

URBAN RESILIENCE ACTION PLAN

2026-2029



AVCILAR
MUNICIPALITY



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FOREWORD

Today, cities have evolved beyond being merely densely populated settlements; they have become complex and integrated structures where economic, social, environmental, and administrative systems interact with one another. Rapid urbanization, the increasing impacts of climate change, the diversification of disaster risks, and the deepening of social vulnerabilities necessitate that local governments manage cities not only in line with today's needs but also by taking into account the uncertainties of the future. In this context, "urban resilience" stands as one of the fundamental building blocks of a sustainable and safe urban life.

Given its geological structure, the nature of its building stock, population density, and the multiple disaster risks facing the Marmara Region, Avcılar District is one of the residential areas where resilience policies must be prioritized. At Avcılar Municipality, our fundamental approach is to institutionalize a local governance model that does not merely respond to disasters and crises, but proactively anticipates and mitigates risks, and prepares the city to maintain its functionality under all conditions. This approach requires a holistic perspective that addresses not only the strengthening of physical infrastructure but also the enhancement of social solidarity, the assurance of environmental sustainability, and the development of institutional capacity.

Prepared in this vein, the Avcılar Municipality Resilience Action Plan has been designed in alignment with national policy and strategy documents, the Istanbul Provincial Disaster Risk Reduction Plan (İRAP), international resilience frameworks, and the Sustainable Development Goals. The plan serves as a guide containing concrete actions based on our district's current risk profile, prioritized implementation areas, and measurable targets. It also adopts a participatory governance approach that prioritizes the contributions and collaboration of public institutions, civil society organizations, the private sector, and district residents.

At Avcılar Municipality, we believe that resilient cities are built not only through strong structures against disasters but also through informed communities, effective institutions, and sustainable policies. This action plan is a concrete expression of our goal to address

Avcılar's current needs while leaving a safer, more livable, and resilient city for future generations. We believe that through the determined implementation and continuous improvement of this plan, Avcılar will serve as a strong example on its journey toward resilience.

1. INTRODUCTION

As of the 21st century, the rapid increase in urbanization rates has led to greater diversity and complexity in the types of risks cities face and the areas affected by these risks. Inadequacies in infrastructure systems, congestion in transportation networks, unsustainable use of natural resources, environmental degradation, socioeconomic inequalities, mass migration, epidemics, disasters, and security threats all have the potential to disrupt the holistic functioning of cities. This situation highlights the necessity of evaluating cities not only based on their physical capacities but also on their levels of systemic resilience.

In this context, “urban resilience” is defined as the capacity of cities to withstand systematic shocks and chronic stressors, as well as to ensure rapid recovery and adaptation. Strengthening urban resilience is possible through the identification of vulnerabilities, the conduct of comprehensive risk analyses, the development of preventive strategies, and the scenario-based planning of post-crisis rehabilitation processes. In addition to improving physical infrastructure, a multi-layered management approach that enhances social integration, ensures environmental sustainability, and fosters economic resilience is essential.

In this context, local governments assume critical responsibilities in the planning and implementation of urban resilience policies. At Avcılar Municipality, our goal is to implement disaster risk reduction efforts, climate change adaptation strategies, environmentally friendly urban design practices, sustainable infrastructure projects, renewable energy integration, resource circularity, and social capacity-building activities in accordance with the principles of institutional strategic planning. Ensuring that these initiatives are carried out in alignment with our municipality’s mission, vision, and strategic goals forms the cornerstone that will enable Avcılar to take its place within the network of resilient cities.

This study aims to identify the necessary activities to enhance the city’s resilience and establish it in all its dimensions, and to implement these activities in alignment with our municipality’s mission, vision, and strategic plan.

2. URBAN RESILIENCE

Urban resilience refers to a city's ability to withstand short-term shocks (such as natural disasters like earthquakes, floods, and heat waves, and human-made disasters like cyberattacks, supply chain disruptions, and terrorist acts) and long-term pressures (such as climate change, poverty, and aging infrastructure). As this definition makes clear, the ability to demonstrate flexibility in the face of shock conditions is the most critical element for enhancing resilience, enabling cities to sustain their existence in the face of disasters and shocks. This capacity encompasses the entire cycle of risk prevention/mitigation, preparedness, response, and recovery, and places social justice and inclusivity at its core.

2.1. Core Components of Urban Resilience

The fundamental components of urban resilience can be evaluated under the following six headings:

1. Governance and Strategic Planning: To ensure urban resilience, decision-making processes must be conducted in a participatory, transparent, and data-driven manner within the framework of a comprehensive risk management approach. The development, updating, and implementation of disaster risk reduction strategies at the local level establish a management capacity that is prepared for and adaptable to risks.

2. Infrastructure and Spatial Planning: Physical infrastructure systems in urban areas must be designed and implemented to be resilient and flexible against existing and potential multiple hazards. In this context, the city's resilience to disaster and climate risks must be enhanced through gray-green-blue infrastructure approaches reinforced with nature-based solutions (e.g., "sponge city" initiatives).

3. Social Resilience and Inclusivity: To mitigate the social impacts of disasters, it is crucial to develop inclusive social services for vulnerable and disadvantaged groups, address social inequalities, and strengthen social solidarity. Additionally, the continuity of livelihoods must be ensured to support communities' capacity for post-disaster recovery.

4. Economic and Institutional Resilience: To ensure that cities' economic operations and critical public services can continue uninterrupted in the face of disasters, it is necessary to strengthen institutional capacity, ensure the security of supply chains, and establish risk financing mechanisms (insurance, emergency funds, etc.). This ensures the sustainability of services during times of crisis.

5. Integration of Climate Change Adaptation and Mitigation: To enhance cities' long-term resilience, climate change adaptation and greenhouse gas emission reduction targets must be addressed together. The coordinated implementation of adaptation and mitigation policies contributes to sustainable urbanization and the development of new-generation governance models.

6. Measurement, Monitoring, and Evaluation: Monitoring and regularly evaluating the level of urban resilience using concrete and measurable indicators enables the enhancement of the effectiveness of policies and strategies. In this context, the use of international measurement tools such as the UN-Habitat CRPT contributes to determining the city's current capacity and identifying areas for development.

3. DIFFERENT APPROACHES WITHIN THE CONTEXT OF THE INTERNATIONAL RESILIENCE VISION

The international resilience vision can be evaluated within the context of three leading institutions: the World Bank, the World Economic Forum (WEF), and the United Nations (UN).

3.1. The World Bank's "Resilience" Vision

This approach, which supports sustainable development and aims to build societies that are strong against risks and shocks and prepared for environmental, economic, and social threats, places resilience at the center of development policies. This holistic vision is shaped through various strategic frameworks developed by international institutions.

The World Bank's "Green, Clean, and Resilient Development Vision" is one of the most comprehensive examples of these approaches. This vision combines the "green"

dimension—which is based on the sustainable management of natural resources , the protection of ecosystems, and the assurance of food security—with the “clean” dimension—which emphasizes low-emission and climate-sensitive models for transportation, energy, agriculture, and urbanization aimed at protecting air, water, and the environment; and the “resilient” dimension, which aims to ensure countries are prepared for natural disasters, climate change, and environmental shocks. Thus, development is integrated with the principle of environmental sustainability, establishing an inclusive framework that ensures long-term well-being and security.

Following the COVID-19 pandemic, the World Bank has approached the global recovery process not merely as economic revival but also as an opportunity for sustainable and inclusive transformation, introducing the “GRID” (Green, Resilient, Inclusive Development) approach. This approach calls for the integration of climate-sensitive policies into national development programs; the strengthening of resilience through infrastructure investments, disaster financing, emergency response mechanisms, and social safety nets; and the implementation of inclusive development models that ensure equal access for all sectors and support vulnerable groups. The GRID framework thus goes beyond short-term economic recovery to target long-term social and environmental sustainability.

In parallel, the World Bank’s Fragility, Conflict, and Violence (FCV) Strategy for the 2020–2025 period focuses on preventing the reversal of development gains in conflict and crisis environments. This strategy addresses climate change not merely as a risk factor but also as a “threat multiplier” capable of triggering conflicts; it aims to reduce the root causes of instability through inclusive and environmentally sensitive projects. Strengthening social cohesion by supporting vulnerable groups is one of the core objectives of this approach.

Ultimately, these strategic approaches—shaped around the pillars of green transition, climate resilience, inclusivity, and social stability—demonstrate that sustainable development is not merely about economic growth; it must be addressed in conjunction with its environmental, social, and institutional dimensions. This, in turn, provides a comprehensive roadmap for building more resilient, equitable, and sustainable societies capable of withstanding future risks and unexpected shocks.

3.2. WEF Resilience Vision

The World Economic Forum (WEF) launched the Resilience Consortium initiative with its 2022 report titled “Resilience for Sustainable and Inclusive Growth,” creating a collective platform aligned with global resilience goals. This framework aims to bring together representatives from the public and private sectors on a common platform to develop joint strategies in critical areas such as climate, energy, supply chains, health, education, and the fight against inequality.

The WEF views resilience not as a concept limited to temporary and reactive solutions, but rather as a “muscle” that is continuously developed. This approach aims not only for organizations to be structures capable of withstanding crises but also to become flexible and adaptive systems that can adapt to changing conditions and capitalize on growth opportunities. Developing resilience in this way as a capability provides organizations with sustainability and a competitive advantage even in environments of uncertainty.

Another key aspect highlighted by the WEF is the need to take resilience beyond a reactive risk management approach. Organizations are no longer merely structures that react to crises; they are transforming into entities that proactively plan based on long-term scenarios, regularly monitor their performance, and continuously improve their strategies. In this context, the measurement tools and performance monitoring frameworks developed by the WEF enable organizations to assess their resilience levels and track their progress.

Building resilience is not limited to measures taken at the organizational level; this process necessitates comprehensive collaboration encompassing technical, financial, and governance dimensions. Public-private partnerships are of critical importance, particularly in developing regions, regarding access to finance, infrastructure investments, and capacity building. As emphasized in WEF reports, expanding such collaborations is a strategic necessity to achieve sustainable resilience goals.

The “Risk Proof” model, developed to establish resilience within a systematic framework at the organizational level, is based on four principles that form the foundation of sustainable adaptability in an environment of uncertainty: resolve, communication, agility, and

empowerment. These principles enable organizations not only to manage risks but also to adapt to changing conditions and capitalize on new opportunities.

The “Resilience Pulse Check” report, published in 2025, provides key data on the private sector’s resilience capacity. According to the report, while 84% of private sector leaders believe their organizations are not sufficiently prepared for future shocks, only 13% have performance metrics (KPIs) that integrate resilience into their strategies. These findings clearly demonstrate that resilience must be moved beyond mere rhetoric and embedded into organizations’ strategic planning processes, performance management, and leadership approaches.

In conclusion, the vision outlined by the WEF positions resilience not merely as a defense mechanism against crises, but at the center of sustainable growth and organizational transformation. This approach represents a holistic development philosophy aimed at building systems that are prepared for future uncertainties, capable of turning risks into opportunities, and fostering greater resilience at the global level.

3.3. The United Nations Vision of Resilience

The United Nations’ (UN) “resilience” vision focuses on strengthening societies through preventive, systematic, and inclusive policies rather than merely responding to crises. This vision is supported by numerous sub-strategies, plans, and frameworks. These can be summarized by key areas as follows:

1. Sendai Framework for Disaster Risk Reduction 2015–2030

Adopted by the UN in March 2015, this framework is a global action plan for reducing disaster risks. It has four key priorities:

1. Understanding hazards
2. Strengthening governance for risk management
3. Promoting investments in disaster risk reduction to enhance resilience
4. Ensuring preparedness and effective response through the “Build Back Better” approach. This framework is integrated into global goals, climate action, and sustainable urban development approaches.

2. The UN System’s Risk-Informed Integrated Approach

In 2016, the UN made resilience a strategic priority through its vision of a “Risk-Informed and Integrated Approach to Sustainable Development.” This plan:

- Ensures the UN system’s alignment with the Sendai Framework goals
- Provides coordinated support to member states
- Places disaster risk reduction at the center of development.

Additionally, strategies spanning until 2030 have been established under the umbrella of a leadership group within the UN (the UN Senior Leadership Group on DRR for Resilience – UN SLG).

3. UN Common Guidance – A Joint Roadmap for Resilient Societies

Published in September 2021, this guidance provides the UN system with a common language and operational framework to mainstream resilience across the dimensions of development, human rights, peace, and security:

- Integrated response plans addressing multifaceted risks
- Collaboration at the national and local levels
- An inclusive approach guided by the principle of “leaving no one behind”

4. Global Assessment Reports (GAR)

The GAR reports prepared by the UN through UNDRR analyze resilience performance at the global level. For example, the 2023 “Mapping Resilience for the Sustainable Development Goals” report:

- emphasizes that “the accumulation of small crises can lead to major crises,” thereby advocating for a holistic approach to cross-system risks;
- defines resilience along the “people, planet, and prosperity” axis;
- recommends directing public and private sector investments toward areas such as early warning systems and infrastructure strengthening.

5. Resilient Recovery – The “Build Back Better” Approach & Ten Priority Actions

As part of the World Resilient Recovery Conference held in Geneva in June 2025, the UN shared a roadmap titled “Ten Priority Actions,” stating that post-disaster recovery is no longer a reactive process but a strategic development opportunity:

- It includes concrete steps in areas such as financing, policy, data, inclusivity, and social leadership;
- The goal: to break the “disaster–recovery–recurrence” cycle; that is, to help communities “leap forward and become stronger” (UNDP).

In summary

The UN defines resilience not merely as crisis management, but as sustainable development, inclusivity, cross-sectoral integration, social transformation, and advanced preparedness. It aims to build sustainable and resilient societies with a broad vision spanning from disaster risk to development and human rights.

4. URBAN RESILIENCE FROM THE PERSPECTIVE OF THE SUSTAINABLE DEVELOPMENT GOALS

The Sustainable Development Goals (SDGs) are a global action plan comprising 17 comprehensive goals adopted by the United Nations General Assembly in 2015 to ensure social, economic, and environmental sustainability on a global scale by 2030.



Figure 1. Sustainable Development Goals

Technically, these goals aim to ensure that development policies are not limited to economic growth alone; rather, they seek to establish a multidimensional development paradigm that encompasses social welfare, environmental protection, governance capacity, and institutional sustainability. Each goal is briefly explained below:

1. **No Poverty:** Ending poverty in all its forms everywhere. This goal encompasses multidimensional strategies such as strengthening social protection systems beyond income-based poverty, creating economic mechanisms to reduce inequality, and enhancing the resilience of vulnerable groups.

2. **Zero Hunger:** Ending hunger, ensuring food security and adequate nutrition, and supporting sustainable agriculture. Technically, this involves increasing agricultural productivity, improving the efficiency of food supply chains, and promoting climate-resilient agricultural practices.
3. **Good Health and Well-being:** Ensuring healthy lives at every age and promoting well-being. This includes universal access to healthcare, combating infectious and non-communicable diseases, and strengthening the institutional capacity of health systems.
4. **Quality Education:** Ensuring inclusive and equitable quality education and supporting lifelong learning opportunities for all. Technically, this encompasses the development of educational infrastructure, improving teacher quality, and integrating digital learning solutions.
5. **Gender Equality:** Achieving gender equality through the empowerment of women and girls. Legal frameworks, institutional mechanisms, and policies for cultural transformation are key components of this goal.
6. **Clean Water and Sanitation:** Ensuring access to water and sanitation for all. This goal includes technical objectives such as integrated water resources management, infrastructure investments, and the protection of water quality.
7. **Affordable and Clean Energy:** Ensuring universal access to affordable, reliable, sustainable, and modern energy. The widespread adoption of renewable energy technologies, the enhancement of energy efficiency standards, and the modernization of energy infrastructure are key priorities.
8. **Decent Work and Economic Growth:** Promoting sustainable, inclusive economic growth, full and productive employment, and decent work. At the technical level, this goal is linked to increasing productive investments and strengthening digital economy and industrial policies.
9. **Industry, Innovation, and Infrastructure:** Building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation. This includes developing R&D capacity, digital transformation, and green industry strategies.
10. **Reduced Inequalities:** Reducing inequalities within and among countries. This goal encompasses multi-level policies addressing income distribution equity, financial inclusion, and migration management.

- 11. Sustainable Cities and Communities:** Making cities and human settlements inclusive, safe, resilient, and sustainable. Technically, this includes urban planning, infrastructure resilience, disaster risk reduction, and smart city applications.
- 12. Responsible Consumption and Production:** Ensuring sustainable consumption and production patterns. The circular economy, resource efficiency, sustainable supply chains, and life-cycle assessments are key tools for this goal.
- 13. Climate Action:** Taking urgent measures to combat climate change and its impacts. This goal encompasses emission reduction targets, adaptation plans, and climate finance mechanisms.
- 14. Life Below Water:** The sustainable use and protection of oceans, seas, and water resources. This includes marine ecosystem management, reducing pollution, and protecting marine biodiversity.
- 15. Life on Land:** The conservation of terrestrial ecosystems, sustainable forest management, combating desertification, and preventing the loss of biodiversity. This goal includes nature-based solutions and ecosystem restoration policies.
- 16. Peace, Justice, and Strong Institutions:** Promoting peaceful and inclusive societies for sustainable development, ensuring access to justice, and building effective, accountable institutions. The rule of law, the fight against corruption, and strengthening governance capacity are key elements of this goal.
- 17. Partnerships for the Goals:** Strengthening implementation tools and revitalizing global partnerships. Financing, technology transfer, trade facilitation, and multi-stakeholder cooperation mechanisms constitute the technical dimensions of this goal.

