İZMİR COP

CLIMATE CHANGE TOWN HALL COP

2025 REPORT

İZMİR METROPOLITAN MUNICIPALITY

HEALTHY CITIES NATIONAL NETWORK OF TÜRKİYE

izpa İzmir Planning Agency

ICLEI Local Governments for Sustainability

Town Hall COP

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FOREWORD

The deepening global climate crisis is no longer just an environmental issue; it has become a reality that affects all areas of our lives with its social, economic, and political dimensions. A significant part of the environmental problems we face stems from climate change; access to water, food, energy, and a healthy ecosystem is becoming increasingly critical each day. With this awareness, we are taking determined steps locally to make İzmir a healthy and resilient city.

We believe that local governments must take more active roles in combating the climate crisis. In this era where centralized approaches and nationally driven policies hinder the implementation of global decisions, the leadership of cities is more valuable than ever. İzmir, with its conscious and engaged citizens, holds strong potential for this transformation.

We recognize that the climate crisis is not limited to temperature increases and carbon emissions; it has wide-ranging impacts from food security to health, from agriculture to social justice. Our water resources are under threat, our agricultural lands are struggling, unhealthy food production is increasing, and public health is at risk. This situation stands before us not only as an environmental issue but also as a societal one. For this reason, we have prioritized healthy food, sustainable agriculture, and a clean environment in our work areas.

As İzmir Metropolitan Municipality, we embrace a governance approach that sets concrete goals, prepares actionable plans, and works tirelessly to implement them. We aim for our efforts to serve as an example not only for İzmir but also for other cities in Türkiye and around the world.

At the COP30 Climate Conference to be held in Brazil in November, we will represent the Healthy Cities National Network of Türkiye; sharing our experiences, work, and recommendations with international stakeholders. We believe that being part of global solutions is only possible through local action.

Every great journey begins with a single step. No matter how great the challenges ahead, with strategies based on scientific knowledge and applied with determination, there is no obstacle we cannot overcome. As long as we do not give up. I would like to thank all institutions and individuals contributing to this process, and emphasize our commitment to continue our collective struggle for a healthier, more resilient world and İzmir.

İZMİR METROPOLITAN MUNICIPALITY | HEALTHY CITIES NATIONAL NETWORK OF TÜRKİYE

Dr. CEMİL TUGAY
President of Healthy Cities National Network of Türkiye
Mayor of Izmir Metropolitan Municipality

Through its network of more than 2500+ local and regional governments in more than 130 countries, ICLEI serves the largest and most effective global network of local and regional governments committed to urban sustainability by providing guidance, facilitating networks and advocacy at the intergovernmental fora. At the UNFCCC space, ICLEI also serves as the focal point of Local Governments and Municipal Authorities (LGMA) Constituency, facilitating the voice of towns, cities, regions of the world in the UNFCCC process.

10 years after the Paris Agreement when the importance of engagement of all levels of governments are recognized, through decisions in Dubai and Baku, multilevel governance and urbanization are now embedded in global climate action. It is now time to transfer all these UN provisions into national climate plans.

If we want this year's COP30 in Belem in November to be recognized as a success, we must ensure that the new national climate plans must mobilize all stakeholders and all levels of governments for integrated, holistic and ambitious action.

In preparation to COP30, the LGMA Constituency announced its vision for Local-To-GlobalCOP30 and beyond. Within this scope, ICLEI developed Town Hall COPs as an innovative stakeholder engagement in support of the mobilization at the national to influence the upcoming national climate plans (i.e. NDCs3.0).

From Sydney in Australia to Campinas in Brazil, from Riverside in the USA to Kuala Lumpur in Malaysia, local governments across the world have started to mobilize themselves for such an ambitious agenda and try to feed into their upcoming national climate plans.

I am very happy and proud that İzmir Metropolitan Municipality, an active ICLEI member since 2019, plays a leading role in Türkiye and the world in the Town Hall COP initiative under the title of COP İzmir. The outputs to be obtained in the COP İzmir process can both ensure the active participation of İzmir residents in the work led by the Municipality and contribute to the implementation of the Paris Agreement, to which Türkiye is a party, and the CHAMP initiative announced at the COP28 meeting in 2023. In the medium and long term, such awareness that will emerge locally may contribute to the more conscious conduct of the Climate Law discussions that Türkiye is intensely discussing and may even provide a positive basis for the preparations for the COP31 meeting that Türkiye plans to host in 2026.

As ICLEI, we believe that the COP İzmir process and its outcomes will provide extremely important experiences for both Türkiye and LGMA's COP30 preparations, and I would like to congratulate and thank İzmir Metropolitan Municipality President Dr. Cemil Tugay, municipal authorities and all the people for their participation in this important initiative.

ICLEI Local Governments for Sustainability

YUNUS ARIKAN
Global Advocacy Director

INTRODUCTION

Although climate change historically occurred due to natural causes, human activities play a major role in driving this phenomenon to the level of a global crisis today. Rising global temperatures, increasing frequency and severity of extreme weather events, and the depletion of water and food resources directly threaten the fundamental needs of all living beings. While the effects of this crisis are global, they are felt in a more concrete and devastating manner at the local level through climate injustice. Therefore, it is essential not only to rely on global and national policies but also to develop localized climate policies.

Under the United Nations (UN) Framework Convention on Climate Change (UNFCCC) adopted at the 1992 Rio Summit, the parties came together in 1995 in Berlin, Germany, for the First Conference of the Parties (COP1). Since that initial meeting, the UN Climate Change Conferences of the Parties have been held annually, clearly demonstrating that the climate crisis is far too complex and multilayered to be addressed solely by a single country or ministry. We believe this fight requires the active participation and collaboration of all stakeholders. Moreover, ensuring that decisions are applicable at the local level is critically important for the success of the process. Accordingly, we advocate for cities to assume more responsibility as implementing actors, and for national climate action plans and local climate movements to complement and mutually reinforce each other.

Located in the Mediterranean region both historically and geographically, İzmir is Turkey's third-largest metropolis and the leading economic, cultural, and social center of the Aegean Region. The city faces spatially differentiated effects of climate change. Today, we regard the strategies and practices we have developed in İzmir as concrete examples of localized climate policies. With the Sustainable Energy and Climate Action Plan (SECAP) prepared by İzmir Metropolitan Municipality in 2020, we aimed not only to reduce greenhouse gas emissions but also to enhance resilience against the social, economic, and environmental impacts of climate change.

In 2024, İzmir was selected as one of the 112 cities under the NetZeroCities project within the EU's Climate-Neutral and Smart Cities Mission. As the first city outside the EU to receive this title, we aim to become climate-neutral by 2030. In this direction, we organized awareness meetings in collaboration with multiple stakeholders, initiated the establishment of a Mission Action Lab, and signed the İzmir 2030 City Commitment together with members of the İzmir Economic Development Coordination Board.

Following the March 2024 local elections, Dr. Cemil Tugay was elected as the Mayor of İzmir Metropolitan Municipality and also assumed the Presidency of the Healthy Cities National Network of Türkiye.

In November 2024, we participated in COP29 in Baku as the Network. As a result of the engagements and observations there, we decided to ensure a more effective participation in COP30 through a healthy cities approach.

We aim to develop concrete and applicable local action plans to tackle the climate crisis and to contribute our experience to the COP30 process. Accordingly, between May 12 and June 10, 2025, we organized the COP İzmir - Town Hall COP under the theme "From Local to Global on the Way to COP30." We brought together local stakeholders to carry İzmir's climate agenda onto the global platform, contribute to COP30 from İzmir, and build a strong local consensus.

A total of 320 participants attended the panels and workshops held under four main themes: food security, energy transition, climate-resilient cities, and green belts. With the contributions of 224 representatives, we prepared the 35-article COP İzmir Climate Declaration and the COP İzmir Climate Action Plan, which includes 268 activities, both of which are shared in this report.

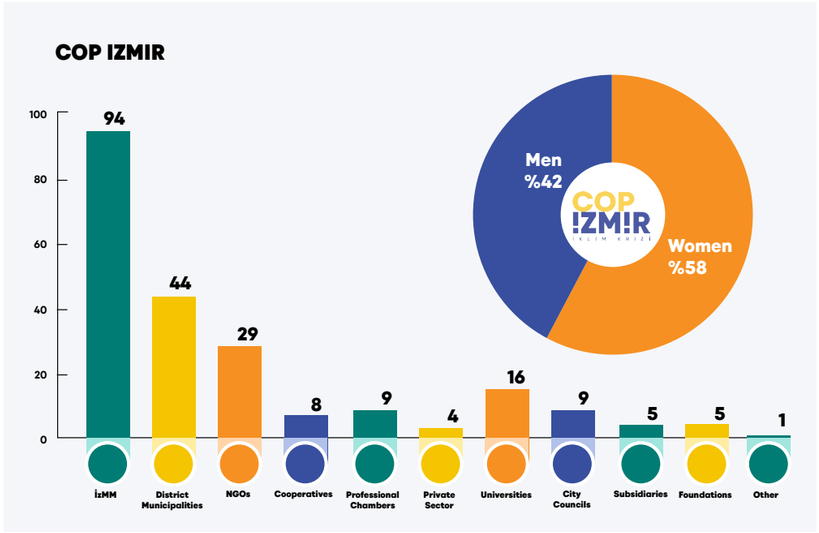

Figure 0.1.

According to conference findings, water resources are among the areas most affected by the climate crisis in İzmir. Due to increasing drought and irregular precipitation patterns, the city is facing an alarming situation. Accordingly, we are implementing measures such as water-saving programs, rainwater harvesting systems, and wastewater reuse.

Agricultural areas are also experiencing productivity losses due to water scarcity, erosion, and rising temperatures. This poses a threat to food security. We support sustainable agriculture, promote agroecological production, and provide training for farmers on climate-friendly practices.

We address food security not only in terms of production volume but also regarding nutritional value and public health. We are carrying out projects to prevent food waste and developing social support mechanisms to ensure access to healthy and reliable food.

In urban areas, we prioritize green infrastructure projects. With green belts, we aim to protect urban ecosystems, reduce the urban heat island effect, and support climate adaptation.

In the energy sector, in line with our climate-neutral and smart city goal, we are increasing investments in renewable energy and encouraging energy efficiency. We are expanding the use of solar and wind energy and monitoring carbon emissions through smart technologies.

We recognize that climate resilience cannot be achieved through physical infrastructure alone. Social resilience and public participation are essential. Therefore, we are developing fair and inclusive policies, prioritizing vulnerable groups, and investing in disaster management and early warning systems. We are conducting public awareness campaigns and building our sustainability vision together with the community.

We aim to expand the Town Hall COP process nationwide, which we initiated in İzmir as Turkey's first Town Hall COP, to ensure greater involvement of local governments in climate policy; and to increase the visibility of local actors.As the Healthy Cities National Network of Türkiye, we aim to participate in COP30, which will be held in Belém, Brazil, in November 2025, and share the experiences gained through the COP İzmir process on international platforms, contributing to global climate action.

Figure 0.2.

First presented to the international community at the Daring Cities meeting held in Bonn in June 2025, the COP İzmir experience stood out as a successful example of multilevel governance. Through this pioneering initiative, we aim to develop holistic and sustainable solutions in areas such as water management, agriculture, food, energy, green infrastructure, and social resilience. Our next priority is to turn these goals and activities into concrete local actions and to further advance the process we started in İzmir, expanding its impact.

We thank everyone who contributed to the COP İzmir – Town Hall COP process.

Prof. Dr. Pınar Okyay
Deputy Secretary General, İzmir Metropolitan Municipality

Assoc. Prof. Dr. Dalya Hazar
Deputy Secretary General, Healthy Cities National Network of Türkiye

FOOD SECURITY AND ACCESSIBILITY IN THE FACE OF CLIMATE CRISIS

12.05.2025

AHMET ADNAN SAYGUN ART CENTER

01

1. OPENING SPEECHES

İzmir Metropolitan Municipality has taken a pioneering step in Türkiye by launching the country's first Town Hall COP (Conference of the Parties) process, aiming to address one of the most critical aspects of the climate crisis at the local level: food security and accessibility to food.

The opening of the COP İzmir event, held under the title "From Local to Global on the Way to COP30: Food Security and Accessibility in the Face of the Climate Crisis", took place at the Ahmed Adnan Saygun Art Center (AASSM). This event holds great significance as it highlights both the potential of local governments to shape climate policies and the increasing pressure of climate change on food systems.

Figure 1.1.1.

Yunus Arıkan, Director of the Global Advocacy Team at the ICLEI – Local Governments for Sustainability network, participated in the meeting online and emphasized the multidimensional nature of the climate crisis in his speech, stating the following:

"Climate conferences are held every year, but the climate crisis has become such a complex and multilayered issue that it can no longer be addressed solely by a single ministry or country. Therefore, a comprehensive effort that involves active participation and collaboration of all stakeholders is necessary. It is of great importance to make the decisions taken applicable at the local level. Unfortunately, in many countries, political and daily debates have pushed climate-related policies into the background. However, cities have both significant contributions to make and responsibilities to implement in this process."

Arıkan emphasized their goal of initiating a process led by İzmir, in which local actors become more visible, and stated: "National action plans and local climate movements need to align and mutually reinforce one another. The climate process is not only about reducing greenhouse gas emissions or developing adaptation policies for disasters; it also marks the beginning of a profound transformation across many sectors. İzmir stands out as one of the cities taking pioneering steps in this transformation. I believe that the COP İzmir meeting will make a significant contribution to the efforts ahead."

Figure 1.1.2.

İzmir Metropolitan Municipality Mayor and President of the Healthy Cities National Network of Türkiye, Dr. Cemil Tugay, delivered the opening speech of the session titled "From Local to Global on the Way to COP30: Food Security and Accessibility in the Face of the Climate Crisis." He stated that they are working to make İzmir a healthy and resilient city, adding: "As local governments, we are trying to define and implement action plans regarding the climate crisis and its consequences.

We are very eager to make İzmir active and engaged on this issue. We are moving forward with the intention that our efforts will serve as an example for other cities in Türkiye and around the world."

Addressing the issue of drought, Mayor Tugay emphasized that cities are facing a serious crisis in managing their water problems, stating:"In cities where agriculture is important – including İzmir – the water problem is becoming increasingly unmanageable. We see that there is insufficient planning when it comes to agriculture. That is why one of the key topics we want to highlight in today's meeting is food. We are aware that it's not just about food scarcity; we also need to talk about food safety. The lands we use for agriculture are struggling to survive. And because those engaged in farming are not being adequately supported, the production of unhealthy food is rapidly increasing."

Figure 1.1.3.

He continued: "We've set aside the question of whether food has adequate nutritional content – now we are discussing whether it causes serious illnesses in people. We haven't yet seen the full impact of this in daily life. Since sufficient data has not been presented, we don't know the exact source of the problem."

Commenting also on public health, Mayor Tugay stated: "The climate has direct and indirect effects on human health – effects that are intense and increasing. Forty years ago, we lived in a cleaner environment and under better climate conditions. Even though regulations were insufficient, food production was generally safer. Developmental disorders have increased rapidly. There is a tendency to avoid questioning the causes of these issues, yet they are becoming problems that directly affect daily life. While longer life expectancy is made possible through the treatment of diseases, many people are living with serious health problems in terms of quality of life. We believe that an unhealthy environment and unhealthy food have a significant role in this."

02

2. NOTES FROM THE PANEL

İzmir's Food Perspective

Moderator: Prof. Dr. Pınar OKYAY, Deputy Secretary General, İzmir Metropolitan Municipality

Participants: Saadet ÇAĞLIN, Chair, Environmental Commission, İzmir Metropolitan Municipality

Selçuk KARAKÜLÇE, Veterinary Physician, Chair of the Agriculture, Forestry and Livestock Commission, İzmir Metropolitan Municipality

Erçin GÜDÜCÜ, Secretary General, İzmir Commodity Exchange

Öztürk KURT, General Manager, İZTARIM

Figure 1.2.1.

Saadet Çağlin, Chair of the Environmental Commission, İzmir Metropolitan Municipality

The agricultural sector is one of the areas most affected by climate change. Türkiye's climatic diversity causes these impacts to become even more pronounced regionally. Climate change poses a critical threat, especially in terms of agricultural food security.

Approximately 73% of existing freshwater resources are used for agricultural production, making the efficient and sustainable use of water extremely important. In İzmir, there are four main water basins: Gediz, Büyük Menderes, Küçük Menderes, and Bakırçay. The region may face a serious risk of water scarcity in the coming years.

Climate change negatively impacts fruit production by causing heat stress (+35 to +40 °C), lack of chilling periods, and drought. Extreme climate events such as droughts in 2008, 2014, and 2020, as well as frost events after February 23, have led to significant production losses. Changes in microclimate regions directly affect crop patterns and productivity.

Soil health is also directly dependent on climatic conditions. When suitable soil moisture is not present, planting cannot be done; under continuous production pressure, the soil becomes exhausted. Soil acts as an almost invisible organism due to its biodiversity, and the disruption of this system threatens productivity.

Additionally, increased temperature and humidity raise microbiological risks and promote the spread of diseases and harmful organisms; excessive rainfall worsens these issues further. This situation not only threatens public health but also risks Türkiye's reliability in international trade, as products are often turned back at customs.

On the other hand, forest fires directly affect forest villages engaged in agricultural production, and producers living in these areas are among the most vulnerable groups to the climate crisis. İzmir Metropolitan Municipality has intervened in these areas with support measures such as tanker distribution.

Selçuk Karakülçe, Chair of the Agriculture, Forestry, and Livestock Commission, İzmir Metropolitan Municipality

Criticism directed at large livestock regarding greenhouse gas emissions is sometimes exaggerated or presented out of context. Yes, large cattle contribute to greenhouse gases in the atmosphere through methane emissions; however, their share in the total global emissions is not as high as commonly believed. Moreover, this debate is often disconnected from the broader context of livestock's water use, soil fertility, environmental impact, and food security.

Cows indeed consume a significant amount of water. It is estimated that an average cow uses about 450 tons of water per year. In Türkiye, approximately 13 million tons of water are used annually in just 100 large farms. This highlights how serious the pressure on water resources is. Particularly, the fact that groundwater levels have dropped up to 250 meters in many regions reveals an unsustainable situation.

At this point, it is crucial that decisions taken are embraced by the community—that is, by local people and producers. Livestock farming should be viewed not only from the perspective of environmental impacts but also its economic and social contributions. Türkiye is a country with fertile soils offering great potential for both agriculture and livestock. However, for this potential to be utilized sustainably, some structural problems must be resolved.

For example, silage production is mostly done for profit, leading to irrational use of water and soil resources. Crops like silage corn require high water consumption, while producers still commonly use inefficient irrigation methods. Modern water-saving techniques such as drip irrigation have not been sufficiently widespread. Teaching and encouraging farmers to use these techniques is critical for water management.

On the other hand, some practical issues in goat breeding are also noteworthy. Policies such as not allowing native goats to enter forests for the purpose of acquiring higher-yield breeds can have negative consequences for both biodiversity and traditional production systems. When goats cannot graze in their natural environment, producers need to provide more supplementary feed, which increases costs.

The use of agricultural pesticides is another serious issue. When control mechanisms are not effective enough, producers can easily access these chemicals, and their careless use causes negative impacts on environmental health. Pollinators such as bees are exposed to these chemicals as well as plastic pollution in the environment, creating cascading effects on the ecosystem. Today, bees are battling not only pesticides but also microplastics they encounter during pollination.

In conclusion, when evaluating agricultural and livestock issues, it is necessary to avoid one-dimensional blame and instead perform a multidimensional, systemic analysis. Comprehensive solutions should be developed across a broad spectrum—from greenhouse gas emissions to water management, from agricultural awareness to nature conservation. These solutions should be communicated appropriately to producers on the ground and made applicable. Only in this way can a sustainable production model be established both environmentally and socially.

Figure 1.2.2.

Erçin Güdücü, Secretary General, İzmir Commodity Exchange

Producers, consumers, and exporters operating in the agriculture and food sector face similar challenges across a wide spectrum, ranging from global developments to local climate conditions. Particularly in port cities like İzmir, selling agricultural products as raw materials leads to value creation occurring in other regions, which limits the income of local producers.

With a history of 134 years and over 2,000 registered members from the food and agriculture sectors, our exchange closely monitors these issues and directs solution-oriented efforts. However, at the current point, the sustainability of many agricultural production activities is seriously threatened. For example, while rice cultivation used to take place in the Menemen region, today, even cotton cannot be grown due to water shortages. Drought, climate variability, and insufficient rainfall adversely affect production patterns and reduce crop diversity.

The increase in diseases caused by mycotoxins in fig production necessitates pesticide use, leading to significant losses in exports. Agricultural products are rejected at border crossings, and policies such as lowering pesticide residue limits put producers under pressure. The pandemic, regional conflicts, changing customs tariffs, and the global climate crisis cause fluctuations in supply and income losses.

While plains agriculture in the Küçük Menderes Basin has almost come to a halt, producers have begun shifting toward livestock farming. However, new risks emerge here as well, including water supply issues, feed costs, and environmental impacts.

In line with the goal of productivity and sustainability in agriculture, our exchange places special emphasis on agricultural technologies. Smart irrigation systems, rainfall forecasting, humidity analysis, and drip irrigation techniques are supported, and entrepreneurs in these areas receive assistance. These technologies enable more efficient water use and adaptation of production processes to climate change.

However, besides technological transformation, a shift in product marketing strategies is also required. Türkiye largely exports agricultural products as raw materials, limiting value creation. With a country image of low brand value, it becomes difficult to sell at high prices in global markets. In this context, branding agricultural products in a high-potential region like İzmir, processing them for final consumers, and linking them with gastronomy are of great importance.

For example, the more effective promotion of local and geographically indicated products like the “Sakız artichoke” presents a strategic opportunity for value creation. Visitors to İzmir should be encouraged to come not only for tourism but also to experience local foods. Gastronomy tourism is considered a supportive sector in this regard.

On the other hand, urban development pressures are shrinking rural areas and increasing economic pressures on producers. Cotton production has declined, there are productivity problems in vineyards, and fig production is shifting eastward. Meanwhile, fish production has increased, but most of this comes from fish farms. New energy solutions are also needed in greenhouse cultivation. While greenhouses in Türkiye generally use energy for heating, those in hot Gulf countries require cooling. Energy management strategies must be developed accordingly to these differences.

Financing and investment support mechanisms in agriculture are also critically important. Risk capital funds are being explored, aiming to strengthen the food supply chain. Our exchange organizes producer training on topics such as olive pruning and harvesting techniques, developing projects to increase product efficiency and sustainability.

To maintain the international market position of high-value products like olive oil, quality, sustainability, and brand value must be developed simultaneously. Meanwhile, competition has intensified for crops like corn, and even in artichokes, there is serious competition with other Mediterranean countries.

In conclusion, value creation in the agriculture and food sector requires the integrated management of many factors, including not only production but also marketing, financing, technology use, and consumer perception. As İzmir Commodity Exchange, our goal is to make regional agriculture more competitive, sustainable, and value-added.

Öztürk Kurt, General Manager, İZTARIM

İZMAR, İzmir’s new retail model focused on supporting local producers and ensuring reliable food supply, has opened its second store and met with the public. Offering quality products at affordable prices, İZMAR quickly attracted wide consumer interest. This growth process continues with the upcoming opening of a third branch in Gaziemir.

The product supply chain is efficiently managed through a logistics center located in Menemen. After quality and safety checks at this center, products are placed on İZMAR store shelves. Thus, the vision of providing consumers with trustworthy, traceable, and affordable food is reinforced.

İZMAR’s vision is further supported by partnerships developed with cooperatives. Especially through an agreement with Tire Dairy Cooperative, dairy products from regional producers are directly delivered to consumers. Within this collaboration, the production of milk, yogurt, and butter has also been initiated, bringing fresh and high-quality dairy products to İzmir residents.

In the field of social responsibility, the “Süt Kuzusu” (Milk Lamb) Project stands out. Through this project, 8 liters of milk are distributed monthly free of charge to children from low-income families, contributing to their healthy nutrition. Additionally, the recently launched “School Nutrition Bag” Project provides healthy food support to approximately 5,000 students.

All these efforts contribute not only to consumption but also to production. Animal slaughtering activities are conducted within İZMAR, ensuring quality, safety, and price stability in meat products. Thanks to this model, visible changes have been observed in the pricing policies of other regional markets, with competition shifting in favor of consumers.

İzmir has a historical culture of direct sales. This tradition, shaped by Tansaş in the past, is being revived today under the İZMAR brand; the project concretizes the city’s attachment to its heritage and awareness of local development.

İZMAR continues to grow as a model that embraces İzmir’s values, supports local producers, and aims to meet the basic needs of the public at affordable prices. The goal is not only to provide products to İzmir’s consumers but also to create a value chain and strengthen it with social benefit.

Food Security and Accessiblity in the Face of the Climate Crisis

Moderator: Dr. Bülent ŞIK, Secretary General of BAYETAV

Participants: Prof. Dr. Funda BARBAROS, Faculty of Economics and Administrative Sciences, Ege University

Prof. Dr. Derya EŞEN, Department of Forest Engineering, İzmir Katip Çelebi University

Dr. Fatih ÖZDEN, Department of Agricultural Economics, Faculty of Agriculture, Ege University

Figure 1.2.3.

Prof. Dr. Funda Barbaros, Faculty of Economics and Administrative Sciences, Ege University

Food security today stands out not only as an economic issue but also as a political and social matter on a global scale. Current data show that approximately 733 million people worldwide face the problem of undernourishment. Moreover, 2.3 billion people experience varying levels of food insecurity. The geographical distribution of food insecurity presents significant differences; while the continent of Asia is severely affected by this issue, the least affected regions are North America and Europe. This situation is directly related to global income and development levels.

Developed countries largely meet individuals' protein needs from animal sources, whereas developing and low-income countries try to fulfill these needs through plant-based sources. This is a fundamental factor that affects both nutrition quality and individuals' health and development levels.

Among the factors threatening food security, climate change, economic downturns, and regional conflicts are at the forefront. Extreme weather events–especially droughts, floods, hurricanes, and frost–negatively impact agricultural production, which directly or indirectly leads to migration movements. The increasing number of days spent in conflict further intensifies the pressure on food systems.

The COVID-19 pandemic serves as a critical example in this regard. Its impact has been deeper and more long-lasting than the 2008 global financial crisis; particularly, the halt in trade flows and disruptions in supply chains have deepened the food security crisis.

Public expenditures play a decisive role in food security. The extent to which central governments spend on individuals living in rural areas is one of the most important variables affecting the overall food security level of society. Observations reveal that malnutrition rates are high in low- and middle-income countries, while government expenditures targeting these groups remain insufficient.

Climate-related damages to agricultural gross domestic product are also more severe in low-income countries. Although agricultural land productivity in Türkiye has increased, a decline in the economic value generated is observed. Türkiye ranks quite low on the food security index among OECD countries, indicating the necessity for structural measures at the policy level.

Children, the most vulnerable group in society, hold a special place in food security policies. The prevalence of stunting among children under 5 in Türkiye is at a concerning level. Simultaneously, the obesity rate has risen from 29.6% to 33.6%; this increase shows that unhealthy and unbalanced nutrition must be addressed in terms of both deficiency and excess.

Specifically for İzmir, there is a systematic lack of data regarding food security. However, local-level data is critically important for developing targeted social policies. In large metropolitan areas like İzmir, access to healthy food is a priority issue not only in rural areas but also in neighborhoods experiencing urban poverty.

Prof. Dr. Derya Eşen, Department of Forest Engineering, İzmir Katip Çelebi University

The effects of climate change are becoming increasingly visible each year, with the frequency and severity of extreme weather events rising significantly. Forest fires, floods, and prolonged droughts directly threaten human life, agricultural production, and natural resources. Recent data reveal that drought affects 2 billion people worldwide. In some regions, rainfall expected over three years occurs intensely within just a few hours, causing severe environmental damage.

Each year, the global population grows by approximately 10 million people. Along with this population increase, pressure on water and food resources intensifies; especially the Mediterranean Basin, including Türkiye and neighboring countries, is disproportionately affected by this crisis. Therefore, prioritizing strategies that enhance climate resilience in natural resource management has become essential.

Drought not only limits access to water but also adversely affects the physical structure of the soil, making it more impermeable and compact, thereby reducing agricultural productivity. In this context, water harvesting techniques– which combine traditional knowledge with modern practices–emerge as effective solutions for sustainable land and water management.

Water harvesting refers to the process of directing, storing, and distributing rainwater runoff from catchment areas to locations where it is needed. Compared to traditional systems, water harvesting can restore natural balance with minimal ecological disruption through phased ecosystem intervention.

This method is not new; its history dates back 9,000 years, with structures such as arches and cisterns used to collect and distribute water, meeting the daily needs of local populations as well as serving the logistical demands of armies.

One successful water harvesting system applied in different geographies is the Meskat system in Tunisia. Used on sloped terrains, this system channels water efficiently through “diamond-shaped” catchment basins, ensuring optimal use. Additionally, solutions like crescent-shaped bunds help dry and semi-arid areas absorb water, preparing the soil not only for tree cultivation but also for agricultural production. These systems are used as natural methods in combating desertification and have yielded positive results.

In Türkiye, awareness and applications of water harvesting are increasing. Projects conducted in cooperation with the İzmir Forest Regional Directorate in the Aliağa region are among significant steps taken in this area. These projects, utilizing rainwater harvesting methods, have achieved twice the water collection capacity compared to traditional techniques. This success is promising not only for enhancing sustainability in local agriculture but also for building climate-resilient systems.

Moreover, crescent bunds and terracing methods are traditionally employed in olive-growing regions, reducing soil erosion and increasing water retention capacity. Such traditional knowledge and practices should be key components of local adaptation policies against the climate crisis.

Figure 1.2.4.

Dr. Fatih Özden, Department of Agricultural Economics, Faculty of Agriculture, Ege University

Food systems have historically evolved in parallel with different periods of capital accumulation, with each era producing its own distinct food regime. The current period is often described as the “corporate food regime,” the third food regime characterized by dominance of highly synthetic inputs, chemicals, and energy-intensive production methods, monoculture farming, export-oriented production systems, and the decisive influence of transnational corporations over markets.

This structure not only shapes agricultural production methods but also brings multidimensional problems such as climate change, overexploitation of natural resources, dispossession, labor exploitation, and rural poverty. Small producers are squeezed between rising costs and falling product prices, debt levels are increasing, and income levels are steadily declining. Currently, it is reported that farmers in Türkiye are owed approximately 3.5 trillion TL by the government, and demands to allocate 20% of the national income to agriculture remain unmet.

As an alternative to these structural problems, agroecology is emerging not only as an agricultural production model but also as a socio-political movement and a nature-based transformation framework. Rooted in the social sciences, this approach emphasizes learning and implementation processes alongside farmers. Agroecology envisions a production system where producers are not left alone, knowledge sharing occurs through participatory means, and nature-friendly methods are promoted.

However, in Türkiye specifically, current practices remain largely confined to organic farming and need to evolve into a more holistic agroecological culture. The limited support for nature-friendly farming practices is one of the main obstacles to this transformation. To expand agroecology, strong cooperation and organization among farmers, rural communities, agricultural workers, and relevant institutions are necessary.

Agroecology holds significant potential not only environmentally but also for public health. It enables both producers and consumers to access healthy and nutritious food without exposure to hazardous chemicals. In this respect, it is a strategic approach that must be at the center of not only agricultural but also food security and public health policies.

In conclusion, supporting agroecological practices, economically empowering producers, and increasing social awareness and collective resistance against the corporate food regime are crucial for building a sustainable, just, and resilient agricultural and food system.

03

3. WORKSHOP REPORTS

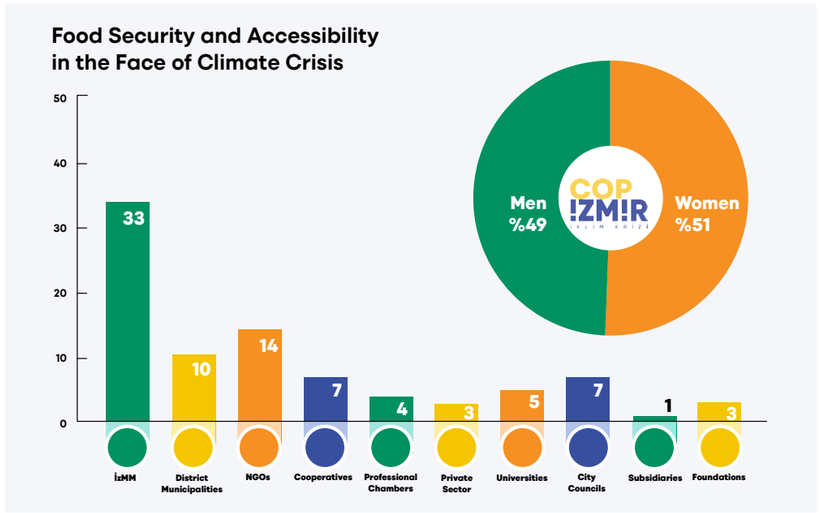

Figure 1.3.1.

Purpose of the Workshop

The “Food Security and Accessiblity in the Face of the Climate Crisis Workshop” is organized to assess the impacts of climate change on agricultural production, food supply, nutritional quality, and access to healthy food. It aims to develop solution-oriented policy recommendations through the participation of local governments, academia, civil society, and all relevant stakeholders. The workshop seeks to make food systems more resilient, sustainable, and equitable in response to the climate crisis.

Specific Objectives of the Workshop

- To evaluate scientific data on the impacts of drought, decreasing water resources, soil degradation, and rising temperatures on agricultural production and the food chain,
- To identify local-level measures, support mechanisms, and planning tools that can be implemented against food crises,
- To develop social policy recommendations ensuring access to healthy and sufficient food for low-income groups, children, elderly, and rural populations,
- To create strategies for promoting sustainable production models such as reducing chemical use, ecological farming, local seeds, and agroecological methods,
- To propose locally applicable policies and practices to reduce food loss throughout the supply chain,
- To establish an interdisciplinary knowledge-sharing platform among academic institutions, experts, and practitioners,
- To develop recommendations that will increase coordination among local governments on food security and serve as a basis for long-term strategic action plans.

Group Outcomes

First Group

Plant Production

Plant production is one of the fundamental pillars of the food system. However, the impacts of the global climate crisis seriously threaten this mode of production. Factors such as rising temperatures, seasonal imbalances, declining soil fertility, difficulties in accessing water resources, and increasing populations of pests jeopardize the continuity and quality of agricultural production. In climate-sensitive regions like İzmir, these effects become even more pronounced, directly affecting the income stability of local producers and the food security of urban populations. Therefore, measures taken at the local level, interventions by municipalities that communicate directly with producers, relevant provincial directorates, and the widespread adoption of sustainable agricultural practices are of vital importance.

Main Effects of Climate Change on Plant Production in İzmir

In recent years, the effects of climate change have caused serious consequences on plant production. Rising temperatures and changing precipitation patterns have led to a northward shift of production areas; this has resulted in changes in the agricultural crop patterns. For example, fig trees traditionally cultivated are being replaced by olive trees. This change represents a significant transformation in terms of ecosystem diversity.

Climate-induced extreme weather events disrupt the biological cycles of plants, negatively affect fruit formation, and cause losses in yield and quality. Especially severe frost events and heavy rainfall weaken the physical structure of the soil and trigger erosion.

In Türkiye, particularly coarse-grained rainfall leads to the loss of the top 5 cm layer of the soil, which is the most fertile part, thereby reducing productivity.

Low soil water retention capacity limits plant growth, especially during drought periods. This living material, rich in microorganisms that require oxygen, is critical for healthy production. However, significant increases in soil-borne pests and pathogens have been observed, increasing production costs and losses. Additionally, the intensive use of hybrid seeds disrupts the natural balance of the soil and negatively affects soil fertility.

Land degradation, forest fires, flood disasters, and erosion also threaten plant production. Inefficient use of water resources, especially through wild irrigation methods, leads to both water wastage and deterioration of soil structure.

To prevent these adverse effects, efforts to increase the soil's water retention capacity are of great importance. The use of organic fertilizers should be encouraged, and the habitat of beneficial microorganisms located in the top 5 cm of soil should be enriched. This way, a healthier and more balanced nutrition environment can be created for plants.

Enriching the soil with organic matter contributes to both increasing soil thickness and environmental sustainability. In this process, well-equipped agricultural engineers and conscious producers have major responsibilities. Deep plowing applications should be carefully planned as they can damage the soil. Instead, the use of compost and mulch should be promoted, and fertilizers used should be mature and have a low pH value.

In summary, preserving the structural and biological quality of the soil is essential for sustainable plant production. This can only be achieved through conscious practices, correct agricultural methods, and scientific data.

Support and Incentive Mechanisms That Local Governments Can Establish for Producers to Mitigate These Effects

Local governments can invest in agricultural technologies that farmers have difficulty accessing and offer these tools to producers through rental models at nominal fees. Especially small family farms can reduce production costs and increase competitiveness through such supports. The wider adoption of digital tools such as field analysis devices, irrigation automation systems, and soil moisture sensors enables more conscious and efficient production processes.

Perennial crop production planning and maintenance processes are more complex compared to seasonal crops. Therefore, local governments like İzmir Metropolitan Municipality (İzBB) should actively promote existing support programs to farmers and provide technical consultancy specifically tailored to these types of production.

Metropolitan municipalities can collaborate with agricultural cooperatives to establish comprehensive compost production facilities to utilize organic waste. This would improve urban waste management while providing farmers with free or low-cost compost, thereby enhancing soil quality. This practice contributes to both economic and ecological sustainability.

Local governments should allocate resources for irrigation infrastructure, particularly leading the adoption of modern and water-efficient systems such as drip and sprinkler irrigation. Regional irrigation projects can be supported through cooperatives to develop collective solutions in water management.

Local governments should organize training seminars for cooperatives to build capacity in environmentally friendly production techniques, agricultural finance, marketing strategies, and climate-smart practices.

Since the agroecological structure varies by region, production planning must identify crop patterns suitable for the soil, climate, and water resources specific to each area.

Food communities that strengthen direct relations between producers and consumers revitalize local economies and improve access to safe food. However, for the sustainability of these structures, a coordinating and supporting mechanism above the communities is necessary. Local governments can assume this role by providing support in logistics, marketing, and legal infrastructure.

Logistics is among the highest cost items in agricultural production. Shortening the distance between producer and consumer reduces costs and carbon footprint. In this context, local governments can establish regional distribution centers, develop cold chain infrastructure, and collaborate with cooperatives to create alternative distribution models.

Agriculture should be restored as a respected and attractive profession within society. Accordingly, local governments should highlight producer stories, lead projects to encourage youth participation in agriculture, and raise awareness through events that connect farming with urban life.

Innovative Agricultural Technologies and Practices to Be Promoted for Sustainable Crop Production

Geographically indicated agricultural products unique to İzmir should be examined in detail, and their tolerance levels to heat and cold should be scientifically researched to enhance their resilience to climate change. A range of alternative crops with low water consumption and the ability to adapt to drought and extreme climate conditions should be developed; these crops must be compatible with the ecosystem and promoted in ways that generate consumer demand.

Cooperatives, together with stakeholders such as universities and research institutions, should collaborate to contribute to the development of innovative agricultural technologies. The widespread adoption of smart farming and measurement systems is essential to establish early warning and intervention mechanisms against potential natural events. Additionally, ongoing training programs on disaster awareness and climate crisis preparedness should be implemented for producers.

Through the Citizen Assembly to be initiated under the leadership of İzmir Metropolitan Municipality (İzBB), suggestions and solution ideas from citizens regarding climate change and food security should be collected; these ideas must be transformed into concrete action plans and implemented under the responsibility of local governments.bu fikirler somut eylem planlarına dönüştürülerek yerel yönetimlerin sorumluluğunda hayata geçirilmelidir.

Figure 1.3.2.

Second Group

Biodiversity, Green Belts, and Urban Agriculture

In building cities resilient to the climate crisis, protecting biodiversity, creating ecological corridors, and integrating food production into urban centers are of great importance. Strengthening the connection with nature in urban areas produces both ecological and social benefits. In rapidly urbanizing regions like İzmir, establishing green belts ensures the continuity of ecosystem services and increases residents' access to lifestyles integrated with nature. At the same time, urban agriculture practices enhance food access, especially for low-income groups, while also reinforcing community solidarity. This session aims to consider ecological conservation and social inclusion together within the framework of nature-based solutions.

Urban Planning Interventions to Protect Biodiversity in İzmir

Creating a comprehensive, up-to-date, and visually supported database on plant and animal diversity specific to İzmir is of great importance. Existing data sources either have limited access or do not cater to a wide range of users. In this context, local governments could develop a publicly accessible biodiversity database supported by photographs to enhance awareness and engagement.

Before any urban planning intervention, a thorough ecological inventory of the relevant area must be conducted; existing species should be identified and prioritized. These areas should be monitored for at least 2–3 years without any physical intervention to understand the natural structure and biodiversity dynamics. During this period, threats should be identified, and species and habitats requiring protection must be determined based on scientific grounds.

