. (2012). Uluslararası göç ve kültürlerarası iletişim. *Uluslararası Sosyal Araştırmalar Dergisi*, 5(20), 292–303. Retrieved September 5, 2022, from <https://www.sosyalarastirmalar.com/articles/international-migration-and-intercultural-communication.pdf>.
- Aktel, M., & Kaygısız, Ü. (2018). Türkiye'de göç yönetimi. *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 23(2), 579–604. Retrieved September 10, 2022, from <https://dergipark.org.tr/tr/download/article-file/1005847>.
- Amorim-Maia, A. T., Anguelovski, I., Chu, E., & Connolly, J. (2022). Intersectional climate justice: A conceptual pathway for bridging adaptation planning,

transformative action, and social equity. *Urban Climate*, 41, 101053. <https://doi.org/10.1016/j.uclim.2021.101053>

Aslan, Ö. (2022). *Dirençli toplumlardan sorumlu idarelere: İklim temelli aşırı hava olaylarına hak temelli bir yaklaşım*. (Policy brief). İstanbul Politikalar Merkezi. Retrieved May 25, 2023, from <https://ipc.sabanciuniv.edu/Content/Images/CKeditorImages/20220531-10055868.pdf>

Atauz, A. (2022). Göçler, kentler, iklim krizi ve iklim adaleti. Yeşil Gazete. Retrieved May 27, 2023, from <https://yesilgazete.org/gocler-kentler-iklim-krizi-ve-iklim-adaleti/>

Aydın, G., & Genç, F. N. (2023). İklim değişikliğine bağlı afetler ve sürdürülebilir kalkınma. *Çankırı Karatekin Üniversitesi*, 13(2), 563–590. Retrieved July 14, 2023, from <https://dergipark.org.tr/tr/download/article-file/265621>

Balaban, O., Özgür, B., & Sakar, B. (2021). Yerel yönetim ve göç dizisi II. In G. Tuçaltan (Ed.), *İklim Değişikliği, Göç ve Yerel Yönetimler*. SKL International AB.

Balcılar, A. N. (2022). İklim adaleti bağlamında sınırlar ve iklim göçü. *Uluslararası Eşitlik Politikası Dergisi*, 2(1), 118–132. Retrieved May 27, 2023, from <https://dergipark.org.tr/tr/pub/uepd/issue/70405/1133399>

Barrett, S. (2013). Local level climate justice? Adaptation finance and vulnerability reduction. *Global Environmental Change*, 23(6), 1819–1829. <https://doi.org/10.1016/j.gloenvcha.2013.07.015>

Basara, J. B., Basara, H. G., Illston, B. G., & Crawford, K. C. (2010). The impact of the urban heat island during an intense heat wave in Oklahoma City. *Advances in Meteorology*, 2010, 1–10. <https://doi.org/10.1155/2010/230365>

Bayındır Goularas, G. & Sunata, U. (2015). Türk dış politikasında göç ve mülteci rejimi. *Moment Dergi, Göç*, 12-40. Retrieved May 12, 2022, from <https://dergipark.org.tr/tr/pub/moment/issue/36262/409334>

- Baykal, S., & Yılmaz, L. (2020). Yabancılar ve uluslararası koruma kanunu ile göç idaresi bağlamında Türkiye'nin yeni göç siyaseti. *Optimum Ekonomi ve Yönetim Bilimleri Dergisi*, 7(2), 633–652. <https://doi.org/10.17541/optimum.739217>
- Bazeley, P. (2018). *Integrating analyses in mixed methods research*. Sage Publications.
- Berger, A., & Tricot, C. (1992, November). The greenhouse effect. *Surveys in Geophysics*, 13(6), 523–549. <https://doi.org/10.1007/bf01904998>
- Betsill, M. M., & Bulkeley, H. (2006). Cities and the multilevel governance of global climate change. *Global Governance*, 12(2), 141–159. <http://www.jstor.org/stable/27800607>
- Biter, N. (2018). İklim adaletsizliği ve görünmez mülteciler: Çevre/iklim mültecileri. *Toplum ve Hekim*, 33(4), 284–296. Retrieved May 27, 2023, from https://www.belgelik.dr.tr/ToplumHekim/kayit_goster.php?Id=2859
- Boran, I. (2019). On inquiry into climate justice. In T. Jafry (Ed.), *Routledge Handbook of Climate Justice*. Routledge, Taylor & Francis Group. New York. pp. 26–41.
- Borjas, G. J., & Crisp, J. (Eds.). (2005). *Poverty, International Migration and Asylum*. Palgrave Macmillan.
- Bouchard, T. J. (1976). Unobtrusive measures: An inventory of uses. *Sociological Methods & Research*, 4(3), 267–300. <https://doi.org/10.1177/004912417600400301>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77–101. <https://doi.org/10.1191/1478088706qp063oa>

- Bruno., K., Karliner., J., & Brotsky, C. (1999) Greenhouse gangsters vs. Climate justice. Retrieved April 15, 2022, from <https://www.corpwatch.org/sites/default/files/Greenhouse%20Gangsters.pdf>
- Bulkeley, H., & Betsill, M. M. (2013). Revisiting the urban politics of climate change. *Environmental Politics*, 22(1), 136–154. <https://doi.org/10.1080/09644016.2013.755797>
- Bulkeley, H., & Newell, P. J. (2015). *Governing climate change* (2nd ed.). Routledge. Taylor and Francis Group. <https://doi.org/10.4324/9781315758237>
- Bulkeley, H., Carmin, J. A., Castán Broto, V., Edwards, G. A. S., & Fuller, S. (2013). Climate justice and global cities: Mapping the emerging discourses. *Global Environmental Change*, 23(5), 914–925. <https://doi.org/10.1016/j.gloenvcha.2013.05.010>
- Bulkeley, H., Edwards, G. A. S., & Fuller, S. (2014). Contesting climate justice in the city: Examining politics and practice in urban climate change experiments. *Global Environmental Change*, 25, 31–40. <https://doi.org/10.1016/j.gloenvcha.2014.01.009>
- Buzan, T. (2003). *How to mind map: Make the most of your mind and learn to create, organize, and plan*. Thorsons Pub.
- Carter-Pokras, O., Zambrana, R. E., Mora, S. E., & Aaby, K. A. (2007). Emergency preparedness: Knowledge and perceptions of Latin American immigrants. *Journal of Health Care for the Poor and Underserved*, 18(2), 465–481. <https://doi.org/10.1353/hpu.2007.0026>
- Chakraborty, L., Rus, H., Henstra, D., Thistlethwaite, J., & Scott, D. (2020). A place-based socioeconomic status index: Measuring social vulnerability to flood hazards in the context of environmental justice. *International Journal of Disaster Risk Reduction*, 43, 101394. <https://doi.org/10.1016/j.ijdr.2019.101394>