These 17 goals form the foundation of the global development architecture by working in an integrated and mutually reinforcing manner. In terms of institutional strategies, national policies, and international cooperation mechanisms, these goals serve as a reference framework for measuring and guiding sustainability performance.

4.1. Integration of Resilience with the Sustainable Development Goals

Urban resilience refers to cities' capacity to adapt to, recover from, and sustainably develop in the face of social, economic, and environmental shocks, and in this regard, it is directly

linked to many of the Sustainable Development Goals (SDGs). Resilience is directly related to the following Sustainable Development Goals.

According to the UN, the role of resilience within the SDGs is highly significant. UN agencies such as UNDRR and UNDP view resilience as a necessary “infrastructure capacity” for achieving the SDGs as a whole:

- Sustainability cannot be achieved without reducing vulnerability.
- Development gains cannot be sustained without resilience.
- Inequality, poverty, and environmental degradation cannot be prevented without building crisis-resilient societies.

Therefore, resilience is both a goal (particularly SDGs 11 and 13) and a tool that enables the success of all goals.

Table 1. The Relationship Between the Sustainable Development Goals and Resilience

SDG No.	GOAL	RELATIONSHIP WITH RESILIENCE
1	End Poverty	Poor communities are the most vulnerable to disasters and crises. Social security systems reduce vulnerability.
2	Ending Hunger	Resilient agricultural production ensures food security in the face of climate change and drought.
3	Healthy Individuals	Health systems must be resilient to shocks (pandemics, disasters).
6	Clean Water and Sanitation	Climate change and natural disasters threaten water resources. Resilient infrastructure reduces this risk.
9	Industry, Innovation, and Infrastructure	Resilient infrastructure is critical in the face of economic shocks, climate impacts, and disasters.
11	Sustainable Cities and Communities	The primary goal: disaster-resilient, inclusive, safe, and sustainable settlements.
13	Climate Action	Combating climate change involves not only mitigation but also adaptation and resilience.

16	Peace, Justice, and Strong Institutions	Violence, conflict, and poor governance weaken resilience. Institutional resilience builds trust.
17	Partnerships	Global cooperation is needed to address crises: financial, technological, and capacity support.

5. URBAN RESILIENCE POLICIES, STRATEGIES, AND TOOLS IN TÜRKİYE

In countries like Türkiye—located in an earthquake zone, possessing ecosystems vulnerable to climate change, and undergoing rapid urbanization—urban resilience is not merely a disaster response strategy; it is also addressed as an integral component of development, environmental, energy, social welfare, and spatial planning policies.

In Türkiye, urban resilience policies are shaped through the integrated framework of national vision documents, strategic plans, legal regulations, and local implementation tools. While long-term national goals, such as development plans and the “Türkiye Century Vision,” form the foundation of this structure, implementation-oriented strategies—including the “National Risk Shield Model,” “Disaster Risk Reduction Plans,” “National Smart Cities Strategy,” and “Urban Renewal Program”—demonstrate the practical implementation of these goals on the ground.

At the national level, the “Disaster and Emergency Management Law (No. 5902),” “Law No. 6306 on Urban Renewal,” and the “Urban Planning Law” ensure that disaster risks are integrated into planning processes, while at the local level, Provincial Disaster Risk Reduction Plans (İRAP), climate action plans, urban renewal master plans, and nature-based solutions projects prepared by municipalities serve as the practical tools for implementing these policies on the ground.

The primary policy, strategy, plan, and vision documents that directly or indirectly shape the issue of urban resilience in Türkiye can be summarized as follows, and these documents serve as the framework for defining Türkiye’s long-term development, climate adaptation, disaster risk reduction, and sustainable urbanization goals:

Table 2. National Policy and Vision Documents

DOCUMENT TITLE	RESPONSIBLE AGENCY	URBAN RESILIENCE LINK
Türkiye's Vision for the Century	Presidency	Disaster-resilient cities, sustainable development, and green transition goals
12th Development Plan (2024–2028)	Presidency/SBB	Disaster-resilient cities, urban risk management, environmental resilience
Climate Change Adaptation Strategy and Action Plan (2024–2030)	Ministry of Environment, Urbanization, and Climate Change (MEUCC)	Enhancing cities' capacity to adapt to climate risks
Zero Waste Vision	MEUCC	Resource management and sustainable urban infrastructure
Türkiye's Green Development Revolution	Presidency	Urban infrastructure transformation, energy efficiency, and environmental resilience
National Spatial Strategy Document (NSSD) (<i>preparatory work is ongoing</i>)	MEUCC	Disaster risks and resilience perspectives in urban development scenarios
National Climate Change Strategy Document	MEUCC	Urban planning strategies against climate-related disasters

Table 3. Strategies and Action Plans

DOCUMENT / PROGRAM	YEAR	CONTENT
National Risk Shield Model (URKM)	2023–	Aims to cover all phases of disaster management—pre-disaster, during the disaster, and post-disaster—and to monitor the process from all angles, manage it, and establish recovery and reconstruction policies.
Disaster Risk Reduction Plans (TARAP / İRAP)	2020–	Strategies for reducing urban risks and enhancing preparedness, based on risk analysis in each province.
National Disaster Risk Reduction Plan (TARAP)	2022	Risk prioritization and action strategies across Türkiye.
National Smart Cities Strategy and Action Plan (2020–2023) *A draft study for 2024–2030 is available.	2019	Technological resilience, data-driven city management, disaster early warning, and infrastructure optimization.
National Urban Renewal Strategy (2012 / 2023 Update)	2012–2023	Transformation of areas at risk of disasters and enhancement of structural resilience.
Climate Adaptation Plans and Greenhouse Gas Reduction Strategies (<i>City-based</i>)	2020+	Plans prepared by local governments to enhance climate resilience (e.g., Izmir, Istanbul, Bursa, etc.).
Sustainable Urban Development Network (SUKA) Strategies	2020+	EU-supported initiatives in local governments focusing on resilience, green infrastructure, and circular economy practices.

Ensuring urban resilience is possible through a robust legal framework and effective institutional structures. In Türkiye, numerous legal and institutional regulations have been implemented in line with the objectives of disaster risk reduction, adaptation to climate change, and sustainable urbanization. In this context, the Disaster and Emergency Management Law (No. 5902) ensures the coordination of disaster management at the national level and defines the duties, authorities, and responsibilities of AFAD. The Law on the Transformation of Areas at Risk of Disasters (No. 6306) establishes the legal framework

for the transformation of high-risk structures and areas. The Urban Planning Law (No. 3194) and the Regulation on Urban Planning in Planned Areas mandate the consideration of disaster risks in planning processes, thereby supporting safe and resilient urbanization.

While the Environmental Law (No. 2872) contains fundamental provisions for managing environmental risks and strengthening ecological resilience, the Draft Climate Law is being prepared as a key legal instrument to define cities' obligations regarding adaptation to climate change. Mandatory earthquake insurance (DASK), which came into effect with the Disaster Insurance Law (2000), contributes to enhancing economic resilience.

Table 4. Local and Sectoral Tools

TOOL / PROGRAM	DESCRIPTION
Provincial Disaster Risk Reduction Plans (IRAP)	Province-level risk maps, priority response and resilience strategies
Municipal Strategic Plans and Climate Action Plans	Disaster management, green spaces, and resilient infrastructure targets in local governments' 5-year plans
Local Disaster Risk Management Centers (YARM)	Risk monitoring and early warning infrastructure within municipal administrations
Urban Renewal Master Plans	Risk-prone area transformation and new development strategies at the neighborhood or district level
Green Infrastructure and Nature-Based Solutions Projects	Rainwater management, carbon sinks, ecosystem-based solutions
AFAD Disaster Education Campaign and Community-Based Resilience Program	Increases risk awareness at the individual and community levels

In summary, urban resilience policies in Türkiye have a multi-layered structure:

- At the macro level, they are shaped by development plans, climate, and risk strategies.
- At the micro level, they are implemented through municipal plans, IRAPs, and urban renewal projects.

- The legal framework is built upon disaster management, zoning, environmental, and climate policies.

5.1. Avcılar Municipality’s Responsibilities and Status of Action Implementation under the IRAP (Istanbul Province Risk Reduction Plan):

According to data as of November 28, 2025, there are a total of 40 actions assigned to Avcılar Municipality under the IRAP.

Action No.: 34-A1-H15-E57 - Relevant Unit/Department: DEPARTMENT OF DISASTER AFFAIRS AND RISK MANAGEMENT

Neighborhood liaison offices will be established in public institutions, schools, mosques, and similar buildings capable of withstanding an earthquake (to accommodate 5,000 people), based on the district’s population density, for use during disasters.		
1. In how many neighborhoods will liaison offices be established?	2. Number of neighborhood liaison offices required to be established	3. Number of liaison offices established in the neighborhoods
10	88	10

Action No.: 34-A1-H1-E53 - Relevant Unit/Department: DEPARTMENT OF URBAN RENEWAL

By determining the number of buildings within the district that must undergo first-, second-, and third-degree urban renewal, efforts related to urban renewal will be completed in order of priority.				
1. Total number of buildings requiring urban renewal	2. Number of first-degree buildings	3. Number of second-degree buildings	4. Number of third-degree buildings	5. Number of buildings that have undergone urban renewal
21,362	1,564	1,922	17,876	2,989

Action No.: 34-A3-H4-E6 - Relevant Unit/Department: DEPARTMENT OF DISASTER AFFAIRS AND RISK MANAGEMENT / DEPARTMENT OF PRESS, PUBLICATIONS, AND PUBLIC RELATIONS

Incentive activities such as awareness campaigns, billboard advertisements, content on the corporate website, and promotions during Friday sermons will be conducted to increase participation in DASK.

1. Number of single-family homes	2. Number of active DASK policies	3. District DASK Rate
146,871	69,584	47.94

Action No.: 34-A2-H6-E279 - Relevant Unit/Department: DEPARTMENT OF CLIMATE CHANGE AND ZERO WASTE

All buildings and facilities belonging to institutions and organizations subject to the Occupational Health and Safety Law No. 6331 must, in accordance with this law, undergo the necessary training and develop Emergency Response Plans for their workplaces, update existing plans, and integrate these plans with all teams as a whole through a series of steps: Awareness and Orientation Seminars, Practice and exercises, Table-top exercises, Functional drills, and Full-scale (Field) drills, and will be implemented, evaluated, and improved to ensure they are fully operational.

1. Number of buildings/facilities subject to Occupational Health and Safety,	2. Number of workplaces with an Emergency Response Plan	3. Number of activities conducted (awareness training, seminars, fieldwork)
72	25	32

RED ACTION

Action No.: 34-A2-H6-E240 - Relevant Unit/Department: DEPARTMENT OF DISASTER AFFAIRS AND RISK MANAGEMENT

To enhance local search and rescue capabilities, the district municipality will form at least three search and rescue teams comprising personnel and volunteers selected from its own service buildings and facilities; these teams will be equipped with necessary gear and receive training from AFAD. Additionally, trainers who have received training from AFAD will conduct training in the district for at least 7.5% of the population, as well as students in the 9th, 10th, and 11th grades, amateur licensed athletes, construction workers, employees at small industrial sites, businesses with over 100 employees, shipyard and port workers (in districts where such facilities exist), university students, and students residing in official and private dormitories affiliated with KYK within the district.

1. Number of search and rescue teams	2. District population/ Number of neighborhoods,	3. Percentage of the district population receiving training	4. Enrollment in grades 9, 10, and 11 / number of students, number of courses offered, number of students enrolled	5. Construction workers in the construction sector, workers in small-scale industry, total number of workers, number of training sessions provided in businesses with over 100 employees, number of people receiving training,	6. Total number of shipyard and port workers, number of training sessions provided, number of participants,	7. Number of amateur licensed athletes, number of training sessions provided, number of participants,
1	440,934/10	5	1,254 people	Number of training sessions provided: 150, number of participants: 12,500	0	5 training sessions, 40 people

Action No.: 34-A2-H8-E50 - Relevant Unit/Department: DEPARTMENT OF DISASTER AFFAIRS AND RISK MANAGEMENT

Awareness training sessions targeting the hazards and risks in our province (earthquakes, tsunamis, fires, floods, landslides, etc.) will be conducted annually in your district on a neighborhood basis, covering all segments of society (public sector, institutions, organizations, businesses, managers, employees, citizens, vulnerable groups, students, etc.) (Disaster-prepared families, disaster-prepared workplaces, disaster-prepared schools, disaster-prepared youth, etc.) will be conducted annually, and drills will be carried out.

1. Number of disaster awareness training sessions conducted	2. Number of participants	3. Number of drills conducted
250	21,500	23

Action No.: 34-A1-H5-E49 - Relevant Unit/Department: DEPARTMENT OF ZONING AND URBAN PLANNING

In accordance with Presidential Decree No. 9419, published in the Official Gazette No. 32785 dated January 17, 2025, and prepared by the General Directorate of Water Management (SYGM) for the water basins within the district boundaries, the Marmara Basin Flood Management Plan and Drought Management Plan have entered into force; and the hazardous areas identified within this scope will be taken into account in all urban planning and construction activities.

1. Number of streams at risk	2. Number of people affected in high-risk areas	3. Number of people affected in areas with a moderate risk level	4. Number of people affected in low-risk areas
2	5,981	0	0

Action No.: 34-A1-H4-E130 - Relevant Unit/Department: DEPARTMENT OF PUBLIC WORKS

All streets and avenues within the district boundaries will be inspected to ensure that no loss of life occurs and that all signs, billboards, mobile or fixed stalls, air conditioners, flower arrangements, street furniture, etc., do not fall, topple, or shift during an earthquake; where necessary, they will be secured and/or relocated.

1. Total number of streets/avenues	2. Number of avenues where work has been completed	3. Number of streets where work has been completed	4. Number of avenues and streets where work is not yet complete	5. Total number of operations performed (detailed)
PUBLIC WORKS Number of avenues: 113 Number of streets: 1,655 Boulevard: 1	50	400	AVENUE: 63 STREET: 1255	In the streets and avenues of the Gümüşpala and Merkez neighborhoods in Avcılar district, all overhead power lines have been buried underground in collaboration with the Bedaş Institution, and all old-style power poles have been removed.

Action No.: 34-A1-H4-E91 - Relevant Unit/Department: DEPARTMENT OF SUPPORT SERVICES

To prevent loss of life and property in all public service buildings and their annexes, and to ensure service continuity after an earthquake, all computers, equipment, machinery, items, cabinets, IT objects, chemical substances, stored goods, etc. will be inspected to ensure they do not fall, topple, or shift from their positions during an earthquake, and will be secured and/or relocated as necessary

1. Number of public service buildings	2. Public service buildings where the securing process has been completed	3. Number of operations performed

49	42	100
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Action No.: 34-A2-H5-E49 - Relevant Unit/Department: DEPARTMENT OF PUBLIC WORKS

Temporary reinforcement and stabilization measures will be implemented in areas at high risk of flooding, and materials such as sandbags and flood barriers will be made available for public use at strategic locations.	
1. Number of high-risk flood areas	2. Number of sandbags deployed/ flood barriers
8	56

Action No.: 34-A4-H1-E10 - Relevant Unit/Department: DEPARTMENT OF CLIMATE CHANGE AND ZERO WASTE

In all structurally sound public service buildings where earthquake performance has been documented as sufficient, adequate quantities of first aid supplies, blankets, and basic food packages—among other materials critical for emergency response and initial recovery—will be stored and replenished every six months through drills.				
1. Number of public buildings with sufficient earthquake performance	2. Number of deployed search and rescue materials (Building-Material)	3. Number of blankets, tents, sleeping bags, and mats (Building-Equipment)	4. Number of basic food items (Building-Materials)	5. Stock of emergency medical supplies (Building-Materials)
68 (20 single-story prefabricated structures, 1 stadium, 1 covered market, 42 earthquake-resistant containers, 2 mosques, 2 schools)	0	400 (Overalls, Support Services Warehouse)	0	0

Action No.: 34-A4-H1-E8 - Relevant Unit/Department: DEPARTMENT OF STRATEGY DEVELOPMENT

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Funding will be provided for preparedness and response projects aimed at reducing risks such as earthquakes, floods, and climate change through cooperation with international organizations. Best practices will be identified and adapted to the district.

1. Number of projects funded	2. Number of projects awaiting funding
1	1

Action No.: 34-A1-H4-E92 - Relevant Unit/Department: URBAN PLANNING AND URBAN DEVELOPMENT DEPARTMENT

As part of preparations for an effective response following an earthquake, and to ensure accessibility by search and rescue and damage assessment teams when required, all static design plans for buildings in the municipal archives must be digitally stored at the Municipal DEPARTMENT OF DISASTER AFFAIRS AND RISK MANAGEMENT. Additionally, to facilitate damage assessment and rescue operations, the requirement that building facade cladding be removable should be added to new building permit conditions.

1. Number of buildings in the district	2. Number of projects on file	3. Number of buildings without a project in the administration	4. Number of projects transferred to the digital archive
27,853	26,000	1,853	7,295

Action No.: 34-A1-H4-E52 - Relevant Unit/Department: DEPARTMENT OF ZONING AND URBAN PLANNING (KUDEP)

To ensure no loss of life or property in all historic, natural, historical, and cultural heritage structures under the district’s jurisdiction, and to ensure that cultural heritage can be passed on to future generations, all equipment, furnishings, cabinets, computers, IT, artistic, archaeological objects, stored artifacts, etc. will be inspected to ensure they do not fall, topple, or shift from their positions during an earthquake, and will be secured and/or relocated as necessary.