Protecting and sustaining biodiversity is possible not only through conservation policies but also by involving local communities. Sustainable maintenance of native species through local stewardship should be encouraged. This process should be supported by advisory bodies consisting of experts, such as scientific committees, with priority given to endemic and endangered species.

Urban planning approaches must treat biodiversity not just as an environmental factor but as a fundamental planning criterion. Accordingly, the number of urban gardens (community gardens) should be increased, especially preserving the ecological and cultural memory of the Peninsula region. In urban transformation projects, integrating green spaces into the urban fabric must be a priority, and the use of native and local plant species should be promoted.

To achieve these goals, education programs, incentive mechanisms, and active involvement of local governments in participatory planning processes must be ensured. Interdisciplinary collaboration is crucial to ensure that higher-level planning decisions are effectively implemented at local levels.

In planning and protecting green spaces, not only aesthetic and social needs but also ecological integrity must be considered. The relationship between nature and humans should be restructured through arrangements such as green corridors, protected areas, and bicycle paths. Steppe-like areas should also be regarded as part of the green infrastructure.

Environmental pollution caused by transportation, industry, and agricultural activities negatively affects biodiversity directly. To reduce these impacts, an effective and coordinated inspection mechanism must be established between local governments and central authorities. Agricultural chemicals like pesticide residues pose serious threats to soil health and biodiversity. Waste management systems need to be re-evaluated with an emphasis on promoting nature-friendly practices.

Protecting İzmir's biodiversity potential should be at the core of sustainable urban planning, addressed through a holistic approach that includes environmental, social, and economic dimensions.

Figure 1.3.3.

Actors Involved in Establishing Green Belts Within and Around the City

All public institutions and organizations responsible for granting building permits should adopt policies that support urban agriculture during the construction and zoning processes, and develop related practices accordingly. To encourage food production within the city, municipalities should collaborate with agricultural and environmental engineers to implement home garden projects. Through these initiatives, cities can become more resilient to the climate crisis. Additionally, to support soil health and manage food waste, the establishment of compost production areas in residential zones should be promoted.

Green belt initiatives should not be considered only at the provincial level but evaluated on a regional scale to ensure ecological integrity is preserved. Sustainable collaborations should be established among academic institutions, local governments, and civil society organizations (CSOs), with strategic plans developed within this multi-stakeholder framework.

Beyond the concept of "Agriculture 4.0," which focuses on digitalization and automation in agriculture, a more realistic and participatory approach that responds to current local needs should be adopted. CSOs should identify the needs of farmers in the field and communicate this data to municipalities, which in turn should develop concrete applications and support mechanisms based on these needs. Academic institutions should contribute with scientific knowledge and technical solution proposals throughout this process.

It is crucial for local governments to fulfill their responsibilities regarding urban agriculture and food security by allocating budgets and resources to these areas. Academics can support policy development by providing scientific data production and analysis throughout the process.

Furthermore, the rent-driven exploitation of agricultural production areas and natural resources should be prevented; these areas must be managed according to long-term strategies aimed at public benefit. Achieving this goal requires adopting a transparent, participatory, and sustainable governance model among all stakeholders.

Making Urban Agriculture Practices More Widespread and Effective in Terms of Social Justice and Food Accessibility

It is of great importance to conduct efforts especially in disadvantaged areas and with the youth to expand urban agriculture and establish a sustainable food system. A comprehensive education process that includes individuals from all age groups should be designed; within this scope, cooperation should be established with schools, daycare centers, and various hands-on training facilities. By focusing on place-based education models, environmental and agricultural awareness should be instilled from an early age.

The education system needs to be restructured with an approach that reduces consumption and encourages production. Accordingly, the collection of organic waste for composting should be supported, and the compost produced should be used in parks, gardens, and agricultural areas. In urban parks, instead of traditional grass, it is possible to use vegetable species selected from local varieties as ornamental plants. The fact that local species are more resistant in terms of water needs provides an important advantage in the adaptation process to climate change. Conversely, the pressure that non-native seeds place on water resources can pose serious environmental risks in the long term.

Producers engaged in soil-based production within the city and its outskirts should be supported by local governments; necessary measures should be taken to increase product diversity and prevent monoculture production in these areas. Seed exchange practices should be expanded, and the necessary infrastructure and organization for this process should be provided through municipalities. The economic evaluation of products grown through seed exchange methods should be conducted, and strategies that contribute to the local economy by supporting high value-added products should be developed.

A two-pronged production-consumption model should be designed with the aim of achieving appropriate costs, logistical ease, and reducing intermediaries in agricultural activities. Strengthening production areas around the city will both help solve logistical problems and reduce pollutants transported into the city.

Instead of technology transfer, local technology production should be encouraged; mechanisms that support entrepreneurship in this area should be established. Sustainable collaborations between cooperatives and municipalities should be developed to create systems that offer direct purchase guarantees to farmers. Urban gardens should be considered not only as green spaces within the city but also as strategic tools guiding rural agricultural policies; coordination units should be established for this purpose. Planning should be carried out and necessary resources provided to make urban gardens applicable in wider areas.

Raising public awareness about urban agriculture practices will be an important step in terms of environmental and food security. Supporting local farmers is the cornerstone of this process and plays a critical role in the sustainability of production.

Third Group

Food Security, Safety, and Hidden Hunger

Food security includes not only access to an adequate quantity of food but also access to nutritious, healthy, and safe food. Among vulnerable groups living in urban areas, malnutrition and hidden hunger are becoming increasingly widespread. Hidden hunger—referring to deficiencies in vitamins, minerals, and essential micronutrients—has long-term negative effects on an individual's health and lowers the overall welfare level of society. At the same time, concerns about food safety are raised by issues such as pesticide residues, additives, and unregulated production. In large cities like İzmir, both identifying these problems and developing intervention strategies fall under the responsibility of local governments. This working group will develop multi-stakeholder solutions aimed at making the right to healthy nutrition accessible to all.

Priority Social Groups to Target for Combating Hidden Hunger in İzmir

To effectively fight hidden hunger, it is necessary to accurately identify and classify the disadvantaged segments of society. In this context, the priority disadvantaged groups determined by the relevant working group are presented below:

1. Children

- Children living in families with low socio-economic status
- Children residing in areas with high poverty rates
- Children living in single-parent or parentless households
- Migrant children
- Children with genetic or chronic illnesses such as celiac disease
- Children with special needs
- Children subjected to peer bullying due to nutritional deficiencies
- Children experiencing personal or social stress caused by malnutrition

- Child laborers
- Children with disabilities

2. Pregnant Women

- Pregnant individuals with low socio-economic status
- Mothers with disabled children
- Women with many children
- Pregnant women lacking sufficient knowledge and awareness about nutrition

3. Elderly

- ndividuals aged 65 and over
- Elderly people living alone
- Elderly individuals with low income and/or disabilities

4. Youth

- Unemployed and economically disadvantaged young individuals
- Young people not involved in education, employment, or training (NEET youth)
- Young individuals with low socio-economic status
- University students with insufficient financial support

Monitoring, Inspection, and Awareness Efforts to Improve Food Safety

Transparency in inspection processes is crucial for ensuring food safety. In this context, data related to food inspections at both national and local levels should be openly shared with the public. Particularly, transparency must be ensured in processes involving products exported abroad but later destroyed for specific reasons, to maintain public trust.

To conduct effective food safety inspections, it should be mandatory for municipalities' licensing and enforcement units to employ technical staff such as food engineers. Inspections must not be limited to the final product stage but should begin from the early stages of production.

Local solutions should be developed to collect organic and food waste generated during production and convert it into compost. Municipalities should play an active role in sustainable agriculture and environmentally friendly practices. The expansion of soil analysis centers affiliated with municipalities will support both farmers and producers in making accurate and efficient production decisions.

To raise public awareness about food safety and sustainable consumption, education programs should be widely implemented. Public awareness can also be increased using billboards, posters, and other outdoor communication tools.

Encouraging the recycling of household waste is another important step to generate social benefits.

For example, collecting waste oils from homes and converting them in an environmentally friendly manner, while supporting local people in return (such as providing 1 kg of olive oil in exchange for 5 kg of waste oil), could be integrated into social assistance policies.

Nutrition and food safety training provided by the Health Education Branch Directorate operating under İzmir Metropolitan Municipality (İzBB) should be expanded, with increased continuity and inclusivity of these trainings.

Strengthening the Role of Food Banking and Solidarity-Based Food Networks

To establish a sustainable, equitable, and resilient food system in cities, municipalities should prepare a City Food Strategy Document. To monitor the implementation of this strategy and enhance accountability, an independent City Food Council should be established. Additionally, it is recommended to join the Milan Urban Food Policy Pact to benefit from international experiences and increase global collaborations.

To support local food production and strengthen food sovereignty at the local level, Community Supported Agriculture (CSA) models should be widely adopted. Within this scope, exemplary neighborhood-scale urban garden projects should be developed to encourage direct participation of city residents in production. Local supply chains should be created where small-scale urban farmers can sell their products directly to consumers. The producer-consumer relationship should be made direct through local markets and food networks.

Food Tables should be established to identify food issues on-site and develop solutions, while participatory food planning should be carried out at the neighborhood level. To ensure the sustainability of local agriculture, the quality of local seeds should be improved and their use expanded. Cooperatives should be encouraged to enhance producers' organization and joint marketing capacities.

To protect clean water sources and ensure their efficient use, smart irrigation systems should be widely implemented and supported by renewable energy. Awareness-raising education and information campaigns should be conducted for both farmers and city residents in this regard.

Fourth Group

Food Logistics

Food logistics refers to the complex chain extending from the producer to the consumer. However, disruptions at every link in this chain lead to significant food waste, increased costs, and higher carbon emissions. With the impacts of the climate crisis, the sustainability of food supply and its equitable distribution have become more important than ever. Especially in large cities, the distance between

rural production areas and urban consumption centers must be balanced through effective logistics planning. Local governments are expected to play an active role in this process by establishing alternative market structures, investing in cold chain infrastructure, and facilitating the integration of small producers into supply chains. This working group aims to develop recommendations to make İzmir's food distribution system more equitable, resilient, and environmentally friendly.

Main Structural and Climate Risks in İzmir's Food Logistics System

Greenhouse gas emissions originate both from production processes and the distribution chain. In particular, increasing transportation distances directly lead to a rise in the carbon footprint. Therefore, producing food close to consumption areas or prioritizing products produced in this way contributes to reducing the carbon footprint.

Additionally, transportation vehicles lacking cold chain systems cause product losses and increase food waste. Transport over short distances reduces the need for refrigeration systems, thus lowering both energy consumption and greenhouse gas emissions.

Spoiled food is classified as waste, and during the storage of such waste, harmful gases like methane are released into the environment. Therefore, preventing food loss is important not only economically but also environmentally.

Logistics encompasses not only transportation but also storage processes that ensure products are kept under suitable conditions. However, especially during harvest periods, the insufficient number of main warehouses negatively affects logistical efficiency.

In the context of climate risks and agricultural policies, opening grazing lands and farmland to construction results in a reduction of production areas; this increases the distance between production centers and consumption points. Protecting agricultural lands, particularly olive groves, is critically important for both ecological balance and food supply security.

Joint logistics and distribution centers, to be established by İzmir Metropolitan Municipality (İzBB) departments in cooperation with affiliated municipal organizations, will enable production and consumption processes to be conducted in a more integrated and efficient manner. Such facilities will encourage rural production while also facilitating the delivery of healthy, fresh, and low-carbon-footprint products to urban areas.

Structural risks in logistics arise from deficiencies in urban transportation infrastructure. Insufficient transportation options between peripheral districts and the city center, along with limited alternative routes, cause delays and inefficiencies in logistics flows.

Traffic congestion around Alsancak Port negatively affects port operations and urban logistics mobility. The lack of sufficient truck parking spaces for heavy vehicles entering and exiting the port increases traffic jams and exacerbates environmental impacts.

Moreover, the increasing number of motorcycle couriers in the city, combined with the lack of designated parking areas, causes irregular parking and circulation behaviors; this adversely affects traffic flow and increases unnecessary transportation-related carbon emissions.

In this context, it is crucial for the municipality to take a more active role in logistics management. Especially, documenting, routing, and monitoring city movements of K-plate vehicles (trucks, pickups, etc.) will ensure that logistics flow is carried out sustainably.

Additionally, creating pedestrian and micro-mobility-focused movement plans in vehicle-restricted areas will reduce the environmental impacts of urban logistics activities and improve urban life quality.

The underutilization of sea and rail systems in logistics presents a significant barrier to sustainable transportation. The lack of alternative and eco-friendly vehicles for cargo transport keeps the system heavily dependent on road transport.

Insufficient transportation infrastructure to agricultural production areas disrupts logistics activities, particularly in regions inaccessible to heavy vehicles. Furthermore, the low level of cooperativization among producers increases individual transport activities and reduces efficiency.

Dispersed, unplanned, and short-term profit-driven production undermines sustainability and market stability in agriculture. Transportation infrastructure deficiencies adversely affect both urban and rural logistics processes.

It is critically important that cooperatives have independent and effective decision-making mechanisms internally, strengthening the organized structure and enabling more coordinated logistics processes.

The lack of digitization in the agricultural sector and disruptions in data flow create serious problems for planning and efficiency. In this regard, establishing agricultural and food logistics hubs in strategic regions such as Bergama is highly important.

Inefficient management of water resources, such as the inadequate water supply to key reservoirs like Tahtalı Dam, reduces crop yields and causes soil quality deterioration.

While road transport continues to dominate logistics, increasing the continuity of railway lines and prioritizing rail transport is critical for more sustainable and cost-effective transportation. Furthermore, locating production areas close to consumption zones will increase logistics efficiency and reduce the carbon footprint. In this context, the use of electric vehicles in logistics will contribute to reducing environmental impacts.

Finally, economic feasibility analyses must be conducted for the planned and sustainable development of regional agricultural production.

Developing Alternative Distribution Models to Facilitate Direct Access of Local Producers to Consumers

To reduce the need for logistics and ensure environmental sustainability, the principle of “local production, local consumption” should be adopted as a core strategy. This approach will help reduce transportation-related carbon emissions while increasing efficiency in the supply chain.

Integrating technological innovations instead of traditional methods in agriculture is of critical importance. For instance, multi-purpose production models such as agrivoltaic systems can increase land use efficiency by enabling both energy production and agricultural activities on the same land.

To manage logistics processes holistically, integrated logistics planning must be carried out, and corresponding digital systems, software, and automation solutions should be implemented. During this process, it is crucial to integrate the use of renewable energy in a way that considers its environmental impacts.

The central government needs to revise the Cooperatives Law. In particular, the establishment of cooperatives focused on logistics and storage will strengthen producer organizations and contribute to reducing transportation inefficiencies and lowering the carbon footprint. In this regard, the shared use model of agricultural equipment implemented by İzmir Metropolitan Municipality serves as a good example.

Establishing regional transfer or logistics support hubs is essential for the efficient management of logistics networks. Strategic regions such as Aliağa, Torbalı, Işıkkent, and Kemalpaşa are well-suited for these centers.

A logistics data infrastructure must be established to support sustainable and data-driven decision-making processes. This will allow for the development of various scenarios, creation of effective policies, and strategic modeling. To implement these processes successfully, strengthening organizational structures, establishing a legal framework, and developing digital infrastructure and software systems are necessary.

To increase the efficiency of logistics processes and make urban transportation more effective, digital applications for truck parking areas must be developed. Additionally, real-time monitoring of freight and waste transport through vehicle tracking systems is critical for planning and oversight.

In specific logistics areas such as solid waste, excavation, cargo, and hazardous material transportation, software solutions based on routing and certification systems should be developed. These systems should serve both environmental and urban sustainability goals.

Possible disaster scenarios should also be considered in logistics planning. Support mechanisms should be introduced for local producers to ensure food security. In this context, durable food processing methods, such as canned food production, should be encouraged.

Furthermore, processing agricultural products into value-added goods is vital for regional development and economic sustainability. Techniques such as freezing or UHT technology used in dairy products can both extend shelf life and ease logistics pressure.

To support the economic sustainability of well-structured and organized cooperatives, dedicated market areas should be established. Through producer markets and cooperative sales points, competition can be encouraged and direct contact between producers and consumers can be facilitated.

Digital applications based on weekly order systems can enable direct purchases from producers. This model supports demand-driven production, reduces waste, and stabilizes producer income.

Promoting local production festivals and improving public access to these events will support the local economy and contribute to rural development.

Finally, establishing systems that convert organic waste in storage areas into compost products will improve waste management and help create a sustainable agricultural model in line with circular economy principles.

Establishing Public-Private Collaboration to Develop Climate-Friendly Logistics Infrastructure

Local governments need to update their logistics action plans and develop strategic plans specifically for food logistics. Municipalities should play a leading role in coordination, supervision, and guidance.

Figure 1.3.4.

Training personnel working in high-density logistics areas—such as wholesale vegetable/fruit and fish markets—is essential to improve service quality and hygiene standards. In this process, collaboration with the private sector will support the development of technical capacity.

Food should be regarded as a strategic domain. In this context, legal regulations, inspection mechanisms, and—when necessary—enforcement measures should be implemented to address disruptions in the supply chain.

Furthermore, to enhance operational efficiency, it is recommended to receive specialized support from third-party logistics companies. Through professional distribution services, a systematic, traceable, and secure food logistics network can be established.

Encouraging the use of electric vehicles or transportation solutions powered by renewable fuels in food transportation should be one of the primary goals to reduce carbon emissions and ensure environmental sustainability.

In order to restructure distribution plans and minimize transportation distances (in kilometers), efficiency-based solutions can be developed by leveraging the technical knowledge and operational capacity of the private sector.

To manage these processes effectively, a unified food logistics vision should be created, with collaboration between the public and private sectors. This vision is crucial for aligning strategic goals and ensuring cohesive implementation.

Additionally, training programs should be organized for SMEs on green transformation and sustainable logistics practices. This will help integrate small and medium-sized enterprises into environmentally friendly production and distribution processes.

Replacing packaging and transportation equipment used in logistics with environmentally conscious materials will be an important step in supporting the circular economy.

Fifth Group

Animal Production and Fisheries

The livestock sector holds strategic importance for rural development and food supply security. However, as a significant source of greenhouse gas emissions, it also raises serious concerns in terms of environmental sustainability. Rising costs, animal welfare issues, challenges in feed supply, the shrinking of pasture areas, and climate change-induced animal diseases pose threats to the future of production. In terms of fisheries, the overexploitation of marine and inland water resources, pollution, and stock depletion are among the major problems. In coastal cities like İzmir, the planned and sustainable production of aquatic products, along with the mitigation of the environmental impacts of animal production, constitute the core focus of this discussion.

Reducing Environmental Impacts of Animal Production in İzmir

The collection and use of organic waste such as manure and urine as fertilizer in agricultural fields is essential for both waste management and maintaining the natural nutrient cycle. To ensure these practices are carried out safely, biosecurity measures must be implemented, and waste disposal as well as biogas facilities should be established in a planned and systematic manner.

Supporting and promoting small family farms can enable more controlled management of organic waste and contribute to reducing local environmental impacts.

Methane gas has a greenhouse effect 21 to 29 times more potent than carbon dioxide. The intensive use of fossil fuels in sectors such as agriculture, livestock, aquaculture, construction, and transportation significantly increases these emissions. In this context, the influence of local governments is limited, and the primary responsibility lies with the central government to develop and implement effective policies.

To reduce methane emissions:

- Adding methane-reducing additives (e.g., seaweed, sainfoin, chicory) to animal feed;
- Conducting state-supported research and scientific studies on methane emissions;

- Encouraging ammonia and nitrous oxide balancing practices;
- Processing manure at centralized facilities for biogas production, particularly by implementing state-supported biogas investments–similar to the U.S. model–for farms with over 2,000 animals;
- Expanding models for collecting manure from small family farms and processing it at biogas plants.

In large-scale livestock farms, restricting excessive water use (e.g., for milking systems and animal washing) is critical both for water conservation and broader environmental sustainability.

To reduce environmental impacts and improve resource efficiency in livestock production, sustainable livestock practices must be promoted. This includes prioritizing the cultivation of low-water-consuming feed crops, which is a key strategy in combating climate change.

Locating new livestock investments in higher-altitude, cooler regions can reduce heat stress in animals, improve productivity, and support animal welfare.

In İzmir specifically, efficient pasture management is essential. Emphasizing native breeds and pasture-based models, especially in dairy farming, can reduce dependency on imported roughage and concentrated feed, lower input costs, and minimize industry-driven environmental impacts.

One of the most pressing structural problems in the sector is the lack of planning and the uncontrolled expansion of large-scale farms. This disrupts the supply-demand balance and negatively affects producers, consumers, and the entire agri-industry chain.

Current contract farming models, which tend to skew supply-demand balance in favor of one party, must be revised to establish more balanced and inclusive production planning systems that protect all stakeholders.

In seafood production, only about one-third of fish caught through wild fishing is used for human consumption, while the rest is processed as by-products. However, overfishing causes market price fluctuations and ecosystem imbalances. In particular, declining populations of small fish disrupt the food chain of larger fish, leading to jellyfish blooms and algal outbreaks, which pose serious environmental threats.

Although there are public concerns about drug residues in aquaculture, effective inspection mechanisms can prevent these risks. However, because aquaculture operations fall under the Ministry of Trade, sustainability criteria such as environmental impact and carbon footprint are often overlooked.

In current practices, many facilities use artesian water sources, resulting in unsustainable water consumption. The widespread adoption of closed-loop water systems is essential to protect these resources.

Moreover, inadequate removal of seabed sludge leads to serious pollution, as this material–unable to be carried away by currents–accumulates on the sea floor. Despite the surface appearing clean, underwater pollution poses a significant environmental threat.

Additionally, direct discharge of waste into the sea, and the uncontrolled issuance of maritime licenses, allow for uninformed activities by amateur users, contributing to marine pollution and harming professional fisheries.

To mitigate these environmental risks, cooperatives should be strengthened, and local monitoring capacity enhanced in marine and aquaculture management. An ecosystem-based governance model should be established for licensing, fishing, and discharge systems.

Combating Climate Change and Stock Management in Aquatic Products Production

The supply process of aquatic products should be thoroughly analyzed, and the environmental impacts of production methods must be evaluated. In particular, the pressures of animal production and aquaculture on ecosystems should be taken into account; in line with these impacts, necessary measures should be implemented within the framework of sustainability principles, and environmentally friendly production models should be adopted.

In fisheries, it is essential to determine in detail the extent to which fish stocks are independent from each other or to what extent they overlap. If the stocks become isolated from one another, there is a risk of decreased genetic diversity, which can negatively affect ecosystem health. For instance, anchovy stocks may exhibit genetic and population-level differences across regions, which requires region-specific management strategies.

Stock estimations are made using samples taken from the caught aquatic species, which both facilitates resource management and provides a scientific basis for regulatory decision-making. Developing a practical, technology-based monitoring and evaluation system for fishers will enhance management efficiency in the sector.

With climate change, rising sea temperatures directly impact aquatic product production. This leads to the emergence of new species and the spread of new diseases in aquatic environments. Therefore, the development and integration of species that are resistant to high temperatures and diseases into production is of great importance for the sector's adaptation to climate change.

İzmir, one of Türkiye's major centers for aquatic products production, ranks second in Europe in terms of fisheries. This highlights the region's high potential and production capacity, underlining once again the importance of planning in accordance with sustainability principles.

Policy Instruments Local Governments Can Implement to Enhance Sustainability in Livestock Production

Local governments should prioritize support for small-scale producers working with native breeds, while also offering additional performance-based incentives to highly productive operations. The lack of zoning plans in rural areas should be addressed through environmental impact assessments by local authorities, and rural development policies should be designed accordingly. By ensuring that the value created in rural areas remains within the local economy, youth migration to cities can be reduced and rural employment preserved.

To prevent youth from disengaging from production, support for irrigation and milking systems, seed supply, and financial assistance for family farms should be increased. Additionally, providing equipment (e.g., milk tanks) to cooperatives can strengthen production processes. These types of support create direct and positive impacts on local producers.

Local authorities should play an active role in helping producers market their products, improve access to markets, and stabilize prices to prevent unfair competition. Such support empowers small producers and also facilitates consumer access to healthy food at more affordable prices.

In general, issues like biosecurity, preventive veterinary practices, and herd management are not well understood. Climate change-induced temperature increases have led to the spread of infectious diseases via vectors like flies. Therefore, vector control programs should be implemented, and producers should be educated on these topics.

Comprehensive training programs should be developed through collaboration among universities, cooperatives, and local governments. These programs should target all stakeholders in rural areas, especially aquaculture producers, and be integrated with support mechanisms. Producers who receive training should be offered greater support, while those who do not should receive limited support, encouraging a transition to knowledge-based production models.

The methodology of the training programs should be revised to ensure they are simple, clear, and applicable. Training content should prioritize sustainability, environmental awareness, biosecurity, controlled antibiotic use, and preventive veterinary care. Awareness programs for consumers should also be organized to promote healthy and informed consumption habits across society.

Amateur fishing licenses, which are legally required for recreational (rod) fishing, should be effectively monitored. Coastal fishing activities should be traceable in terms of microbiological safety and health risks; checks should be carried out at landing points, and sales should be recorded. The unregulated sale of catches from recreational fishing in restaurants should be prevented, and the environmental impacts of excessive recreational activities targeting species such as sharks should be considered. Entering the catch coordinates of fish into a central system should be made mandatory at fish markets, allowing both regulatory authorities and consumers to know the origin of the products. As seen in Japan, implementing traceability systems is critical for food safety and consumer awareness.

The culture of cooperativism should be promoted, and cooperatives should play a more active role in both production and marketing. Oversight processes should be strengthened and transparency increased. In the fisheries sector, education programs based on sustainability should be prioritized over profit-driven approaches. Effective collaboration and coordination should be established between cooperatives, local governments, universities, research institutes, and the central government. Enhanced information sharing among these stakeholders will provide a stronger foundation for policymaking. Legal regulations should be developed based on scientific data and field findings, and strategic roadmaps for the sector should be created.

Sixth Group

Drought, Water Consumption, and Water Pollution

Drought is one of the most serious environmental threats of the 21st century, and in a world where access to water becomes increasingly difficult each day, the proper and efficient use of water has become a primary agenda item for local governments. Excessive irrigation in agriculture, unplanned urbanization, industrial activities, and inadequate infrastructure lead to the depletion and pollution of water resources, threatening not only the present but also the future. In a rapidly growing city like İzmir, combating water scarcity is possible through the implementation of innovative water management approaches. This discussion will focus on building a balanced water policy between city and countryside, increasing the cyclicality of water, and ensuring active public participation in this process.

Technologies and methods that need to be encouraged to use water more efficiently in agriculture for drought mitigation:

Individual irrigation and agricultural production solutions cannot provide long-term sustainability; solutions should be sought in cooperative-based, participatory, and community-oriented models. Different institutions such as irrigation unions, irrigation cooperatives, and municipalities often implement conflicting and inconsistent practices in water management, leading to injustice among users and resource waste. Coordination among these actors must be established; decisions about who uses water, when, how much, and by what method should be made through collective wisdom.

Irrigation plans should be developed based on the efficient use of water, not merely to prevent crop loss. Under conditions of limited water supply, while some land plots may receive irrigation every 2-3 days, others wait for 10 days. This imbalance should be addressed through systematic planning; irrigation schedules must be based on resource efficiency rather than farmer demands.

Illegal drilling is a serious issue. Inventories of these systems should be created, integrated into the system within a regulatory framework, and unregulated water use must be prevented. The installation of meters should be made mandatory so that water consumption can be measured, allowing farmers to see transparently how much water they are using and at what cost.

Approximately 75% of the water used in agriculture is allocated to farming, and of this, 80% is used through traditional (wild) irrigation methods, resulting in significant waste. This situation highlights the importance of transitioning to modern irrigation techniques such as drip, sprinkler, and sensor-based systems. For this transformation, both training and financial incentives should be provided to farmers. Soil analyses should be conducted, and experts should recommend plant varieties suitable for the soil structure. Water-consuming crop combinations that balance water use, such as in ecological mutualism examples (e.g., watermelon-corn), should be encouraged. Especially in areas with high drought risk, forage crops with high water dependency should be cultivated in a controlled manner. Shared drilling systems should be established under local government supervision; all farmers in the region should have access to prescribed amounts of water.

Irrigation ponds and early warning systems established by some municipalities, like İzmir, should be expanded, and all water sources should be planned in collaboration between local and central authorities.

Commercialization of water is one of the biggest threats that hinder the management of water as a common asset. The commodification of water rights creates inequalities in access to resources. In line with the principle that water is a public right, community-focused applications such as water revolutions and water harvesting, as exemplified by Bolivia, should be implemented.

Due to increasing urbanization, surface permeability decreases, and underground water sources are insufficiently replenished. Water from rooftop gutters flowing directly into streets and streams causes both flooding and drought. To prevent this, rainwater harvesting, sponge city models, and surface water diversion systems should be developed.

The use of treated wastewater in agriculture should be encouraged, and recycling systems should be established. Additionally, water basins and forested areas should be protected to ensure the sustainability of the natural water cycle.

Through these systems, drought mitigation and flood control can be carried out in a healthy and sustainable manner.

Figure 1.3.5.

Measures to be taken at the local level to prevent the pollution of water resources

Water management should be evaluated not only in terms of water users but also as a shared concern across multiple sectors such as industry, residential areas, agriculture, and mining. Strong coordination and data sharing among central government, local authorities, universities, and public institutions are essential; a basin-based management model should be adopted as the core approach. The balance between agriculture, industry, and urban settlement must be planned using scientific methods.

In preventing water pollution, it is evident that not only punitive measures but also incentive mechanisms play a crucial role. Small-scale practices, such as reusing wash water from vegetables and fruits (for example, for garden irrigation), should be promoted within larger models. Investments in treatment plants should be supported considering energy and chemical use costs, and qualified personnel, such as environmental engineers, should be encouraged through suitable conditions. As seen in examples like the Çiğli Wastewater Treatment Plant and Çeşme Municipality, the scope of awareness and cooperation efforts by local governments should be expanded.

Animal production activities have both direct (manure, waste) and indirect (methane emissions, water consumption) environmental impacts. Agriculture and livestock should be planned together, and recovery technologies such as biogas production should be supported. Research and development (R&D) incentives should be provided for alternative protein sources (e.g., mealworms, krill, etc.). Livestock feed should be conscientiously blended to reduce methane emissions and water use.

Widespread pollution sources (agricultural chemicals, animal waste, etc.) are much more difficult to control than point sources. To ensure proper fertilization, timing, and dosage are effectively communicated to farmers, agricultural advisory systems should be strengthened. Soil analyses must be conducted regularly, and their results should be integrated into fertilization planning.

The "Village Identity Card" program implemented in some provinces like İzmir serves as a good example. The infrastructure status of each village (such as sewage, waste management, water quality, etc.) should be systematically documented, and this data integrated into public planning. This approach can facilitate rural transformation aligned with sustainable development principles.

The use of new technologies in agriculture and industry should be encouraged, but it must be ensured that these processes do not harm ecological sustainability. Municipalities and other public institutions, while promoting technological investments, should also jointly oversee environmentally respectful usage conditions.

Ensuring Public Participation and Awareness in Water Management

İzBB is implementing the "Climate Citizens' Assembly" model to increase citizen participation in combating the climate crisis. This structure will consist of 50 randomly selected citizens representing the city's demographic makeup. The Assembly will be independent, inclusive, and free from political bias. Its first session is scheduled for September 7.

Members of the Assembly will undergo climate literacy training to be involved in conscious decision-making processes. To make the Climate Citizens' Assembly effective and reliable, the process must be based on scientific principles; local government should act as a facilitator rather than a directive authority. In this context, universities, academics, and independent experts should be actively involved in the process.

To spread climate awareness broadly, sustainable educational and awareness programs are necessary not only for Assembly members but also for all social strata. Educational activities on climate change and environmental sustainability should be organized in schools, youth centers, and city councils.

Across İzmir, there are 126 agricultural development cooperatives affiliated with Köy-Koop. For example, in Ödemiş district, 12 cooperatives operate. The local access and trust relationships of these structures will be a significant advantage in implementing climate-compatible agriculture and water management policies. Municipalities should develop tripartite cooperation models with the scientific community and cooperatives, initiating training and capacity-building programs for producer partners.

Seventh Group

From Soil to Table: Agroecology

Transforming food systems involves not only changing how food is produced but also altering consumption habits, distribution models, and policy-making processes. Agroecology is a holistic approach at the core of this transformation. As an ecosystem-based, locally grounded, farmer-empowering, and environmentally sustainable agricultural model, agroecology also promotes social equality and participation. For innovative and participatory cities like İzmir, agroecological policies are not just a farming method but a city-wide vision. This platform will discuss ways to strengthen the relationship between producers and consumers and build a food system that is in harmony with nature.

Mechanisms Needed for Widespread Adoption of Agroecological Practices in İzmir

To systematically support agroecological production models, an institutional structure is necessary. In this context, a "Agroecological City Food Council" should be established under local government leadership, involving both producers and consumers. This council should encompass all aspects of the food system, including production, distribution, consumption, and waste management. Its role is not only to develop policies but also to create a democratic participatory platform where cooperatives, small producers, academics, and citizens can make joint decisions. Through this structure, direct supports such as training, marketing, infrastructure, and financing can be provided to farmers transitioning to agroecological methods.

How to Establish a Connection between Agroecological Production and Local Markets

The spread of agroecological production depends on the existence of reliable and sustainable market networks that connect these products to consumers. Increasing short supply chains and local producer markets, alongside supporting direct interactions between producers and consumers, are essential. Urban gardens, community-supported agriculture (CSA), neighborhood markets, and cooperative sales points are key components. Local governments should allocate space for these markets, invest in necessary infrastructure, and provide logistical support to reinforce the economic and social sustainability of agroecological products. Urban agriculture initiatives also play a vital role by providing proximity to consumption centers and establishing rural-urban food bridges.

How to Make Agroecological Production Attractive to Farmers

To motivate producers to participate in this transformation, regional strategies considering geographic and socio-economic differences should be developed. For example, in districts like Ödemiş, where livestock and crop production coexist, model farms for agroecological practices can be established, and pioneering farmers supported to share their knowledge and experiences. These farmers can serve as references for surrounding producers. In contrast, in areas like Menemen, where industrial agriculture is dominant, phased and incentivized transition models such as "Good Agricultural Practices" should be adopted.

Reducing risks, offering purchase guarantees, and providing technical support are crucial to making agroecological transformation appealing in these regions.

Building a food system “from soil to table” requires not only transforming production processes but also restructuring public support mechanisms, strengthening local marketing networks, and increasing producer motivation. Therefore, the strategies developed on our agenda are not isolated recommendations but parts of a comprehensive, strategic transformation plan. Structures such as the “İzmir City Food System Document,” the “Food Pact” in collaboration with İzmir Metropolitan Municipality (İzBB) and districts, the City Food Council, and within this scope, the “Agroecological City Food Council” should play a central role in ensuring that this transformation proceeds democratically and sustainably.

04

4. CONCLUSION

The climate crisis poses a serious threat to food security by affecting the entire system—from food production to supply chains. Rising temperatures, droughts, floods, and other extreme weather events are reducing agricultural productivity, making access to food more difficult, especially for poor and vulnerable communities. This situation necessitates that climate change mitigation policies be addressed in a holistic manner that encompasses food systems. Ensuring food security requires a comprehensive approach that includes not only agricultural production, but also fair distribution, sustainable practices, and the strengthening of local resilience.

As we approach COP30, and the impacts of the climate crisis become increasingly visible, the issue of food security and access is emerging not only as a global challenge but also as a local struggle. The vulnerability of agricultural production to climate conditions, the structural problems faced by small-scale farmers, and rising food prices underscore the growing need for a sustainable and equitable food system. In this context, the knowledge and experiences of local communities must play a central role in shaping global climate policies. COP30 presents a critical opportunity to implement holistic policies that center climate justice, secure the right to food, and strengthen local resilience. Seizing this opportunity is vital not only for today’s food security, but also for the future.

WHAT IS A TOWN HALL COP?

A Town Hall COP is a local climate summit, inspired by the global UN Climate Change Conferences—but grounded in your reality.

It’s a **community-led event** where local voices—residents, youth, leaders, business owners, Indigenous groups—come together to talk about what matters most.

Every Town Hall COP is **nationally relevant—connecting** your local priorities directly to your country’s climate plans.

And it’s **transformation-oriented—focused** on real-life issues like health, affordability, justice, jobs, and nature.

This isn’t just another meeting. It’s your community’s chance to drive the climate conversation—and influence global action with ICLEI and other local and regional government leaders around the world.

İZMİR'S OPPORTUNITIES FOR GREEN ENERGY TRANSITION

22.05.2025

IZFAS FAIR AREA

01

1. OPENING SPEECHES

As part of the COP İzmir Town Hall COP Series, the second panel and workshop titled “İzmir’s Green Transformation Opportunities in Energy” was held at the İZFAŞ Exhibition Area.

During the morning session of the event, comprehensive evaluations were conducted among participants on the topics discussed at the roundtable meetings, and separate reports were prepared for each table. In the afternoon panel sessions, world-renowned Canadian urban planner Gil (Guillermo) Penalosa, Chairman of the İzmir Planning Agency Prof. Dr. Koray Velibeyoğlu, and Chairman of the Board of İZENERJİ Erhan Uzunoğlu addressed the participants, sharing their insights on the role of cities in the energy transition and the specific opportunities for İzmir.

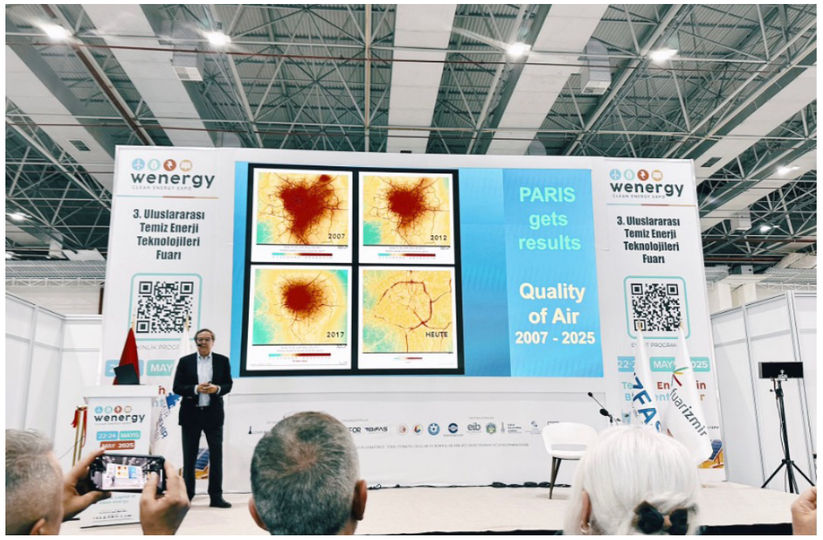

Figure 2.1.1.

02

2. NOTES FROM THE PANEL

Good Cities Are Sustainable

Gil (Guillermo) Penalosa (Urban Planner, Founder of 8-80 Cities)

Gil (Guillermo) Penalosa, who participated as a keynote speaker within the scope of the Wenergy Fair, is a globally recognized urban planner known for his work on sustainable and livable cities. It aims to transform cities into healthier, fairer and more livable spaces for individuals of all ages through the non-profit organization "8-80 Cities", of which he is the founder and president.

The "8-80: Cities for All" philosophy developed by Penalosa argues that cities should be designed with the needs of an 8-year-old child and an 80-year-old elder in mind. This approach aims to be accessible, safe and inclusive for all residents of the city.

At the core of this philosophy lies the emphasis that cities should support the physical and mental well-being of individuals. Promoting active forms of transportation, such as walking and cycling, contributes to reducing common public health problems such as obesity, diabetes, and depression. Furthermore, increasing green spaces and parks increases social welfare by strengthening individuals' contact with nature.

Penalosa advocates prioritizing walking and cycling in urban transportation. The construction of safe and interconnected bicycle paths makes it easier for individuals of all ages to choose these modes of transportation. However, the low rate of women's bicycle use reveals the inadequacy of the existing infrastructure.

Emphasizing that cities should have public spaces that support social interaction, Penalosa led the construction of over 200 parks and expanded the scope of the "Ciclovía" program as part of his work in Bogotá. Thanks to this program, approximately 1.5 million people come together every Sunday for walking, cycling and various activities on city streets.

Penalosa argues that cities should be fair and inclusive for all residents. He states that the removal of social, economic and physical barriers makes it possible for individuals to participate equally in city life. This approach particularly requires prioritizing the needs of groups such as children, the elderly, and people with disabilities. His vision is to build people-oriented, healthy, sustainable and inclusive cities. Promoting walking and cycling, increasing green spaces and strengthening public spaces are the basic building blocks of this vision.

Talking about various cities and examples of good practice that do not require a high budget during his presentation, Penalosa emphasized that İzmir has a great potential in this field. Comparing İzmir especially with Paris, he stated that urban mobility in the city could be enhanced by expanding connected bicycle lanes, particularly along Kordon. He emphasized the need for the rapid implementation of initiatives focused on behavior change.