- Chu, E., & Michael, K. (2018). Recognition in urban climate justice: Marginality and exclusion of migrants in Indian cities. *Environment and Urbanization*, 31(1), 139–156. <https://doi.org/10.1177/0956247818814449>
- Cohen, D. A. (2018). *Climate justice and the right to the city*. Philadelphia, PA: Kleinman Center for Energy Policy. Penn Institute for Urban Research, and Perry World House. <http://penniuur.upenn.edu/uploads/media/Cohen.pdf>
- Cordonier Segger, M.-C. (2016). Advancing the Paris agreement on climate change for sustainable development. *Cambridge International Law Journal*, 5(2), 202–237. <https://doi.org/10.4337/cilj.2016.02.03>
- Creswell, J. W. (2007). Five qualitative approaches to inquiry. In J. W. Creswell (Ed.), *Qualitative Inquiry and Research Design: Choosing among Five Approaches*, (pp. 53-84). Thousand Oaks: Sage Publications.
- Cutter, S. L., & Finch, C. (2008). Temporal and spatial changes in social vulnerability to natural hazards. *Proceedings of the National Academy of Sciences*, 105(7), 2301–2306. <https://doi.org/10.1073/pnas.0710375105>
- Cutter, S. L., Boruff, B. J., & Shirley, W. L. (2003). Social vulnerability to environmental hazards. *Social Science Quarterly*, 84(2), 242–261. <https://doi.org/10.1111/1540-6237.8402002>
- Davies, I. P., Haugo, R. D., Robertson, J. C., & Levin, P. S. (2018). The unequal vulnerability of communities of color to wildfire. *PLoS ONE*, 13(11). <https://doi.org/10.1371/journal.pone.0205825>
- DEMP (AFAD). (2017). *Türkiye’deki Suriyelilerin demografik görünümü, yaşam koşulları ve gelecek beklentilerine yönelik saha araştırması*. (Report). Ankara.
- Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods*. New York: McGraw-Hill.

DGMM. (2017). *Türkiye Göç Raporu 2016*. (Report). Ankara: T.C İçişleri Bakanlığı Göç İdaresi Genel Müdürlüğü Yayınları, No: 40.

DGMM. (2022). Temporary Protection [Data file]. Retrieved June 30, 2022, from <https://www.goc.gov.tr/gecici-koruma5638>.

Dinshaw, F. (2015, July 9). *Climate change opened “Gates of Hell,” in Syria: Al Gore*. Canada's National Observer. Retrieved April 2, 2022, from <https://www.nationalobserver.com/2015/07/09/news/climate-change-opened-gates-hell-syria-al-gore>

Doğan, N., Süleymanoğlu-Kürüm, R., Bekaroğlu, E. A., & Cin, M. (2020). *İstanbul göç araştırması*. (Report). İstanbul: İstanbul Büyükşehir Belediyesi.

Doğru, B., & Gökulp Alica, S. S. (2019). İklim mücadelesinde ekonomik, sosyal ve ekolojik adalet. In *İklim Değişikliği Eğitim Modülleri Serisi* (No. 16). İklim Değişikliği Alanında Ortak Çabaların Desteklenmesi Projesi (İklimIN). Retrieved May 27, 2023, from https://www.iklimin.org/wp-content/uploads/egitimler/seri_16.pdf

Donner, W., & Rodriguez, H. (2008). Population composition, migration, and inequality: The influence of demographic changes on disaster risk and vulnerability. *Social Forces*, 87(2), 1089–1114. <https://doi.org/10.1353/sof.0.0141>

Doruk, Ö. (2022, February). *Bozkurt: İklim adaleti üzerine saha notları* (Baykan, Ed.). Yeşil Düşünce Derneği. Retrieved May 27, 2023, from <https://www.yesildusunce.org/wp-content/uploads/2022/02/BOZKURTIKLIM-ADALETI-UZERINE-SAHA-NOTLARI.pdf>

Emrich, C. T., & Cutter, S. L. (2011). Social vulnerability to climate-sensitive hazards in the southern United States. *Weather, Climate, and Society*, 3(3), 193–208. <https://doi.org/10.1175/2011wcas1092.1>

- Erdoğan, M. M., Şener, B., Ağca, M. (2021). *Marmara'nın kent mültecileri: Belediyelerin süreç yönetimi*. (Report). SAM Araştırma, No: 144. İstanbul: Marmara Belediyeler Birliği Kültür Yayınları.
- Erdoğan, M. M. (2015). Türkiye'ye kitlesel göçlerde son ve dev dalga: Suriyeliler. In M. M. Erdoğan & A. Kaya (Eds.), *Türkiye'nin Göç Tarihi 14. Yüzyıldan 21. Yüzyıla Türkiye'ye Göçler*, (pp. 317–347). İstanbul: Bilgi Üniversitesi Yayınları.
- Eriksen, S. H., & O'Brien, K. (2007). Vulnerability, poverty, and the need for sustainable adaptation measures. *Climate Policy*, 7(4), 337–352. <https://doi.org/10.1080/14693062.2007.9685660>
- Fatemi, F., Ardalan, A., Aguirre, B., Mansouri, N., & Mohammadfam, I. (2017). Social vulnerability indicators in disasters: Findings from a systematic review. *International Journal of Disaster Risk Reduction*, 22, 219–227. <https://doi.org/10.1016/j.ijdr.2016.09.006>
- Femia, F., & C. Werrell. (2012). Syria: Climate change, drought, and social unrest. *The Center for Climate and Security*, 29, 2-5. Retrieved February 5, 2023, from <https://climateandsecurity.org/2012/02/syria-climate-change-drought-and-social-unrest/>
- Flanagan, B. E., Gregory, E. W., Hallisey, E. J., Heitgerd, J. L., & Lewis, B. (2011). A social vulnerability index for disaster management. *Journal of Homeland Security and Emergency Management*, 8(1). <https://doi.org/10.2202/1547-7355.1792>
- Folger, R., & Konovsky, M. A. (1989). Effects of procedural and distributive justice on reactions to pay raise decisions. *The Academy of Management Journal*, 32(1), 115–130. <https://doi.org/10.2307/256422>
- Fraser, N. (1997). *Justice interruptus: Critical reflections on the “postsocialist” condition*. New York: Routledge.

- Fraser, N. (2000). Why overcoming prejudice is not enough: A rejoinder to Richard Rorty. *Critical Horizons*, 1(1), 21–28. <https://doi.org/10.1163/156851600510408>
- Frimpong, K., Van Etten E J, E., Oosthuizen, J., & Fannam Nunfam, V. (2016). Heat exposure on farmers in northeast Ghana. *International Journal of Biometeorology*, 61(3), 397–406. <https://doi.org/10.1007/s00484-016-1219-7>
- Gajjar, S. P., Jain, G., Michael, K., & Singh, C. (2019). Entrenched vulnerabilities: evaluating climate justice across development and adaptation responses in Southern India. In K.-K. Bhavnani, J. Foran, P. Kurian, D. Munshi (Eds.), *Climate Futures: Re-imagining Global Climate Justice*, (pp. 200-212). London: Zed Books.
- Garschagen, M., & Romero-Lankao, P. (2015). Exploring the relationships between urbanization trends and climate change vulnerability. *Climatic Change*, 133(1), 37–52. <https://doi.org/10.1007/s10584-013-0812-6>
- Goodman, J. (2009). From global justice to climate justice? Justice ecologism in an era of global warming. *New Political Science*, 31(4), 499–514. <https://doi.org/10.1080/07393140903322570>
- Grimm, N. B., Foster, D., Groffman, P., Grove, J. M., Hopkinson, C. S., Nadelhoffer, K. J., Pataki, D. E., & Peters, D. P. (2008). The changing landscape: Ecosystem responses to urbanization and pollution across climatic and societal gradients. *Frontiers in Ecology and the Environment*, 6(5), 264–272. <https://doi.org/10.1890/070147>
- Güleç, C. (2015). Avrupa Birliği'nin göç politikaları ve Türkiye'ye yansımaları. *Turkish Journal of Tesam Academy*, 2(2), 81–100. Retrieved September 5, 2022, from <https://dergipark.org.tr/tr/download/article-file/138010>.
- Güneş Aslan, G., & Güngör, F. (2019). Suriyeli sığınmacıların Türkiye'ye göç sonrası yaşadığı sorunlar: İstanbul örneği. *OPUS International Journal of Society Researches*, 11(18), 1602-1632. <https://doi.org/10.26466/opus.558512>

