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People living with water and responses of policymakers: An analysis of urban flooding in Fatih, Istanbul

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Abstract

This research explored how people live with water and how policymakers respond to these realities in Istanbul, Turkey. The study's findings were drawn from qualitative interviews with eight citizens and five officials. Observation and interpretation of data were made by examining in-depth interviews and policy documents in which professionals engaged in implementing policies and the residents engaged in their own coping strategies in response to dealing with water.

I found that both officials and citizens shared the same theories of the causes of the flood, while at some points, they differed. Its impact, however, varied among different groups of citizens as they have diverse livelihoods, experiences, and practices of living with water. Residents adopted the language of experts in some moments. Their knowledge helped them to construct solutions as coping strategies for their houses and workspaces. In the meantime, different policies are incorporated into preventive measures, while interaction between policy and society is often overlooked or only occurs de facto. Professionals clarified their actions with infrastructure development and planning. This research thesis shows the policies remain vague and unimplementable due to different responsibilities given to different institutions and several challenges.

Acknowledgements

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Finally, I would like to thank my family and amazing friends for their never-ending support and thoughtful tolerance of me. They helped me to get through the process and motivated me to complete my studies.

Abbreviations

AFAD: Disaster and Emergency Management Presidency

AKOM: Istanbul Municipality Coordination Centre

DSI: General Directorate of State Hydraulic Works

IMM: Istanbul Metropolitan Municipality

ISKI: Istanbul Water and Sewerage Administration

KOSGEB: Small and Medium Enterprises Development Organization

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1. Introduction

This chapter illustrates the introduction of the research, consisting of the agenda setting, the problem statement, knowledge gap, scientific and development relevance, and the structure of the thesis.

1.1. Agenda setting

Despite the considerable contribution of developed nations to climate change, people in developing countries are disproportionately affected by climate change (Ludwig et al., 2007). One of the most severe impacts of climate change is heavy rainfall, leading to flash floods in urban areas. If flash floods combine with poor living conditions, they pose problems for residents, leading to an increase in the degree of being affected by water and impacting people's livelihood (Ahmed et al., 2019). In response to the impacts, people come up with coping strategies. These strategies might vary according to their experiences shaped by lay knowledge. At the same time, different actors involve in the process and attempt to respond to floods with their coping strategies. One of them is policy efforts that are gaining momentum with ever-increasing events to make cities resilient to floods (Laeni et al.,2019). According to many in the field of water management, there is an intense desire for policymaking (Akmouch, nd). The inclination is to emphasize practical universal solutions based on criteria and commonalities perceived by professionals to exist everywhere. Mosse (2004) asserts that policies tend to reflect the interests of policy makers rather than those of the 'beneficiaries.' He addresses the ambiguity of "good policy" as things that make better policy might be different from the things that make it implementable (Mosse, 2004). The success and failure of these policies depend on specific criteria they envision achieving. However, there might be differences between what communities consider success and failure. On the one hand, local people might be excluded in the process through so-called "successful" policies. On the other hand, what is deemed as successful for some people might be a failure for policymakers.

Although there might be many different types of flooding, some of the main categories include river floods, flash floods, drain and sewer floods, and coastal flooding. Flash floods are often attributed to poor drainage systems caused by some of these factors in urban areas. Several factors such as "topography, land use, and urbanization" trigger the intensity of flooding, which affect "the degree, speed of beginning, and length of the flood" (Few,2003,

p.2). While all around the world, flash flooding causes a lot of damage and nuisance in urban areas, it might be prevented by efficient drainage systems. In this sense, proper urban drainage systems are essential to convey the floodwater (Dewan,2013). While urban drainage systems are planned to drain surface runoff (Qin et al.,2013), their inadequacy is often associated with flooding during heavy rainfalls (Bezboruah, 2021). There are multiple reasons why it becomes inadequate. It is often associated with urban growth, which makes areas more impervious (Dewan,2013). This result in an "insufficient sewer system or low drainage" in urban spaces, leading to excessive stormwater that surpasses the current capacity of drains and thus affects citizens' livelihoods (Bezboruah, 2021). The situation is exacerbated by solid waste disposal into the drainage network, resulting in the drainage infrastructure's blockage (Hossain and Rahman, 2011).

Floods are associated with vulnerability or disasters. However, it is essential to consider the reasons that make people vulnerable to floods. One of them is the type and frequency of floods. Floods have taken people's lives occasionally compared to conflicts, hunger, and illnesses (Blaikie et al., 1994). Therefore, it is significant to consider how often floods happen when considering how vulnerable people are. The same case may result in different consequences for different households since the division between "severe" and "mild" types of flooding is unclear (Blaikie et al., 1994). Vulnerability varies from person to person meaning flooding affects people differently. In this sense, the phrase "disaster" is often misused (Blaikie et al., 1994). It could only be a disaster when a vulnerable group of people is subject to flooding. It is also significant to consider the situation of residential buildings associated with floods. Building features and adaptation levels might influence the vulnerability of residential buildings (Few, 2003).

Within this context, acknowledging that vulnerability depends on many criteria, such as the type and value people give to floods, this proposal examines the real-time practices and actions people do concerning the flood.

1.2. Problem statement

Several measures are taken in response to flood events at the collective and individual levels. Richert (2019) mentions zoning policies, national flood insurance programs, and structural flood defenses, such as dikes, which help decrease the damage to floods. Local and state

governments use other tools such as vulnerability assessment to respond to natural hazards, including floods (Nasiri et al., 2016. They merge physical, social, and policy-based variables into different indices and endeavor to measure the "exposure, sensitivity, risk, resiliency, and adaptive capacity of physical assets and people" (Pricope et al.,2021). However, people have different vulnerabilities and capacities (O'Hare & White, 2018) in dealing with and recovering after floods. These various capacities are associated with socio-spatial variation and inequalities in income, education, age, and access to support and services. In pursuing policies that take into consideration socio-spatial variations of citizens, policymakers often fail as there are often unintended consequences (Forrest et al., 2020).

In response to increased flood risks, policy makers in water tend to prioritize scientific, mathematical insights and modeling to design water policies, and they rarely consider existing practices. They try to develop measures but don't achieve the envisioned outcome very often. One of the reasons is that policymakers' plans tend to undermine local communities' fabric (Ahmad& Eklund, 2021). Laeni (2019) points out the concept of resilience by arguing that the Bangkok flood resilience policy is limited in terms of the role of local communities and civil society. Resilience has become a buzzword in international development studies. Cambridge dictionary describes resilience as "the quality of being able to return quickly to a previous good condition after problems." The policymakers often use the term resilient city as the desired outcome, but Vale (2014) argues the political nature of the concept is neglected. Many policymakers use these terms with a power-blind attitude which may lead to exposing more risk among disadvantaged communities (White & O'Hare, 2014). Laeni (2019) mentions a critical perspective is needed that asks questions about resilience for whom. Vale (2014) adds to that and questions, "How is going to be decided whose resilience to take into consideration and whose resilience is ignored in the process?

Short-term insights may respond to immediate needs but can make people more vulnerable, marginalized, and poor while they are already confronting the burden of climate change (Ahmet,2021). In this debate, coastal cities and towns are seen as the most vulnerable in several studies. Walker and Burningham (2011) point out that the risk of flooding mainly occurs in specific spaces that are close to rivers, coastlines, and different water bodies. There is the dilemma that some groups and individuals benefit from flood management while others do not by questioning the privilege of upstream communities and the contribution of landowners to the process (Thaler et al., 2016). Although who lives in such risky territories is a relevant question, if a flood comes occasionally, this doesn't make every person

vulnerable to floods. There is a problem when floods come too early or water levels rise more than expected. As Handmer et al. (2008) argue, the sudden flow of water can only be problematic once it impacts human activities or things we value. Location, type, and value of human activities are essential at this point to potential flood damage (Handmer et al.,2008). The generalizability of much-published research on this issue is problematic.

1.3. Knowledge gap

Many studies in the field of urban water management mainly focus on the system perspective that focuses on the system's adaptation, transitions, pathways, vulnerability, etc. There are studies in the field of flood disaster having emphasized adaptive capacity (Wilby&Keenan, 2012) and the concept of vulnerability (Ibrahim et al., 2017; Kasperson, 2001; Nur and Shrestha, 2017; Shreevastav et al., 2021; Walker& Burningham, 2011). Few studies, however, have pointed out the characteristics of the flood and the cultural, political, and socio-economic status of the people who experience flooding (Hossain,2020). Several studies have emphasized the impacts of floods and population displacement (Dun, 2011; Gray and Mueller, 2012) and the impact of climate change on upcoming flooding (Kundzewicz et al.,2014; Mirza, 2002).

Many studies give too much emphasis on the risk management in flood issues (Aerts et al.,2018; Bernardini et al., 2017; Glaus et al.,2020; Handmer, 2008) without specifying for whom or by discussing risks in general terms. Similarly, Jongman (2018) argues for effective adaptation, risk reduction and management strategies. Richert (2019) adds that the promotion of integrated flood risk management in recent years by giving the example of France and the United States with the implementation of zoning policies and national flood insurance programs. Furthermore, there are many researchers who conducted their research on the context of people's indigenous/local knowledge and coping strategies to respond to flooding (Richert et al., 2019; as cited in Hossain et al., 2020). Abas et al. (2022), to illustrate, mention that empowering institutions, law enforcement and public education are significant interventions to adjust flooding in Ghana.

Although vulnerability indices are adopted to help planners and first responders in planning for and responding to events, it is even impossible to measure the accuracy of vulnerability indices (Tate,2012). Human needs and choices may vary depending on different factors. The one-size-all approach of governance ignores the uniqueness local fabric. Disasters are also the result of the social, political and economic environment that surrounds and structures the

diverse lives of various groups of people (Blaikie et al., 1994). A deepened understanding of people's needs is needed to improve the governance of flood events. Focusing on actual practices of how people live with water might result in more fair and realistic water policies through less exclusion and more likely results.

After reviewing several pieces of literature, it can be said that many research works have been done on addressing the issue in terms of "system thinking," which mostly focuses on the taken-for-granted approaches and often tries to attempt to measure and determine the vulnerability of a scale and target policy intervention to those people who are conceived most vulnerable on that scale. Few writers, however, have been able to draw on any systematic research into the human perspective and the interplay between citizens and policymakers for urban floods. Therefore, there is a clear research gap here. Regarding filling this research gap, the study aims to analyze different dimensions by paying attention to locally valued variables in diversity.

1.4. Scientific and development relevance

The topic is of scientific relevance: getting a better picture of the discrepancies between people's experiences with floods and investigating flood-related policies and their implications provide practical insights for policymakers. Not addressing the issue will only exacerbate the problem in the future. This research will contribute to drawing more attention to the topic, possibly sparking more investigation in the future. It will contribute to the community to realize the significance of their knowledge as well as the institutions through the data and analysis that the research will provide.

The problem is also significant in terms of emphasizing development. The issue of how fair the interaction of environment and society is when specific political actors or decision-makers are involved is becoming increasingly important and prevalent in the field of international development practice (Ahmed & Eklund, 2021). Even though what a just and fair solution is relatively difficult to answer, people are disproportionately affected by climate change. Scientific evidence of climate change effects includes losses from drought, floods and storms, the implications of unsustainable production and consumption patterns, deforestation rates, actual and projected water scarcity, and food wastage (Anderson, 2013). Anderson (2013) points out that development programs must include climate justice concepts to meet people's needs and rights in climate-vulnerable countries, distribute finance from industrialized countries to those confronting increasingly rising costs of adaptation, and

ensure inclusive participation in decision making in all countries. The concerns have been increasing regarding shifts in extreme weather events attributed to climate change that could do worse damages or even reverse development gains in many regions (UNDP, 2007).

1.5. Structure of the thesis

The overall structure of the study comprises of seven chapters, including:

Chapter 1, the introductory chapter, includes agenda setting, the problem, research topic, and knowledge gap by explaining the needs of this research in the international development area. The research objectives and questions are also introduced in this chapter.

Chapter 2 explains the theories concerning different perspectives on flooding. It delineates these theories and conclude with a conceptual framework.

Chapter 3 gives brief information on the research design, how participants are selected, the interviews conducted, and the local framework in which the research takes place. It also emphasizes the practical encountering and problems involved during the study as well as positionality as a researcher.

Chapter 4 focuses on empirical observations and highlights the finding on flood-affected residents. Not only about experiences concerning flooding, but also everyday life highlights the coping of professionals concerning flooding, their perspective on causes and solutions of flooding,

Chapter 5, entitled “Fragmented fragmentation and collaboration in flood management” discusses the knowledge of professionals informed by their training and diverse actions against flooding in the study area

Chapter 6 is a reflexive approach to the responses taken by residents and professionals and focuses “negotiations.

Chapter 7 is the conclusionary chapter where the research questions are answered.

2. Theoretical framework

This chapter explains the theoretical analysis related to the topic. It addresses different theories and concepts to understand the different responses of professionals and inhabitants in dealing with urban flooding.

2.1. System Thinking, Symmetry Model and Social Construction Concepts

Past research revealed a system thinking approach regarding flooding. Such practices tend to focus on the technicality of floods (e.g., hydrology, discharge, velocity, damaged area) and propose new measures, including infrastructure development or spatial planning (Li et al., 2022; Asano, Uchida,2016). In this process, existing practices of how people live and deal with floods tend to be overlooked. This study, however, argues local inhabitants' knowledge gained from their own experiences should not be ignored since it is locally produced and shaped according to different dynamics. In this sense, diverse conditions of people, everyday life struggles, the type and degree of wet conditions and structural constraints constitute how people deal with these conditions. Poor conditions of people and the degree of flood introduce diverse impacts even for similar groups.

Social construction has been used to conceptualize disasters by many scholars. This perspective suggests that the people's understanding of disaster is socially constructed, which means subjective or context-dependent (Bempah&Oyhus,2017). Similarly, Latour (1986) adds that the social process of community consensus-building generates knowledge. In the Latour view, everything is social since it is us who construct the linkages. The context might include peculiar socioeconomic factors, direct and indirect experiences, religious elements and political features that impact risk perception (Bempah&Oyhus,2017). For example, a flood in an unsettled region is regarded as an "event"(McCarthy,2004).On the contrary to these events, a disaster only happens when vulnerable people suffer severe disruption or loss of their livelihoods, and recovery is not likely without external assistance (Blaikie, 1994). If people receive insurance in such a way that it compensates for all the damage, they might not see a flood as a disaster, or it doesn't make them vulnerable. The perception of disaster depends on various factors. While people often perceive and treat disasters "matter of factly," these perceptions are constructed by cultural and social norms or political interaction with institutional discourses (Sun, 2018).

Scholars attempted to approach scientific and other kinds of accounts equally, which gave way to the “symmetry model” (Faik& Thomson and Walsham,2013). The model is adopted By Latour with the actor-network theory and proposes a demarcation between material and social (Faik& Thomson and Walsham,2013). Latour investigates the symmetry model in which social factors are excluded in “successful science” by arguing that both humans and nonhumans take part in the establishment of scientific facts. The research, therefore, addresses comparing professional practices and "people's practice." The general view is that experts’ knowledge is 'higher' than people's knowledge which is qualified as perspectives and hence, seen as 'lower' knowledge. Furthermore, people might internalize that what engineers know is better than what people know. It rarely happens the other way around. This study attempts to address the correlation between what “science” and “local experiences” tell regarding dealing with water and compare the practices of these two groups 'in symmetry' instead of 'in the hierarchy.'

