Planlama 2025;Supp(1):59–73 | doi: 10.14744/planlama.2025.33340

ARTICLE / ARAŞTIRMA

Using SWOT Analysis for Urban Food Planning Focused on Local Governments: Mamak, Ankara

Yerel Yönetimler Odaklı Kentsel Gıda Planlaması için GZTF Analizinin Kullanılması: Ankara Mamak

Yağmur Öcal,[1] Feriha Yıldırım[2]

[1]PhD Student in Environmental Sciences, Gazi University, Institute of Natural Sciences, Ankara, Türkiye

[2]Department of Environmental Sciences, Gazi University, Institute of Natural Science, Ankara, Türkiye

ABSTRACT

Today, more than 800 million people out of a global population exceeding 8 billion cannot find sufficient food, and considering climatic extremes, environmental degradation, and economic crises, a bleak picture emerges regarding food systems. The rapid urbanization trend worldwide has led to the intensive use of existing resources and a decrease in food production areas, making urban food planning an important focal point. Many actors are involved in shaping urban food systems. Local governments are in a position to be more effective in the sustainable planning and transformation of food systems compared to other actors. In the case of Mamak District in Ankara, local governments consist of metropolitan and district municipalities. Mamak was a self-sufficient settlement in agricultural terms until the establishment of the Republic but has transformed into a district dependent on the metropolitan city since the 1950s due to the opening of agricultural lands to settlement. In the Mamak district, there are agricultural input support programs, urban agriculture projects, and cooperative formations related to agriculture and food; however, these efforts are far from a holistic framework and action. In urban food systems, analyses of the natural-social-built environment related to the settlement, local government authority-qualification analysis, and the SWOT analysis created within this framework are critical for comprehensive planning. This study has developed a SWOT analysis, one of the cornerstones of a local government-centered urban food system design for Mamak District, which has a population of approximately 700,000 and is largely under metropolitan influence.

Keywords: Food systems; local governments; sustainability; SWOT analysis; urban food planning.

ÖZ

Bugün 8 milyarı aşan dünya nüfusunun 800 milyondan fazlası yeterli besin bulamamakta olup iklimsel aşırılıklar, çevresel tahribatlar ve ekonomik krizler de göz önünde bulundurulduğunda gıda sistemleri konusunda iç karartıcı bir tablo ortaya çıkmaktadır. Dünya genelindeki hızlı kentleşme eğilimi, mevcut kaynakların yoğun bir şekilde kullanılmasına ve gıda üretim alanlarının azalmasına neden olduğundan kentsel gıda planlaması konusu önemli bir odak noktası haline gelmiştir. Kentsel gıda sistemlerinin şekillenmesinde birçok aktör bulunmaktadır. Yerel yönetimler, gıda sistemlerinin sürdürülebilir planlanmasında ve dönüştürülmesinde gıda sistemlerinin diğer aktörlerine kıyasla daha etkin olabilecek bir konumdadır. Çalışma alanı olan Ankara'nın Mamak İlçesi için yerel yönetimler büyükşehir ve ilçe belediyesinden oluşmaktadır. Mamak, Cumhuriyet'in kuruluşuna dek tarımsal anlamda bütünüyle kendine yeten bir yerleşme iken 1950'lerden itibaren tarım topraklarının yerleşime açılması ile metropoliten kente bağımlı bir ilçeye dönüşmüştür. Mamak ilçesinde, tarım ve gıda konusunda yapılan tarımsal girdi destekleri, kentsel tarım projeleri ve kooperatif oluşumları bulunmakla birlikte, bu çalışmalar bütüncül bir kurgudan ve faaliyetten uzaktır. Kentsel gıda sistemlerinde, yerleşime yönelik doğal-sosyal-yapılaşmış çevre analizleri, yerel yönetimler yetki-nitelik analizi ve bu çerçevede oluşturulan GZTF analizi bütüncül bir planlama için kritik önemdedir. Bu çalışmada, yaklaşık 700.000 nüfuslu ve büyük oranda metropol etkisindeki Mamak İlçesi için yerel yönetimler odaklı bir kentsel gıda sistemi kurgusunda temel taşlardan biri olan GZTF analizi hazırlanmıştır.

Anahtar sözcükler: Gıda sistemleri; yerel yönetimler; sürdürülebilirlik; GZTF analizi; kentsel gıda planlaması.

This article was prepared as part of the PhD thesis being conducted by Yağmur Öcal at the Gazi University, Institute of Natural Sciences, Environmental Sciences.

Received: 09.09.2024 Revised: 08.03.2025
Accepted: 13.04.2025 Available online date: 19.08.2025
Correspondence: Yağmur Öcal
e-mail: yagmurocal.yo@gmail.com

TMMOB Şehir Plancıları Odası

1. Introduction

The Global Report on Food Crises reveals how the world is on the brink of a serious food crisis (GRFC, 2024). The causes of this crisis include food waste, lower nutritional value of food, injustices in food sharing, and food production losses due to extraordinary events (floods, droughts, climate change, etc.). As a result of a consumption-oriented lifestyle adopted worldwide, natural assets are rapidly being destroyed and the climate is changing. Climate change has the power to significantly affect food geopolitics, agricultural production, and capital flows in the medium and long term. This exacerbates food system vulnerability, and sustainable transformation of food systems is becoming increasingly important. According to the United Nations Population Fund (UNFPA), more than half of the world's population now lives in cities. According to 2022 World Bank data, 77% of the population in Türkiye lives in urban areas (The Ministry of Environment, Urbanization and Climate Change of the Republic of Türkiye, n.d.).

Cities, which are becoming centers of consumption as they become increasingly detached from food production, are regarded as units that need to be addressed as a priority in the sustainable transformation of food systems, which have a very comprehensive and multiactor structure. "Urban food planning" emerges as the most holistic and inclusive way to ensure the sustainable transformation of food systems. Although transforming food systems through urban food planning is a long and dynamic process, it is the only way to achieve an inclusive, sustainable, and resilient food system in cities. Although many actors need to be involved in the planning of food systems, local government units will be the most effective actors when the criteria of proximity to the public, breadth of authority, sanction power, and ease of implementation are taken into consideration. In Türkiye, local government units comprise special provincial administrations, municipalities (metropolitan municipalities, provincial, district, and town municipalities), and villages. Local governments have the power to organize the food production/consumption/distribution system within their boundaries of responsibility. Adopting agroecological principles that provide a holistic approach in urban food system planning focused on local governments is important for making the process sustainable and resilient. Spatial data analysis and the definition of participation tools are considered the most important components of a sustainable food system planning based on agroecological principles and focused on local governments. Spatial data analysis here refers to the assessment of the current situation in all its aspects, and SWOT analysis (strengths, weaknesses, threats, and opportunities) is an important tool at this point. With SWOT analysis, internal and external factors can be systematically evaluated when analyzing the food systems of cities, which contributes to the strategic orientation of food planning.

2. Conceptual Framework for the Transformation of Urban Food Systems

According to the definition published by the Food and Agriculture Organization of the United Nations (FAO) (2018), "Food systems encompass the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded." According to Şahin (2014), "the concept of food systems covers a wide range of issues from the quantity of food produced to its price, from processing to recycling, from the decisions made by politicians in food-related decisions to the protection of environmental values." The actors in food systems are primarily producers (farmers, fishermen, and shepherds), but also include the central government, local government, the food processing/production sector, retailers, consumers, civil society organizations, the transportation sector, and the finance/insurance sector.

Food systems are fundamentally based on natural resources such as soil, water, climate, and biodiversity and, for food to be sustainable, it is important to use these resources effectively in food systems activities and to consider the ecological pressure that will be created through system activities (Şahin, 2024).

According to Adaman (2022), "when considering the food system as a whole, it is necessary to focus on the protection of natural assets, the environment and the relationship between these topics, taking into account the conceptual framework offered by food security/assurance/sovereignty."

Access to affordable and healthy food is an important problem, especially in big cities. The reduction of agricultural areas within, on the periphery of, and close to large cities due to multiple reasons, especially construction, has negative impacts on food security (Anonymous, 2023).