- Haase, D., Güneralp, B., Dahiya, B., Bai, X., & Elmqvist, T. (2018). Global Urbanization: Perspectives and Trends. In T. Elmqvist, X. Bai, N. Frantzeskaki, C. Griffith, D. Maddox, T. McPhearson et al. (Comps.), *Urban Planet: Knowledge towards Sustainable Cities*. Cambridge University Press, Cambridge, 19-44.
- Hansen, A., Bi, L., Saniotis, A., & Nitschke, M. (2013). Vulnerability to extreme heat and climate change: Is ethnicity a factor? *Global Health Action*, 6(1), 21364. <https://doi.org/10.3402/gha.v6i0.21364>
- Harding, B. (2016). Finding justice within climate change actions. *Freedom from Fear*, 2016(10), 54–59. <https://doi.org/10.18356/7254edc0-en>
- Hardoy, J. (1995). Urban research in Latin America. In R. Stern (Ed.), *Urban Research in the Developing World, Volume Three: Latin America, Centre for Urban Community Studies*, (pp. 19-41). Canada: University of Toronto Press.
- Hardoy, J., & Pandiella, G. (2009). Urban poverty and vulnerability to climate change in Latin America. *Environment and Urbanization*, 21(1), 203–224. <https://doi.org/10.1177/0956247809103019>
- Hari, V., Dharmasthala, S., Koppa, A., Karmakar, S., & Kumar, R. (2021). Climate hazards are threatening vulnerable migrants in Indian megacities. *Nature Climate Change*, 11, 636–638. <https://doi.org/10.1038/s41558-021-01105-7>
- Harlan, S. L., Pellow, D. N., Robberts, J. T., Bell, S. E., Holt, W. G., & Nagel, J. (2015). Climate justice and inequality. In Riley E. Dunlap, & Robert J. Brulle (Eds.), *Climate change and society*. Oxford University Press, 127-163. <https://doi.org/10.1093/acprof:oso/9780199356102.003.0005>.
- Harvey, D. (1973). *Social justice and the city* (REV-Revised). University of Georgia Press. <http://www.jstor.org/stable/j.ctt46nm9v>

- Hultgren, J., & Stevis, D. (2020). Interrogating socio-ecological coalitions: Environmentalist engagements with labor and immigrants' rights in the United States. *Environmental Politics*, 29(3), 457–478. <https://doi.org/10.1080/09644016.2019.1647752>
- ICC. (2020, June 30). *Sıcak dalgaları konusunda görüş ve öneriler*. [Opinions and recommendations on heat waves]. (Issue brief). İstanbul Kent Konseyi İklim Krizi Çalışma Grubu. Retrieved August 12, 2022, from <https://istanbulkentkonseyi.org.tr/sicak-dalgaları-konusunda-görüş-ve-öneriler/>
- IMM. (2018a). *İstanbul iklim değişikliği eylem planı “Risk, fırsat ve kırılganlık analizi raporu”*. (Report). Çevre Koruma ve Kontrol Daire Başkanlığı. Retrieved September 6, 2022, from https://cevre.ibb.istanbul/wp-content/uploads/2022/05/Risk_Firsat_ve_Kirilganlik_Analiz_Raporu.pdf
- IMM. (2018b). *İstanbul iklim değişikliği eylem planı “İklim senaryoları raporu”*. (Report). Çevre Koruma ve Kontrol Daire Başkanlığı. Retrieved September 6, 2022, from https://cevre.ibb.istanbul/wp-content/uploads/2022/05/Risk_Firsat_ve_Kirilganlik_Analiz_Raporu.pdf
- IMM. (2021). Afet bilgi sistemi (AKOMAS) verileri. Retrieved August 5, 2022, from <https://akom.ibb.istanbul/akomas/sayfalar/30/afetbilgisistemi-akomas>
- IOM. (May-July, 2019). *Baseline assessment in Istanbul province analysis report*. (Report). The UN Migration Agency. Retrieved June 1, 2022, from <https://reliefweb.int/report/turkey/baseline-assessment-istanbul-province-analysis-report-may-july-2019>
- IPCC (2007). Climate change 2007: Impacts, adaptation, and vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. (Report). M. L. Parry, O. F. Canziani, J. P. Palutikof, P. J. van der Linden, & C. E. Hanson (Comps.), Cambridge: Cambridge University Press.
- IPCC. (2014a). Climate change 2014: Impacts, adaptations, and vulnerability. Cambridge University Press: Cambridge, UK.

- IPCC. (2014b). Climate change 2014: Synthesis report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri, & L.A. Meyer (Eds.)]. IPCC, Geneva, Switzerland, 151 pp.
- IPDDE. (2022). *İl afet risk azaltma planı*. [Provincial disaster risk reduction plan]. Governorship of Istanbul. Retrieved July 8, 2022, from https://istanbul.afad.gov.tr/kurumlar/istanbul.afad/PDF-Dosyalar/irap_istanbul.pdf
- Islam, S. N., & Winkel, J. (2017). *Climate change and social inequality*. (Working Paper No. 152). <http://www.ejnetindiaresource.org/ejissues/bali.pdf>
- İçduygu, A., & Yüksek, D. (2012). Rethinking transit migration in Turkey: Reality and re-presentation in the creation of a migratory phenomenon. *Population, Space and Place*, 18(4), 441–456. <https://doi.org/10.1002/psp.633>
- İçduygu, A.; Erder, S., & Gençkaya, Ö. F. (2014). *Türkiye'nin uluslararası göç politikaları, 1923-2023: Ulus-devlet oluşumundan ulus-ötesi dönüşümlere*. İstanbul: Koç Üniversitesi Göç Araştırmalar Merkezi.
- İlhan, A., Yıldız, D., Tokaç, F. Z., Kurnaz, M. L., & Türkeş, M. (2014). *İstanbul'un su krizi ve kolektif çözüm önerileri*. Sosyal Değişim Derneği. Retrieved August 6, 2022, from <https://www.suhakki.org/wp-content/uploads/2015/03/istanbuldasukrizi-arastirma.pdf>
- Jacobs, J. (1961). *The death and life of great American cities*. New York: Random House.
- Jafry, T. (Ed.) (2019). *Routledge handbook of climate justice*. (1st ed.). Routledge, Taylor & Francis Group.