İzmir's Climate Neutral and Smart City Mission

Prof. Dr. Koray Velibeyoğlu (Chairman of İZPA)

İzmir Planning Agency Chairman Prof. Dr. Koray Velibeyoğlu's presentation at the Wenergy Fair comprehensively outlined İzmir's urban transformation goals aligned with its "Climate-Neutral and Smart Cities" mission, as well as the mission-oriented governance model adopted to achieve these goals. Velibeyoğlu stated how İzmir envisions a transformation by 2030 in line with the European Union's vision of "100 Climate-Neutral and Smart Cities".

The mission-oriented governance and economic approach presents a model that positions the public sector not only as a regulator but also as a transformative actor. This approach aims to enable public institutions to produce innovative, strategic and impact-oriented solutions to major social and economic problems.

İzmir has been one of the leading cities to adopt this approach by joining the OECD's "Mission Action Lab" network. The city's governance strategy is built upon the principles of goal orientation, flexibility (adaptability), participation (distributed governance), and learning from experience.

The strategies developed by İzmir strongly coincide with the European Union's vision of urban-centered sustainability. In line with the EU's goal of creating 100 climate-neutral cities by 2030, İzmir aims to be climate-neutral by the same date and to carry out a transformation that will cover the whole city by 2050.

In this context:

- İzmir Mission City 2030 Framework has been established.
- The Climate City Convention has been prepared and the commitment to the European Union missions has been declared.
- The foundation for long-term strategic planning has been strengthened through Urban Commitments, including the İzmir 2074 City Vision and the 2054 Master Zoning Plan.

The thematic missions identified for İzmir address the multi-layered problems facing the city in terms of social, economic and environmental aspects. These missions are grouped under the following headings:

1. Sustainable Mobility: Strengthening green transport infrastructure with pedestrianized areas, safe bicycle paths and low emission zones.

2. Disaster Resilience: Infrastructure improvements focused on pre- and post-disaster planning and dissemination of assembly areas.

3. Affordable and Adequate Housing: Construction of equipped, healthy and safe housing.

4. Healthy Food and Agriculture: Establishing agri-food chains compatible with nature in urban peripheries and ensuring food safety.

5. Innovation and Technology Production: Development of technology-friendly urban planning tools.

6. Decent Income and Work: Increasing accessible employment opportunities and improving the investment climate.

7. Educated Generations: A vision of education that offers sustainable equal learning opportunities.

8. Culture, Connectedness and Inclusion: Supporting cultural production and dissemination of participatory living spaces.

9. Circular Urban Metabolism: The integrated optimization of water, energy, and waste management.

10. One Health and Well-being: Ensuring the balance between human, environmental, and animal health.

The mission city model is not only a technical planning tool, it is also a transformation approach based on participatory democracy and inclusive governance. In this context:

- Technical Committee activities of the İzmir Economic Development Coordination Board (İEKKK) have been carried out,
- Citizen participation was encouraged by organizing thematic workshops and participatory camp processes,
- Through the Capital Hub Program, a financing dialogue has been initiated with international institutions such as the European Investment Bank.

İzmir's vision of "Mission City 2030" represents an impact-oriented and multi-actor transformation model that goes beyond traditional planning. This model is an innovative policy paradigm that generates experimental and collective solutions to interconnected problems such as the climate crisis, social inequality, and economic fragility. It sets a pioneering example in the field of climate neutrality and sustainable development at the local level in Türkiye.

Figure 2.2.1.

Erhan Uzunoğlu (Chairman of İZENERJİ)

As one of the affiliates of İzmir Metropolitan Municipality, İZENERJİ plays a strategic role in achieving the sustainable energy goals of the city. The institution is developing comprehensive strategic plans and projects that support İzmir's vision of becoming a carbon-neutral city; it approaches this process not only as a technical endeavor but also as a transformation in social, environmental, and quality-of-life dimensions.

Energy efficiency is considered by İZENERJİ not only as an engineering-based field of application, but also as an integral element of social justice, environmental sustainability and public welfare. In line with this approach, technical training programs are being organized to strengthen the energy management capacities of public institutions, while awareness-raising activities carried out in schools and social spaces aim to foster societal transformation.

The institution emphasizes that relevant legislation should be strengthened for the development of renewable energy-based social projects and societal solidarity models such as energy cooperatives. In this context, energy efficiency and renewable energy projects, which aim to facilitate access to energy, especially for low-income groups, are among the priority areas.

İZENERJİ Chairman Erhan Uzunoğlu stated that important steps have been taken based on cooperation with other metropolitan municipalities and energy companies in line with İzmir's energy transformation goals. In this context, a decision has been made to develop joint projects with energy institutions in various cities, particularly İstanbul.

İZENERJİ cooperates with Istanbul Energy Inc., a subsidiary of İstanbul Metropolitan Municipality, on sustainable energy projects. This collaboration aims to increase the use of renewable energy sources, primarily including solar power plants (SPPs), wind power plants (WPPs), geothermal power plants (GPPs), hydroelectric power plants (HPPs), and biomass power plants (BPPs). Furthermore, infrastructure projects focusing on energy efficiency, Sustainable Energy and Climate Action Plans (SECAP) applications, technical knowledge and product experience sharing are also within the scope of this cooperation.

Erhan Uzunoğlu also highlighted the challenges faced by local governments in implementing energy transformation initiatives; he emphasized the need to overcome obstacles such as internal and inter-agency communication gaps, budget constraints, and barriers created by the political climate. In order to prevent these problems, various metropolitan municipalities have declared a common will to establish an “Energy Network” to increase the sharing of experience and knowledge in the field of energy. This network is designed to enable local governments to become institutions that produce their own energy, to disseminate renewable energy projects and to develop common strategies for energy efficiency.

İZENERJİ also cooperates with energy companies in cities such as Bursa, Manisa, Denizli and Ankara, and these partnerships are focused on areas such as energy efficiency, renewable energy use and the development of sustainable energy policies.

These multi-stakeholder collaborations are considered as important steps towards İzmir’s goal of becoming a carbon-neutral city. Thanks to these strategic partnerships established with other cities, İZENERJİ is expected to produce more holistic, sustainable and innovative solutions in the field of energy. The panel ended with a Q&A section and general evaluations.

Figure 2.2.2.

03

3. WORKSHOP REPORTS

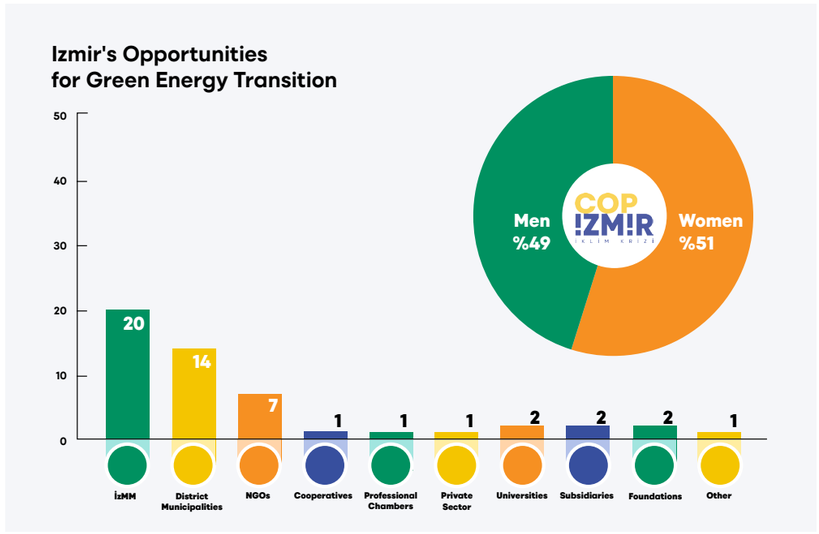

Figure 2.3.1.

Purpose of the Workshop

The primary aim of this workshop is to assess the green transformation potential in the energy sector in line with İzmir’s sustainable development vision, analyze the current situation to identify opportunities at local, national, and international levels, and strengthen information exchange and collaboration among stakeholders in this field. The workshop aims to contribute to the development of İzmir’s climate-friendly energy policies and to lay the groundwork for taking concrete steps toward the adoption of renewable energy technologies.

Specific Objectives of the Workshop

- To analyze İzmir's existing energy infrastructure and renewable energy capacity.
- To identify financial and technical opportunities for green energy projects that can be implemented in the city.
- To evaluate participatory models such as energy cooperatives, community-based energy generation, and micro-grids.
- To discuss ways to mainstream energy efficiency practices with the goal of reducing carbon emissions.
- To lay the foundations of long-term strategic collaborations by bringing together all relevant stakeholders.
- To include efforts to meet İzBB's energy needs completely from renewable sources and to contribute to the city's goal of becoming a carbon-neutral city.
- To promote innovation opportunities in the field of green energy for young entrepreneurs and technology developers.

Group Outcomes

First Group

Climate Finance and Clean Energy

In order to combat climate change, cities and countries need to switch to systems that emit less carbon and cause less damage to the environment. However, a significant amount of money—that is, financing—is required to bring this transformation to life. "Climate finance" refers to the financial support provided to ensure this transition. This support is sometimes provided by states, and sometimes by international organizations (such as the World Bank or the European Union).

Clean energy refers to energy sources that do not harm nature. Examples include solar energy, wind energy, hydroelectricity (energy from water), and geothermal energy (energy from underground heat). These types of energy help stop the climate crisis when they are used in place of environmentally damaging fossil fuels such as natural gas or coal.

Figure 2.3.2.

Are there any examples you have heard of or remember regarding İzmir's past use of renewable energy (such as solar or wind), or investments and financial support in this field?

A solar power plant (SPP) with an installed power of 1.3 MW was established on the roof of Mustafa Kemal Atatürk Stadium in Tire district. This project, which was developed within the scope of the ESCO[1] model, was carried out on behalf of İzgüneş company in partnership with İzenerji and the private sector. Tire Municipality takes part in the project without making any investment. The investment is covered by İzgüneş and it is aimed that the municipality will meet approximately 10% of the electricity consumption. The facility will be transferred to the Tire Municipality after 15 years of operation. The project was commissioned as of February 2024.

With the GCC SYNERGY[2] project applied through İzenerji, it is aimed to establish a digital platform for real-time monitoring and analysis of electricity consumption throughout İzmir. The project supports the development of data-based energy management strategies.

İzBB is involved in the international CLIMAXX[3] project to combat the climate crisis, and in this context, it contributes to reducing carbon emissions and increasing climate adaptation capacity.

In cooperation with İZKA, green growth strategies are developed within the scope of blue growth and renewable energy projects in the Gulf of İzmir. These studies aim to contribute to the environmental sustainability of the city.

Lack of financing resources and lack of technical capacity are among the important obstacles in the spread of renewable energy investments. In this context, it is important to disseminate energy cooperatives, to create capacity-building-oriented financing models and to develop supportive regulations at the policy level.

Within the scope of the project carried out in cooperation with Ege University, bio-coal is obtained from plant wastes. The aim is to expand the use of this system—commonly implemented in countries like the Netherlands—in İzmir as well, and to apply for national and international grant programs in this field.

İzBB Central Water Management Project, which is planned to be implemented in all parks, aims to use water resources efficiently.

[1] The ESCO (Energy Service Company) model is a business model used to finance and implement energy efficiency and sustainable energy projects. This model is commonly applied to renewable energy projects such as solar power plants.

[2] The project aims to increase electricity efficiency and accelerate the adoption of renewable energy sources. Within this scope, a digital platform has been developed that enables real-time monitoring of electricity consumption and data analysis, allowing for optimized consumption, testing of innovative technological applications, and the development of more sustainable energy solutions.

[3] CLIMAAX is a project funded by Horizon Europe, aiming to develop a customized framework and toolbox for climate risk assessment by helping communities evaluate past experiences and encouraging them to take action.

As part of this pilot project launched in Işılay Saygın and Esra Parks, more efficient alternatives have been developed to replace traditional irrigation systems, resulting in a savings of 1.5 tons of water. The project is expected to provide 30% improvement in the irrigation capacity of the parks.

In applications for EU projects, although the project name is kept confidential during the evaluation process, aspects such as budget planning, the structure of the project, and the alignment between the budget and the objectives are of great importance during the preliminary assessment stage. İzBB carries out studies to increase its capacity in project writing in accordance with these criteria.

In line with the EU's "Green Deal" objectives, applications are being submitted to various funding programs; additionally, projects are being developed under large-scale regional programs such as Next-MED.[4] However, in order for these projects to be successfully implemented, not only financial resources but also the development of implementation capacity is essential.

İzBB continues to develop sustainability-oriented projects in cooperation with district municipalities. In this context, joint infrastructure, energy, and environmental projects are being implemented.

The Sustainable Urban Mobility Plan (SUMP İzmir), developed to reduce the environmental impacts of urban transportation, aims to lower the city's carbon footprint and enhance livability by establishing long-term transportation strategies.

İzmir's current access to national and international funds for climate financing

It is of great importance for different units to be involved at an early stage in project calls related to their areas of expertise. For example, when a staff member working in the social services unit gains access to a climate-themed project opportunity, there is a need for developed internal coordination mechanisms to manage the necessary internal correspondence and bureaucratic processes quickly and efficiently. In this regard, a structure within the institution should be designed to operate more flexibly and horizontally, enabling rapid evaluation of project opportunities.

When compared in structures such as universities and non-governmental organizations, it is seen that the processes can be longer and more restrictive in some academic institutions. This can directly affect the chances of success of project applications. Increasing institutional capacity will be possible by improving the competence of the personnel in areas such as project writing, budget planning, and finding international partners.

[4] Cross-Border Cooperation Programme in the Mediterranean Basin

Access to comprehensive and up-to-date information on access to funds is critical. Calls for European Union and international grant schemes can be followed up, for example, through portals such as ufukavrupa.org. In order for the projects to be successful at the international level, strong partnership structures must be established. In line with this, outreach should be made not only to funding organizations but also to potential project partners.

It may not be easy for İzmir to establish direct partnerships with major cities like London or Paris; however, developing cooperation with cities of similar scale, such as Ljubljana, is a more accessible and feasible strategy. At the same time, academic connections should be established through universities, research institutions, and conferences to strengthen relations with high-capacity cities like Barcelona. Such thematic events provide fertile ground for new collaborations and project ideas.

The goal should be not only to write projects but also to ensure their practical implementation on the ground and to generate sustainable outcomes. In this context, units such as the Sustainability Office should play key roles in areas such as employing green-collar personnel, conducting data-driven analyses, and establishing institutional memory. Project writing and budget planning capacity need to be increased, international partnerships diversified and expanded, and sustainable implementation examples multiplied.

A financing model that can be proposed to support İzmir's energy transformation in the future

The aim is to promote cooperative processes to support sustainable production and consumption models at the local level. This model aims to enhance economic and social resilience through the direct participation of local communities, particularly in rural areas, in sectors such as agriculture, energy, and water management.

Additionally, basin-based collaboration models can ensure the proper scaling of needs and efficient use of resources at the regional level. This approach will also offer significant gains in climate change adaptation and disaster resilience.

Access to various funding sources provided by the European Union plays a significant role in the participation of local governments in international projects. Within this scope, funding calls are regularly monitored through the EU Horizon Portal, Next-MED, Post-Action funds, and various other EU Project Portals.

Thanks to newsletters provided through memberships to these platforms, potential calls can be monitored in advance, and appropriate consortium structures can be formed.

Furthermore, opportunities for project partnerships can be seized through professional networks such as LinkedIn. İzmir Metropolitan Municipality currently receives partnership proposals and is invited to project consortiums through international organizations such as Eurocities, of which it is already a member.

Physical participation in international conferences and meetings is of great importance in the process of finding partners in projects. One-to-one meetings heldin such events allow the establishment of trust-based relationships and pave the way for long-term cooperation. For example, the contacts developed by İzmir Metropolitan Municipality with Bremen Municipality are an effective example of this method.

Sustainable transport policies are one of the main components of cities' goals to reduce carbon emissions. Projects carried out in İzmir within this scope are progressing under strategies that prioritize alternative fuel transportation systems, the development of active transportation infrastructure, and public transit.

Green hydrogen and its associated technologies, which are among the energy solutions of the future, represent strategically important new development areas for İzmir. Applications such as hydrogen fuel cell buses offer significant opportunities both to reduce carbon emissions and to develop innovative transportation systems.

Second Group

Local Energy Policies and Energy Law

Energy is at the heart of both economic development and everyday life. We need energy in every area, from heating our homes to public transportation. But how we produce and use energy has a huge impact on the environment. That's why every city or country sets some rules about energy. These are called "energy policies" and "energy law."

Energy policies determine what types of energy cities will prioritize, who can produce how, and how to improve energy efficiency. Energy law is the legal framework that ensures the implementation of these policies.

Energy production in Türkiye is largely under the control of the central government. However, the need for local governments to plan for energy is increasing. Local governments are especially expected to take a more active role in the fight against climate change. Therefore, it is important for big cities such as İzmir to develop their own energy strategies.

The ways in which a city formulates its own energy policies, and possible efforts İzmir may have undertaken in this regard

Considering the unique natural resources of each city, the usable renewable energy resources of the region should be determined first. In this process, collaboration should be conducted with non-governmental organizations in a way that reflects the views of the local community.

Energy use policies aimed at emission reduction should be addressed not only specifically for İzmir but also on a regional level encompassing the surrounding provinces. In this process, regional collaborations such as the Aegean Municipalities Union can take a leading role in promoting and spreading these policies.

It is observed that energy policies are not effectively reflected at the local level. Lack of coordination between institutions causes problems in planning and implementation stages. Planning, transportation, and zoning units, among all relevant departments, need to operate with an approach that considers energy policies. Similar multidisciplinary practices can be implemented by analyzing successful examples that ensure regulatory compliance, such as the Narlıdere IPA Project.[5]

Figure 2.3.3.

Authority over energy production and consumption monitoring, as well as the establishment of standards and implementation processes, should be clearly defined. The compliance of 1/5000, 1/1000, and 1/25000 scale plans with energy policies should be reviewed, and regulations should be amended as necessary. Local governments can guarantee the purchase of energy produced by citizens, but compliance with standards and urban aesthetics must be taken into account in this process. Random positioning of power generation systems should be prevented.

[5] IPA (Instrument for Pre-Accession Assistance) is a financial instrument established for the benefit of countries with candidate and potential candidate status in the EU accession process.

Beyond the TS 825 standard, municipal council decisions should be made to support practical solutions for those seeking higher-efficiency insulation without reducing usable space. Within municipal budgets, incentive-based–and when necessary, deterrent–policies should be developed to support sustainable practices in areas such as energy, environment, and water management. Public participation should be ensured in order to shape energy policies in a democratic way, and İzBB should play a facilitating role in this regard. Fair energy access policies, especially for disadvantaged groups should be developed.

It is necessary to ensure coordination between institutions and to clarify the authorities and responsibilities. It should be determined who will take which steps and how to establish a connection with the public. In this context, Akdeniz Academy, İZPA and İzBB affiliates can carry out micro-zoning studies.

Buildings capable of producing their own energy, such as through wind power, should be regarded as examples; concrete projects that raise public awareness, like household composting practices, should be supported. The public can be encouraged through compost training and equipment distribution.

At the building permit stage, it should be ensured that buildings are designed to be compatible with smart grid systems. In this way, energy consumption can be optimized towards renewable sources.

Infrastructure investments affecting transformer capacity should be carried out under the responsibility of energy distribution companies and developed in a way that supports municipalities' energy planning.

In areas where widespread energy infrastructures such as natural gas are feasible, the technical and legal compliance processes for the efficient use of local resources should be decided by municipal councils. Local government boundaries, authorities and duty areas should be clearly defined in the energy transformation of the city.

Criteria of the current energy legislation to support İzmir's local energy policies

The current energy legislation in Türkiye is largely structured to protect the interests of companies operating in the energy production and distribution sectors. This situation causes the basic principles such as social benefit, environmental sustainability and local participation to be overshadowed. However, this should not prevent the production of solutions on a local scale. Local governments, especially at the metropolitan municipality level, can implement policies by developing creative, coherent, and sustainable solutions within their jurisdiction without overstepping the boundaries of legislation.

Future legal reforms necessary for İzmir to establish its own energy communities

Suitable models for İzmir can be developed by examining successful practices abroad in waste management, circular economy, and societal participation. In this context, strategies from cities with similar socio-economic structures should be considered.

The practice by İstanbul Metropolitan Municipality of incentivizing citizens to load balance onto their public transportation cards in exchange for plastic waste is an effective model that encourages source-separation of waste. This practice can be integrated into İzmir and revised according to regional dynamics.

The zero waste and recycling-based policies of Kadıköy Municipality serve as an exemplary model, particularly in their neighborhood-level applications. They can be adapted to İzmir through detailed analysis.

Informative campaigns reminding citizens of their responsibilities and rights regarding waste management should be organized. Awareness should especially be raised regarding specific waste categories like batteries, cooking oils, and electronic waste.

Education programs on climate change, zero waste, and environmental sustainability should be developed for small businesses, children, and school-age individuals. The climate and zero waste themed education provided by Buca Municipality in schools can be expanded upon.

Thematic working groups focusing on climate change, environment, and waste management should be established under city councils. These structures will enhance the societal representation of local policies.

The "Transformation Campus" under İzmir Metropolitan Municipality should be a comprehensive center facilitating district-level waste management coordination, transformation workshops for active citizen participation, and educational spaces. Additionally, it could host a "Waste Management Cooperative" supporting the circular economy.

A "Social Transformation Center" should be established locally to bring together project, human resources, and financing pools for environmental, climate, and sustainability initiatives. It should also feature material exhibitions and practical application areas.

A coordination mechanism can be developed within İzmir Metropolitan Municipality's municipal police to support environmental municipal police for district municipalities. This structure will enhance inspection capacity and operational effectiveness.

Third Group

Climate Neutral and Smart City

The term “climate neutral city” means reducing the carbon emissions produced by city activities (transportation, industry, energy usage, etc.) to zero. To achieve this goal, methods must either reduce carbon emissions or reclaim emitted carbon to nature (e.g., afforestation). “Smart city” uses technology to efficiently utilize resources, thereby improving citizens’ lives.

Examples of smart city applications include smart traffic lights, energy-efficient lighting, sensor-managed waste collection systems, or digital public transportation cards. These applications not only conserve energy but also enhance quality of life.

Figure 2.3.4.

While İzmir was honored with the mission label outside of EU member cities, it became the first and only city in Türkiye to do so. Climate City Contracts define the city’s climate commitments, action plan, and investment strategy to become climate neutral by 2030. However, these technologies must be systematically and justly implemented for environmental benefit.

What smart or climate neutral applications or services have you noticed in İzmir in recent years?

The improvement of urban lighting systems by Turkish Electricity Distribution Corporation (TEDAŞ) for energy savings and environmental sustainability is crucial. These efforts align with the goals of environmental protection units working to reduce light pollution.

Smart intersection systems and integrated public transportation applications not only enhance transportation efficiency but also contribute to climate neutral city goals by reducing carbon emissions.

Various transportation strategy packages prepared within this scope offer multi-dimensional solutions including technical and environmental benefits.

Underground irrigation systems and timed irrigation practices are successful examples supporting efficient water use. These applications contribute to both resource conservation and sustainable agricultural production.

In Torbalı Municipality, sensor systems capable of detecting environmental issues within a 30-meter radius are used with autonomous vehicles. Such technological investments increase environmental data collection capacity, facilitating scientific basis for decision-making processes.

The contamination of clean water sources rendering them unusable is a serious environmental issue. Integrated solutions for wastewater management and resource conservation must be developed. A holistic approach must be adopted simultaneously to prevent new damages while aiming for environmental progress.

The concept of a “climate-neutral city” is highly ambitious, and there needs to be more public debate and analysis on how realistic and feasible this goal truly is. For this objective to succeed, the impact on nature must be assessed in a holistic manner.

Although many environment- and climate-focused initiatives have been launched in İzmir, continuity is often lacking during implementation, and unfinished projects have led to a loss of public trust. Policy consistency is critically important for achieving tangible results.

For example, the city of Mersin appears to have more systematic and completed processes in terms of smart city applications compared to İzmir. Such comparisons are useful for evaluating İzmir’s current situation and identifying areas for improvement.

The smart city management systems implemented in China enable the early detection of potential urban problems through hyper-responsive solutions. These systems operate with high efficiency thanks to digital infrastructures integrated with public institutions.

The goal of becoming a climate-neutral city can only be achieved through a comprehensive and well-planned urban transformation process. The existing building stock needs to be re-evaluated in terms of energy efficiency, green space regulations and climate adaptation.

When the city’s digital twin is created, real-time data integration between physical infrastructure and digital environments will be achieved.

This technology will effectively serve as a decision support mechanism in urban planning and service management.

It is crucial that all these projects are first implemented in socio-economically disadvantaged areas, ensuring social justice. Climate and environmental policies must be accessible to everyone.

For smart city and climate neutral goals to succeed, these approaches must be embraced and integrated into daily life within city culture. Long-term success depends on societal transformation.

Current State of İzmir's Carbon Footprint and Digital Infrastructure Capacity

The existing urban infrastructure unfortunately remains insufficient in the face of large-scale natural disasters, particularly earthquakes and wildfires. A stronger and more inclusive infrastructure system must be established to address emergency scenarios.

Digital infrastructure and data-driven management systems have the potential to offer long-term, sustainable solutions at lower costs. However, in the current situation, this capacity within local governments is not at the desired level. Greater investment and institutional coordination are needed for further development.

Inventory management and data collection processes are vital for local governments to make strategic decisions. While current efforts are commendable, there is still room for improvement in terms of scalability and inclusiveness of these systems.

The neighborhood-based digital emergency support systems implemented in Mersin are noteworthy. For instance, digital devices installed in neighborhoods enable rapid intervention in infrastructure problems like burst water pipes, or in public safety incidents (such as harassment cases occurring at night). Such practices could serve as examples for İzmir.

The mobile application "Teksin" used in Mersin provides a service similar to İzmir's Citizen Communication Center (HİM) system. The user experience, accessibility, and integration level of such platforms should be comparatively examined, and areas for improvement should be identified.

There are some local initiatives toward digital applications in certain districts of İzmir. However, coordinating these applications at an institutional level and ensuring their inclusiveness is critically important for the success of digital transformation.

Carbon footprint calculations are mostly conducted at an individual level, though some district-level analyses also exist. However, industrial zones—especially areas with heavy industry such as Aliağa—pose serious environmental risks.

Toxic gases emitted from factory chimneys threaten public health. Therefore, environmental inspection processes should fall under the responsibility not only of local governments but also of authorized ministries. In addition to the permitting processes, effective and continuous inspection mechanisms must also be established.

Systemic Transformations Required for İzmir to Become a Climate-Neutral City by 2030

To effectively reduce the carbon footprint, it is important to develop micro-scale strategies at the neighborhood level. In this process, neighborhood mukhtars (local headmen) should take on active responsibility, playing a functional role in informing, guiding, and encouraging participation.

The metropolitan and district municipalities must operate in an integrated manner in areas such as energy, environment, and waste management. The goal should be to establish holistic and sustainable systems not only in planning documents but also during the implementation phase. The metropolitan municipality can take on a guiding and supportive role for district municipalities, strengthening coordination through task sharing and local implementation guides.

In line with the "your waste, my raw material" approach, industrial symbiosis models should be developed to repurpose waste as valuable input. Municipalities should build cross-sector waste reuse networks and integrate these symbiotic structures into the local economy.

Smart machines (deposit systems) that collect recyclable materials such as empty bottles and offer small financial incentives in return can be widely deployed throughout the city. Such practices can positively influence citizen behavior.

The city's total carbon emissions and waste collection data can be regularly shared with citizens via digital billboards or open data platforms. For example, data like "32,000 tons of waste were collected in İzmir this month" could be displayed on city billboards to increase public awareness.

There should be transparency and traceability in the process of which companies the municipalities deliver recyclable waste to, and what those companies do with the materials. These processes must be shared openly with the public.

To enable the separate collection of waste that has already been sorted at home, the necessary infrastructures—such as separate container systems, directional signage, and mobile collection points—must be implemented in neighborhoods.

To transform citizen behavior, incentive and reward mechanisms should be prioritized over penalty-based approaches.

In this way, voluntary participation and sustainable habits can be more effectively promoted.

For municipalities to successfully implement environmental sustainability policies, strong coordination and resource-sharing with central government authorities is essential. Local governments face challenges in achieving these goals alone, making institutional cooperation indispensable.

A “learning city” approach should be adopted in urban governance. This model involves continuous improvement based on data-driven analysis of individual and collective behavior patterns. AI-supported analytics can help interpret these patterns and transform them into policy recommendations.

Awareness-raising efforts should target key groups that drive social change, particularly children and women. Schools, women’s centers, and neighborhood houses can host programs focused on environmental awareness, climate change, and zero-waste practices.

To reduce carbon emissions and achieve energy efficiency and eco-friendly urbanization, regional and urban transformation projects should be accelerated. These processes must holistically address energy, transportation, water, and waste management.

Fourth Group

Green Transition in Agriculture

Agriculture is both a user and a shaper of nature. Soil cultivation, water use, and the application of fertilizers and pesticides have direct environmental impacts. At the same time, climate change poses a threat to agriculture: droughts, floods, and shifts in temperature can reduce agricultural productivity. Therefore, agriculture must undergo a “green transition” to become more environmentally friendly.

The green transition in agriculture includes the use of irrigation techniques that consume less water, the application of organic fertilizers, production methods that avoid chemical pesticides, and practices that protect soil health. It also involves preserving local seed varieties, supporting small-scale producers, and making agriculture more resilient to the climate crisis.

İzmir is a region rich in agricultural potential. Areas such as the Küçük Menderes, Gediz Basin, and Bakırçay (Northern Aegean), along with districts like Seferihisar and Tire, benefit from fertile lands and strong producer networks. However, these areas are also vulnerable to the impacts of climate change.

Figure 2.3.5.

Do you have any information or observations regarding the use of smart agriculture practices in İzmir’s agricultural areas?

There is both information and observable evidence indicating that smart agriculture practices are being implemented in İzmir’s agricultural areas. As of June 1, 2025, İzmir Metropolitan Municipality is launching a mobile application for farmers that will make soil analysis, sapling support, and early warning systems accessible in digital form. In certain regions, the use of drones and remote sensing technologies is being planned to monitor land use—aiming to enhance productivity and reduce the use of chemicals. Initiatives such as the İzmir Agricultural Technology Center also support this transformation through tools like sensors, artificial intelligence, and data analytics. These efforts aim to support small-scale producers and build an agriculture system that is resilient to the climate crisis.

The current state of agroecological production, water use, and carbon footprint in İzmir’s agriculture

The concept of agroecological production is increasingly being embraced in İzmir, especially among small-scale producers. This shift is evident in the growing prevalence of production methods that are free of chemical inputs, use local seed varieties, and prioritize biodiversity. Municipal support mechanisms and cooperative-based initiatives play a significant role in this transition. However, agriculture in İzmir is under serious pressure when it comes to water use. Due to climate change and the growing risk of drought, efficient water use is no longer optional but necessary. In this context, drip irrigation and other effective water management techniques are being promoted, and producers are becoming more conscious about practices aimed at reducing their water footprint.

In terms of carbon footprint, a comprehensive monitoring and governance system is still lacking.

Nevertheless, steps are being taken to reduce greenhouse gas emissions through the use of organic fertilizers, the promotion of energy-efficient equipment, and the adoption of renewable energy sources in agricultural areas. There are traceable examples of this structural transformation not only on a rural but also on an urban scale. This structural transformation can also be observed at the urban level, not just in rural areas. Urban garden projects implemented in various neighborhoods of İzmir serve multiple purposes: increasing the participation of disadvantaged groups in food production, supporting local food systems, and improving access to healthy food. At the same time, these areas function as small-scale carbon sinks, enhancing local resilience to climate change. In this respect, urban gardens provide not only agricultural benefits but also socio-ecological value. In addition, strategy documents such as the Rural Area Strategy Plan and the Food Systems Document are being developed. These aim to promote nature-friendly practices by considering life and economic activities across İzmir's approximately 11,000 km ^{2} rural landscape within a holistic rural landscape framework, ensuring the protection of ecosystems and biodiversity.

Finally, the 2nd Agroecology Workshop, held in April 2025, served as a significant platform for discussing this transformation on both theoretical and practical levels in İzmir. During the event, which brought together producer organizations, academics, local government representatives, and civil society actors, it was emphasized that agroecology is not just a production method but also a societal foundation for building a fair, collective, and eco-friendly food system. Events like this play a key role in institutionalizing and expanding agroecological principles within İzmir's food system.

Future agricultural policies to enhance carbon sink areas in İzmir's rural regions

Following the enactment of Law No. 6360 on Metropolitan Municipalities, it has become especially important to ensure the effective provision of support and services for agricultural activities—which constitute the main economic activity in rural areas now under the service responsibility of municipalities. Given that these rural zones are also İzmir's most significant carbon sink areas, it is essential to implement measures that will revitalize the rural economy and social life, protect natural areas, ensure effective water management, and prevent the misuse of agricultural lands. In this context, there is an urgent need to define enforcement and intervention mechanisms that protect ecosystem integrity.

Looking ahead, agricultural policies aimed at increasing İzmir's carbon sink capacity in rural areas must be shaped within a holistic framework that supports climate-friendly production practices. Practices that enhance soil organic carbon should be prioritized. Techniques such as conservation tillage, cover cropping, reducing fallow land, and incorporating organic materials like compost into the soil not only boost carbon sequestration but also improve soil health.

In parallel, implementing pasture restoration and managed grazing systems is strategically important, especially in mountainous and semi-arid regions. Approaches like using native livestock breeds and circular pasture management can help spread ecosystem-based production models. Additionally, agroforestry systems—such as integrating cover crops or forage plants within olive groves—not only expand carbon sink capacity but also enhance producers' economic resilience through diversification.

These policies should not be confined to rural areas alone; they must also encompass urban agricultural spaces. For example, İzmir's urban gardens in neighborhoods like Bornova and Kadifekale, though small in scale, serve as valuable examples of low-emission food production and organic matter cycling, and can act as micro carbon sinks. Furthermore, the community engagement fostered through these gardens contributes to food sovereignty, local ecological awareness, and the social dimension of sustainability policies.

In conclusion, increasing İzmir's carbon sink capacity is not solely a matter of technical agricultural measures—it also requires policies that support community-based and nature-aligned production models while acknowledging the interconnection between urban and rural scales. Local governments have a key role to play in this process by guiding cooperatives, developing training programs for producers, and promoting the use of carbon footprint measurement tools—thus establishing a strong institutional foundation for long-term transition.

Fifth Group

Green Transition in Transportation

Vehicle emissions from urban transport are among the leading causes of air pollution and climate change. Today, many cities are developing solutions that reduce private car use and promote alternatives like public transport and cycling.

The green transition in transportation includes practices such as electric buses, rail systems, bike lanes, walkable streets, and low-emission zones. It's equally important that these solutions are accessible and fair—everyone should be able to benefit from sustainable transportation options.

İzmir is one of Türkiye's leading cities in terms of public transport investment. The city has implemented various initiatives, such as electric buses, İZBAN (commuter rail), tram lines, and a bike-sharing system. However, the rate of private car use remains high, and traffic congestion and carbon emissions continue to pose significant challenges.

Examples of İzmir's Actions Toward Carbon-Neutral Transportation Goals

In 2017, the ESHOT General Directorate added 20 electric buses to its fleet.

For 2025, a preliminary financing agreement worth €80 million was signed with France's Societe Generale Bank to procure 100 electric buses equipped with dynamic charging infrastructure. Between 2020 and 2024, a total of 708 environmentally friendly vehicles were put into service, including 206 vehicles under the İZTAŞIT project.

Under Phase 1 of the Solar Power Plant (GES) Project launched in 2017 at the Gediz Heavy Maintenance Facility, a 10,000 m^2 solar panel system produced 9 million kWh of energy annually. This met 154% of the energy needs of 20 electric buses, with the excess energy used at the workshop facilities. Additionally, 40 closed bus stops without electrical connections were equipped with solar-powered lighting systems.

Figure 2.3.6.

A telemetry system was integrated into 1,198 vehicles in the ESHOT fleet, enabling real-time monitoring of parameters such as speed, engine temperature, braking, throttle response, and brake pad thickness. This system aims to improve operational efficiency and is supported by İZKA.

In line with İzmir's goal of becoming a bicycle-friendly city, bicycle racks were installed on 506 buses. Travel data was collected through transport analysis zones created as part of a passenger mobility study, and AI-supported service planning software was developed.

A mathematical model and decision support system were used to reduce "dead kilometers" on bus routes, increasing operational efficiency and reducing carbon emissions, thus contributing to environmental sustainability.

A diesel particulate filter (DPF) cleaning furnace was commissioned for cleaning particulate filters used in EURO 6 emission standard diesel vehicles.

This led to an annual saving of 6 million TL, yielding both environmental and economic benefits.

Through a cooperation agreement between ESHOT and the Aliağa Organized Industrial Zone (ALOSBİ), two electric buses began operating within the industrial zone. The required infrastructure and support were provided by ALOSBİ.

In a joint project by ESHOT, Bakırçay University, the University of St Andrews, and Heriot-Watt University, a constraint programming model is being developed for the optimal assignment of electric buses to routes. Additionally, driver performance is classified using energy consumption forecasting models, and energy efficiency training and route optimization efforts are being supported.

As of 2024, the TS EN ISO 50001 Energy Management System has been implemented at the Gediz Central Workshop.

The Konak (12.8 km, 19 stations) and Karşıyaka (8.8 km, 14 stations) tram lines are in service. The Buca Metro is a project consisting of 13.5 km and 11 stations. The historical Kemeraltı Bazaar was closed to vehicle traffic at certain hours and pedestrianized.

With a fully adaptive signalization system, signal durations are adjusted according to traffic density, and the Urban Logistics Plan aims to control emissions caused by freight transportation.

The current pedestrian path length in İzmir, which is 96 km, will be extended to 390 km by 2030 in line with targets. The existing 105 km of bicycle lanes is planned to reach 784 km by 2030. İzmir is also a member of the European Bicycle Network (EuroVelo), featuring a 500 km route network.

A symbolic fee is charged to passengers boarding ferries and passenger ships with bicycles. At Bostanlı Pier, a 110 m^2 micro-mobility parking area has been created for scooters, bicycles, and motorcycles. Additionally, dynamic charging transportation vehicles are being introduced on the Bostanlı-Zübeyde Hanım Neighborhood and Narlıdere-Güzelbahçe routes, with plans to eliminate fossil fuel-powered lines.

Ferry services are optimized according to passenger occupancy rates; waste, energy and transportation performance data are shared with visual tools for citizen information and awareness throughout the city.

Current Environmental Performance of İzmir's Transportation Infrastructure

The electric bus fleet of ESHOT General Directorate traveled a total of 392,000 kilometers throughout 2024.

Thanks to this usage, 2,783,420 liters of fuel consumption was prevented, and approximately 7,460 tons of CO_2 equivalent greenhouse gas emissions were avoided. To filter this amount of carbon emission in just one day, 187,285 trees would be needed.

Under the GES Project implemented at the Gediz Heavy Maintenance Facilities, 4,419 tons of CO_2 equivalent emissions were prevented as of 2024. The number of trees required to filter this amount of emissions in one day is calculated to be 110,937.

Using the Telemetry System, a control model aimed at preventing unnecessary engine idling was initially implemented on 364 buses. As a result of this work, the average daily idling time per vehicle decreased by approximately 45%, resulting in an annual fuel savings of 203,572 liters and an economic gain of approximately 9.2 million TL. At the same time, 550 tons of CO_2 emissions were prevented, equivalent to the annual carbon absorption capacity of 1,331 trees.

Within İzmir's marine transportation, a total of 1,397,643 vehicles were transported by ferries throughout 2024. During the same period, 14,008,464 passengers traveled by sea, and 227,167 passengers with bicycles were transported, supporting the integration of sustainable transportation modes.

New Investments Needed to Achieve İzmir's Carbon Neutrality Goals in Transportation

As part of the 2025–2029 strategic plan period, ESHOT General Directorate will initiate a tender process for the purchase of a total of 530 buses, including 100 dynamic charging electric buses. With these investments, the environmental impact of the fleet will be reduced, and energy efficiency will be enhanced. The Fleet Renewal Project foresees the addition of 722 more environmentally friendly vehicles to service during the 2025–2029 period.

Under the Solar Power Plant (SPP) Project, feasibility studies are ongoing for the Gediz Phase 2 and Çiğli Ataşehir Bus Depots. By 2029, a total of 250 solar-powered bus stops are planned to be installed. These stops will be illuminated using renewable energy, contributing to the reduction of the city's carbon footprint.

Through the second phase of the Telemetry System Project, a big data infrastructure will be established using the collected data, and AI-supported predictive maintenance systems will be developed. This will enable early detection of vehicle malfunctions, integration of emergency alert systems, and the execution of driving behavior analysis, significantly improving operational efficiency.