2.2. Urban flood and drainage-related management

Different actions are adopted concerning managing urban floods. Local governments, for example, invest in urban flood management for many reasons. One of them is that constant urban development in many flood liable land causes growth in communities’ exposure to floods (Glaus,2020). Developing countries often respond reactively against prevailing flood situations through emergency response and recovery instead of proactively responding, which needs more governmental, nongovernmental, private agencies, and public participation (Tingsanchali, 2012. Minnery & Smith (1996) divide flood management prevention and mitigation approaches as nonstructural and structural in tackling the adverse effects of the flood. While the nonstructural refers to measures not to prevent floods but to decrease the short- and long-term impact of the hazard, namely “formal flood warning systems and evacuation programs, land use controls on flood-prone sites, building regulations to prevent the incursion of floodwaters and insurance schemes,” structural refers “engineering interventions such as river channel modifications, embankments, reservoirs and barrages designed to control the flow of rivers and abate or control the spread of flooding”(Few, 2003). Bradford et al. (2011) argue that today, flood risk management emphasizes nonstructural measures such as enhanced land-use planning, relocation, flood proofing, flood forecasting, and warning and insurance are advocated.

One of the main causes of flooding in many cities is changing or improper urban drainage patterns and underlying basin conditions that have changed with the rapid urbanization,

leading to land-use conditions such as the growth of urban construction land and damage to ecological lands (Jia et al.,2022). The process led to a rise in the impervious ground area and a decrease in the water-seepage capacity, leading to increased runoff trapped at the surface (Jia et al.,2022).

Responsible bodies act for inadequate or poor drainage, which is one of the causes of flooding due to heavy rainfalls in several ways. Flood is mitigated by "cleaning and maintenance" of drainage system as well as "stormwater retention measures" to reduce surface runoffs (Tingsanchali, 2012). Other preventive strategies include increasing infiltration from the catchment areas and preserving green and open urban spaces (Tingsanchali, 2012). Policies do not reflect a range of variations of residents, as they are often considered to implement certain flood or drainage-related strategies. In this sense, there is a need to understand flood risks in their diversity. This study acknowledges the importance of considering these policies in diversity rather than a one-size-fits-all approach and explains why (see 2.4).

2.3. Polycentric Urban Water Governance

Governance has become a buzzword many define to stress almost everything related to organizing collective acts (Teisman et al., 2013). As an empirical concept, governance is treated as increasing interconnection between different actors involved in collective action and decreasing the role of single governance models in producing and implementing public policy (Teisman et al., 2013). This definition is close to those of Schröder and Shirin (2018), who define governance as represented at least by a variety of decision-making centres that are governing a particular good or problem within defined system barriers. This research studies governance from an empirical perspective rather than a normative concept of governance.

It is critical to approach the governance analytically to understand "what happens on the ground" and learn from practice rather than anticipating a "panacea" in water governance (Teisman et al., 2013,p:3). Water can be dealt with complex and interconnected system related with many fields such as economic and social development, health etc. and is the interest of many actors such as municipalities, industries or environmental organizations, which makes it "governance challenge" (Teisman et al., 2013, p:4). This challenge is caused by fragmentation of responsibilities between different scales of institutions which makes the capacity of water governance is often inadequate because of the fragmentation of

responsibilities (Teisman et al., 2013). Several initiatives include inhabitants' participation, community-based initiatives, or public-private partnerships (Brunner& Steelman,2005). Teisman et al. (2013) mention the "multifaceted nature of water governance" with interconnecting and intermingling and nature of "actors, scale and domain." (p.6).

Instead of the idea that government should serve or organize, how and what "actors, scale and domain" take different parts will be one of the main questions of the study.

2.4. Livelihoods, coping strategies, and intersectionality

This section conceptualizes how people respond differently to floods and relates it to vulnerability. The intersectionality approach to the crisis is beneficial for understanding diverse capabilities within different groups (Ahmed & Eklund, 2021) and for the practices of local communities that are often heterogonous. Understanding the complex structure of local society is crucial to analyzing how the experiences, responses, and practices can be subjective with regard to flooding. The diverse capabilities might lead to various outcomes. To illustrate, in terms of the local dynamics of dealing with flood issues or anomalies in rainfall, while elites have resources, the resources of the poor are limited (Ahmed & Eklund, 2021). So, resources can make certain groups vulnerable to floods. However, it is crucial to analyze and problematize norms and taken-for-granted ideas that reinforce social categorizations and see the conflicting effect of climate change on vulnerable groups. (Kaijser and Kronsell, 2014, p.428). Intersectionality draws a pathway that avoids traps of essentialization, empowering solidarity and agency across and beyond social categories (Kaijser and Kronsell, 2014). Furthermore, it can clarify how power structures and categorizations may be reinforced but also disputed and renegotiated in the realities of climate change (Kaijser and Kronsell, 2014). There are factors that make people vulnerable to climate change. The elements that make people vulnerable to climate change are most acute among specific groups such as older people and low-income groups (JRF, 2014). The effects are anticipated to be disproportionately challenging to the poor, young, elderly, sick, and otherwise marginalized populations (Kasperson,2001). One of the examples is older people tend to have health risks from extreme cold and heat.

A combination of socioeconomic and geographical determinants might lead to spatial distributions of vulnerability: while low-income groups in poor-quality housing in coastal areas are disproportionately impacted by coastal flooding, disadvantaged communities living in the urban landscape with the least green space are more vulnerable to pluvial flooding

caused by rainfall and heatwaves. (JRF, 2014) Jongman (2018) argues the welfare loss from flood events hits the poorest in society hardest because they are often pushed to make a living and work in low-lying areas. Similarly, hazard scholars accept low-income groups disproportionately affected by hazards (Mazumder et al.,2022). However, the vulnerability can vary from person to person by age, gender etc. as well. Flood inequities reveal that socially disadvantaged groups living in a low or minimum-risk flood zone have a high relative burden since a lot of them could not bear the cost of recovering from flooding of medium intensity (Collins et al., 2019; Zahran et al., 2008).

It is significant to analyse flood-affected people in diversity. According to the findings of the research carried by Mazumder et al. (2022), measurable inequity is observed in exposure to flood across different age groups, educational attainment, and income groups and on the one hand, age is an essential predictor of defining vulnerability and flood risk in cities, social vulnerability indicators such as education, per capita income, and homeownership vary based on both cities' geographical and socioeconomic contexts. Therefore, these findings support understanding differences in flood hazard vulnerability across geographic contexts and population subgroups (Mazumder et al.,2022)

Focusing on the human dimension is significant to understanding the relationship between the residents and flood and study practices. Dealing with coping strategies for population subgroups allows for developing a different understanding of vulnerability. An assessment of social vulnerability and vulnerable groups, through the lens of an intersectional perspective, to reveal qualitative differences in vulnerability is advantageous. Countries and international organizations generally define vulnerable groups according to "pre-crisis social, economic and cultural factors," without considering that these factors often arise and perpetuate inequality, exclusion, and lack of access to and control over resources (Kuran,2020, p:2).

It is also essential to analyze coping strategies through the lens of intersectionality. People with different vulnerabilities, livelihoods, and intersecting features deploy diverse coping strategies. A coping mechanism can be described as the method in which people and organizations have an action, using existing tools within various anticipation of the situation to achieve different ends (Blaike et al.,1994). Twigg refers to coping mechanisms or strategies as the application of indigenous knowledge against the experience of hazards (2004). Douglas (1985) adds that people tend to have a coping strategy when people notice

an event may happen because it has happened in the past. However, oversimplification or overgeneralization of the expectation and vulnerable or flood-affected people's priorities might be dangerous as they might have a complex range of priorities

However, it is important not to oversimplify and over-generalize the expectations and priorities in the lives of vulnerable people or those affected by a disaster. Oliver-Smith (1986b) has described very complex motives and ideals among survivors of a dire earthquake tragedy (as cited in Blaike et al.,1994).

For flooding, individuals could take actions such as installing pumps in their dwellings or avoiding locating the main rooms on the ground floor (Bubeck et al., 2013; Reynaud et al., 2013). Blanco et al. (2017) consider these devices or behaviours as individual adaptation measures (Richert et al., 2019). In this sense, the research will clarify what different actors do in response to flooding.

This study acknowledges that different actors have a diverse range of coping strategies and investigates what these actors do in response to flooding in the study area and the underlying factors behind these coping strategies.

2.4.1. Livelihoods of the people in the study area:

The population of Fatih district is 382,990 in 2021, consisting of 190,991 men and 191,999 women. Middle-aged citizens mostly make up the vast majority of the people, with 52 %. Most of the population are married. The average family size is between 3-4 people. Economic activities in the district are tourism, administrative and educational functions, and trade. Tourism-related activities largely occur in the community due to many attractions caused by Byzantine, Roman and Ottoman artefacts on the Historical peninsula and thereby increasing the power of the tourism function on people's livelihoods; Especially in the part of the peninsula within the old Eminönü District, workplaces are gradually turning into tourism-oriented businesses. One of the important historical markets, Grand Bazar, is highly attractive for people visiting the city worldwide. While tourism plays a critical role in defining the livelihoods of the people in the province, pharmacies and businesses selling health equipment and clothing stores are also concentrated in the area.

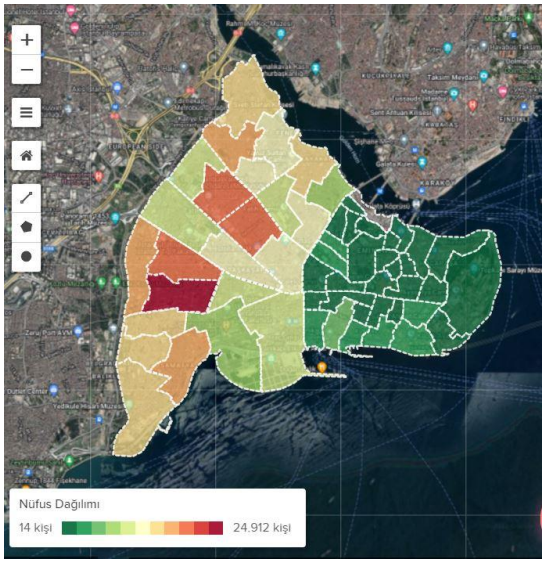

Figure 1: Population distribution of the area, Source: https://www.endeksa.com/tr/analiz/istanbul/fatih/demografi

2.5. Conclusion

The theoretical framework has identified a wide range of theories and concepts. In conclusion, I have established a conceptual framework that indicates the complex link between the approaches. The framework helps to analyze the interaction between the professional community and people community and the complex nature of both sides, distinguishing strategies of residents and professionals in dealing with flooding. It draws different elements which constitute the meaning that the residents give flooding and elaborate strategy that they have to deal with and particular strategies of policymakers and coping mechanisms of professionals. The distinguishment between professionals and policymakers and residents will be made in the discussion chapter. The components of policies regarding floods are divided into climate change policies and infrastructure policies, and planning policies to understand the underlying dynamics behind decision-making in flooding. On the professional side, analyzing implementations of spatial plans, engineering projects, or drainage relate solutions will be helpful to see how these can be put into practice. These factors shape the policy and human interaction, and the outcomes determine whether the intervention could work or not for people. The impacts on people help assess the level of vulnerability to flooding as well.

After the theoretical framework, the methodology chapter will show the research strategies, how the respondents are selected, and the selection criteria of certain policy documents and research questions.

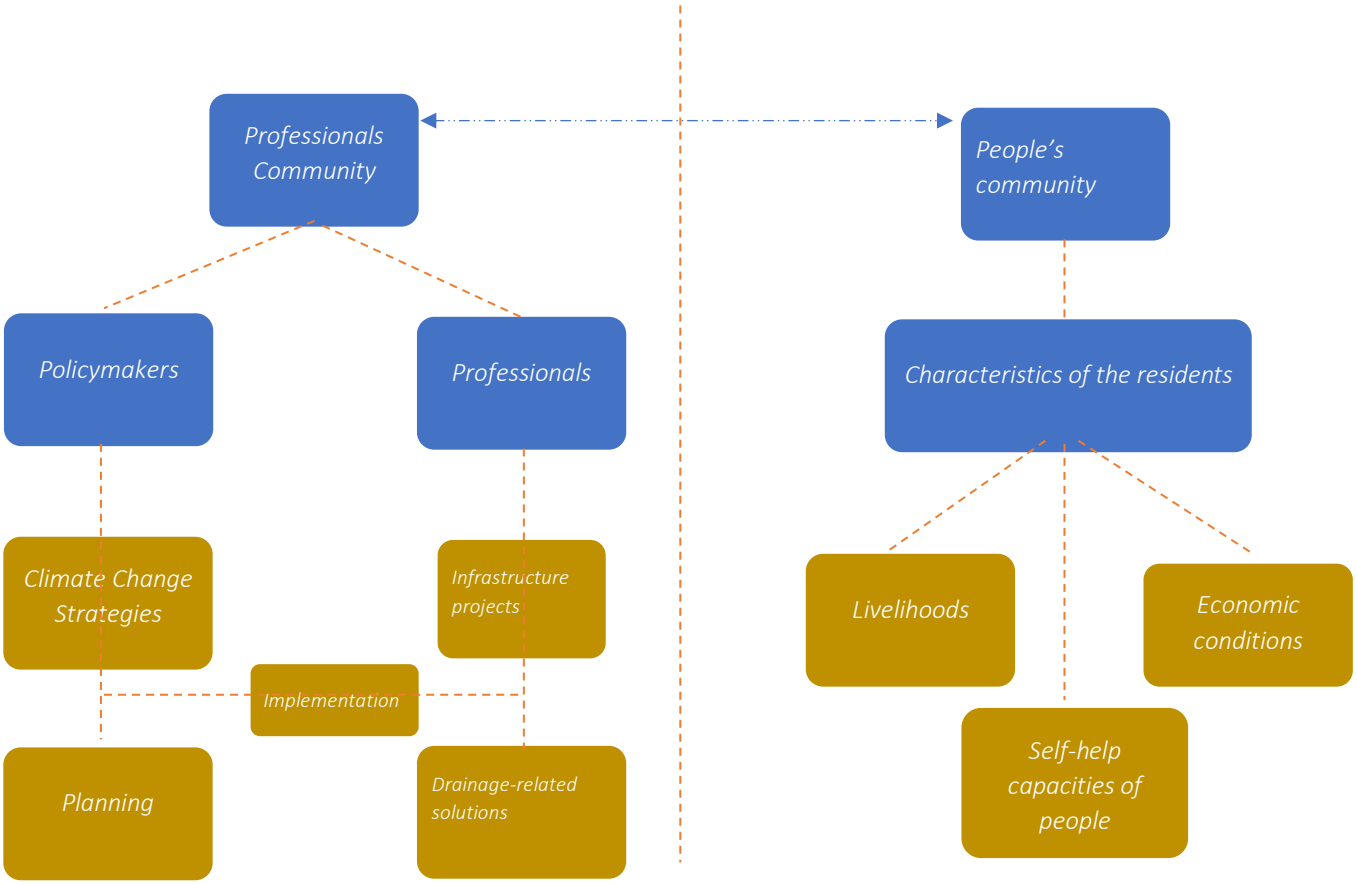

Figure 2: Conceptual Framework, Source: Author

3. Methodology

The following chapter depicts the research design and what I have encountered during the process. I have no direct experience with flooding and drainage. However, I am particularly interested since flooding is one of the most prevalent events in Turkey, which is my home country. Considering that I did my bachelor's degree in City and Regional Planning and worked as a city planner in several institutions, my positionality was chiefly supporting top-down policies so far. Given that a small body of work highlights the residents' experience, I aimed to bring a fresh perspective to exploring the residents' practices concerning the flood. Comparisons were made between people with different backgrounds.