- Johnson, C., & Blackburn, S. (2014). Advocacy for urban resilience: UNISDR's Making Cities Resilient Campaign. *Environment and Urbanization*, 26(1), 29–52. <https://doi.org/10.1177/0956247813518684>
- Kahraman, S., & Tanıyıcı, Ş. (2018). Türkiye’de Suriyeli sığınmacılar örneğinde çok düzeyli göç yönetiřimi. *TESAM Akademi Dergisi*, 235–280. <https://doi.org/10.30626/tesamakademi.393048>
- Kara, M., & Dönmez Kara, C. Ö. (2015). Türkiye’de göç yönetiřimi: Kurumsal yapı ve iřbirlięi. *Giriřimcilik ve Kalkınma Dergisi*, 10(2), 1-25. Retrieved September 5, 2022, from <https://hdl.handle.net/20.500.12428/1469>
- Karakaya, E. (2016). Paris iklim anlařması: İçerięi ve Türkiye üzerine bir deęerlendirme. *Adnan Menderes Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 3(1), 1–12. <https://doi.org/10.30803/adusobed.188842>
- Karasu, M. A., & Aksungur, A. B. (2022). Housing problem of migrants: An evaluation specific for Syrian migrants. *İdealkent*, 13(37), 2027–2050. <https://doi.org/10.31198/idealkent.1108543>
- Kasperson, R. E., & Kasperson, J. E. (2001). Climate change, vulnerability, and social justice. *Stockholm Environment Institute*. Retrieved November 16, 2022, from <https://www.researchgate.net/publication/254610840>
- Kaya Erdoğan, E., Kurtuluř, H., & Yüksek, D. (2022). İstanbul’da göçmenlerin mekâna yerleřme ve tutunma dinamikleri: Beyoęlu örneęi. *İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi, Türkiye’nin Göç Siyaseti Özel Sayısı*, 21, 135-158. <https://doi.org/10.46928/iticusbe.1179133>
- Kaya Örk, E., & Çömez Polat, F. (2022, April 27). Çevresel adaletsizlik mağduru grupların ihtiyaçlarını karřılamada yeni bir model önerisi: Yeřil sosyal hizmet birimleri kurulması. *Toplum ve Sosyal Hizmet*, 33(3), 975–990. <https://doi.org/10.33417/tsh.989897>

- Kaya, A., & Kır  , A. (2016). * stanbul'daki Suriyeli m ltecilere ili kin zarar g rebilirlik de erlendirme raporu*. (Report). Hayata Destek Derne i. <https://www.academia.edu/27523033/>
- Kaya, Y. (2018).  klim de i ikli ine kar ı kentsel kırılganlık:  stanbul i in bir de erlendirme. *International Journal of Social Inquiry*, 11(2), 219-257. Retrieved January 19, 2022, from <https://dergipark.org.tr/tr/download/article-file/606756>
- Kaymaz, C. & Tut, G. (2020).  klim de i ikli i politikalarına y nelik bir  er eve denemesi. *Kent ve  evre Ara tırmaları Dergisi*, 2(1), 78-98 . Retrieved July 15, 2023, from <https://dergipark.org.tr/tr/pub/yykentcevre/issue/55330/736780>
- Kelley, C. P., Mohtadi, S., Cane, M. A., Seager, R., & Kushnir, Y. (2015). Climate change in the fertile crescent and implications of the recent Syrian drought. *Proceedings of the National Academy of Sciences*, 112(11), 3241–3246. <https://doi.org/10.1073/pnas.142153311>
- Kıymaz, E. (2023, February 28).  klim Adaleti Ba lamında Yerel Y neticilerin Kırılganlık Bilinci: SECAP 4. Belediyeler Bulu ması  rne i. *International Journal of Social Humanities Sciences Research (JSHSR)*, 10(92), 260-270. <https://doi.org/10.26450/jshsr.3500>
- Knowlton, K., Rotkin-Ellman, M., King, G., Margolis, H. G., Smith, D., Solomon, G., Trent, R., & English, P. (2009). The 2006 California heat wave: Impacts on hospitalizations and emergency department visits. *Environmental Health Perspectives*, 117(1), 61–67. <https://doi.org/10.1289/ehp.11594>
- Kumar, N. A. (2011). *Vulnerability of migrants and responsiveness of the state: The case of unskilled migrant workers in Kerala, India*. (Working Paper). Kerala, India: NH By-Pass, Padivattom.
- Kuran, C. H. A., Morsut, C., Kruke, B. I., Kr ger, M., Segnestam, L., Orru, K., N vestad, T. O., Airola, M., Ker nen, J., Gabel, F., Hansson, S., & Torpan, S. (2020). Vulnerability and vulnerable groups from an intersectionality

perspective. *International Journal of Disaster Risk Reduction*, 50, 101826.
<https://doi.org/10.1016/j.ijdr.2020.101826>

Külcür, R. (2022, January 16). Toplumsal cinsiyetin çevresel adalet ve iklim değişikliği bağlamında Türkçe literatürdeki görünürlüğü. *İstanbul Üniversitesi Kadın Araştırmaları Dergisi*, 24, 31–54.
<https://doi.org/10.26650/iukad.2021.982531>

Lee, Y. J. (2014, January). Social vulnerability indicators as a sustainable planning tool. *Environmental Impact Assessment Review*, 44, 31–42.
<https://doi.org/10.1016/j.eiar.2013.08.002>

Lefebvre, H. (1996). Right to the city. In E. Kofman & E. Lebas (Eds.), *Writings on cities*, (pp. 61–181). Blackwell: London, UK.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage Publications.

Lynn, K., MacKendrick, K., & Donoghue, E. M. (2011). Social vulnerability and climate change: Synthesis of literature. (General Technical Report: PNW-GTR-838) United States Department of Agriculture. Retrieved May 12, 2022, from <http://collections.unu.edu/eserv/UNU:1836/pdf10570.pdf>

Maldonado, A., Collins, T. W., & Grineski, S. E. (2015, June 5). Hispanic immigrants' vulnerabilities to flood and hurricane hazards in two United States metropolitan areas. *Geographical Review*, 106(1), 109–135.
<https://doi.org/10.1111/j.1931-0846.2015.12103.x>

Mary Robinson Foundation. (July, 2013). *Climate justice baseline*. (Report). Retrieved April 15, 2022, from <https://www.mrfcj.org/media/pdf/ClimateJusticeBaseline.pdf>

Mehdi, B. (Ed.). (2006). *Adapting to climate change: An introduction for Canadian municipalities*. Ottawa: Canadian Climate Impacts and Adaptation Research Network.

- Meikle, M., Wilson, J., & Jafry, T. (2016). Climate justice: Between mammon and mother earth. *International Journal of Climate Change Strategies and Management*, 8(4), 488–504. <https://doi.org/10.1108/ijccsm-06-2015-0089>
- Méndez, M., Flores Haro, G., & Zucker, L. (2020). The (in)visible victims of disaster: Understanding the vulnerability of undocumented Latino/a and indigenous immigrants. *Geoforum*, 116, 50–62. <https://doi.org/10.1016/j.geoforum.2020.07.007>
- Meyer, L. H. (2013). Why historical emissions should count. *Chicago Journal of International Law*, 13(2). Retrieved April 2, 2022, from <https://chicagounbound.uchicago.edu/cjilAvailableat:https://chicagounbound.uchicago.edu/cjil/vol13/iss2/15>
- MoAF (2020). 2019 yılı iklim değerlendirmesi. General Directorate of Meteorology. Ankara.
- MoEUCC. (2021). Türkiye Mekansal Strateji Planı III. Etap Stratejik Çevresel Değerlendirme Raporu. [Turkey Spatial Strategy Plan Phase III Strategic Environmental Assessment Report]. İTÜ Çevre ve Şehircilik Uygulama Araştırma Merkezi. İstanbul.
- Morgül, K., Savaşkan, O., & Mutlu, B. (2021). *İstanbul'da Suriyeli sığınmacılara yönelik algı ve tutumlar: Partizanlık, yabancı karşıtlığı, tehdit algıları ve sosyal temas*. Türkiye Ekonomik Sosyal Siyasal Araştırmalar Vakfı [TÜSES]. Retrieved October 15, 2022, from <https://tr.boell.org/tr/2021/06/10/istanbulda-suriyeli-siginmacilara-yonelik-algi-ve-tutumlar>
- Morrow, B. H. (1999). Identifying and mapping community vulnerability. *Disasters*, 23(1), 1–18. <https://doi.org/10.1111/1467-7717.00102>
- Mpanje, D., Gibbons, P., & McDermott, R. (2018). Social capital in vulnerable urban settings: An analytical framework. *Journal of International Humanitarian Action*, 3(1), 4. <https://doi.org/10.1186/s41018-018-0032-9>