With the next-generation, flexible, and technology-based Demand Responsive Transport (DRT) model, it is aimed to reduce fossil fuel consumption and greenhouse gas emissions. Alongside vehicle type and route optimization, a reduction of up to 24% in CO_2 emissions is projected.

To enhance the efficiency of public transportation services, a planning, assignment, and optimization project has been launched. Through this initiative, both vehicle routes and personnel duty scheduling will be optimized with software support.

This will ensure efficient use of institutional resources and support environmental sustainability. The expansion of the "Park and Ride" system aims to reduce private vehicle use. It is proposed that commercial deliveries in the Historical Kemeraltı Bazaar be carried out using electric cargo bikes and light electric commercial vehicles. To support urban maritime transport, the addition of 6 electric passenger ferries to the fleet is planned. The project is expected to pay for itself within 7–8 years through a 30% grant and 70% loan financing model.

To encourage the use of e-micromobility vehicles (such as scooters and e-bikes) citywide, the expansion of parking spaces and improvements in infrastructure are among the top priorities.

In order to meet the energy demand of existing and planned electric vehicles, the strengthening of charging infrastructure and the establishment of new charging stations are also planned.

To reduce private vehicle usage, increasing the comfort level and frequency of public transportation services is a primary objective. In this regard, the aim is to both improve user satisfaction and reduce inner-city traffic congestion and emissions.

Sixth Group

Green Transition, Innovation and Technology in Industry

Industry plays a vital role in the economic development of cities.

Figure 2.3.7.

However, due to factors such as energy consumption and waste generation, it also has significant environmental impacts.Green transition refers to the shift of industrial production processes and energy use toward environmentally friendly methods.

Key elements of this transformation include energy efficiency, waste recycling, the use of clean production technologies, and the adoption of a circular economy approach. The circular economy means reintegrating products into the system before they become waste.

In İzmir, areas such as Aliağa, Kemalpaşa, and Menemen have a strong industrial infrastructure. It is possible for factories in these regions to maintain their competitiveness while producing in an environmentally responsible manner. However, this transition requires both advanced technologies and public support.

Do you think there are factories or industrial zones in İzmir that produce without harming the environment?

Organized Industrial Zones (OIZs), by their very nature, have more structured infrastructures—such as treatment facilities and energy lines—and built-in monitoring mechanisms. Companies operating in these zones, especially those focused on exports, are often required to comply with environmental standards imposed by the European Union (such as carbon and water footprint reporting). This results in more conscious and regulated production practices. However, even though treatment facilities in OIZs may meet current standards, cases like the Gediz Basin show that technological advancements reveal the inadequacy of existing systems, making advanced treatment technologies necessary.

There are also successful examples of sectoral clustering and improvement, such as the software system developed by textile firms to monitor consumption data, which fosters natural competition. Similarly, industrial symbiosis—where one facility's waste becomes another's raw material—has become a necessity as part of the shift toward a circular economy. To move away from the linear production model, domestic infrastructure must be quickly established to support this exchange of materials.

Industrial facilities operating individually outside Organized Industrial Zones (OIZs) are among the sources of environmental pollution. These facilities often lack adequate infrastructure—such as wastewater treatment, natural gas, and electricity—and therefore require proper oversight and infrastructure systems to ensure their waste is managed in a responsible and sustainable manner. The environmental compliance costs borne by companies within OIZs create unfair competition when unregulated businesses outside these zones evade such obligations.

Furthermore, the allocation of new industrial zones in environmentally sensitive areas—such as agricultural lands, watersheds, or Ramsar sites—can lead to serious long-term environmental issues and disturb the ecological balance. A notable example of this is the pollution observed near the bird sanctuary in Sasalı.

Current Access of Industrial Enterprises in İzmir to Green Technologies

It is observed that the narrowing of municipal authorities further restricts the already limited maneuvering space of local governments. In order to initiate and sustain green transformation efforts, dedicated staff should be employed and projects developed at all levels of local government, including district municipalities. The ability to obtain permits from other institutions—such as the Ministry of Environment, Urbanization and Climate Change or the Ministry of Agriculture—when municipalities do not grant zoning approval leads to significant confusion in urban planning. This situation results in uncoordinated and irregular development in cities, such as buildings with inconsistent heights on the same street. Some environmentally friendly projects may be halted due to audits by the Court of Accounts or other legal procedures. For example, İzmir Metropolitan Municipality's rainwater harvesting tank distribution project was blocked on the grounds that "public goods cannot be distributed in this manner." Such instances disrupt well-intentioned environmental initiatives.

There is a need for legal and regulatory support to encourage the development and widespread adoption of environmental projects. In particular, strengthening the inspection mechanisms in industrial areas outside of OIZs would significantly help prevent illegal discharges and unregulated practices. While large companies generally find it easier to access green transformation financing, the process is often complex and costly for SMEs. Bureaucratic hurdles and long reimbursement periods of institutions like KOSGEB make it difficult for SMEs to benefit from available support. Furthermore, practices such as automatically charging a high percentage for wastewater on water bills reduce motivation among businesses to recover or use water efficiently. The perception of "I'm already paying for it" can lead to wasteful resource consumption.

The cost of transforming an existing factory or production process into an environmentally friendly one can often be significantly higher than establishing a green business from scratch. These high costs increase resistance among firms toward transformation and must be addressed through regulatory incentives and financial support mechanisms. In some cases, industrialists lack sufficient awareness of the economic and environmental benefits of green transformation, resulting in educational and informational efforts not having the intended impact.

A shortage of qualified personnel capable of implementing, monitoring, and managing green technologies poses a major obstacle to the execution and sustainability of projects. Strengthening university–industry collaboration in this field is essential.

Moreover, there is a lack of systematic mechanisms for visiting good practices abroad and bringing new technologies into the country—efforts in this area remain largely limited to individual initiatives.

Steps Toward Making İzmir a Green Industry and Innovation Hub in the Future

To realize its vision of becoming a "green industry and innovation hub," İzmir must move beyond fragmented efforts and adopt a holistic and coordinated strategy. A high-level body—such as an "İzmir Green Transformation Council" (or Commission)—should be established, bringing together stakeholders including the İzmir Governorship, İzmir Metropolitan Municipality, district municipalities, chambers of industry and commerce, universities, civil society organizations, and even citizen representatives. This council must operate with a service-oriented approach, independent of political conflicts.

The council should develop a detailed action plan for İzmir's green transformation, clearly outlining each stakeholder's roles and responsibilities, including timelines and measurable targets. The progress of this plan should be monitored regularly (e.g., every 3 or 6 months) and transparently shared with the public. All stakeholders should pool their resources—such as funding, expertise, and good practice experiences—into a common platform.

District municipalities, in particular, should be granted more authority and financial capacity in areas related to climate change and environmental protection. Local enforcement mechanisms should be strengthened to increase compliance with environmental regulations, including deterrent measures related to waste collection and resource recovery.

Climate change departments within municipalities should evolve beyond simply setting strategies or raising awareness. Instead, they should function as oversight and guidance units with the authority to audit environmental impacts of investments, ensure compliance with green standards, and intervene when necessary.

"Sustainability Centers" staffed with subject-matter experts should be established within Organized Industrial Zones (OIZs) and large district municipalities. These centers would inventory and analyze the environmental performance (energy and water use, waste management, emissions) of all industrial facilities—both within and outside OIZs—and provide tailored consulting for improvement.

Financial instruments such as differentiated loan interest rates based on energy performance certificates, currently used in the housing sector, should be extended to industrial and other sectors. Incentives for wastewater recovery, energy efficiency investments, and carbon reduction projects should be enhanced, and the associated bureaucratic processes streamlined.

Accurate measurement of resource use such as water consumption and wastewater generation in industrial facilities and even households, combined with the implementation of a "pay-as-you-use" principle, will enhance resource efficiency.

In cooperation with universities, the training of engineers and technical personnel specialized in green technologies and sustainable production should be supported. Additionally, firms and professionals should be provided with overseas training and study programs to examine best practices on-site and establish international networks. Recovery methods for wastewater-generating systems, such as treatment devices in homes (e.g., garden irrigation, greywater reuse), should be encouraged or made mandatory. At the community level, awareness and enforcement of waste separation should be increased.

Seventh Group

Climate-Responsible / Green Behavior Changes

Fighting climate change is not only possible through large projects or technological investments but also through small changes individuals make in their daily lives. Actions like saving electricity, using water carefully, recycling, and choosing eco-friendly products all contribute to this process.

Figure 2.3.8.

However, changing people's habits is not easy. Therefore, raising environmental awareness, providing education, organizing campaigns, and explaining the climate crisis in a way everyone can understand are very important.

İzmir is a city with strong environmentally conscious NGOs and volunteer citizens. It is also known that the municipality carries out various awareness campaigns and environmental activities in this area. However, these efforts need to become more widespread and reach a larger audience.

Do you see any examples in İzmir that show people have started to behave more environmentally consciously? (In waste management, transportation, etc.)

Although İzmir is considered as a holistic city, there are noticeable differences in environmental awareness and practices among its districts. For example, in Karşıyaka, there is a high level of social awareness regarding recycling. The widespread implementation of waste separation systems in markets indicates that citizens have become sensitive to this issue. However, overall awareness and behavioral change regarding waste reduction have not yet reached the desired level.

The gardens established without the use of chemical fertilizers in the Kadifekale, Buca Gediz, and Bornova Meriç neighborhoods serve as important examples of environmental awareness and food sovereignty. Supported by the İzmir Metropolitan Municipality, these initiatives allocate garden plots to women for one year across 90 separate parcels on a 6-acre land. Additionally, 78 children and their parents participate in planting activities within the scope of the children's garden project. These practices not only strengthen social solidarity but also promote the adoption of environmentally friendly lifestyles.

Despite increasing public awareness about waste separation and management, significant shortcomings are observed in practice. Some key points are:

- The management of separated waste afterward is not transparent enough in the eyes of citizens.
- Waste pharmaceuticals are still mostly discarded in regular trash; there is a lack of necessary infrastructure for their proper disposal.
- Approximately 20 tons of furniture waste are generated daily in Karşıyaka.
- The İzmir Metropolitan Municipality's dual collection system (e.g., distribution of bags) is a positive step; however, more in-depth work is needed regarding organic waste.

Positive steps are being taken in environmental education. Observations in kindergartens and primary schools show that children are developing awareness of waste separation. However, this awareness often fails to translate into practice when parental behaviors do not support it.

The separate collection of hazardous wastes (batteries, fluorescent lamps, etc.) should be encouraged and expanded.

Greywater reuse is a sustainable method widely applied in European countries. New housing projects should integrate such systems. Deterrent penalties applied in Germany and the Netherlands promote behavioral change. Korea's practice of storing organic waste in freezers offers a creative solution for controlling household waste.

Public awareness campaigns should be intensified to promote waste prevention and reduction, and zero-waste or reduction-focused programs should be incentivized.

Harmandalı Regular Landfill Facility is now reaching its capacity limits; therefore, waste reduction, advanced recycling, and composting systems need to be expanded. Good practice examples such as the household compost project in Mardin can be adapted for large cities like İzmir.

The lack of interest from companies in participating in waste management tenders opened by municipalities stems from the mixed collection of waste. Policies encouraging source-separation must be implemented. A landfill tax alone is not sufficient. Waste disposal is a cost item, and multi-stakeholder financing models should be developed for this issue.

Environmental problems are more deeply felt in poverty-stricken areas, where issues like waste management rank low in individuals' priorities. The lack of visible improvement in Kadifekale despite the garbage collection indicates systemic deficiencies. The social dimensions of the climate crisis are directly related to poverty; therefore, environmental policies should be approached from a justice perspective. Every school and neighborhood should have a community garden; this can be a key to both educational and ecological transformation.

Waste management is not just a technical issue but also a cultural and social transformation process. Reducing waste at the source, making healthy choices, and developing habits of reuse are necessary. The spread of eco-friendly behaviors through fashion trends (such as using reusable water bottles and thermoses) should also be considered.

Methods for Measuring the Green Behavior Tendencies of İzmir Residents Today

Municipalities, non-governmental organizations, or international partnerships occasionally conduct green behavior surveys. These tools aim to assess citizens' attitudes and awareness levels regarding topics such as recycling, energy saving, transportation preferences, water use, and consumption habits.

Indirect indicators like bicycle lane usage, statistics from BİSİM (İzmir Bicycle Rental System), and public transportation usage rates are used to evaluate environmentally friendly transportation tendencies.

The quantities of organic, plastic, glass, and metal waste collected separately from households indicate the level of citizen contribution to recycling.

Through systems like ESTA used by Karşıyaka Municipality, the energy and water consumption of public buildings are measured, and behavioral tendencies are inferred from these data.

A city-wide digital sustainability dashboard should be created to monitor tendencies with detailed data at the district level.

A measurement tool such as a “Green Behavior Index” should be developed to systematically track the public’s environmental sensitivity once a year.

With smart trash bins, mobile applications that track waste, and meters that show real-time water and energy consumption, individuals’ behaviors should be monitored more accurately and directly.

Impact analyses after educational programs (such as before-and-after surveys) should be conducted to measure the transformation from knowledge to behavior.

04

4. CONCLUSION

The “İzmir’s Opportunities for Green Energy Transition” Workshop, held under the leadership of İzmir Metropolitan Municipality with the participation of representatives from the public sector, private sector, academia, and civil society, has presented important outcomes in line with our city’s vision for a sustainable future. The workshop emphasized the strategic importance of energy transformation for a climate-resilient İzmir and provided comprehensive assessments.

As Gil Penalosa highlighted during the panel, İzmir’s high solar potential and renewable energy infrastructure offer attractive opportunities for clean energy investments. In line with İzmir’s goal to become a “climate-neutral city,” the widespread adoption of energy-efficient buildings, smart grids, and digital energy management systems was emphasized. Data-driven decision-making mechanisms and monitoring and evaluation processes were underscored as crucial to achieving carbon neutrality.

Reducing energy use in the agricultural sector, supporting agricultural irrigation with renewable sources, and empowering producers through energy cooperatives emerged as key topics for green transformation in rural areas. Making İzmir’s agriculture both climate-friendly and energy-efficient was identified as a strategic priority.

It was stressed that widespread education, awareness-raising, and participatory models are necessary to increase energy awareness across all segments of society. Individual and institutional behavior changes in energy consumption form the social foundation of the transformation.

Increasing multi-stakeholder collaborations, effective use of local resources, incentivizing climate-friendly investments, and supporting social transformation are essential for İzmir’s green energy transition. The workshop has fostered a shared determination to advance decisively toward İzmir’s sustainable energy future.

CLIMATE RESILIENT CITIES AND COMMUNITIES

30.05.2025

EGİAD SOCIAL AND CULTURAL ACTIVITIES CENTER
HISTORICAL PORTUGUESE SYNAGOGUE

01

1. OPENING SPEECHES

As part of the COP İzmir Town Hall COP Series, the third panel and workshop titled "Climate Crisis-Resilient Cities and Communities" was held at the EGİAD Social and Cultural Activities Center (ESKEM).

The opening speeches were delivered by Prof. Dr. Koray Velibeyoğlu, Chairman of İZPA, and Dr. Ahmet Soner Emre, Head of the Health Affairs Department of İzmir Metropolitan Municipality. The panel consisted of two sessions. The first session, moderated by Sustainability Expert Ferdi Akarsu, opened with presentations by Dr. Ufuk Özkan (PhD), Assoc. Prof. Dr. Nurdan Erdoğan, and Eylem Ulutaş Ayatar, Head of the Disaster Affairs Department of İzmir Metropolitan Municipality. After a coffee break, the second session was moderated by Assoc. Prof. Dr. Dalya Hazar, Deputy Secretary General of the Healthy Cities National Network of Türkiye, and concluded with valuable contributions from Prof. Dr. Pınar Okyay, Deputy Secretary General of İzmir Metropolitan Municipality, Gaye Tuğrulöz, President of the Social Climate Association, and Deniz İncesu, Senior Architectural Officer at the Climate Change and Clean Energy Directorate of İzmir Metropolitan Municipality.

Figure 3.1.1.

İZPA Chairman Prof. Dr. Koray Velibeyoğlu emphasized the importance of contributing to the COP İzmir series from İzmir and stressed the need to give more voice to local governments and cities at the national level. In addition to food crisis and climate-finance issues addressed in previous events, he stated that putting "disaster and resiliency" on today's agenda was of great significance.

Velibeyoğlu explained that there are other key issues İzmir, which holds the European City Label, should focus on, adding that topics such as "fire", "disaster", and "cooling the city" would be addressed in roundtable meetings. Pointing out the necessity to take action in the face of crises, Velibeyoğlu stated that the action plans and research notes prepared to date have provided a rich base of knowledge.

He also underlined the need to be strongly prepared for the next COP30 meeting in Brazil, noting that questions such as "What can İzmir say to the world, what can it present?" would be evaluated during these meetings. Velibeyoğlu explained that at the end of all these discussions, the opinions put forward would be presented to the public in a declaration.

Figure 3.1.2.

Following Velibeyoğlu, Dr. Ahmet Soner Emre, Head of the Health Affairs Department of İzmir Metropolitan Municipality, stated that holding the third meeting of the COP İzmir (Town Hall COP) series in İzmir would serve as an encouragement for other cities as well. Emre described the first two meetings as having produced extremely valuable outcomes and stressed the great importance of participating in COP30 well prepared after this process.

Emre also underlined the necessity for universities, non-governmental organizations, and all stakeholders to work in collaboration in order to achieve this goal.

Figure 3.1.3.

02

2. NOTES FROM THE PANEL

Disaster Resilience In The Age Of Multiple Crises

Moderator: Ferdi AKARSU, Sustainability Expert at İZPA

Participants: Dr. Ufuk ÖZKAN, Vice Chair of the Department of Forest Engineering at Katip Çelebi University

Assoc. Prof. Dr. Nurdan ERDOĞAN, Department of Landscape Architecture at İzmir Democracy University

Eylem ULUTAŞ AYATAR, Head of Disaster Affairs Department at İzmir Metropolitan Municipality

Figure 3.2.1.

Dr. Ufuk Özkan, Vice Chair of the Department of Forest Engineering at Katip Çelebi University

Until the early 2000s, the phenomenon was commonly referred to as “climate change,” but it has since escalated to the level of a “climate crisis.” Drought has become an unavoidable reality. This issue demands a multidisciplinary approach that encompasses not only environmental but also social and economic dimensions, as our quality of life faces significant threats.

A reduction of approximately 30% in precipitation, coupled with increased frequency of forest fires and accelerated urbanization, has further deepened the existing crisis. Particularly, the conversion of forest and agricultural lands to urban development has caused severe disruptions in the forest-water-food nexus. The climate crisis has now reached a critical threshold of resilience, necessitating the urgent development of comprehensive and effective strategies.

Over the past three years, İzmir has made substantial progress and experienced positive transformations. However, the response to the Yamanlar Fire highlighted regulatory deficiencies that delayed firefighting efforts. Additionally, the encroachment of urban areas into forested regions has exacerbated risks. Forests no longer lie on the periphery of rural zones but are increasingly intersecting directly with urban environments, contributing to heightened panic and vulnerability in the aftermath of fires.

The adverse impacts of such fires are not limited to the natural environment; they also result in carbon emissions equivalent to approximately 60,000 households, biodiversity loss, destruction of forest products and landscapes, and contribute to climate anxiety within society.

Although efforts such as tree planting are being conducted in the field, the water retention capacity of these saplings will remain limited during the first decade. Fundamental measures–such as addressing the soil’s need for a protective litter layer and improving rainwater drainage infrastructure–have become urgent. Increasing surface permeability and preserving natural areas are critically important for enhancing urban resilience.

A Fire Action Plan has been prepared specifically for İzmir. However, another significant threat facing the city is rapid population growth. Currently, reservoir levels have dropped to approximately 20-25%, and throughout Türkiye, water sources have become increasingly inaccessible as forested areas retreat to higher elevations.

Therefore, it is imperative to ensure high-quality and continuous water production in watersheds, adopting a multi-stakeholder, integrated land management approach. The people of İzmir demonstrate strong motivation and awareness regarding value creation. This potential must be effectively directed through robust collaboration among public institutions, universities, NGOs, and citizens.

In conclusion, it is essential that these meetings focus on the core of the issue. İzmir’s current water capacity has diminished to one-quarter of its former level and continues to decline. Addressing forest fires, carbon emissions, food security, and public health not as isolated issues but as interrelated components must be the fundamental approach of this process.

Assoc. Prof. Dr. Nurdan Erdoğan, Department of Landscape Architecture, İzmir Democracy University

Summary – Disaster Resilience in the Age of Multiple Crises: Nature-Based Solutions (Thermal Comfort)

Two fundamental approaches define humanity’s position relative to nature: on one hand, the human model (ego) that perceives itself as superior to nature through reason, technology, and control; on the other, the understanding (eco) that embraces integration with nature and acknowledges interconnectedness with all things. In the face of ongoing environmental and economic crises, we must turn not only to technical systems but also to nature’s inherent capacity for sustainability and restoration. At this juncture, we must ask ourselves: Can we adopt this holistic approach? Is it possible to develop nature-based solutions?

Within this framework, questions such as how to preserve green infrastructure networks and how to integrate ecosystem services into urban life must be addressed. Although cities occupy only about 2% of the Earth’s surface, their environmental impact far exceeds this proportion. Therefore, adopting a human-centered approach, reintegrating nature into urban areas, enhancing disaster resilience, and protecting existing natural spaces should be among our top priorities.

Figure 3.2.2.

However, when evaluated specifically for İzmir, it is evident that sufficient connections between green spaces have not been established. Although an ecological backbone has been structured around the city, this network is frequently interrupted by concrete infrastructures in many areas. This situation further underscores the necessity of nature-based solutions. For instance, the recent reappearance of rare bird species at Flamingo Nature Park serves as a tangible indicator of the ecosystem's potential.

The urban heat island effect, which is becoming an increasingly significant problem in cities, must also be addressed through nature-based approaches. While the transition to solar energy systems is rapidly advancing in rural areas, the absorption and prolonged release of heat by asphalt and concrete surfaces in city centers adversely affect comfort conditions, especially during nighttime. Therefore, green systems that support urban cooling need to be integrated into planning processes. It is critical not only to preserve natural areas but also to position them strategically, appropriately, and optimally.

It should be remembered that nature-based solutions require long-term processes. However, in the face of climate and environmental crises, moving beyond assessment to concrete action is vital. Today, we may share common concerns, but for a sustainable future, we must develop shared hopes and create transformation together.

Eylem Ulutaş Ayatar, Head of the Disaster Affairs Department, İzmir Metropolitan Municipality (İzBB)

Summary – Disaster-Resilient City (İzmir Studies)

Achieving a green transformation will not only yield environmental benefits but also provide significant economic gains. The concept of "climate change" has evolved over the years into the dimensions of climate crisis and disasters; the crises we face today have become multi-layered and form a self-reinforcing cycle.

For example, earthquakes in Japan can trigger tsunamis, leading to cascading disaster effects. However, Japan has developed resilient industrial systems by adopting a holistic, disaster-focused approach to energy, transportation, and healthcare services through legislation enacted in 2013.

The country is increasing its disaster preparedness by utilizing its technological infrastructure; through systems such as RESAS[6] and LEDIX[7], it conducts firm-based economic impact analyses to identify potential risks in advance. Integrating such systems into data collection, analysis, and strategic decision-support processes is of great importance for Türkiye as well.

The earthquakes that occurred on February 6, 2023, not only caused structural damage but also triggered multiple crises. For instance, the fire in İskenderun was one of these cascading effects. Earthquakes can lead to secondary disaster risks such as fire, floods, and water inundation. Therefore, disasters must be addressed not only from engineering or administrative perspectives but also with active community participation, embracing an approach in which individuals are key actors in the process.

As the Disaster Affairs Department of İzmir Metropolitan Municipality, various studies are being conducted within this scope. These include the analysis of the existing building stock, tsunami risk assessments, and the preparation of the Disaster and Emergency Response Plan. Additionally, inter-agency collaboration and coordination were strengthened through the Disaster Coordination Workshop held on February 19.

Furthermore, efforts are ongoing to establish a Disaster Portal where institutions and relevant units can share disaster-related data, perform analyses, and update current information. This digital infrastructure will enable the implementation of a holistic, transparent, and data-driven approach to disaster management.

Figure 3.2.3.

[6] Since 2015, this platform, provided by Japan's Ministry of Economy, Trade and Industry and the Cabinet Secretariat, visualizes large datasets from both the public and private sectors through maps and graphs.

[7] The Local Economic Driving Force Index is an index used to measure the sectors or activities that contribute most significantly to the growth, employment, and economic activities of a region or local economy.

Solidarity Networks for Resilient Cities

Moderator: Assoc. Prof. Dr. Dalya HAZAR, Deputy Secretary General of the Healthy Cities National Network of Türkiye

Participants: Prof. Dr. Pınar OKYAY, Deputy Secretary General of İzmir Metropolitan Municipality

Gaye TUĞRULÖZ, President of the Social Climate Association

Deniz İNCESU, İzmir Metropolitan Municipality Climate Change and Clean Energy Directorate

Figure 3.2.4.

Prof. Dr. Pınar Okyay, Deputy Secretary General of İzmir Metropolitan Municipality

Summary – Public Health During and After Earthquakes

The fundamental public health approach must be preserved and prioritized under all conditions throughout disaster management processes. This approach supports not only individual health but also the overall well-being and resilience of the community during crises. Effective coordination and collaboration among all stakeholders are critical for continuous and efficient disaster response.

Temporary settlement areas should be pre-identified in disaster situations, with infrastructure preparations thoroughly completed, and their use planned sustainably. Ensuring life and property safety depends on designing settlements according to emergency scenarios. Tent cities and container settlements must be located considering terrain features, security requirements, and regional needs.

Access to safe water is a vital factor in protecting public health in disaster-affected areas. The reliability of drinking and utility water systems must be ensured, including high-level chlorination when necessary. Moreover, sanitation hygiene is an integral part of essential health services and must be adequately designed even under temporary conditions.

Traditional methods such as pit latrines and overflow areas remain valid with appropriate regulations.

Post-disaster waste management is another critical area. The accumulation of textile waste following the February 6, 2023 earthquakes demonstrated the need for systematic approaches. Additionally, intense asbestos exposure during debris removal posed serious health risks to field personnel. Therefore, early identification of environmental health risks and proper use of personal protective equipment are imperative.

Rapid health risk assessments, emergency medical interventions, and the effective deployment of mobile healthcare units such as field hospitals are essential in disaster zones. Access to primary healthcare services plays a decisive role in protecting vulnerable groups. Furthermore, the physical and psychosocial support of healthcare personnel must not be overlooked.

The key to timely and appropriate response lies in data-driven, evidence-based systems. While it may not be possible to prevent natural hazards, early warning systems and preventive strategies can mitigate their impacts. Scaling successful local examples presents a strategic opportunity.

The following structures and actors hold significant roles in these processes:

- Provision of essential health services within the framework of the Minimum Initial Service Package (MISP) for Sexual and Reproductive Health (SRH) in disasters
- Planning and implementation sensitive to the needs of disabled and elderly individuals
- Coordination of aid organizations
- Support from local networks such as the Healthy Cities National Network of Türkiye
- Volunteers, small task groups, and neighborhood-based solidarity structures
- Technological applications, databases, and digital monitoring systems
- Empowerment of civil society through NGOs and Disaster Platforms
- Activation of local familiarity and community solidarity culture

In conclusion, disaster management should be conducted through a comprehensive and multidimensional approach that encompasses not only physical interventions but also social solidarity, local knowledge, and integration of technological infrastructure. This holistic model will play a key role in building more resilient, prepared, and sustainable communities.

Figure 3.2.5.

Gaye Tuğrulöz, President of the Social Climate Association

Summary – Social Climate Association Portfolio 2025

Founded in 2014, the association operates with a rights-based approach centered on nature. Encouraging the democratic participation of youth, women, and children, the association advocates for social justice while also developing holistic approaches to combat the climate crisis.

Addressing solutions to the multiple climate crises both theoretically and practically, the association has implemented exemplary projects in this field. One such initiative, the Youth Act4Climate project, aims to strengthen young people's capacities for climate action. The project supports the active involvement of youth in local policymaking processes and seeks to transform their demands and solution proposals into concrete policy recommendations, thereby mobilizing public opinion and local governments with creative action ideas.

To date, the association has provided climate education to over 5,000 children at the Konak Çınarlı Recreation Area. It has also participated at a representative level in an international climate summit attended by 20 different countries. Within the scope of local government and private sector collaborations, the association worked with Konak Municipality to prepare the Konak Climate Adaptation Plan, fostering dialogue with various stakeholders throughout the process.

The association supports the active participation of youth in decision-making mechanisms and has established a Children's Executive Board for this purpose. Additionally, through the Ecological Young Women's Movement project conducted in partnership with Çiğli Municipality, it aims to raise awareness among young women about environmental responsibility and gender equality.

Figure 3.2.6.

The association is a member of numerous civil society networks both nationally and internationally, contributing to the exchange of knowledge and experience through these networks. In the coming period, it aims to make its work visible on the international stage by participating in the COP30 Climate Summit to be held in Brazil.

Deniz İncesu, İzmir Metropolitan Municipality, Climate Change and Clean Energy Directorate

Summary – İzmir Citizens' Assembly for Climate

The İzmir Citizens' Assembly for Climate project was launched in January 2025 through a partnership between Yuva Association, İzmir Metropolitan Municipality, and HUDOTO (Law, Nature and Society Foundation). The 15-month project is a democratic platform aimed at increasing local community participation in climate policies and developing joint solutions to combat climate change. It is supported within the Civil Participation Project, implemented by the United Nations Development Program (UNDP) and funded by the European Union.

To strengthen İzmir residents' resilience against the effects of climate change and ensure citizens' active involvement in local government climate policies, İzmir Metropolitan Municipality will reach out via SMS to individuals representing demographic diversity. After applications are completed through a link in the message, a software system based on democratic and transparent selection principles will choose 50 people to form the assembly.

In the first session, assembly members will receive education on climate literacy. Following the training, participants will work across four sessions to develop solutions to the question "How do you survive in a warming İzmir?" focusing on

Figure 3.2.7.

The proposals developed from citizens' demands and experiences in the İzmir Climate Assembly will be integrated into the İzmir Metropolitan Municipality's Sustainable Energy and Climate Action Plan.

The grant program aims to enhance cooperation between civil society organizations and local governments, and to promote democratic and participatory governance models. Within this scope, representatives from İzmir Metropolitan Municipality, Yuva Association, and HUDOTO participated in technical study visits in London, where they met with three different citizens' assemblies and one local government. Thanks to these interactions, participatory governance practices were examined on-site, and best practices that could be adapted to İzmir were evaluated. By sharing the project experiences on national and international platforms, it is also aimed that the model developed by İzmir will serve as an example for other cities.

03

3. WORKSHOP REPORTS

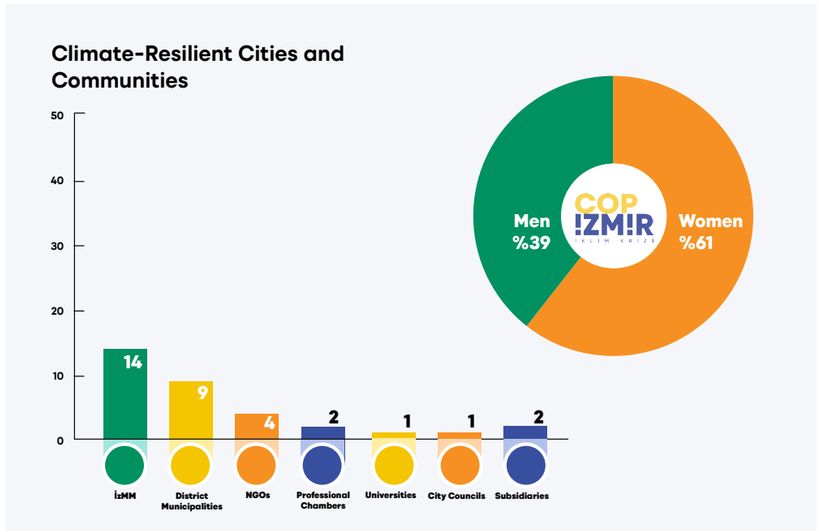

Figure 3.3.1.

Purpose of the Workshop

The workshop, organized to reduce İzmir's vulnerabilities to climate change, increase local resilience, and build a just transformation process through the active participation of all social groups, aims to bring together actors from different scales and sectors of the city to foster collective wisdom and solution development. It seeks to unite the knowledge, experience, and needs of local governments, civil society organizations, academic institutions, neighborhood and village-level communities, and vulnerable groups such as women, youth, children, elderly people, and migrants on a common platform for developing climate-resilient cities and communities.

Accordingly, the workshop will provide a foundation for mapping climate risks, making local solidarity initiatives visible, developing innovative and inclusive solutions, and identifying strategies that ensure community-level ownership of climate policies.

Specific Objectives of the Workshop

- Maps detailing risks such as heatwaves, floods, droughts, and sea-level rise will be developed at the district level using existing scientific data and local knowledge.
- The exposure levels of vulnerable population groups (elderly, children, low-income communities) to climate risks will be identified.
- Pilot areas will be selected for the creation of neighborhood-based climate adaptation plans, and exemplary practices will be supported.
- Community-based resilience protocols" covering pre-disaster preparedness, disaster management, and post-disaster recovery processes will be developed
- Concrete proposals to promote ecosystem-based planning in İzmir's coastal, plain, and hillside areas will be formulated.
- Priority areas for interventions such as green corridors, urban forests, permeable surfaces, and rain gardens will be determined.
- Proposal models will be developed for participatory structures such as neighborhood forums, women's and youth climate councils.
- Needs assessments will be conducted to establish community-based early warning and solidarity systems.
- Guidance studies will be initiated for climate-resilient production models in key sectors like agriculture, tourism, and industry.
- Collaborations will be developed for urban food security, circular economy, and low-carbon production practices.
- A set of local indicators to measure İzmir's climate resilience (e.g., access to green spaces, disaster response time, and water recovery rate) will be discussed and developed during the workshop.
- These indicators will be reported and integrated into the strategic plans of İzmir Metropolitan Municipality and district municipalities.

Group Outcomes

First Group

Disaster Assembly Areas

Being prepared for disasters requires a holistic approach that goes beyond crisis-time intervention to include risk reduction before the event and preventive strategies based on spatial planning. Disaster assembly areas are a crucial component of this whole system. The readiness of open spaces in the city for rapid evacuation, safe gathering, and organized intervention during disasters holds strategic importance—especially in metropolitan areas with high population density and irregular urban development.

In İzmir, where diverse socio-spatial dynamics coexist within the urban fabric, key questions such as where disaster assembly areas are located, who can access these areas, and which neighborhoods remain excluded from access are critical for urban planning and disaster management policies. This study provides a spatial assessment addressing these questions; as a first step toward a comprehensive disaster management and planning perspective, it analyzes the accessibility of disaster assembly areas, spatial inequalities, and the amount of space available per capita using a data-driven approach.

Figure 3.3.2.

How do you evaluate the steps taken so far regarding the planning and accessibility of disaster assembly areas in İzmir? In your opinion, where are the good examples and where do the problematic situations concentrate? (Based on the study: the population outside the large accessibility circle in Bornova, low per capita area rates in Karabağlar and Balçova, and lack of access despite land availability in rural districts.)

Evaluations regarding disaster management and the planning of assembly areas specifically in Bornova reveal significant problem areas and points that need improvement. When examining the current structure of the district, it is observed that approximately one-third of the population falls outside an inclusive plan for access to disaster assembly areas. This situation indicates that in the event of a possible disaster, there could be serious difficulties in mass evacuation and reaching safe areas.

In determining disaster assembly areas, not only the size and location of the area but also the facilities to be provided play an important role. However, adding facilities to every assembly area may bring other risks in terms of safety and security. It should not be forgotten that especially uncontrolled structures can increase secondary disaster risks such as fires and floods.

Therefore, in the selection of assembly areas, not only accessibility but also safety criteria and environmental factors should be taken into account.

The events that occurred at Aşık Veysel Recreation Area after the 2020 Samos Earthquake clearly highlighted the importance of post-disaster site management. Security deficiencies, fire risks caused by materials burned for warmth, and the establishment of tents on waterlogged grounds after rainfall made post-disaster life even more difficult.

It is of great importance to approach post-disaster coordination processes with a gender perspective. The active participation of women in these processes both diversifies decision-making mechanisms and prevents the reproduction of social inequalities. Due to gender roles, tasks such as cleaning, cooking, and caring for children and the elderly are often imposed on women after disasters, leading to their disproportionate impact. Therefore, disaster management planning should adopt an egalitarian approach and ensure that women are included not only as victims but as active agents in the process.

Considering the areas where the amount of disaster assembly space per capita is below 2 m^2 and the clusters of buildings located outside the accessibility radius across the city, how would you assess İzmir's current situation in terms of disaster preparedness? (Urban density, shortage of open spaces, continuity issues in rural areas, relationship between accessibility and spatial justice)

There are many important factors to consider in the planning process of disaster assembly areas. First of all, when determining existing assembly areas, calculations based solely on the per capita area without taking into account natural and artificial features within the area (such as trees, hard surfaces, slopes, etc.) tend to overestimate the actual number of people that can fit in the area. This situation may cause the safe gathering capacity during a disaster to be significantly lower than anticipated. Therefore, it is crucial to base the calculations on the net usable area in assembly area planning.

When evaluated specifically for the İzmir metropolitan area, the total amount of green space is approximately 7-8 thousand hectares. However, considering the metropolitan population of around 3 million and the target of 2 square meters of green space per person, at least an additional 6 thousand hectares of green space is needed just to meet this target. This calculation raises questions about the feasibility of the 2 m^2 per capita target under current conditions; hence, such targets need to be set in accordance with local physical and demographic conditions.

Some disaster assembly areas are exposed to secondary disaster risks, either natural or human-induced. These areas may be located in zones prone to landslides, floods, fires, or chemical hazards. Increasing disaster awareness in society directly affects post-disaster behaviors.

Especially if individuals living in safe buildings prefer to stay in their homes during a disaster, the urgent need for public assembly areas may decrease.

In previous years, Neighborhood Disaster Volunteers (MAG) projects implemented in Türkiye have been valuable examples in disaster management. Containers placed in disaster assembly areas containing basic search and rescue equipment have enabled rapid intervention at the neighborhood level during disasters.

In evaluations specific to the Torbalı district, although it was planned as a logistics center, approximately 62 thousand people are found to be outside the coverage area of disaster assembly sites.

Additionally, the planning of central districts within the İzmir metropolitan area and rural districts needs to be addressed under separate headings. In rural districts, prioritizing the planning of disaster assembly areas in urbanized centers is a primary need to ensure access to more people during a disaster.

Do you think that simply increasing the number of disaster assembly areas is sufficient? How should dimensions such as accessibility, functionality, and social inclusivity be strengthened? What should be done to make these areas more resilient in İzmir? (Consider approaches like "Resilient Place Standards," integration of minimum standards into planning notes, defining temporary/qualified areas, pedestrian connections, and participatory processes.)

Integrating the process of designating disaster assembly areas as a mandatory part of zoning plans and related plan notes is of great importance. At the same time, standardizing the design requirements for these areas is a fundamental need to ensure their functionality and safety.

One of the good practices in this field is the Resilient Place Standards (RPS), initially developed in Scotland, which includes various criteria such as infrastructure adequacy, the condition of the building stock, availability of green spaces, and security elements. However, directly transferring these standards to other cities is not always feasible. For example, the current state of the Aşık Veysel Recreation Area in İzmir does not fully align with these standards. This highlights the necessity of adapting the RPS model according to the specific needs of the country and city scale.

In this context, the Urban Design Guide prepared by the Ministry of Environment, Urbanization, and Climate Change with contributions from academic institutions can serve as a strong support tool for the work carried out by İZPA and İzmir Metropolitan Municipality.

Under the umbrella of İzmir Metropolitan Municipality, coordinated participation of all district municipalities in this process will foster unity in the planning and implementation of disaster assembly areas, thereby increasing urban resilience.

Second Group

New Fire Regime

Globally, due to climate change and other anthropogenic factors, there has been an observed increase in the frequency of forest fires. In this context, in our country where forest resources are under fire threat, especially in the Mediterranean region, changes in the fire regime are being witnessed. This situation is directly related to SDG 11 (Sustainable Cities and Communities) and SDG 13 (Climate Action) targets. As stated in the IPCC's 6th Assessment Report, rising temperatures and prolonged droughts significantly increase the risk of forest fires, particularly in sensitive regions such as the Mediterranean basin.

It is critical for local governments to enhance their adaptive capacity against this risk in order to build climate-resilient cities. The expansion of residential areas towards forest boundaries shows that fires have the potential not only to affect wildlands but also to impact urban areas. Consequently, local administrations, which previously had voluntary or legally defined duties, now bear much greater responsibilities, especially against forest fires that spread into urban areas.