Globally, food insecurity disproportionately affects women and people living in rural areas. While 27.8 percent of adult women experience moderate or severe food insecurity, this rate is 25.4 percent for men (FAO et al., 2023).

Food is an area that is directly affected by urbanization policies. According to Çaşkurlu (2024), "worldwide, as a result of urbanization, a large urban population has emerged that no longer produces the food it consumes. This is one of the important reasons why the global food system is no longer sustainable. Urban populations are extremely vulnerable to income and food price shocks in order to maintain food security."

Today, the fragility of food systems necessitates transformation and the development of alternative agri-food strategies. One of the most important concepts for the transformation of food systems is agroecology.

The word "agroecology" is a combination of "agro" from agriculture and "ecology" meaning natural science. Blending agricultural and ecological sciences, agroecology is a multidisciplinary field that includes social, political, and social elements as well as being an economic movement (Altıparmak Law Office, 2023).

The 10 elements of agroecology identified by the FAO between 2015 and 2019 are diversity, participatory knowledge, synergies between different systems, efficiency, recycling, resilience, social and human values, nutrition culture, responsible management models, and circular and solidarity-oriented economy (FAO, 2019).

Agroecology involves principles, concepts, and strategies that should underpin a sustainable food production system. These principles, concepts, and strategies are intended to provide a design framework for sustainable agroecosystems rather than prescriptions or blueprints for the construction or management of actual agroecosystems and do not dictate the characteristics of an entire world food system (FAO, 2015). According to Özkaya et al. (2021), "agroecology has the know-how and potential to end all industrial corporate inputs by ensuring biological balance in advanced stages of development."

Accordingly, agroecology can be considered a holistic system that prioritizes biodiversity and locality. According to Karakaya Ayalp (2021), "localized or relocalized food systems can be defined as food systems that aim to produce direct production, distribution, consumption and waste management networks, encourage the use of local resources, reduce intermediary mechanisms, are sustainable and prioritize the social, cultural, etc. values of food."

According to Özkaya et al. (2021, p. 40–41), "In our country, efforts should be made for municipalities to understand agroecology and determine it as a strategy. The formation of alternative food networks provides great support to agroecology. The establishment and support of cooperatives supporting agroecology, municipal and state programs to purchase agroecological products, food groups, community supported agriculture groups and ecological peasant markets are very effective."

3. The Role of Turkish Local Government Systems in Food Planning

There are many actors in the food planning process, including national and international organizations, governments, local governments, civil society organizations, farmers, and consumers. Among these actors, local governments play a key role in building a sustainable food system in a holistic, inclusive, and stable manner.

Local government refers to the administrative units responsible for meeting the needs of local units in a particular region of a country and organizing and administering services. These administrative units comprise special provincial administrations, municipalities (metropolitan municipalities, provincial, district, and town municipalities), and villages. The relations between central government and local government are regulated in detail by the 1982 Constitution (IPA, n.d.).

Within the framework of the authority granted by the Constitution, the establishment and boundaries, duties, powers and responsibilities, organs, organization, revenues and expenditures, budget, and borrowing and economic activities of municipalities are regulated in Municipality Law No. 5393 enacted in 2005. Article 4 of Law No. 5393 states that "Municipalities may be established in settlements with a population of 5000 or more. It is compulsory to establish municipalities in provincial and district centers".

The main duties and responsibilities of the municipality are explained as follows (Article 14 of Municipal Law No. 5393) "Provide or have provided urban infrastructure; geographical and urban information systems; environment; emergency aid; urban traffic; burial and cemeteries; green areas; housing; culture and arts; social services and assistance; development of economy and trade services." The same article also states that municipalities can carry out maintenance, repair, protection, and food banking activities.

With the Metropolitan Municipality Law No. 6360, which came into force in 2012, metropolitan municipalities were established in provinces with a population of 750 thousand or more, and special provincial administrations, which until then had been local government units specialized in providing services to rural areas, were abolished. Villages and town municipalities in these provinces were transformed into neighborhoods. With the abolition of special provincial administrations, the responsibilities for all services in rural areas were transferred to metropolitan municipalities, creating a need for rapid organization in these municipalities. Following Law No. 6360, metropolitan and district municipalities have carried out various activities involving agricultural support and training.

However, since the implementation of this law, as explained in detail in Yıldırım and Yücel Işıldar's (2014) article "An Ethical and Ecological Examination of Law No. 6360", a negative transformation has occurred and many natural elements of village life have started to disappear rapidly within these "urbanized" areas. Compared to urban life, village life, which has elements such as a more self-sufficient and productive way of life that moves along with the natural structure, the diversity of local seeds, a system that produces less waste in which everything is utilized, the use of land for agriculture and animal husbandry, and being content with less energy, has changed in a short period of 10–12 years, making those living there much more consumerist, while natural areas and agricultural areas have become victims of the rent system.

Local governments are more effective institutions than the central government in ensuring local participation and realizing local entrepreneurship. The reason for this is that local governments are the organizations that have a say in the local area, that have all the information about the local area, and that serve as the units closest to local communities (Bilgin, 2002).

Land use planning, which is among the service areas that municipalities are authorized to fulfill, is directly determinative of the present and future status of food production areas, and this reveals the importance of local government units in the construction of the food system.

Although grassroots organizations and movements play an important role in initiating a sustainable food system, the role of local governments is fundamental to create a structure that directs the food system in a holistic, inclusive, and stable sustainable direction (Karakaya Ayalp, 2023).

According to a study conducted by Kazancı in 1983, "In its current position, local governments are bystanders in the regulation and supervision of consumption in cities. Municipalities have no role in the transportation, marketing and distribution chain of consumer goods from the producer to the consumer. Food pricing is completely outside the purview of local governments. What local governments should do here is to initiate initiatives that will provide additional resources." Considering today's conditions, it is clear that this situation continues.

According to Keleş (2020, p. 165), "Local governments cannot fulfill the political functions expected of them unless they are elevated to a situation where they are accountable to the public and open to the constant control of the public."

In many cities around the world, urban food policy councils are established at the local level to produce food policies and plans that integrate the city with nature and its inhabitants (IMM, 2021). In addition, food strategy documents are organized by local governments to set up a long-term framework for food.

Today, one of the most important steps that Turkish local government systems can take for urban food planning is to implement a city-region food system toolkit. As explained in detail in the study by Yarış and Karakaya Ayalp (2023), the Regional Food System Toolkit has been developed for the sustainable transformation of urban food planning. The urban–regional food system toolkit is based on mapping and defining this food system. Defining it involves answering the questions: "Who feeds the urban region, where is food processed, how is it marketed, how do people access food, what is the current situation in terms of food security, how is food waste managed, and who are the government and institutional actors involved in the food system?"

According to Dury et al. (2019), "food systems are of strategic importance for inclusive development." When planning the food system, it is necessary to develop a holistic perspective as well as an assessment within the framework of strategic development plans.

3.1. National and International Regulations on the Position of Local Governments in Food Planning

At the Food Systems Summit organized by the United Nations, five main action areas were identified within the scope of 2030 Sustainable Development Indicators (UN, 2021). These are the following:

Action 1: Ensure access to safe and nutritious food for all.

Action 2: Transition to a sustainable consumption model.

Action 3: Increase nature-friendly production on a sufficient scale.

Action 4: Promote just livelihoods.

Action 5: Build resilience to vulnerabilities, shocks, and stresses.

In line with the UN targets, Türkiye prepared the "National Food Systems Roadmap" in 2021. The Roadmap was prepared within the scope of the United Nations 2030 Sustainable Development Indicators and includes how food systems will be transformed to meet sustainable development goals and what needs to be done in Türkiye for this transformation. In the National Food Systems Roadmap, a total of 10 priority targets have been identified within the United Nations action areas. Actions are determined to achieve each goal.