- Newell, P., Srivastava, S., Naess, L. O., Torres Contreras, G. A., & Price, R. (2020). *Towards Transformative Climate Justice: Key Challenges and Future Directions for Research* (No. 540).
- Nixon, R. (2011). *Slow violence and the environmentalism of the poor*. Cambridge, MA: Harvard University Press.
- Novak, D. J., & Gowin, B. (1984). *Learning how to learn*. New York: Cambridge University Press.
- OHCHR. (2020a). Understanding human rights and climate change. (Report). The COP21 to the UNFCCC. Retrieved April 14, 2022, from <https://www.ohchr.org/sites/default/files/Documents/Issues/ClimateChange/COP21.pdf>
- OHCHR. (2020b). Climate change and the right to housing. (Report). Retrieved March 28, 2022, from <https://www.ohchr.org/en/special-procedures/sr-housing/climate-change-and-right-housing>
- Oliver-Smith, A., Cutter, S. L., Warner, K., Corendea, C., & Yuzva, K. (2012). Addressing Loss and Damage In The Context of Social Vulnerability and Resilience. In *UNU-EHS Publication Series* (No. 7). Institute for Environment and Human Security. Retrieved April 25, 2022, from <http://collections.unu.edu/eserv/UNU:1836/pdf10570.pdf>
- Olsson, L., Opondo, M., Tschakert, P., Agrawal, A., Eriksen, S. H., Ma, S., Perch, L. N., ve Zakieldein, S. A. (2014). Livelihoods and Poverty. Field, C. B., V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, M. Chatterjee, K. L. Ebi, Y. O. Estrada, R. C. Genova, B. Girma, E. S. Kissel, A. N. Levy, S. MacCracken, P. R. Mastrandrea, & L. L. White (Eds.). In *Climate change 2014: Impacts, adaptation, and vulnerability, global and sectoral aspects* (pp. 793-832). Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.
- Özlüer, F., Turhan, E., & Erensü, S. (2016). *Türkiye’de ekoloji mücadelesi sınıfsal ve tarihsel arayüzler arasında nereden nereye?* (1st ed.). In S. Erensü, E.

Turhan, F. Özlüer, & A. C. Gündoğan (Comps.), *İsyanın ve Umudun Dip Dalgası*, (pp. 15-42). İstanbul: Tekin Yayınevi. Retrieved May 27, 2023, from <https://www.academia.edu/32003644/>

Paavola, J. & Adger, W. N. (2002). *Justice and adaptation to climate change*. (Working Paper No. 23). Tyndall Centre for Climate Change Research, University of East Anglia, Norwich, UK. Retrieved February 25, 2022, from <https://stuffit.org/carbon/pdf-research/behaviourchange/tyndall-justice-and-climate.pdf>.

Paavola, J., & Adger, W. N. (2006). Fair adaptation to climate change. *Ecological Economics*, 56(4), 594–609. <https://doi.org/10.1016/j.ecolecon.2005.03.015>

Pandey, R., & Jha, S. (2012). Climate vulnerability index-measure of climate change vulnerability to communities: A case of rural Lower Himalaya, India. *Mitigation and Adaptation Strategies for Global Change*, 17(5), 487–506. <https://doi.org/10.1007/s11027-011-9338-2>

Preston, C., & Carr, W. (2018). Recognition justice, climate engineering, and the care approach. *Ethics, Policy & Environment*, 21(3), 308–323. <https://doi.org/10.1080/21550085.2018.1562527>

Preston, I., Banks, N., Hargreaves, K., Kazmierczak, A., Lucas, K., Mayne, R., Downing, C., & Street, R. (2014). *Climate change and social justice: An evidence review* (Report). Joseph Rowntree Foundation. Retrieved March 11, 2022, from <https://www.jrf.org.uk/report/climate-change-and-social-justice-evidence-review>

Puppim de Oliveira, J. A. (2009). The implementation of climate change related policies at the subnational level: An analysis of three countries. *Habitat International*, 33(3), 253–259. <https://doi.org/10.1016/j.habitatint.2008.10.006>

Revi, A. (2008). Climate change risk: An adaptation and mitigation agenda for Indian cities. *Environment and Urbanization*, 20(1), 207–229. <https://doi.org/10.1177/0956247808089157>

- Romero-Lankao, P., & Dodman, D. (2011). Cities in transition: Transforming urban centers from hotbeds of GHG emissions and vulnerability to seedbeds of sustainability and resilience. *Current Opinion in Environmental Sustainability*, 3(3), 113–120. <https://doi.org/10.1016/j.cosust.2011.02.002>
- Rumbach, A. J., & Kudva, N. (2011). Putting people at the center of climate change adaptation plans: A vulnerability approach. *Risk, Hazards & Crisis in Public Policy*, 2(4), 1–23. <https://doi.org/10.2202/1944-4079.1096>
- Salihoğlu, A. (2021, February). *Göç yönetiminde Türkiye: Uluslararası standartlar ve eğilimler ışığında başka bir yaklaşım mümkün mü?* (Report). Uluslararası Mülteci Hakları Derneği. Fatih, İstanbul. Retrieved June 1, 2022, from <https://www.academia.edu/49074806/>
- Salleh, A. (2010). From metabolic rift to “Metabolic value”: Reflections on environmental sociology and the alternative globalization movement. *Organization & Environment*, 23(2), 205–219. <https://doi.org/10.1177/1086026610372134>
- Sanson, A. V., & Burke, S. E. L. (2020). Climate change and children: an issue of intergenerational justice. In N. Balvin & D. Christie (Eds.), *Children and Peace*. Peace Psychology Book Series, (pp. 343–362). Cham: Springer. https://doi.org/10.1007/978-3-030-22176-8_21
- Santha, S. D., Jaswal, S., Sasidevan, D., Datta, K., Khan, A., & Kuruvi, A. (2015). *Climate change, livelihoods, and health inequities: The vulnerability of migrant workers in Indian cities*. (Working Paper No. 16). (pp. 1–62). London, UK: International Institute for Environment and Development.
- Santos, M. (2017). Global justice and environmental governance: An analysis of the Paris Agreement. *Revista Brasileira De Política Internacional* [Brazilian Journal of International Politics], 60(1). <https://doi.org/10.1590/0034-7329201600116>
- Sarıkoç Yıldırım, B. (2020, June 29). Climate justice at the local level. *Politikon: The IAPSS Journal of Political Science*, 45, 7–30. <https://doi.org/10.22151/politikon.45.1>