In this regard, it is of great importance that municipalities prepare proactively with a protective approach; defining the necessary actions before, during, and after fires according to their resources and capacities. The related action plan prepared for municipalities serves as a model for all settlements that have the potential to be affected by forest fires.

What are your thoughts on the current situation and outlook regarding forest fires in our country in general?

Coordination deficiencies between İzmir Metropolitan Municipality Fire Department and the General Directorate of Forestry, as well as authority confusion in the incident command system, hinder rapid and effective intervention in fires.

Figure 3.3.3.

The İzmir Metropolitan Municipality Fire Department is a unit with the capacity, equipment, and organizational structure to respond to urban fires. However, responding to forest fires requires special expertise, different equipment, and terrain-appropriate vehicles. The municipal fire department can generally provide only logistical support in forested areas, as its capacity for direct intervention is limited due to the lack of tankers and firefighting vehicles suitable for rough terrain.

In large metropolitan areas like İzmir, where residential areas and forests intertwine, overlapping responsibilities increase the burden on municipal fire departments. Increased urbanization and the proximity of forest boundaries to settlements raise fire risks and significantly increase the workload of urban fire departments.

On the other hand, it has been observed that in some cases, stations affiliated with the Regional Forestry Directorates do not intervene in fires in buildings such as residences or workplaces, citing that these do not fall within their duty descriptions. In emergencies like fires, inter-agency cooperation requires acting with a shared sense of responsibility beyond formal job descriptions.

The active use of aerial firefighting vehicles in forest fires is a critical factor for successful intervention, yet there are structural problems at the national level regarding this. The high costs of aerial intervention vehicles cause insufficient numbers and intermittent usage, which creates conditions for fires to grow.

Large-scale forest fires specifically experienced in İzmir indicate that the region has a high fire load. Accordingly, strengthening both the municipal fire department and other relevant units in terms of vehicles, equipment, and personnel is of great importance.

Public opinion often attributes the responsibility for fires mostly to the İzmir Metropolitan Municipality Fire Department and expects this unit to solve all problems. However, the primary responsibility for forest fires legally belongs to the General Directorate of Forestry. Therefore, for an effective intervention strategy to be developed, it is essential that both institutions act in communication, coordination, and cooperation.

What are your views on the policies and activities developed by municipalities in cities with a high threat of forest fires in our country?

In 2021, the Department of Fire Services established the Forest Villages and Rural Area Fires Directorate; thus, aiming for a more systematic and local-scale approach to risks specific to forest fires.

Various efforts are being carried out to increase preventive measures, raise public awareness, and strengthen intervention capacity to reduce fire risk in residential areas adjacent to forests.

In this context, fire training programs have been organized, water tankers distributed, and pilot applications started in Kemalpaşa Yukarı Kızılca and Bergama Yerlitahtacı villages within the scope of the "Resilient Village Project." Additionally, planning and communication meetings are held in coordination with the relevant district governorates, and inter-agency cooperation is being strengthened.

Special implementations have also been put into practice in historic and touristic areas carrying fire risk. Particularly in settlements with narrow streets, such as Kemeraltı, Şirince, and Alaçatı, fire cabinets and hydrant systems have been installed; along with public awareness activities, infrastructures facilitating early fire intervention in these areas have been reinforced.

The Smart Notification System (SNS), an important innovation for early fire response, enables detection of fires at the initial stage and rapid intervention.

However, citizens' habits of burning stubble during summer months and increased energy consumption due to air conditioner use cause excessive loads on energy lines passing through forested areas. This situation increases the risk of arcing in electrical transmission lines and creates dangerous conditions that can lead to forest fires.

In your opinion, regarding forest fires, what should municipalities prioritize and focus on in terms of governance, intervention, capacity, and other key areas?

It is of great importance that public institutions, local governments, non-governmental organizations, and other stakeholders come together to create a joint intervention and coordination plan.

With the impact of climate change, forest fires in the city begin to be seen as early as April, indicating that the fire season starts well before the traditional calendar.

Maritime transport should be integrated into fire intervention plans. In coastal cities like İzmir, it should play a role both in transporting intervention teams and coordinating assistance coming from supporting provinces.

The planning process needs to be designed with a local focus and be open to public participation. Including local communities' demands in planning will ensure both ownership of the measures taken and the development of on-site solutions.

Raising public awareness about forest fires is another critical topic. In this context, educational activities should be expanded.

Early Warning Systems should be developed to detect fires at their initial stage, and rapid intervention capacity should be established in high-risk areas.

The education level, personal protective equipment, adequacy of tools, and social rights of personnel involved in intervention processes should be strengthened.

The volunteer system, which needs to be widely implemented across Türkiye, should be legally secured to enable volunteers to participate more effectively during disasters and to enhance the resilience of the community.

Third Group

Sea Level Change

The study titled "Sea Level Change in İzmir" aims to reveal the spatial impacts of sea level rise on İzmir's coastal areas due to global climate change. In the study, the Copernicus GLO-30 digital elevation model (DEM)[8] is used to model potential sea level changes and affected areas for the years 2040, 2055, and 2090 based on different IPCC emission scenarios (RCP5 2.6, 4.5, and 8.5).

Additionally, integrated assessments are conducted with the current land cover (built-up areas and agricultural lands) to analyze the possible risks of sea level rise on urban structures, infrastructure systems, and agricultural production.

The resulting maps are intended to serve as crucial decision-support tools for coastal planning and climate change adaptation strategies.

How do you evaluate the current situation and studies related to sea level change in İzmir? In your opinion, which areas in the coastal regions are the most vulnerable? (For example, risks concentrated in areas like Çiğli, Gediz Delta, Aliağa, Selçuk.)

In İzmir specifically, the risks faced in coastal areas are not limited solely to sea level changes; sudden events such as storm surges and tsunamis can also cause significant water level rises and must be taken into account.

Land use changes in risk-prone areas emerge as a significant factor increasing the existing hazard. Particularly, the transformation of agricultural lands close to the coast into residential and industrial zones over time has made flood and sea-related disaster risks more complex and widespread in these regions.

In this context, the adequacy of the pumping systems installed in the Mavişehir area to discharge water is a matter of debate. Considering the current and projected flood risks in the region, these systems need to be re-evaluated in terms of number and capacity, and revised if necessary. There are uncertainties regarding the effectiveness of the protective barriers built along the Alsancak waterfront.

[8] It contains elevation data of the Earth's surface. This model has a 30-meter resolution and is a Digital Surface Model (DSM) that includes above-ground features such as buildings and vegetation.

Figure 3.3.4.

The functionality of these structures has not been clearly measured, and there are criticisms regarding both aesthetic concerns and technical inadequacies in terms of durability.

Transportation infrastructures near the coastline are also directly affected by these risks. In particular, measures taken against water rise are considered insufficient along the İZBAN line between Turan and Naldöken, the Karşıyaka and Konak tram lines, and metro stations close to the sea. These infrastructures must be made more resilient against sea-sourced flood risks.

Overall, it is observed that the works carried out along İzmir's coastline largely lack an analytical basis and rely on temporary solutions. This situation does not align with the goal of building a city resilient to current and future disaster risks. There is a need for permanent, science-based, and holistic intervention strategies supported by data-driven solutions.

Based on current scenario analyses and spatial maps, what measures can be taken in İzmir in response to sea level rise? Which methods should be prioritized, such as coastal protection structures, land use regulations, ecosystem-based solutions, and infrastructure planning?

The outputs of our existing and upcoming studies should be analyzed using Geographic Information Systems (GIS), and based on this data, models should be developed that predict good, moderate, and worst-case scenarios.

Marinas and piers should be made resilient against sea level changes, sudden water mass movements, and potential tsunamis.

For this purpose, structural reinforcement, flexible connection systems, and additional protective barriers against rising water levels should be designed and implemented. At points where rivers and urban infrastructure meet the sea, preventive measures should be enacted to prevent flooding and seawater encroachment. In these efforts, natural-based solutions should be prioritized.

Citizens should be informed in a timely manner through early warning systems. This way, residents in areas at risk of rising water levels or tsunamis can be directed to safe zones, minimizing loss of life and property damage.

In urban planning, creating sea embankments should be avoided as much as possible. Fill areas can disrupt natural water flow, increase flood risk, and damage coastal ecosystems.

When constructing buildings in vulnerable areas, considerations such as ground elevation and foundation height should account for sea level rises and flood risks.

What policy recommendations, strategic plans, and local government practices do you think should be implemented to create more resilient and sustainable developments in İzmir's coastal areas? (For example, including climate resilience principles in planning regulations, retreat strategies for new developments, public-private partnerships, and processes to enhance community participation.)

Comprehensive, scenario-based evacuation plans should be developed to address sudden or long-term impacts of marine floods, and these plans should be regularly updated.

Within local governments, competent units capable of carrying out search and rescue operations need to be established.

Particularly in vulnerable areas at risk, educational activities aimed at increasing public awareness should be conducted; when necessary, local initiatives such as neighborhood volunteers capable of providing first response support during disasters should be organized.

Zoning plans should be reviewed and revised, taking into account these sensitivities and disaster risks.

The establishment and enhancement of early warning systems will enable both public institutions and individuals to act in a timely manner, thereby reducing loss of life and property.

All these measures should be clearly and bindingly incorporated into local and national strategic plans.

To ensure the success of disaster preparedness and response processes, establishing a strong and sustainable communication and interaction network among public institutions, the private sector, and NGOs is essential.

Fourth Group

Local Climate Adaptation Policies

Climate change is not only a global issue but also a crisis that directly affects local life, resulting in impacts across multiple dimensions, from urban infrastructure to social fabric. Local governments, especially in coastal cities, regions at risk of drought, or areas under intense urbanization pressure, face challenges such as rising temperatures, extreme weather events, and depletion of water resources.

Local climate adaptation policies include planning, infrastructure, disaster management, ecosystem-based solutions, and community resilience strategies aimed at increasing the resilience of cities to current and future climate risks. However, adaptation policies often remain overshadowed by mitigation efforts and face deficiencies such as insufficient budgets, data, expertise, and a holistic governance structure. Cities located in the Mediterranean climate zone, like İzmir, urgently need effective adaptation policies in areas such as water management, agricultural production, urban heat islands, and biodiversity loss.

The European Union's "Climate Change Adaptation Mission" aims to make at least 150 regions and communities resistant to climate risks by 2030. This mission supports the development of evidence-based policies, scaling up local solutions, pilot projects, and financing opportunities to enhance adaptation capacity.

The workshop conducted in the Yarımada region of İzmir is a local effort directly contributing to this vision. The workshop findings reveal that vulnerabilities related to climate change are concentrated in critical areas such as food and water security, health infrastructure, energy, and transportation systems in the Yarımada. However, challenges such as data deficiencies at the local level, gaps in stakeholder coordination, and limited technical capacity hinder the effective implementation of adaptation policies. Similar to the mission outlined by Europe, developing comprehensive, multi-stakeholder, and science-based adaptation policies will make İzmir more resilient to the multiple crises associated with climate change.

What fundamental structural, institutional, or social challenges do you think are faced during the local-scale adaptation process to climate change? Specifically, what is the situation regarding data shortages, resource limitations, or issues in decision-making processes?

Views on Water Management and the Climate Crisis

The limited technological development of industry in İzmir leads to the widespread adoption of less efficient practices in water consumption. This situation particularly results in an increase in groundwater usage.

Water scarcity in İzmir is becoming an increasingly significant problem. Due to the insufficiency of surface water sources, reliance on groundwater for water supply causes the depletion of water reserves and deepens the impacts of the climate crisis.

Figure 3.3.5.

Decisions related to water management and water use at the local level–that is, decentralization–are of great importance.

Policies should be developed for the reuse, conservation, and effective management of water in the industrial sector.

Another growing problem in the city is the risk of pollution in underground waters. Therefore, environmental measures to prevent water pollution should be implemented, along with awareness-raising activities about the climate crisis and water conservation.

Personnel working in municipalities and relevant public institutions should receive training on climate change and water management.One of the most common issues encountered in water management projects is the lack of adequate funding.

It is critically important for local government decisions to be aligned with central government policies to ensure the coherent implementation of water policies.

Local Governments and Decision-Making Processes

To ensure that measures taken against natural disasters are effective and sustainable, decisions in this area must be clearly integrated into relevant regulations and legislation.

Various public institutions, local governments, universities, NGOs, and experts should come together to form a collaborative framework.

Encouraging participation at the neighborhood level is of great importance. Active involvement of local residents in disaster preparedness, response, and recovery processes will enhance mutual trust and cooperation between local authorities and the community.

Local governance systems should be established and strengthened within neighborhoods.

In decision-making processes, the voice of the public should be made more visible, and platforms and participation mechanisms should be created to allow citizens to express their opinions.

Alignment of Central and Local Policies

Urban transformation, industrialization, and water management policies should be harmonized through a holistic approach.

These policies must be revisited in line with land use, urban planning, and sustainability principles; environmental, economic, and social impacts should be considered together.

Active public participation in decision-making processes should be encouraged; awareness should be raised among the public about environmental indicators such as water consumption, carbon footprint, and similar metrics through digital information panels.

Among these identified challenges, which do you think most limits İzmir's climate adaptation capacity? If you were to define this as a "local adaptation mission," which goal would you prioritize, and within what framework?

A significant issue is the inadequate culture of collective action and social motivation within society. Strengthening this culture is a priority need in line with sustainable development goals. This process should be supported through increasing social awareness, consciousness, and capacity–both institutional and individual–via education. Active participation of civil society organizations should be encouraged; collaborations and participatory mechanisms should be developed to disseminate environmentally friendly practices at the grassroots level.

For an effective local climate adaptation policy (to ensure the success of the discussed mission), which stakeholders such as local governments, civil society, academia, and the private sector should take on which roles? How should these roles be fulfilled? Is it possible to achieve this collaboration with the current capacity, or if not, what is needed? (What types of tools, governance models, financing mechanisms, or capacity-building processes are required?)

A comprehensive review of existing applications is necessary, along with their transformation into flexible and sustainable systems aligned with the climate crisis. Digital transformation opportunities should be effectively utilized, with priority given to smart technologies that minimize environmental impacts.

Fifth Group

Cooling the City

Thermal comfort is a fundamental factor that determines the perception of heat in outdoor areas and directly influences how individuals use public spaces. The Urla Thermal Comfort Study was conducted within this context based on the mean radiant temperature (Tmrt). Tmrt, which is formed by the combined effect of all short- and long-wave radiation exposure experienced by individuals, has been considered a critical determinant in urban design aspects such as shading, building form, and green space planning. In this study conducted in the Urla case, Tmrt data were combined with the Physiological Equivalent Temperature (PET) index in micro-scale analyses; thus, the comfort or stress levels felt by individuals in outdoor areas were modeled. This approach led to the development of a decision support tool that prioritizes interventions aimed at reducing heat stress in urban planning.

Figure 3.3.6.

The Urla Thermal Comfort Report reveals that areas with impermeable surfaces and a lack of shading experience significant heat stress during the summer months. How do you assess the thermal comfort conditions in outdoor areas in İzmir? In your opinion, which areas experience the most intense heat stress, and what are the main physical/spatial factors triggering this?

The Urla Thermal Comfort Report indicates that certain areas experience significant heat stress during the summer months due to the high density of impermeable surfaces and insufficient shading elements. Similarly, across İzmir, the increasing heat stress during the summer season has been attributed to factors such as the prevalence of impervious surfaces like asphalt and concrete, lack of shading, and unplanned urban development.

The areas where heat stress is most intensely experienced across the city are as follows:

- Kıbrıs Şehitleri Avenue and its surroundings: Lack of shading in pedestrian zones and the abundance of reflective surfaces cause surface temperatures to rise excessively.
- Karşıyaka pedestrianized zones: Restricted airflow and dominance of impermeable surfaces increase microclimatic heat accumulation.
- Urla New Bazaar and Square: Surface temperatures measured under the sun reach up to 42°C, posing a serious risk to public health.
- Gazi Boulevard and Fevzipaşa Boulevard: Heavy traffic, dominance of hard and impervious surfaces, and treeless development elevate heat stress to its highest levels.

The main factors triggering heat stress include:

- Adjacent building arrangements and irregular building layouts along the coast hinder natural air flow, increasing the urban heat island effect.
- Glass facades of modern buildings reflect sunlight, triggering environmental heat buildup.
- Intensive use of air conditioning cools indoor spaces but increases heat emission outdoors, negatively affecting microclimates.
- Concrete, asphalt, and dark-colored ground materials absorb sunlight due to their low albedo values, raising surface temperatures.
- Insufficient green spaces prevent the activation of natural cooling effects, thereby lowering thermal comfort levels.

In İzmir, what initiatives have been implemented in recent years with the aim of "cooling the city"? (For example: heat island maps, permeable surfaces, street greening, shading elements, etc.) Which of these initiatives have been effective, and which have fallen short? Which areas show clear deficiencies? What are your thoughts on the community's acceptance of these solutions and the sustainability of the implemented measures?

Although various interventions aimed at reducing urban heat in İzmir have been implemented, the effects of these measures have remained limited, and the desired level has not been achieved in terms of sustainability and comprehensive impact. While some practices serve as examples, it has been challenging to create a lasting and widespread effect on a larger scale.

Main Methods Implemented

- Thermal island maps and thermal analysis reports have been prepared (e.g., Urla Thermal Comfort Report), enabling the identification of spatial temperature differences.
- Within the scope of the "Living Parks Project," heat load caused by impermeable concrete surfaces in Buca Fırat Neighborhood has been reduced through the addition of water elements and green spaces.
- At Fuar Tartan Park, microclimate improvement has been achieved with tree corridors created via reverse staggering method.
- Renovation works in Karşıyaka Bazaar have been planned to increase airflow, aiming to create cooling corridors.
- At Halkapınar Transfer Center, natural shading has been provided through ivy planting.
- In Göztepe Park, thermal comfort has been ensured for open area users with water spray systems.
- Increasing the albedo effect with light-colored pavement and building surfaces has resulted in a temperature decrease of up to 4°C.
- Early warning systems and flexible working hours during hot weather periods have been introduced as climate-adaptive governance measures.

Main Identified Shortcomings and Problem Areas

- Permeable surface applications have remained limited, and infrastructure allowing water infiltration into the ground has not been widespread.
- In central areas such as Konak, Alsancak, and Fevzipaşa, green infrastructure providing shade is insufficient despite high temperature stress.
- Urban ground and facade coverings predominantly consist of concrete and stone materials that retain high heat.
- The widespread use of dark-colored facade materials in newly constructed buildings increases the urban heat island effect.
- The community's awareness and ownership levels are heterogeneous, and many measures have not ensured long-term sustainability.

Recommended Best Practice: International Model

- The "shade navigation" model developed in Athens offers a digital guidance system that directs pedestrians toward shaded walkways. This application can be considered an innovative and feasible solution for enhancing thermal comfort in cities experiencing intense heat stress, such as İzmir.

What areas and what types of interventions are primarily needed in İzmir to improve thermal comfort?Which institutions should develop what kind of cooperation to strengthen microclimate-focused planning?In your opinion, how can the integration of climate data and heat stress analyses into planning processes be made more systematic?

For İzmir to combat increasing temperatures and heat stress effectively and to become a resilient city against the climate crisis, urban planning processes need to be restructured in line with microclimate conditions.

Priority Intervention Areas

- Squares, boulevards, and pedestrianized areas lacking shading infrastructure in urban centers.
- Public transportation transfer centers (e.g., Halkapınar), which are critical due to high user density.
- Areas where the urban heat island effect is notably felt, such as densely built-up zones like Fevzipaşa, Konak, and Alsancak.

Proposed Intervention Strategies

- Widespread use of permeable surfaces, rainwater management, and surface temperature reduction should be prioritized.
- Encouraging the use of natural materials and increasing surface reflectivity (albedo) will contribute to enhancing thermal comfort across the city.
- Strengthening green infrastructure systems; solutions such as tree corridors, vertical gardens, roof gardens, and green walls should be integrated into the urban fabric to provide ecosystem services.
- Building facade orientation, surface color, and shading elements should be made mandatory in planning and permitting processes for new constructions.
- Preference should be given to light-colored building materials and ground coverings that optimize the albedo effect.
- Natural watercourses and air flow corridors should be preserved; those currently blocked should be reopened.

Institutional Cooperation and Integrated Planning

- A coordinated cooperation mechanism should be established among İzmir Metropolitan Municipality, district municipalities, relevant university departments (urban and regional planning, climatology, landscape architecture), and civil society organizations.
- Heat stress analyses should be systematically integrated into city planning and project development processes.
- Building and zoning regulations should be updated in accordance with climate-friendly planning principles; criteria such as material selection, permeability, and shading should be incorporated into legislation.
- Urban temperature maps and vulnerability analyses should be used to identify high-risk areas in advance, and intervention priorities should be determined based on scientific evidence.
- Emergency “Heat Action Plans” that include early warning systems for heatwaves should be prepared and implemented.

Sixth Group

Disaster Resilient Mission Map

The mission-oriented approach aimed at shaping İzmir’s future not only seeks to produce sectoral solutions but also aims to define comprehensive intervention areas that address systemic vulnerabilities. As the impacts of the climate crisis bring risks such as increasing temperatures, droughts, sudden heavy rains, and ground movements in cities, these situations make disaster risks more complex and widespread. A resilient city approach to disasters should encompass not only emergency response systems but also preventive measures such as infrastructure resilience, safety of the building stock, post-disaster recovery capacity, and communities’ ability to act collectively. Therefore, it is essential to develop an inclusive, locally-informed, and preventive approach that promotes climate-compatible disaster resilience involving all stakeholders. İn this way, resilience to disasters is not only viewed as a risk reduction challenge but is redefined as a major challenge that will make the city physically and socially more resilient, with the concrete goal of making İzmir disaster-resistant.

What do you think are the current challenges İzmir faces in ensuring resilience to disasters with a focus on climate?

The unplanned migration movements, coupled with the development of agricultural lands for construction, have accelerated the unplanned and uncontrolled urbanization process in İzmir. This situation threatens both ecological and urban sustainability. Insufficient alternative transportation routes within the city, especially on main arteries, increase traffic congestion; this leads to economic losses and environmental negative impacts. Deficiencies in smart city applications–such as signalization errors and other basic infrastructure problems–negatively affect urban living quality.

Figure 3.3.7.

The fact that a large portion of the existing building stock is old and that urban transformation processes are not carried out with adequate supervision and transparency increases disaster risks and hinders the creation of safe living areas. Technical and structural problems observed in infrastructure systems further increase the city's vulnerability to crises like climate change.

Additionally, the Compulsory Earthquake Insurance (DASK) covers only specific disasters such as earthquakes, fires, and floods; it does not include businesses, creating a significant institutional gap. Weak inter-institutional cooperation and coordination mechanisms reduce the effectiveness of disaster management processes. The absence of a risk map related to drinking water across the city represents a strategic deficiency in water security and management. Low public awareness of disasters and insufficient knowledge about how to act during such events are factors that increase this vulnerability. Furthermore, the inadequacy of early warning systems and the lack of mission maps for disasters stand out as primary barriers to proactive risk management.

When considering the issues identified, which problem would you prioritize and define as a mission goal?

The inadequate fulfillment of the responsibilities and duties outlined in the Provincial Risk Reduction Plan (İRAP) hinders the development of a comprehensive and effective disaster risk management process. In line with this mission goal, creating comprehensive risk maps to identify disaster-prone areas is of great importance. Through these maps, the aim is to reduce the impacts of disaster risks such as floods, inundation, drought, earthquakes, and ground movements. Within this scope, infrastructure investments should be based on risk-based spatial analyses, and urban planning practices should be implemented that are resilient to disasters

Who do you think should play what roles in transforming this mission goal into reality?

Building disaster-resilient cities is not only a technical objective but also a strategic necessity for long-term societal security, sustainability, and quality of life. Addressing this process with a supra-political approach and ensuring effective cooperation and coordination between the central government and local authorities are of great importance.

Active participation of civil society organizations will contribute valuable insights to disaster management policies through their field experience and data collected from directly interacting with affected communities. To ensure all efforts are rooted in scientific principles, universities and academics should be engaged to provide their expertise. This will ensure that both current situation analyses and proposed solutions are scientifically valid and based on evidence-based planning principles.

International agencies and organizations should be involved through project-based collaborations, which will diversify knowledge and financial resources and help strengthen local capacity. Similarly, professional chambers with their specialized expertise and technical personnel play a critical role during implementation. Chambers of commerce and industry should serve as bridges among public institutions, local governments, and the private sector to foster a holistic cooperation model.

To realize the vision of disaster-resilient cities, the services and products needed should be developed using up-to-date technologies, and active involvement of the private sector will enhance the applicability of innovative solutions. The success of all these efforts depends fundamentally on raising citizens' awareness about disasters and fostering societal consciousness, which should be considered a prerequisite.

Seventh Group

Climate Justice, Eco-Anxiety, and Solidarity Networks

Well-being goes beyond traditional development approaches focused solely on economic growth; it offers a societal development framework based on principles such as social justice, participation, inclusivity, and harmony with nature. Achieving well-being for everyone is only possible through the provision and enhancement of the material, social, and ecological conditions necessary for a meaningful good life. Climate change threatens well-being not only through its adverse impacts on people's material living conditions and capabilities but also by generating negative emotions like anxiety and hopelessness about the future of the planet. Climate justice is inseparable from the fundamental element of well-being, which is justice. Climate justice can be addressed in three core dimensions: firstly, not everyone is equally responsible for or benefits equally from activities causing climate change. This can be considered at the individual consumption level (such as large houses and cars, luxury consumption, long-distance travel), the unequal distribution of economic gains from activities contributing to climate change (for example, high profits of corporations versus low wages and insecure working conditions for workers), and the unequal participation in decision-making related to these activities (such as the limited influence of local communities in energy policy decisions compared to lobbying power). Secondly, different social groups are not equally vulnerable to climate change. It is essential to thoroughly analyze which groups are more vulnerable and why, in order to reduce these vulnerabilities and enhance adaptive capacity. Thirdly, some activities undertaken in the name of combating climate change may, in fact, deepen existing inequalities or create new ones. Social solidarity networks offer a significant opportunity to address climate justice across these three dimensions: they are vital for preventing activities that cause climate change, ensuring that all segments of society meet their basic needs under changing climate conditions, and guaranteeing that climate solutions are fair and democratic.

Figure 3.3.8.

Who are the most vulnerable groups to climate change in İzmir, and what are the underlying reasons for this vulnerability? Do you think climate change creates emotions such as anxiety, fear, and hopelessness among the residents of İzmir? How important do you believe this is?

Across İzmir, the key factors determining social vulnerability to the climate crisis are shaped by elements such as income levels, the geographical and physical characteristics of living areas, infrastructure deficiencies, the spatial concentration of economic sectors, living conditions in rural areas, and the situation of seasonal workers. Within this framework, it is essential to systematically identify vulnerable groups across the 30 districts of İzmir Metropolitan Municipality.

In this context, the Climaax Project offers a multi-stakeholder, multi-layered approach covering themes of climate adaptation, risk reduction, and resilience; it aims to analyze climate vulnerability using scientific methods. Another initiative, the Climate Resilience Project, focuses on identifying vulnerable groups, analyzing issues through their direct participation, and developing solutions. The project is implemented over a three-year period and is currently in its second year. The areas selected for implementation are Kadifekale and Pazaryeri neighborhoods. This choice is based on the demographic structures of these regions (particularly the high numbers of women and refugees) and the physical conditions that increase their vulnerability. In Kadifekale, issues such as urban heat island effect and flood risks have been addressed, and disaster-focused mapping studies have been conducted. In Pazaryeri, flood and river overflow risks have been analyzed, and direct interviews have been carried out with local residents, shopkeepers, and children.

These activities have been carried out with a holistic approach, coordinating social and scientific components. It has been observed during the research that climate-related problems not only have physical impacts but also social and psychological effects. For example:

- Extreme heat and power outages increase family tensions,
- Shopkeepers' businesses are damaged by flooding,
- Infrastructure works face technical difficulties due to the protected site status,
- Structures on sloped terrains face flood risks even during minor rains,
- Individuals dependent on public transportation and with chronic illnesses experience significant hardships during hot weather.

In many districts of İzmir, access to energy is increasingly becoming problematic. Especially in central districts such as Konak and Bayraklı, low-income groups are forced to heat with inefficient fuels, which leads to increased air pollution and respiratory diseases. Current legal regulations limit the inspection and sampling of used fuels; this situation deepens the lack of oversight. Additionally, due to urban transformation processes, infrastructure investors like İzmirgaz are reluctant to invest in certain areas.

The concept of "energy deprivation/poverty" is expanding beyond low-income groups to potentially affect more economically empowered groups over time. The increasing physical, legal, and technical barriers to access energy indicate that this issue is directly related not only to income but also to systemic infrastructure.

Particularly in the Aliağa region, it has been observed that the environmental and public health are under serious pressure due to industrial emissions and over-capacity truck transportation. Technical site visits were carried out in the area; it was observed that industrial activities conflict with archaeological and natural heritage.

Furthermore, the private sector, especially mining companies, has turned towards Solar Energy Power Plant (SEPP) projects; however, these investments are often evaluated only as short-term project-based initiatives, with insufficient regulation and oversight. Government policies that prioritize fossil fuels as the main energy source are pushing renewable energy investments to the background.

Significant differences are observed among İzmir's districts in terms of climate change awareness and social consciousness. Large districts like Gaziemir have ongoing city council activities, but managing civil activism can be challenging. In districts like Karşıyaka, where educational levels are higher, environmental sensitivity is greater, and residents actively protect parks and green spaces. These differences reveal that education level and ecological literacy are key determinants in how society approaches the climate crisis.

It has been observed that the public in İzmir finds it difficult to associate environmental issues they experience (such as floods, heat waves, power outages) with climate change. This indicates a deficiency in ecological literacy levels. In this context, a two-way educational process is necessary:

1. Community education to increase societal awareness and individual resilience against the climate crisis,
2. Expert training to ensure technical personnel and public officials approach climate-related risks with a holistic perspective.

While citizens can contribute to adaptation strategies at the individual level, interventions aimed at reducing climate change should be implemented through comprehensive and centrally planned structural policies.

Among vulnerable groups, individuals living in rural areas are prominent. Climate-induced migration often occurs laterally within cities, triggering economic hardship, internal migration, and displacement. This is followed by low-income groups residing in less developed urban areas (for example, Limontepe).

Even in groups with good economic standing, vulnerability can be observed; however, these groups generally have a higher capacity to tolerate risks. Therefore, to mitigate the effects of the climate crisis, it is first necessary to address the socioeconomic issues of middle- and lower-income groups. Otherwise, eco-anxiety and social fragility will deepen within these segments.

What efforts are being carried out to make the most vulnerable groups in İzmir more resilient to climate change? Are there any good examples in this area, and what are the key elements that make these examples successful?

Within the scope of this project supported by the European Union, the aim is to identify and assess climate change-related risks starting specifically with the Konak district and expanding to cover the entire İzmir province. The study will be conducted under four main headings:

1. Flood and inundation risk,
2. Heatwaves and urban heat island effect,
3. Forest fires,
4. Water scarcity.

Risk analyses will be deepened especially from the perspective of disadvantaged communities and sensitive groups. In this context, the Climaax project provides a methodological foundation, and data entry tools that can be used within the scope of the project are also available. The İzmir Metropolitan Municipality Directorate of Climate Change and Zero Carbon has requested the assignment of expert personnel from relevant municipal units for analysis and implementation processes. As the process progresses, a workshop involving various stakeholders is planned to be organized.

Field studies conducted in Kadifekale, one of the pilot application areas, have revealed that face-to-face citizen interviews yield more effective results than numerical data alone. However, the presence of a population that does not speak Turkish has created communication difficulties, and language barriers have been identified as a significant obstacle in data collection processes.

Community-based climate adaptation efforts are prominent across various districts and rural areas throughout İzmir.

- Gaziemir City Council actively participates in this field through social responsibility projects.
- The Süngerkent Project is a successful example implemented with the aim of finding solutions to water scarcity.
- In rural areas such as Karaburun, Orhanlı Village, Bademler, Şirince, Ulamış, and Tire, the organizational capacity of local communities is increasing, facilitating their ability to act collectively against the climate crisis.
- Kemeraltı and Alsancak Care Groups establish neighborhood gardens, organize bartering events, and adopt a citizenship-based approach that extends beyond institutional identities.

The Neighborhood Gardens Project, carried out by the İzmir Metropolitan Municipality Women's Studies Department, both contributes to food security and enables the strengthening of social bonds. Nine different food communities operating throughout the city provide important examples in terms of solidarity economy and sustainable food supply.

What measures should be taken to ensure the well-being of residents living in İzmir under climate change conditions? In this context, what kinds of solidarity networks should be established and/or strengthened?

In İzmir, many cooperatives operate with national recognition but prioritize local production and solidarity. These cooperatives form a multi-layered structure extending from the national to the local level:

- Cooperatives operating in areas such as Gödence, Bademler, Tire Süt Cooperative, Selçuk, Foça, and Karaburun offer successful models, particularly in the fields of food production and rural development.
- In the field of education, organizations like "Başka Bir Okul Mümkün" (A Different School is Possible) develop alternative educational models and, through memberships in global networks such as the International Cooperative Alliance, create opportunities for international collaboration.

Various non-governmental organizations and citizen initiatives operating throughout the city play an active role in issues such as food security, ecological agriculture, and public space design.

- Green Tables Network (Yeşil Sofralar Ağı) is engaged in activities supporting local solidarity models for food communities.
- ETO (Ecological Farming Organisation) Association unofficially monitors organic markets in the city and assumes an oversight role at the local level.

- Organizations like Wheat Association, Mathematics Village, and Amberseki Village contribute to a sustainable living culture by offering alternative living and learning spaces.

The neighborhood garden initiatives implemented in various neighborhoods, especially in Kadifekale, have strengthened the culture of solidarity. The collaboration established between local government, mukhtars (neighborhood headmen), and civil society organizations is noteworthy. Moving forward, it is recommended to develop organized and production-based relationships, and to establish neighborhood solidarity networks based on consensus and voluntarism.

Increasing strategies for bicycle-friendly and pedestrian-friendly transportation are critical for reducing carbon emissions and promoting healthy living.

The issue of energy independence should be supported particularly through the more effective use of renewable energy sources and the establishment of local energy cooperatives. The example of energy cooperatives in Germany offers an adaptable model for Türkiye.

The lack of afforestation along the coastline hampers climate adaptation; these areas need to be transformed with nature-based solutions. Academic studies and doctoral theses in this area (e.g., reducing salt stress with B12 supplementation) can provide scientific support.

It is necessary to map the climate-related vulnerabilities of individuals across the entire İzmir region and develop targeted action plans accordingly. Urban transformation processes should be planned and inclusive, ensuring the preservation of not only physical structures but also the social fabric.

Climate considerations should be integrated into public space designs, and urban aesthetics and functionality should be reevaluated accordingly. Local development projects and citizen initiatives in districts like Bergama serve as strong examples. Supporting these movements is important not only for “improving” but also for building resilience against existing negative trends.

Revamping existing regulations and standards with a climate-focused perspective will enable a holistic transformation both in planning and implementation levels.

04

4. CONCLUSION

The “Resilient Cities and Communities against Climate Crisis in İzmir” workshop was held with the participation of various public institutions, civil society organizations, academics, and local residents in İzmir. The aim of this workshop was to establish resilient structures at the local level in the fight against climate change, enhance the preparedness of cities and communities against the climate crisis, and develop solutions based on collaboration.

During the workshop, topics such as urban transformation and climate adaptation, green infrastructure solutions, community-based disaster management, energy efficiency, sustainable transportation, and climate resilience in local government policies were highlighted. Participants emphasized that nature-based solutions should be prioritized in city planning and that infrastructure should be redesigned considering risks like flooding, drought, and extreme heat. It was also stated that awareness-raising activities at the neighborhood level should be carried out to increase social participation and strengthen communities against disaster risks.

Furthermore, the establishment of systems for monitoring climate data and the development of science-based decision-making processes with this data were underlined. It was proposed that continuous collaborations among public institutions, the private sector, universities, and civil society organizations should be supported and expanded through pilot projects. The integration of climate adaptation and emission reduction policies into the strategic plans of local governments was also emphasized.

In conclusion, this workshop strengthened İzmir’s vision of being a city resilient not only physically but also socially and administratively against the climate crisis. The insights and recommendations obtained from this will be shared to serve as a guide for other cities.

10.06.2025

THE FUTURE OF İZMİR: GREEN BELTS

ALSANCAK HISTORICAL GAS FACTORY
CULTURAL CENTER

01

1. OPENING SPEECHES

Organized as part of the COP İzmir Town Hall COP Series, the fourth panel and workshop titled “İzmir’s Future: Green Belts” was held at İzmir Historical Gas Factory Cultural Center.

İzmir Metropolitan Municipality and İzmir Office of the Healthy Cities National Network of Türkiye organized an event titled “From Local to Global Vision on the Way to COP30 - The Future of İzmir: Green Belts”. The meeting at this historical cultural center included presentations, interactive activities and round table meetings. Prof. Dr. Pınar Okyay, Deputy Secretary General of İzmir Metropolitan Municipality and Ali Faruk Göksu, an urban planner and the founder of Anadolu Design Workshop, attended the fourth COP İzmir program, which was held within the scope of “one health” and “well-being” approaches. Göksu shared important information on the concept of “green belt for İzmir”.

Figure 4.1.1.

Reminding that they are organizing the fourth COP İzmir, Okyay emphasized that COP organizations have been held on a country basis so far and that there is a need for locally strengthened structures.

Figure 4.1.2.

Okyay said, “The dynamics of countries can be different for each city. What is said at the center may sometimes not be valid locally. Therefore, we developed the idea of putting forward our own needs and priorities as cities. İzmir started the first Town Hall COP in Türkiye. We will take all this information and present it at the World Health Organization’s Healthy Cities Network meeting in Bursa. We will also make a presentation at another meeting organized by ICLEI (Local Governments for Sustainability) and we will try to put these into our action plans. Your professional knowledge will illuminate this path. We have to be the pioneer of these efforts together in İzmir”.

Figure 4.1.3.

02

2. PRESENTATION SUMMARY

Ali Faruk Göksu

Blue - Green Infrastructure and Ecological Corridors in İzmir

2024 was recorded as a year with the highest temperatures ever recorded. According to scientific estimates, 216 million people may have to migrate due to climate change by 2050. In his speech on the local repercussions of this global crisis, urban planner Ali Faruk Göksu summarized the critical threshold reached by the climate crisis in the following words:

“Our planet can no longer bear the burden created by humankind. Global COP summits are failing to produce solutions, so action at the local level has become inevitable.”

Göksu, who made a presentation titled “Blue-Green Infrastructure and Ecological Corridors in İzmir” at the event, emphasized that İzmir has taken an important step in this regard. Göksu stated that it was an appropriate approach for the city to put the local COP vision on its agenda and posed the following question: “Can İzmir’s blue and green cover be a response to the multifaceted impacts of the climate crisis?”

Göksu emphasized the importance of reconnecting with nature while seeking answers to this question and pointed to İzmir’s ecological potential. He said that a green belt strategy that evaluates the natural assets of the city as a whole - from Kültürpark to Yamanlar, from Balçova to Inciraltı, from streams to coasts - can be implemented.

Figure 4.2.1.

Göksu also touched upon the Beautiful İzmir Movement initiated by İzmir Metropolitan Municipality Mayor Dr. Cemil Tugay and stated that this initiative includes small but effective steps to revitalize public spaces and that these touches can contribute to long-term major transformations.

“If a blue-green cover is to be designed for İzmir, it must be handled from a regional perspective. Göksu said, adding that large geographical areas such as the Gediz and Küçük Menderes basins should be included in this strategy. Emphasizing that spatial designs should be made by considering the “edge effect” on the eastern borders of the city, Göksu said that the functioning of the system should be tested with micro-scale green solutions with the “three colors and three strategies” approach.

Ali Faruk Göksu’s call demonstrates İzmir’s potential to develop a resilient and participatory climate policy in harmony with nature: Local action can be the key to global transformation.

03

3. WORKSHOP REPORTS

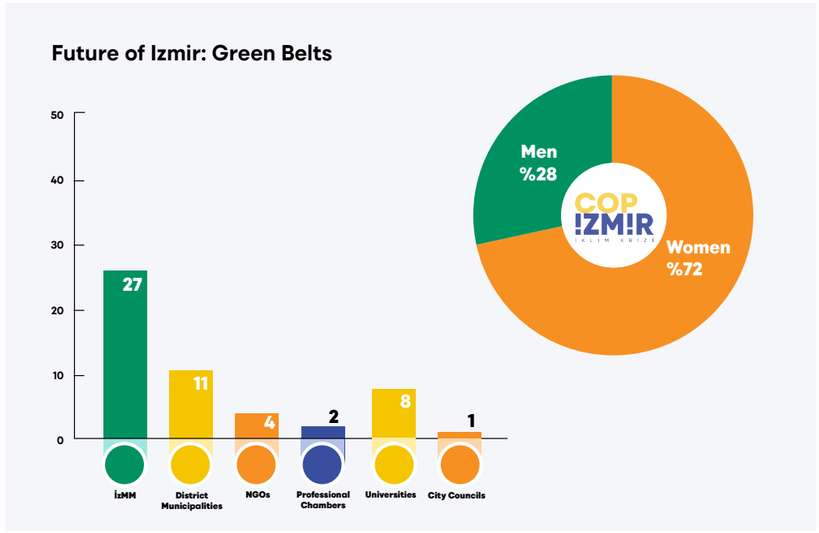

Figure 4.3.1.