1. Number of natural and cultural heritage buildings in the district	2. Number of buildings where reinforcement is complete	3. Number of buildings to be designated
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1	1	0
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Action No.: 34-A1-H3-E88 - Relevant Unit/Department: DEPARTMENT OF ZONING AND URBAN PLANNING (KUDEP)

<p>The performance of historical and cultural heritage structures within the area of responsibility against the expected earthquake will be examined, and reinforcement, temporary, and removable bracing and shoring measures will be implemented for structures deemed necessary.</p>			
<p>1. Number of historical and cultural heritage structures in the district</p>	<p>2. Number of historical and cultural heritage structures for which seismic performance assessments have been conducted</p>	<p>3. Number of historical and cultural heritage structures where temporary and permanent reinforcement and strengthening measures have been applied</p>	<p>4. Number of historical and cultural heritage structures where no measures were implemented</p>
11	11	1	10

Action No.: 34-A1-H3-E49 - Relevant Unit/Department: DEPARTMENT OF PUBLIC WORKS

<p>The seismic resilience of all municipal service buildings and properties will be assessed, and buildings with insufficient performance will be identified. For these buildings, improvement efforts will be carried out using necessary reinforcement or reconstruction methods, starting with simple reinforcement methods if appropriate, and risk reduction plans will be urgently prepared and implemented.</p>			
<p>1. Number of buildings owned by the municipality</p>	<p>2. Number of buildings reinforced</p>	<p>3. Number of buildings demolished or demolished and rebuilt</p>	<p>4. Number of buildings where no measures were implemented</p>
<p>MUNICIPAL SERVICE BUILDING: 49 STATE HOSPITAL: 1 NEIGHBORHOOD POLICE STATION: 5 TAX OFFICE: 1 DISTRICT GOVERNOR'S OFFICE: 1</p>	1	<p>MUNICIPAL SERVICE BUILDING: 1</p>	<p>MUNICIPAL SERVICE BUILDING: 32</p>

STATE UNIVERSITY: 1 SCHOOLS UNDER THE NATIONAL EDUCATION DIRECTORATE: 56			
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Action No.: 34-A2-H4-E52 - Relevant Unit/Department: URBAN PLANNING AND DEVELOPMENT DEPARTMENT

Numbering systems for squares, boulevards, avenues, roads, streets, and buildings facing these areas will be completed or updated, and the results will be shared with relevant institutions and organizations.

1. Number of independent units in the district	2. Number of independent units in the spatial address registration system	3. Number of independent units verified in the field according to MAKS	4. Number of buildings not inspected for numbering in accordance with MAKS	5. Number of independent units with numbering corrected according to MAKS	6. Number of units with ongoing issues
199,569	199,569	199,569	0	0	0

Action No.: 34-A2-H8-E8 - Relevant Unit/Department: DEPARTMENT OF SOCIAL SERVICES

Disaster awareness campaigns, provision of necessary supplies, and social support activities will be conducted annually for at least 10% of vulnerable groups (e.g., the elderly, people with disabilities, children, low-income families, and those with chronic illnesses) living in areas identified as high-risk for disasters.

1. Number of people with disabilities, chronically ill individuals, elderly living alone, elderly living with family, and disadvantaged families	2. Number of training sessions provided per person	3. Number of families who received supplies	4. Number of families receiving social support
750 families (1,650 people)	11	0	750

Action No.: 34-A2-H6-E102 - Relevant Unit/Department: DEPARTMENT OF PUBLIC WORKS

Periodic maintenance, repair, and improvement work on transportation systems and all urban infrastructure (including water and sewer systems, electricity and natural gas lines, telecommunications infrastructure, stormwater drainage systems, etc.) within the scope of

responsibility will be carried out without interruption. Software programs will be developed for these operations, and work progress will be tracked using these programs.

<p>1. Length of wastewater lines, stormwater lines, natural gas lines, electricity lines, lines owned by private companies (including Telekom and other private companies), and transportation systems (road and rail) in the district, and the number of artistic structures in the district</p>	<p>2. Length of wastewater, stormwater, natural gas, electricity, private-company, and transport lines requiring maintenance and repair, and number of artistic structures requiring maintenance and repair</p>	<p>3. Length of wastewater lines, stormwater lines, natural gas lines, electricity lines, lines owned by private companies (including Telekom and other private companies), and transportation systems (road and rail) that have undergone maintenance and repair, and the number of artistic structures that have undergone maintenance and repair</p>																																						
<table border="1"> <tr><td>DRINKING WATER</td><td>419 KM</td></tr> <tr><td>ISKI WASTEWATER</td><td>368 KM</td></tr> <tr><td>RAINWATER</td><td>120 KM</td></tr> <tr><td>FIBER & INTERNET TELECOM</td><td>390 KM</td></tr> <tr><td>FIBER & INTERNET TURKNET</td><td>30 KM</td></tr> <tr><td>FIBER & INTERNET SUPERONLINE</td><td>90 KM</td></tr> <tr><td>FIBER & INTERNET OTHER</td><td>30 KM</td></tr> <tr><td>İGDAŞ</td><td></td></tr> <tr><td>TOTAL</td><td>641 KM</td></tr> <tr><td>CE:</td><td>51 KM</td></tr> <tr><td>PE:</td><td>435 KM</td></tr> <tr><td>SH:</td><td>133 KM</td></tr> <tr><td>SERVICE BOX:</td><td>22 KM</td></tr> <tr><td>BEDAŞ:</td><td></td></tr> <tr><td>TOTAL:</td><td>1,180 KM</td></tr> <tr><td>A.G:</td><td>510 KM</td></tr> <tr><td>O.G:</td><td>200 KM</td></tr> <tr><td>Overhead Power Line Network Lighting:</td><td>120 KM</td></tr> <tr><td>UNDERGROUND NETWORK LIGHTING</td><td>350 KM</td></tr> </table>	DRINKING WATER	419 KM	ISKI WASTEWATER	368 KM	RAINWATER	120 KM	FIBER & INTERNET TELECOM	390 KM	FIBER & INTERNET TURKNET	30 KM	FIBER & INTERNET SUPERONLINE	90 KM	FIBER & INTERNET OTHER	30 KM	İGDAŞ		TOTAL	641 KM	CE:	51 KM	PE:	435 KM	SH:	133 KM	SERVICE BOX:	22 KM	BEDAŞ:		TOTAL:	1,180 KM	A.G:	510 KM	O.G:	200 KM	Overhead Power Line Network Lighting:	120 KM	UNDERGROUND NETWORK LIGHTING	350 KM	<p>MAINTENANCE ISKI SEWAGE: 368 KM RAINWATER: 120 KM İGDAŞ Natural Gas: 51 KM</p> <p>Repairs may be required on all lines.</p>	<p>MAINTENANCE ISKI SEWAGE: 360 KM RAINWATER: 100 KM</p> <p>REPAIR ISKI SEWAGE: 5 KM STORM WATER: 1 KM BEDAŞ: 8 KM INTERNET COMPANIES: 5 KM İGDAŞ: 2 KM</p>
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Action No.: 34-A2-H6-E57 - Relevant Unit/Department: DEPARTMENT OF PUBLIC WORKS / DEPARTMENT OF URBAN PLANNING AND DEVELOPMENT

The transportation system and urban infrastructure (roads, viaducts, underpasses, overpasses, pedestrian crossings, bridges, retaining walls, and tunnels, along with the surrounding urban infrastructure, water and sewer systems, electricity and natural gas lines, telecommunications infrastructure, stormwater drainage systems, and all buildings along the roadside, etc.) will be conducted jointly. To prevent the collapse of buildings surrounding transportation routes and major arteries that may sustain damage, these structures will be improved, reinforced, or renovated.

1. Total infrastructure route length, including the length of road and rail systems subject to vulnerability analysis	2. Number of artistic structures subjected to vulnerability analysis	3. Number of buildings surrounding transportation routes and major arteries that could be damaged	4. Number of buildings around transportation routes and main arteries that could sustain damage where improvements or reinforcements have been made
Total infrastructure length in our district: 3,268 km Rail: 2 km	0	275	202

RED ACTION

Action No.: 34-A2-H6-E11 - Relevant Unit/Department: DEPARTMENT OF ZONING AND URBAN PLANNING

Within the scope of the hazards and risks identified in the IRAP, neighborhood-level disaster and emergency risk analyses will be conducted in the district and submitted to the Risk Identification, Mitigation, Monitoring, and Evaluation Commission.

1. Total number of neighborhoods	2. Number of neighborhoods where risk analysis was conducted	3. Number of neighborhoods to be analyzed
10	10	0

Action No.: 34-A2-H4-E9 - Relevant Unit/Department: URBAN PLANNING AND URBAN DEVELOPMENT DEPARTMENT

Risk models developed for streams across Istanbul under heavy rainfall conditions will be shared not only with relevant agencies and local governments but also with companies operating in the construction and infrastructure sectors, particularly those involved in project and contracting work. This information will be made available to engineering firms responsible for construction projects prior to project initiation, thereby ensuring information sharing within the framework of risk mitigation governance.

1. Number of companies applying for construction permits	2. Number of Engineering Firms with Which Risk Models Were Shared

179	0
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Action No.: 34-A1-H15-E16 - Relevant Unit/Department: DEPARTMENT OF PUBLIC WORKS

To improve stormwater drainage systems, existing culverts will be maintained, and their periodic cleaning and maintenance will be ensured. Culverts will be expanded and additional culverts constructed in accordance with new rainfall regimes to increase stormwater drainage capacity. Designs will be prepared based on the size of the watershed, approval will be obtained from the ISKI General Directorate, and all culverts will be reported in a GIS environment. Software programs will be developed for operations such as the rehabilitation and maintenance of underpasses and stream beds, the protection of gratings, and the installation of additional gratings to prevent flooding, and these programs will be used to monitor measures in areas at risk of flooding.

1. The required number of culverts for the stormwater drainage system	2. Number of culverts in the stormwater drainage system	3. Number of inlets modified according to the new rainfall regime	4. Number of inlets that need to be modified according to the new rainfall regime	5. Number of gratings required - number of existing culverts	6. Number of cleaned culverts, gratings, etc.
6	6	0	1	1,200-6	Culvert: 6 Grate: 1100

Action No.: 34-A1-H14-E72 - Relevant Unit/Department: DEPARTMENT OF ZONING AND URBAN PLANNING

Within the scope of rainwater harvesting and water conservation, the construction of water storage areas and cisterns in every building where it is legally compliant and physically feasible will be encouraged, and the establishment of underground water storage systems will be promoted. The use of graywater in residential and commercial buildings will be encouraged, and to ensure that green spaces throughout the city are irrigated with graywater, new building permits will require graywater systems to be designed in accordance with applicable regulations.

1. Number of buildings with water storage areas/cisterns	2. Number of buildings with graywater design included in building permits
40	8

Action No.: 34-A1-H14-E43 - Relevant Unit/Department: DEPARTMENT OF CLIMATE CHANGE AND ZERO WASTE

Within the scope of the District Climate Change Action Plan and/or in coastal districts, measures will be identified to combat all climate-related disasters, including risks associated with rising sea levels and coastal erosion, and to reduce greenhouse gas emissions.

1. Is there a District Climate Change Action Plan?	2. Number of actions required for climate-related disasters	3. Number of actions taken	4 Emissions reduction target set under the Climate Change Action Plan	5. Amount of emissions reduced under the Climate Change Action Plan
YES	11	0	501,656 (tons)	0 (Increased by 25,000 tons)

Action No.: 34-A1-H14-E5 - Relevant Unit/Department: DEPARTMENT OF CLIMATE CHANGE AND ZERO WASTE

Under the District Sustainable Energy Action Plan, the implementation of microgrids that increase the use of solar energy will be required in new building permits in accordance with applicable regulations.	
1. Number of buildings eligible to utilize solar energy in building permits under the District Sustainable Energy Action Plan	2. Number of buildings utilizing solar energy in building permits under the District Sustainable Energy Action Plan
38	0

RED ACTION

Action No.: 34-A1-H11-E14 - Relevant Unit/Department: DEPARTMENT OF PUBLIC WORKS

The load-bearing capacities of retaining structures (retaining walls, shoring walls, gabion walls, anchored walls, etc.) throughout the district will be examined in detail; structures found to be inadequate will be reinforced or demolished and rebuilt to ensure safety and durability.					
1. Total number of streets and avenues in the district	2. Number of streets and avenues surveyed	3. Number of streets and avenues not surveyed	4. Number of retaining structures in the district	5. Number of building-based improvements / cubic meters	6. Number of building-based improvements required
Total: 1,769 Avenues: 113 Streets: 1,655 Boulevard: 1	Street: 150 Avenue: 10	STREET: 1,505 AVENUE: 103	To be determined.	9 / 200	4

Action No.: 34-A1-H8-E6 - Relevant Unit/Department: DEPARTMENT OF PUBLIC WORKS

The capacity of stormwater systems will be increased, and regular maintenance will be performed; separate sewer (wastewater) and stormwater lines will be established to prevent overloading during floods.

1. Required length of the stormwater channel	2. Current length of the stormwater channel	3. Length of the sewer line that also functions as a stormwater drain	4. Length of the section where the stormwater line branches off from the wastewater line	5. Number of projects completed during the year
150 km	120 km	10 km	358 km	3

Action No.: 34-A1-H7-E270 - Relevant Unit/Department: DEPARTMENT OF ZONING AND URBAN PLANNING

If there are areas declared as disaster-prone and/or high-risk zones, their boundaries will be incorporated into existing urban plans where such plans exist, and new construction and settlement will be prevented.

1. Number of disaster-prone areas	2. Number of areas declared as high-risk	3. Number of areas that should be declared high-risk	4. Number of disaster-prone zones incorporated into the zoning plan, Number of high-risk areas
1	0	0	1

Action No.: 34-A1-H7-178 - Relevant Unit/Department: DEPARTMENT OF PARKS AND RECREATION

To prevent the uprooting or breaking of all trees (including those of public institutions/organizations and private entities, with priority given to monumental and registered trees) located on main streets and in existing parks within the city due to storms and snowfall, these trees will be pruned appropriately during the season, and necessary protective measures will be taken.

1. The total number of trees	2. Number of trees belonging to public institutions and organizations in the district	3. Number of trees owned by private entities	4. Number of studies conducted	5. Statistics on efforts made to reduce risk
49,754	4,738	Inventory records for private properties have been initiated.	11,957	24%

Action No.: 34-A1-H7-E58 - Relevant Unit/Department: DEPARTMENT OF PUBLIC WORKS

In areas at risk of landslides and liquefaction, structural improvements such as pile foundation construction, jet grouting, soil drainage, and dynamic compaction will be implemented to mitigate these risks.	
1. Number of infrastructure facilities in areas at risk of landslides and liquefaction	2. Length of infrastructure undergoing structural improvements, number of infrastructure projects undergoing improvements
Number of disaster-prone areas: 1 Number of infrastructure facilities at risk of landslides and liquefaction: 5	Structural improvements: 750 m Number of infrastructure facilities improved: 3

RED ACTION

Action No.: 34-A1-H7-E100 - Relevant Unit/Department: DEPARTMENT OF ZONING AND URBAN PLANNING / MUNICIPAL POLICE DIRECTORATE

Pursuant to the Municipalities Law No. 5393, regardless of whether they are new or old, all buildings (apartment buildings, arcades, inns, markets, standalone businesses, small industrial sites, etc.) and the businesses operating within them will be inspected to determine whether they have a valid permit, whether the intended use of the building (e.g., whether a building constructed for residential use has had its ground and upper floors converted into shops or workshops), and whether any hazardous alterations have been made to the building (such as modifications to load-bearing systems like foundations, columns, and shear walls; the retrofitting of an elevator; adding a water tank with a capacity of more than one ton to the attic, the removal of sections of the building's interior walls, the installation of additional windows throughout the building, or the removal of walls, etc.) will be inspected, and the necessary actions will be taken.				
1. Number of business premises (independent units)	2. Number of licensed business premises	3. Number of business premises not legally required to have a permit	4. Number of unlicensed business premises and statistics on inspections conducted (sealed)	5. Number of workplaces subject to structural interventions and inspections, and number of procedures performed
13,495	9,958	0	3,537	2,466

Action No.: 34-A1-H7-E6 - Relevant Unit/Department: DEPARTMENT OF PARKS AND RECREATION

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Soil erosion will be prevented by constructing terraces and water retention structures in areas with steep slopes; for this purpose, afforestation and landscaping activities will be carried out. Green areas that increase water absorption, such as parks, gardens, and green roofs, will be expanded, and afforestation projects will be implemented to prevent erosion. To address ponding on roads, the use of construction materials and techniques that increase surface permeability, regulate surface runoff, and facilitate the interaction between water and soil will be promoted

1. Area at risk of erosion	2. Area size where erosion control measures are implemented	3. Number of areas at risk of waterlogging	4. Number of areas where interventions were carried out against the risk of waterlogging
187,000 m ²	5,400 m ²	1	1

RED ACTION

Action No.: 34-A1-H6-E87 - Relevant Unit/Department: DEPARTMENT OF ZONING AND URBAN PLANNING

All buildings identified as having sustained severe and/or moderate damage in past disasters and declared as high-risk structures will be reinforced or demolished.