- Schlosberg, D. (2012). Climate justice and capabilities: A framework for adaptation policy. *Ethics & International Affairs*, 26(4), 445–461. <https://doi.org/https://doi.org/10.1017/S0892679412000615>
- Schlosberg, D., & Collins, L. B. (2014). From environmental to climate justice: Climate change and the discourse of environmental justice. *Wiley Interdisciplinary Reviews (WIREs) Climate Change*, 5(3), 359–374. <https://doi.org/10.1002/wcc.275>
- Sencer, M. & Sencer, Y. (1978). *Toplumsal arařtırmalarda yöntem bilim*. Ankara: Türkiye ve Orta Doęu Amme İdaresi Enstitüsü Yayını.
- Shaherhawasli, K. & Güvençer, E. N. (2021, March). *Suriyeli mülteciler ve Türk toplumu arasındaki uyum: Fırsatlar ve tehditler*. İHH İnsani Yardım Vakfı Arařtırma Merkezi (İNSAMER). Retrieved August 2, 2022, from https://insamer.com/tr/suriyeli-multeciler-ve-turk-toplumu-arasindaki-uyum-firsatlar-ve-tehditler_3788.html
- Sharkey, P. (2007). Survival and death in New Orleans: An empirical look at the human impact of Katrina. *Journal of Black Studies*, 37(4), 482–501. <https://doi.org/10.1177/0021934706296188>
- Shue, H. (1998). Bequeathing hazards: security rights and property rights of future. In M. Dore & T. Mount (Eds.), *Global Environmental Economics: Equity and the Limits to Markets*. Malden, Mass.: Blackwell Pubs., pp. 38-53.
- Shue, H. (1999). Global environment and international inequality. *International Affairs*, 75(3), 531–545. <https://doi.org/10.1111/1468-2346.00092>
- Sicotte, D. M., & Brulle, R. J. (2017). Social movements for environmental justice through the lens of social movement theory. *The Routledge Handbook of Environmental Justice*, 25–36. <https://doi.org/10.4324/9781315678986-3>

- Sovacool, B. K., Kester, J., Noel, L., & de Rubens, G. Z. (2019). Energy injustice and Nordic electric mobility: Inequality, elitism, and externalities in the electrification of vehicle-to-grid (V2G) transport. *Ecological Economics*, 157, 205–217. <https://doi.org/10.1016/j.ecolecon.2018.11.013>
- Stake, R. E. (1995). Data Gathering. In *The art of case study research*, (pp. 49–68). SAGE Publications. Retrieved April 25, 2023, from <https://legacy.oise.utoronto.ca/research/field-centres/ross/ctl1014/Stake1995.pdf>
- Swaine, J. (2009, August 10). *Ban Ki-moon warns of catastrophe without world deal on climate change*. The Telegraph. Retrieved June 7, 2022, from <https://www.telegraph.co.uk/news/earth/environment/climatechange/6004553/Ban-Ki-moon-warns-of-catastrophe-without-world-deal-on-climate-change.html>.
- Şahin, Ü. (2019). *Sıcak dalgaları: İklim değişikliğiyle artan tehdit ve sıcak-sağlık eylem planları*. (Policy Brief). İstanbul Politikalar Merkezi, Sabancı Üniversitesi and Stiftung Mercator. Retrieved July, 20, 2022, from <https://istanbulkentkonseyi.org.tr/wp-content/uploads/2020/11/Sicak-Hava-Dalgaları-Iklim-Degisikligiyle-Artan-Tehdit-ve-Sicak-Saglik-Eylem-Planlari.pdf>
- Şentürk, C. (2020). *Türkiye şehirlerinde Suriyeli göçmenler*. (Policy Brief No. 8). Türkiye ve Uyum Araştırmaları Merkezi Vakfı (Stiftung Zentrum für Türkeistudien und Integrationsforschung) [ZfTI]. Retrieved June 20, 2022, from https://www.koeln-istanbul.de/wp-content/uploads/2020/05/TR-PolicyPaper_8_Syrische_Migration.pdf.
- Şimşek, D. (2017). Göç politikaları ve insan güvenliği: Türkiye’deki Suriyeliler örneği. *Toplum ve Bilim*, 140, 11-27. Retrieved February 5, 2023, from <https://iletisim.com.tr/dergiler/toplum-ve-bilim/3/sayi-140-2017/10009>.
- Şimşek, D., & İçduygu, A. (2017). Uluslararası göç, politika ve güvenlik. *Toplum ve Bilim*, 140, 6-11. Retrieved February 5, 2023, from <https://iletisim.com.tr/dergiler/toplum-ve-bilim/3/sayi-140-2017/10009>.
- Tanyaş, M., Günalay, Y., Aksoy, L., & Küçük, B. (2013). *İstanbul ili afet lojistik planı kılavuzu*. İstanbul Kalkınma Ajansı & Loder Derneği. Retrieved August

5, 2022, from <https://www.istka.org.tr/media/24626/İstanbul-İli-afet-lojistik-planı-kılavuzu.pdf>

Tatgın, E. (2019). İklim adaleti kapsamında toplumsal cinsiyet tartışması. *Kent ve Çevre Araştırmaları Dergisi*, 1(1), 104–118. Retrieved May 27, 2023, from <https://dergipark.org.tr/en/download/article-file/886205>

Thorp, T. M., (2014). *Climate Justice*. Palgrave Macmillan, London, UK. <https://doi.org/10.1057/9781137394644>

Tuğaç, Ç. (2018). İnsan hakları temelinde kentli haklarına ilişkin uluslararası çalışmaların Birleşmiş Milletler iklim değişikliği sözleşmeleriyle ilişkisi. *İnsan Hakları Yıllığı*, 36, 31–74. Retrieved May 27, 2023, from <https://dergipark.org.tr/en/download/article-file/1734147>

Tuncel, G., & Ekici, S. (2019). Göçün siyasal etkisi: Suriyeli göçmenlerin Türkiye'nin siyasal hayatına etkisi. *Birey ve Toplum Sosyal Bilimler Dergisi*, 9(2), 48–72. <https://doi.org/10.20493/birtop.648831>

Turhan, E. (2017). Right here, right now: a call for engaged scholarship on climate justice in Turkey. *New Perspectives on Turkey*, 56, 152–158. <https://doi.org/10.1017/npt.2017.21>

TURKSTAT. (2022). Population of provinces by years 2000-2021 [Data file]. Retrieved June 30, 2022, from <https://data.tuik.gov.tr/Kategori/GetKategori?p=Nufus-ve-Demografi-109>.

Turoğlu, H. (2011). Flashfloods and floods in İstanbul. *Ankara Üniversitesi Çevre Bilimleri Dergisi*, 3(1), 39–46. https://doi.org/10.1501/Csaum_00000000043

Uekusa, S., & Matthewman, S. (2017). Vulnerable and resilient? Immigrants and refugees in the 2010–2011 Canterbury and Tohoku disasters. *International Journal of Disaster Risk Reduction*, 22, 355–361. <https://doi.org/10.1016/j.ijdr.2017.02.006>

- UN. (2020). *Climate change: Exacerbating poverty and inequality*. (Report-Chapter 3). World Social Report 2020: Inequality in a Rapidly Changing World. Retrieved from <https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/02/World-Social-Report-2020-Chapter-3.pdf>
- UNDP. (2022). *New threats to human security in the Anthropocene: Demanding greater solidarity*. (Report). New York, USA. Retrieved February 17, 2022, from <https://hdr.undp.org/sites/default/files/srhs2022.pdf>.
- UNHCR. (2020). Global trends: Forced displacement in 2020. Retrieved January 11, 2022, from <https://www.unhcr.org/statistics/unhcrstats/60b638e37/>
- UNHCR. (2022). Global trends: Forced displacement in 2022. Retrieved March 18, 2023, from <https://www.unhcr.org/global-trends-report-2022>
- UNHRC. (2009). *Report of the United Nations High Commissioner for Human Rights on the relationship between climate change and human rights*. (Report). Retrieved February 17, 2022, from <https://undocs.org/en/A/HRC/10/61>.
- Vanderstoep, S. W. & Johnston, D. D. (2009). *Research methods for everyday life blending qualitative and quantitative approaches*. Jossey-Bass, San Francisco.
- WCED. (1987). Our common future. (Report). Oxford: Oxford University Press. <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>
- Weinrib, E. J. (2002). Corrective justice in a nutshell. *The University of Toronto Law Journal*, 52(4), 349. <https://doi.org/10.2307/825933>
- Wisner, B., Blaikie, P., Cannon, T., & Davis, I. (2004). *At risk: Natural hazards, people's vulnerability and disasters* (2nd ed.). Routledge.