These action areas, targets, and actions that are deemed important to be taken within these areas can be summarized as follows:

Action 1 refers to three main elements in the food system. These are the right to food, the right to clean water and sanitation, and the right to nondiscrimination. In Action Area 1, the most problematic areas are identified as lack of education on conscious nutrition, low efficiency and effectiveness in production processes and products, lack of consumer awareness and therefore lack of awareness on healthy food consumption, insufficiency of some nutrients and the obesity problem, and controlling food prices. Some of the prominent action proposals related to these problems are expanding urban agriculture, raising awareness on food literacy, supporting the use of technology to increase food fortification, investigating regional nutrient deficiencies, raising awareness in food preparation and consumption, preventing losses, and increasing lifelong education opportunities in society.

The problematic areas highlighted in Action 2 are the lack of awareness on safe and nutritious food, the mismatch between producers and consumers in the value chain, the need to improve monitoring systems for food safety, and information

pollution in this area. The proposed actions are as follows: preventing information pollution about healthy and nutritious food, raising consumer awareness, improving food labeling practices, monitoring the greenhouse gas emissions and water footprint of products, increasing biodiversity, introducing public deterrent and incentive systems to prevent waste, recycling food waste for use in pet food or pharmacology, refining organic production, food banking practices for the transformation of the national food system, and adopting a "produce locally and consume locally" approach to deliver surplus food suitable for human consumption to those in need.

Action 3 involves the increasing amounts of food loss and waste due to the lack of digitalization and smart agriculture techniques in the agri-food value chain, inefficient use of natural resources, and lack of efficient land and production planning. In this context, the proposed solutions include the dissemination of geographical information systems and smart agriculture practices, supporting farmers to use smart agricultural techniques, enacting a water law and increasing water efficiency through the use of technology, disseminating climate-friendly agricultural practices, protecting genetic resources, and updating curricula for the efficient use of natural resources and adoption of sustainable food systems in higher education.

Action 4 involves highlighting inequalities in agriculture among migrant and indigenous peoples, women, children, minorities, young people, and seasonal workers. It is important that natural resources are distributed more equitably, taking vulnerable groups into account. The more people from low-income or socially excluded groups have opportunities, the more perfectly food systems are considered to work. Stabilization of food prices will help vulnerable groups that are negatively affected by high prices. The transition from production patterns to consumption also brings some challenges. In this context, recommended actions include structural changes that can be expected for food systems, more inclusive policies for agri-food sector workers and working towards equitable access to and use of relevant technology.

Action 5 is an action area to improve urban area food systems, helping people, especially vulnerable people, to access affordable and nutritious food, enabling access to farmers' markets and local and regional hubs to be established, and shortening the supply chain. Meetings about this area also emphasized the importance of actions to build the resilience of small farmers and smallholders for a sustainable food system approach. For these specific target groups, actions such as informing and educating farmers about shocks, raising awareness through locally based research and training programs, and public–university cooperation are proposed.

Again, regarding this action area, the National Roadmap Action List includes the action of "Establishing the Resilience of Food Systems against Climate Change, Natural Disasters, and Unexpected Crises" within the target of "Establishing regional food systems based on Urban Agriculture (Urban Food) for both reducing carbon footprint and participating in food supply/value chains in a stable manner and ensuring the integration of these systems with national and global food systems." In this context, a monitoring and evaluation process will also be carried out to determine whether the National Roadmap has established or increased the resilience of food systems at the local level. Among the responsible and implementing institutions for this action are the relevant policy-making and implementing institutions acting at the regional level, relevant provincial directorates, development agencies, and provincial and district municipalities (The Ministry of Agriculture and Forestry of the Republic of Türkiye, 2021).

4. Examples of Milan and FUSILLI Project in Local Government-Oriented Food Planning

Today, many cities are preparing urban food strategy documents and implementing holistic food planning practices. In the present study, Milan and the FUSILLI Project were selected based on the criterion that food system planning should be "local government-oriented."

4.1. Milan Urban Food Policy Pact and Milan Food System Report

In Italy, which has a very long history, municipalities provide certain administrative services to the inhabitants of the municipal territory, as required by a law passed in 2000. For example, municipalities are authorized to carry out land-use planning and all other responsibilities and duties not delegated to other authorities by State and Regional Governments through legislation. Each municipality has a Mayor and Assembly elected directly by the people, and an Executive Committee whose members are elected by the Mayor (Keleş, 2020, p. 136).

In 2014, the then Mayor of Milan launched the Milan Urban Food Policy Pact (MUFPP), the aim of which is to address food-related issues at the urban level. The Pact is based on the role of cities in the development of sustainable food systems. In 2015, more than 100 cities signed the Pact in Milan, which includes 37 proposed actions. The Milan City Council has allocated a budget for piloting the proposed actions and has organized various technical activities (MUFPP, n.d.).

The projects and practices carried out by the MUFPP within the framework of 6 actions are in the areas of social and economic equality, governance, sustainable diets and nutrition, food production, food supply and distribution, and food waste. Today, 280 cities from 84 countries are members of the Pact, with Mersin Mezitli Municipality, Aydın Efeler Municipality, Istanbul Metropolitan Municipality, Bursa Nilüfer Municipality, and Antalya Muratpaşa Municipality from Türkiye.

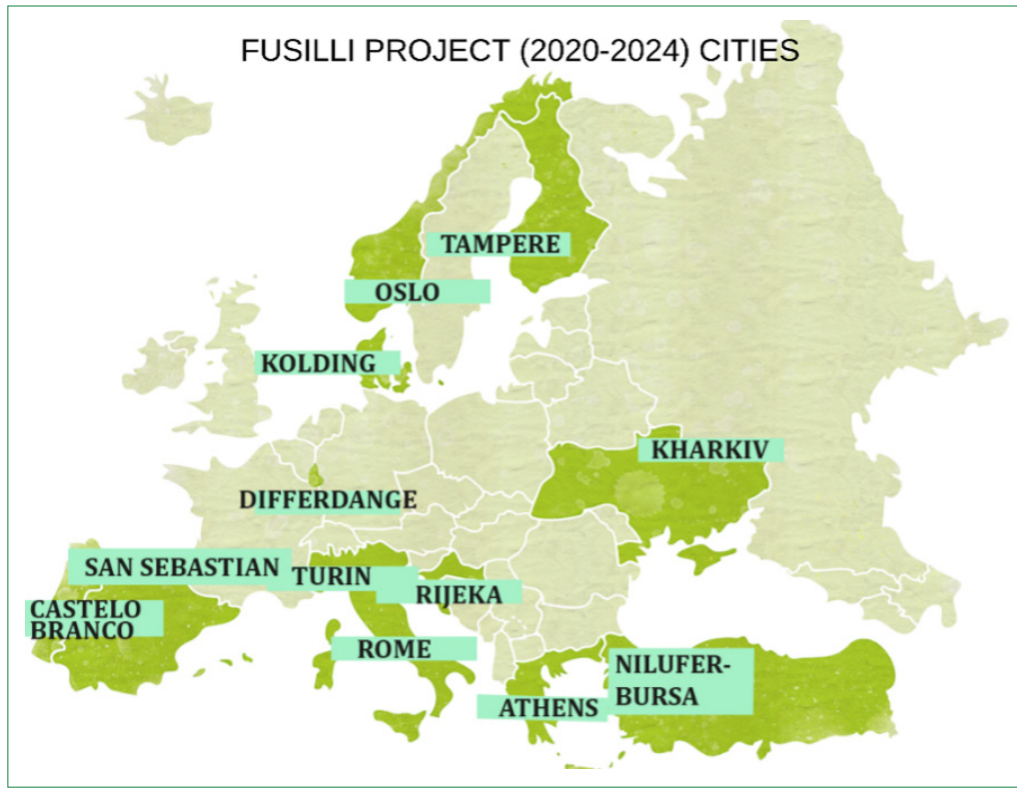

Figure 1. Cities in the FUSILLI network.

Source: https: fusilli-project.euabout.