1. Number of severely damaged buildings, if any, remaining from past disasters since 1999	2. Number of severely damaged buildings, if any, from past disasters since 1999 that have been demolished	3. Number of moderately damaged buildings, if any, remaining from past disasters since 1999	4. Number of moderately damaged buildings, if any, from past disasters since 1999 that have been reinforced or repaired
0	0	6	41

RED ACTION

Action No.: 34-A1-H6-E45 - Relevant Unit/Department: DEPARTMENT OF ZONING AND URBAN PLANNING

In flood-prone areas, riverbeds and waterways will be closed to development while preserving their natural flow. In accordance with relevant legislation, inspections and controls will be increased to prevent uncontrolled development in riverbeds within the area of responsibility, and criminal penalties will be imposed when necessary.

1. Number of flood-prone areas	2. Number of buildings in flood-prone areas (permitted, unpermitted)	3. Number of buildings demolished by the administration (permitted, unpermitted)	4. Number of buildings not demolished (permitted and unpermitted)
2	652	0	652

RED ACTION

Action No.: 34-A1-H5-E4 - Relevant Unit/Department: PARKS AND RECREATION DEPARTMENT

New parks and gardens will be designed as integrated disaster-resilient spaces. In this context, disaster-resilient infrastructure and superstructure elements will be incorporated, such as two adequately sized underground water tanks with rounded edges and check valves to withstand earthquakes, water intake systems equipped with pumps, septic tanks for restrooms, cooking and bathing units, solar-powered lighting and charging stations, and pergolas that can be enclosed and used as emergency field treatment areas when necessary. In addition, existing parks and gardens will be upgraded to include similar infrastructure and superstructure elements.

1. Number of existing parks and gardens	2. Number of parks and gardens with disaster relief facilities
68 (31)	12

RED ACTION

Action No.: 34-A1-H3-E9 - Relevant Unit/Department: DEPARTMENT OF PUBLIC WORKS

To reduce disaster and emergency risks, street markets identified as necessary for relocation will be moved to permanent market facilities equipped with infrastructure such as parking areas, assembly areas, temporary shelter areas, and food and logistics centers that can operate 24/7 and be used during disasters.

1. Number of Existing Markets	2. Number of street markets	3. Number of street markets to be relocated	4. Number of open-air markets that do not pose a hazard	5. Number of covered markets
14	8	3	1	5

RED ACTION

Action No.: 34-A1-H2-E6 - Relevant Unit/Department: DEPARTMENT OF URBAN RENEWAL

Urban renewal projects will be initiated in high-risk earthquake zones; urban renewal information and outreach offices will be established in high-risk neighborhoods to support the “Half from Us” campaign; and old, structurally unsound buildings will be demolished and replaced with modern, earthquake-resistant structures. Accordingly, under the district urban renewal strategy document approved by the Ministry of Environment and Urbanization, new, cost-effective reinforcement techniques and other appropriate measures will be implemented in priority areas, with annual implementation covering at least 10%.

1. Total number of buildings	2. Building stock built before 1980	3. Building stock built before 2000	4. Building stock built before 2008	5. Number of urban renewal information and outreach offices	6. Number of buildings subjected to seismic analysis	7. Number of buildings demolished following seismic analysis	8. Number of buildings demolished and rebuilt or reinforced following seismic analysis
27,870	10,179	21,362	9,899	2	2,989	2,398	1,855 + 13 (Reinforcement)

RED ACTION

Action No.: 34-A1-H1-E13 - Relevant Unit/Department: DEPARTMENT OF PLANNING AND PROJECTS

The District Urban Renewal Strategic Document will be prepared and submitted to the Ministry of Environment, Urbanization, and Climate Change (MEUCC) for approval.	
1. Has the District Urban Renewal Strategic Document been approved?	2. Has the District Urban Renewal Strategic Document not been approved?
No	Not approved

Action No.: 34-A1-H4-E193 - Relevant Unit/Department: Department of Public Works/Department of Parks and Recreation

To reduce vehicle traffic and its negative environmental impacts across Istanbul, existing bicycle and scooter networks will be expanded and appropriate infrastructure for cycling will be developed.

Question 1: What is the current total length of bicycle/scooter paths in your district? Are there any ongoing or planned projects to increase the length of bicycle/scooter paths, and if so, what is the targeted total length?	Question 2: How many designated parking spaces for bicycles and motorcycles are there in the existing parks in your district?	Question 3: What percentage of the total capacity of existing parking areas is allocated to bicycles and motorcycles?	Question 4: What is the planned number of parking spaces for bicycles and motorcycles in new or renovated parks, and what percentage does this represent of the total capacity of the parks?
<p>- Tahtakale Neighborhood, Ertugrul Gazi Street, approximately 3 km</p> <p>Planned Bicycle Lanes</p> <p>- Avcilar Coast ~ 5 km</p> <p>- , Gumuspala Neighborhood, İskece Street ~ 3 km</p> <p>- , Tahtakale Neighborhood, İspartakule Boulevard ~ 3 km</p> <p>- , Ambarli Neighborhood, Fevzi Cakmak Street ~ 3 km</p> <p>- , Firuzkoy Neighborhood, Tiryaki Suyu Street ~ 2 km</p>			

Note: "At least 7.5% of existing parking areas must be designated as bicycle and scooter parking areas. Additionally, efforts should be initiated to create new bicycle/scooter parking areas throughout the district."

6. AVCILAR DISTRICT RESILIENCE ASSESSMENT

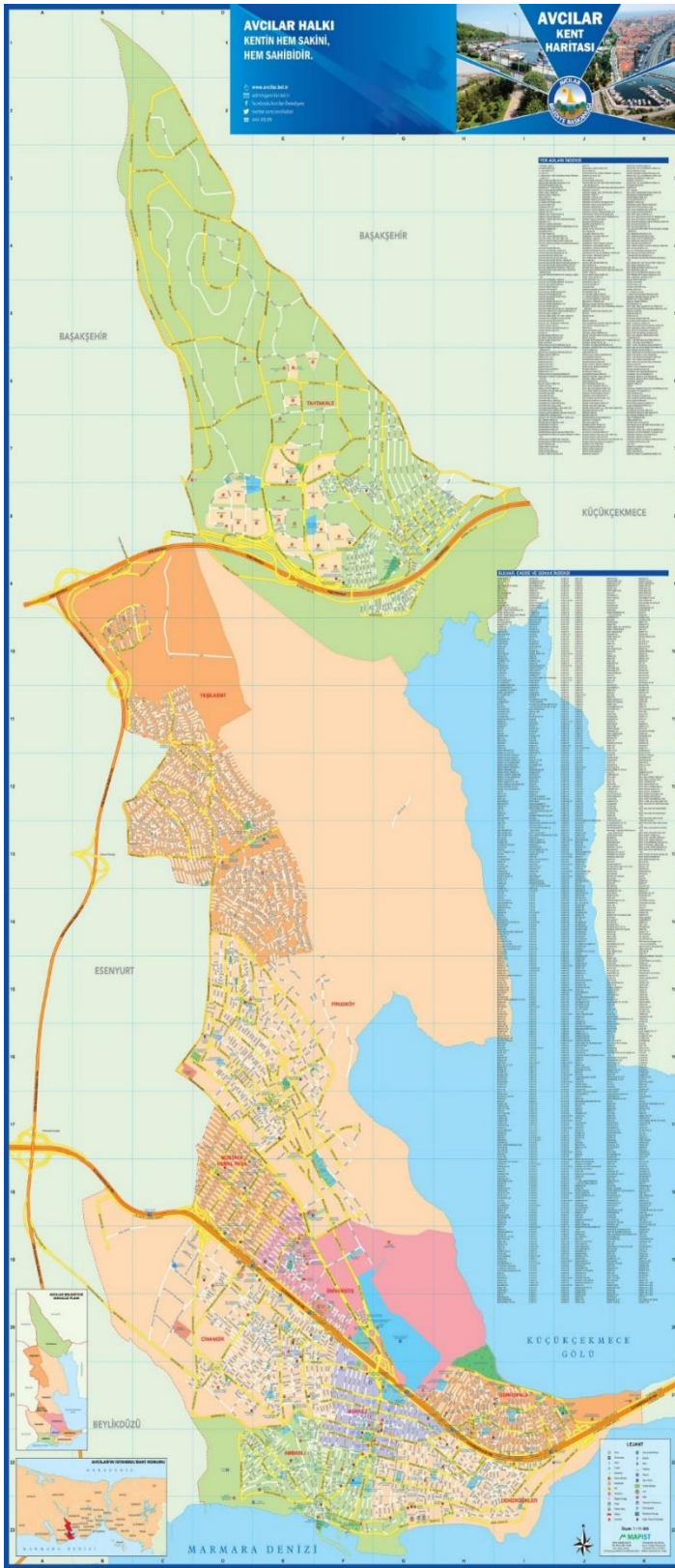
6.1. Geographic Location and Population

Avcılar is located in the western part of Istanbul, on the coast of the Marmara Sea, 27 kilometers from the city center. It is bordered by Küçükçekmece Lake and Küçükçekmece District to the east, towns of Yakuplu and Esenyurt to the west, town of Bahçeşehir and Küçükçekmece District to the north, and the Marmara Sea to the south, covering an area of approximately 42.59 km². The settlement that forms the core of today's Avcılar was a small Greek village before the proclamation of the Republic. This village was located near Ambarlı. In the post-Republic era, in 1924, the Greek inhabitants of Ambarlı Village—numbering 40 to 50 households—were replaced by Turks. Since military warehouses were established in the areas vacated by the Greeks, this place came to be known as Ambarlı. With the settlement of Turks in this area, agriculture gained greater importance. In 1924, the Greek residents of Ambarlı village—comprising 40–50 households—were replaced by Turks. In 1928, a new group of 35 migrant households purchased the 12,000-acre Amindos Farm (now Avcılar) located north of Ambarlı and settled in the farm's buildings. By 1934, the farm's population had grown enough for it to acquire the status of a village. After the departure of the Greek population in 1924, Turks were brought from the Thessaloniki region of Greece and settled here. While Avcılar, which was considered a village at the time, sustained itself through fishing and agriculture, its residents began working in the industrial centers established in the region, particularly from the 1970s onward.

Although population growth in Avcılar District remained below average until 1950, it gained significant momentum after that year. The construction of fuel filling stations in 1959 and the establishment of the TEK Ambarlı Thermal Power Plant in 1964 were the first factors to influence this population growth.

Over time, the district's population reached 126,282 in 1990 and 214,383 in the 1997 census. According to the 2000 census, the district's population was 235,113; as of March 13, 2008, it was 323,596; as of January 1, 2009, 333,944; as of January 1, 2010, 348,635; as of January 1, 2012, 383,736; and by 2014, it had risen to 417,852. According to 2024 TÜİK data, the district's population is 440,934.

Avcılar District consists of the following 10 neighborhoods:



1. Avcılar Center Neighborhood
2. Ambarlı Neighborhood
3. Cihangir Neighborhood
4. Gümüşpala Neighborhood
5. Denizköşkler Neighborhood
6. University Neighborhood
7. Mustafa Kemal Paşa Neighborhood
8. Firuzköy Neighborhood
9. Tahtakale Neighborhood
10. Yeşilkent Neighborhood

Figure 2. Avcılar District and Neighborhoods

6.2. Socio-Economic Characteristics

The population structure of Avcılar District is characterized by a growing population driven by migration, with a predominance of young and middle-aged population groups.

While Avcılar's economic structure historically relied on agriculture, fishing, and viticulture, these sectors have now been replaced by industry, trade, and the service sector. The district is home to over 250 industrial facilities operating in sectors such as metal goods, textiles, clothing, and machinery manufacturing. A significant portion of the population belongs to the working class, with over 40% of the working population employed in the industrial and service sectors. Additionally, small business owners, merchants, and public sector employees contribute to the district's economic fabric.

In terms of educational attainment and cultural structure, Avcılar has a well-developed profile. The literacy rate exceeds 90%; approximately 60% of the population has completed primary school, 30% has graduated from high school, and 10% holds a university degree. The district is home to numerous public and private schools, as well as vocational and technical education institutions. The presence of university campuses has particularly enhanced the participation of the young population in cultural and social life. In terms of social life, recreational areas, cafeterias, sports facilities, and community centers along the coastline bring vibrancy to Avcılar.

In terms of infrastructure and services, the district has widespread healthcare facilities (public hospitals, private hospitals, and family health centers), and in terms of transportation, it offers strong connectivity to Istanbul's center via the E-5 highway and the metrobus line. This locational advantage has increased housing and real estate values; in particular, the coastal strip and central neighborhoods have become attractive for investment.

However, Avcılar also faces certain challenges stemming from rapid urbanization. Population density, unplanned construction, traffic congestion, and inadequate infrastructure occasionally negatively impact the quality of life in the district. Furthermore, social and economic inequalities regarding income levels and access to services are observed between certain neighborhoods. With the decline of traditional industrial sectors,

low-income groups have found themselves in a vulnerable position regarding employment and income security.

As a result, Avcılar is a district dominated by the industrial, commercial, and service sectors, with developing educational and social infrastructure, yet still exhibiting uneven urbanization and socio-economic disparities. It serves as a significant residential and economic hub on the western side of Istanbul and holds strategic importance for regional development due to its young population, transportation advantages, and coastal potential.

According to the 2017 District Socio-Economic Development Ranking Survey conducted by the General Directorate of Development Agencies under the Ministry of Industry and Technology, Avcılar ranks 78th out of 970 districts nationwide and 30th out of 39 districts within the province. According to 2022 SEGE data, the district has achieved a significantly higher ranking compared to 2017 (78th out of 970 districts), placing 29th among 973 districts in 2022, which indicates that the district's socio-economic development level is relatively high.

6.3. Identification of Risks for Avcılar

6.3.1. Natural and Man-Made Disasters

Avcılar has been exposed to numerous disasters throughout history. Some of these disasters are nature-based, such as floods, landslides, and earthquakes, while others are human-induced, such as industrial accidents, plane crashes, and terrorist attacks.

The table below lists the natural disasters that have occurred in Avcılar District over the past 2,000 years:

Table 5. Disasters in Avcılar District over the past 2,000 years (Ergenç N., 2016)

Date	Description
12/14/557	A major landslide occurred. Significant structural damage occurred in the western part of Küçükçekmece Lake. According to Ambraseys, the areas where structural damage occurred cover a region spanning the eastern part of Avcılar and the eastern part of Firüzköy.

July 10, 1894	This was the second earthquake to trigger a landslide. In this earthquake, a fissure approximately 3 km long and 8 cm wide formed parallel to the coast, extending eastward from the village of Ambarlı in Avcılar district. Landslides also occurred in Sirkeci and Eminönü following the earthquake. In Esenköy, some fissures formed parallel to the coast. In the Princes' Islands, where the earthquake was felt most strongly, fissures—the longest of which was 200 meters—and ground subsidence occurred. In Sivriada, some subsidence on the ground surface was observed due to landslides. In the Old City, the area stretching from Balıkpazarı to Limon Pier and the front of Sirkeci Pier experienced fissures in places, while ground subsidence occurred in some areas. In Ortaköy, the ground subsided slightly, causing the mosque by the sea to tilt by about two degrees.
January 21, 1975	At the Ambarlı power plant, one technician lost his life as a result of an accidental explosion. Following an explosion at the Ambarlı thermal power plant, the construction of the power generator that had gone offline was completed in 1977, and the plant's energy production was increased.
January 30, 1975	On the evening of January 30, a plane on the İzmir-İstanbul route was unable to land at Yeşilköy due to a power outage on the runway and crashed into the Marmara Sea off the coast of Ambarlı. 41 people died.
January 30, 1989	A landslide occurred in Ambarlı. The landslide caused a natural gas pipeline to rupture. Natural gas service was cut off.
August 13, 1990	Heavy rainfall, particularly in Üsküdar, Avcılar, Gaziosmanpaşa, Beykoz, Kadıköy, Küçükköy, Beşiktaş, and Fatih, caused basements and lower floors to flood. Large pools of water on main streets disrupted traffic.
September 29, 1998	Heavy rainfall on September 29–30 brought Istanbul to a standstill. Flooding occurred in Alibeyköy, Kocasınan, GOP, Güngören, Merter, and Avcılar. Train services were disrupted as the TCDD Halkalı station was submerged.
July 4, 1999	One person was killed and 30 were injured when a bomb placed in a trash can exploded in Avcılar.
August 17, 1999	A 7.4-magnitude earthquake (see EQ-1999-0000-Istanbul) near Izmit resulted in loss of life and property damage due to ground amplification.
August 9, 2002	Rain that began at 2:00 a.m. lasted for 1.5 hours, flooding streets and avenues with accumulated water. Due to the overflowing of some streams, many homes and businesses were flooded, primarily in Kadıköy, Üsküdar, Ümraniye, Bağcılar, and Beşiktaş, as well as in Maltepe, Beykoz, Eyüp, Kartal, Gaziosmanpaşa, Avcılar, Esenler, Bayrampaşa, and Şişli.