3.1. Research strategy

The primary approach used for collecting information was semi-structured, in-depth interviews. They were conducted to investigate the symmetry between policymakers' strategies and actions and the residents' practices concerning flooding. Within the group of participants, the professionals and residents of the area were distinguished. This allowed an exploration of how diverse groups were involved in the flood governance of the study area. On the resident side, the interviews allowed the participant to discuss flood-related issues on their own term. On the professional side, I have focused on the policies, engineering projects, and master planning to improve flood management to understand the motivation behind the interventions project. In addition, I tried to make observations on professionals and citizens.

Interviews were held in the Turkish language. Each session was recorded onto audiotape. (Hossain 2020). After completing the interviews, qualitative data were interpreted via textual analysis. (Hossain 2020). The study adopts an explorative concept reflected in the empirical and discussion chapters.

Table 1: Research goals and methods

Research Goals	**Research Methods**
Give detailed information on the subjective experience of flooding	Semi-structured professionals' interviews Observation
Understand how different characteristics affect the way people deal with flood	Semi-structured residents' interviews Observation
Understand how living with water is experienced at an everyday level	Semi-structured residents' interviews Observation
Understand what actors involved in water management	Semi-structured professionals' interviews Observation
To understand the correlation between de jure and de facto water use practices	Policy document analysis Semi-structured professionals' interviews Observation

3.2. Research on Residents:

The main method that I used for collecting information on residents' practices or understanding community dynamics was interviewing, consisting of several questions concerning:

- Their views on the biggest problems in Turkey,
- The experiences of them,
- The reasons why flood happens, who do they think is responsible,
- Their perspective on the responsible body with regards to floods,
- The effects of floods on their livelihood,
- The coping strategies, what do they do when the flood comes,

The interviews were carried out either in the residents' homes or workplaces which was helpful since they were the scene of flooding. The respondents clearly explained their experience by indicating particular objects or areas of the workplace or homes. After asking the question about the biggest problems in Turkey, I asked them to describe their experience concerning flooding, which allowed the respondents to express their own narratives in their own way and make them feel comfortable. The interviews are interpreted both inductively and deductively. The main aim was to analyze different coping strategies in dealing with floods and the aftermath of their experiences.

3.2.1. Locations chosen

3.2.1.1. Istanbul

As the Ottoman Empire's capital, Istanbul has always been economically and culturally center of Turkey. By the 15th century, the Empire started to become successful, and Mehmet, the conqueror, captured the city of Constantinople, currently Istanbul, in 1453 and made it the city's new capital. The Ottomans attempted to modernize the city, considering that the main challenges faced in the nineteen century were implementing basic hygienic standards and improving building quality. (Gül, 2017). Large-scale attempts to make these improvements were mainly established by European experts (Gül, 2017). Ottomans had integrated themselves with the western capitalist economy during the late 19th century through technological advancements (Gül, 2017). This history makes Istanbul a 'model city' in Turkey -- one of the nation's most progressive cities and a place where the newest policy ideas are tested.

Currently, the policymakers promote the city as a global city. The city's real estate market is growing with gated communities and fancy shopping malls (Gül, 2017). The government and developers dominate the city through mega projects launched in every corner of the city (Gül, 2017). Gül (2017) argues the dichotomy of Istanbul, where on the one hand, the city is framed as a global city with megaprojects, and on the other hand, the everyday problems that people struggle with such as traffic, lack of green space, growing living costs besides the expected earthquake within the next few decades.

The city experienced 200 recorded flood events over the last few decades. In the last few years, to deal with severe flooding, “several structural adjustments such as stream remediation and revision of the storm water pipe network” have been implemented (Ekmekçioğlu, Koç & Ozger, 2021,p:2). While municipalities have been given the responsibility of many tasks such as making watershed protection plans and establishing flood prevention structures, other institutions such as Water and Sewerage Administrations and disaster management and coordination centres are entitled as the leading stakeholders under the administration of Istanbul metropolitan municipality (Ekmekçioğlu, Koç & Ozger, 2021). Furthermore, university academic staff consult relevant public enterprises and citizens at every stage of flood risk management strategies(Ekmekçioğlu, Koç & Ozger, 2021).

River floods, coastal floods and urban floods are different types of flooding in Turkey. Although the city is surrounded by the Black Sea, Bosphorus and the Marmara Sea, research shows that coastal flooding is not a problem in this area (OECD, 2016). Experts suggest that Istanbul is categorized as a low-risk area for coastal flooding, while the river and urban floods are high in terms of risk, which means that likely harmful and life-threatening floods are predicted to happen occasionally, no more than once a year (Thinkhazard,2020).

The construction plans in Istanbul played a vital role in the flow direction of precipitation and blocking its runoff (Turoğlu, 2011). Istanbul, which experiences rapid urbanization and climate change, faced several unprecedented flooding events. The city's population is 15.5 million, and one of the world's largest metropolises. As a result of urbanization, the green spaces that would benefit flood control, cooling of temperature, home of biodiversity, etc., have decreased considerably in Istanbul, leading to a decrease in stormwater retention largely (Konijnendijk, Nilsson, Randrup, & Schipperijn, 2005).

3.2.2. Fatih district

Fatih, one of the oldest districts in Istanbul and a province situated within the city's historical peninsula, is selected for this research. It consists of 57 neighbourhoods and encompasses seven famous hills of Istanbul. It was a cosmopolitan area where diverse groups such as Armenian, Jewish, and Greek minorities continued living together. Between 1940 and 1960, Istanbul experienced a significant population influx since the people from Anatolia sought employment in the city. Since the 1960s, Fatih has become more crowded with increasing migration similarly. It is recognized as a working-class district, but before, the community was a wealthy area. Fatih was constructed with some degree of central planning by the municipality.

Figure 3: Istanbul and the location of the research area

The district has experienced several floods throughout its history, affecting people's livelihoods and, more generally well-being of people. One of the critical floods occurred in

2019, and AKOM (Istanbul Municipality Coordination Centre) announced Fatih had experienced 114 litres per square meter of rainfall. According to media reports (Hürriyet Daily News, 2019), one person died in Fatih District, some houses were destroyed, and many streets were flooded, leading to significant transport disruptions.

The neighbourhoods selected in the study area were Eminonu, Yenikapi, Balat and Yedikule districts to analyze the residents' diverse perspectives and interrelationships. I have chosen these neighbourhoods in Fatih since they have experienced recurring flood events, which I noticed from social media and my social network. Also, some areas such as Eminonu were always in the media's attention and policymakers' agenda. The locations of these neighbourhoods are provided below.

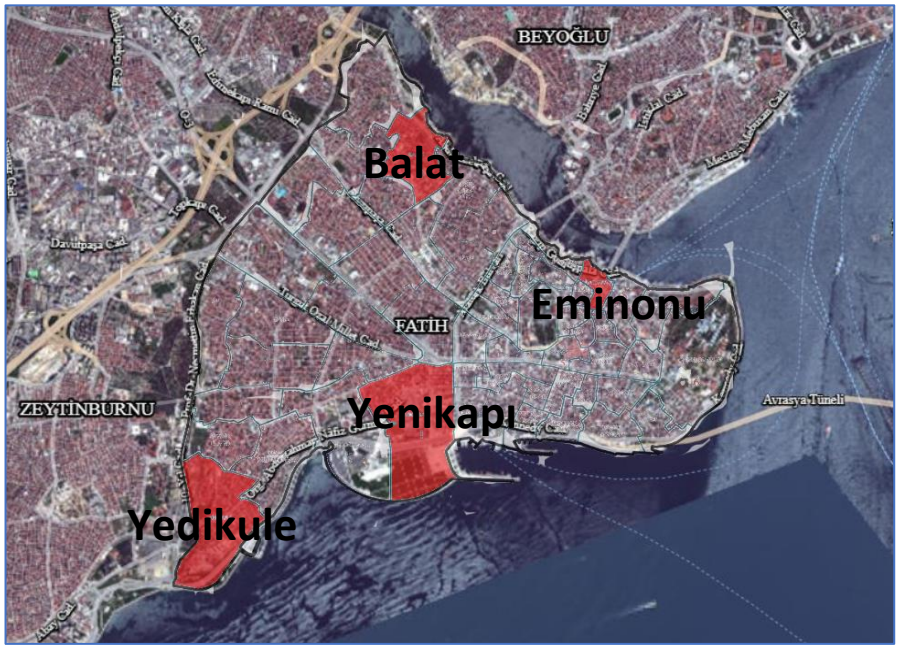

Figure 4: Locations chosen

After visiting Eminonu, it became clear that residents' knowledge was similar, while their experiences varied after the flood. They were primarily referring flood that happened in 2019. After reaching saturation, I visited other localities to conduct additional interviews. From different media sources, I learned that several areas within the region had been affected by flooding events. Some people weren't affected despite heavy rainfalls. Yenikapi was the second area that I visited. This allowed me to make a comparison between the first case and the experiences of residents in Yenikapi. When asked questions on the causes of flooding, they have different answers. The third area I have selected to visit is Balat, known for contested renovation and revitalization projects. Door knocking was useful from the

beginning. I had many informal conversations and spoke to many more people than the respondents' list. Respondents' strategies to deal with flooding were also varied in the area, but they were similar at specific points.

3.2.2. Sampling Selection

Purposeful sampling was applied to recruit participants in this research rather than probability samples. As Black (1993) states, the researcher chooses the sample according to the features to give what is considered a representative sample in purposive sampling. Rather than random sampling, respondents were selected purposively by looking for particular profiles or characteristics of people. A snowball sampling was also useful from the first interview onwards. Purposeful sampling was adopted according to the following selection criteria: gender (man/women), class (poor/rich; owner/renter), affected (by floods or not), having insurance or not, and ‘upstream' and 'downstream' positions. Participants were representatives of these mentioned groups. Afterwards, I made short descriptions of people. Although they initially represented a different group, different dynamics play a role in the communities. They illustrate intersectionality regarding gender, class, position, being affected/not affected, and owner/renter. This technique helped me understand how people live with water and indicated some complexities. Certain profiles or characteristics of people were differentiated based on different locations.

While some factors are recognized, such as living in poor conditions that force people to settle in regions that are affected by hazards, including flood plains of rivers, political and economic factors are less obvious (Blaikie et al., 1994). I, therefore, decided to choose these less apparent factors first and attempt to understand how diverse factors can affect people when they are mixed. One of the factors was based on their area within the neighbourhood, whether they live upstream or downstream. However, the vulnerability can vary people to person by other factors such as receiving insurance after flooding or gender. Although they initially represented different groups, different dynamics play a role in the communities. A general view is that owner-occupiers are less vulnerable than tenants since the tenant cannot modify their homes and are less able to get ready for and recover from climate events (JRF, 2014). However, tenants may modify their houses, or owner-occupiers might be vulnerable. This generalization can fail as there could be other reasons that make people susceptible to climate change.

It is risky to segregate floods from the social context that people are influenced by and put too much emphasis on them rather than the surrounding social environment (Blaikie et al., 1994). I have selected a diverse range of participants according to particular features and keeping in mind certain criteria within the framework of the social environment. This allows me to focus on many characteristics rather than generalizing. The aim was to understand how diverse groups of people's experiences may vary and how they deal with flooding. Further research is needed to analyze the groups in detail.

Table 2: Participants' short descriptions

Participants	Profile
Bürol, 57	*He is a poor man and breadwinner. He is working as a shopkeeper on the underpass. He has multiple jobs for living as an actor and retired. He lives in Balat and works in Eminönü. He has two kids and is part of a big family. He grew up in Istanbul for four generations and migrated from Turkey to Germany for a workforce in adulthood. He has experienced floods coming from the ground in the underpass. He is not concerning wet conditions anymore. He tried to clean everything in 2019 flood.*
Mehmet, 41	*As a rich man, he is the manager of a hotel. He is working in Yenikapı. His working place is not underground but downstream. The waters accumulated in front of his hotel, which faced floods several times. He has no insurance and has their coping strategies. He tried to clean everything with stuff. He is not concerning wet conditions anymore. He has a small family and moved to Istanbul for a long time.*
Orhan, 39	*He has flood insurance. He is a poor man working in an underpass as a shopkeeper (watch seller). He has experienced floods coming from the ground in the underpass. He is concerning wet conditions. He is living in Eminönü with a large family. He has been living there for a long time.*
Ahmet, 63	*He is working in Yenikapı. He defines himself as not flood-affected residents. He is a rich man who owns a courier company. He is not affected so much as the company has a stone door threshold. He is not concerning wet conditions. He has a large family and has been living in Istanbul for a long time.*
Ercan, 45	*He runs his own garment factory in Yedikule. He is a rich man living in Fatih for 45 years. He is concerned about the wet conditions. He is working in Yedikule. He tried to clean everything during the flooding. He has a small family.*
Semra, 36	*She is a poor woman who works in a logistics company. She is a mother of two. She lives in a basement and a rented house. She is concerned about wet conditions. She is living in Yedikule. She tried to clean everything. She has a small family and has been living there for a long time.*
Mehmet, 55	*He is a poor man working as a shopkeeper. He is concerned about wet conditions. He is living in Balat with a large family. He has lived there for a long time.*
Eren, 28	*He is flood affected young academician who spent his childhood in Balat. He lives in another city now, Antalya. He quite experienced flooding during his childhood multiple times. He has a small family, and his house in Balat was a second-degree historical monument.*

3.3. **Research on professionals**

Through interviews, I researched professionals responsible for dealing with flooding in the study area. Interviews with some officials from Istanbul Water and Sewage Institution, the private sector and European Environment Agency were conducted to gather information concerning flood events in the city. They included city planners, engineers working in Sewage and Water Administration and a climate expert. I have chosen Istanbul Water and Sewage Institution since the institution is the leading stakeholder in water management. The European Environment Agency was determined to understand how experts objectively consider flood management in Turkey. The city planner from the private sector had actively played a role in water management and was selected to contribute to the research from the lens of urban planning. They have recruited by using a mixture of methods. While the respondents provided contact numbers or email addresses, I have used their names as an introduction. I have asked about their responsibilities to understand what kind of knowledge they have. I was able to discuss their work in Istanbul, with a particular reference to Fatih. The respondents' list and responsibilities are presented in the table below.

Table 3: Professionals' descriptions

Nihat	He works as a climate expert on water resources, especially on water management, water scarcity, and drought, in the European Environment Agency, which is responsible for the outlook of the environment in Europe, shedding light on environmental issues and producing the information needed by politicians.
Batuhan	He has multiple jobs. He works as a city planner in a local municipality and at the same time in an organization they have established called the "Urban Studies Cooperative." They are trying to provide support and consultancy to local governments and cities that don't have enough capacity for urban studies.
Tunay	He works as an engineer in the Master Plan Department in the Project and Strategy Unit in ISKI. This institution is responsible for flood management consisting of river and flood modeling studies, river improvement projects, determination of river protection zones, determination of flood risk elevations, and determination of the principles of rainwater management in the next 30 years in Istanbul. He conducts projects related to manufacturing and related to stream improvement, and tunnels.
Derya	She works as a city planner in ISKI, in the Department of Planning. To respond to flooding, the department is responsible for setting out streams and floods into plans and determining basin densities. The department provides a plan and calculation for creating zoning according to basin densities. In their inspections, both give an opinion before the zoning plan and check whether the necessary things are done when it is suspended. If situations are not done, they follow the objection processes.
Oğuzhan	He is both a civil servant and a longtime resident of Fatih. He works as an environmental engineer and the control engineer in Technical Chief of Water and Canal Services. Within the boundaries of Fatih district, the institution is responsible for maintenance, repair, etc., of all operational malfunctions in drinking water and sewage systems.