Wolcott, H. F. (1994). *Transforming qualitative data: Description, analysis and interpretation*. Newbury Park, CA: Sage.

World Bank. (2021). The World Bank annual report 2021: From crisis to green, resilient, and inclusive recovery. Washington, DC. Retrieved February 6, 2022, from <https://openknowledge.worldbank.org/handle/10986/3606>.

Xu, J., & Takahashi, M. (2021). Progressing vulnerability of the immigrants in an urbanizing village in Coastal China. *Environment, Development and Sustainability*, 23(5), 8012–8026. <https://doi.org/10.1007/s10668-020-00914-8>

Ye, M., & Aldrich, D. P. (2020, September 16). How natural hazards impact the social environment for vulnerable groups: an empirical investigation in Japan. *Natural Hazards*, 105(1), 67–81. <https://doi.org/10.1007/s11069-020-04295-z>

Yıldırım, A. & Şimşek, H. (2016). *Sosyal bilimlerde nitel araştırma yöntemleri*. Ankara: Seçkin Yayıncılık.

Ziersch, A., Walsh, M., Due, C., & Duivesteyn, E. (2017). Exploring the relationship between housing and health for refugees and asylum seekers in South Australia: A qualitative study. *International Journal of Environmental Research and Public Health*, 14(9), 1036. <https://doi.org/10.3390/ijerph14091036>



INTERNET RESOURCES

- URL 1 <https://www.unhcr.org/uk/what-we-do/how-we-work/environment-disasters-and-climate-change/climate-change-and-disaster>
- URL 2 <https://www.epa.gov/heatislands>
- URL 3 <https://www.britannica.com/science/heat-wave-meteorology>
- URL 4 <https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls>
- URL 5 <https://refugeesmigrants.un.org/definitions>
- URL 6 <https://multeciler.org.tr/turkiyedeki-suriyeli-sayisi/>
- URL 7 <https://data2.unhcr.org/en/documents/details/90912>
- URL 8 <https://www.haberturk.com/son-dakika-istanbul-da-beklenen-yagis-basladi-iste-son-durum-haberler-2515038>
- URL 9 <https://www.utikad.org.tr/Detay/Sektor-Haberleri/3866/istanbulun-en-buyuk-sel-felaketi>
- URL 10 https://tr.wikipedia.org/wiki/2009_Marmara_sel_dizisi
- URL 11 <https://www.haberturk.com/istanbul-da-beklenen-dolu-yagisi-etkili-oldu-3515365>
- URL 12 <https://www.aa.com.tr/tr/turkiye/istanbulda-saganak-ve-dolu-etkili-oldu/1989324>
- URL 13 <https://www.hurriyet.com.tr/gundem/son-dakika-meteoroloji-yagis-icin-uyarmisti-istanbulda-dolu-surprizi-42126421>
- URL 14 <https://www.ntv.com.tr/turkiye/istanbul-ve-ankara-dahil-17-il-icinsaganak-ve-dolu-uyarisi,Xkbs7sObkUWmuEjgpvLeQQ>
- URL 15 <https://www.tgrthaber.com.tr/gundem/istanbul-esenyurta-dolu-baskini-2844498>
- URL 16 <https://www.gazetevatan.com/galeri/istanbulda-sel-felaketi-saganak-kuvvetli-vurdu-vali-saat-verip-uyardi-2049000/5>
- URL 17 <https://www.sozcu.com.tr/2020/gundem/istanbulu-dolu-vurdu-cevizden-buyuk-6059465/>
- URL 18 <https://www.haberturk.com/istanbul-da-firtina-ne-zaman-bitecek-29-kasim-istanbul-da-lodos-ne-kadar-surecek-3267541>
- URL 19 <https://www.trthaber.com/haber/turkiye/istanbulu-firtina-vurdu-4-kisi-hayatini-kaybetti-630953.html>

- URL 20 <https://www.hurriyet.com.tr/gundem/istanbulda-lodos-firtinasi-hayati-felc-etti-20373280>
- URL 21 <https://www.sozcu.com.tr/2014/gunun-icinden/firtina-istanbula-ulasi-572769/>
- URL 22 <https://www.milliyet.com.tr/gundem/istanbulda-kiyamet-koptu-1922360>
- URL 23 <https://www.memurlar.net/haber/479043/istanbul-da-siddetli-yagis-ve-firtina.html>
- URL 24 <https://www.star.com.tr/guncel/istanbulda-yagmur-ve-firtina-haber-922617/>
- URL 25 <https://www.sozcu.com.tr/2017/gundem/istanbul-27-temmuz-2017-afeti-9-gun-sonra-ikinci-kabusu-yasadik-1949885/>
- URL 26 <https://www.cnnturk.com/turkiye/istanbulda-firtina-1-olu>
- URL 27 <https://www.ekoiq.com/2022/10/iklime-dairin-sekizinci-sayisi-kuresel-isinmanin-etkilerini-odagina-aliyor/>
- URL 28 <https://www.sozcu.com.tr/2017/gundem/son-dakika-haberi-istanbulda-18-temmuz-afeti-iste-aciklamalar-esliginde-yagmur-alarminde-son-durum-1937094/>
- URL 29 https://tr.wikipedia.org/wiki/2017_istanbul_yağmur_ve_dolu
- URL 30 <https://www.havaforum.com/istanbulda-tarihi-yagis-18-07-2017-sel/>
- URL 31 <https://www.gazetevatan.com/gundem/gece-yarisi-avcilar-da-korku-dolu-anlar-1291822>
- URL 32 <https://sputniknews.com.tr/20211129/avcilar-da-siddetli-lodos-nedeniyle-suruklenen-yuk-gemisi-iskeleye-carpti-1051253391.html>
- URL 33 <https://www.evrensel.net/haber/448991/istanbulda-firtina-nedeniyle-5-kisi-yasamini-yitirdi-46-kisi-yaralandi>
- URL 34 <https://www.birgun.net/haber/yagmur-bayrami-kabusa-cevirdi-395067>
- URL 35 <https://www.cnnturk.com/guncel/lubnan-devlet-baskani-aoun-lubnan-israile-tek-bir-kilometre-bile-vermedi>
- URL 36 <https://www.yenicaggazetesi.com.tr/memis-enflasyon-dusse-de-fiyatlar-dusmez-uyarisini-yapti-piyasalarin-bir-bileni-islam-memis-dolarin-2-ay-sonra-ne-kadar-olacagini-acikladi-588502h.htm>
- URL 37 <https://www.trthaber.com/haber/turkiye/istanbulda-firtina-catilar-uctu-agaclar-devrildi-554839.html>