For Milan, which pioneered the MUFPP, the report "The Food System in Milan" was prepared in 2018, in which the following five priorities for sustainable development were identified (The City of Milan, 2018):

- Providing healthy food and water for all citizens: This includes ensuring that all citizens have access to healthy food and water to protect personal dignity and improve quality of life.
- Promote the sustainability of the food system: This includes promoting local production and consumption of quality fresh and seasonal foods for a sustainable food system.
- Promote food education: This refers to promoting a culture of consumer awareness of food that is sustainable, healthy, safe, and culturally appropriate in terms of human rights and the environment.
- Tackling food waste: Reducing surpluses and food waste at different stages of the food chain as a way to prevent social and economic inequalities and as a means to reduce environmental impact.
- Supporting scientific research in agri-food sectors: Milan stands for promoting the development of agri-food scientific research, improving processes and technological development.

In 2018, the "Metropolitan Food Council" was established in Milan in order to generate ideas and policies for the city's holistic food system and implement them. The Council represents a common space where civil society, academia, the private sector, and institutions can exchange ideas and consult with each other.

4.2. FUSILLI Project (2020–2024)

The main objective of FUSILLI (Fostering the Urban Food System Transformation through Innovative Living Labs Implementation) is to overcome barriers to the development and implementation of integrated food policies that support the transition to sustainable food systems in urban, peri-urban, and nearby rural areas. To achieve this goal, FUSILLI has engaged 12 cities in a knowledge sharing and learning network to address the challenges of food system transformation. These cities are shown in Figure 1.

According to the project, each city will develop a "Living Lab" as an open innovation ecosystem with the goal of implementing different innovative actions at all stages of the food chain, including production and processing, distribution and logistics, consumption, food loss and waste, and management. Supported through the FUSILLI Knowledge Community and through urban food plans, partners will identify existing best

Figure 2. Location of Mamak district in Türkiye and Ankara.

practices and thus support participating Living Labs, related initiatives, and policy makers in the development of sustainable food systems (FUSILLI, n.d.). Funded as part of the European Union's Horizon 2020 Research and Innovation Program, FUSILLI covers the period 2020–2024.

The aim of the FUSILLI project is to improve operations at all stages of the food value chain. These priorities are the following (Nilüfer Municipality, n.d.):

- Foods for sustainable and healthy diets,
- Climate and environmentally sustainable food systems,
- Circularity and resource-efficient food systems,
- Innovation and empowerment of communities.

The FUSILLI project involves all kinds of actors, policies, administrations, and different functions in research and policy work, not only all relevant processes.

5. Spatial Data Analysis on Mamak's Food System

The existing data on the food system for Mamak, the study area, was largely obtained from Mamak Municipality and Mamak District Directorate of Agriculture and Forestry. Within the scope of the study, data on plant and animal assets, field cultivation rate, and number of enterprises were obtained from the District Directorate of Agriculture and Forestry officials. Mamak's geographically marked products, natural assets, zoning plans, agricultural support, and farmer surveys were obtained from Mamak Municipality. The last step of the spatial data analysis, the food deserts synthesis, was prepared by considering built-up areas, supermarket and local market locations, and edible landscape areas.

5.1. Mamak's Location

Mamak District is located in the eastern corridor of Ankara and is surrounded by Elmadağ District to the east and south, Çankaya District to the west, and Altındağ District to the north. Figure 2 shows the location of Mamak District in Türkiye and Ankara.

Mamak is one of the districts of Ankara most migrated to and is a district where urbanization is continuous and urbanization is continuous and urbanization takes place in a disordered manner, especially in slum areas, and, as a result of this, there are old settlements that have suffered considerable destruction.

While the district had a total of 56 neighborhoods until 2004, in 2004, in accordance with the Metropolitan Municipality Law numbered 5216, five village settlements (Gökçeyurt, Kıbrıs, Kızılca, Kusunlar, and Ortaköy), which were within the borders of Ankara Metropolitan Municipality and whose village legal status was abolished with the Ankara Metropolitan Municipality Assembly Decision No. 531, were added to Mamak District to make a total of 61 neighborhoods. Later on, in 2008, in accordance with the Law on the Establishment of Districts within the Metropolitan Municipality Boundaries numbered 5747, Kutludüğün and Lalahan municipalities, which were first stage municipalities, were connected to Mamak Municipality as neighborhoods, resulting in a total of 63 neighborhoods, making it the fourth largest district of Ankara in terms of density (Çakmak, 2016).

According to the information obtained from the District Directorate of Agriculture and Forestry, barley, wheat, chickpea, etc. are produced in Mamak and agricultural activities are carried out in neighborhoods with a highly rural character.

5.2. Mamak's Local Government Structure

In 1984, the first municipal elections were held in Mamak, which was separated from Çankaya District with the Law on the Establishment of Six Districts and the Abolition of the Central District of Ankara Province adopted on November 29, 1983. Since 2008, villages have become neighborhoods and the towns of Kutludüğün and Bayındır have been included in the district.

The local government units in Mamak consist of Mamak Municipality and Ankara Metropolitan Municipality.

5.3. Climate

A continental climate prevails in Mamak District. Winters are rainy and cold, while summers are dry and hot. The hottest months are July and August and the coldest month is January. Precipitation comprises snow and rain in winter and rain in spring and fall. The average annual precipitation of the district is around 360–420 kg/m^2. Despite the southern slopes of the district, snowfall is higher on the northern slopes. Especially on the northern slopes of Elmadağı, snow thickness is over 30 cm according to the year. The average annual wind speed in Ankara is around 1.7 m/s. When analyzed according to the number of gusts, it is seen that north winds are dominant (Erdoğan, 2015).

5.4. Crop Production/Land Assets

While 66,781 da of the 308,000 da of land in the district is used for agricultural purposes, the area that is suitable for agriculture but cannot be used is 1679 da.

5.4.1. Land Use in Crop Production

According to the data obtained from Mamak District Directorate of Agriculture and Forestry, 57,858 da of agricultural land is used for the production of field crops, 227 da for vegetables, 748 da for fruits, 14 da for greenhouse cultivation, and 7 da for outdoor ornamental plants, while 7927 da of land is left fallow. In the district, 813 da of agricultural land can be irrigated.

5.5. Mamak's Geographically Marked Products and Ecological Assets

Two products specific to Mamak have geographical indications. The sourdough bread of Kutludüğün and Mamak Ravak yogurt, which were registered with the initiative of Mamak Municipality, have provided an important added value for the district to promote its local flavors. The marketing of geographically marked products is mostly carried out by the Mamak Women's Cooperative (MAKKOP).

5.5.1. Kıbrıs Valley

Located in Mamak, Kıbrıs Valley is a natural asset. It is located 25 km from Ankara city center and 12 km from Mamak district center. In 2020, Mamak Municipality prepared a conservation zoning plan to protect the ecological quality of the valley, which is a 3rd degree natural protected area, and to create a nature tourism area.

5.5.2. Gökçeyurt Ecological Valley

In Mamak, the District Municipality has implemented an ecological valley project focused on ecological food production starting in 2020. With this project implemented within the borders of Gökçeyurt Neighborhood in Mamak, an "ecological village" with a vegetable planting area, fruit tree planting area, training workshops, greenhouse, bakery, seed warehouse, and local products sales block was built on an area of approximately 25 decares; a lavender garden on an area of approximately 25 decares; and afforestation activities, aromatic plant cultivation, a cherry garden, and a strawberry garden on an area of approximately 66 decares. Our design study showing the locations of the uses in the project is given below (Fig. 3).

There is a lavender garden on an area of 25 decares in the ecological valley. Lavender, which uses water sparingly and grows on barren soils, also ensures the protection of soil and water resources (Öcal & Ercoşkun, 2021). It was learned that the fruits and vegetables produced in the ecological garden in Gökçeyurt, are used in the municipal cafeteria and as social aid. According to data obtained from the district municipality, a total of 6283 kg of tomatoes, 252 kg of beans, 926 kg of zucchini, 409 kg of peppers, and 1800 kg of cucumbers were harvested in Gökçeyurt Ecovillage in 2023. There are approximately 200 local species in the seed warehouse in the ecological valley, where children are given training to instill the importance of traditional seeds.

5.6. Mamak Farmer Surveys (2023) and Agricultural Support

Within the scope of the Mamak Rural and Local Development Strategy prepared by Mamak Municipality in 2023, it was aimed to determine the deficiencies in the current agricultural practices through farmer meetings and survey applications in nine rural neighborhoods where agricultural production takes place in the district.