I have asked the professionals the questions as follows:

- The role of their organization, responsibilities, and goals
- Their view on climate change
- How do they deal with flooding
- Their view on why flood happens in the study area, causes of flooding
- The efficiency of engineering works
- Improvement /barriers
- Views on what they consider water management

In addition to interviews, I have analyzed policy documents consisting of The Strategic Plan Report Of ISKI, the Climate Change Action Plan, the Istanbul Master Plan Report, and the Provincial Risk Reduction Plan to understand the discourse of policymakers involved in flooding and the management of flooding. I used specific criteria to select these documents and acquired them by examining the institution's website.

Table 4: Policy documents selection criteria

Policy Document	Selection Criteria
ISKI Strategic Plan Report (2021-25)	ISKI is one of the leading institutions in water management. Flood management is part of the report. It is one of the latest reports concerning water management
Climate Change Action Plan (2011-2023)	It is one of the most overarching plans prepared in Turkey concerning climate change. It includes national-level policies.
Provincial Risk Reduction Plan (2021)	The report illustrates what strategies are developed by AFAD regarding flooding/drainage.
Istanbul Master Planning Report (2009)	The report illustrates what spatial strategies are developed by policymakers regarding spatial planning and flooding/drainage.

3.4. Research questions

This research focuses on the citizens dealing with water by analyzing the residents' and policymakers' strategies for rehabilitation and prevention intervention and policy documents at national and local levels. The impacts and coping strategies have been explored in Fatih, İstanbul in Turkey. This research aims to understand how policies work out for people or not and have an insight into humans regarding how they deal with the issue. The study analyzes and compares adaptation mechanisms used by communities affected by floods and

policymakers' interventions and provides more academic knowledge on climate injustice issues. In this sense, the main question in this research are:

"How do policymakers' initiatives of planning flood rehabilitation and preventions interventions in Fatih, Istanbul respond to local communities' practices of living with floods?"

The following sub-questions are specified systematically to answer the research question;

1. What do floods mean for people?
   1.1. Which people are affected by floods?
   1.2. How do flash floods impact the well-being of people?
   1.3. How have the livelihoods of people changed with the flood?
2. What are the coping strategies/adaptation strategies of people concerning floods?
   2.1. To what extent are the communities vulnerable to floods?
3. How do policies work out for people?
   3.1. What are the policymakers' initiatives of planning flood rehabilitation and prevention?

3.5. Limitation of the Research

This section elaborates on the most significant limitations. One of the most important challenges was finding the right persons to interview. Water management/governance was challenging to study as many actors were involved in the process. Even if I had called the institutions before I visited them, they always directed me to other institutions that don't have enough knowledge about water management in Fatih. Meeting the right people was challenging for me as my study took a little longer. However, I have attempted to choose my respondents purposely from the most relevant institution and sectors. Government institutions' bureaucracy and organizational structure also contributed to this challenge to gain some maps and demographic information concerning the citizens of Fatih.

Another limitation of the sample selection was most shopkeepers have shut down after floods. This doesn't relate to floods; however, I had difficulty finding those who experienced flooding. I have asked several residents if they know the person who experienced flooding, and most of the time, they told me I was not here when the flood came. This might also be because they find the issue sensitive. During the interviews, I thought a sensitive topic might arise initially, especially for the Eminonu case. So having informed consent of the respondents was critical so they could participate in the process, knowing the aim and

possible outcomes. If they want to stop, I have always informed them they might withdraw during the interviews. The country's political atmosphere, which subjects to intense criticism for being highly central and characterized by limited freedom of speech, is some of the most challenging problems for doing research. I have experienced firsthand that some residents refused my request for an interview because they considered the issue political in terms of seeing the government doesn't act for flood management. The limited freedom of speech doesn't allow them to speak on water management.

Lastly, some practical issues of empirical data gathering were raised. One is the impossibility to indicate all findings within 24000 words, including the social, economic or political analysis of investigating inhabitants' experiences. Similarly, I didn't intend to make generalizations or form representatives of groups of people. It is almost impossible to analyze all of the variations. The situation might differ country by country where they have diverse cultural contexts or practices. Instead, I plan to address the categorization challenge since a society consists of people with heterogeneous patterns.

3.6. Positionality

As I mentioned before, I did my bachelor's degree and trained in City and Regional Planning which is highly top-down. My perspective, therefore, might be influenced by spatial planning, meaning that rather than empowering citizens, I had envisioned what the best planning solutions for them are so far. Although the planning practices and norms I have been subjected to so far have affected my personal bias, I had no first-hand experience in the water management field. Furthermore, as a Turkish citizen who knows the context in detail, I might have been influenced by the political atmosphere in the country before I visited the study area. I was aware that the government's central policies in any area impacted my positionality as a researcher.

3.7. Conclusion

To conclude, a quantitative approach was employed for this research. Semi-structured interviews were provided to collect primary data, while policy documents were examined for secondary data. Considering the attempts to collaborate concerning water management, this study explores how policies work out in Istanbul, how people collaborate or do people opt for their own initiatives and exert pressure on the government via other ways. The following chapter will present the results of the study.

4. Permanent Conditions of Wetness

This chapter will show that the general dynamic in the study area was rather than thinking of flooding as a problem in terms of disaster; the residents deal with longer-term, permanent conditions of wetness caused by poor drainage systems, clogging up of manholes with garbage or poor maintenance of pumping systems. According to the residents, not only did flood comes into their houses but also issues that followed the water receding were problematic. For most, the concern was the period after floodwater was exposed. In the light of this information, the question arises, "how do they deal with these conditions." This chapter elaborates on the livelihood of people in the area, how they deal with wet conditions, and their knowledge of causes. Before examining the strategies, it might be significant to mention what people like to live in the area to understand why they don't leave the area despite recurrent flooding.

4.1. Local attachment, livelihood, and the possibility of wetness

The findings suggest that the residents had an attachment to their locality. For elderly respondents, leaving the country was not the best solution due to their greater attachment caused by living in the area for long periods. One respondent felt emotional when mentioning the youth who want to leave the country.

"Whoever you ask, they say that I will leave this country, no matter where. I was in Germany on New Year's Eve. There is no place like Turkey. When I'm in a good mood, and the weather is nice, I take a cup of tea and go here to the Bosphorus; you don't need money for this. Take your tea, go here, sit there; you can't get that pleasure anywhere in the world." (Bürol,57)

All respondents felt strong connections to the locality they live in regardless of flooding risk. Moving to another city or country was not an option for them. Most of them have stayed there for a long time. Older people consider relocation more disruptive since they believe the conditions are not good enough in other countries.

While speaking about their experience with wet conditions, many respondents expressed their feeling, including their sadness and sometimes frustration. The unexpected nature of the event led some residents to consider flooding a disaster. Some residents felt a sense of dread, while some were concerned about what the future will bring. Although all of the respondents view the possibility of flooding in the future and that they experience the same situation again, they prefer to live in these wet conditions. The term flood is used with

"horrible event" or sometimes as "disaster." However, they were not approaching the problem as if they had experienced a disaster. The study revealed that another reason why they were not leaving the environment that they live in was their livelihoods. There were opportunities in the area, such as tourism and business, that played an active role in their livelihood. All these factors related to their subsistence make the localities more attractive to keep living. It was found that residents were given a different meaning to their livelihoods and the environment that they live in. Livelihood was a good reason to stay. Furthermore, most stated that the rain was critical for their life. Raining was perceived positively, while it became a problem when it was severe enough to influence their livelihood.

"I remember during my childhood how flood had an impact on marketers in Salı market which is set up on such a very small street, but it is a long market. In fact, it was one of the oldest markets in Istanbul since the Ottoman Empire. Not opening a market for a week was a very serious problem for those marketers. Sometimes the rain lasted for a day. It was affecting many small businesses."
(Eren,28)

4.2. The responses of the residents

The respondents referred to diverse responses concerning permanent wet conditions. The action that they performed was both preventive and recovery, depending on their previous experiences. They employed a range of coping strategies, which primarily depend on livelihood strategy. This section explains how the residents deal with these conditions.

4.2.1. Cleaning the manholes

Individuals play a role in actively constructing their localities aftermath of flooding. One of the strategies the respondents attempted to deal with wet conditions was acts of self-maintenance of government infrastructure. The shopkeepers in the two localities helped each other and tried to clean the drainage system- the manholes, so that flood water could leave easily. Even some of their outside acquaintances and friends contributed to the collaborative action. They were actively prepared for flooding and tried to eliminate the after-damages. Although they were involved in maintaining the manholes, they think they can experience wet conditions again. The residents with a continued risk of flooding still keep their equipment in a room since it is a situation they have to deal with very often.

"All staff is ready here. When it rained too much, we even had a border; when it came to the second-floor tile, everyone was on guard with mops and other stuff. Here. When the water enters, at least we give direction to that water. Because the floor is marble, it turns dull as a result. It costs a lot to polish it. In the rain like that at that hour, all the staff is here, ready." (Mehmet,41)

Figure 5: Pieces of equipment that the respondent still keeps, Source: Author

From the interviews with the residents, it turns out that they had multiple strategies to deal with wet conditions. Some of the respondents' ability to cope with overflowing manholes was not limited to cleaning the manholes with their social network as they have more resources. To illustrate, in Yenikapı, since they used to flood at least once a year, they were well-prepared. They employed a private company to expand the manholes, which was useful for draining the floodwater. According to the respondents, they haven't had any water problems since they opened the manhole.

4.2.2. Negotiating with government

One of the most important strategies was putting pressure on the government in terms of seeing it as a drainage problem. Most participants choose to apply to the municipality through a petition to share their issues concerning wetness-related concerns and continued risk. Rather than protesting against the government, the strategy might be called a "negotiation" since the residents demanded the government develop solutions to deal with the situation. The existence of social structure and network made it easier for residents to act collectively. However, they said they quit putting pressure after some time since they

received no response. They thought it wouldn't work since they believed the municipality would not address and responds to their concerns.

"I remember very clearly that my grandfather reported the situation to the municipality. The rainwater was not properly directed and did not reach the sewer; thereby, the basements were flooded with water. Here, water hits the basement of the house and one wall, and there appears to be serious humidity. That humidity affects the coal and the firewood. Well, I remember that my grandfather wrote a petition in this regard. No response was received, so I remember they came and looked. Well, we did not receive a response. So, it was not a permanent solution." (Eren, 28)

One respondent in Yenikapı explained the municipality's response to their application. He felt dissatisfaction with short-term solutions such as cleaning manholes after flooding. They already have the capability to clean the manholes and explain their need for long-term and permanent solutions. Another felt dissatisfied after applying to the municipality as well since the only response was establishing canal projects which couldn't prevent recurrent flooding. Some respondents in Yedikule explained the impossibility of having a response from the municipality while appreciating their work on short-term solutions.

"It is very difficult to get a response from the municipality. It's really, really hard. But they are doing this, to be honest. Well, the sewers are often clogged here. Of course, there is such a problem not only in the place where we are working but also in the apartments around us. When such a situation arises, they come and deal with the situation, frankly, but even this might be very difficult sometimes. We tried several times, but frankly, we did not get any response." (Ercan, 45)

4.2.3. Sandbagging

Tackling these wet conditions requires rationalities. The tendency was to take action during the flooding rather than waiting for different actors to come. One of the actions against flooding was to stack sandbags behind the doors to create a barrier in order to prevent more water from entering the workplace or home. This illustrates self-organization or defense against wetness. One respondent explained that they are still keeping sandbags in the warehouse so that they can intervene when a flood happens. As a precaution to prevent water, not just only sandbags, one respondent claimed that they put whatever they found. The residents developed a strategy to put them in an effective and proper way to reduce and prevent the damage. As the quotation below illustrates, they had a greater attachment to their

house since it was a family apartment. The strategy was labour intensive and required social action for some respondents.

We had sandbags, and we used to put them in the shape of a half-moon on the side of the door so that the water would never come to the door. Well, but they wouldn't solve the problem one hundred percent, you know, just to change the direction of the water. This was our family apartment, so we used to put whatever we found, such as clothes, buckets, bags, and things. My aunt, my mother, my grandmother, my grandfather, my uncles, they were always struggling for this." (Eren, 28)

4.2.4. Citizen-led development

An intriguing coping strategy was an example of self-construction through citizen-led urban development or incremental housing, where people construct their place bit by bit. One example of this practice was that they set up a " diver " system in their shops which collects the rainwater coming from canals after flooding. The respondent pointed out that the system works with electricity and helps water to go sewage drain. This system must have a water tank and a well to drain the water. The submersible system should be placed in this well. A water tank, a well, and the drainage pipes in the basement are visible in the picture below. When the water reaches a certain level, the excess water is pushed up the discharge pipe down the well with the help of a panel connected to the electrical system. An electrical system that activates this system automatically during the day must operate 24 hours a day, as seen in Appendix A.

Figure 6: Submersible System, Source: Ercan,43

To what extent flooding or drainage has impacted people can vary in diverse localities and among people with different socioeconomic statuses. Based on their experience in the past, some residents were able to reestablish their workplaces in Yenikapı and put barriers in front of the doors to prevent water entrance. They hired a private employee to employ this strategy which was not the only one they developed (see 4.2.1.).

"We were closing the hotel, but we were not blocking the road. When you don't block the road, and a vehicle comes, it makes the water ripple, and thereby almost all of the water was getting in by the ripple. Then we said that we had to close the road too. When the road was blocked, the vehicle entry and exit were already blocked. After that, for example, in the subsequent flooding, we blocked the water coming from there because of the slope, so we hired a blacksmith to build something like a big embankment there. It started to block. We have reduced the flow of water to this area. In front of the door, we made something out of iron; we made a barrier." (Mehmet, 41)

Figure 7: Barriers made up of iron, Source: Author

4.2.5. Wet conditions and insurance

Several issues occur as a result of these conditions. One of them was livelihood disruption due to loss of possessions. Most respondents had to bear the loss of property related to their livelihoods or prized possessions. I have interviewed two respondents who have experienced the flood in Eminönü, where several shops are located. The fact that goods of shopkeepers floated in the water resulted in financial loss and workforce loss as well as loss of property,

4.2.5.1. Waiting for insurance companies to come

The findings show that the residents rely on flood insurance. One respondent has flood insurance, and he waited for insurance experts that needed to come and check on the damage claims of claimants during the flooding. Some residents stated that insurance could be a disadvantage since they have to wait for the insurance company to account for damage, and the insurance assessment report does not come out immediately. Some correlated them with other shopkeepers' experiences with insurance companies.

"The interesting thing is that it was our advantage because the people on the opposite side who have insurance couldn't close the door during the flood. The manhole over there exploded. All his possession and goods were destroyed. There was also a shoe store downstairs. No insurance covered it. ...Other friends waited for the insurance assessors for 10 days or so; they will come here to see and do something. They will set the price. In the meantime, all the goods were destroyed, and all of them went to waste. In other words, we had an advantage because we were not dependent on insurers in that respect." (Bürol,57)

4.2.5.2. Go to the Court for Insurance:

One of the other practices of living with water in the area was going to court for insurance to put pressure on insurance companies. The residents who had insurance had experienced directly how insurance became a disadvantage. They have been in a court case with the insurance company for almost 3years. They struggle with the company because the insurance assessors set the value of their products far below their value. The insurance assessor made the damage evaluation according to the inflation rates of 2019. They calculate the damage of the products not with the current inflation rates and do not consider the increasing inflation rate since 2019, which puts the insured into even more difficulties. Another issue was the postponement of the court, which made the damage double for them. Insurance companies try to negotiate, but according to the residents, the evaluation of damages is hard to deal with.