April 1, 2004	Due to a landslide that occurred on Badem, Bayırlı, and Bahçe Streets in the Ambarlı neighborhood in Avcılar, 438 residential units were damaged.
June 21, 2004	Flooding affected 256 commercial properties across 5 districts. According to a statement from AKOM, the rainfall was particularly heavy in Avcılar and Esenyurt; the rain, which fell within a shorter timeframe than seasonal norms, caused adverse effects.
June 26, 2004	A landslide occurred in Ambarlı in 2004 due to heavy snowfall.
December 5, 2004	In the landslide that caused the collapse of a 7-story building, 19 buildings were evacuated. 38 homes were also placed under observation due to risk. The Avcılar Balaban region has been declared a disaster-prone area. The landslide in the region affected an area 700 meters wide and 350 meters long on land, with the sliding surface ranging from approximately 13 to 40 meters. One of the main causes of the landslide in the region was the failure to drain rainwater and garden water.
July 4, 2005	As a result of the rain that began in the morning, more than 500 homes and workplaces on the Anatolian side were flooded. Rainwater covered the E-5 Highway, leaving vehicles stranded on the roads. On the European side, flooding occurred in Gaziosmanpaşa, Bahçelievler, and Küçükçekmece. The Kemikli streams overflowed in Ayamama, Tavukçu, Çinçin, and Pendik. A 20-meter section of Plevne Street collapsed. Numerous homes were flooded in Pendik, Maltepe, GOP, Eyüp, Ümraniye, Kadıköy, Sultanbeyli, Sarıgazi, Samadıra, Tuzla, Üsküdar, Esenler, Bakırköy, Bahçelievler, Ataköy, Bağcılar, Avcılar, Beyoğlu, Güngören, K. Çekmece, Halkalı, Yeşilköy, and Şişli.
June 23, 2010	Due to the heavy rain affecting Istanbul, flooding occurred on the ground floors and in the basements of buildings in some districts, including Avcılar, Bahçelievler, Zeytinburnu, and Bağcılar. The Istanbul Metropolitan Municipality Fire Department announced that nearly 30 reports of flooding had been received since the night before.
October 28, 2010	Three sewer lines overflowed due to heavy rainfall. Flooding also occurred in Ambarlı neighborhood in Avcılar, and some parts of Kadıköy, Arnavutköy, and Büyükçekmece.
August 7, 2014	The Istanbul Metropolitan Municipality announced that the heavy downpour in the afternoon brought 7 to 25 kilograms of rainfall per square meter across the city, while wind speeds reached up to 55 kilometers per hour before the rain. It also stated that power outages occurred in some parts of Istanbul. The rainfall, which affected the

	entire Istanbul coastline, reached 7 to 25 kilograms per square meter within 10 minutes. It was determined that the rain system moving in from the Thrace Region affected the districts of Büyükçekmece, Avcılar, Küçükçekmece, Başakşehir, Bakırköy, Bağcılar, and Bahçelievler and caused damage.
09/04/2014	In Avcılar, one of the busiest points in Istanbul traffic, the open rear gate of a tanker carrying a chemical substance and heading toward Topkapı struck a pedestrian overpass. The overpass collapsed with a loud noise. The collapsed section fell onto the tanker that had struck the overpass and onto a minibus traveling in the opposite direction. One person was killed and four were injured. Following the accident, traffic on the E-5 highway was closed in both directions. The resulting congestion on the TEM extended from Esenyurt to Mahmutbey. The congestion began on the Levent access road. The E-5 was reopened after five hours of work. Since the tanker was loaded with liquid glucose, foam was used to prevent any fire from breaking out. Citizens were also warned not to approach the area.
August 21, 2015	Due to intermittent heavy rain affecting various parts of the province, the Istanbul Metropolitan Municipality (İBB) received a total of 191 reports of flooding and water accumulation. Teams from İSKİ, Road Maintenance, Fire Department, and Waste Management responded to the reports. Reports were received from the E-5 Haramidere Intersection, Ambarlı Intersection, Esenyurt Fatih Industrial Site, and Arnavutköy Bolluca.
November 29, 2021	Due to the severe winds and storms observed across the province, our district experienced damage such as roof collapses, balcony collapses, fallen utility poles, and fallen trees.
January 24, 2022 January 25, 2022	Due to the extraordinary snowfall that began on January 22, 2022, and continued until January 25, turning into a storm on January 24, the following incidents occurred across the province: tree uprooting, chain-reaction traffic accidents, roof collapses, blocked transportation routes, the risk of freezing for homeless individuals, feeding and shelter issues for stray animals, and the inability to provide accommodation for stranded passengers at the airport due to flight cancellations.

Given that the Ambarlı Natural Gas Filling Station is still actively operating in the district, the continued risk of landslides and earthquakes due to the district's geological and topographical ground conditions and active fault lines, and the fact that infrastructure works have not been sufficiently improved in terms of their resilience to floods and other natural disasters, it is clear that the district remains under serious risk from natural and man-made

disasters similar to those observed in the past. In particular, the high concentration of old and high-risk structures in Avcılar, the presence of unauthorized construction in some neighborhoods due to the lack of zoning plans, and the district’s soil characteristics pose a major threat in terms of loss of life and property as well as infrastructure issues, especially given the Great Istanbul Earthquake, which experts expect to occur in the near future.

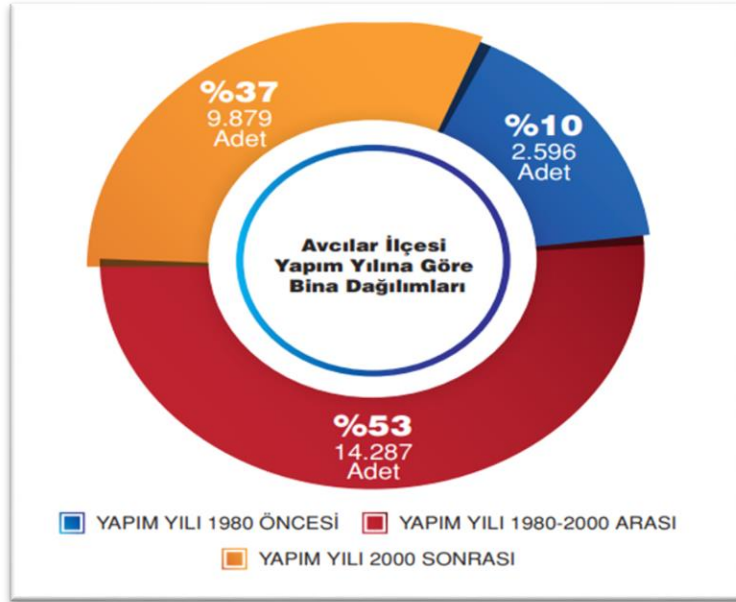


Figure 3. Buildings in Avcılar District by Year of Construction (Istanbul Metropolitan Municipality, 2020)

Table 6. Statistics on High-Risk Buildings in Avcılar District (Avcılar Municipality Activity Report, 2024)

No.	Risk reports for 2024	Buildings demolished in 2024	Number of residential independent units	Number of commercial independent units
1	205	211	1949	213

However, initiatives implemented in recent years by Avcılar Municipality and the central government to promote urban renewal—such as the “Half from Us” campaign and amendments to zoning plan notes—have supported the reduction of the district’s stock of old buildings and provided a positive impetus for urban renewal.

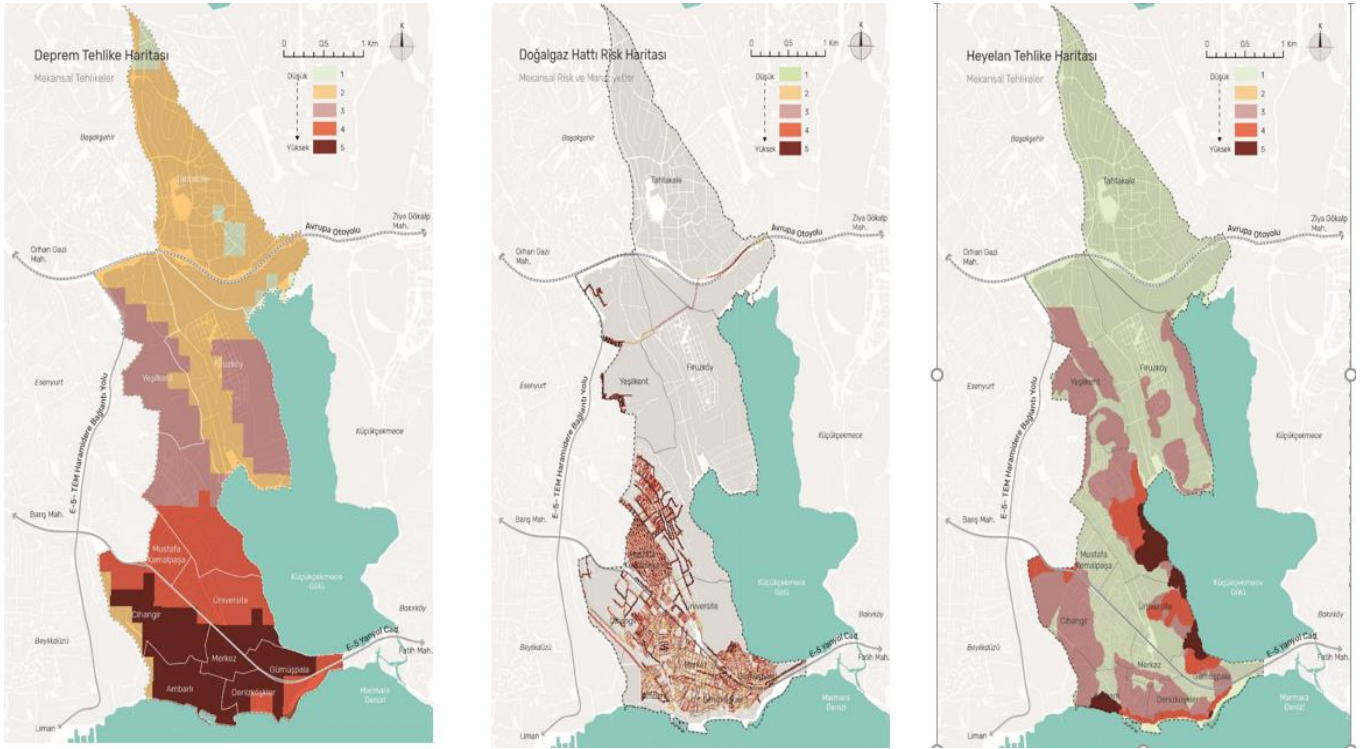


Figure 4. Avcılar Risk Maps-1

Table 7. Number of buildings and residents benefiting from urban renewal as of 2024 (Avcılar Municipality Activity Report, 2024)

No.	District	Number of demolished buildings in 2024	Number of residential independent units	Number of commercial independent units	Total	Population
1	Across Avcılar	211	1949	213	2162	10810 people
	District Toal	211	1949	213	2162	10810 people

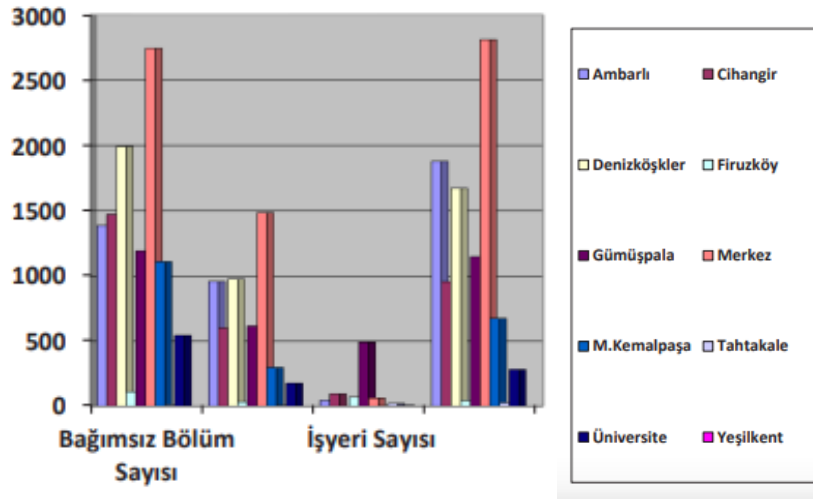


Figure 5. Neighborhood-based urban renewal data as of 2024 (Avcılar Municipality Activity Report, 2024)

Furthermore, since Avcılar is a district bordering both Küçükçekmece Lake and the Marmara Sea, in the event of an earthquake of the expected magnitude, the coastal neighborhoods of Denizköşkler, Gümüşpala, and Ambarlı face a risk of tsunamis and flooding. Tsunami flooding is projected in an area of 0.541 km² covering 1.29% of Avcılar District and affecting 6 neighborhoods. The distribution of the tsunami flooding area across Avcılar District's neighborhoods and the percentage values of flooding by neighborhood are explained below in the graph and table. According to the assessment results, a 17.52% flood area percentage was calculated for Denizköşkler Neighborhood. This is followed by Gümüşpala Neighborhood with a 12.73% rate. The neighborhood with the highest calculated flood depth is Denizköşkler Neighborhood at 5.20 m.

Table 8. Avcılar District Neighborhood-Based Flooding Analysis Results (Istanbul Metropolitan Municipality, 2020-1)

Neighborhood	Max. flood depth	Avg. flood depth	Flood area (m ²)	Total Neighborhood area	Flood area percentage
Denizköşkler	5.20	1.14	296,925	1,695	17.52
Gümüşpala	4.54	0.89	146,200	1,148	12.73
Ambarlı	4.77	1.97	96,000	1,841	5.22

Üniversite	0.36	0.21	950	2,835	0.03
Firuzköy	0.30	0.15	825	12,488	0.01
Tahtakale	0.13	0.11	75	11,427	0.00

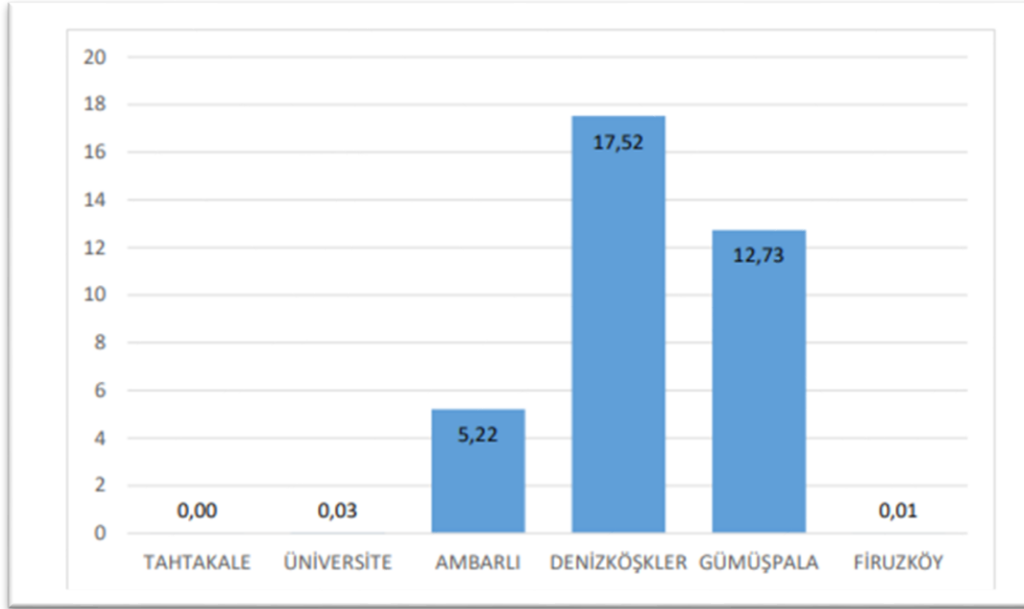


Figure 6. Avcılar District Neighborhood-Based Flood Area Graph (Istanbul Metropolitan Municipality, 2020-1)

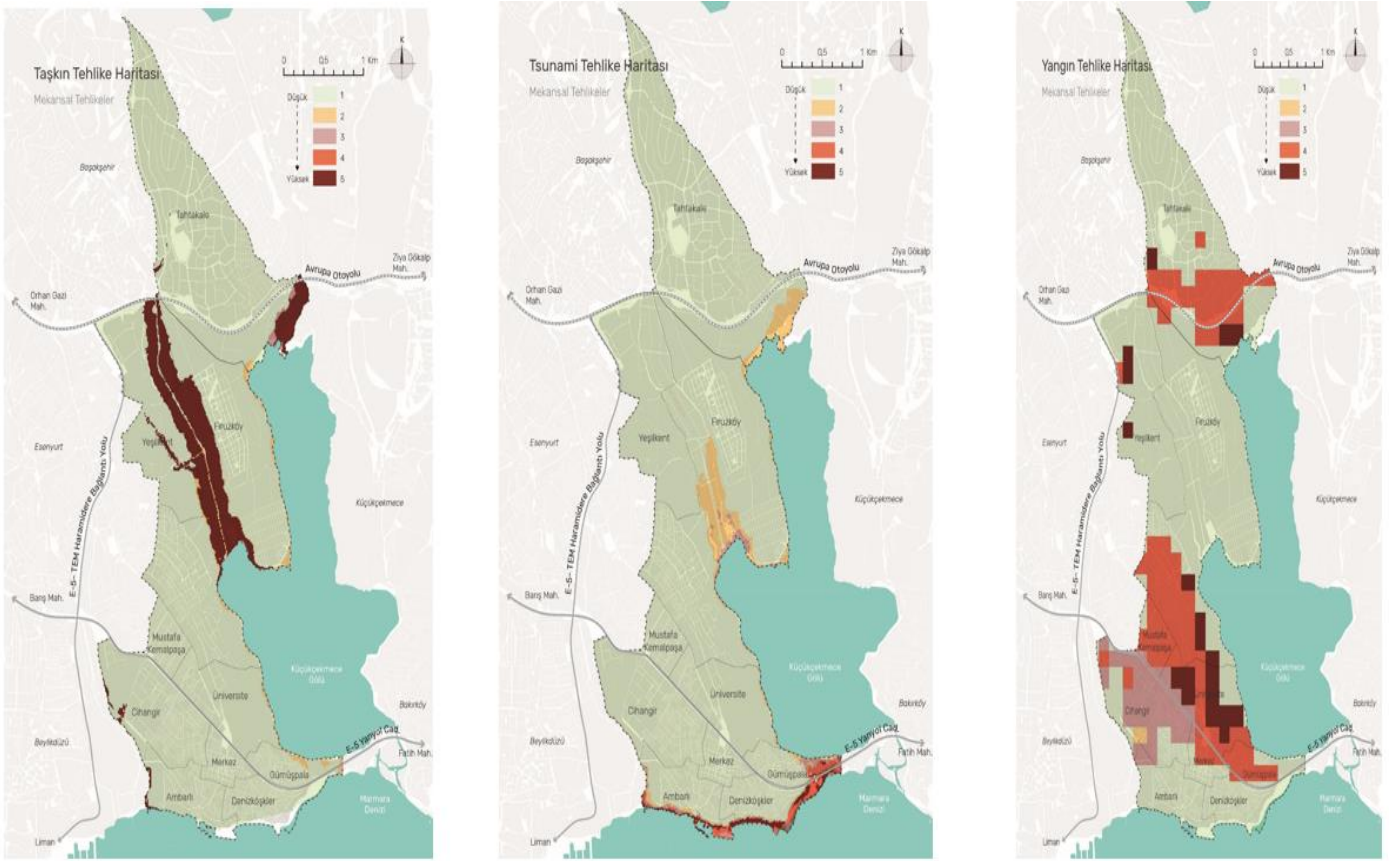


Figure 7. Avcılar Risk Maps-2

6.3.2. Risks Related to the Environment and Ecosystems

Ecosystems and the natural environment within urban areas are significantly affected by factors such as population growth, increased urban density, and rising industrialization—all natural consequences of the urbanization process. These factors exert an increasingly intense pressure on urban ecosystems and cause various changes in their natural functioning. These changes occasionally disrupt ecosystem services; as a result, the environmental, social, and economic benefits provided by urban ecosystems are diminishing. The weakening of ecosystems in this manner negatively impacts the overall resilience of cities and leads to a decline in residents' well-being and living standards.