When the section "Your opinions and suggestions for the development of agriculture and animal husbandry and increasing the welfare levels of farmers," which was asked to the 98 farmers surveyed, is examined, it is seen that the demands are mostly about the need for training, equipment, and technical support and the removal of construction pressure in agricultural areas:

- Increased training and financial support for the development of agriculture and animal husbandry,
- Regional farmers generally support solutions for the spreading of solid fertilizers,
- Support for solid fertilizer machines because they think that they cannot spread solid fertilizer homogeneously in agricultural areas,
- Support for stone collecting machines for field preparations, as it is difficult to sow in stony fields,
- Support for overwintering (food) and beekeeping products to be used during the season for people engaged in beekeeping,
- Demands for agricultural consolidation,
- Supporting young farmers,
- Increasing the amount of support as farmers are struggling with increasing fertilizer and diesel prices,

Figure 3. Ecological valley project.

- Increasing herd managers,
- Removal of hobby gardens from agricultural areas,
- Prohibiting the development and sale of grazing areas (meadows and pastures), which are important for livestock breeding, and protecting these areas by rehabilitating them,
- Establishing the necessary technical infrastructure for soil analysis in the district or supporting the analysis,
- Producing products suitable for the soil and climate and providing guidance on appropriate fertilization, spraying, and seed selection,
- Veterinary support for those engaged in animal husbandry,
- Providing the necessary support for livestock activities to be carried out in more organized areas.

The District Municipality also provides agricultural and livestock support to farmers who are actively engaged in general support programs in Mamak District. According to data from Mamak Municipality's Rural Services Directorate,

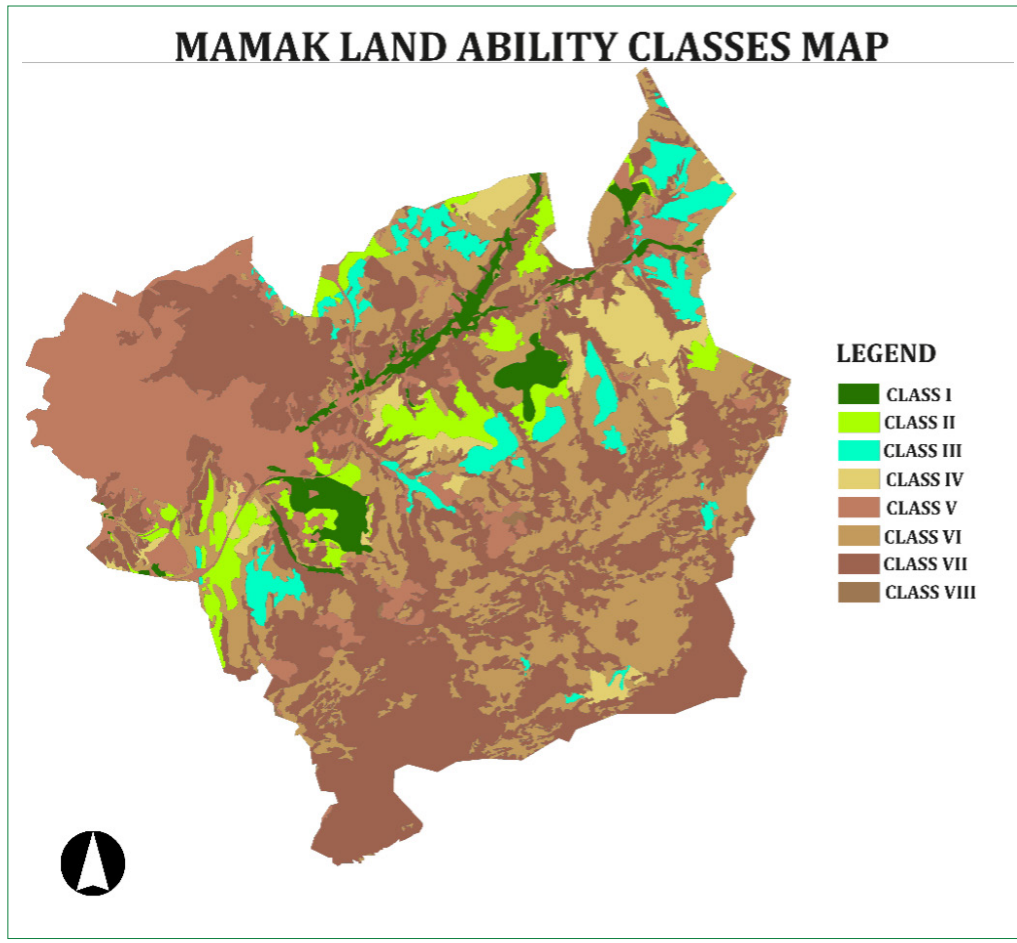

Figure 4. Mamak land capability map.

Source: Created using ArcGIS program.

the District Municipality provided 90% grants for seedlings, hives, chickpeas, wheat, laying hens, and fertilizers in 2022 and 2023. Ankara Metropolitan Municipality, another component of Mamak's local government, has also provided agricultural and livestock support to farmers, but in a more comprehensive manner than Mamak Municipality (Ankara Metropolitan Municipality, n.d.).

5.7. Mamak's Soil Capability Classes and Zoning Plans

Mamak consists of rugged, plateaus (including high ones), narrow and steep valleys, and high altitude hills. In the valley of Hatip Stream, there are partial broad-based plains with alluvial soil. This is where the fruit and vegetable gardens of Ankara were located 40–50 years ago. The Kayaş, Üregil, Mamak, and Gülviran orchards have met the fruit needs of Ankara for centuries. Over time, these vineyards and orchards were opened up for development and dense urbanization began in the region, and the land lost its characteristics (Erdoğan, 2015).

Based on the 2023 Capital Ankara Master Plan, soil characteristics, topography, climatic conditions, current irrigation status, and land use in Mamak district have been classified. The land was divided into four groups and its characteristics are as follows:

Important agricultural land in the first degree is absolute agricultural land. This includes class I and II land and irrigated gardens, and all irrigated agricultural land with sufficient water in other classes. In class I and II land, the soil is generally deep enough to grow various plants. Soil temperature and reaction are favorable for the growth of cultivated plants. Soils are not subject to frequent flooding during the growing season. Due to intensive construction, this type of soil has only partially remained around Kusunlar, Kayaş, Kıbrıs, Kutludüğün, Bayındır, Kızılcaköy, Odabaşı, Ortaköy, Gökçeyurt, Yukarı İmrahor, and Lalahan.

Grade III important agricultural land includes nonirrigated vineyards and gardens and special crop land. There is class III agricultural land in the settlements around Kusunlar, Kıbrıs, Kutludüğün, Bayındır, Üregil, Kızılcaköy, Ortaköy, Odabaşı, Gökçeyurt, and Lalahan.