Purpose of the Workshop

The “İzmir’s Future: Green Belts” workshop was organized to strengthen İzmir’s green and blue infrastructures, increase ecological resilience and develop a sustainable spatial planning approach in line with the goals of combating the climate crisis and urban development in harmony with nature. This workshop aims to transform the “Green Belt” vision into concrete steps by addressing İzmir’s existing natural areas, water resources and ecological corridors in an integrated system.

Specific Objectives of the Workshop

- To discuss nature-based solutions that integrate İzmir's natural landscapes (forests, streams, coasts, agricultural areas) into spatial planning
- Increase İzmir's ecological integrity and climate resilience by creating interconnected green-blue corridors surrounding urban areas
- To create a development framework in harmony with nature by integrating the ecological belt approach into the transformation processes planned or ongoing in different parts of the city
- To create a participatory platform that will bring together public, academic and civil stakeholders to shape İzmir's green future together
- To prepare strategic recommendations that can be integrated into İzmir Metropolitan Municipality's environmental, transportation, planning and agricultural policies
- Create a comprehensive Green Belt map by analyzing the city's natural values, risk areas and potential ecological hotspots
- Propose pilot areas for micro-green interventions, nature-based solutions and public space-oriented practices in line with the workshop outputs

Group Outcomes

First Group

Climate-Sensitive Planning and Urban Transformation

The global climate crisis directly affects how cities are planned and how buildings are transformed. "Climate-sensitive planning" means making cities resilient to climate impacts such as heat waves, floods and droughts. The placement of buildings, the width of streets, the location of green spaces, transportation systems and infrastructures are essential parts of this planning.

Figure 4.2.2.

"Urban transformation" is the process of rebuilding old, worn out or risky buildings. However, this transformation should not only be limited to the renovation of buildings; it should also create a living space that is environmentally sensitive, energy efficient, supported by green areas and resistant to disasters.

This approach is vital for a city like İzmir, which faces earthquake risk and climate impacts. In order to create sustainable and resilient cities, planning and transformation processes must be designed in harmony with nature.

How do you think the plan of a city/neighborhood should be shaped according to the climatic conditions of that region?

The current situation of the city in terms of climatic conditions should be comprehensively analyzed; climate-based disaster risks such as heat waves, drought, floods and floods should be identified and integrated into the planning process. Considering that the existing regulations governing infrastructure practices are insufficient from the perspective of climate change, the relevant legislation should be updated and restructured in accordance with the principle of sustainability.

To ensure long-term ecosystem harmony, landscaping should prioritize drought-tolerant and resilient plant species that are suited to local climate and soil conditions. Sustainable water management practices such as rainwater harvesting should be widespread throughout the city. These practices should be secured through zoning plan notes and integrated into legislation, as in the case of Istanbul Metropolitan Municipality.

In line with water management and urban resilience goals, sponge city practices should be initiated in identified pilot regions; solutions that reduce runoff, retain water in place and contribute to natural cycles should be prioritized. Incentive systems should be developed by local governments for the implementation of the identified practices, while at the same time audits and sanctions should be put in place for stakeholders who fail to implement them.

Planning processes should be carried out in a way to minimize disaster risks by taking into account flood risk areas, active fault lines and other natural thresholds in the preparation of zoning plans. Structures to increase coordination and data sharing among all institutions, especially municipalities, provincial directorates and relevant ministries, should be established - coordinated action should be taken in line with common goals.

Infrastructure regulations should include explicit provisions on climate change adaptation and greenhouse gas mitigation to ensure binding force at the planning and implementation level. Differentiated local climate strategies should be developed and implemented, considering the unique topographical, climatic and socioeconomic characteristics of each district.

Sustainable transportation networks such as pedestrian priority transportation, bicycle lanes and electric public transportation should be considered as one of the basic components of urban planning. Sustainable solutions based on local knowledge and expectations should be produced by ensuring the active participation of neighborhood people, civil society organizations and relevant professional chambers in planning processes.

Integrated water management should be established against the risk of sudden rainfall and flooding, supported by rainwater retention basins, reduction of impervious surfaces and open green spaces. To increase social resilience against climate risks, energy-efficient solutions such as cooling areas against extreme heat (e.g. natural cave-like structures), installation of solar panels on mosques, and solutions that will also serve as emergency gathering areas should be included in the planning.

Were environmental factors sufficiently considered in past urban regeneration practices in İzmir?

In current practices, plan integrity is not observed, and high-rise buildings are constructed without taking into account the construction conditions set in the zoning plans. This situation causes urban transformation to move away from planning principles and causes transformation processes to function unhealthily.

Especially in some regions, it is observed that individual building renovation processes are more prominent than urban transformation. This situation prevents the physical environment from being addressed with a holistic approach and brings along structural problems such as insufficient infrastructure and social facilities.

A pilot project in Narlıdere district, supported by the World Bank, stands out as an exemplary model. Declared as an urban transformation project by the Ministry, it is being carried out with international financial support, and it is stated that the World Bank will continue to support similar projects if successful.

However, urban transformation practices across Türkiye are very limited and disorganized. Regulations prepared in the 1990s are still in force, and these regulations need to be updated in line with today's climate crisis, disaster risk and sustainability principles.

Transformation processes are often carried out through the declaration of "reserve areas", but even in areas that do not meet this definition, practices are carried out by using the reserve area status. This leaves the door open to rent-oriented orientation of transformation and undermines the principle of social justice.

Furthermore, in many regions, plan notes and building restrictions in zoning plans, although intended to take precautions against earthquake risk, slow down or hinder the transformation process due to implementation costs and technical difficulties.

What steps should central and local governments take to build more climate-sensitive neighborhoods in the future?

In the current zoning legislation, the per capita green space standard is kept constant for all settlements. However, since this approach ignores local climatic differences and microclimatic conditions, it may have negative impacts especially on surface temperatures. Therefore, it is necessary to update green space standards by differentiating them at the neighborhood scale.

It is difficult to integrate climate-sensitive planning in previously built-up urban areas. Failure to fully comply with existing zoning plans also leads to serious failures in implementation. For example, the transformations realized in Bayraklı district in the last five years have been realized without sufficient sensitivity in the framework of combating and adapting to climate change.

In this context, it is of utmost importance to conduct current situation analyses and climate risk assessments across the city, and to develop action plans based on concrete data. Furthermore, nature-based solutions should be encouraged by developing green infrastructure strategies, and land use decisions should be re-evaluated in line with these strategies.

In line with sustainable urban development goals, it is necessary to implement integrated policies in areas such as water and waste management, energy use, and improvement of public transportation systems. Raising public awareness and ensuring public participation in this process is critical to ensure that planning is carried out in a fair and inclusive manner. Especially the active participation of disadvantaged groups should be ensured.

Monitoring and evaluation mechanisms should be established in planning and implementation processes, these mechanisms should be integrated into local government policies. Climate sensitivity should be considered at all planning levels from upper to lower scales and in zoning regulations. A transparent and sharing process based on stakeholder participation should be carried out, public opinions should be considered in decision-making processes.

It should be ensured that the technical staff involved in planning activities have a high level of expertise and that the processes are carried out by professionals with signature authority. Potential areas planned to be opened for settlement should be identified in advance, considering environmental and climatic factors, and effective control and monitoring mechanisms should be established to prevent illegal construction.

Environmental engineers should be considered as an active part of this process. Furthermore, working in cooperation with national and international networks will make an important contribution in terms of knowledge sharing and experience transfer.

Second Group

Climate Sensitive Design and Landscaping: New Generation City Squares

City squares are public spaces where people come together, breathe and socialize. However, increasing temperatures, dense construction and concretization make these spaces less livable. “Climate-sensitive design” and “landscaping” involve redesigning city squares with natural elements (trees, shade, water elements, etc.).

Figure 4.2.3.

The new generation of city squares should not only be aesthetic, but also functional and climate-friendly. Shaded areas, permeable surfaces, open spaces that allow natural air flow and designs that channel rainwater are key components of this approach.

In cities like İzmir with hot summers, such squares are of great importance in terms of increasing thermal comfort by reducing the heat in the built-up area. At the same time, these spaces strengthen social life.

Which natural elements in a city square make people feel more comfortable?

Afforestation, incorporation of water features into the design and the application of green themes on building surfaces (e.g. façade cladding with ivy-type plants) contribute to both microclimate regulation and aesthetic and ecological benefits.

The creation of wind corridors to support air flow in the urban fabric plays an effective role in reducing the urban heat island effect.

The widespread use of permeable surfaces (natural stone, gravel, permeable concrete, etc.) for the efficient collection and reuse of rainwater contributes to the reduction of runoff. However, within the scope of sponge city applications aiming to store rainwater and reduce flood risk, it is recommended that ponding areas, flood control zones and rainwater collection ponds be identified and integrated into urban design.

The use of climate-sensitive materials in public open spaces is also important. Wooden seating elements and shades both increase environmental sensitivity with natural material preferences and improve user comfort.

Can you give an example of a square in the center or districts of İzmir designed in accordance with the climate?

Although not a traditional city square, Kültürpark, as an important open space within the city, is an exemplary urban space in terms of climate-sensitive urban design with its trees providing natural shading, large gathering areas and spatial features that balance the microclimate.

Can squares in the future also be used as a tool to tackle the climate crisis? How?

Renewable energy systems can be integrated into square designs, especially solar energy panels can be used to provide both shading and energy generation. Such applications also contribute to increasing climate comfort in public spaces.

Squares should be planned to be integrated with green corridors and supported by sustainable transportation alternatives such as bicycle lanes and pedestrian connections. Collecting rainwater on-site and utilizing it as a cooling element offers an important opportunity for both improving the microclimate and the circular use of water.

The positioning of squares should be based on the city’s spatial identity, triangulation points and historical/topographical features, thus creating public spaces that build strong relationships with urban memory. Indoor/outdoor transitions can be achieved through controlled overlays; at the same time, squares can be transformed into multifunctional and flexible public platforms with underground spaces.

The squares of the future must be resilient and adaptable to changing climatic conditions and unpredictable urban needs. Squares should be designed from a multidisciplinary perspective that considers the urban context, social, environmental and economic dimensions in a part-whole relationship. This holistic approach is the key to transforming squares into not only aesthetic or functional, but also resilient and sustainable urban spaces.

Third Group

Blue and Green Networks: Ecological Stream Reclamation

Natural waterways (streams, rivers) and green spaces in cities together form an "ecological network". These networks carry vital functions for both nature and people. However, in the past, streams were often converted into concrete channels, covered over and their natural structure was disrupted. This has increased flood risk, destroyed wildlife and reduced the water-holding capacity of cities.

"Ecological stream reclamation" is an approach that integrates streams with their former natural state, provides vegetation around them, resists flooding and supports biodiversity. It also creates new public spaces where people can connect with nature.

Figure 4.2.4.

Many waterways in İzmir such as Meles, Arap Creek, Bornova Creek have the potential for this transformation. This transformation both protects nature and improves the quality of life in the city.

Do you know an example of a stream in İzmir that has been concretized or dried up? How do you think the surroundings of that stream should have been?

In the central districts of İzmir, there are a total of 33 streams discharging into the gulf. In most of these streams, surface flow is interrupted in the summer months due to seasonal regimes and there is no water in the stream beds. Almost every stream in the metropolitan districts has been interfered with by traditional reclamation methods; the natural feeding and flow cycle has been prevented by covering it with impermeable concrete surfaces. These structures have become artificial channels that carry only surface runoff and have lost their ecological function, turning into urban voids. Coupled with seasonal drought, these streams turn into beds that dry up completely in summer.

The Halkapınar Lake, also known as the "Diana Baths", located within the IZSU facilities in Halkapınar, a witness to the city's history, dried up because of IZSU's interventions for drinking water supply - the natural stream bed formed by the springs feeding the lake and known as the "Halkapınar Stream" in the past has completely disappeared. Today, this area bears limited traces of the Arap Stream as an artificial tributary. Similarly, the Boyacı Stream, which passes through Kültürpark, has been completely erased today.

As in the case of Bornova Stream, creating dykes to maintain a minimum water level in streambeds -and thus retain water- is important for preserving regional ecological values. The partial naturalization practices carried out in Yeşildere Stream within the scope of Expo 2027 activities are exemplary in terms of reconsidering stream systems in terms of ecological and spatial integrity. Similar approaches should be gradually implemented in other stream systems.

It is essential to redefine stream beds in their natural state by removing concrete surfaces. However, this transformation is not feasible in the short term due to the need for larger cross-sectional areas and high expropriation costs in metropolitan areas. Therefore, planning, engineering and landscape design works should be carried out in coordination to naturalize stream systems in line with long-term strategies.

One of the biggest risks facing the streams is İzmir's combined sewerage system. Wastewater entering the creeks through flood outfalls during rainy periods poses serious threats to public health and causes pollution in the gulf. Uncontrolled discharges from industrial zones are also a major pollutant, and more stringent inspections and deterrent sanctions are needed in these areas.

In rural areas, pesticides and chemical fertilizers reach streams through agricultural runoff, reducing water quality and posing an environmental threat. Therefore, it is necessary to establish vegetated buffer zones along stream banks, promote biofiltration and limit uncontrolled agricultural practices.

Streams should be viewed not only as concrete channels carrying water but also as ecological backbones. Accordingly, it is important to urgently implement ecological reclamation approaches with the integration of green infrastructure techniques. Nature-based solutions should be integrated into streams and re-evaluated in line with strategic objectives such as rainwater harvesting, groundwater recharge, flood risk reduction and climate change adaptation.

Making infrastructure and sewerage systems resilient against sea floods and water movements from sea to land, which are expected to increase in the future due to climate change, should be considered as a priority requirement.

How do natural waterways in the city affect our quality of life?

Natural waterways within cities offer multifaceted benefits in terms of both ecosystem services and human health. These waterways create thermal comfort zones by regulating the microclimate and play a critical role in mitigating heat waves and the urban heat island effect, which are increasing due to climate change. By lowering the surrounding air temperature through evaporation, water surfaces create a cooling effect in urban areas, making open spaces more livable.

Natural waterways have a positive impact on human well-being both physically and mentally by increasing interaction with nature. By integrating these areas with walking paths, resting points and social gathering spaces, they increase the physical mobility of individuals and encourage social interaction.

Natural waterways also provide habitats that support biodiversity. This increases the interaction of urban dwellers with different species and raises environmental awareness. Protecting aquatic ecosystems is essential not only for environmental sustainability, but also for creating healthy, resilient and livable cities.

What are the environmental and social impacts of ecological stream rehabilitation? Can you give an example of ecological stream rehabilitation in İzmir?

An example of this approach in İzmir is the Peynircioğlu Creek project. In this project, walking paths, bicycle paths and green areas along the creek were designed in an integrated manner, impervious surfaces were reduced, and ecological balance was observed with gradual coastal arrangements in contact with the water. Similarly, the works carried out around Yeşildere emphasize the potential of the ecological reclamation approach to improve the quality of urban life.

Unlike conventional engineering practices, ecological stream rehabilitation is a form of intervention that preserves or restores the natural processes and environmental functions of aquatic ecosystems. This approach has multifaceted environmental and social impacts.

From an environmental perspective, ecological reclamation practices maintain the natural flow regime along the stream, support groundwater recharge by reducing impervious surfaces and improve water quality. They also contribute to the establishment and preservation of ecological linkages by creating habitats that support biodiversity. Restoring waterways to their natural state also helps to create air corridors that reduce the urban heat island effect.

Socially, ecological reclamation allows for the creation of accessible, safe and multifunctional recreational areas around the stream. Through uses such as walking paths, cycling routes, seating areas and playgrounds, these areas strengthen the public's contact with nature and enhance physical and mental well-being. In addition, such public spaces support social interaction and strengthen the sense of spatial belonging among urban dwellers.

Fourth Group

Urban Well-being and Green Spaces

Green spaces (parks, woodlands, urban gardens) have a direct impact on both the physical and mental health of people in cities. A shady spot under a tree, a walkway in the fresh air or a quiet park reduces the stress of urban life. Experts say that being in touch with nature reduces depression, anxiety and chronic diseases.

Urban "well-being" includes not only health, but also social connections, a sense of security, convenient transportation and access to a quality living environment. Green spaces contribute to many of these elements.

The amount of green space per capita is low, especially in the central districts of İzmir. This is a factor that deepens urban inequality. Access to green spaces should therefore be fair and easy for everyone.

Figure 4.2.5.

Which green spaces do you spend time in in your daily life and what do you think they bring to you?

The views of the participants are as follows:

"I am often in Kültürpark for my work; it is an important breathing space as it is one of the densest green areas in the city center. I also actively use the Peynircioğlu Stream in my daily life. Although there were problems such as flooding and water pollution in the past, these problems have been largely eliminated with the recent arrangements. The area has turned into an urban forest and is now a place where I actively spend time, rest and walk."

"Kültürpark is one of the most frequently used open spaces in the city. In addition, İnciraltı Urban Forest is home to a nature habit I have adopted for a long time. Living in İzmir, it is almost a necessity to prefer the seaside or green areas because there is limited breathing space in the densely built-up city."

"However, since most of the coastline is open and lacks shade, the comfort of use is low, especially in hot seasons. On the other hand, the dense vegetation and coastal relationship offered by İnciraltı Urban Forest fills an important gap by allowing nature and the sea to be experienced together. I also visit the Balçova Therapy Forest several times a year; these areas become a serious need to connect with nature. I live in the city center. In everyday life, even the oleander plant that wraps around the facade of the opposite apartment building provides a visual freshness. Opening a window to greenery, even without direct physical contact, can create a psychological healing effect in urban life. This reveals how valuable even visual greenery is in the quality of urban life."

"Bostanlı, Mavişehir and Sasalı are among the areas where I spend the most time in daily life; however, Kültürpark stands out as the first and most prominent green area in the city. Especially in the area where I live, the environment is mostly limited to hard surfaces, concrete roads and small-scale grass areas. I think it would be difficult to connect the existing green areas to each other due to the existing density of construction."

"As the staff of the Parks and Gardens Department, we continue to organize and improve parks within the scope of the Living Parks Project. In addition to the current implementations, projects to be realized in the near future are also in the planning stage. As an İzmir resident, I have the opportunity to spend time in the parks in the Evka-3 area and in natural environments such as Yamanlar. We also work in cooperation with the Orienteering Federation to support nature-based sports and open space use."

"I live in Menemen Evka-2. The open space structure in the area is inadequate in terms of both physical and thermal comfort due to the lack of shaded areas. Existing parks are generally small-scale and fragmented, with poor connectivity and a lack of green continuity between them. This has a negative impact not only on the environment, but also on users' mood and experience of public space."

"I live in Göztepe and use the coastline regularly. Walking is an important part of my daily life. For this reason, I believe that everyone should have access to a green space within walking distance. However, although İzmir is a very sunny city, the lack of shaded areas makes this experience very difficult, especially in summer. The heat makes it harder to walk in unshaded areas, and for the elderly and vulnerable groups, this becomes even more limiting.

Emulation of grass surfaces is common in green space planning, but their maintenance is both costly and unsustainable in terms of water consumption. Some urban models in Europe should not be adapted to high insolation areas such as İzmir due to climatic differences.

At this point, solutions that are compatible with the local climate, such as the green belt projects implemented in Libya with endemic plant species that reduce the need for irrigation, may be more functional for Türkiye.

One of the main problems in İzmir is direct sun exposure. Unfortunately, this problem is not adequately addressed in urban design. Increasing shade systems and expanding heat-refracting landscape elements throughout the city should be among the priority solutions.

Furthermore, although I live close to the coast, many streets connecting to Mithatpaşa Avenue have serious deficiencies in pedestrian infrastructure. Sidewalks are either non-existent or the ones that do exist are insufficiently wide, such as 30 cm. This makes it almost impossible for people with strollers, wheelchairs or walking sticks to move around. The almost non-existent garden distances also leave no qualified public space for pedestrian passage. The creation of green and shady routes where people can walk comfortably and safely stands out as one of the most urgent spatial needs of İzmir for the future."

Is access to green spaces equal for everyone in İzmir?

Access to open spaces is critical. The proximity of public green spaces to where one lives - especially to one's residence or workplace - is a great advantage for users. However, accessibility is not equal for all individuals; social and spatial injustices can prevent these spaces from being equally available to everyone. Therefore, the right to access and spatial justice should be fundamental principles in public green space planning.

Green spaces play an important role in urban life not only with their ecological functions but also with their opportunities for social interaction. These spaces are places where individuals from different age groups and lifestyles come together, meet and socialize. Especially for pet owners, families with children and regular users of open spaces, parks become a routine destination over time.

Orientation towards green spaces is often a natural tendency based on the physical and psychological needs of individuals, rather than a planned activity or an economic choice. The limited availability of safe public spaces in the city where people can breathe, relax and socialize increases the importance of green spaces.

While the use of environmentally friendly vehicles in urban transportation is important, it is not sufficient on its own. The real goal is to create holistic transportation solutions that encourage individuals to walk more and support cycling. In the case of İzmir, access to green spaces and bicycle lanes is very limited, especially in the inner city. This is a barrier to the spread of sustainable transportation and active lifestyles. Therefore, existing ecological corridors should be directed towards the inner neighborhoods of the city, rather than concentrating only in coastal areas. İzmir's overall topography is largely uneven, and the slope of the roads is favorable for bicycle and pedestrian transportation.

Therefore, when transportation infrastructure is planned with ecological integrity in mind, a more accessible, healthy and environmentally friendly living environment can be created for city dwellers.

Access to parks and green spaces in the city is not equal for all individuals. Physical distance, transportation facilities and socioeconomic conditions deepen access inequalities. On the other hand, urban green infrastructure should not be limited to large parks. Trees along sidewalks and green belts around these trees can also serve as green corridors. As in cities such as Antep or Ankara, the street texture formed by broad-leaved, highly shaded trees makes a significant contribution to walkability and microclimate. In the case of İzmir, completing and maintaining this type of tree canopy with a holistic approach will significantly improve the climate comfort and pedestrian experience in the city.

At first glance, İzmir's coastline looks like an open public space, but for many users it is far from providing a comfortable and healthy public space experience. The coastline is exposed to exhaust gases as it is located next to a highway, and the odor coming from the sea from time to time creates a negative environmental impact. Although there are arrangements such as sunset terraces, these areas are far from functional. Given İzmir's intense sun exposure, the lack of shade and the reflective effect of the ground materials greatly reduce the usability of the area. On the other hand, walking areas become unusable in rainy weather due to the density of impervious surfaces. This situation poses serious risks not only for comfort but also for human health.

What is needed in the city is not just aesthetically "green-looking" areas, but functional, climate-sensitive, permeable surfaces and ecological green infrastructures supported by living vegetation. Excessive use of concrete surfaces not only increases the heat island effect but also increases the risk of flooding as it prevents water absorption during sudden rainfall. Although climate-sensitive materials such as permeable concrete have been proposed as an alternative, these solutions are not widespread enough due to their high cost. In addition, the absence of any vegetative or structural elements to provide shade, especially at pedestrian crossings, makes it difficult to wait in the summer heat or rain, making these areas disadvantageous in terms of accessibility.

Moreover, urban planning decisions are often based on the movement habits of middle-aged individuals, whereas the needs of different user groups such as children and the elderly should be integrated into the design. The placement and quality of urban furniture is critical at this point. Especially seating units designed around trees are valuable for both natural shading and social interaction. For the elderly, the presence of shady, cool and safe resting points at regular intervals along the routes will increase the livability of the city.

Arched passageways (arcades) on the ground floor of buildings, which are common abroad, offer good examples in this regard. In İzmir, the awning systems used in historical areas such as Kemeraltı can be adapted to today's climatic conditions and transformed into public shade solutions. It should not be forgotten that such local and flexible applications are solutions that both increase comfort and preserve the aesthetic and cultural context in the city.

What methods can be used to create more green space in the city?

The example of Susuzdede Park in İzmir shows how a quality park can be used intensively even in a region where there is no need for green space. Similarly, parks in the Karantina region are actively used especially in the evening hours, whereas parks such as Susuzdede are preferred during the day. The perception of security lies behind these differences in use. The lack of use of public spaces at night is due to a lack of both physical and perceptual security.

Integration of green spaces within the transportation infrastructure is also important. By implementing green stop projects around transfer centers, bus stops and piers, both urban aesthetics and user comfort can be improved. The example of the green space around İstinyepark shows how negotiations with the private sector can be transformed for the public good. In this way, it is possible to create public green spaces in areas where shopping centers are used intensively.

Supporting local initiatives is an important element that strengthens urban belonging. The sycamore tree planted by the employees of a taxi stand through their own efforts is a good example of collective ownership. Similarly, the planting and maintenance of trees distributed to apartment buildings by their residents will increase ownership at both the individual and community level. In areas of the city where there is a weak sense of belonging, especially in areas such as Basmane, landscaping is subject to vandalism when users are not engaged. For this reason, green spaces should not only serve needs but should also be designed in such a way that an emotional connection can be established. Creating a space that users can defend and protect when something happens to them is the basis of the right to the city.

The "5-minute city" or "10-minute city" approaches to urban planning aim to create urban structures where all basic needs can be accessed within a short distance. In this context, "tactical urbanism" practices also attract attention. Especially with small-scale interventions, some areas are freed from vehicle traffic, making it possible to create pedestrian-prioritized public spaces.

Urban expansion areas require special control in terms of planning. In areas such as Güzelbahçe and Seyrek, there is a tendency towards migration with the increase in educational and living infrastructures. However, such developments are difficult to manage with 5-year municipal strategies.

A longer-term, fixed municipal vision should be developed, and supervision and control mechanisms should be operated effectively in new construction areas. Otherwise, these areas may be squeezed into the identity of “satellite cities”, increasing the abandonment of central city areas and bringing the risk of urban decline.

The tree species used in urban design should be selected in line with the local climate and user needs. For example, palm trees are not sufficient for user comfort because they do not provide shade. Instead, species with wide crowns that provide shade should be preferred. In a city like İzmir, where balcony culture is strong, eliminating balconies in new buildings creates incompatibility with the lifestyle. Urban projects should be planned in harmony with the physical, social and cultural structure of the locality. Otherwise, fast and superficial projects threaten long-term sustainability.

There is also significant room for improvement in terms of urban aesthetics. Excessive and scattered billboards and signage density create serious visual pollution. Addressing these elements within a certain aesthetic integrity directly affects the quality of public space.

Considering that İzmir is a gulf city, supporting the pedestrian movement from the piers to the land with green walkways will create an attractive experience for both residents and visitors.

Finally, for all these efforts to be successful, “good examples” must be created and disseminated.

Fifth Group

Carbon Sinks

““Carbon sinks” are natural or artificial areas that absorb and store carbon dioxide (CO_2) from the atmosphere. Forests, wetlands, meadows/pastures, agricultural areas and some marine ecosystems perform this function. These areas are one of the most effective natural tools to slow the climate crisis.

Unfortunately, urbanization, deforestation and concretization are destroying these sinks. In cities, parks, groves, urban forests and urban gardens can be considered as carbon sinks.

İzmir has the potential to increase such areas in both rural and urban areas. In addition, municipalities’ afforestation, natural area protection and green infrastructure projects can support this process.

Why do you think afforestation is not only an aesthetic but also an environmental action?

Trees play a critical role in ecosystem protection by preventing erosion in coastal areas. They also contribute to the global carbon cycle by balancing the amount of carbon dioxide in the atmosphere through photosynthesis. However, afforestation practices that are based solely on aesthetic considerations and that require intensive water consumption and maintenance that can disrupt the ecological balance should be avoided.

Figure 4.2.6.

In afforestation projects, endemic species specific to the region and especially maquis formations should be considered, ecological harmony should be observed by monitoring the interactions of these species with other plant and animal species. In addition, trees play an important role in urban and coastal areas with their natural shading and microclimate effects that improve the quality of life by providing thermal comfort.

In this framework, increasing new green areas in accordance with ecological and climatic conditions as well as preserving existing green areas should be a priority goal in terms of sustainable environmental management.

Can you give examples of areas that can be carbon sink areas in İzmir?

Seagrass meadows are as vital to the ecosystem as terrestrial forests. In addition to its carbon storage capacity, it provides nitrogen and phosphorus removal, contributes to the protection of environmental habitats and significantly supports oxygen production. It also plays a critical role in protecting marine species. Studies have shown that seagrass meadows positively affect the rainfall regime and increase rainfall.

In this context, regions such as Gülbahçe, Karaburun, Sığacık, Urla and Çeşme are rich in seagrass meadows and have important ecological textures that need to be protected.

Wetlands are important carbon sinks. It is recommended to conduct detailed research on carbon sink capacity in areas such as Kemalpaşa, Karabağlar, Yamanlar, Bornova ridges and Kültürpark Fairground, Cicipark, Hasanağa Park and Susuzdere Park, which are among the potential study areas.

Urban forests, especially in areas such as İnciraltı in İzmir, are being opened to development, causing serious damage to existing carbon sinks and posing a risk to ecosystem balance. Therefore, it is of utmost importance that these areas are taken under protection, comprehensive inventory studies are carried out and existing natural resources are effectively protected.

What do you think individuals and organizations can do to protect and increase the number of carbon sinks?

As part of environmental and urban planning efforts, mapping of İzmir's blue and green areas should be developed in collaboration with sustainability teams over a period. In this process, joint work should be carried out with the municipality and relevant public institutions, and improvement projects on green areas (carbon sinks) and streams should be carried out with the support and supervision of all stakeholder institutions.

Digitizing existing maps and making them accessible to the public is of great importance for the effective use and protection of carbon sinks. Thus, sustainable environmental management will be supported by raising public awareness.

Sixth Group

Rural-Urban Fringe

Rural-urban fringe refers to the transition zones where urban and rural areas intersect. These areas are generally agricultural, mixed-use, low-density settlements and ecologically sensitive areas. However, rapid urbanization puts pressure on these areas. Unplanned growth leads to the loss of these valuable areas.

Nature, agriculture, rural life culture and urban life are intertwined in rural-urban fringe. These areas are critical for food security, climate adaptation and social balance. They need to be protected in a planned manner.

In İzmir, these transition zones are especially dense in districts such as Menemen, Buca, Seferihisar and Torbalı. In these regions, agriculture is carried out and there is also the threat of rapid urbanization.

Where do you think the differences between urban and rural areas begin?

Rural systems are regions where nature-human interaction is intense, solidarity-based social relations and small-scale production activities (crop and livestock production) are prominent.

Figure 4.2.7.

Rural areas can be distinguished from urban areas by criteria such as intense nature-human interaction, the existence of social relations based on solidarity, the existence of small-scale living and production environment, distance from urban centers, low population density, agricultural activities (crop production and animal husbandry) being the main activity, developed labor distribution and lack of specialization, the existence of a village-based settlement and culture, and the presence of a young population that has recently decreased. These areas are characterized by low population density, spatial distance from urban centers, and a predominantly agricultural economy. There is a lack of sophisticated labor distribution and specialization, while village-based settlement and cultural dynamics are prominent. Demographically, the decline of the young population and the concentration of the elderly population is a notable trend. Rural areas tend to exhibit more pronounced temperature differences compared to urban structures. These structures reflect the feudal understanding of society based on self-sufficiency, in contrast to the fast consumption habits brought about by modern industrialization. Rural life is defined as areas where, in addition to population density and demographic structure, climatic differences, drinking water resources and general natural life are more intense.

Areas defined by high urbanization, industrialization and dense construction. High population concentration, advanced transportation and infrastructure services are the main characteristics of these areas. Gray areas and concretization, which are dominant in the urban fabric, lead to higher heat absorption, making urban temperature increases more pronounced. Due to their intensive resource use, cities create significant negative externalities on environmental ecosystems, which increases the pressure on the resources of cities and has a major impact on the external environment. Within urban systems, artificial and fast-growing cities increase the pressure on their resources. This leads to a major negative impact on the environment outside the urban system.

The contradictions between urban economic growth and the ecological environment are becoming increasingly apparent. With the acceleration of urbanization through the modern industrialization process, the contradictions between urban economic growth and the ecological environment have become increasingly apparent.

What is the importance of low-density areas and rural areas on the periphery of İzmir in climate change adaptation and adaptation?

According to the Fourth and Fifth Assessment Reports of the Intergovernmental Panel on Climate Change (IPCC), the Mediterranean Basin is one of the most vulnerable regions in terms of climate change and therefore one of the most affected regions. Since both temperature increases and decreases in precipitation are expected in the Mediterranean Basin in the future, it is among the regions that will be most affected by climate change. In this context, rural areas function as effective carbon sinks thanks to their extensive green fabrics (forests, pastures), which are vital for stabilizing greenhouse gas concentrations.

Rural areas are production hubs that meet the basic food needs of urban populations and contribute to emission reductions by minimizing the logistical carbon footprint associated with product transportation thanks to close production areas. In a context of deepening urban housing and infrastructure crises, strengthening rural production is essential for the sustainability of food security. 80% of urban poor families' budgets are allocated to food expenditures, emphasizing the critical role of peri-urban agricultural areas. As the housing and infrastructure crises of the urban population deepen, rural production weakens, and food security is jeopardized.

Rural areas are essential habitats for the healthy functioning of ecological diversity and the water cycle. While temperature increases and irregular precipitation regimes due to climate change threaten agricultural production, the preservation of existing agricultural areas secures food supply. Preventing habitat destruction and loss of biodiversity in these areas, ecological and sustainable policies, development of practices that reduce carbon footprint, conscious use of water and soil resources, and protection of natural transition zones are important in combating climate change.

Rural-urban fringe areas are suitable areas for implementing a nature-oriented urbanization and transition model with the potential to mitigate the negative impact of the city on the countryside through rural planning policies. These regions are of great strategic importance for reducing environmental impacts and ensuring sustainable environmental management through carbon footprint-reducing agricultural practices, optimization of renewable energy investments, waste management and circular economy approaches.

Therefore, the rural-urban fringe is very important in terms of agricultural policies that reduce carbon footprint, optimization of renewable energy investments, waste management, circular economy approaches, reducing environmental impacts, increasing productivity and sustainable environmental management. In the case of İzmir, with rapid urbanization and unplanned growth, population density has increased, settlement characteristics have been shaped by migration, and areas where the urban fabric and natural environment are disregarded have increased. This has resulted in the deterioration of the ecological order and international/national protection legislation has sometimes been insufficient. In İzmir province, as in all big cities of Türkiye, population density has increased with rapid urbanization, settlement characteristics have been shaped by migration, the city has grown to the periphery with intense migration, and areas with poor building quality and infrastructure services, unhealthy living conditions, transportation and infrastructure problems, and disregard for the urban fabric and natural environment have increased. This has resulted in a change in the ecological order and deterioration of the natural balance, and international conventions and national protection legislation have sometimes not been sufficient to protect natural areas. Large investment projects such as non-agricultural use of agricultural land, secondary housing areas, urban/industrial sprawl, energy and mining investments increase the pressure on the urban periphery. The non-agricultural use of agricultural land, secondary housing areas, urban (residential) sprawl, industrial sprawl, energy and mining investments, and the presence of large investment projects in low-density areas on the periphery of İzmir are increasing pressure on the urban periphery, which is a transitional zone as large investment projects focus on growing cities.

In this context, İzmir Metropolitan Municipality Rural Services Department is carrying out studies to combine areas of natural importance and protected status (ecological sensitivities) in İzmir province into a geographical information system (GIS) based database, and it is aimed to create a structure that can be a resource and ecological base to be used when making planning decisions in line with the principles of sustainability and sustainability of the city. In terms of climate change adaptation and adaptation, increasing urban growth is becoming both environmentally and socially unsustainable. İzmir is a city with high environmental and economic vulnerability to climate change. In this sense, the conscious use of water and soil resources and the protection of natural transition zones play a critical role in the struggle.

Do you think these areas are sufficiently protected? How can we protect rural-urban fringe and agricultural areas as the city grows?

As in the case of İzmir, rapid urbanization and intensive migration have led to the unplanned growth of urban peripheries. This "urban sprawl" results in inadequate infrastructure, unhealthy living conditions and destruction of the natural environment. Large areas of agriculture and pasture have been lost to various investments such as industry, housing, energy and mining.

Concrete examples such as the zoning of İnciraltı, the uprooting of okra fields in Dikili and the transfer of Kozak Plateau to the ministry for mining reveal the dire consequences of this uncontrolled growth. In addition, as can be seen in İzmir, the uncontrolled growth of the urban periphery under the pressure of the city for the last 20 years and the increase in decisions on industrial, residential, etc. uses have led to the deterioration of the ecosystem in the rural-urban fringe.

International conventions and national protection legislation are insufficient for the effective protection of natural areas. Practices such as “hobby gardens” lead to loss of agricultural land, while non-compliance with existing laws and failures in supervision mechanisms weaken conservation efforts. In particular, the confusion of authority and lack of coordination between the Ministry of Agriculture and local governments make it difficult to control and protect these areas. It is an important problem that structures such as the “Soil Conservation Board” cannot work effectively despite the laws, and that the will of the legislators cannot be realized in practice.

Disconnected practices and inadequate institutional coordination between central and local administrations prevent the development of holistic and integrated strategies. The problems experienced in the implementation phase of decisions taken in platforms such as the Agriculture Councils are a concrete indicator of this deficiency. With constantly changing administrations, the institutional memory of administrative units and the continuity of implementation are disrupted.

The negative impact of climate change on the agricultural sector, especially on the female labor force, weakens rural production. Extreme weather events, droughts and floods, changes in precipitation regime and soil degradation make the agricultural sector vulnerable to climate change and affect the agricultural labor force, especially the female labor force due to its intensity in the sector. Opening land for non-agricultural use due to economic pressures continues to put pressure on these areas. Although the high food expenditures of the urban poor increase the importance of agricultural areas on the urban periphery, this potential cannot be utilized due to weaknesses in legislation and supervision.

A strong culture of cooperation and joint strategy development between central and local governments should be established. “Planning as a holistic and systematic form of action” should focus on which problems are to be solved and include clear goals and tools. Therefore, it should be clearly defined which problem(s) planning as a holistic and systematic course of action is intended to solve and which goals and tools it will include.

Existing legal regulations for the protection of rural areas should be strengthened and concepts such as “agricultural protected areas” should be discussed and included in legislation in Türkiye, and the necessary areas should be given special legal status.

Supervisory mechanisms should be strengthened, and legal loopholes and arbitrary practices should be prevented. The supremacy of special legislation such as the Law on Olive Groves should be ensured for the protection of forest basins and olive groves. Within the scope of the “protected area concept” that comes up from time to time, it is of great importance to identify areas that require absolute protection and special measures, just like natural, archaeological or historical sites. Although the concept of rural protected areas does not yet have a legal equivalent, it is a concept that needs to be discussed, as rural areas are structures that have formed their own culture and production relations, specific to village settlements and together with their hinterland. Therefore, it is essential to have arguments to support the protection of this culture and sociology beyond physical protection in planning.

Special strategies should be developed in spatial planning processes to control urbanization. Building restrictions should be introduced through plan notes and strategy documents, and land use decisions should be guiding. In the case of İzmir, neighborhood-based data collection, rural strategy plan and rural neighborhood typology studies carried out by İzmir Metropolitan Municipality Department of Rural Services are of great importance in this context. In addition, projects should be developed based on strategic plans such as the “Peninsula Sustainable Development Strategy”. Scientific evaluations on the distinction between urban and non-urban areas have recently taken different theoretical approaches. Some studies that redefine “urban” reinterpret the boundaries and textures between urban and rural areas with the concept of “peri-urban”. In the dynamics of urban sprawl, known in the literature as “urban sprawl”, spatial planning needs to develop special strategies. The answer to the question in the title of the chapter can be clearly answered as “these areas are not sufficiently protected”. It can be argued that the greatest textural destruction in spatial change processes is experienced in these areas. The ecosystems encountered in the edge regions of urban geography contain economic production relations, cultural and sociological spatial dynamics that differ from region to region.

Micro-scale urban agriculture practices such as urban gardens should be supported and expanded. Urban residents’ awareness of agriculture should be raised and their participation in food production should be encouraged. Successful examples such as kindergarten and university gardens in developed countries should be analyzed and adapted to Türkiye.

Support programs for small producers, especially women, such as seedlings, saplings, tractors, fertilizers and heirloom seeds should be increased to ensure economic sustainability. Bornova Municipality’s support to farmers for the replanting of local crops such as musket grapes and henna okra are concrete examples of this approach. In urban peripheries, it is important to transition to practices that can ensure the sustainability of ecological resources by taking advantage of new generation cooperative models that are developing in the world and Europe,

innovative approaches that aim to increase the welfare of local communities, protect biodiversity and strengthen local production systems. Ecological policies and ecologically based planning approaches should ensure the protection of the urban periphery and natural assets. Municipalities should also determine strategies in line with the potentials and needs of the urban periphery in the planning and implementation of agriculture and food policies, establish access to food and short supply chains, support alternative food movements and community-supported agriculture and organizing, and keep the "peri-urban" away from the pressure of urban sprawl through controlled measures (plan notes, strategy documents, etc.) that eliminate regional inequalities.