This decline in urban resilience also leads to increased vulnerabilities regarding environmental quality and human health. Therefore, from the perspective of sustainable

urban management, the protection of ecosystems, the reduction of pressures on the natural environment, and the preservation of ecological balance are of great importance.

Located north of Avcılar, Küçükçekmece Lake features a semi-enclosed lagoon ecosystem. However, the lake is exposed to high nutrient loads (particularly nitrogen and phosphorus) due to domestic waste, industrial pollution, and pollutants carried by surface runoff. This accelerates the eutrophication process and triggers algal blooms. As a result, dissolved oxygen levels in the lake are declining, fish mortality is increasing, and the balance of aquatic life is being disrupted.



Figure 1. Küçükçekmece Lagoon

Air pollution is also a significant environmental issue in the district. Due to heavy vehicle traffic on the D100 (E-5) highway, concentrations of NO_2 , $\text{PM}_{2.5}$, and PM_{10} exceed limit values, particularly during peak hours. Widespread urbanization and a lack of green spaces exacerbate the urban heat island effect. This situation negatively impacts not only human health but also the photosynthetic capacity of plants and the balance of local wildlife.

In terms of waste management, Avcılar also poses various risks, with instances of illegal dumping and accumulation of construction debris observed. Accumulations of heavy metals (lead, cadmium, zinc) and microplastics have been detected in the soil in these areas. Soil contamination reduces soil fertility by affecting organisms such as earthworms and microorganisms.

Industrial and shipping activities around the Ambarlı Port also exert significant pressures on the ecosystem. Pollution from oil storage facilities and ship ballast water is carried into the

Marmara Sea, leading to heavy metal accumulation in marine life. This situation threatens both marine biodiversity and the human food chain.

In Avcılar, the amount of green space per person is approximately 1.8 square meters; this figure is well below the 9-square-meter value recommended by the World Health Organization. The lack of green space disrupts the continuity of ecological corridors within the city and, in particular, reduces the resting areas for migratory birds. Due to habitat loss around Küçükçekmece Lake, the populations of certain bird species are declining.

Climate change is also an important factor that increases environmental risks in Avcılar. One of the most significant risks is climate change, which emerges in line with the increase in greenhouse gas levels and will manifest itself globally or regionally in the Earth's climate over the coming decades or longer. The concept of climate change is defined by the IPCC as "climatic changes occurring over time as a result of natural variations or human activities" (IPCC, 2016). Rising sea levels cause flooding in coastal areas, while heavy rainfall leads to flooding due to inadequate drainage systems. During dry periods, lake levels drop, water salinity increases, and the lagoon ecosystem is damaged. Rising temperatures also intensify the urban heat island effect, causing stress in plant and animal species.

All these environmental risks increase Avcılar's ecological vulnerability. Therefore, ecosystem-based planning and nature-based solutions must be prioritized in the district. Strengthening coastal protection and green infrastructure systems, establishing a water quality monitoring network in Küçükçekmece Lake, creating green corridors, controlling industrial pollution, and promoting the widespread adoption of green roofs to mitigate the urban heat island effect are of great importance in this regard.

The algal bloom issue, which has dominated the agenda across Türkiye and Istanbul in recent years and exposed the pollution in the Marmara Sea, poses a serious problem within Avcılar. Due to the algal bloom, a decline in biodiversity and disruptions in the marine ecosystem are occurring throughout the Marmara Sea; moreover, it is clear that the prestige and aesthetic value of Avcılar Beach—which holds great importance for residents' recreational activities—will also be compromised. Furthermore, the pollution in Küçükçekmece Lake, which is increasing day by day, has already led to negative consequences such as mass fish deaths, odor, and pollution, as experienced in 2019.

Considering the importance of the lake's shoreline—similar to the coastal strip—for the city's prestige and recreational activities, the pollution of the lake also poses a significant risk for Avcılar.



Figure 2. Marmara Sea Algal Bloom

In conclusion, Avcılar District is one of Istanbul's most environmentally vulnerable areas due to its high population density, industrial activities, transportation pressures, and sensitive ecological location. Coastal erosion, water and soil pollution, air pollution, habitat loss, and risks associated with climate change threaten the district's natural ecosystems. Mitigating these risks will only be possible through sustainable environmental policies and nature-based planning approaches.

6.3.3. Socioeconomic Inequalities, Preservation of Cultural Memory, Social Cohesion, and Security Risks

Urban resilience refers to a city's ability to withstand natural disasters, economic hardships, and social issues, and to recover quickly from such situations. This resilience depends not only on the structural integrity of buildings but also on the social and economic conditions of the people living in the city.

Socioeconomic inequalities—specifically disparities in income, education, and access to healthcare—make low-income populations particularly vulnerable to disasters and crises. This situation can increase tensions within society and hinder solidarity.

Cultural memory consists of shared values, traditions, and historical structures derived from a city's past. Preserving this memory strengthens people's connection to the city and enables them to act collectively during difficult times. If cultural values are lost, the sense of belonging within the community weakens, which negatively impacts urban resilience.

Social cohesion refers to people from different cultures and income groups living together in harmony. Strong social cohesion facilitates mutual support among people and enables the generation of swift and effective solutions during crises. In places where social cohesion is weak, conflicts and problems increase, which reduces the city's resilience.

Security, on the other hand, refers to both people feeling physically safe and low crime rates. In unsafe cities, people experience greater anxiety, and social life and economic activities are negatively affected. Ensuring security is crucial for urban resilience.

As a district in Istanbul undergoing one of the most rapid processes of urbanization, Avcılar has experienced significant migration, particularly following the 1999 Marmara Earthquake, and has emerged as a settlement with a heterogeneous socio-economic structure.

From a socioeconomic perspective, there are significant disparities among neighborhoods in Avcılar in terms of income, education, and employment opportunities. While the Merkez, University, and Denizköşkler neighborhoods exhibit higher income levels and education rates compared to other areas in the district, neighborhoods such as Yeşilkent, Firuzköy, and Mustafa Kemal Paşa demonstrate low income, high unemployment, and lagging education levels. This situation not only lowers individual quality of life but also leads to spatial segregation and inequality in access to urban services. Furthermore, economic inadequacies in urban renewal processes cause housing insecurity among low-income groups and increase social vulnerabilities.

Table 10. Socio-Development Index of Neighborhoods in Avcılar District, 2016

Cihangir Neighborhood	38.4
Mustafa Kemalpaşa Neighborhood	34

Denizköşkler Neighborhood	45.7
Tahtakale Neighborhood	44.3
Yeşilkent Neighborhood	24.9
Gümüşpala Neighborhood	35.6
Ambarlı Neighborhood	34.7
Central Neighborhood	60.8
Firuzköy Neighborhood	31.8
University Neighborhood	58.2

In the context of cultural memory, Avcılar has historically transformed from coastal villages into industrial and residential areas; however, rapid and unplanned urbanization has resulted in a significant loss of local identity and historical fabric. Old pier structures, historic residences, and the coastal fabric have largely disappeared, and cultural heritage has not been adequately preserved. This situation has led to a weakening of the city's sense of belonging and the erosion of social bonds.



Figure 3. Avcılar Gümüşpala Neighborhood, Historic Kuruçeşme

In terms of social cohesion, while the coexistence of a population with diverse geographic and cultural backgrounds in the district represents a potential source of richness, economic and spatial inequalities simultaneously hinder social integration. Economic disparities between neighborhoods limit social interaction, leading to social polarization and a lack of

belonging. Unemployment and social exclusion among the young population are the primary issues threatening social cohesion.

Security risks manifest in both physical and social dimensions. Avcılar is at risk in terms of structural resilience due to its location in an earthquake zone, and infrastructure deficiencies complicate response efforts during disasters. In terms of social security, economic deprivation and unemployment are increasing crime rates and social vulnerability, particularly in certain neighborhoods. Substance abuse and the potential for social violence among young people are also significant risks.

Consequently, reducing socioeconomic inequalities, preserving cultural heritage, strengthening social cohesion, and enhancing security measures are critical for the sustainable development of Avcılar. To achieve these goals, it is necessary to increase support for education and employment, develop plans to preserve cultural values, create projects that encourage social participation, and enhance resilience against disasters.

These approaches will both preserve the city's identity and create a more livable Avcılar by enhancing social resilience.

At the same time, migration issues that unexpectedly arise in cities due to causes such as war, economic factors, or natural disasters can lead to compatibility issues between the local population and refugees. Indeed, we know that nearly 4 million Syrians have come to Türkiye due to the war in Syria, and that refugees have spread across many cities in the country. In Avcılar as well, there are a large number of refugees and asylum seekers; some do not speak Turkish, some face economic hardships, some require psychological support due to the emotional trauma caused by the war, and adapting to the city's social life takes time; the possibility of being rejected or marginalized by some of the local population, and the disruption of children's education, it is evident that the risk of social discord is a concern for Avcılar.

One of the inevitable consequences of the globalization process is that cities have become the focal point of all conflicts and attacks. Traditional security measures and law enforcement are now insufficient to address the terrorist attacks observed in cities today. Preventing terrorist threats requires coordinated efforts not only from the central government

but also from local administrations. Cities in Türkiye have begun facing very serious terrorist attacks in recent years. Indeed, in Avcılar, a bomb placed in a trash can exploded in 1999, resulting in one death and 30 injuries. Similarly, in 2007, a bomb placed in Mustafa Burcu Park on Ambarlı Beach injured five people. It is evident that just as terrorism threatens all cities, it is a risk factor that threatens the peace, tranquility, and security of Avcılar as well.

7. AVCILAR MUNICIPALITY RESILIENCE ACTION PLAN STUDIES

7.1. Evaluation of the Previous Resilience Action Plan

To establish urban resilience, a Resilience Unit was established within the municipality in 2020. In 2021, the Avcılar Municipality Resilience Action Plan was developed, published on the municipality's website, shared with all relevant internal stakeholders, and accompanied by informational meetings and an urban resilience workshop.

The purpose of the action plan is to identify the risks facing Avcılar district from an urban resilience perspective, evaluate current activities, and implement actions aimed at enhancing the city's resilience against natural and human-made disasters as well as socio-economic, cultural, and environmental risks, in collaboration with both internal and external stakeholders.

In the action plan, urban resilience for Avcılar has been evaluated under three main headings:

- 1) Natural and Human-Made Disasters
- 2) Risks Related to the Environment and Ecosystems
- 3) Socioeconomic Inequalities, Preservation of Cultural Heritage, Social Cohesion, and Security

A total of 39 actions have been identified to address the risks outlined under these three headings. Of course, since urban resilience initiatives are activities that must be updated and adapted to current conditions and the city's needs, the action plan is periodically revised, and new actions are introduced as needed. When all categories are evaluated together, it is seen that a total of 39 actions were planned. Of these actions, 34 have been implemented, and 5 have not. The overall implementation rate is 87%.

A total of 17 actions have been planned regarding natural disasters. Of these, 16 have been successfully completed, while 1 action has not yet been implemented. The completion rate in this category is recorded as 94%. A total of 9 actions have been identified for the

protection of the environment and ecosystems. Of these, 6 have been completed, while 3 actions have not been implemented. The completion rate under this heading is 66%.

A total of 13 actions have been planned to enhance community resilience. Twelve of these actions have been completed, while one has not yet been implemented. The implementation rate in the area of social resilience has been determined to be 92%.

Table 11. Numerical Data on the Implementation of the Previous Action Plan

	TOTAL NUMBER OF ACTIONS	NUMBER OF ACTIONS IMPLEMENTED	NUMBER OF ACTIONS NOT IMPLEMENTED	IMPLEMENTATION RATE (%)
ACTIONS RELATED TO NATURAL DISASTERS	17	16	1	94
ENVIRONMENT AND ECOSYSTEM-RELATED ACTIONS	9	6	3	66
SOCIAL RESILIENCE	13	12	1	92
ALL ACTIONS	39	34	5	87

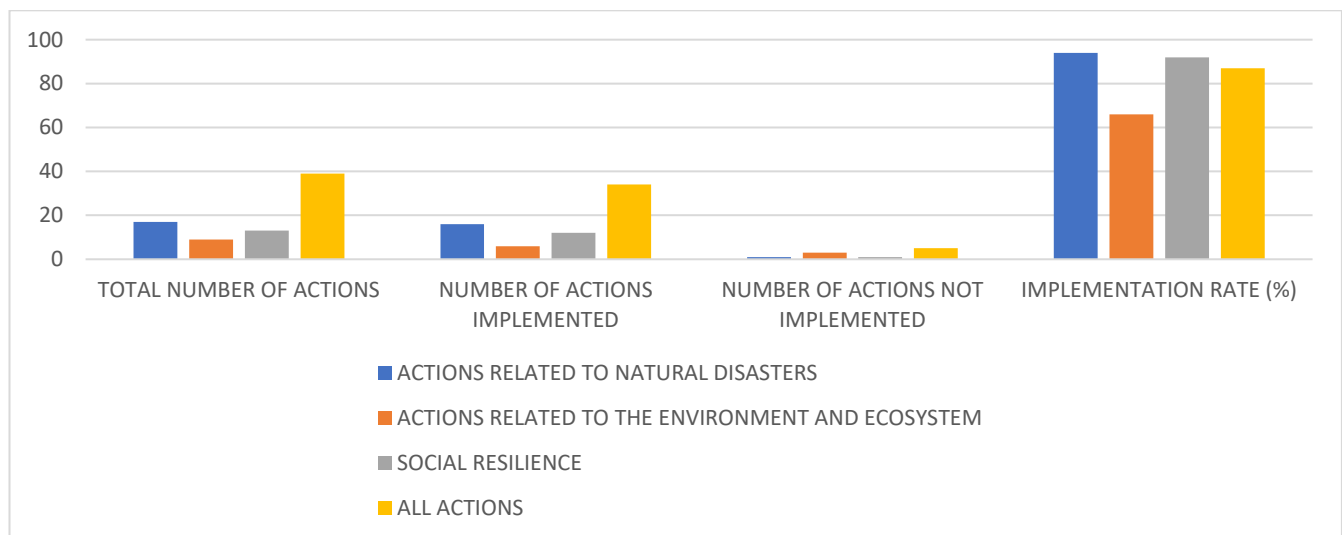


Figure 8. Graph of Implementation Data for the Previous Action Plan

As a result, it is observed that the vast majority of actions were implemented as planned, with a high success rate achieved particularly in the areas of natural disasters and social resilience. In the area of environment and ecosystems, however, the implementation rate

was found to be lower compared to other areas. This situation indicates the need for additional measures and supportive efforts in this specific area.

7.2. New Action Plan Preparation Process and Methodology

The Avçılar Municipality Resilience Action Plan was prepared based on the principles of participatory governance and an evidence-based planning approach. The process was structured in four main phases: stakeholder analysis, data collection activities, internal evaluation meetings, and fieldwork. Within this scope, a comprehensive methodology combining qualitative and quantitative research methods was adopted.

7.2.1. Stakeholder Analysis and Participatory Interviews

In the first phase of the preparation process, local actors playing a direct or indirect role in resilience-themed policy development in the district were identified, and a stakeholder analysis was conducted. In line with this analysis, **interviews** were conducted **with 10 neighborhood council members** representing different areas of Avçılar to identify neighborhood-level needs and areas of vulnerability. These interviews provided qualitative data on risks observed at the local level, existing capacity, and the neighborhoods' priority needs. Additionally, evaluation meetings held with **the City Council** contributed to shaping the planning approach on a more inclusive foundation by incorporating the civil society perspective and social expectations into the process. The City Council's recommendations served as a guiding framework in identifying policy areas focused on social resilience, community participation, and the empowerment of vulnerable groups.