"When I look at the inflation, the current value is very different from the production values of that time. The products they bought from us are clear in the assessment report. I hope they fix the price and do something about it...We live here as 3 or 4 shops. Most of them did not have insurance. They started to look ahead by selling the product they could sell and throwing away the product they could not sell. So they started to look their way. But the process is still ongoing for us since the cost they offer is not acceptable. I mean, after all, there is a lot of effort. So how can I compromise on the cost? You can't even decorate your workplace with this money." (Orhan, 39)

4.2.6. Cleaning Clothes and Buildings

The permanent wetness condition was responded to through several attempts to recover its properties. The residents' efforts to save the properties were not only during the flooding but also in the aftermath. One of the strategies was cleaning clothes and selling them at a lower price. Some respondents didn't throw out all the goods left; instead, they gave them to a dry cleaner so their products could not be ruined. They sold them at lower prices. Although they didn't make any profit, they tried to compensate for the damage as much as possible.

"*Well, we found a dry cleaner for the damaged goods. Right away, that day, without destroying things. We took it to the washer. We came after that; we had already laid it out in front. I mean, I already had packaging done after it dried. Then we sold cheaply, but we cannot say we did not lose; we did. But for example, what we sold for 40 Turkish Liras, we sold for 20 Turkish Liras, we sold for 15. We said to customers that we brought the ones that came out of here washed. We sold it but cut the loss in half in the end." (Bürol,57)*

Another response was to clean the building that had flooded. In this sense, the gender dimension is worth mentioning as the society has traditionally patriarchal attitudes and orientations (Özdemir, 2021). Respondents clarified that the task of taking care of children is mainly left on the shoulders of women during flooding. Being a woman, having a child, and wet conditions shaped their response. Apart from their reproductive labor, it was challenging for women to handle the wet conditions by cleaning the houses, drying everything out, and taking care of the children simultaneously. One male respondent attributed cleaning to the sewer overflow, which his mother was afraid of dealing with during his childhood since it required a lot of work to clean the sewage from furniture and floor. Residents who experienced flooding in their homes were more worried about damage to personal belongings. It was clear that they were connecting past and their current lives. Positive statements were rare concerning the wet conditions. The work was not only limited to cleaning for the residents who have a livelihood in the area. It included arrangements and decoration that required more labor.

4.2.7. Putting clothes high

It was found that wet conditions didn't lead to long-lasting emotional effects in the area. It was more livelihood impact that was significant for the residents. Another response of the residents was putting the goods high to minimize the effects on their livelihoods. Some residents, the shopkeepers in Eminönü, keep their goods above a certain level during the flooding to save them. Only items on the shelf remained dry. They put mannequins on the top when they hear from the media that a flood is coming. It was a common threat for most respondents dependent on their livelihoods.

4.3. The nature of flooding and loss of trust

This section presents how the residents consider the problem caused by different factors. Although the study focuses on how they deal with flooding, it is significant to explore the relationship between these diverse ranges of experiences which leads to various responses.

When the city is faced with extreme rain conditions, the rainwater goes directly into the manholes, overloading the drainage system. The respondents also acknowledged that when heavy rain happens, people have to deal with different conditions caused by the clogging of manholes. The participants at first tended to attribute what they call a problem to the lack of government interventions. They also attributed the lack of government intervention to some barriers, including ageing infrastructure from the 1970s. Some residents, on the other hand, did not put so much pressure on government institutions. Respondents tended to attribute the cause of wetness to poor drainage and sewage problem, leading to damp and humid housing conditions and health problems. For most, what they call the "problem" is when these different factors combine.

4.3.1. Poor drainage

References to overflow of the gratings, ageing infrastructure or improper pumping were often made. It became apparent that the respondents' theories of the cause of flooding were discussed based on different bodies of knowledge. One of them was the knowledge attained by the experience of living. Professionals produced the other knowledge. The quotation below clearly shows how people perceive the problem, and very few of them mention flooding.

Of course, the flood four years ago was caused by the overflow of the manholes and the accumulation of rainwater there." (Bürol,57)

Damage to some items, including coal and wood, was more devastating since they are necessary for heating for the winter season. They were keeping them in the basement, which was flooded. Some respondents explained how poor people were dealing with flooding. Reference was made to the improper gutter system on the roofs of poor people. For some, this was due to financial conditions of people, which led them not to take care of their houses and upgrade their roofs. Therefore, the rainwater could not reach the right place, destroying the houses. This illustrates the capabilities of people dealing with water. Poverty and not having a collective action had an impact on the coping strategies of some residents. In coping with the impacts, some respondents had fewer resources while some of them had more.

Istanbul has appealed to several migrants and refugees for many years. The study area also shows the same pattern with the immigrants from other cities constituting 272967 while the local population is 110023. The demographic data of the province was applied in interviews. Some participants immigrated from other cities and sustained their lives in Istanbul for years. During the fieldwork, the interviews were constantly delayed due to the long working hours of the shopkeepers. Sometimes they were disrupted because of their clients. They were very attached to their products as they were the only income sources for some of them. However, some respondents benefit from multiple income sources.

One of the localities which I considered flood-affected was Eminönü. Eminönü is a big district situated in the busiest ferry crossings for Bosphorus and Marmara Sea. The population of the area is 30000 residents, while two million people work or pass the site daily. Residents are predominantly working class. A severe flood occurred in an underpass where flood waters rose to over 1 meter above the ground in 2019. As a result of this, most properties on the underpass were flooded. I, therefore, decided to visit the area and contact the shopkeepers. The workers were more familiar with my research since the area attracted the media's attention at that time, and several journalists interviewed them after the flooding in 2019. However, few respondents had time for interviews when I first visited the area. The time was arranged for later that day. Some were unwilling to interview and stated they could not have a break since their boss is quite demanding. It became apparent that working conditions in the city were pretty harsh.

In Eminönü, most respondents consider the leading cause of flooding in 2019 to be emanated from neglect in the maintenance of pumps by responsible bodies. Some witnessed flooding several times but often mentioned 2019 flooding. As can be surmised from the quote below,

the respondents are not holding the flood responsible for what happened. Instead, he considers it a 'manhole' problem, an infrastructure problem. Furthermore, according to him, the Eminönü underpass was submerged because of the area's topography and insufficient drainage systems in adjacent areas.

"*The manholes overflowed from this underpass as the pumps in the other underpass did not work and put pressure on the manholes. The pumps haven't been checked for a long time anyway. It wasn't raining heavily at that time. Therefore, since this place is exactly at sea level, the waters filled with water from above Mahmutpaşa, from Grand Bazaar and directly from the ramps without going any sewerage." (Bürol, 57)*

I spent a half-day being shown around the underpass and was given information concerning the background, different practices, and strategies for the flooding that had occurred there. One of the participants who worked in an underpass informed me that the local municipality did not have responsibility for the flooding in the area since Istanbul Metropolitan Municipality is the responsible body for flooding in "underpasses." This made me aware that the differentiation of responsible institutions occurs region by region and on the "underpasses" and "surfaces." Some respondents also mentioned pumping machines that were not routinely tested for functions then. Acknowledging that municipality is the responsible body for the maintenance of pumping stations, citizens consider the lack of care as a problem in Eminönü.

4.3.1.1. Aging Infrastructure

The localities I selected differed from each other, and the flooding characteristics differed from the resident's accounts. From the YouTube videos, Self-posted videos' by citizens, or material from a television station, I have attempted to find one of the hotel crew working there for about nine years. They had experienced flooding several times. According to their theory of cause, it was aging infrastructure that resulted in wetness. His experience with the flood was the disruption of the elevator or other properties in the hotel. The hotel where he works was flooded several times by disrupting the elevator or other properties. It is not only the hotel's property; sometimes, the customers' cars are affected. He accounts for the infrastructure, such as small inadequate pipelines.

4.3.1.2. Being in the intersection of main roads and poor drainage

The residents felt that the cause was a mixture of factors. A significant part of the respondents acknowledged other reasons why flood happens. One of them was living where the main streets or bridges intersected in Yenikapı. They considered water comes from Istanbul Metropolitan Municipality and Beyazıt, which were upper areas. This led to the accumulation of all water from bridges or main roads. Manholes were not big enough for incoming waters. Some who experienced flooding multiple times had more detailed explanations based on their observations. Most of them were aware of the municipality's responsibility to clean the manholes that prevent water from draining.

In the same localities, the theory of the cause of two residents varied. While one blamed government infrastructure, other residents consider human-related factors responsible for what happened. Some respondents in Yenikapı, who consider themselves unaffected by flooding, explained how some parts of the manholes are blocked by trash, leading water not to enter the drainage system and blaming human-related factors for what is happening.

4.3.1.3. Road Building

The other locality I visited was Balat. This respondent explained the situation with his own understanding. According to him, the municipality [read: the section responsible for road construction] was responsible for flooding since they rebuilt the road. Respondents in Balat also blamed the government for not protecting historic buildings in the district.

"They poured concrete on these roads; they put wire mesh and concrete on it. When the concrete was poured, the roads completely rose, and even the shutters of many shops could not close. They had to lift the shutters. Because, for example, the shutters are here now. Now it goes all the way down here. So now you poured concrete here and there. What happened? This shutter did not go down. What happened is that they had to lift their locks up and the shutter. Look, here is a simple example. The shutters did not close. When sidewalks and roads rise." (Mehmet,55)

"*The place we lived in was already a place of historical importance called old Istanbul; our house was a secondary historical monument, for example. I don't think it's a very normal understanding to allow them to be harmed blatantly, you know, I don't find it very normal in terms of transferring it to future generations in terms of the continuation of a tradition and culture outside of municipal administration. I'm not saying this in the name of blessing my own neighbourhood, but I think it is in a really important position. Even if we don't live there anymore, I think it is very important for Istanbul." (Eren,28)*

According to some respondents living in the basement, the problem was infrastructure. One respondent blamed the developer for avoiding some costs and the government for not inspecting.

4.3.2. Sewage problems

The respondents acknowledged that the water coming from the ground was not only rainwater but also sewage. The residents are quite aware of the differences between the infrastructure on the floor. For most, it was not a flooding problem in the view of citizens: instead, it was a sewage problem. In Yedikule, one respondent explained the sewer system they were exposed to. According to him, the sewer system was eighty or ninety years old and didn't change since that time, while the outside system has changed from a certain manhole to a certain manhole.

Contamination was one of the significant issues that threatened the residents' health. They mentioned the floodwater as a "germ" that destroyed their goods and possessions. For some residents, sickness was attributed to humidity caused by wetness. It was wet conditions that were the leading factor in health problems.

4.3.3. Living "up" and not affected

Living upstream or downstream also shaped the degree to be affected by flooding. One respondent in Eminönü explained that the higher areas are also affected: the water entered many shops there; however, it was easy to evacuate due to the topography according to this respondent, while their conditions as flooding underground and low-areas resulted in more submerge.

Flood-affected respondents were chiefly worried about the aftermath of floodwater that entered their workplace, while not-affected people were concerned with other residents' experiences. One respondent defines himself as unaffected since he thinks having a threshold in front of his door saved his workplace from flooding. Despite the heavy rain, the door steps were useful for them not to be affected while the other commercial buildings were flooded.

One respondent defined himself as not affected; rather, his family is influenced by flooding. Based on his observations from childhood memories, living on the upper floor was advantageous. According to his account, no situation would damage their belongings since their apartments started from the first floor. The area he comes from, Fener Balat, is a district where detached housing is more common. Acknowledging that, he elaborated on how the water damaged the coal they use for winter.

4.3.4. Loss of trust in the government and institutions

The relationship between the government and the citizens is also significant in understanding how people respond to government interventions. It was apparent that the residents of the area distrust the government. Given that the government is also highly politicized, the respondents feel that they cannot rely on the government regarding water governance; one of the residents elaborated on how the issue was politicized.

"Politics has always been there. It was associated with everything. In fact, we suffered much more damage to the knee in the previous period. No one came to help us. I mean, neither the municipality nor the municipal police came and helped."(Bürol,57)

This quotation might explain why people are not putting more pressure on the government. By saying previous period, he means the last municipality, the ruling party's Justice and Development Party candidate. The new mayor from the opposing party had come to the new Office, and right after that, there was a flood in Eminönü. He was criticized for not being there then, which was also reflected in the media's stance on the issue. The media depicted the stories of shopkeepers in such a way that it would be in their own interest, which resulted in more political polarization.

It was found that the more what is happening is depicted in the media, the more responses come from the state, or the response is based on the magnitude of the flood. Shopkeepers consider that when it was reflected in the media a little, the actors started to help a little from both sides, from the municipality and other state institutions in Eminönü. According to the participant who experienced flooding several times, financial support is just for the image of the policymakers. The resident doesn't trust the actors as they explained that policymakers only show up when enormous damage has already occurred:

"This is Turkey, after all. Well, when you look at the system, no one helps anyone here anyway. Everyone pretends to help. So here, for example, we experienced the same things before. For example, consider these six, assuming they are up to a knee, just like the one before. No one helped us at that time. So in the period up to the knee, no one came and helped." (Bürol,57)

In the initial phase, I attempted to find a community leader to help me to find the participants who experienced flooding. I have tried to reach the gatekeeper that I thought, the Muhktar, representative of the neighbourhood, could be in my case. However, he denied the flooding a few years ago and responded: "there hasn't been any flood in my neighbourhood for 25 years. I have been in charge for almost 25 years. What do you want from me? If I say anything, they will charge me." He meant the government in Office. When I said I have watched in your neighbourhood on YouTube videos, there has been a flood; the response was, "it is not related to our responsibilities; it is their problem." This quote illustrates community representatives' dynamic capacities not to put pressure on the government. It was because of the political climate the country went through. Furthermore, Most residents mentioned the increasing partisanship in the country. After I had experienced this, I decided to change my strategy to find people affected by floods and watched YouTube videos as background information on flooding in the localities and attempted to find people who didn't hesitate to speak.

The study's findings illustrate that climate change adaptation was not a priority for residents since there were other primary issues that the residents have gone through. However, they acknowledged the importance of sustainability. Some respondents blamed the ignorance of people.

"We destroy nature…. people waste water without thinking about tomorrow. When you waste water or waste it too much, you destroy nature. Even if it goes into the sea, drinking water is wasted. After all, I think it will be a problem for future generations." (Mehmet,41)

Since the people's priority was shaped by different factors rather than flooding, floods only became a concern when they faced the flood. It was not a problem for most residents because it was not happening very often. Furthermore, some floods are a big problem. As well as the frequency of flood events, one of the things that make flooding devastating is the level of flooding. When I asked people to do interviews, they replied: *"You should go to Black Sea Region for your research because floods kill people over there*" which means that even though flooding disrupts everyday life activities for particular people in the region, they consider the devastating ones.

4.4. Livelihood disruption

It was apparent that there was a correlation between the magnitude of the flood and the loss. The unexpected nature of flooding in some localities was the reason why they didn't intervene during the flooding. Most respondents' livelihood was affected by unanticipated wet conditions. One respondent claimed that renovating an elevator that was damaged after water entered their hotel cost 5000 euros. Moreover, the conditions resulted in their guest's belongings being damaged. The repair cost 12.000 euros. These conditions have also led to other damages to shopkeepers who are dependent supply chain. Ercan (45) owns a small garment and elaborated on the following about their responsibility of him to the clients;

"In such a situation, of course, you feel bad at first because they were ordered goods, shirts by the wholesaler. It's okay if there were damages on other shirts other than that. There would be a certain cost in the same way, but it wouldn't be that much of a problem. In this case, because the shirts are ordered, you have to buy the same product again and replace it. In other words, if you're making one loss, the cost is multiplied. So, of course, there were problems with the other side in that sense. Of course, he will try to market the product he will sell. But we couldn't complete them. We were only able to make it in a period of ten to fifteen days. So it was a problem for them too. If you can't produce the goods in the workshop, it will be a day or two, but a problem of 10-15 days makes everyone nervous." (Ercan,47)

4.5. The aftermath of flooding- interaction between the government and society

A diverse range of people with various subsistence lives in the area. These different dynamics influence their activities and their relation to floods. They also interact with government policies directly or indirectly. In Eminönü, the municipality was able to act in several ways. Some respondents explained that some institutions supported the shopkeepers after the flood in 2019 in Eminönü.