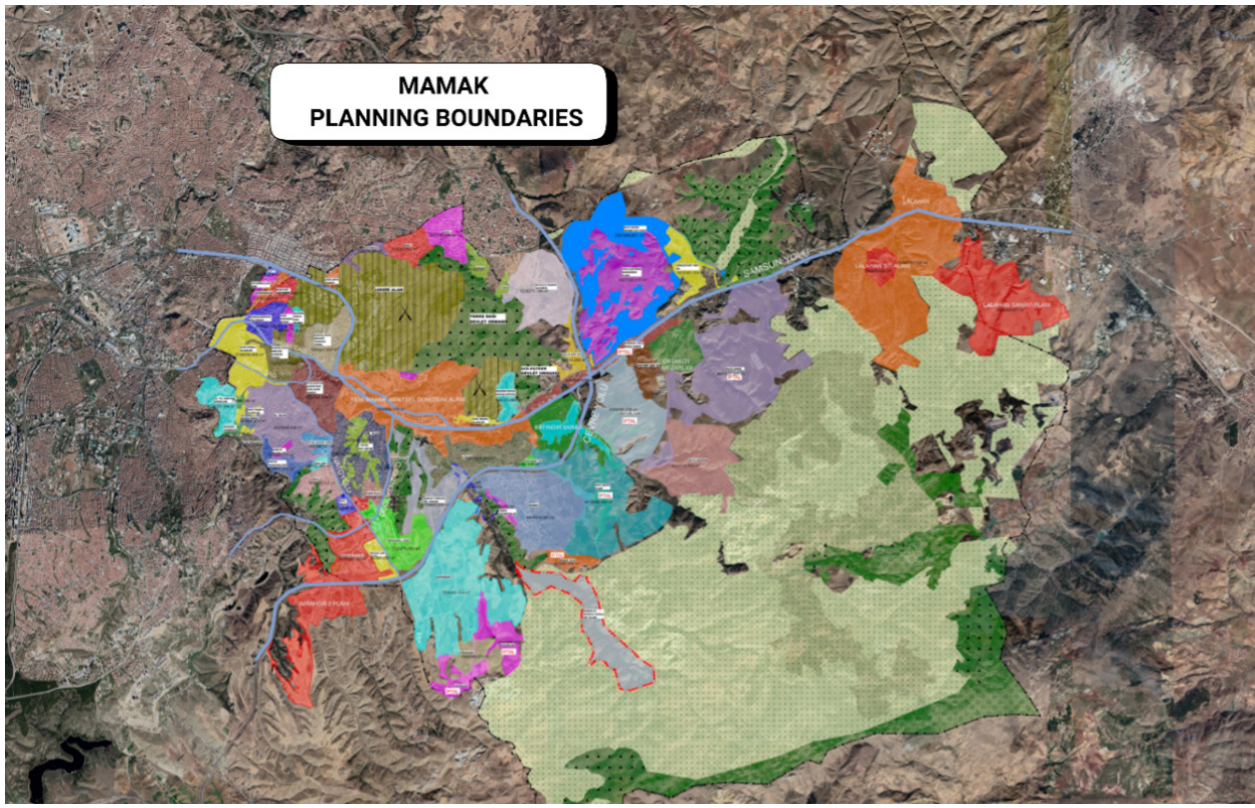

Figure 5. Mamak municipality, Mamak zoning plan boundaries by 2023.
Source: Mamak Municipality.

Mamak, which has a total surface area of 30,800 ha, has 6600 ha of agricultural land. Of this, 1200 ha is class I, 1600 ha is class II, and 1600 ha is class III. Although these agricultural areas are currently protected, it is understood that some of the zoning plans in progress cover these areas.

Based on the above information, the "Mamak land capability map" (Fig. 4) was created using the software ArcGIS. Mamak Zoning Plan Boundaries (Fig. 5) were obtained from Mamak Municipality Directorate of Zoning and Urbanization.

In 2023, Mamak Local and Rural Development Strategy was prepared by the District Municipality with the objectives of developing local values in rural parts of Mamak on the axis of sustainability and increasing the opportunities for all segments of society to benefit from ecological services and opportunities. The plan has eight strategic purpose and 39 targets related to these purposes. It is understood that the zoning plans prepared in Mamak are fragmented in terms of scope and history. Figure 5 shows the zoning plan boundaries in force for Mamak.

When the regional plan for Ankara Province and the 2038 master development plan approved by the Ankara Metropolitan Municipality, one of the local government bodies of Mamak District, are examined, it is seen that the food issue is approached from a fragmented perspective and has a superficial and production-oriented approach only at the level of protecting agricultural areas (1,200,000 ha). Although there are some alternative food networks, community-supported agriculture projects and agricultural projects operating at the Ankara scale, there is no system in which these formations are organized within a holistic plan.

5.8. Food Deprivation Zones

A map of food deprivation zones was obtained by mapping food sales areas, local markets, and edible landscapes in Mamak. This map was prepared to create a general view of the levels of access to food in Mamak and is not very detailed or comprehensive. According to this map, Region 1, the urbanized area of Mamak with the highest population, is identified as food deprived. It is seen that there is only one edible landscape area in this region. Zone 2 is a semirural area with a much lower population density, where the number of local markets is inadequate. In Region 3, which covers the rural areas of Mamak, it is seen that the edible landscape areas have been increased with the "ecological valley project" implemented by the District Municipality, but the number of local markets (farmers'

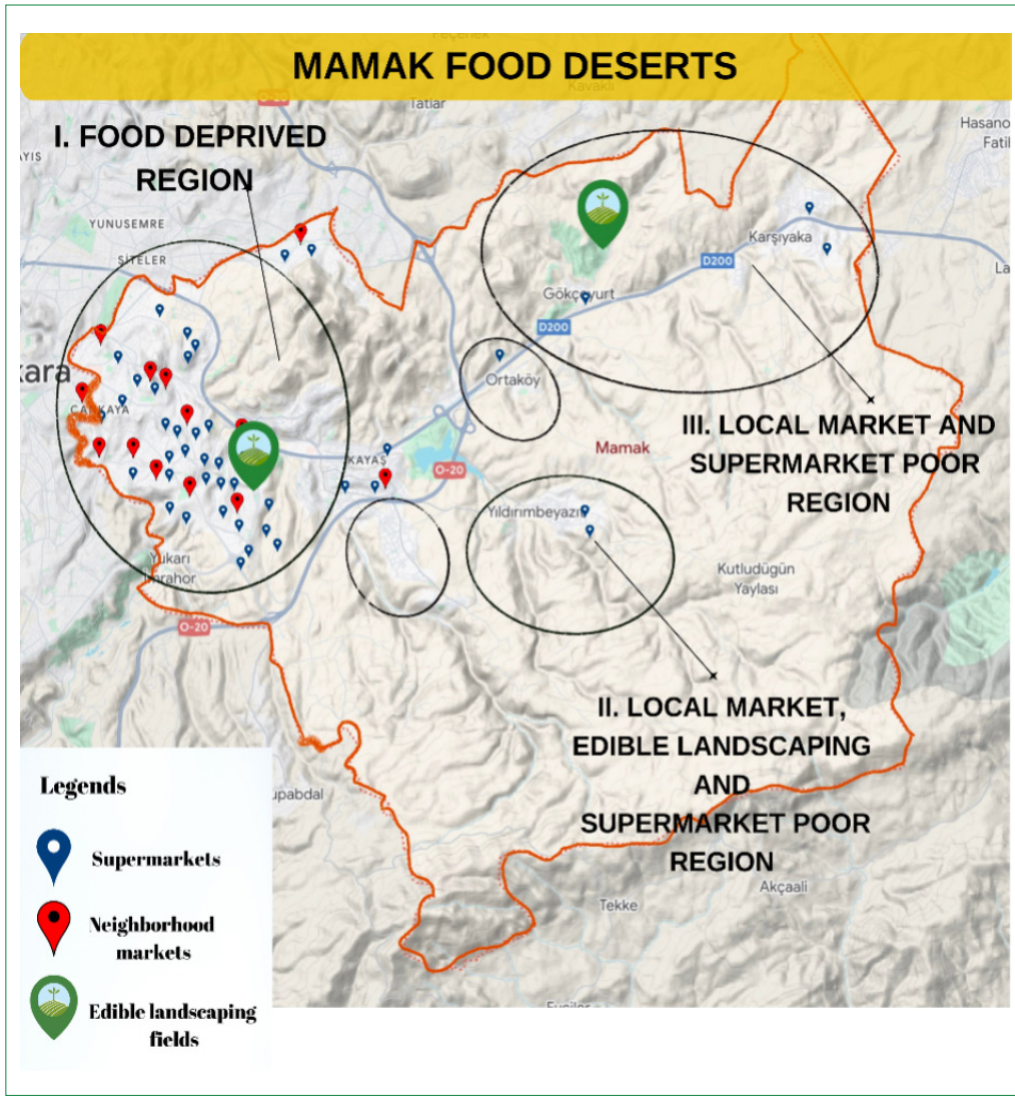

Figure 6. A general forecast diagram regarding the food deserts in Mamak.

Digitized using Adobe Photoshop program according to the data obtained from various analyses and field studies.

markets) is insufficient. The identified Mamak food deprivation zones are shown in Figure 6.