Figure 4. Neighborhood Head Meetings-1



Figure 5. Neighborhood Head Meetings-2



Figure 6. Neighborhood Head Meetings-3

7.2.2. Internal Evaluation and Departmental Feedback

To assess the feasibility of the action plan and the operational capacity within the municipality, **an internal joint evaluation meeting** was organized with the participation of all departments of Avcılar Municipality. During this meeting, the departments provided their views on risks, available resources, legal constraints, and potential areas of collaboration within their respective areas of responsibility and authority. This phase facilitated both the

strengthening of internal coordination and the structuring of the plan in alignment with operational realities.



Figure 7. Internal Assessment Meeting

7.2.3. Fieldwork and Data Collection

To create a needs analysis based on quantitative data, **a survey** was conducted **with a total of 83 individuals** across the district. The survey aimed to measure households' risk perception, disaster preparedness levels, awareness of environmental and social vulnerabilities, and expectations regarding municipal services. The data collected enabled a quantitative assessment of the district's current resilience level and served as a key input for identifying priority intervention areas to be included in the action plan.

7.2.4. Data Analysis and Development of the Planning Framework

Data obtained from interviews, meetings, and surveys were evaluated using qualitative content analysis and basic statistical methods. The findings were synthesized within a comprehensive analysis that considered national legislation, international frameworks (the Sendai Framework for Disaster Risk Reduction, the Sustainable Development Goals, etc.), and the local context in conjunction with one another.

Based on this analysis, the strategic objectives, priority risk areas, intervention areas, and implementation tools of the Avcılar Municipality Resilience Action Plan were systematically

defined; recommendations obtained through the participatory process were integrated into all stages of the plan.

7.2.5. Survey Evaluation

The analysis below covers the survey conducted as part of the resilience action plan, including participant profiles, perceptions of social risks, and policy priorities.

In the analysis below, each question has been evaluated in terms of:

- The meaning of all options in the distribution
- How the participants' mindset is divided along which axes
- The social risk perception model
- Results from the perspective of municipal policies
- Latent variables
- Social resilience indicators.

Question 1: How much do you know about safety measures in your home in the event of a disaster?

- I know very well.
- I have some knowledge.
- I have no knowledge.
- I have not taken any safety precautions.

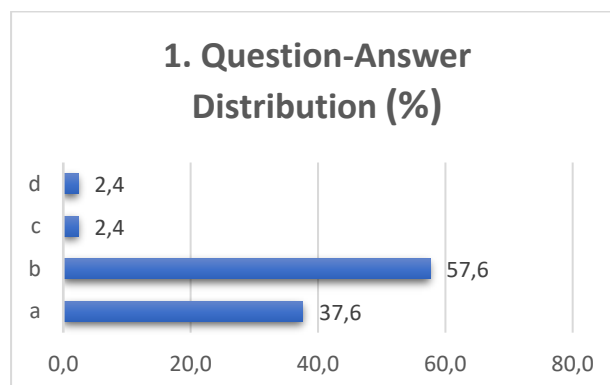


Figure 9. Percentage distribution of responses -1

Approximately 97% of participants consider themselves to have at least some level of knowledge. This is a relatively high rate compared to general risk studies in Türkiye, but the percentage of those who say “I know very well” is below 40%. This suggests that while self-efficacy perceptions may be high, actual behavioral preparedness may be limited. The low percentage of C-D responses is due to the social desirability bias. People may avoid admitting they are unprepared. Consequently, the “knowledge exists but behavioral preparedness is weak” model is observed. This aligns with the “awareness-behavior gap” frequently cited in the literature.

Question 2: How prepared do you think you are to organize at the neighborhood or street level in the event of a disaster?

- a. I am fully prepared.
- b. I am somewhat prepared.
- c. I am not prepared at all.
- d. There is no organization in our neighborhood.

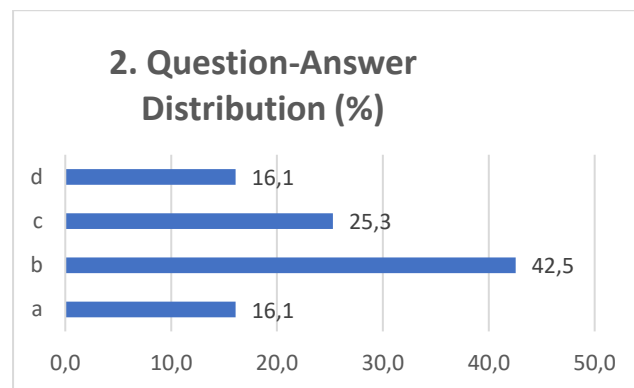


Figure 10. Percentage distribution of responses -2

Neighborhood solidarity is one of the most important factors in increasing survival rates during disasters. Here, more than half of the participants (c and d) indicate that there is no neighborhood-level preparedness. Interestingly, while individual disaster knowledge is high (Question 1), neighborhood preparedness is very low. This indicates that community resilience lags far behind individual resilience. The high percentage of respondents selecting the “no organization in our neighborhood” option

points to a lack of institutional coordination. Consequently, neighborhood-based management and volunteer structures must be completely redesigned in Avçılar’s resilience strategy.

Question 3: What should be the top priority for urban resilience in Avçılar?

- a. Infrastructure strengthening
- b. Increasing disaster education and drills
- c. Increasing green spaces
- d. Strengthening health services
- e. Economic development and workforce support
- f. Other (Please specify): _____

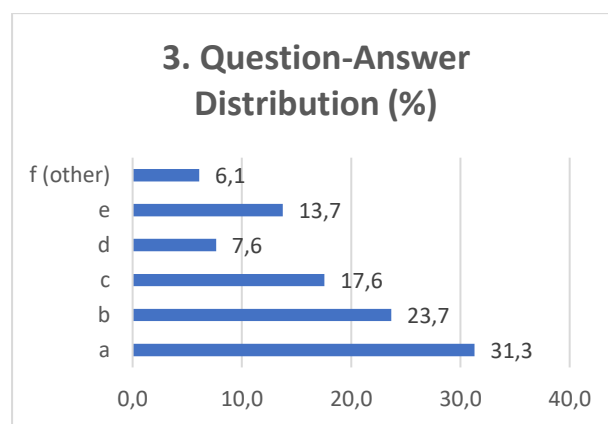


Figure 11. Percentage distribution of responses -3

This distribution shows us the following:

- There is no single priority. The community wants multi-dimensional resilience.
- Although health and the economy scored low, this does not mean they are unimportant; participants view the critical issue as earthquakes and infrastructure.
- The 17% share of “green spaces” is noteworthy. It indicates that environmental sustainability holds a significant place in public perception, despite the area being an earthquake zone. Consequently, the municipality’s resilience policy should not be sector-specific but multi-sectoral.

Question 4: What services do you expect from Avçılar Municipality regarding disaster preparedness?

- a. Organizing disaster education and drills

- b. Increasing the number of emergency shelter areas
- c. Strengthening infrastructure (water, electricity, roads, etc.)
- d. Special safety measures for children and women
- e. Psychological support and crisis management services
- f. Other (Please specify): _____

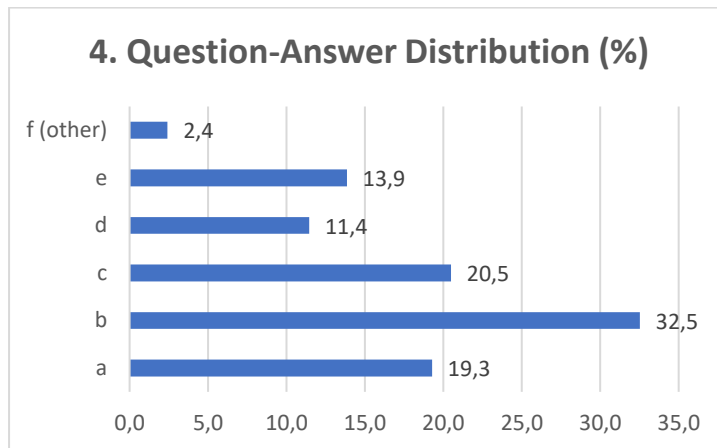


Figure 12. Percentage distribution of responses -4

In this question, participants rank priorities based on their feelings:

- Concrete threat: Infrastructure
- Concrete need: Shelter
- Abstract but critical: Psychological support
- Need for continuity: Education

The “other” option, ranging from 2% to 6%, indicates the presence of specific individual demands in public consciousness (personal solutions for people with disabilities, requests for animal shelter, etc.). In conclusion, it can be said that the public wants to see comprehensive and transparent municipal preparedness.

Question 5: What measures do you think Avcılar Municipality should take regarding post-disaster health services?

- a. Strengthening health centers
- b. Establishment of mobile emergency health teams
- c. Psychological first aid and counseling services
- d. Establishment of mobile health units during crises
- e. Ensuring easier access to health services

f. Other (Please specify): _____

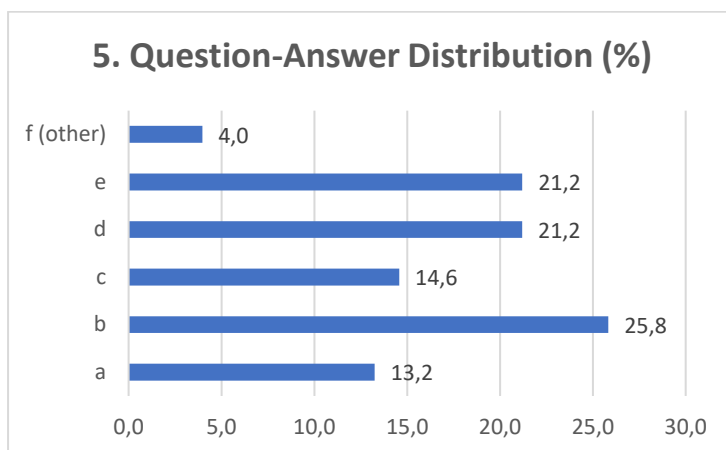


Figure 13. Percentage distribution of responses -5

Here, it is evident that the “need for acute intervention” takes center stage. The public is aware that the first few hours after a disaster are critical; while the 14.6% figure for psychological first aid is striking, the community is also aware of the need for mental health support. Strengthening health centers has received high levels of support; this indicates a lack of confidence in Avcılar’s current health infrastructure. In conclusion, simultaneous solutions—physical, psychosocial, and mobile—are required in the health sector.

Question 6: What steps do you think should be taken to accelerate the economic recovery process following disasters?

- a. Providing financial support to small businesses
- b. Vocational training and job placement support for the unemployed
- c. Expanding social assistance and support programs
- d. Ensuring equal opportunities in the labor market
- e. Municipal support for the local economy (local production, entrepreneurship, etc.)
- f. Other (Please specify): _____

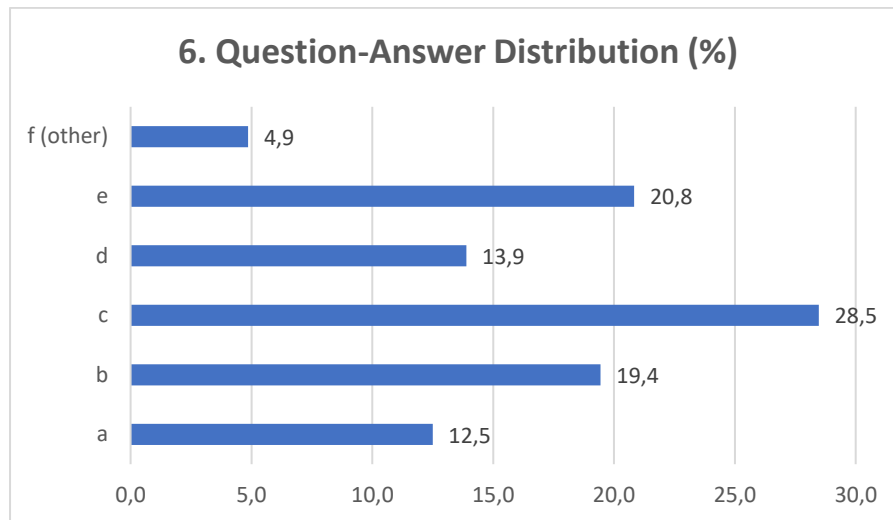


Figure 14. Percentage distribution of responses -6

- This distribution tells us about Avcılar’s economic structure: a region with a high concentration of small businesses and significant income volatility.
- Expectations regarding vocational training serve as an indicator of livelihood concerns.
- The high demand for social assistance indicates that the public clearly perceives economic vulnerability following a disaster.

In conclusion, an economic resilience program is essential.

Question 7: What specific measures would you like to see implemented in Avcılar for women, children, the elderly, and people with disabilities?

- Economic support and job opportunities for women
- Safe play areas and disaster education for children
- Accessible infrastructure and specialized support services for people with disabilities
- Home care services and health support for the elderly
- Special housing and health services in the event of a disaster

f. Other (Please specify): _____

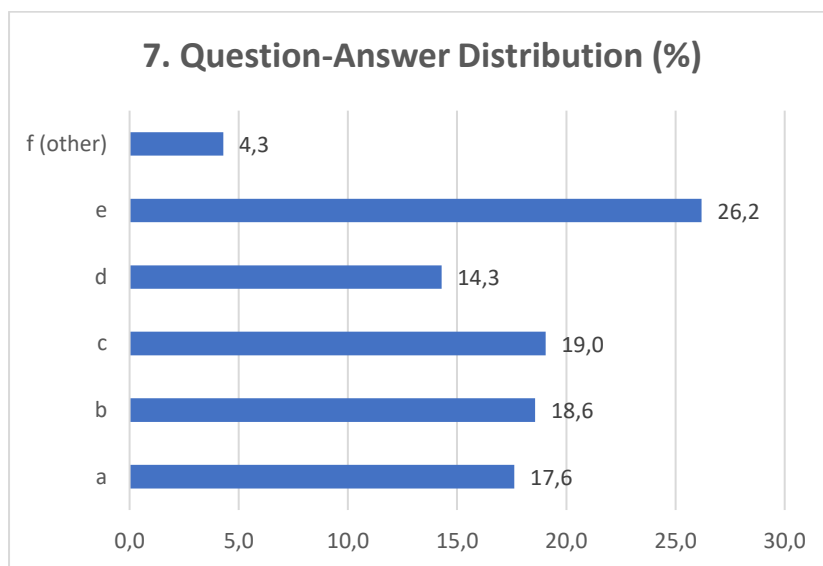


Figure 15. Percentage distribution of responses -7

The distribution in this question reflects the hierarchy of social values:

- People with disabilities are considered the most vulnerable → the community's level of ethical sensitivity is high.
- The fact that the proportions of children and the elderly are similar, reflects the influence of a family-based social structure.
- The proportion of women, however, indicates the "invisibility of hidden needs" in this area. In other words, the visibility of services provided for women must be increased. Consequently, specialized service modules (accessibility for people with disabilities, child-psychological resilience programs, elderly care support) should be developed for this area.

Question 8: What measures should be taken to strengthen infrastructure against natural disasters in Avclar?

- a. Construction of earthquake-resistant buildings
- b. Strengthening water and sewer systems
- c. Making the electricity and communication infrastructure disaster-resistant
- d. Organizing the traffic and transportation system to be disaster-appropriate
- e. Increasing green spaces and ensuring environmental sustainability

f. Other (Please specify): _____

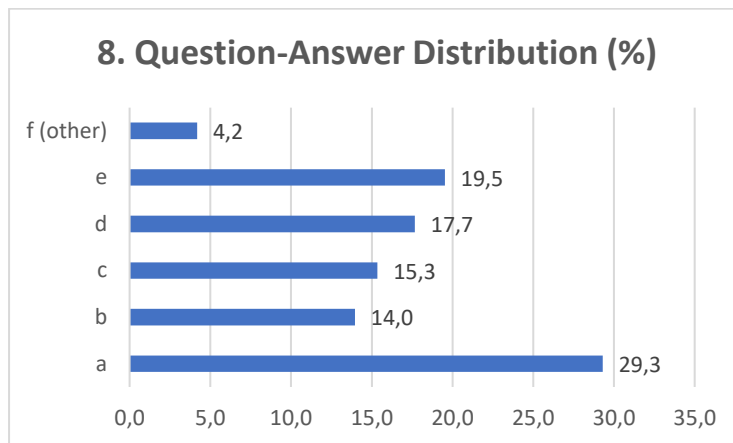


Figure 16. Percentage distribution of responses -8

It can be said that the distribution appears quite balanced in this question. This indicates that the public views infrastructure not as a one-dimensional entity, but as a holistic system.

An interesting finding is that green spaces alone account for a significant share of 19.5%. In other words, environmental awareness is strong even in a district with a high disaster risk. In conclusion, this distribution indicates that Avclar's infrastructure requires a complete overhaul.

Question 9: What measures should be taken to increase social resilience?