"In 2019, The government supported us by paying our rent for three months, even four months, to the municipality as the State..... The governorship paid our rents to the municipality. Something like that happened. They also gave 100 thousand Turkish liras to support the loan from KOSGEB. Interest-free. Perhaps they also gave such support. Otherwise, there was nothing else." (Bürol, 57)

KOSGEB is an organization that supports small and medium-sized enterprises in Turkey. This quote illustrates the observation of how different institutions manage governance. Support was to compensate for the financial damage. Another response was taking on tasks such as cleaning the place rapidly. According to the resident's accounts, the municipality gave them much support at that time. They brought ten men from each district and cleaned the mud and dirt.

Based on resident observations, the decision-makers tended to underestimate human knowledge from the citizens' experiences. In contrast, some respondents underestimated their ability which comes from daily experiences. In one of the interviews, the participant stated that before the flooding, government officials removed the stone door threshold in front of an underpass in Eminönü. After two or three weeks, the flood came. This quotation illustrates the attachment of government officials to the project rather than involving the citizen in the process.

"Two years ago, there was a flood again. It was all wrong. They tried to fix the stones, the ground, etc., all over the place. At that time, there was a company that made the stairs straight. They did not put the threshold outside. We usually had two more steps; they didn't do it there. We went there as shopkeepers. When we said it later, they said, we do not have such a thing in the project. We said that 'look, if it rains, we're ruined, all the rain coming from outside would go inside'. It didn't take a week, it rained, and a tremendous rain fell. All the waters flowing from above, that is, from above, entered the bazaar as it was. They should have listened to us but didn't." (Bürol, 57)

This quote illustrates government and citizens' interactions since the government employs the contractors through public-private partnerships. Some of the promises made by government officials were helpful, according to the residents in Eminönü. Although they experienced heavy rainfall, the resident has not experienced flooding since the government put two pumps in the underpass. They mentioned a separate tank was built, allowing them to save from flooding during the same amount of precipitation. The respondents had guarded optimism that they don't feel afraid of massive rain anymore

The residents felt that it was not only financial loss but also emotional disruption. The affected people also needed support from different actors. They stated that in Eminönü, in 2019, they received a lot of moral strength from the municipality. Also, they indicated that they renovated their workplaces and cleaned them.

4.6. Residents' discourse

Respondents were inclined to argue the problem according to context and content. For some, the lack of standards in the country was one of the most significant issues that led to flooding. When asked about the problems with these wet conditions, reference to the municipality's responsibilities, giving permission to basements, lack of standards and lack of zoning was made, as well as acknowledging living in the historical area with old infrastructure. Some mentioned that basements should be used more as parking systems, and municipalities even charge per flat for construction and make parking with those fees. This shows that this

resident adopted the spatial planner’s language. Other respondents acknowledged the increasing population in Istanbul, thereby commonalities of living in the basements. For most, basements constitute a significant problem since they flooded after heavy rainfalls. Some residents suggested that the municipality's responsibility and involvement of citizens in the water management process are essential. Some of them consider the solution as apply to complaining when the municipality didn’t provide the maintenance of the drainage system.

5. Fragmented responsibilities and collaboration in flood management

This chapter analyzes how the different actors are trying to respond to these conditions regarding policymaking, planning, etc. The research addresses the issue through observation of professionals and policies' terminology, knowledge of cause-and-effect relationships and solutions, and barriers in dealing with flood events.

Following the advice of the municipality to gather visual data, I visited Istanbul Water and Sewage Institution. After interviewing a city planner, she advised me to get data from another department, the master planning department. However, the engineer there was sceptical about data sharing because he thought I could share information with other "rival" municipalities, which shows even data sharing is something institutions scare because other government institutions which are highly politicized can use the data in such a way that serves their political interest. Despite the lack of transparency, they were willing to share information via petition. It was found that lack of transparency, constructed by power dynamics, plays a role in data collection. These power dynamics play a role in the institution's stance concerning collaboration. While in theory, the organizations are constantly collaborating, in reality, different institutions such as the municipality always directed me to other institutions which do not know about who is responsible for water management. In fact, in ISKI, there were diverse departments that were responsible for different roles in flood management. This illustrates the fragmentation of the institutions and the disconnection between them.

Compared with climate experts, the role of flood professionals is more precisely focused on flooding issues. Among engineers and planners, only one of the respondents resided in the study area, while the others were responsible for several localities in Istanbul. Flood professionals working in ISKI usually had a civil engineering background.

Rather than decision-makers on projects, the respondents' role was to implement them with available resources. On the other hand, their understandings of cause and effect and solution varied at specific points. While their training requires the procedures they must follow, their actions are also affected by political and economic context. Although they didn't acknowledge the political impact during the interviews, one of their interpretations of the cause of the flooding was changing land use and decreasing green spaces, which is highly political.

As well as analyzing policy documents, their contribution was necessary for this research to understand the major concerns and how they approach the issue. Policies and professional knowledge were no different in terms of cause and solution. Mostly, the procedural demands of the professional's institution build their interpretation of the solution.

5.1. Policies on water management

The policies introduced in this section are Climate Change Action Plan, ISKI Strategic Plan Report, Provincial Risk Reduction Plan, and Istanbul Master Plan Report. All the documents are relevant since they include many elements regarding urban flooding. The policies will be interpreted based on the interviews and observations of professionals and residents.

5.1.1. Climate Change Action Plan

The Ministry of Environment and Urbanization prepared this plan for 2011-2023. In this report, the flood management policies are under the heading "natural disaster risk management." Although the plan expressed the need for national preparedness and capacity to prevent the adverse effects of climatic change and to adapt to these effects, the targets concerning flooding management are mentioned for two purposes briefly:

"Purpose UA1: Identifying threats and risks for management of natural disasters caused by climate change.

Purpose UA2: Strengthening response mechanisms for natural disasters due to climate change."

While capacity development, coordination among different institutions, education and infrastructure, and increasing public awareness are expressed to realize purpose 1, these illustrate the ambiguous policies since they do not address how they will be implemented. Several flood risk maps and plans are mentioned as output with performance indicators and relevant legislation. However, some relevant institutions are excluded when referred to coordination. The urban flooding and drainage-related problems are not stressed.

For purpose 2, there is a reference to emergency response post-disaster recovery for developing community-based disaster management. It is clear that the community-based approach reduced training and public awareness. There are some references to a partnership between coordination. However, there is no clear explanation for this coordination between the partners. Different responsibilities are given to various organizations, while drainage-related solutions are excluded. Furthermore, these policies do not address how the residents

deal with wet conditions as none of the strategies deals with the consequences of these conditions on residents. The ambiguous nature of policies is apparent since they did not consider the barriers to implementation in terms of lacking the country's government budget, time frame, and bureaucracy.

According to the interviews with professionals, the policies were also unlikely to be implemented. Flood professionals had acknowledged climate change dynamics and the difficulty in the applicability of design measures. They often commented on these dynamics by holding responsible climate change as one reason for flooding. During the interviews, the participants also acknowledged the uncertainties of the climate crisis. Strong emphasis is given to learning to live with uncertainties.

5.1.2. ISKI Strategic Report and Provincial Risk Reduction Plan

It might be argued that the Provincial Risk Reduction Plan and Strategic Plan of ISKI entail relatively the same strategies, which explain that the goals, priorities, and responsibilities are negotiated and, as a result, shared and comply with other strategies on paper. It might be helpful to clarify them comparatively.

AFAD prepared Provincial Risk Reduction Plan (2021) to increase resilience to disasters in Istanbul. The plan refers to floods in the history of Istanbul and the impacts such as disruption in traffic, agricultural areas, accumulation of water under the bridges, flooding of basements of homes and workplaces and thereby extensive property damage. The cause is attributed chiefly to downpours, increasing population, mistakes in city planning, destroyed nature etc., in Istanbul. Three interchangeable words are used for the term "flood," including "sel, su baskını, taşkın". Although the division between these words is not clearly made, the phrase “sel” and “taşkın was explained while “su baskını” is not. “Sel” is often used as an umbrella term for flooding. However, the flood that happened in Eminönü in 2019 attributed to “su baskını”. Although the division is made between what floods are in Istanbul, the solution was not differentiated for these different types of floods.

2021-2025 Strategic Plan also has the same lines as Provincial Risk Reduction Plan. It has been prepared by ISKI (2021). Several water management strategies and propositions are introduced. It proposes some strategies/actions related to flood or drainage problems (Table 6). These two policy documents are an illustration of the negotiation between institutions.

Table 5: Solutions to Poor Drainage Caused by Excessive Urbanization

Provincial Risk Reduction	ISKI Strategic Plan
The separation of rainwater and sewer lines will be ensured completely.	*The preparation of the Rainwater/ Tunnel Project will be ensured.*
Building materials and techniques that will increase the permeability of the surface cover and regularize the surface flow regime in roads, pavements, green areas, and vacant land will be developed, and their use will be expanded against flood risk.	*Urban permeable pavement, artificial ponds, seepage areas, etc., creation and protection of the groundwater level are proposed to provide flood control. Institutional capacity for green buildings and disseminating practices will be increased.*
Flood risk maps will be prepared by considering the effects of climate change.	*Flood Management Plans should be completed and put into practice.*

Some additional solutions in Provincial Risk Reduction concerning urban flooding/drainage are as follows.

- *The existence of pump-motor-pump systems that will discharge water in the basements and ground floors of the buildings located in the flooded areas and the floodplain, training of personnel and reserve personnel with usage skills will be expanded, and the level of preparation will be inspected*
- *Stormwater drainage structural system solutions will be developed to prevent urban flooding.*
- *Strengthening flood water drainage channels will be ensured, the manholes will be overhauled, and the needed areas will be restructured.*

Both plans envision that all the strategies will collaborate with different government institutions, from national and local levels. However, there is little detail on how they will be realized except the time frame and responsible bodies. Moreover, drainage-related solutions proposed in the policies to increase surface permeability were not implemented in the Fatih area.

These plans include the same theory of cause with experts or semi-experts, which is climate change was not the only cause of flooding. When asked about the causes of flooding in Turkey, respondents mostly referred to river flooding in Istanbul since they viewed this as the main problem compared to sewer overflooding. For them, one of the reasons for flooding occurred in Turkey was changing land use through excessive urbanization. They didn't explicitly mention the drainage problem while they implied it. They recurrently referred to

“unexpected rain, flash floods, climate change land use changes, sensitive areas and more concretization caused by urbanization.” The policies and professionals have the same notion concerning problems and solutions. Emphasis is given to minimizing the risk by improving the stream improvement projects in those regions, making the stream cleaning more meticulous, and cleaning the ditches to the road crossings because closed passages can be blocked more quickly with regard to river flooding.

It was clear that their theories were similar to the residents' theories. However, the professionals mostly used technical language. Sometimes they supported their claims with statistics. Besides statistics, using some terminologies such as "precipitation, infiltration capacity” constructed their theory within the technical framework. The references were made to the soil that cannot absorb water. They mentioned the contribution of excessive urbanization, which gives way to change in land uses to flooding, resulting in the boundaries of the settlements expanding by covering the valleys.

5.1.2.1. Separate System

One of the most emphasized strategies is to build separate systems to minimize the risk of flooding in water policies. ISKI Strategic Report (2021) legitimizes building these infrastructures and treats them as if they prevent drainage problems entirely. The report defines the problem as: “*The connection of roof water, drain grate, etc. into the sewer line results in inadequacy of canal line and thereby flooding of lower floors*” while their proposition is; “*Since it is essential to give the drainage and ground waters of the building to the rainwater channel if there is no rainwater channel, it is temporarily poured onto the road*” (ISKI,2021). Similarly, the professionals mainly emphasized their infrastructure-based solutions. They implicitly attributed the problems to the poor urban drainage caused by changing land use and excessive urbanization of Istanbul. The engineer respondents’ leading terminology was mainly composed of realizing projects as a result of being representatives of their institution's role. They put a lot of emphasis on infrastructure and centralized planning. Separating stormwater and wastewater is one of the most used words during the interviews. They mainly attributed why it is difficult to do these projects to implement. As can be surmised from the below quotation, engineering-based possibilities often shape the solution generated by flood professionals.

“A combined system was designed in Fatih. Only the wastewater part is made; the rainwater part is not. Therefore, since the wastewater pipes carry the falling rain, the presence of low elevations causes flooding in the buildings. Of course, it is not easy to prevent them. This can be relieved with

the new projects or the projects under the bridge, but a separate rainwater canal project must be implemented… Maybe the projects on Vatan Streets can relieve what is happening here. Oğuzhan"

"There is a combined system in some places, but a separated system is always prioritized in our country…..In some places, for example, in Kadıköy, a combined sewer system is obligatory. Because the line is the system, you cannot make a new one." Tunay

Local entities maintain primary emergency responsibilities for flood management with operation and maintenance. This respondent was responsible for the immediate needs of the citizens and the district when a flood came. There are three projects that ISKI conducts in Fatih in which floods are attempted to be mitigated by rainwater lines. According to the respondents, the private sector is involved in the process since ISKI does not do it with its own personnel but with the help of the contractor company. ISKI organize the contractor companies' work, direct them and supervise their work. The public sector determines and controls the work and pays the progress payment.

Table 6: The projects in the area

Projects	Status of the projects
Edirnekapı Rainwater Drainage Project	Completed
Unkapanı Rainwater Drainage Project	Ongoing
Samatya Rainwater Drainage Project	On feasibility stage

Policymakers approach the problem as if rainwater projects will dissolve flood events indicating that the government is mainly thinking in terms of new infrastructure development. The picture below also illustrates government officials' perspectives and coping strategies of government officials concerning flooding.

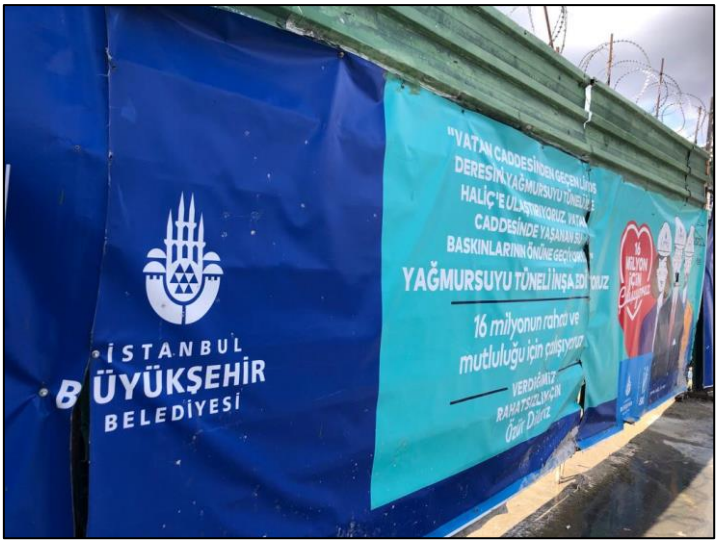

Figure 8: The poster that promotes infrastructure projects to prevent flooding, Source: Author

5.1.2.2. Flood Risk Maps and Basements

One of the policies in the Strategic Plan of ISKI is that "*Maps for Hazard, risk and disaster such as floods, landslides, which will form a basis for risk management processes, will be prepared and integrated with land use plans."* (ISKI,2021). One of the respondents verified the attempt to prepare flood risk maps.