In Mamak, Google Earth was used for location-based analysis of food sales units and wholesale and retail units, while the locations of local markets and edible landscaping areas were obtained from the Municipality.

6. SWOT Analysis and Food Systems

SWOT analysis is a strategic method used to understand the current state of any project or organization, develop strategies, and manage risks. SWOT stands for strengths, weaknesses, opportunities, and threats. A holistic urban food system planning requires a detailed presentation of data on the city's agri-food system, and SWOT analysis is considered a valuable tool to achieve a unique synthesis within this framework.

6.1. SWOT Analysis in terms of Mamak's Food System

SWOT analysis was conducted to detail the current situation for the components of Mamak's food system. In the present study, spatial data analyses, survey data, data obtained from one-to-one interviews, and data obtained from field studies for Mamak District were used. The aim of the SWOT analysis is to ensure that all factors related to Mamak's food system are appropriately identified. When planning a local government-oriented food system in Mamak, using SWOT analysis as a basis will make the process effective and holistic. SWOT analysis will help identify the strategic objectives and roadmap for holistic food system planning in Mamak. While strengths and opportunities can be used to guide food planning, it is also possible to make strategic decisions by addressing weaknesses and threats.

The strengths related to local government identified in terms of the food system in Mamak are as follows:

- S1: Existence of geographically marked products registered to Mamak Municipality, (Kutludün Sourdough Wood Oven Bread and Mamak Ravak Yogurt),
- S2: High interest in the "Introduction to Permaculture" training given by Mamak Municipality for rural neighborhoods,
- S3: Beekeeping training provided by Mamak Municipality for rural neighborhoods and beehive support for those who received training,
- S4: Subsidies for farmers (wheat, chickpeas, seedlings, chickens, hives, and diesel),
- S5: High plant diversity in the ecological valley in Gökçeyurt Neighborhood,
- S6: Beekeeping practices in the ecological valley in Gökçeyurt Neighborhood,
- S7: Training for children on seeds, bread making, vegetable drying, etc. given in the training workshops in the ecovillage,
- S8: Seed warehouse in the ecovillage, where approximately 200 types of ancestral seeds are kept,
- S9: Practices of the current local government structure that contribute to sustainability (ecological valley project, ecology-based training, etc.),
- S10: Mamak Sustainable and Local Rural Development Plan prepared by the Municipality.

Strengths identified in terms of the food system in Mamak that are not directly related to local government are as follows:

- S1: The region has the necessary climatic conditions and soil structure for agriculture and ovine husbandry,
- S2: Institutions and organizations related to the development of agriculture and animal husbandry are in cooperation with farmers,
- S3: Farmers are willing to engage in the practices to be implemented for the development of agriculture and animal husbandry.

The opportunities related to local government identified in terms of the food system in Mamak are as follows:

- O1: Proximity to the market for the producer's evaluation of products,
- O2: Cyprus Valley with high rural tourism potential,
- O3: The areas within the ecological valley in Gökçeyurt Neighborhood have a high agrotourism potential with uses such as the lavender garden, cherry garden, strawberry garden, aromatic plant garden, and ecovillage,
- O4: Endemic plant presence in the region (Prangos denticulata),
- O5: The existence of a women's cooperative in Mamak that facilitates the marketing of agricultural and animal production (MAKKOP).

The weaknesses related to local governments identified in terms of the food system in Mamak are as follows:

- W1: There is no live animal market or mobile slaughterhouse in the region,
- W2: Inefficient animal husbandry in the region,
- W3: Inadequate and incorrect reclamation works in Hatip Stream,
- W4: Not all farmers have adopted good agricultural practices,
- W5: Failure to spread cattle manure,
- W6: Lack of rural design guidelines,
- W7: Lack of supervision leading to the proliferation of hobby gardens on arable land,
- W8: A food-poor region and local market- and supermarket-poor regions identified in the food deserts synthesis.

Weaknesses not related to local governments were identified as follows:

- W1: Development of food pricing completely outside local government,
- W2: Insufficient number of animal herd managers,
- W3: Large amount of nonirrigated land in the region,
- W4: Multishare ownership of land,
- W5: Limited financial literacy of farmers and limited knowledge of new production techniques.

The threats related to local governments identified in terms of the food system in Mamak are identified as follows:

- T1: Agricultural land under urbanization pressure,
- T2: Insufficient grazing areas due to the decrease in pasture areas,
- T3: Nonparticipatory development planning processes,
- T4: Inadequate control of solid and liquid waste in the area,
- T5: Rapid disappearance of natural elements (plant and animal species, natural habitats) in the area due to various human activities (agriculture, uncontrolled animal husbandry, construction, roads, quarries),
- T6: Negative impacts of quarries on the environment,
- T7: Development pressure on agricultural areas,
- T8: Unconscious and excessive use of groundwater.

Threats not related to local government were identified as follows:

- T1: Impending food crisis,
- T2: Farmers' production and incomes are not stable,
- T3: While the cost of inputs required for farmers' production increases, the products are not valued at the same rate.

7. Evaluation and Conclusion

Food systems are complex and multiactor in nature. Today, the world is facing a food crisis that is becoming increasingly evident. This situation underscores the importance and necessity of sustainable and resilient food planning in urban areas. The Türkiye National Food Systems Roadmap, prepared in accordance with the UN 2030 goals, includes targets for the transformation of food systems. Local governments, which derive their authority from central administration and operate within the limits set by laws, play a key role in the transformation of food systems. Food security, which is one of the most important requirements of sustainable food systems, is threatened by the reduction of agricultural land, and local governments are largely decisive in the protection of agricultural areas. When considering the conditions in Türkiye, the greatest contributions that municipalities can make to the food system are establishing food councils, implementing urban food laws, and creating food strategy documents within the framework of comprehensive analyses and planning. As for practical actions that can be taken within the defined food urban regions, the initial steps could include establishing farmers' markets based on agroecological principles to eliminate intermediaries, collaborating with alternative food networks, and promoting urban agriculture practices. Collective urban gardens, which will be realized by evaluating suitable areas within the boundaries of municipalities, can also contribute to the acquisition of sustainable living habits through "ecological farming" training provided to citizens. It should be remembered that urban agriculture, while being a series of practices that go beyond food cultivation and support a culture of shared living, is only one component of food planning. The establishment of City Food Councils is critical for the governance aspect of a sustainable food system framework for municipalities. Additionally, promoting products with geographical indications or introducing new geographical indication products, as well as disseminating these products through producer organizations, are also important actions that local governments can undertake.

The study area, the Mamak District of Ankara, is a settlement under the influence of the metropolitan city and is subjected to zoning pressure. The shrinking agricultural land is reducing the district's self-sufficiency rate at an accelerating speed, and it is seen that the zoning plans made do not take into account the balance of food supply and demand. At this point, the need for a sustainable urban food system framework that adopts agroecological principles emerges. Protecting and maintaining the health of ecological systems and adjusting agricultural, livestock, housing, and distribution systems while considering soil, water, and air pollution is one of the most sensitive issues regarding obtaining food in rural areas in a sustainable way. In Mamak, it is seen that the urban agriculture projects implemented by the district municipality are not considered in connection with the overall zoning plan or food production areas of Mamak. In general, in this country, there is a fragmented approach, and studies that remain at the level of "urban agriculture practices" need to be integrated into spatial plans; a clear and holistic management plan needs to be established. It appears that local government in Mamak does not exhibit a holistic conceptual understanding or an agroecological perspective for the agriculture and food sectors. The Mamak Local and Rural Development Strategy prepared by Mamak Municipality in 2023 is an important step for holistic sustainable development and rural/urban integration, but the actions included in this plan need to be implemented. While there are some efforts towards the formation of alternative food networks, it is clear that there is a deficiency, especially in establishing farmers' markets.

Definition of the food urban region for Mamak District is an important tool that can initially be used in the transformation to a sustainable food system. The participation of the Mamak Municipality in the MUFPP, one of the most significant steps taken in recent years regarding urban food systems, should also be evaluated by the administration as a valuable step towards ensuring sustainable urban food planning for the district.