- a. Safe shelter and support services for women
- b. Post-disaster psychological support for children
- c. Accessible infrastructure and support services for people with disabilities
- d. Emergency aid and psychological support for low-income families
- e. Care and emergency assistance services for the elderly
- f. Other (Please specify): _____

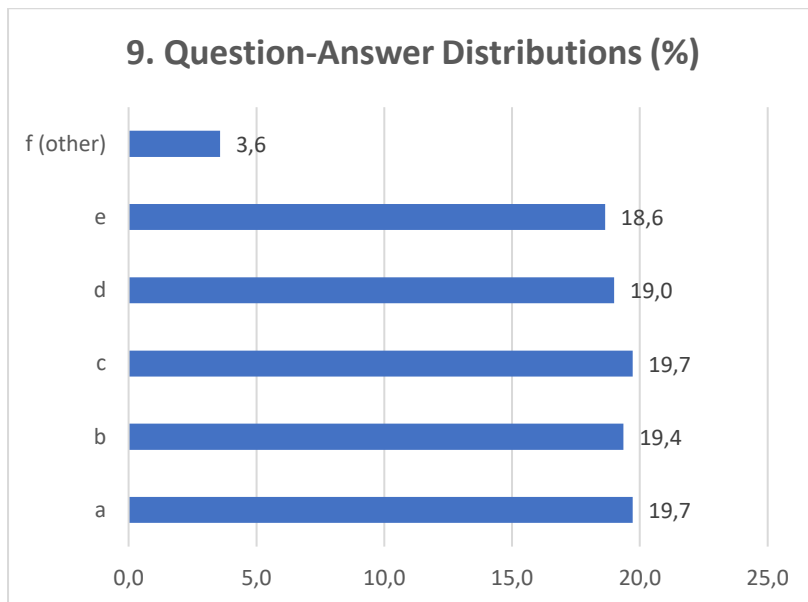


Figure 17. Percentage distribution of responses -9

This even distribution is referred to as “homogeneous demand” in statistics. It signifies that society views social resilience not as a single issue but as a holistic concept. This is a rare finding and is of great importance. Consequently, a multi-layered social intervention system—rather than a single policy—should be established for this area.

Question 10: Regarding environmental sustainability efforts in Avçılar, what types of measures do you expect from the municipality?

- a. Increasing the use of renewable energy and supporting energy efficiency
- b. Protection of natural areas and expansion of green spaces
- c. Development of waste management and recycling programs
- d. More efficient use of water resources and the establishment of rainwater harvesting systems
- e. Other (Please specify): _____

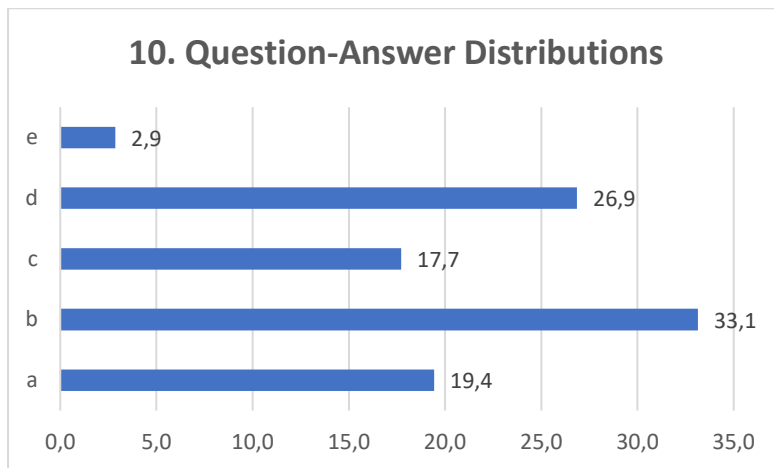


Figure 18. Percentage distribution of responses -10

The fact that green spaces scored so high indicates the public’s concern for the future. This points to a society with high climate awareness. The waste management rate shows that environmental sensitivity is linked to concrete behaviors. The high demand for water management is related to the perception of the Istanbul water crisis in recent years.

When we examine the **“Comprehensive Assessment”** based on the entire survey, the following evaluation can be made:

The survey results indicate that the public’s perception of disasters and risks in Avçılar is particularly concentrated around the threat of earthquakes. Building stock safety, infrastructure resilience, and the necessity of urban renewal are the primary expectations highlighted by nearly all participants. Although individual awareness levels are high, the low capacity for neighborhood-level organization, volunteerism, and collective preparedness points to a significant vulnerability in disaster management. While the public is willing to prepare on their own, community resilience has not reached the expected level.

The findings also reveal a marked increase in awareness regarding social vulnerability. The need for special measures for vulnerable groups—such as children, the elderly, people with disabilities, and disadvantaged households—is strongly emphasized. The high demand for psychosocial support indicates that societal trauma persists and that post-disaster mental health services are viewed by the community as a critical necessity.

While economic issues appear secondary in all questions, it is evident that economic resilience is weak, particularly among small business owners and the unemployed. This situation suggests that economic support mechanisms will be decisive in a potential post-disaster recovery process. Overall, risk perception in Avcılar is shaped by a high level of earthquake awareness; while individual awareness is strong, community resilience remains low; the need for social sensitivity and psychosocial support is increasing; and economic vulnerability persists as a significant risk area.

8. CONCLUSIONS AND RECOMMENDATIONS

Urban resilience refers not only to the capacity for disaster response during a crisis but also to a comprehensive governance approach that can identify risks in advance, mitigate their impacts, accelerate post-crisis recovery, and ensure sustainable development in the long term. In this context, the Avcılar Municipality Resilience Action Plan, prepared to address these challenges, offers a practical and measurable roadmap that comprehensively addresses the district's physical, social, economic, and environmental structures while aligning with national and international policy frameworks.

Under the plan, significant progress has been made in improving the building stock, strengthening critical infrastructure, reducing flood and climate-related risks, enhancing disaster preparedness capacity, and raising public awareness, in line with the priority actions identified in accordance with the Istanbul Provincial Disaster Risk Reduction Plan (İRAP). In particular, neighborhood-based risk analyses, urban renewal initiatives, the development of search-and-rescue capabilities, disaster education, and projects supported by international funding stand out as concrete outcomes that enhance Avcılar's resilience.

This action plan was prepared in alignment with the United Nations Sendai Framework, the Sustainable Development Goals (particularly SDG 11 and SDG 13), the World Bank's GRID approach, and the World Economic Forum's resilience vision. Thus, Avcılar Municipality has adopted a city management approach that is aligned not only with local priorities but also with the global resilience agenda. The plan addresses disaster risk reduction as an integral part of development policies; it comprehensively incorporates the objectives of environmental sustainability, social inclusion, and institutional capacity building.

On the other hand, evaluations indicate the need to enhance the implementation level of certain actions, strengthen data-driven monitoring and evaluation mechanisms, and further improve inter-institutional coordination. In this regard, treating the plan as a living document, updating it at regular intervals, and monitoring it through performance indicators is of great importance. Within the framework of participatory governance, the active involvement of public institutions, civil society organizations, the private sector, and district residents in the process will ensure the sustainable implementation of resilience objectives.

In conclusion, the Avcılar Municipality Resilience Action Plan serves as a strategic guide aimed at reducing the district’s current vulnerabilities, enhancing preparedness for disasters and crises, and transforming Avcilar into a safe, inclusive, and sustainable city. The determined implementation of the plan will not only make Avcilar a city resilient to risks but also position it as a living space capable of adapting to the future and continuously evolving.

RECOMMENDED ACTIONS				
ACTION NO	ACTION	RESPONSIBLE DEPARTMENT	STAKEHOLDERS	INDICATOR
1	<p>Establishment and expansion of the Avcilar Neighborhood Resilience Network in 3 pilot neighborhoods. This initiative aims to strengthen neighborhood-based disaster preparedness, establish a volunteer system, and accelerate initial response during disasters.</p> <ul style="list-style-type: none"> • Establishment of teams consisting of at least 50 volunteers in each neighborhood • Enhancing local response capacity through monthly in-person or online training and drills • Establishing a neighborhood-based disaster communication chain 	Department of Disaster Affairs and Risk Management	Information Technology Department – Neighborhood Councils – Department of Strategy Development	<ol style="list-style-type: none"> 1. Number of established neighborhood resilience networks 2. Number of registered volunteers per neighborhood 3. Number of training sessions and drills conducted 4. Number of neighborhoods where a disaster communication chain has been established 5. Volunteer retention rate
2	Establishing the Disaster Academy to raise public awareness of disasters	Department of Disaster Affairs and Risk Management	NGOs - Universities	<ol style="list-style-type: none"> 1. Status of the Disaster Academy’s establishment 2. Number of people trained 3. Number of training sessions/seminars organized
3	Enhancing the earthquake resistance of parks, roads, and public buildings under the responsibility of Avcilar Municipality within the scope of IRAP.	Department of Public Works	Department of Parks and Recreation	<ol style="list-style-type: none"> 1. Number of structures subjected to seismic analysis 2. Number of structures reinforced 3. Number of projects completed under the IRAP program

4	Green Belt & Sustainable Water Management Program (Rainwater management in the district, development of green infrastructure, and creation of safe green spaces usable after disasters)	Department of Public Works	Department of Parks and Recreation - Department of Climate Change and Zero Waste	<ol style="list-style-type: none"> 1. Number of areas where rainwater harvesting systems have been implemented 2. Area of green infrastructure created (m²)
5	<p>Accessible Evacuation and Access Project</p> <p>Developing special evacuation plans for people with disabilities</p> <ul style="list-style-type: none"> • Establish accessible assembly areas • Establishing a disability support hotline and teams • Strengthening participation in social life by creating accessible parks 	Department of Disaster Affairs and Risk Management - Department of Parks and Recreation	Department of Public Works – Department of Culture, Arts, and Social Affairs and Department of Social Support Services –	<ol style="list-style-type: none"> 1. Number of neighborhoods for which an evacuation plan has been prepared 2. Number of accessible assembly areas 3. Number of people registered with the disability support hotline 4. Number of accessible parking spaces
6	Immediate repair of roads damaged due to urban renewal and making the infrastructure disaster-resistant	Department of Public Works	<ol style="list-style-type: none"> 1.Length of repaired roads 2. Number of streets/roads made disaster-resistant 3. Rate of decrease in citizen complaints
7	Since trees located in the middle of sidewalks obstruct access for all segments of the population, including vulnerable groups, the width of the walkable hard surface should be increased at least by using tree-base grates	Department of Parks and Recreation	Department of Public Works	<ol style="list-style-type: none"> 1. Number of sidewalks where tree-base grates have been installed 2. Increase in walkable sidewalk width 3. Decrease in complaints regarding accessibility
8	Revitalization of the fishing culture and historical fabric, and the planning of Ambarlı village center accordingly.	Department of Public Works	Department of Culture, Arts, and Social Affairs	<ol style="list-style-type: none"> 1. Number of projects prepared (Ambarlı) 2. Number of areas renovated

9	With a cultural park design that encompasses the Bathonea Ancient City located in our district, as well as global and national cultural elements, the aim is to add brand value to the district, facilitate cultural transmission, and increase municipal revenue through exhibition and sales areas within the park.	Department of Public Works	Department of Finance – Department of Zoning and Urban Planning	<ol style="list-style-type: none"> 1. Bathonea Cultural Park project completion rate 2. Number of exhibition and sales areas created 3. Increase in municipal revenue 4. Number of visitors
10	By establishing protocols with local businesses such as grocery stores and bakeries that can provide access to basic food supplies, the goal is to address food shortages during the critical first 72-hour period in the event of a disaster.	Department of Disaster Affairs and Risk Management	Department of Strategy Development	<ol style="list-style-type: none"> 1. Number of food businesses with which protocols have been established
11	Preparing a joint protocol with the Istanbul University Faculty of Veterinary Medicine, located in the district, to support processes such as feeding and treating stray animals during disasters, and conducting preparatory work	Department of Veterinary Affairs	Department of Strategy Development	<ol style="list-style-type: none"> 1. Status of the street animal disaster protocol preparation 2. Number of animals supported
12	Construction of a "Disaster Park" equipped with renewable energy sources for electricity generation, a clean water reservoir, shelter areas, restrooms, and a helipad to facilitate the delivery of aid	Department of Public Works	Department of Parks and Recreation	<ol style="list-style-type: none"> 1. Number of Disaster Parks constructed
13	Organizing cultural and social events and providing a shuttle service on specific days and times to neighborhoods that are socio-economically disadvantaged and have relatively difficult access to the district center	Department of Transportation Services	Department of Culture, Arts, and Social Affairs and Department of Social Services – Department of Women and Family Services	<ol style="list-style-type: none"> 1. Number of neighborhoods served by shuttle services 2. Number of trips made 3. Number of people benefiting from the service
14	To support climate resilience, solar energy and rainwater harvesting/greywater projects will be implemented primarily at the main municipal building and other auxiliary buildings	Department of Climate Change and Zero Waste	Department of Public Works	<ol style="list-style-type: none"> 1. Number of municipal buildings equipped with solar power systems 2. Number of buildings with installed stormwater/graywater systems

15	Implementing incentive-based regulations (such as tax breaks) to support ecological approaches like solar energy and rainwater harvesting in residential areas	Department of Climate Change and Zero Waste	Department of Finance – Department of Strategy Development – Department of Zoning and Urban Planning	1. Number of residential units/complexes benefiting from ecological incentives
16	A protocol may be established with local health institutions to identify vulnerable groups—including individuals with disabilities—who have special vital needs during disasters, create an inventory of these groups, and develop solutions to provide post-disaster health support. Tax breaks and other incentives may be provided to institutions supporting the protocol.	Department of Social Services - Department of Health Affairs	Department of Strategy Development - Department of Disaster Affairs and Risk Management	1. Number of individuals registered in the vulnerable groups inventory 2. Number of protocols signed with health institutions
17	Given that we are a student city, facilitate connections between the private sector and university and vocational high school students to support them (securing internship placements, scholarships, knowledge transfer, career days, etc.)	Department of Social Services	Department of Human Resources	Number of students provided with internship/scholarship support Number of career events organized Employment rate of students
18	Due to frequent complaints from district residents regarding power outages and internet disruptions, discussions were held with relevant institutions to improve service quality	Department of Public Works	BEDAŞ-TURK TELEKOM	1. Number of meetings held with institutions regarding electricity and internet services 2. Reduction in the number of complaints
19	Climate Change Department: Establishment of a separate energy unit within the department to inform and guide the public on energy efficiency	Department of Climate Change and Zero Waste	Department of Human Resources	1. Status of the energy unit's establishment 2. Number of citizens informed
20	To enable families of individuals with disabilities to participate in social life, care support will be provided through our disability center, where individuals with disabilities may be looked after for up to two hours during the day. If needed, transportation from home to the center and back home will also be provided.	Department of Health Affairs	Department of Transportation Services – Department of Social Services	1. Number of individuals with disabilities receiving care support

21	Installation of solar-powered streetlights in parks and throughout the district, along with providing charging facilities for users.	Information Technology Department	Department of Climate Change and Zero Waste - Department of Public Works - Department of Parks and Recreation – Department of Social Services	1. Number of solar-powered streetlights installed 2. Number of charging points
22	Launching smart city initiatives by integrating artificial intelligence into the municipal website and call center services.	Information Technology Department	Department of Press, Publications, and Public Relations	1. Number of AI-supported services 2. Percentage of applications resolved using artificial intelligence
23	To support amateur artists in our district and simultaneously boost the motivation of district residents, we will organize a mobile street music and concert event by providing a mobile vehicle for amateur artists.	Department of Culture, Arts, and Social Affairs	Department of Transportation Services	1. Number of supported amateur artists 2. Number of mobile street music events
24	Preparation and public release by the municipality of the book "AVCILAR," which details the history, cultural and natural riches, and vegetation of Avcılar district. This book can also be distributed to a wider audience through fairs.	Department of Press, Publications, and Public Relations	All Departments	1. Number of copies of the AVCILAR book printed and distributed 2. Number of promotional events and fair participations 3. Number of digital accesses
25	Organizing periodic meetings between the elderly residents of our district's nursing home and students from selected pilot schools (through contributions such as providing free transportation to nursing homes or organizing meeting days at social facilities) to facilitate intergenerational exchange and boost the motivation of elderly residents	Department of Social Services	Department of Transportation Services	1. Number of intergenerational meetings organized 2. Number of participants
26	Organizing neighborhood-based get-together and socialization events to enhance neighborhood and community culture and create safer living environments (Paşaeli Picnic Area and Social Facilities can be used for this purpose.)	Department of Culture, Arts, and Social Affairs	Department of Women and Family Services - Department of Social Services	1. Number of neighborhood integration events organized 2. Number of participants in the events

27	Designing a scouting area in the city that will encourage children to enjoy camping and scouting activities and instill an awareness of nature conservation, and conducting joint activities with schools	Department of Public Works	Department of Parks and Recreation - Department of Climate Change and Zero Waste – Department of Culture, Arts, and Social Affairs	1. Number of scouting areas established 2. Number of children participating in scouting activities 3. Number of collaborations with schools
28	To ensure the continuity of communication by launching a Municipal Radio Station, as communication may be disrupted due to power outages during disasters	Department of Press, Publications, and Public Relations	Information Technology Department - Department of Support Services	Status of the Municipal Radio Station Establishment
29	To support the creation of play areas for children beyond the limited number of existing parks through the organization of Play Streets.	Department of Public Works	Department of Parks and Recreation	1. Number of streets where play streets have been established 2. Number of children benefiting
30	Providing digital literacy training for those aged 50 and over. At Avcılar Municipality, this initiative aims to enhance the social integration of our citizens in this age group, reduce generational conflicts, and broaden their worldviews and knowledge base by providing training in basic computer skills, internet usage, and social media literacy.	Department of Social Services	Information Technology Department	1. Number of participants 2. Number of training programs organized

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