Circular economy approaches such as the conversion of organic waste (marketplace waste, twig trimmings) into compost should be promoted. Projects such as renewable energy production from methane gas, feeding greenhouses from waste heat and using packaging waste as raw material should be encouraged. Safe collection and disposal of pesticide waste is critical. Bornova Municipality's efforts to produce compost, even with primitive methods, are commendable.

"Rural-urban fringe" or "peri-urban" regions should be designed as a meeting point integrated with the urban system in terms of both agricultural production and rural life opportunities. These regions can assume the role of a functional buffer zone where production-consumption relations are balanced, and logistics storage and agricultural market opportunities are built. In disaster management strategies, these peripheral regions should be considered as logistics centers for emergency aid. It should not be forgotten that these regions have unique ecosystems. Establishing logistics storage, transfer and agricultural market (shopping) facilities in hybrid peri-urban areas where the production potentials of rural areas and the consumption habits of urban life intersect can serve as a functional buffer for the protection of agricultural areas and rural culture. While discussing how to design more resilient rural areas, to create healthier and more resilient rural (and peri-urban) areas, the problems of the agricultural system and the rural-urban transition should be discussed through holistic approaches that do not rely on rural-urban dualism and ignore the global system.

A holistic framework should be adopted that addresses the full cycle of food from production to consumption in the interdependence of rural and urban areas. The CRFS includes the goals of reducing the regional carbon footprint, protecting agricultural biodiversity and strengthening food justice, while securing food supply. This approach is a conceptual bridge that serves to concretize the Sustainable Development Goals (especially SDG 2: Zero Hunger, SDG 11: Sustainable Cities and Communities, SDG 12: Responsible Consumption and Production) at the urban-rural scale. It lies at the intersection of "urban metabolism" and "regional agroecology". In the literature, CRFS is defined as a holistic framework that addresses the entire cycle of food from production to consumption within the interdependence of rural and urban areas.

The CRFS concept has initiated a new scale debate by emphasizing the continuity between the two, rather than sharply separating the dichotomy of "urban" and "rural", and this scale combines the food demand of the city with the ecological, logistical and socio-economic capacity of the surrounding production hinterland on the same analytical plane. This approach not only secures food supply but also carries with it the goals of reducing the regional carbon footprint, protecting agricultural biodiversity and strengthening food justice. In this way, CRFS becomes a conceptual bridge that serves to concretize sustainable development goals (especially SDGs 2, 11 and 12) at the urban-rural scale. While aiming for a seamless circulation of food along the axis of production → processing → distribution → consumption → waste management, the process design, which considers each link with both its spatial and social context, is described in the literature as the intersection of "urban metabolism" and "regional agroecology".

Seventh Group

Nature Routes and Alternative Tourism Potential

Alternative tourism includes types of tourism (ecotourism, agrotourism, gastrotourism, etc.) that do not destroy nature, support local people and comply with sustainability principles. Nature routes are routes that bring people together with nature through activities such as hiking, cycling and bird watching.

This tourism approach is an alternative to the damage caused by traditional mass tourism to nature and local culture. It also supports economic development in rural areas, reduces the migration of young people from rural to urban areas and promotes nature awareness.

İzmir's mountain villages, forest roads, wetlands and coastal areas offer great opportunities for alternative forms of tourism. Urla-Çeşme-Karaburun Peninsula, Yamanlar Mountain, Gediz Delta are areas that can be evaluated in this respect.

Figure 4.2.7.

Are there any hiking routes or natural areas in İzmir where you spend time in nature?

Participants stated that they actively use many natural hiking routes in different regions throughout İzmir. In this context, frequently preferred areas include Bergama Kozak Plateau (Çamavlu Mevkii), Kiraz Cevizli Village surroundings, Ödemiş Gölcük and Bozdağ region, Urla Olive and Vineyard Road routes, Efeler Road, İzmir Coastline (especially Bostanlı Coastal Road), İnciraltı Urban Forest, Karşıyaka Karagöl, Balçova Therapy Forest and Efes-Mimas Road.

In particular, İnciraltı Urban Forest was highlighted by participants for its central location and biodiversity. Participants who hiked in this area reported that they discovered alternative walking routes around the lagoon and observed many endemic bird species in the area.

Participants emphasized the need to increase the promotion of these natural hiking routes in İzmir.

How do you think it is possible to do tourism without harming nature?

Expanding the use of electric vehicles and the bicycle sharing system Bisim is seen as important in terms of both reducing carbon emissions and promoting environmentally friendly alternatives in urban transportation. In this context, it was also suggested that inspection mechanisms should be strengthened.

It was emphasized that public awareness should be raised on reducing the use of plastic bottles and waste management. It was suggested that good practice examples should be disseminated throughout the city to promote the habit of waste separation. It was especially recommended that the Efes sim card application, which is being implemented in Selçuk and which offers free use of public transportation in return for the collection of waste separated by the municipality, be extended to other districts.

Raising public awareness on the use of picnic and recreation areas is also a critical issue in terms of environmental management. To ensure cleanliness and fire safety in such areas, it was stated that sanctions should be imposed on polluters, and it was also stated that distributing free garbage bags at the entrances of hiking routes and recreation areas to encourage users would be a positive step.

It was stated that hygienic and accessible toilets should be provided to meet basic needs, especially in areas where tourism activities are concentrated. In addition, the need to plan for population density in overcrowded holiday areas was also emphasized.

It was suggested that free water stations be set up in natural walking routes and recreation areas where users can meet their clean water needs; this practice is also thought to reduce the use of plastic bottles.

Tourism enterprises should be encouraged to use clean and renewable energy sources more, and the use of local plants during the construction process should be integrated into landscape plans to minimize the damage these enterprises may cause to nature.

Can alternative forms of tourism contribute to İzmir's rural development?

Various suggestions were made to support rural development, protect cultural heritage and develop alternative tourism opportunities. In this context, it was stated that local festivals should be organized, regional differences should be highlighted and events that coincide with the same date should be prevented. It is suggested that festivals should be diversified in terms of content and enriched with thematic programs such as goat milking events, underwater diving activities or bird watching events.

In addition, the preparation of guidelines to guide the planning process of festivals and events will make it easier to organize logistical requirements such as the number of participants, parking arrangements, security measures and health services (ambulance, etc.) in advance. In this way, both the comfort of visitors will be ensured, and rural people will be encouraged to gain economic benefits through these events. In this direction, it is important to increase the integration of rural people into tourism activities and to raise awareness on this issue.

The integration of technological tools is also considered an important part of this process. Especially, digital solutions are suggested for sharing event calendars through mobile applications (apps) and enabling users to create alternative tourism routes according to their own interests. While such applications will facilitate the planning process of individual travelers, they will also make regional tourism mobility more balanced and sustainable.

To increase accommodation opportunities in rural areas, it was emphasized that home boarding should be encouraged and the official permission and license processes in this regard should be facilitated. This will both contribute to the local economy and provide a more authentic accommodation experience for visitors.

In addition, it is recommended that cultural and experience-based tourism activities such as the expansion of village theaters, increased promotion of spa areas and natural beauties, and the development of gastronomy tourism (gastro-tourism) should be integrated with rural life. All these steps are of great importance for strengthening sustainable tourism in rural areas and supporting local development.

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4. CONCLUSION

Organized under the leadership of İzmir Metropolitan Municipality and İzmir Office of the Healthy Cities National Network of Türkiye, the “Future of İzmir: Green Belts” workshop was organized with the participation of academics, professional chambers, civil society representatives, local administrators and technical experts. The workshop was planned and conducted on a participatory platform with the aim of creating a vision of a resilient and nature-compatible city by protecting İzmir’s natural structure.

As the effects of the global climate crisis grow, local governments have a growing responsibility to develop nature-based solutions. İzmir, with its green spaces, coastline, agricultural lands, forests and river systems, has significant potential to lay the foundations for a sustainable future. In this context, a “green belt” approach plays a strategic role in both increasing urban resilience and protecting ecosystem services.

The workshop emphasized that İzmir’s ecological thresholds and natural landscape should be at the center of urban planning. Direct ecological connections should be established between the northern (Yamanlar), southern (Balçova, İnciraltı), eastern (Gediz and Küçük Menderes basins) and central (Kültürpark, urban green areas) parts of the city.

Nature-based solutions include the protection and sustainable management of streams, coasts, wetlands and agricultural areas. These areas are critical for reducing the urban heat island effect, strengthening carbon sinks and protecting biodiversity.

İzmir’s planning tools (landscaping plans, zoning plans, urban design guidelines) should be restructured with nature-based principles and corridors should be integrated into spatial planning.

The success of a green belt strategy depends on citizen participation and public ownership of the strategy. Participatory planning processes and micro green solutions at the neighborhood scale should be encouraged.

Within the scope of the Beautiful İzmir Movement, it was stated that small-scale transformations in public spaces should be linked to the green belt vision. Parks, squares, empty spaces and riverbanks should be considered as critical thresholds for climate adaptation and social integration.

Green belts need to be planned not only in the city center, but throughout İzmir, encompassing rural and coastal settlements. The Gediz Delta and Küçük Menderes Basin are key components of this approach.

The workshop suggested implementing micro-green interventions in specific areas, monitoring the impact of these interventions and scaling them according to the results.

COP İZMİR CLIMATE DECLARATION

COP İZMİR CLIMATE DECLARATION

Within the scope of COP İzmir Conference, panels and roundtable meetings were organized under four main themes: Food Security and Accessibility in the Face of the Climate Crisis, İzmir's Opportunities for Green Energy Transition, Climate-Resilient Cities and Communities, and The Future of İzmir: Green Belts. These activities aimed to ensure that İzmir takes a holistic stance against the climate crisis and develops climate policies with a participatory approach. In this direction, a strong will was demonstrated with broad participation and a 35-article climate declaration was prepared. In addition, a total of 268 activities were defined for these 35 goals within the scope of the COP İzmir Climate Action Plan.

Accordingly, We, as representatives of local governments, public institutions, universities, professional organizations, democratic mass organizations, and civil society organizations in İzmir, we demand the following:

1. Food Security and Accessibility in the Face of the Climate Crisis

1. Establishment of "Urban Food Council" in Izmir under the leadership of local governments

2. Preparation of "Izmir Urban Food Strategy Document"

3. Membership in "Milan Urban Food Policy Pact" (MUFPP) in order to benefit from international experiences and increase cooperation

4. Implementation of "Climate Citizens Assembly" Model by Izmir Metropolitan Municipality

5. Encouragement of Urban Food Production and Neighborhood Gardens

6. Branding of Agricultural Products, Effective Promotion of Local and Geographically Indicated Products

7. 7. Reduction of Environmental Impacts of Livestock Sector and Encouragement of Sustainable Livestock Farming Practices

8. Ensuring Recycling of Food Waste with Compost Production

9. Implementation of Applications Such as Rainwater Harvesting, Sponge City Models and Surface Water Diversion Systems within the Framework of the Principle of Water is Common and Prevention of Water Pollution

10. Local Governments, Universities, Cooperatives, etc. Developing Multiple Cooperation Models, Initiating Training and Capacity Building Programs for Producers

11. Establishing Regional Distribution Centers for Food Logistics; Reducing Food Losses and Carbon Footprint by Improving Cold Chain Infrastructures

12. Developing Climate Finance, Agricultural Finance and Investment Support Mechanisms

13. Supporting Retail Sales Models Focusing on Reliable, Healthy and Economical Food Supply, Supporting Local Producers

2. İzmir's Opportunities for Green Energy Transition

14. In Line with the Global Net-Zero Target of Reducing Carbon Emissions of the EU Cities Mission Programme Climate Neutral and Smart Cities Mission, İzmir aims to be a Climate-Neutral City by 2030

15. Reducing the Environmental Impact of Urban Transport; Ensuring Safe, Clean, Accessible and Sustainable Urban Mobility

16. Expanding Renewable Energy Sources and Increasing Energy Efficiency

17. Integrating and Sustaining Water, Energy and Waste Management Infrastructures

18. A Comprehensive Urban Transformation Process Re-evaluating the Existing Building Stock in Terms of Energy Efficiency, Green Area Arrangements and Climate Adaptation

19. Developing Green Transformation and Smart Agricultural Applications in Agriculture

20. Ensuring Participatory Governance and Social Inclusion in Green Transformation

21. Developing New Cooperation and Financing Models to Support Izmir's Green Transformation

22. Expanding Green Transformation, Waste Recycling and Green/Clean Energy Usage in Industry

3. Climate-Resilient Cities and Communities

23. Protecting Biodiversity in the City with Green Infrastructure Applications and Nature-Based Solutions

24. Improving Thermal Comfort in the City

25. Effective Management of Disasters Caused by Climate Change and Increasing Urban Resilience

26. Ensuring Climate Justice in the City

27. Strengthening Inter-Institutional Coordination Mechanisms in Climate Change Mitigation and Adaptation Processes

28. Integrated Management of Water Resources and Basins Against the Sea Level Rise and Salinization

4. The Future of İzmir: Green Belts

29. Creating an Integrated Green Belt System Connecting Izmir's Natural Waterways and Green Networks

30. Creating a Digital Interface for Mapping and Monitoring Blue-Green Infrastructure Systems

31. Designing Blue-Green Infrastructure Systems at Neighborhood Scale

32. Designing Blue-Green Infrastructure Systems at Urban Scale

33. Increasing the Carbon Absorption Capacity of the City

34. Protecting Agricultural Areas and Rural Texture from Urban Sprawl

35. Supporting Rural Development by Encouraging Nature-Friendly and Alternative Tourism Types

Dr. Cemil Tugay

Mayor of İzmir Metropolitan Municipality

President of Healthy Cities National Network of Türkiye

COP !ZM!R CLIMATE ACTION PLAN

COP İZMİR CLIMATE ACTION PLAN

1. Food Security and Accessibility in the Face of the Climate Crisis

Objective 1.1: Establishment of the "City Food Council" led by the local governments in İzmir

Activities:

1.1.1. Creation of a democratic participation platform where cooperatives, small producers, academics, and citizens jointly make decisions through the City Food Council

1.1.2. Expansion of "Community Supported Agriculture" models to support local food production and ensure food sovereignty

1.1.3. Increasing the number of short supply chains and local producer markets, supporting direct producer-consumer interaction

1.1.4. Spatial support and designation of production areas for farmers producing organic and healthy food

1.1.5. Establishment of local supply chains enabling direct connections between producers and consumers through local markets, cooperatives, and food networks

1.1.6. Creation of open data platforms supporting carbon reduction and food security goals (e.g. data on food waste, water use, carbon emissions)

1.1.7. Setting climate justice-based targets to protect the most vulnerable groups (e.g. poor households, children, elderly, migrants) in terms of food security and healthy nutrition against climate change impacts

Objective 1.2: Preparation of "Izmir Urban Food Strategy Document"

Activities:

1.2.1. Preparation of the "Izmir Urban Food Strategy Document" under the leadership of local governments and the supervision of the City Food Council

1.2.2. Establishment of a "Food Agreement" between İzmir Metropolitan Municipality and district municipalities

1.2.3. Preparation of a city-wide "Food Waste Reduction Strategy and Action Plan"

1.2.4. Development of agroecological practice models in regions where animal and plant production coexist (e.g. Ödemiş)

1.2.5. Creation of phased models such as "good agricultural practices" for transitioning to agroecological production in predominantly industrial farming areas (e.g. Menemen)

Objective 1.3: Membership in the "Milan Urban Food Policy Pact" (MUFPP) to benefit from international experience and increase cooperation

Activities:

1.3.1. Transparent public sharing of data related to food inspections at international, national, and local levels to ensure food security

1.3.2. Initiation of food inspections from the early stages of the production process

1.3.3. Increasing international visibility and representation, and developing collaborations from local to global levels

Objective 1.4: Implementation of the "Climate Citizens Assembly" model by İzmir Metropolitan Municipality

Activities:

1.4.1. Collection of citizen proposals and ideas on climate change and food security through the Climate Citizens Assembly

1.4.2. Transformation of citizen proposals into concrete action plans implemented under the supervision of the City Food Council via local governments

1.4.3. Organization of educational activities in targeted regions to raise awareness on climate, food, and environmental issues

1.4.4. Establishment of spatial information sharing and joint decision-making mechanisms among producers, civil society, academia, and public institutions

1.4.5. Mapping of İzmir's climate risks and resources, and making these available to decision-makers and citizens on open platforms

1.4.6. Development and support of citizen science projects to involve citizens in collecting climate and environmental data (e.g. neighborhood-based tools and training for air quality, soil health, and water quality measurements)

1.4.7. Introduction of special quotas and call mechanisms to increase representation of children, youth, elderly, migrants, and low-income groups in the Climate Citizens Assembly

1.4.8. Regular public release of Climate Citizens Assembly meeting reports, decisions, and implementation results on open platforms (e.g. municipal website, open data portals)

1.4.9. Monitoring the integration of the COP İzmir Climate Action Plan into the İzmir Metropolitan Municipality's Sustainable Energy and Climate Action Plan (SECAP)

Objective 1.5: Promotion of Urban Food Production and Neighborhood Gardens

Activities:

1.5.1. Development of exemplary neighborhood garden projects to encourage direct participation of city residents in production; establishment of networks among neighborhood gardens and organization of joint learning programs to disseminate knowledge and experience on urban food production

1.5.2. Allocation of urban gardens, community-supported agriculture models, neighborhood markets, cooperative sales points, and market areas by local governments - provision of infrastructure investments and logistical support

1.5.3. Implementation of "home garden" projects in cooperation with local governments and other stakeholders to increase urban resilience against the climate crisis

1.5.4. Increase of urban green spaces and creation of buffer zones between agricultural and residential areas

1.5.5. Inclusion of urban gardens and green spaces in climate-friendly landscape design, creation of plant cover that enhances biodiversity and supports urban ecosystem services (e.g. carbon sequestration, water cycle, dust and air pollution reduction)

Objective 1.6: Branding of Agricultural Products, Effective Promotion of Local and Geographically Indicated Products

Activities:

1.6.1. Expansion of the "Village Identity Card" application, systematic documentation of each village's infrastructure status, and integration of this data into planning (e.g. sewage, waste management, water quality)

1.6.2. Processing of agricultural products and linking them with gastronomy for final consumer presentation

1.6.3. Conducting microclimate analyses to spatially identify and promote drought- and heat-resistant products

1.6.4. Improvement of the quality of local seeds and diversification of products

1.6.5. Creation of an up-to-date, comprehensive, and visually supported "biodiversity database" on plant and animal diversity in İzmir

1.6.6. Reevaluation of waste management systems due to the serious threats posed by chemicals used in agriculture to soil health and biodiversity - promotion of eco-friendly practices

1.6.7. Expansion of soil analysis centers affiliated with municipalities, preparation of soil quality and biodiversity maps, support for crop rotation and organic farming to prevent soil exhaustion

1.6.8. Product planning in areas at high risk of water scarcity, restriction of planting water-intensive crops

1.6.9. Spatial monitoring, awareness raising, and increased inspection of pesticide and agricultural chemical use in farming areas

1.6.10. Spatial monitoring of air, water, and soil pollution in agricultural and rural residential areas

1.6.11. Strengthening fire prevention and intervention infrastructure in forest fire-prone areas, provision of support to forest village producers

1.6.12. Planning of production and logistics zones for processing and branding of agricultural products in İzmir

Objective 1.7: Reduction of the Environmental Impacts in the Livestock Sector and Encouragement of the Sustainable Livestock Practices

Activities:

1.7.1. Expansion of methane gas reduction applications in livestock (e.g. methane-reducing additives in feed) and support for recovery technologies such as biogas production

1.7.2. Increasing financial support for irrigation, milking systems, seed supply, and family farms to prevent young producers from leaving animal production

1.7.3. Provision of equipment support (e.g. milk tanks) to cooperatives to strengthen production processes

1.7.4. Conducting regular soil analyses and establishing integrated fertilization plans

1.7.5. Prioritizing low-water-consumption crops in fodder production

1.7.6. Ensuring efficient water use in large-scale livestock enterprises - promoting water-saving technologies and closed-loop systems in milking, cleaning, and animal welfare applications

1.7.7. Prioritizing native breeds and pasture livestock in milk production, promoting holistic pasture improvement practices

1.7.8. Providing priority support to small producers working with native breeds and agroecological principles - developing incentive mechanisms based on sustainability, environmental impact reduction, and animal welfare criteria

1.7.9. Encouraging small ruminant livestock in İzmir, implementing ecosystem-based and controlled grazing practices that protect forests and natural areas

1.7.10. Developing ecosystem-based and sustainable species selection and breeding practices in the fisheries sector to adapt to climate change, prioritizing protection of local and native species - supporting species and production systems resistant to high temperatures and diseases while considering environmental and social impacts

1.7.11. Ensuring transparency and traceability of coastal fishing activities and sales processes regarding microorganisms and health risks

Objective 1.8: Recycling of Food Waste Through Compost Production

Activities

1.8.1. Improvement of food waste management and distribution of free or low-cost compost to farmers to enhance soil quality

1.8.2. Encouragement of recycling of organic waste from domestic and commercial sources (e.g., food waste, waste oils) to create social awareness, solidarity, and local economic benefits - conducting education and awareness campaigns for households and businesses to prevent waste generation

1.8.3. Regular monitoring of the environmental impacts of food waste recycling processes (e.g., waste leakage, greenhouse gas emissions) and transparent public reporting of these processes

1.8.4. Development and implementation of policies and practices aimed at reducing food waste throughout the food supply chain, including production, transportation, retail, and consumption stages

Objective 1.9: Within the Principle of Water as Commons, Implementation of Practices Such as Rainwater Harvesting, Sponge City Models, and Surface Water Management Systems - Protection and Monitoring of Water Resources to Prevent Pollution

Activities

1.9.1. Expansion of rainwater harvesting systems in urban and rural areas, integration of these systems into new buildings and public spaces

1.9.2. Preventing uncontrolled open irrigation and protecting water resources by expanding irrigation ponds, early warning systems and closed circuit water systems

1.9.3. Encouraging the use of treated wastewater in agriculture, establishing waste recycling systems

1.9.4. Improving irrigation infrastructure by disseminating modern techniques such as smart irrigation systems that save water such as drip irrigation, precipitation estimates, humidity analyses, etc. for water management

1.9.5. Ensuring the sustainability of the natural water cycle by protecting water basins and forested areas

1.9.6. Considering water management as a common denominator of multi-sectoral areas such as industry, housing, agriculture and mining

1.9.7. Ensuring coordination and data sharing between public institutions and cooperatives in water management

1.9.8. Disseminating small-scale practices such as reuse of vegetable and fruit washing water in garden irrigation

1.9.9. Providing support for energy and chemical usage costs in treatment facility investments, employing relevant technical personnel such as environmental engineers, etc.

1.9.10. Establishing a spatial database for continuous monitoring of water quality and quantity in the Gediz-Bakırçay, Büyük Menderes and Küçük Menderes basins

1.9.11. Developing control and preventive programs to reduce chemical pollutants such as heavy metals, pesticides and endocrine disruptors in water resources at source

1.9.12. Regular sharing of water monitoring data (quality and quantity) on open data platforms; ensuring citizens' access to information on water rights and water quality

1.9.13. Implementing infrastructure and service improvement projects that will ensure access to safe and healthy drinking water for poor neighborhoods, rural settlements and vulnerable groups

Objective 1.10: Development of Multi-Stakeholder Cooperation Models Involving Local Governments, Universities, Cooperatives, etc., and Initiation of Training and Capacity-Building Programs for Producers

Activities:

1.10.1. Local governments should organize training for cooperatives and producers on climate crisis preparedness, and build capacity on environmentally friendly production techniques, climate financing, marketing strategies and climate-friendly practices

1.10.2. Cooperatives should contribute to the development of innovative agricultural technologies in cooperation with stakeholders such as universities, research institutions etc., and smart agriculture and measurement systems suitable for agroecological production should be disseminated, and early warning and response mechanisms should be established against potential disasters.

1.10.3. Establishment of mutual learning and solidarity platforms among producers, cooperatives and consumers on healthy, reliable and environmentally friendly food production (e.g., good practice days, producer-consumer meetings, participatory certification systems).

1.10.4. Establishment and dissemination of training and capacity building programs on nature-based solutions and agroecological production techniques for producers.

1.10.5. Development of training and financing programs to support female producers and young farmers; implementation of agricultural and food policies that consider gender equality.

1.10.6. Protecting local seed varieties, increasing agro-biological diversity and developing information and support services for producers in this regard in cooperation with universities and research institutions

1.10.7. Disseminating new food processing, packaging and distribution techniques that are climate-friendly and environmentally healthy among producers and cooperatives; encouraging practices that reduce chemical use

Objective 1.11: Establishment of Regional Distribution Centers for Food Logistics, Development of Cold Chain Infrastructure to Reduce Food Losses and Carbon Footprint

Activities:

1.11.1. Establishment of agricultural and food logistics bases in strategic regions in the context of digitalization and data flow in the agricultural sector (e.g. Bergama, Aliağa, Torbalı, Işıkkent and Kemalpaşa)

1.11.2. Prioritizing railways in food logistics and increasing the continuity of railway lines

1.11.3. Conducting economic feasibility analyses for the planned and sustainable development of regional agricultural production

1.11.4. Establishment of logistics and warehouse-focused cooperatives and strengthening of producer unions

1.11.5. Spatial determination of pilot areas where climate-friendly agriculture and water management technologies are tested

Objective 1.12: Development of Climate Finance, Agricultural Finance, and Investment Support Mechanisms

Activities:

1.12.1. Establishment of local climate finance mechanisms to support climate adaptation and mitigation projects in agriculture and food systems

1.12.2. Facilitation of access to national and international funds and investment programs for local producers and cooperatives

1.12.3. Development of grant, credit, and insurance schemes tailored to the needs of small-scale producers and vulnerable groups

1.12.4. Promotion of public-private partnerships for the financing of sustainable agriculture and food system projects

1.12.5. Organization of training and information sessions for producers and stakeholders on available financial support mechanisms

1.12.6. Managing many factors such as marketing, financing, technology use and consumer perception together to create value in the agriculture and food sector, making regional agriculture more competitive, sustainable and value-added

1.12.7. Strengthening the food supply chain by conducting studies on venture capital funds

Objective 1.13: Support for Retail Sales Models Focused on Reliable, Healthy, and Affordable Food Supply That Supports Local Producers

Activities:

1.13.1. Ensuring consumers' access to safe, healthy and affordable food through models such as regulated sales

1.13.2. Correctly identifying and prioritizing disadvantaged segments of society (e.g. children, pregnant women, the elderly, youth) within the scope of combating hidden hunger; implementing structural measures that strengthen the right to food of these groups (e.g. free meals, school nutrition programs, social markets, community kitchens); implementing programs that will improve nutrition education and food literacy throughout society

1.13.3. Developing public programs that support sustainable and equitable food access under the leadership of municipalities in order to strengthen public responsibility in the field of food and secure society's right to food; supporting social responsibility projects carried out by the private sector as complementary to public policies and in a manner that is open to transparent auditing (e.g. integrating programs such as Süt Kuzusu with public goals)

1.13.4. Employing a sufficient number of food engineers and relevant technical personnel in the licensing and police units of municipalities in order to increase the effectiveness of food safety inspections; Strengthening citizens' right to access information on food safety by sharing the results of inspections with the public in an open, accessible and understandable manner

1.13.5. Promotion of local markets, cooperative stores, and direct sales points to strengthen the direct relationship between producers and consumers

1.13.6. Support for short food supply chains to reduce intermediaries and transportation-related emissions

1.13.7. Encouragement of e-commerce platforms and digital marketplaces for local food products

1.13.8. Implementation of certification and labeling systems to ensure the reliability, health, and traceability of local food products

1.13.9. Organization of public awareness campaigns to promote the consumption of local and seasonal products

1.13.10. Provision of technical and financial support to small-scale retailers and producers to enhance their competitiveness and market access

2. İzmir's Opportunities for Green Energy Transition

Objective 2.1: In Line with the Global Net-Zero Target of Reducing Carbon Emissions of the EU Cities Mission Programme Climate Neutral and Smart Cities Mission, İzmir aims to be a Climate-Neutral City by 2030

Activities:

2.1.1. Reducing İzmir's carbon emissions through sustainable transportation policies and innovative mobility systems (e.g. hydrogen-fueled buses)

2.1.2. Establishing thematic working committees within city councils focused on climate change, environmental, and waste management issues

2.1.3. Converting urban lighting systems to renewable energy sources (e.g. solar energy)

2.1.4. Increasing environmental data collection capacity with technological investments such as sensor systems equipped with autonomous vehicles capable of detecting environmental issues, thereby providing a scientific basis for decision-making processes

2.1.5. Developing micro-scale strategies at the neighborhood level to reduce the carbon footprint

2.1.6. Ensuring integrated collaboration among İzmir Metropolitan Municipality, district municipalities, and other relevant institutions in the fields of energy, environment, and waste management

2.1.7. Establishing a multi-stakeholder "İzmir Green Transformation Council" comprising the Governor's Office, İzmir Metropolitan Municipality, district municipalities, chambers of industry and commerce, universities, NGOs, and citizen representatives - preparing a detailed action plan under the council's supervision

Objective 2.2: Reducing the Environmental Impact of Urban Transportation, Ensuring Safe, Clean, Accessible, and Sustainable Urban Mobility

Activities:

2.2.1. Constructing safe and interconnected bicycle lanes, especially along the coastline and main arteries such as Kordon, to promote cycling

2.2.2. Creating pedestrianized zones in the city center and densely populated neighborhoods to enhance pedestrian mobility and social interaction

2.2.3. Organizing public space events, such as car-free days on a weekly or monthly basis, to encourage walking, cycling, and other outdoor activities

2.2.4. Integrating active transportation infrastructure with public transport systems, expanding electric bus and tram lines

2.2.5. Developing long-term transportation strategies through the Sustainable Urban Mobility Plan (SUMP İzmir) to reduce the city's carbon footprint

2.2.6. Implementing smart intersection systems and public transport integration applications

2.2.7. Illuminating bus stops with solar energy under the Solar Energy System (GES) Project to reduce the carbon footprint

2.2.8. Establishing a big data infrastructure and developing AI-supported predictive maintenance systems to enable early detection of vehicle failures, integration of emergency warning systems, and increased operational efficiency through driving analytics

2.2.9. Reducing fossil fuel consumption and greenhouse gas emissions through a new-generation, flexible, and technology-based Demand Responsive Transport (DRT) model

2.2.10. Optimizing vehicle routes and personnel assignments via a planning, assignment, and optimization project supported by software to enhance the efficiency of public transport services

2.2.11. Implementing low-emission zones citywide for sustainable urban mobility, expanding the "Park and Ride" system and reducing private vehicle use

2.2.12. Utilizing electric cargo bicycles and light commercial electric vehicles for commercial logistics in marketplaces

2.2.13. Acquiring electric passenger ferries to support urban maritime transport

2.2.14. Promoting the use of e-micro mobility vehicles (e-scooters, e-bikes, etc.) citywide by expanding parking areas and improving related infrastructure

2.2.15. Strengthening charging infrastructure and establishing new charging stations to meet the energy needs of current and planned electric vehicles

Objective 2.3: Expanding Renewable Energy Sources and Increasing Energy Efficiency

Activities:

2.3.1. Increasing the number of solar, wind, and geothermal power plants through public-private partnerships (e.g., the SES model in Tire district)

2.3.2. Promoting energy cooperatives, developing capacity-building financial models, and creating supportive policy frameworks

2.3.3. Expanding the use of İzenerji's digital platform for real-time monitoring and analysis of electricity consumption across İzmir

2.3.4. Implementing energy efficiency improvements in municipal and public buildings and mandating the use of renewable energy

2.3.5. Strengthening legislation to support renewable energy-based social projects and community solidarity models such as energy cooperatives

2.3.6. Developing projects to enhance energy efficiency and renewable energy access, particularly for low-income groups

Objective 2.4: Integrating and Ensuring the Sustainability of Water, Energy, and Waste Management Infrastructure

Activities:

2.4.1. Applying circular economy principles to water, energy, and waste management infrastructure, developing integrated solutions for waste management and resource conservation.

2.4.2. Expanding systems such as biochar production from plant waste and applying for national and international grant programs in this field

2.4.3. Implementing joint infrastructure, energy, and environmental projects between İzmir Metropolitan Municipality and district municipalities

2.4.4. Establishing a comprehensive "Transformation Center" under the İzmir Metropolitan Municipality, including district-based waste management coordination, transformation workshops, and educational spaces for active citizen participation

2.4.5. Structuring a "Waste Management Cooperative" to support the transformation economy

2.4.6. Implementing successful waste management and recycling models from Turkey in pilot areas of İzmir

2.4.7. Developing industrial symbiosis models to establish inter-sectoral waste-reuse relationships and integrate this symbiotic structure into the local economy

2.4.8. Implementing necessary infrastructure for the collection of segregated household waste at the neighborhood level (e.g. container systems, guidance signs, mobile points)

2.4.9. Expanding the use of smart machines that collect recyclable materials such as empty bottles and provide financial incentives in return (e.g. deposit systems)

Objective 2.5: Comprehensive Urban Transformation Process for Re-Evaluating Existing Building Stock in Terms of Energy Efficiency, Green Area Planning, and Climate Adaptation

Activities:

2.5.1. Creating the city's digital twin to serve as a decision support mechanism in urban planning and service management processes

2.5.2. Re-evaluating the existing building stock with respect to energy efficiency, green area planning, and climate adaptation to achieve the goal of becoming a climate-neutral city

2.5.3. Planning and implementing urban transformation projects that will provide affordable, energy-efficient, and healthy living spaces

2.5.4. Increasing the number of parks and green corridors in urban areas and designing living spaces that are compatible with nature

2.5.5. Ensuring that buildings are designed to be integrated into smart grid systems at the building permit stage, thereby optimizing energy consumption based on renewable sources

2.5.6. Developing infrastructure investments that affect transformer capacity by energy distribution companies in a way that supports municipalities' energy planning

Objective 2.6: Developing Green Transformation and Smart Agriculture Practices in Agriculture

Activities:

2.6.1. Supporting green transformation in agriculture with tools such as sensors, artificial intelligence, and data analytics through initiatives like the İzmir Agricultural Technology Center, establishing a resilient agricultural system against the climate crisis

2.6.2. Organizing educational programs on healthy food and sustainable agriculture to raise public awareness

2.6.3. Supporting organic and sustainable agricultural practices around İzmir and strengthening local food chains

2.6.4. Reducing greenhouse gas emissions through the promotion of energy-efficient equipment and the use of renewable energy sources in agricultural areas

Objective 2.7: Ensuring Participatory Governance and Social Inclusion in Green Transformation

Activities:

2.7.1. Making decision-making processes transparent and participatory through mission-oriented strategies involving public institutions, the private sector, and civil society

2.7.2. Ensuring active citizen participation in projects through regular thematic workshops and participatory processes

2.7.3. Increasing innovation opportunities in green energy and sustainability for young entrepreneurs and technology developers

2.7.4. Ensuring that relevant municipal departments, such as planning and transportation, operate with an approach that considers energy policies - analyzing successful examples of regulatory compliance and implementing multidisciplinary practices

2.7.5. Reviewing the alignment of 1/25.000, 1/5000, and 1/1000 scale plans with energy policies and making regulatory adjustments as needed

2.7.6. Developing incentive and/or deterrent policies within municipal budgets to support sustainable practices in areas such as energy, environment, waste, and water management

2.7.7. Developing policies to ensure fair access to energy for disadvantaged groups

2.7.8. Ensuring inter-institutional coordination and conducting micro-zoning studies to clarify authorities and responsibilities

2.7.9. Encouraging local governments, especially at the metropolitan level, to develop creative, coherent, and sustainable solutions based on fundamental principles such as social benefit, environmental sustainability, and local participation

2.7.10. Establishing a comprehensive “Social Transformation Center” that brings together local projects, human resources, and funding pools in the fields of environment, climate, and sustainability, and includes material, exhibition, and application areas

2.7.11. Creating a city-wide sustainability indicator panel to systematically monitor trends with detailed data at the district level

2.7.12. Developing a measurement tool such as the “Green Behavior Index” to monitor public environmental awareness using smart waste bins, mobile applications for waste tracking, and meters that show real-time water and energy use

Objective 2.8: Developing New Cooperation and Financing Models to Support İzmir’s Green Transition

Activities:

2.8.1. Increasing cooperation and knowledge sharing with other cities in the field of energy

2.8.2. Securing project financing through support from international financial institutions such as the European Union and the World Bank

2.8.3. Establishing an “Energy Network” for experience sharing and development of joint strategies among cities

2.8.4. Developing cooperation and project partnerships in the energy sector with medium-sized European cities

2.8.5. Establishing academic-level connections through international networks, universities, research institutions, and technical conferences to strengthen İzmir’s relations with high-capacity cities like Barcelona

2.8.6. Promoting the spread of cooperative processes at the local level to support sustainable production and consumption models

2.8.7. Scaling regional needs accurately and using natural resources/assets efficiently through basin-based cooperation models

2.8.8. Ensuring physical participation in international conferences and meetings to find partners for projects

Objective 2.9: Promoting Green Transition in Industry, Widespread Adoption of Waste Recycling and Green/Clean Energy Use

Activities:

2.9.1. Establishing “Sustainability Centers” within the İzmir Metropolitan Municipality, district municipalities, and Organized Industrial Zones (OIZs), staffed by experts - providing consultancy services and incentives for measuring, inventorying, analyzing, and improving the environmental performance (energy, water consumption, waste management, emissions, etc.) of all industrial facilities inside and outside OIZs

2.9.2. Implementing green finance models such as differentiated loan interest rates based on “energy identity cards” for all sectors with industrial and environmental impacts

2.9.3. Conducting measurements in industrial facilities to prevent water waste and promote circular wastewater management, and implementing practices such as “pay-as-you-use”

3. Climate-Resilient Cities and Communities

Objective 3.1: Protecting Urban Biodiversity with Green Infrastructure Applications and Nature-Based Solutions

Activities:

3.1.1 Protection of existing green areas throughout the city, ensuring the integration of ecosystem services into urban life

3.1.2. Increasing the amount of green areas in urban transformation projects, integrating green areas on the urban periphery into the city; encouraging the use of low-water consumption and local plant species in designed green areas

3.1.3. Increasing the number of city/neighborhood gardens

3.1.4. Protection of the city’s ecological and cultural memory (e.g., Peninsula region)

3.1.5. Ensuring the continuity of ecological corridors (e.g., streams); preventing their interruption by concrete infrastructures

3.1.6. Increasing the number of thematic city parks such as Flamingo Nature Park in Izmir

3.1.7. Protection of stream beds and natural air flow corridors; revealing those that are currently closed

3.1.8. Establishing cooperation mechanisms between the Izmir Metropolitan Municipality, district municipalities, relevant departments of universities (urban and regional planning, climatology, landscape architecture, etc.) and civil society organizations to improve green infrastructure in Izmir

3.1.9. Taking the climate crisis into consideration in public space designs; reconsidering urban aesthetics and functionality in this direction

Objective 3.2: Improving Thermal Comfort in the City

Activities:

3.2.1. Increasing green systems and permeable surfaces to reduce heat stress experienced especially in certain regions during the summer months due to the density of impermeable surfaces and insufficient shading elements in Izmir

3.2.2. Protecting biodiversity and ensuring thermal comfort with nature-based solutions

3.2.3. Achieving a decrease in surface temperatures by increasing the albedo effect with light-colored pavement and building surfaces

3.2.4. Implementing models such as the digital guidance service “shadow navigation” developed in Athens, which allows pedestrians to direct their walking paths to shaded areas, in Izmir

3.2.5. Increasing permeable surfaces in Izmir, especially in city squares, boulevards, pedestrian paths without shading infrastructure and public transportation transfer centers, encouraging the use of natural materials, increasing surface reflectivity (albedo effect) and reducing surface temperature, strengthening rainwater management and green infrastructure systems

3.2.6. Systematic integration of heat stress analyses into urban planning, urban design and project implementation processes

3.2.7. Renewing building and zoning regulations in line with climate-friendly planning principles; including criteria such as material selection, permeability and shading into legislation

3.2.8. Determining risky areas with urban heat maps and vulnerability analyses, determining areas of priority in intervention on a scientific basis

3.2.9. Preparing a “Hot Weather Action Plan” that includes early warning systems against emergency heat waves

Objective 3.3: Effective Management of Climate Change-Induced Disasters, Strengthening Urban Resilience, and Climate Justice

Activities:

3.3.1. Eliminating deficiencies in existing regulations in combating forest fires that have increased due to drought; increasing early response capacity through the integration of smart systems

3.3.2. Establishing integrated and multi-layered risk management systems against disasters; detecting forest fires at an early stage and responding rapidly through early warning systems such as the Smart Notification System (SNS)

3.3.3. Ensuring data sharing, analysis, and integration of early warning systems by establishing a Disaster Portal

3.3.4. Holding Disaster Coordination Workshops regularly, strengthening inter-institutional coordination and cooperation

3.3.5. Strengthening local solidarity culture and communication networks; establishing strong cooperation networks among universities, NGOs and public institutions

3.3.6. Strengthening the knowledge capacity, personal protective equipment and equipment adequacy, and social rights of personnel working in disaster response processes

3.3.7. Planning tent cities and container settlements in accordance with land characteristics; ensuring effective establishment of mobile health services and field hospitals, ensuring safe water supply and hygiene conditions

3.3.8. Systematic planning for post-disaster waste management and control of hazardous waste

3.3.9. Integrating disaster assembly area determination processes into zoning plans and relevant plan notes; standardizing design conditions for these areas

3.3.10. Adapting Resilient Place Standards (RPS) and Critical Infrastructure Resilience (CIR) models developed in Scotland to Izmir in line with the unique needs at national and local scales

3.3.11. Increasing urban resilience by ensuring the participation of all district municipalities in the planning and implementation process of disaster assembly areas under the coordination of Izmir Metropolitan Municipality

3.3.12. Reorganizing zoning plans considering disaster risks

3.3.13. Limiting construction to protect the forest-water-food cycle

3.3.14. Supporting sapling planting and soil protection activities, increasing soil cover

3.3.15. Completion of the Digital Disaster Portal for sharing disaster data; conducting economic impact analyses and risk assessments of disasters

3.3.16. Updating legal legislation on disasters and climate crisis and monitoring implementations

3.3.17. Ensuring inter-institutional cooperation and eliminating coordination deficiencies in regions where residential areas are intertwined with forested areas and where the areas of responsibility of the Izmir Metropolitan Municipality Fire Department and the General Directorate of Forestry overlap, for effective intervention in emergencies

Objective 3.4: Achieving Climate Justice in the City

Activities:

3.4.1. Increasing public awareness on climate change-related disasters (e.g., forest fires, tsunami), expanding educational activities on this issue; establishing neighborhood-based volunteer groups, developing a culture of solidarity

3.4.2. Determining temporary settlement areas in neighborhoods and completing infrastructure preparations

3.4.3. Identifying and assessing risks from climate crisis from a climate justice perspective; prioritizing disadvantaged and vulnerable groups (e.g., elderly, disabled) and detailing risk analyses (e.g., flood and inundation risk, heat waves and urban heat island effect, forest fires, water scarcity) and preparing special support and access plans

Objective 3.5: Strengthening Inter-Institutional Coordination Mechanisms in Climate Change Mitigation and Adaptation Processes

Activities:

3.5.1. Strengthening coordination mechanisms between local public institutions, universities, NGOs, and the private sector

3.5.2. Conducting a comprehensive review of current practices and effectively utilizing digital transformation opportunities to convert them into flexible and sustainable systems compatible with the climate crisis

3.5.3. Encouraging active public participation in decision-making processes, increasing public awareness of environmental indicators such as water consumption and carbon footprint through digital information boards

3.5.4. Reassessing land use in line with sustainability principles - considering environmental, economic, and social impacts together in urban planning processes.