"We have rarely left the area for which a flood risk map has not been prepared throughout Istanbul. We prepare them step by step and put them in the system. We send all maps through the system to municipalities to be processed in all plans." Derya

As can be seen in this quotation of the respondents, respondents mainly emphasized collaboration with the municipality. The operation and maintenance of actions are negotiated with the municipality and ISKI. Respondents elaborated on how they organized the process with the municipality, particularly emphasizing master plan making in the area. The master planning department in the municipality and ISKI interact through data sharing concerning flood management.

Furthermore, ISKI Strategic Plan mentions the problem and solutions for people living in basement areas. The Plan describes issues as follows; *Citizens living in the basements of buildings are victimized due to residence in the basements where the waste water pipes of the building are lower than the elevation of our existing lines (ISKI,2021)".* This quote

illustrates one-dimensional characteristics of policies which consider the residents living in basement as "victim". However, living in a basement doesn't make them "victim as they might have other coping strategies such as pumping system etc. (see the previous chapter). The plan suggests a solution: "*Determining and rearranging the legislation standards for collecting precipitation water in the inhabited basements, in coordination with the district municipalities, so that the rainwater or wastewater does not damage the basements*" (ISKI,2021).

The respondents were also aware of the existence of basements and the possible risk they have when the flood comes. However, apart from policies, they also acknowledge the housing crisis coming with population growth, which makes implementing standards proposed by the ISKI Report more challenging. While the district municipalities determine of soibasman level, which provides raising the buildings, the fragmentation of responsibilities challenges the decision-making process, according to respondents. Acknowledging that the municipality is a decision-making authority, they give opinions and state the flood zone or flood prevention construction area. ISKI attempts to minimize the risk of flooding with the processes that support the operation. One respondent elaborated on the challenges of living in a basement. According to this respondent, removing basement floors from zoning was a solution, which is the government's responsibility. Acknowledging that living in a basement is something people do out of desperation, some structural solutions were needed from his account. It turns out that, similar to residents, flood professionals also look for government to have a structural solution.

5.1.3. Istanbul Spatial Planning and Floods

The 1/100,000 scaled Istanbul Master Plan is one of the significant spatial plans that were approved by the Istanbul Metropolitan Municipality in 2009 and is still in effect. Although this plan attributes the problems mostly urban growth, unplanned development, and population growth, which city subjected, references are made to the position of Istanbul as a world capital and to gain the status of a strengthened city on a world scale. The correlation with other development strategies is apparent.

In the plan, risks are always attributed to "disasters" and "natural disasters". There is certain provision for risky areas in terms of natural disasters. One of the main strategies is to *ensure disaster-sensitive urban development*. This is only attributed to floods by "*Preparation of*

emergency action plans for natural (earthquake, landslide, flood, meteorological, etc.) and man-made (fire, industrial, sea accidents, etc.) disasters and training human resources."

"Studies need to be carried out to integrate disaster reduction and climate change adaptation in order to be successful in reducing the disaster risks that may arise due to climate change; defining climate-related disasters by meeting the relevant parties on common ground (creating a meteorological network); establishment of specific risk mitigation measures; enabling planners, engineers and other decision-makers to use climate risk information. (Istanbul, Master Plan,2009, p:699)

This quotation clearly indicates how the policies approach flood management. Negotiation between different decision-makers and experts was stressed in this plan. While flood is regarded as a natural disaster, drainages are not taken into account in this plan. Furthermore, the plan doesn't include people's response and cover ambiguous policies rather than local practices. Although there is information on demography, historical development, or economic indicators, it doesn't inform different actors' involvement and the diverse conditions of the people in response to flooding in the city.

Istanbul is one of the regions with the highest urbanization rate in Turkey. Respondents verify that the land where Istanbul is located appears almost entirely covered with concrete. The decrease in green spaces due to excessive urbanization was apparent in the local context, as seen in Appendix C. While the respondents acknowledged this, some of them attributed the flood to high slope values in small and narrow areas, thereby a highly fragmented topography which increases the probability of flooding even more. Some stressed lack of spatial planning. This raises the question of what is "planned" and "unplanned."

"*Istanbul is not a planned city. I'm talking about old buildings. We are having a lot of trouble with them. Derya".*

One of the most important findings of the research was the accountability problem. Not only respondents but also the flood management reports put so much emphasis on settlement in a floodplain with excessive urbanization, narrowing the cross-section of the stream bed, covering of stream beds, constriction of riverbeds due to land use, throwing rubble into streams, and throwing garbage in streams (Ministry of Forestry and Water Management, 2017). However, nobody took responsibility for excessive urbanization. When asked about the responsible bodies, the professionals elaborated on the complexity of the problem:

"Everyone is responsible for the occurrence of floods in Turkey. In other words, this is not a problem that can be solved by the policies of one person or an institution or a single sector. The problem is quite complex. In other words, if we want to talk about the flood problem due to excessive urbanization, and if we want to accept the fact that its severity is increasing with climate change and think about how we can solve it, first of all, we need to accept that this problem is very complex." Nihat

5.2. The implementation challenges

In response to the flooding, the respondents from ISKI elaborated on the challenges and how they took action in Istanbul. One is the difficulty of making flood regulations in old settlements while they envision flood-related strategies in new territories. They change their plans accordingly to the challenges they face. They placed greater emphasis on high expropriation and land costs which don't allow them to make decisions on flood-prone areas. However, they sometimes envision a service corridor of specific widths on the right and left of the streams or an ecological corridor. They explained that they separate a band with the thought that a wastewater collector line can be made parallel to that stream due to the topography to the right and left of the streams. However, when they consider that the places outside this band are at risk of flooding, in flood risk maps, flood modeling, and flood depth maps, they define these regions as flood-prone construction areas and give the flood risk level here.

Based on the participants' responses, professionals mainly emphasized their challenges in envisioning and implementing the projects due to architectural structuring based on ancient times. They acknowledged the area's history dating back to the Roman period. Some artefacts don't allow them to realize their projects. It is often referred to protect these artefacts as a priority when they mention implementing these projects. When they come across a historical artefact where they dig for infrastructure, they sometimes leave and call the Conservation Board and negotiate with them on what kind of measures will be taken and what type of transition will be made. While being in a historic area is repeatedly explained as a challenge, it was also found intricacy of the place is being densely populated and touristic. They were often attributed to the difficulties in operating infrastructure facilities and renewing the old lines, including wastewater and rainwater, in such crowded places. One respondent mentioned that implementing a separate system anywhere is impossible in a unique place like Fatih. He stated that the wastewater goes to the treatment plant with rainwater in rainy weather in Yenikapı, which strains the treatment plant capacity. The respondents from ISKI primarily emphasize treatment plants as well.

5.3. De jure and de facto water use practices

Water management responsibilities are shared between different institutions in Istanbul in the reviewed policy documents. However, it became apparent that there is a distinction between de jure and de facto responsibilities. The primary responsibilities of the organizations are divided among different actors, although it is articulated that institutions work together in policies. ISKI (Water and Sewerage Administration) is a waterboard responsible for a large part of flood management. It is an institution affiliated with the Municipality but operates separately and has a different law and budget.

According to one respondent, Road, Maintenance Directorate, and Fire Stations play critical roles in different tasks in the aftermath of flooding. He mentioned that the municipalities are responsible for rainwater concerning the infrastructure system of Istanbul, and the Chief of Water and Canal Services deals with wastewater and sewer when it rains. Although the task of removing rainwater and wastewater is given to ISKI in their founding law, district municipalities deal with the rainwater dimension. "Road Maintenance Directorate" is affiliated with IMM and works on rainwater canals while the Chief inevitably try to organize with them. Moreover, when floods occur, the Fire Station participates in the process. According to the respondent, the fire department plays an intense role in draining the water.

It turned out that AFAD only involved flood-related rescue operations, which is not the case in Fatih since it was not seen as a disaster very often. Based on the respondent's explanations, the most disruptive flood happened in *2017*.

"So, except for the 2017 flood, there was nothing that would concern AFAD. Of course, we carry out our business with ISKI and pumps" (Oğuzhan)

Professionals' theories on seeing the problem are mostly attributed to regulations. The fact that various actors are involved in the process and policies are applied removes the flooding risk for them. However, in practice, the existence of regulations doesn't solve the problems due to the lack of fragmentation of regulations which leads to connectedness among different units and institutions. According to one of the respondents working in the sewage department, the policies are right, but there is low collaboration in reality. The central

government is not involved in the process in Istanbul. Furthermore, ISKI has many departments in itself; it seems difficult to organize. For example, Canal Project Department is responsible for data related to risky flood areas and shares the last updated data with Planning Department. The organization is collaborating only by asking for opinions from other departments to implement the projects that are their own responsibility. According to the respondent working on ISKI, the central government DSI, or the ministry of forestry directorate, is not very involved.

"This is a problem that local governments solve a little bit more. I'm talking about Istanbul." (Tunay)

5.3.1. Involvement of citizens

Involvement of the residents in policies is articulated in policies. One of the strategic purposes of the 2021-2025 Strategic Plan to ensure interaction between society and policy is to "*provide citizen-focused service"(*ISKI,2021). Society and policy interaction is only ensured through a participatory management approach. While policies suggest the involvement of citizens, participation is not happening in Istanbul, according to one respondent from the private sector, an urban planner, who commented on the exclusion of local people in the water management process. According to him, the so-called governance issue is not fully settled in Turkey and gives way to a public that is both affected and uninvolved. However, according to some professionals in the sewage departments, the involvement of the residents is problematic. One respondent commented on how people are trying to do what she called "negotiate":

"There are many barriers in Istanbul. So, for example, about river floods, we reserve a stream improvement band. For example, people come to bargain with us. They don't believe and say, "There is no stream here. You call it to stream band improvement here" ..... Some residents even sue. There are many such incidents like that." Derya

By saying that, this respondent implies the unawareness of the residents who settled in illegal housing. This supports the views on the lack of planned development in the city, which leads to replacement. Similar to what policies suggest, more emphasis is placed on public awareness. When professionals decide on a stream, people argue that there is not much water

flowing there, or it flows once a month. However, professionals stated that the water that flows once a year in that month was the thing they deal with.

5.3.2. Expert knowledge of the solutions

Professionals adopted "scientist" knowledge rather than lay knowledge at some points. The answer varied between different representatives. Rather than holding key decision-making roles based on technical knowledge, the respondents were aware that they represented the institutions that play critical roles in water management. They have described their success rather than failure. The stance they assumed was solution-based new technologies. The references were made to the trenchless technologies already used in the Fatih area. These technologies are developed as a response to the population pressure caused by urbanization. So, rather than renewing those old lines, the professionals see it as the first choice to rehabilitate the old pipes.

"There are methods of blasting from the inside. There is an epoxy material on the pipe's inner wall, blasting an epoxy material from the inside and improving the strength and hydraulic surface there, and so on. They aim to extend it; for example, these were done in Sultanahmet." (Tunay)

5.3.2.1. Crisis Management Rather than Risk Management

The climate expert working in European Environment Agency had the view that Turkey is more oriented toward crisis management rather than risk management, minimizing damage in the first place:

In Turkey, we generally choose crisis management in climate-related natural disasters or natural disasters that increase in severity and frequency due to climate change. Crisis management is more common than risk management. There is a tendency to take measures after the event has occurred…it's like a kind of risk assessment and risk preparation. A strategy with many different stages. You can see this much more clearly, especially in the European Union. Well, as I said, this subject requires input and experts to work in coordination and within the framework of a certain plan, not only in institutions in Turkey. Otherwise, it would be very easy to judge that it is the primary responsibility of this or that institution. The transition from crisis management to risk management is very essential for Turkey. Nihat

5.3.2.2. Pragmatic Solutions

The Water and Canal Department deals with flooding with various pragmatic solutions, such as unclogging the manholes when a flood happens in Fatih. Although these solutions were only for short-term management strategies, they practically found a solution to the residents' nuisance. On the operational side, engineers also identify some solutions as appropriate. They include not only cleaning the manhole but also pumping room or "check valve system" that prevents the rainwater from entering the buildings. They take action according to the precipitation forecasting given by the General Directorate of Meteorology.

Professionals on the local level have tended to generate different immediate solutions as they know the area better than the professionals working for regional level institutions on water management. Oğuzhan mentioned a pumping room they built in Fatih. They proposed a pump room under the bridges which was highly critical and a problem for Istanbul before it snows. They took the falling rainwater into the pump room first and haven't had any problems with the pump for the last couple of years. He also suggests a check valve to prevent the backflow of water. In this system, the squeegee prevents the water coming from the canal from entering this building.

"*We have critical points such as manholes in locations that are low and at sea level or bridge bottoms. We clean these manholes before the rain. We determine if there is an obstacle to the flow or not is done, especially at critical points. We can't reach all directions, but we are cleaning these manholes at critical points. If there is an obstacle to the flow, we eliminate them. We are waiting, ready for the rain. So, we position our vehicles. How can we intervene easily? Because when it rains a lot, we also have problems with traffic, let's say it's under a bridge. Since it disrupts everything, your intervention is not enough. Therefore, we position our vehicles in such specific locations. We take a precaution by taking into consideration how we can intervene in the fastest and most accurate way. We carry out such a study before the precipitation, cleaning the manholes and critical points before the precipitation and removing the obstacles to the flow." Oğuzhan*

Given the fact that all top-down policies include many barriers in dealing with water, these low-level strategies seem to respond to local needs although the policies ignore them or proffesionals doesn't find them optimal. Furthermore, they support the long-term strategy of top-level institutions. Their complementary nature is significant for the resident and professionals as they are second respondents after the residents. The resident explained how these solutions worked as short-term but functional solutions during heavy rains (see the previous chapter).

6. Discussion

The two previous chapters have been provided to establish an understanding of the real-time actions and viewpoints of residents and officials involved in flooding. This chapter discusses their responses and focuses on 'negotiations' and what such 'negotiations' might mean for thinking about challenging topics such as flooding/resilience/climate change.

6.1. Residents' practices

In this section, I will discuss the main findings from the research on the residents. Some theories presented in the theoretical framework contribute to how to approach these various experiences. In this research, residents have explained their practices of living with water. Their coping strategies were diverse and subjective rather than homogenous. This study confirmed that the heterogeneity was evident in the resident's vulnerability to wet conditions. These vulnerabilities were associated with diverse conditions, including health issues, children's care, and financial problems caused by wetness. While most of them undertook to cope with specific strategies such as preparing sandbags or building iron barriers, others were not prepared since they didn't experience flooding multiple times. However, collaborative action was still an active coping mechanism for those affected, no matter how often they were subject to wet conditions.

The research has illustrated that when all spatial, economic, and social factors come together and interact with the level of flooding, they affect residents' vulnerability and coping strategies. In other words, the peculiar topography of the study area, the residents' conditions and the magnitude of wetness determine people's vulnerability level. Gender, for example, was not a single determining factor in the vulnerability; all other characteristics or positions interact and construct their ability to expose the water. However, the poor conditions or living in the basement mostly affected their coping strategies and thereby influenced their vulnerability.

This analysis supports the theory that the practices of flooding/ drainage are socially constructed, which means that the residents give a different meaning to floods. Unaffected people have their own theory of cause for not being influenced by heavy rains. Since they lived in the flooded area, their view of the reason was also consistent with flood-affected people. While some attribute the reason they were not affected to the existence of doorsteps,

some attributed it to living on upper floors. Mostly the residents referred to infrastructure and lack of green areas, which resulted in impermeable surfaces. Informal interactions between government and society might build the ground for this rhetoric caused by exposure to professional views. The residents' narratives supported the theory that flooding or drainage are socially constructed since it means different concepts for different people.