The most important holistic approach to build sustainable and resilient urban food systems is "urban food planning," which adopts agroecological principles. The primary task to be done for this is to conduct current situation assessments related to agriculture and food, and SWOT analysis is thought to be an important tool in this regard. Examples from around the world demonstrate that local governments play a key role in sustainable urban food planning. Although the role of local government is emphasized in the present study, as it is the local administrative unit closest to the public, in sustainable food systems it is essential for central and local governments to work together regardless of party differences for the continuity and resilience of food systems. Moreover, coordination between the other actors in food systems and policy-making administrative units is also critical when planning a sustainable food system.

References

Adaman, F. (2022). *A sustainable and resilient food system: Analysis of Turkey*. Istanbul Policy Center.

Ankara Metropolitan Municipality. (n.d.). *Kırsal hizmetler dairesi başkanlığı*. Retrieved September 6, 2024, from https://www.ankara.bel.tr/teskilat-semasi/kirsal-hizmetler-dairesi-baskanligi-135

Anonymous. (2023, November). *National congress local governments, food security, and urban agriculture: Global and national options*. Full Text Book.

Bilgin, M. (2002). The effectiveness of local governments in regional development: The case of the Lakes Region. *Süleyman Demirel University Journal of Economic and Administrative Sciences, 7*(2), 313-330.

Çakmak, M. H. (2016). *Urban ecological characteristics of Mamak (Ankara) District* [Master's thesis]. Gazi University, Ankara.

Çaşkurlu, S. (2024). Küresel gıda sistemlerinin dönüşümü: Genel bir bakış [The transformation of urban food systems: A general overview]. In S. Ak Kuran (Ed.), *Gıda paradoksları [Food paradoxes]*. Gazi Publishing House, Ankara.

Altıparmak Law Office. (2023). *Agroekoloji bilgi notu [Agroecology factsheet]*. Retrieved March 1, 2025, from https://altiparmakhukuk.org/blog/bilgi-notu-2023-02-agroekoloji-85

Dury, S., Bendjebbar, P., Hainzelin, E., Giordano, T., & Bricas, N. (Eds.) (2019). *Food systems at risk: New trends and challenges*. Rome, Montpellier, Brussels, FAO, CIRAD and European Commission.

Erdoğan, A. (2015). *Mamak tarih ve kültür atlası Vol I-II [Mamak history and culture atlas]*. Mamak Municipality Publications.

FAO (Food and Agriculture Organization of the United Nations). (2015). *Agroecology for food security and nutrition*. Proceedings of the FAO International Symposium, 18-19 September 2014, Rome, Italy.

FAO (Food and Agriculture Organization of the United Nations). (2018). *Sustainable food systems concept and framework*. Retrieved August 30, 2024, from https://openknowledge.fao.org/server/api/core/bitstreams/b620989c-407b-4caf-a152-f790f55fec71/content

FAO (Food and Agriculture Organization of the United Nations). (2019). The 10 elements of agroecology. Retrieved March 2, 2025, from https://www.fao.org/agroecology/overview/overview10elements/en/

FAO, IFAD, UNICEF, WFP, & WHO. (2023). *Summary of the State of Food Security and Nutrition in the World 2023: Urban-rural continuity in the context of urbanization, agricultural food system transformation, and healthy nutrition*. Rome. http://doi.org/10.4060/cc6550en

FUSILLI. (n.d.). About. Retrieved September 2, 2024, from https://fusilli-project.eu/about/

IPA (Istanbul Planning Agency). (n.d.). Yerel yönetim nedir? [What is local government?] In *Kent sözlüğü* [Urban dictionary]. Retrieved September 2, 2024, from https://ipa.istanbul/yayinlarimiz/genel/yerel-yonetim-nedir/

IMM (Istanbul Metropolitan Municipality). (2021). *Istanbul food strategy document*. Istanbul.

Karakaya Ayalp, E. (2021). Alternatif gıda ağları ve Türkiye'de yurttaş temelli gıda inisiyatifleri [Alternative food networks and citizen-based food initiatives in Turkey]. *İdealkent, 33*(12), 965-1005.

Karakaya Ayalp, E. (2023). *Roadmaps2SUSFOOD: Roadmap to sustainable food system: Research, method, and implementation framework design in Karşıyaka, İzmir-Turkey*. Research Report funded by the BAYETAV Foundation.

Kazancı, M. (1983). Yerel yönetimler üzerine birkaç not [A few notes on local governments]. *Amme İdaresi Dergisi [Public Administration Journal]*, 36-51.

Keleş, R. (2020). *Yerinden yönetim [Local governance]*. İmge Publishing House.

Law No. 5393 on Municipalities, Published in the Official Gazette: Date: 13/07/2005 Issue: 25874

MUFPP (Milan Urban Food Policy Pact). (n.d.). *Projects*. Retrieved September 1, 2024, from https://www.milanurbanfoodpolicypact.org/mufpp-projects/

Nilüfer Municipality. (n.d.). *FUSSILI project*. Retrieved September 2, 2024, from https://www.nilufer.bel.tr/kategoriler/proje/tarim-uretim-projeleri/fusilli-projesiJUZKL

Öcal, Y., & Ercoşkun, Ö. (2021). Kentlerde ekolojik üretim ve sosyal sürdürülebilirlik: Ankara Mamak Kadın Kooperatifi (MAKKOP) [Ecological production and social sustainability in cities: Ankara Mamak Women's Cooperative (MAKKOP)]. *Erzincan University Journal of Social Sciences Institute, 14*, Special Issue, 76-86.

One-on-One Interviews, Mamak District Directorate of Agriculture and Forestry, Various Dates Between August 2023 and August 2024.

One-on-One Interviews, Mamak Municipality, Rural Services Department. Various Dates Between August 2023 and August 2024.

Özkaya, T., Yıldız, Y. M., Özden, F., & Kocagöz, U. (2021). *Agroekoloji [Agroecology]*. Metis Publications.

Şahin, N. (2024). Aktör perspektifiyle gıda sistemlerine bakmak: Türkiye gıda perakende şirketleri örneği [Looking at food systems from an actor perspective: The case of Turkey's food retail companies]. In S. Ak Kuran (Ed.), *Gıda paradoksları [Food paradoxes]*. Gazi Publishing House, Ankara.

The City of Milan. (2018). *The food system in Milan*. The City of Milan and Working Group ESTà. Retrieved from https://www.comune.milano.it/en/aree-tematiche/food_policy/obiettivi-e-priorita-della-food-policy-di-milano

The Ministry of Agriculture and Forestry of the Republic of Turkey. (2021). *Towards sustainable food Systems: Turkey's national roadmap*. Retrieved from https://www.tarimorman.gov.tr/ABDGM/Belgeler/Uluslararası%20Kuruluşlar/NATIONAL%20PATHWAY%20OF%20TURKEY_BOOKLET_28%20kasım%2002.pdf

The Ministry of Environment, Urbanization and Climate Change of the Republic of Turkey. (n.d.). *Çevresel göstergeler [Environmental indicators]*. Retrieved September 4, 2024, from https://cevreselgostergeler.csb.gov.tr/kentsel-~-kirsal-nufus-orani-i-85670

UN (United Nations). (2021). *Food systems summit 2021*.

Yarış, A., & Karakaya Ayalp, E. (2023). Kentsel gıda planlaması için çıkarımlar: Gıda'nın kent-bölgesi'ni tanımlamak [Implications for urban food planning: Defining the city-region of food]. *Sketch Journal of City and Regional Planning, 5*(1), 46-60.

Yerküre Yerel Çalışmalar Kooperatifi. (2019). *Türkiye'nin gıda ve tarım sistemi, İstanbul'un gıda tedarik zinciri: Eğilimler, sorunlar ve alternatifler [Turkey's food and agriculture system: Trends, issues, and alternatives in Istanbul's food supply chain]*. Greenpeace Report.

Yıldırım, F., & Yücel Işıldar, G. (2014). 6360 sayılı kanunun etik ve ekolojik anlamda irdelenmesi [The ethical and ecological examination of law no. 6360]. *Yerel Politikalar Dergisi [Journal of Local Policies], 5*, 75-79.