3.5.5. Establishing project-based collaborations with international institutions and organizations, diversifying knowledge and financial resources to strengthen local capacity

3.5.6. Expanding community-based climate adaptation efforts conducted in various districts and rural areas of İzmir, fostering a culture of solidarity (e.g. Neighborhood Gardens Project)

3.5.7. Identifying the most vulnerable groups to the climate crisis, analyzing problems through direct participation, and disseminating projects such as the "Climate Resilience Project" to develop solutions

Objective 3.6: Integrated Management of Water Resources and Basins against Sea Level Rise and Salinization

Activities:

3.6.1. Conducting analyses using Geographic Information Systems (GIS) to assess sea level rise due to climate change in İzmir and developing models predicting good, moderate, and worst-case scenarios

3.6.2. Developing and regularly updating comprehensive, scenario-based evacuation plans against sudden or long-term coastal flooding

3.6.3. Preventing water pollution through integrated land management in basins (e.g. pesticides used in agriculture) and ensuring the sustainable use of water resources/assets

3.6.4. Facilitating access to water resources and improving water quality in urban and rural areas

3.6.5. Developing policies for water conservation, reuse, and effective management in the industrial sector

3.6.6. Taking measures against overflow and salinization at points where rivers and urban infrastructure systems meet the sea, prioritizing nature-based solutions

3.6.7. Implementing environmental measures to prevent groundwater pollution

3.6.8. Expanding awareness activities related to the climate crisis and water use

4. The Future of İzmir: Green Belts

Objective 4.1: Creation of an Integrated Green Belt System Connecting Izmir's Natural Waterways and Green Networks

Activities:

4.1.1. Implementing a green belt strategy that evaluates the city's natural assets – from Kültürpark to Yamanlar, from Balçova to İnciraltı, and from streams to coastlines – as a whole

4.1.2. Reimagining the relationship between nature and humans through green corridors, special protection areas, and bicycle paths; evaluating steppe-like areas as part of the green infrastructure

4.1.3. Removal of concrete channels and conversion to natural stream beds, ecological stream rehabilitation; e.g., expansion of the Peynircioğlu Stream as a pilot project, improvement of water quality

4.1.4. Creation of "eco-recreation corridors" with walking paths and vegetation

4.1.5. Connecting existing green areas with continuous bicycle and pedestrian paths

4.1.6. Protecting wetlands and promoting sustainable methods in agricultural irrigation

4.1.7. Completion of ecological stream rehabilitation projects in collaboration with IZSU by 2026

4.1.8. Mandatory implementation of rainwater harvesting systems to reduce impervious surfaces in the city

4.1.9. Creation of a "Water Museum" and green corridor around the historic Diana Baths (Halkapınar Stream)

4.1.10. Establishment of treatment plants to prevent wastewater from entering streams; prevention of pollution through strict monitoring, especially in industrial areas (e.g., Gaziemir)

4.1.11. Creation of functional, climate-sensitive, permeable surfaces and ecological green infrastructure supported by living vegetation in the city

Objective 4.2: Creating a Digital Interface for Mapping and Monitoring Blue-Green Infrastructure Systems

Activities:

4.2.1. Conducting a "Blue-Green Infrastructure and Ecological Corridors in Izmir" workshop on a digital platform that includes all districts of Izmir and offers free software

4.2.2. Sharing the data compiled for Izmir's blue-green infrastructure on an updatable digital platform, as in the "İBB Green Istanbul/Ecosystem Map" example

Objective 4.3: Designing Blue-Green Infrastructure Systems at Neighborhood Scale

Activities:

4.3.1. Designing micro green areas (e.g. apartment gardens) with the participation of the neighborhood people in urban transformation projects

4.3.2. Updating the green area standards per person by differentiating them at the neighborhood scale, taking into account local climatic differences and microclimatic conditions

4.3.3. Making the right of access and spatial justice one of the basic principles in public green area planning, and carrying out neighborhood-based studies on this issue

Objective 4.4: Designing Blue-Green Infrastructure Systems at Urban Scale

Activities:

4.4.1. Comprehensively analyzing the current status of the city in terms of climatic conditions; identifying climate-based disaster risks such as heat waves, droughts, floods and inundations and integrating them into the planning process

4.4.2. Expanding sustainable water management practices such as rainwater harvesting throughout the city; securing these practices with zoning plan notes and integrating them into legislation as in the case of the Istanbul Metropolitan Municipality (e.g., permeable floors, green roofs)

4.4.3. Considering that the current regulations regulating infrastructure practices are inadequate from a climate change perspective, updating the relevant legislation and restructuring them in line with the principle of sustainability

4.4.4. Constructing energy-efficient buildings with green roofs instead of high-rise buildings; adding "green building" criteria to zoning regulations

4.4.5. Ensuring long-term ecosystem harmony by preferring low-water consumption and resilient plant species suitable for local climate and soil conditions in landscaping

4.4.6. Conducting current situation analyses and climate risk assessments throughout the city, creating action plans based on concrete data

4.4.7. Determining potential areas planned to be opened to settlement in advance, considering environmental and climatic factors; preventing illegal construction

4.4.8. Using climate-sensitive materials in public open spaces, increasing environmental sensitivity and improving user comfort with natural material preferences such as wooden seating elements and shades

4.4.9. Integration of green areas within transportation infrastructure; increasing urban aesthetics and user comfort by implementing green stop projects around transfer centers, bus stops and piers

4.4.10. Establishing monitoring and evaluation mechanisms in planning and implementation processes and integrating them into local government policies; observing climate sensitivity in all planning levels and zoning regulations from the upper scale to the lower scale

Objective 4.5: Increasing the City's Carbon Absorption Capacity

Activities:

4.5.1. Protecting the İnciraltı City Forest by closing it to construction

4.5.2. Restricting fishing activities in areas with dense seagrass beds (e.g., Karaburun)

4.5.3. Promoting water-saving methods in agricultural irrigation, particularly in the Kemalpaşa Plain

4.5.4. Accelerating afforestation efforts through the "A Forest for Every Neighbourhood" project

4.5.5. Incorporating afforestation efforts and water elements into design; applying green themes (e.g., facade coverings with climbing plants) on building surfaces

4.5.6. Creating wind corridors to support airflow in the urban fabric, reducing the urban heat island effect

Objective 4.6: Protection of Agricultural Areas and Rural Fabric from Urban Sprawl Effects

Activities:

4.6.1. Declaration of the Menemen Plain as an agricultural site

4.6.2. Support for agrotourism and organic and/or agroecological farming in suitable areas (e.g., Seferihisar-Köyceğiz)

4.6.3. Collaborating with relevant institutions to establish the legal status of the "Rural Site" concept

4.6.4. Strengthening small producers by providing villages with support such as seedlings/seeds

Objective 4.7: Supporting Rural Development by Promoting Nature-Friendly and Alternative Types of Tourism

Activities:

4.7.1. Marking historical and natural routes (e.g., Ephesus-Mimas Road)

4.7.2. Creating infrastructure for gastrotourism with routes such as the Urla Vineyard Road.

4.7.3. Promoting routes through mobile applications (e.g. developing and implementing previously researched routes, particularly in the peninsula)

4.7.4. Encouraging local guesthouses and organizing festivals (e.g. Bergama Kozak Plateau Walnut Festival).

4.7.5. Developing projects based on strategic plans such as the "Peninsula Sustainable Development Strategy"

4.7.6. Encouraging environmentally friendly behavioral changes; e.g. expanding the "Ephesus SIM card" application, which offers free public transport in exchange for the collection of waste separated by the public in Selçuk, to other districts

4.7.7. Raising social awareness regarding the use of picnic and recreation areas; educating the public on reducing plastic bottle use and waste management

4.7.8. Establishing free water stations in nature trails and recreation areas to meet users' clean water needs; thereby reducing plastic bottle use

4.7.9. Encouraging tourism businesses to use clean and renewable energy sources more

4.7.10. Organizing local festivals and highlighting regional differences to protect cultural heritage and develop alternative tourism opportunities

4.7.11. Promoting cultural and experience-based tourism activities such as the expansion of village theatres, increased promotional activities for spa areas and natural beauty spots, and the development of gastronomic tourism in an integrated manner with rural life

APPENDICES

Index Of Abbreviations

- AASSM: Ahmed Adnan Saygun Art Center
- AİS: Intelligent Warning System
- Ar-Ge: Research and Development
- ALOSBİ: Aliağa Organized Industrial Zone
- BAYETAV: We Live Together Education and Social Research Foundation
- BBOM: Another School Is Possible
- BES: Biomass Energy Plants
- BİSİM: Bicycle Rental System
- CBS: Geographic Information Systems
- COP30: The United Nations Climate Change Conference / Conference of the Parties
- COP İzmir: İzmir Climate Change Conference of Parties
- CRFS: City Region Food System
- CSÜS: Sexual and Reproductive Health
- ÇYDD: Çağdaş Yaşamı Destekleme Derneği
- DASK: Disaster Insurance Pool
- DPF: Diesel Particulate Filter
- DRT: Demand Responsive Transport
- EGEÇEP: Aegean Environment and Culture Association)
- EGİAD: Aegean Young Business Association
- ESKEM: EGİAD Social and Cultural Activities Center
- ETO: Ecological Agriculture Organization
- GES: Solar Energy Plants
- GETO: Gediz Ecology Community
- HES: Hydroelectric Plants
- HİM: Citizen Communication Center
- HUDOTO: Law, Nature, and Society Foundation
- ICLEI: Local Governments for Sustainability Network
- IPCC: Intergovernmental Panel on Climate Change
- İEKKK: İzmir Economic Development Coordination Board
- İRAP: Provincial Risk Reduction Plan
- İzBB: İzmir Metropolitan Municipality
- İZFAŞ: İzmir Fair Services, Culture and Art Inc.
- İZKA: İzmir Development Agency
- İZPA: İzmir Planning Agency

- KOBİ: Small and Medium-sized Enterprises
- KOSGEB: Small and Medium Industry Development and Support Administration
- MAG: Neighborhood Disaster Volunteers
- MISP: Minimum Health Service Package Training Program for Sexual and Reproductive Health in Disasters
- OECD: Organisation for Economic Co-operation and Development
- OSB: Organized Industrial Zone
- RES: Wind Energy Plants
- SDGs: Sustainable Development Goals
- SECAP: Sustainable Energy and Climate Action Plans
- STK: Non-Governmental Organizations
- TEDAŞ: Türkiye Electricity Distribution Co
- TEMA: Turkish Foundation for Combating Soil Erosion, Reforestation and the Protection of Natural Habitats
- TMMOB: Union of Chambers of Turkish Engineers and Architects
- UNDP: United Nations Development Program

COP İzmir: Food Security and Accessibility in the Face of Climate Crisis

Workshop Methods Used

a) Opening and Introductory Presentation

b) Panels

c) Roundtable Discussions

Methodology: Participants will focus on predetermined topics, be divided into small groups, and each group will engage in in-depth discussions on their assigned subject. The working groups will brainstorm to identify current issues and potential solutions related to food security and access amid the climate crisis.

Discussions will be systematically recorded by rapporteurs, and each table's session results will be compiled into an analytical report titled "Workshop Table Results Reports."

Workshop Process and Timeline

09:30 - 10:00 Opening – Speech by Yunus ARIKAN, Global Advocacy Manager of the Local Governments for Sustainability Network (ICLEI)

10:00 - 10:15 Speech by Dr. Cemil TUGAY, Mayor of İzmir Metropolitan Municipality

10:15 - 10:30 First Session: "İzmir's Food Perspective"

10:30 - 11:00 Coffee Break

11:00 - 12:30 Second Session: "Food Security and Access in the Face of the Climate Crisis"

12:30 - 13:30 Lunch Break

13:30 - 14:00 Roundtable Discussions

14:00 - 16:00 Presentation of the Working Group Reports

16:00 - 17:00 Discussion and Closing

Workshop Groups And Main Topics

1. Plant Production

Moderator: Ayşegül KARAKOYUN SEÇGİN, İzmir Metropolitan Municipality Department of Agricultural Services

Rapporteur: Merve AKINCIOĞLU, İzmir Metropolitan Municipality Department of Health Affairs

1.Aynur KAZANCI SARIKAYA, İzmir Metropolitan Municipality Department of Agricultural Services

2.Erol AKMAN, Pirinççi Village Agricultural Development Cooperative

3.Evrim Pınar MAK, İzmir Metropolitan Municipality Department of Agricultural Services

4.Gizem DALGIÇ, İzmir Metropolitan Municipality Department of Agricultural Services

5.Gözde DURAN ÖZER, İzmir Metropolitan Municipality Department of Agricultural Services

6.Gülen Gonca MERSİN, İzmir Metropolitan Municipality Department of Agricultural Services

7.Hüseyin KANLI, Dereköy Gökyaka Village Agricultural Development Cooperative

8.Murat KULAÇ, Bademler Village Agricultural Development Cooperative

9.Seçil UYSAL HALLİ, İzmir Climate Change and Clean Energy Directorate

10.Sema SAYGIN YAMAN, İzmir Agricultural Development and Other Agricultural Cooperatives Union (Village Coop)

11.Yasemin GÜNGÖR ENGİN, Demircili Village Agricultural Development Cooperative

2.Biodiversity, Green Corridors, and Urban Agriculture

Moderator: Ferhan UZUN, Neighborhood Gardens

Rapporteur: Raşide SAR, İzmir Metropolitan Municipality Department of Health Affairs

1.Alev KIR, Ecological Agriculture Organization Association

2.Betül ÇAVDAR, Chamber of Landscape Architects (TMMOB)

3.Betül D. İŞERİ, Menderes Municipality

4.Deniz İNCESU, İzmir Metropolitan Municipality Climate Change and Clean Energy Branch

5.Duygu BÖLÜK, Bornova Municipality

6.Ece KARA, Menderes Municipality

7.Ferhat MATUR, Dokuz Eylül University, Anthropocene Research Group

8.Halit ÇELİK, İzmir Metropolitan Municipality Parks and Gardens Department

9.Hüseyin ÖZTÜRK, İzmir Metropolitan Municipality Parks and Gardens Branch

10.İpek DOĞUSOY, İzmir Metropolitan Municipality City Council

11.Nevzat İŞGÖREN, Menderes Municipality

12.Pelin TEKİR, Social Climate Association

13.Serdar SİMSAR, İzmir Metropolitan Municipality Rural Services Department

3.Food Security, Reliability, and Hidden Hunger

Moderator: Tomris KELEŞ, İzmir Branch of the Contemporary Women's Association (ÇYDD)

Rapporteur: Emre TURHAN, İzmir Metropolitan Municipality Department of Health Affairs

1.Aslı TALAY, İzmir Metropolitan Municipality Department of Agricultural Services

2.Ayçin VURAL, İzmir Metropolitan Municipality Department of Rural Services

3.Aysun ERENOĞLU, İzmir Metropolitan Municipality Soup Kitchens Department

4.Barış Onur ÖRS, Anthropocene Research Group

5.Bilge TÜRK, Aegean Exporters' Associations

6.Bülent ŞIK, BAYETAV (Aegean Fresh Fruit and Vegetable Exporters' Union)

7.Deniz EVCİMEN, İzmir Kadifekale Women's Solidarity Center

8.Dicle Dilan SALMAN, BAYETAV Schools

9.Ebru ASAL, İzmir Metropolitan Municipality Soup Kitchens Department

10.Figen YAVUZ, İzmir Metropolitan Municipality Soup Kitchens Department

11.Gökhan GÖKTEPE, İzmir Chamber of Pharmacists (İZPA)

12.İpek TOPUZOĞLU, Agricultural Economics Association

13.Melek Lora SAKARLI, Climate Change and Clean Energy Branch

14.Melisa METE, İzmir Metropolitan Municipality Soup Kitchens Department

15.Nurcan PİRGAN ÇAKIR, Karabağlar Municipality

16.Ömer Ulaş KIRIM, Chamber of Food Engineers (TMMOB)

17.Özge ŞENYİĞİT, İzmir Metropolitan Municipality Women's Studies Branch

18.Pembe ALBAYRAK EMÜL, Wheat Association

19.Suzan İSMAİL, Neighborhood Garden

20.Seydi TÜTÜNCÜ, Karşıyaka Municipality

4.Food Logistics

Moderator: Özgür YALÇINKAYA, İzmir Metropolitan Municipality Transportation Department

Rapporteur: Çağatay DELEN, İzmir Metropolitan Municipality Department of Health Affairs

1.Berk ÇERGUN, İzmir Metropolitan Municipality Logistics and Terminals Branch

2.Çağlar TÜKEL, İzmir Metropolitan Municipality Climate Change and Clean Energy Branch

3.Güneş UYANIKER, İzmir Metropolitan Municipality Logistics and Terminals Branch

4.İ. Uğur TOPRAK, Chamber of Food Engineers (TMMOB)

5.Muhammed ASHOUR, Bergama Municipality

6.M. Yağız NARİN, İzmir Metropolitan Municipality City Council

7.Oğulcan KAFCAK, İzmir Metropolitan Municipality City Council

8.Umut EROL, İzmir Metropolitan Municipality City Council

9.Yusuf DOĞAN, Kınık Municipality

10.Yeşim GÜL KARABÖRKLÜ, İzmir Metropolitan Municipality Rural Services Department

5.Livestock Production and Fisheries

Moderator: Hüseyin Gökhan ÖZDEMİR, İzmir Metropolitan Municipality Veterinary Affairs Department

Rapporteur: Arda YAPANMIŞ, İzmir Metropolitan Municipality Department of Health Affairs

1.Atakan KAHRAMAN, İzmir Metropolitan Municipality Department of Agricultural Services

2.Can AKÇINAR, Aegean University Faculty of Fisheries

3.Ebru TONG, İzmir Metropolitan Municipality Animal Health Branch

4.Kemal PEKMEZ, Veterinarian

5.Meral AYDIN YÜCE, İzmir Metropolitan Municipality Climate Change and Clean Energy Branch

6.Meriç H. KASAPOĞLU, İzmir Metropolitan Municipality Department of Agricultural Services

7.Murat KAPLAN, Veterinarian

8.Mustafa KOCATAŞ, Kozak Çamavlu Agricultural Development Cooperative

9.Sabahattin ERBAB, Şemikler Fisheries Cooperative

10.Tahir S. YAVUZ, Veterinarian

11.Yücel YILBAŞI, Rural Development and Improvement Branch

6.Drought, Water Consumption, and Water Pollution

Moderator: Nurgül UÇAR AKTUĞ, KÖY-KOOP (Rural Cooperative)

Rapporteur: M. Pelin YILDIRIM, İzmir Metropolitan Municipality Department of Health Affairs

1.Burkay KÖKNAR, İzmir Metropolitan Municipality Climate Change and Clean Energy Branch

2.Ceylin KAPLAN, İzmir Metropolitan Municipality City Council

3.Doğukan TOKÇİN, Ecological Life Support Association of Zeytince

4.Emran KİŞİ, İzmir Commodity Exchange

5.Erdinç ŞİMŞEK, Bahçelievler Municipality

6.Erdinç TÜRKÖN, İzmir Metropolitan Municipality Department of Agricultural Education R&D and Coordination

7.Erhan İÇÖZ, EGEÇEP (Ege Environmental Platform)

8.Ertuğrul BARICA, EGEÇEP

9.F. Yüce AYHAN, İzmir Medical Chamber

10.Pelin ATAKAN, Yaşar University

11.Sinem YEŞİL, İzmir Metropolitan Municipality Rural Area Strategy Department

7.From Soil to Table: Agroecology

Moderator: Nehir YÜKSEL, İzmir Metropolitan Municipality Department of Rural Services

Rapporteur: Ufuk KILIÇASLAN, İzmir Metropolitan Municipality Department of Health Affairs

1.Betül TORUN, GETO (Ecological Agriculture Association)

2.Derya LİM, EGEÇEP (Aegean Environmental Platform)

3.Düzgün Ali VARLI, İzmir Metropolitan Municipality City Council

4.Ilgaz YAMAN, İzmir Metropolitan Municipality City Council

5.İpek SUER TOPUZOĞLU, Agricultural Economics Association

6.Mehmet Göktuğ ÖZTÜRK, İzmir Metropolitan Municipality Climate Change and Clean Energy Branch

7.Mesut Yüce YILDIZ, İzmir Metropolitan Municipality Department of Agricultural Services

8.Müge ÇAKIR, Wheat Association

9.Ömercan HASANKÖYOĞLU, Karaburun Municipality

10.Samet Doğan KARATAŞ, Social Climate Association

11.Zeynep ÖZÇAM, İzmir Institute of Technology

COP İzmir: Opportunities for Green Energy Transition

Methods Used in the Workshop

a) Round Table Discussions

b) Panels

Method: The workshop will be conducted with the participation of stakeholders from public institutions, local governments, private sector, academia, NGOs, and entrepreneurs active in the energy sector.

Discussions will be systematically recorded by rapporteurs, and the results obtained at the end of each table session will be reported analytically as “Workshop Table Outcome Reports.”

Workshop Process and Schedule

10:00 - 12:00 Round Table Discussions

12:00 – 12:45 Lunch

13:00 – 13:45 Gil (Guillermo) Penalosa (Founder of 8-80 Cities) “Good Cities are Sustainable”

14:30 – 16:00 Prof. Dr. Koray Velibeyoğlu (Chairman of İZPA) “İzmir’s Climate Neutral and Smart City Mission” and Erhan Uzunoğlu (Chairman of İZENERJİ Board)

Workshop Working Groups And Main Topics

1. Climate Finance and Clean Energy

Moderator: Mustafa KOCAAĞA, İZENERJİ A.Ş. Energy Services Directorate

Rapporteur: M. Pelin YILDIRIM, İzmir Metropolitan Municipality, Health Affairs Department

1. Akın ERDOĞAN, Zeytince Association for Supporting Ecological Life
2. Anıl KOÇ, İzmir Metropolitan Municipality, EU Grant Projects Branch
3. Can AKTAN, Bornova Municipality
4. Cansu DUMAN, İzmir Metropolitan Municipality, Parks and Gardens Department
5. Ekin TEMİZ, Bornova Municipality
6. Elif ÖZEL, İzmir Businesswomen Association
7. Meltem KARACA, Zeytince Association for Supporting Ecological Life

2. Local Energy Policies and Energy Law

Moderator: Tevhide ALYANAK, Urla Municipality

Rapporteur: Burçin ÇOLTU, İzmir Metropolitan Municipality, Health Affairs Department

1. Emrah Sait ERDA, İzmir Metropolitan Municipality, Urban Justice and Equality Branch
2. Ercan BİRBİLEN, İzmir Metropolitan Municipality, Urban Justice and Equality Branch
3. Hakan DEMİREL, Buca Municipality
4. Kardelen Ekin ŞAHİN, İzmir Metropolitan Municipality, Zoning and Urban Planning Department
5. Mahsun Deniz KANAT, Buca Municipality
6. Mine ÖGE, İzmir Metropolitan Municipality, Zoning and Urban Planning Department
7. Öykü ERDEM, Yaşar University

3. Climate Neutral and Smart City

Moderator: Tolga ÇİLİNGİR, İzmir Metropolitan Municipality, Rural Services Department

Rapporteur: Raşide SAR, İzmir Metropolitan Municipality, Health Affairs Department

1. Ali Kemal ÇINAR, Konak Municipality
2. Başak SOMUNCU, İzmir Metropolitan Municipality, EU Grant Projects Directorate
3. Elit TOKAY, Çeşme Municipality
4. Gökay KARAKALPAKOĞULLARI, İzmir Metropolitan Municipality, Green Spaces Planning Project Directorate

5. Huri ALDIRMAZ, İzmir Metropolitan Municipality, Environmental Protection and Control Directorate
6. H. Deniz ÖZBİLGE, Karşıyaka Municipality
7. Mehtap YILDIZ, İzmir Metropolitan Municipality, Foreign Relations Directorate
8. Meltem KARACA, Zeytince Association for Supporting Ecological Life
9. Onur YÜKSEL, Recent Graduate
10. Ömercan HASANKÖYOĞLU, Karaburun Municipality
11. Selin DÖNMEZ, Karabağlar Municipality
12. Zeynep ÇELİK, Çeşme Municipality

4. Green Transition in Agriculture

Moderator: Murat ALTUN, İzBB Agricultural Training R\&D and Coordination Directorate

Rapporteur: Arda YAPANMIŞ, İzBB Health Affairs Department

1. Ahmet TOMAR, İzBB İzmir Natural Life Park Directorate
2. Bülent ÜNGÜR, Bornova Chamber of Agriculture
3. Dilek BATMAZ VURAL, İzmir Commodity Exchange
4. Ferhan UZUN, İzBB Women’s Studies Directorate
5. Murat KULAÇ, S.S. Bademler Village Agricultural Development Cooperative
6. Nehir YÜKSEL, İzBB Rural Services Department
7. Pınar ERDOĞAN, İzBB Southern Areas Maintenance Directorate
8. Yasemin SOYDAN, TEMA Foundation

5. Green Transition in Transportation

Moderator: Kardelen LAÇİN, İzBB ESHOT General Directorate

Rapporteur: Merve ÇARKCI KAPI, İzBB Health Affairs Department

1. Dilek TOSUN, İzBB Transportation Planning Directorate
2. Gonca BAÇ DENİZLİOĞLU, İzBB ESHOT General Directorate
3. Görkem GÜRDAĞ, İzBB Marine Transportation Services Directorate
4. Sevim SÜRÜCÜ, İzBB ESHOT Strategy Development Department

6. Green Transition, Innovation and Technology in Industry

Moderator: Berk ERÇETİN, İzmir Kemalpaşa Organized Industrial Zone

Rapporteur: Ekrem Ersin CESUR, İzBB Health Affairs Department

1. Asena ÖZBEKOĞLU, İzmir Kemalpaşa Organized Industrial Zone
2. Çiğdem ÖNSAL, Aegean Exporters’ Associations
3. Gürdal AÇIL, Çiğli Municipality
4. Serdar KARADUMAN, Çiğli Municipality
5. Zeynep ÖKMEN, İzmir Democracy University

7. Climate-Responsible / Green Behavior Change

Moderator: Ayşen ÖZMEN, İzmir Kavram Vocational School

Rapporteur: Merve AKINCIOĞLU, İzBB Health Affairs Department

1. Avni GÖK, İzBB Animal Health Directorate
2. Deniz EVCİMEN, İzBB Women's Studies Directorate
3. Doğukan TOKÇİN, Zeytince Association for Supporting Ecological Life
4. Eylem DEMİRCİOĞLU, İzBB Climate Change and Clean Energy Directorate
5. Gülüzar DAĞAŞAN, Bayraklı Municipality
6. H. Deniz ÖZBİLGE, Karşıyaka Municipality
7. Meltem KARACA, Zeytince Association for Supporting Ecological Life
8. Özge ŞENYİĞİT, İzBB Women's Studies Directorate

COP İzmir: Climate Resilient Cities and Communities

Methods Used in the Workshop:

a) Roundtable Discussions

b) Panels

Approach: The workshop will be conducted with the participation of stakeholders including public institutions, local governments, private sector, academia, NGOs, aiming to develop resilient local government policies against climate change.

Discussions will be systematically recorded by rapporteurs, and the results obtained at the end of each table session will be reported as "Workshop Table Results Reports" in an analytical structure.

Workshop Process and Schedule:

09:30 - 10:00 Opening Speeches (Chairman of İZPA Prof. Dr. Koray Velibeyoğlu, İzBB Health Affairs Department Head Ahmet Soner Emre, MD)

10:00 – 11:15 Session 1 – Resilience to Disasters in an Era of Multiple Crises

11:15 - 11:30 Break

12:30 - 13:00 Session 2 – Solidarity Networks for Resilient Cities

13:00 - 13:30 Lunch Break

13:30 – 17:00 Session 3 – Roundtable Discussions

Workshop Working Groups And Main Topics

1.Disaster Assembly Areas

Moderator: Leyla BUDAK, İZPA

Rapporteur: İlkcan SERTDEMİR, Disaster Coordination Center Directorate

1.Bahar ŞAHİN, İzmir Democracy University

2.Cengiz ÖZER, İzBB Disaster Affairs Department

3.Elif ILGAZDAĞ, Karşıyaka Municipality

4.Hasan TOPAL, Konak Municipality

5.Mübeccel İLHAN, İzmir Medical Chamber

6.Selma NALBANTOĞLU, İzmir Disaster Association

2.New Fire Regime

Moderator: Ferdi AKARSU, İZPA

Rapporteur: Berivan ARSLAN, İzBB Disaster Coordination Center Directorate

1.Engin KARAKOYUN, İzBB Fire Department

2.Servet YILDIZ, İzBB Fire Department

3.Sea Level Change

Moderator: Mehmet KAYA, İZPA

Rapporteur: Emek AŞKIN ŞAYİR, İzBB Ground Inspection Directorate

1.Ali Kemal ÇINAR, Konak Municipality

2.Eylem DEMİRCİOĞLU, İzBB Climate Change and Clean Energy Directorate

3.Gürdal AÇIL, Çiğli Municipality

4.Local Climate Adaptation Policies

Moderator: Gökçe AYMAN, İZPA

Rapporteur: Tuğçe ERİŞKEN, İzBB Disaster Risk and Management Directorate

1.Ahmet TOMAR, İzBB İzmir Natural Life Park Directorate

2.Canan KAÇAR, Aydın Efeler City Council

3.Cansu DUMAN, İzBB Green Spaces Planning Project Directorate

4.Derya DİZMAN KAYAR, Gaziemir Municipality

5.Doğukan TOKÇİN, Zeytince Ecological Living Support Association

6.Gülcan ÖZKAN, Gaziemir Municipality

7.Kardelen LAÇİN, İzBB Eshot General Directorate

8.Tevhide ALYANAK, Urla Municipality

9.Tolga ÇİLİNGİR, İzBB Rural Services Department

5.Cooling the City

Moderator: Burçak KARAMAN UYSAL, Environment Protection and Control Directorate

Rapporteur: Serhat TANINMIŞ, Engineering Geology Directorate

1.Aycan YALÇIN GÜÇ, İzBB Green Spaces Planning Project Directorate

2.Akın KÜÇÜKYILMAZ, İzBB Climate Change and Clean Energy Directorate

3.Bircan AYTEN, İzBB Climate Change and Clean Energy Department

4.Burak BÜYÜKÇAKACI, İzBB IZDOĞA Inc.

5.Çağlar TÜKEL, İzBB Climate Change and Clean Energy Directorate

6.Resilient Mission Map

Moderator: İlker BULUT, İZPA

Rapporteur: Rana ŞENKAYA, İzBB Building Inspection and Improvement Directorate

1.Betül DUMLU İŞERİ, Menderes Municipality

2.Nadi Mert AŞCI, İzmir Chamber of Commerce

3.Nurcan PİRGAN ÇAKIR, Karabağlar Municipality

7.Climate Justice, Eco-Anxiety, and Solidarity Networks

Moderator: Duygu AVCI, İZPA

Rapporteur: İlknur UYGUN, Disaster Coordination Center Directorate

1.Akın ERDOĞAN, Zeytince Ecological Living Support Association

2.Damla ÖZKAYA, Social Climate Association

3.Deniz İNCESU, İzBB Climate Change and Clean Energy Directorate

4.Hüda Merve YENER, Environment Protection and Control Directorate

5.Seçil UYSAL HALLİ, İzBB Climate Change and Clean Energy Directorate

COP İzmir: İzmir's Future: Green Belts

Methods Used in the Workshop

a)Presentations

b)Interactive Studies

c)Round Table Studies

Methodology: The workshop will be conducted with the participation of public institutions, local governments, private sector, academia, NGOs and stakeholders aiming to develop local government policies that are resilient to climate change.

The discussions will be systematically recorded by the rapporteurs and the results obtained at the end of each table session will be reported in an analytical structure as "Workshop Table Final Reports".

Process and Timeline of the Workshop

09:30 - 10:00 Opening Speeches

10:00 - 12:30 Session 1 - Blue - Green Infrastructure and Ecological Corridors in İzmir

12:30 - 13:30 Lunch Break

13:30 - 16:30 Session 2 Round Table Studies

Workshop Working Groups And Main Topics

1. Climate Sensitive Planning and Urban Transformation

Moderator: Kardelen Ekin ŞAHİN, IzBB Spatial Planning Branch Directorate

Rapporteur: Arda YAPANMIŞ, IzBB Health Affairs Department

1. Ali Kemal ÇINAR, Konak Municipality
2. Aycan YALÇIN GÜÇ, IzBB Department of Parks and Gardens
3. Ayşegül PALA, Dokuz Eylül University
4. Beyza TEKEDAR, IzBB Renewal Areas Planning Branch Directorate
5. Deniz KORKUNÇ, Narlidere Municipality
6. Doğa Deniz ALKAN, Dokuz Eylül University
7. Hülya BOYACIOĞLU, Dokuz Eylül University
8. Mine ALACALI, Seferihisar Municipality
9. Mine ÖGE, IzBB Spatial Planning Branch Directorate
10. Miraç OSKAY, IzBB Green Areas Planning Project Branch Directorate
11. Pelin KAYA, Karşıyaka Municipality
12. Selçuk ŞENER, IzBB Green Areas Planning Project Branch Directorate
13. Sinem COŞKUN KIYUNAK, IzBB Green Areas Planning Project Branch Directorate

2. Climate Sensitive Design and Landscaping: New Generation City Squares

Moderator: Günseli DEMİRKOL, IZTECH Faculty of Architecture

Rapporteur: Merve ÇARKCI KAPI, IzBB Health Affairs Department

1. Aysu GÜRMAN, Yaşar University / IYTE Faculty of Architecture
2. Can GÜNDÜZ, IZTECH Faculty of Architecture
3. Canan KAÇAR, Aydın Efeler City Council
4. Deniz KAYA, İzmir Democracy University Faculty of Architecture
5. Ece Nur İLERİ, Çeşme Vision Office
6. Gürdal AÇIL, Cigli Municipality

3. Blue and Green Networks: Ecological Stream Reclamation

Moderator: Selçuk AKSOY, IzBB Green Areas Planning Project Branch Directorate

Rapporteur: Ufuk KILIÇASLAN, IzBB Health Affairs Department

1. Emek Aşkın ŞAYİR, IzBB Ground Investigation Branch Directorate
2. Erdem VARDAR, YUVA Association
3. Imran ÖZFESLİ, Zeytince Association for Supporting Ecological Life
4. Semih SARGIN, IzBB Rural Area Development and Development Branch Directorate
5. Serdar SIMSAR, IzBB Rural Area Development and Development Branch Directorate

4. Urban Well-being and Green Spaces

Moderator: Ferhat YILDIZ, IzBB Healthy Life and Public Health Projects Branch Directorate

Rapporteur: Burçin ÇOLTU, IzBB Health Trainings Branch Directorate

1. Aylin ACET, IzBB Green Areas Planning Project Branch Directorate
2. Burçak KARAMAN UYSAL, IzBB Environmental Protection and Control Branch Directorate

3. Cansu DUMAN, IzBB Green Areas Planning Project Branch Directorate
4. Ceren ÜNSEVER, IzBB Healthy Life and Public Health Projects Branch Directorate
5. E. Serdar KARADUMAN, Cigli Municipality
6. Meltem KARACA, Zeytince Association for Supporting Ecological Life
7. Seval SOYSAL TOPUZ, IzBB Green Areas Planning Project Branch Directorate
8. Yağmur Naz SÜREGEN, İzmir Democracy University

5. Carbon Sinks

Moderator: Selma AKDOĞAN, TMMOB Chamber of Environmental Engineers

Rapporteur: Merve AKINCIOĞLU, IzBB Health Affairs Department

1. Akın ERDOĞAN, Ege University
2. Betül DUMLU İŞERİ, Menderes Municipality
3. Büşra DURUSU, Aegean Region Chamber of Industry
4. Günsev DİZOĞLU, İYTE
5. Hüda Merve YENER, IzBB Environmental Protection and Control Branch Directorate
6. Selma AKDOĞAN, Chamber of Environmental Engineers İzmir Branch
7. Sinem YEŞİL, IzBB Rural Area Strategy Branch Directorate

6. Rural-Urban Fringe

Moderator: Fatma MESUTGİL, Bornova Municipality

Rapporteur: Ekrem Ersin CESUR, IzBB Health Affairs Department

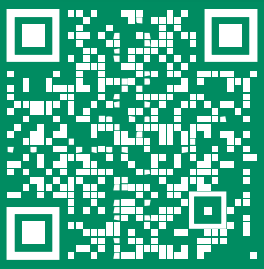
1. Ahmet TOMAR, IzBB İzmir Wildlife Park Branch Directorate
2 Derya DİZMAN KAYAR, Gaziemir Municipality
3.Gülcan ÖZHAN, Gaziemir Municipality
4. Nehir YÜKSEL, IzBB Department of Rural Services
5. Onur KARAOT, IzBB Fire Department
6. Servet YILDIZ, IzBB Fire Department
7. Tevhide ALYANAK, Urla Municipality
8. Tolga ÇİLİNGİR, IzBB Department of Rural Services

7. Nature Routes and Alternative Tourism Potential

Moderator: Ömer Faruk KAYIRAN, IzBB Tourism Department

Rapporteur: Emre TURHAN, IzBB Health Affairs Department

1. Avni GÖK, IzBB Department of Veterinary Affairs
2. Dilan ŞANLI KART, IzBB Rural Area Strategy Branch Directorate
3. Gizem ÇOŞKUN, IzBB Green Areas Planning Project Branch Directorate
4. Gizem GÜR, IzBB Green Areas Planning Project Branch Directorate
5. Merve UĞUR ÖZARSLAN, IzBB Green Areas Planning Project Branch Directorate
6. Şevval YİĞİT, IzBB Department of Veterinary Affairs



İZMİR METROPOLITAN MUNICIPALITY

HEALTHY CITIES NATIONAL NETWORK OF TÜRKİYE

izpa İzmir Planning Agency

ICLEI Local Governments for Sustainability

Town Hall COP