It was found that climate change is not their priority as the resident have other challenges such as inflation, low economic growth, and concern with youth employment, which influences their perception of floods. In the whole spectrum of the issues, flooding comes not very often. However, this doesn't mean that it is disruptive for people when it comes. This research revealed that flooding established extended disruption to the citizens' everyday life. Although sometimes the respondents used phrases such as horrible or disaster, they acknowledge it doesn't become "horrible" very often because of these primary concerns. Moreover, they had various livelihoods and attachments to the area emotionally, resulting in them living in the area with additional risk.

Beyond Determinism

In light of this information, some underlying questions arise about who was and is responsible. There are accusations of government failure and residents who clog the manholes with garbage. The individuals settling in the affected area assume that the responsibility resides government and assign problems to the officials. Some were not thinking policymakers represented their interest as they claimed the benefits were often for their own image. There were also accusations of a lack of standards in the country, which allows, for example, to settle people in basements. The specific detail of the residents made up of their varied experiences. Such diversities resulted from the flooding in their localities and partly the physical conditions of their workplace, which are mostly basement or underground. In section 4.5., local government, governorship, or other national institutions were found to support financially, in part, emotionally, but only when the media depicted the situation through accusations of the current mayor, which is from the opposing party. Some institutions provide flood compensation, but politics determine the significance.

Although the participants tended to blame the government for what was happening, they also deployed actions. Accusations of government failure and coping strategies coexist at the same time. For some, the disruption in their livelihoods ripples effect on their supply chain. At the same time, they attempted to cope with these risks to prevent these losses. This

confirms the viewpoints of the Water Resource Commission (2011) that various coping mechanisms are developed to save the livelihoods of the residents and properties. The residents had a response to losses through a diverse range of solutions both on a social and individual level. The findings of this study are in line with the claims of Fasona et al. (2010) that variations in resources and vulnerability may result in different responses to flooding. This study confirmed that the residents' attempt to reconstruct their house or workplace or self-management with analytical techniques depends on these variations and capabilities. Moreover, the citizens developed their theories and constructed their coping strategies according to their learning from observations and experience. They were very active in the area; They were not waiting for responsible people to come and were cleaning the manholes themselves, which illustrates their self-management capability. The observational experience helped to construct the maintenance of government infrastructure with their social network. Also, most participants organized themselves through petitions to government organizations. Sometimes they appreciated the work of professionals, but rather than hard engineering solutions, their appreciation was for emergency responses.

6.2. The challenges of policies

The policies have various strategies concerning water management. These strategies are articulated differently within analyzed documents. While spatial plan defines floods as "disasters," climate change and strategic plan define the term as "risks". Given the country's current economic situation, the climate policies have multiple targets and indicators, which are highly ambitious. This makes climate action policies to cope with the crisis vague because of several uncertainties.

The responsibilities are shared in different institutions, which raises the question of "how they will be put into practice. While most participants had the view that the problems concerning the flooding in Turkeys are the inefficiency of a master plan law, the construction permit for the basement floors, the lack of standards (sidewalk elevation, basement floor), housing in the stream beds; these responsibilities fall under different organizations/departments. This confirmed the argument of Teisman et al. (2013) that different institutions have highly fragmented responsibilities in handling water. The polycentricity in water policies and different organizations is often inadequate because of these fragmentations (Teisman et al., 2013). Furthermore, the risk management plan and strategic plan of ISKI are focused more on hard engineering solutions. This has excluded emergency response that essentially matches people's needs in the short term. Generally, the

problem is more complex than designing infrastructure projects as there are many elements that must be considered as observed in residents' practices. While professionals put more emphasis on hard engineering solutions and the challenges in implementations, they also acknowledged the problems thoroughly. The combined sewer system is the current drainage system in the study area. Wastewater and rainwater are drained together into a sewer line. Professionals mainly engaged in implementing separated rainwater. The primary entity involved in flood management activities and investment is ISKI; the local entities provide emergency responses. They also refer the urbanization as a problem. While the provincial government is responsible for zoning and land-use decisions in the floodplain, there is a connectedness between the water management and planners. The planners working in ISKI are dealing with only giving opinions to the risk areas for master plans. This division of responsibility obstructs the decision-making process, as Teisman et al. (2013) argue.

There are also barriers to implementing the strategies. A gap between the policies and implementation of these policies exists in the study area. As mentioned earlier, one of the reasons is that climate policies are highly ambitious when looking at the current situation of the country. For example, Climate Change Strategy Report (2010-2023) prepared by Environment and Urbanization Ministry, there are targets related to energy transportation, waste management, land use, agriculture, and animal husbandry. The interaction between all sectors and participation has been mentioned very often. However, what people will be involved, and how they will be representatives of some groups are not explained. Strategies have also been introduced regarding disasters and risks. While these policies have been made stratified, on a small scale, it is still very cumbersome to intervene.

The professionals might be involved in a wide variety of response operations in the aftermath of flooding in Istanbul. However, these operations are affected by political dynamics and power relations. Mosse (2004) emphasizes the intertwined nature of the policy models by asserting that institutions and accountabilities arrange policy models (their theories of cause and effect). The Fatih case confirmed this. Professionals were not the decision-makers; instead, they were fulfilling what their responsibilities demanded. These political dynamics also influence the unique position of institutions and the connection between them. Professionals' cause theory is mainly based on the lack of green spaces and changing land use, which result from current government policy as economic growth. The political nature of causes and solutions makes the problem defined by the residents more complex. The response is only given after the flood since the country lacks a disaster management plan.

To illustrate, from the residents' account, the municipality is involved in the water management process but only after a flood. The involvement of people in the process is limited. They have their own solution to dealing with flooding events.

Lack of transparency led to mistrust of government institutions, and the government officials also don't trust the public regarding data sharing, etc. In some localities, the residents experienced no response after several petitions. While this led to giving up the petition for some residents, at the same time, they turned to other coping strategies. Furthermore, it might be said that the interest of politicians and the contest between different institutions results in more action by the government, but only after the flood happens.

The findings of this research show that water management is highly top-down. In the theoretical framework, it was discussed how urban flood management is promoted in dealing with water. Central planning was one of the tools that are often used by countries with state control. Istanbul case has confirmed this concept. As it becomes evident in the result of this study, professionals often deal with planned and unplanned environments.

6.3. Negotiations

While the conditions of people living with water were differentiated between residents, policymakers have their own positionality in the science of water management. This positionality doesn't allow them to recognize the local people's knowledge since it was highly top-down. This study revealed that rather than including the knowledge and experiences of the local people, interaction between society and policy is based on "negotiating" with residents, which illustrates the dominant position of policy-based solutions. Not only between community and policymakers, but negotiation also happens quite often in intersectoral areas between different water managers from public sector institutions or other decision-makers. The findings of this research indicate multiple examples of how professionals 'negotiate' both water policy and citizens' requests. This study verified the argument of Mosse (2004) that policymakers strive for policies and put them into practice, as many strategic plans, mission statements, or white papers illustrate. Water professionals have different responsibilities in these papers, and those responsibilities are negotiated with various experts. My findings confirm the negotiations are conducted to convince the citizens to achieve their policies. The negotiation occurs between professionals and citizens in implementing these policies. These interactions are channeled through one-way relationships. In this sense, the findings of this study have the same lines as the

arguments of Mosses (2004) that the policy often seems to be an end instead of a means. The practices, events, and impacts of different decision-makers are shaped by the connection and interests, and cultures of a particular organizational context. (Mosse, 2004). The policies show their attempts to negotiate since they are compatible with each other. They refer to other policies and laws. Although they have inconsistencies in implementation, the policymakers collaborate on planning. While in the policies, there is a strong emphasis on the phrase "participation", the participation is only realized to "educate" or "train" the residents. This study confirmed the superior nature of policies which was argued by Laitos (2017). He suggests that one of the reasons why the policies have essential flaws is the superior nature of policies that treat humans as separate things. As Mosse (2003) argues, the policymaking process in which different interests and viewpoints of professionals working for different organizations are presented while what is supposed to be in reality is forgotten, which is the symmetry between policymakers and the residents' practices. Ideally, policies are considered to contribute to humans dealing with water, while the hierarchy leads to asymmetry of power (Mosse,2004).

The policies include some words which manipulate water management through compromising. This study confirmed the view of Mosse (2004) that asserts discourse on policy catalyzes metaphors such as "participation" or "partnership". The ambiguity of these words and conceptual imprecision is necessary for policymakers to cover ideological discrepancies, allow negotiation between diverse interests, establish coalitions, allocate agency, and expand the success criteria in projects (Mosse,2004). The question raises "what such 'negotiations' might mean for thinking about challenging topics such as flooding/resilience/climate change." Many actors involved in policy-making develop more national and international policies on climate change. Projects lost significance and were replaced with greater ambitions with state-level partnerships (Mosse,2004). Climate change policies in Turkey confirm this.

6.4. What might such 'negotiations' mean for the future?

Despite the insistence on policymaking, certain planetary boundaries have already been breached, which brings the question of whether the results come from fracted laws, poor policy design and implementation, inadequate capital, or a combination of these factors. (Laitos, 2017). Laitos (2017) discusses three characteristics of these policies, which are included superior nature of them that consider humans a separate thing, as mentioned earlier, a tendency to consider nature as "stationary instead of dynamic," and a tendency to think of

humans as “idealized economic actors” rather than treating them irrational. The question can be asked if these are tendencies, what do these tendencies mean for future generations and resilient societies in terms of policymaking or thinking about challenging topics such as flooding/resilience/climate change?

Many different bodies, such as individuals, corporations, governments, and professionals, take the resilience concept for various purposes to argue concept (Vale, 2014). Vale (2014) suggests that taking into consideration real examples of resilience that takes place in action is the only way to evaluate “the value of resilience as an agenda” (Vale, 2014,p: 196). The Fatih case illustrated that the residents were highly resilient before the event; they were undertaken reasonably cooperative action or single solutions to the risk that they saw. The policies, however, varied between long-term and short-term. While residents are dealing with the consequences of wet conditions, policies and professionals have a tendency to primarily focus on the long-term solutions with the intent that they will sustain themselves. Vale (2014) suggests that resilience is often neglected in the realm of engineering, where the dominance of human agency is less important. As mentioned earlier, an emphasis on actual practices of how people live with water might lead to more fair and realistic water policies, which brings about less exclusion.

In this context, policies are also essential; as Mosse (2004) argues, the policy has an impact or “is not insignificant”. The enhancement of water policy might be achieved through changing the policymakers' approach. In this sense, rather than starting from scratch or using a one size fits all approach, building on the residents' responses is essential in terms of policymaking. Furthermore, pragmatic solutions that support professionals attempting to cope with the problems meet the immediate needs of residents. Knowing that it is hardly possible to implement all these policies and apply the projects they intend to achieve, these strategies might seem efficient for residents, although they are not optimal.

In this sense, it is essential to strengthen the coherence between the community and policy instead of top-down, taken for granted water management. Rather than glorifying the bottom-up approach, it might be significant to stress in between, where the local people have more agency, and the policymakers turn this process into a co-learning. The policies and self-capacities of the residents can go hand in hand.

7. Conclusion and Recommendations

This study has drawn analysis of water management of both policymakers and the real-time experiences of the local inhabitants. The following research question is answered on the basis of analyzing the actions taken by residents and professionals.

"How do policymakers' initiatives of planning flood rehabilitation and preventions interventions in Fatih, Istanbul respond to local communities' practices of living with floods?"

Wet conditions of various sizes allowed people to be exposed to outcomes of policies and contact professionals from different areas, including water boards, insurance assessors, fire departments, and private companies, to build barriers in front of their doors in Fatih, Istanbul. They played a role in the practices of Fatih's inhabitants. However, this study found that the strategies adopted by different policies and attempted to implement by professionals are not fit with the resident's practices. The policies have a different set of values which mostly articulate disaster planning and risk management. These values undermine the local practices, including their coping strategies or cooperation among the residents. For some, the local knowledge disregard resulted in disempowerment. From the residents' experience, they firsthand witnessed this disregard through unanswered petitions or the disconnection between the project implementer and them. However, despite all these attempts, residents' aspiration to convert their past experience into action was beyond determinism. Residents explained these experiences and how they organize as a response to wetness problems. On the professional side, drainage in urban areas and flooding in general touch upon diverse levels of actors, which makes water management more complex. Policymakers and professionals challenge by this complexity. However, their attempt to look for policy solutions to complex problems and implementation of these policies was often inadequate and didn't match with the residents of Fatih. The reflex is often a response to complex problems with more planning or infrastructure projects. Uncertainties of climate change and a strong need to learn to live with these uncertainties establish the ground for these reflexes. However, in the specific case of Istanbul, it is not fair to blame only the climate crisis as the city has a history of interactions with policymakers in water management and related areas.

It is essential to ensure that plans are aligned with community practices and build on what is already there rather than ignoring them. For Fatih's specific case, the policies don't fit with the coping strategies, responses, or practices they established in the area. Local inhabitants'

needs are not limited to only engineering infrastructure projects. In fact, the dynamics in the environment are significant to be taken into account, which is constantly changing with time. The residents are actively engaged in flood management, which needs to take into account by decision-maker institutions. It was found that not only coping strategies but also there are so many elements to think about, such as drainage system, doorstep, and urbanization. The policies do not include them due to the asymmetries of power leading to neglecting local practices of citizens.

In Istanbul, multiple actors have diverse responsibilities in approaching water management. The diverse and fragmented nature of policies and responsibilities doesn't allow water governance to be manageable. The fragmentation of these responsibilities is informed by the organizations. The goal, priority, and roles exacerbate this multilayered complexity. Although policies might be seen encompassing in different policy documents, these policies are not implemented in a short period of time very often. All these elements come together, making it even more challenging to respond to people's diverse practices. While the fragmentation is clearly seen between professional communities, the resident has clear real-time responses and coping strategies to wetness which were all connected to each other, meaning that there is no fragmentation between them. The findings show that they intersect what they call "problems" while some respondents don't define it as a problem since they have self-help solutions.

In this sense, the emergency response based on the residents' experiences is helpful, although it doesn't often seem to be a solution in risk management policies. The role of emergency response is significant since their interaction with the residents is highly visible, although they don't take place in policy documents very often. It might be said that they were a mediator between residents and professionals. Knowing the area better than regional or national level policymakers, they have interacted with the practices and experiences of people firsthand. Their interpretation and knowledge, which comes from their experience, reflected reality when compared to other knowledge. While the flood professionals emphasize the demanded responsibility of their institution, the respondents responsible for emergency response had a broader perspective on what could be advantageous for the community and what couldn't.

The policies emphasize central planning or infrastructure, which are fragmented, but people have existing livelihoods of the people or practices. This research findings show a disconnection between the two, as my findings indicate that the policies fail to address the concern of people. Neither the policies nor professionals mention the self-help capacity of the citizens. It was found that policies largely undermine local practices as a response to wet conditions, and water policies mainly dismiss local knowledge.

Recommendations

Several recommendations might be made from the findings of the study. This study is explorative in nature. Therefore, additional research can be conducted on different policies on water management. The symmetry model can be applied to different contexts in water management and extend into different activities which influence water management indirectly. It could also cover other policies, such as the law on flood management.

The findings suggest the development of the policies in Fatih and the nation as a whole. Rethinking flood management in the study area provides the ground for formulating policies with appropriate strategies. The findings might have practical significance for future research. Building upon the peoples' agency in response to flooding might need capabilities. Therefore unequal capabilities regarding the residents' practices in living with water might be an interesting research topic in different contexts. The practical solutions provided by the resident are worth paying attention. They could be analysed in different cultural contexts and might be examined with their historical evolution.

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9. Appendix

Appendix A

Appendix B

Appendix C