- URL 38 <https://www.yenimesaj.com.tr/esenyurtta-yol-coktu-H1308826.htm>
- URL 39 <https://www.sabah.com.tr/yasam/son-dakika-esenyurtta-cati-yoldakilerin-uzerine-uctu-anne-cocugunu-korumak-isterken-oldu-5765944?paging=2>
- URL 40 <https://www.trthaber.com/haber/turkiye/istanbulda-firtina-catidan-savrulan-3-isci-yaralandi-631295.html>
- URL 41 <https://www.haberler.com/guncel/kucukcekmece-de-pazari-su-basti-esnaf-yagmurun-15233140-haberi/>
- URL 42 <https://www.haberler.com/guncel/firtinayla-devrilen-vinc-insaat-iscisini-yaraladi-6516369-haberi/>
- URL 43 <https://www.iha.com.tr/haber-sultanbeylide-okul-catisi-uctu-393695/>
- URL 44 <https://www.iha.com.tr/haber-sultangazide-su-baskini-nedeniyle-ev-ve-is-yerleri-zarar-gordu-1080120/>
- URL 45 <https://www.sabah.com.tr/yasam/sagnak-yagis-istanbulu-etkisi-altina-aldi-bircok-ilcede-su-baskini-yasandi-6117132?paging=3>
- URL 46 <https://www.hurriyet.com.tr/gundem/dokunsan-cokecek-hayatlar-40548466>
- URL 47 <https://www.kucukcekmededen.com/kucukcekmedede-beklenmedik-dolu-yagisi/>
- URL 48 <https://www.sozcu.com.tr/2018/gundem/istanbulu-sel-aldi-2-2620807/>
- URL 49 <https://www.hurriyet.com.tr/gundem/yurdun-batisini-firtina-vurdu-41736716>
- URL 50 <https://www.trthaber.com/haber/turkiye/beyoglundan-cati-cokmesi-1-arac-hasar-aldi-564937.html>
- URL 51 <https://www.cumhuriyet.com.tr/haber/istanbulda-sel-degil-altyapi-felaketi-96421>
- URL 52 <https://www.mynet.com/basaksehir-de-siddetli-firtinanin-catiyi-ucurdugu-anlar-saniye-saniye-kamerada-110106886507>
- URL 53 <https://www.dha.com.tr/foto-galeri/esenyurtta-saganak-yagis-su-baskinlarina-yol-acti-2098714>
- URL 54 <https://www.yenisafak.com/foto-galeri/gundem/istanbulu-yine-sel-aldi-esenyurtta-araclar-yolda-kaldi-2068244>

- URL 55 <https://www.istanbulkenthaber.com.tr/esenyurt-ta-firtina-olume-sebep-oldu/9823/>
- URL 56 <https://www.tgrthaber.com.tr/gundem/istanbul-esenyurtta-dolu-baskini-2844498>
- URL 57 <https://www.cnnturk.com/turkiye/istanbulda-olaganustu-saatler-gece-gunduze-dondu>
- URL 58 <https://gazetekspres.com/asayis/arnavutkoy-de-firtinada-cati-uctu-hastane-tabelasi-devrildi-12131.html>
- URL 59 <https://www.sabah.com.tr/istanbul/2021/02/09/arnavutkoyde-firtinada-balkonun-camlari-ucusunca-yardimina-itfaiye-kostu>
- URL 60 <https://www.dha.com.tr/gundem/arnavutkoyde-firtina-evin-bahce-duvarini-yikti-1746127>
- URL 61 <https://www.milliyet.com.tr/gundem/son-dakika-istanbulda-dolu-alarmi-6462375>
- URL 62 <https://www.gungoreninsesi.com.tr/gungoren-de-firtina-catilar-ucurdu-felaket-kil-payi-atlatildi/8281/>
- URL 63 <https://www.yeniakit.com.tr/haber/kagithanede-6-katli-binanin-catisi-uctu-995642.html>
- URL 64 <https://www.cumhuriyet.com.tr/haber/istanbulda-firtina-hayati-felc-etti-1812278>
- URL 65 <https://www.dha.com.tr/gundem/istanbulu-siddetli-yagis-vurdu-araclar-mahsur-kaldi-ev-ve-is-yerlerini-su-basti-1615842>
- URL 66 <https://www.gercekgundem.com/istanbul/250127/gaziosmanpasada-catinin-uctugu-anlar-amator-kamerada-korkutan-goruntu>
- URL 67 <https://sehirplanlama.ibb.istanbul/ilceler/>
- URL 68 <https://www.paradurumu.com/butce/amerika-asgari-ucret-2023-haberi-16473>
- URL 69 <https://tr.euronews.com/2022/12/22>

APPENDICES

A. Semi-structured Interview Form

Name and Surname:

Neighborhood:

A. Demographic information and socio-economic status:

1. Basic information on age, gender, households, families, education and career

Age:

Gender:

- ☐ Male
- ☐ Female
- ☐ Does not want to specify

Education level:

- ☐ Primary school graduate
- ☐ Secondary school graduate
- ☐ High school graduate
- ☐ University
- ☐ Master's Degree

Occupation: _____

How many people live in your home? _____

How many families live in your home? _____

How many people work in your home? _____

2. Are there any elderly, disabled or chronically ill people in your household? Are there any school-age children who cannot go to school?
3. What is your total monthly household income?
4. How has your education or work situation changed since you came here?
5. Are you a tenant in your home? How much is your monthly rent?
- ☐ 2500 TL and below
 - ☐ 2500-5000 TL
 - ☐ 5000-7500 TL
 - ☐ 7500 TL and above
6. How many times have you changed homes in Turkey? _____

B. Immigration status and process:

1. When did you come to Turkey? _____
2. What are your reasons for choosing the neighborhood you live in?
3. What do you think about being sent back to Syria?
4. Do you think that the Syrian Civil War is related to drought and weather events?

Strongly disagree	Disagree	Undecided	Partially agree	Strongly agree
☐	☐	☐	☐	☐

5. Were your material or spiritual assets damaged by any natural disaster before you migrated?

C. Climate-related disaster experiences (Disaster memory):

1. Have you experienced disasters such as extreme temperatures, hail, heavy rain, floods, etc. since you settled here? What do you think about these events?
2. What did you do during the hot weather, where did you spend your time? Do you have a way to lower the room temperature at home?
3. Do you feel safe from extreme weather events?

Do not feel at all	Do not feel	Undecided	Partially feel	Definitely feel
☐	☐	☐	☐	☐

4. Have you experienced a weather event (such as flood/hail/storm) that damaged your home or property? What kind of difficulties did you deal with?
5. What measures do you take and what methods do you use to protect yourself from extreme weather and disaster events?
6. How would you evaluate your situation when you think about how safe you would feel in the event of severe weather events and how likely you would be to suffer material and moral damage?

Very bad	Bad	A little bad	A little good	Good	Very good
☐	☐	☐	☐	☐	☐

D. Access to resources and public services:

1. Do you have easy access to open-green spaces and other public spaces such as schools/hospitals? Do you feel safe in these places?
2. How satisfied are you with the overall comfort of your home?

Not satisfied at all	Not satisfied	Undecided	Somewhat satisfied	Absolutely satisfied
☐	☐	☐	☐	☐

3. What kind of housing problems can you identify?
4. Can you get health care in your city if you have any health problems?

E. Language barriers:

1. How well do you know and speak Turkish?
2. Can you follow emergency calls and news in your own language?
3. How does your level of Turkish affect your access to health and education services?
4. How does your knowledge of Turkish affect your relations with other segments of society and your neighbors?

F. Risk awareness and knowledge:

1. Are you aware of the dangers, emergencies and disasters that may occur in your area?
2. How much of a problem do you think flooding/hail and other extreme weather events are in your region?

G. Assistance and social solidarity (material assistance, community participation, exclusion:

1. How are your relations with Turks and other Syrians in your neighborhood?
2. How often do you meet Turks? Do you visit each other's houses?
3. In the event of a weather event, disaster or risky situation, from whom or which organizations do you think you can get help first?
4. Have you ever received any financial/moral assistance from any organization or person?