THE CONSEQUENCES OF SURPLUS LAND PRODUCTION THROUGH SPATIAL PLANS: ANKARA CASE

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

BY

COŞKUN TUNÇ

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

APRIL 2024

Approval of the thesis:

THE CONSEQUENCES OF SURPLUS LAND PRODUCTION THROUGH SPATIAL PLANS: ANKARA CASE

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ABSTRACT

THE CONSEQUENCES OF SURPLUS LAND PRODUCTION THROUGH SPATIAL PLANS: ANKARA CASE

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Master of Science, City and Regional Planning
Supervisor: Assoc. Prof. Dr. Ö. Burcu Özdemir Sarı

April 2024, 157 pages

There are many generally accepted reasons for urban sprawl, which was seen in many cities after the 1950s and appeared in the literature as a form of growth. Although increasing population is the most crucial reason for the emergence of sprawl, other reasons such as increasing income, development of transportation facilities, and planning are at least as important as population growth. The municipal approach, localization and legal regulations experienced in Türkiye after the 1980s led to excess land production and urban sprawl.

The role of planning in urban sprawl is undeniable. There are many studies in the literature on the prevention of urban sprawl, which has become a worldwide problem, and the development of precautions and countermeasures against it. Yet, in the case of Ankara, the major reason of sprawl and excessive growth is partially different from the world examples since urban spatial expansion is directly enabled and triggered by spatial plans.

This study examines the causes, consequences and effects of surplus land production through spatial plans. This examination is done based on the analysis of existing

plans. Basically, the urban sprawl phenomenon caused by surplus land production through spatial plans, and Ankara macroplan decisions and associated population projections were examined. The development and consequences of the excessive growth experienced in terms of planning were evaluated together with satellite images. Ways to reverse this growth and whether planning can develop a new attitude for such areas are also discussed in the conclusion.

Keywords: Spatial Plans, Surplus Land Production, Urban Sprawl

ÖZ

MEKÂNSAL PLANLAR YOLUYLA İHTİYAÇ FAZLASI ARSA ÜRETİMİNİN ANKARA ÖRNEĞİ ÜZERİNDEN SONUÇLARI

Tunç, Coşkun
Yüksek Lisans, Şehir Planlama, Şehir ve Bölge Planlama
Tez Yöneticisi: Doç. Dr. Ö. Burcu Özdemir Sarı

Nisan 2024, 157 sayfa

1950'li yıllardan sonra birçok kentte görülen ve bir büyüme biçimi olarak literatüre geçen kentsel saçaklanmanın kabul görmüş birçok nedeni bulunmaktadır. Saçaklanmanın ortaya çıkmasının en önemli nedeni artan nüfus olsa da, gelirin artması, ulaşım imkânlarının gelişmesi, planlama gibi diğer nedenler de en az nüfus artışı kadar önemlidir. Türkiye'de 1980'li yıllardan sonra yaşanan belediyecilik anlayışı, yerelleşme ve yasal düzenlemeler, aşırı arazi üretimine ve kentsel saçaklanmaya yol açmıştır.

Kentsel saçaklanma da planlamanın rolü yadsınamaz. Dünya çapında bir sorun haline gelen kentsel saçaklanmanın önlenmesi, buna karşı önlem ve karşı tedbirlerin geliştirilmesi konusunda literatürde pek çok çalışma bulunmaktadır. Ancak Ankara örneğinde saçaklanmanın ve aşırı büyümenin temel nedeni, kentsel mekânsal genişlemenin doğrudan mekânsal planlar tarafından sağlanması ve tetiklenmesi nedeniyle, dünya örneklerinden kısmen farklıdır.

Bu çalışma, fazla arazi üretiminin nedenlerini, sonuçlarını ve etkilerini mekânsal planlar üzerinden incelemektedir. Bu inceleme mevcut planların analizine dayalı olarak yapılmaktadır. Temel olarak mekânsal planlar aracılığıyla fazla arazi

üretiminin neden olduğu kentsel saçaklanma olgusu ve Ankara makro plan kararları ve buna bağlı nüfus projeksiyonları incelenmiştir. Planlama açısından yaşanan aşırı büyümenin gelişimi ve sonuçları uydu görüntüleriyle birlikte değerlendirilmiştir. Bu büyümeyi tersine çevirmenin yolları ve planlamanın bu tür alanlara yönelik yeni bir tutum geliştirip geliştiremeyeceği de sonuç bölümünde tartışılmaktadır.

Anahtar Kelimeler: Mekansal Planlar, İhtiyaç Fazlası Arsa Üretimi, Kentsel Saçaklanma

To my family

ACKNOWLEDGMENTS

The author wishes to express his deepest gratitude to her supervisor Assoc. Prof. Dr. Ö. Burcu Özdemir Sarı for her guidance, advice, criticism, encouragements and insight throughout the research.

The author would also like to thank Prof. Dr. Nil Uzun, Prof. Dr. Nihan Özdemir Sönmez for their suggestions and comments.

The technical assistance of Zeynep Namlıkaya is gratefully acknowledged.

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LIST OF ABBREVIATIONS

ABBREVIATIONS

AÇDP Ankara Environmental Plan

AMNPB The Ankara Metropolitan Area Urban Planning Office

BANİP Capital Ankara Master Plan

TOKİ The Housing Development Administration

TUİK Turkish Statistical Institute

CHAPTER 1

INTRODUCTION

The number of cities and urban dwellers is increasing worldwide. Projections for the year 2050 suggest that approximately 70% of the world's population will reside in urban areas (OECD, 2018). In the process of meeting the needs of the urban population and rapidly developing and growing cities, urban land production plays an important role. It is often observed that uncontrolled and unplanned growth leads to scattered and relatively low-density outskirts in urban areas. However, the absence as well as the presence of land policies and spatial plans can sometimes pave the way for urban sprawl. This study examines the production of excessive land beyond the actual need through spatial plans in Türkiye, where such examples are frequently observed and focuses on the consequences of excessive land production.

1.1 Scope of the Study

The process of spatial planning results in different land use purposes and urban rent levels, creating new property rights that differ from the previous ones. When considered together with development rights, it actually leads to a change that will have a long-lasting impact on urban form. The planning activity can, at times, facilitate unregulated expansion, the proliferation of residential areas and the urban sprawl.

After the 1980s, the inclination towards sprawl has become one of the elements that shape the space as part of the urbanization process in our country.

The phenomenon of urban sprawl, which has been observed in many cities after the 1950s as a form of growth, can be attributed primarily to the increase in population (Öncel &

Meşhur, 2021). However, other factors such as income growth, improvements in transportation infrastructure and planning also have had an impact on this process.

In Türkiye, the post-late 1980s concept of municipal governance, localization and legal regulations have resulted in an excessive production of land and urban sprawl.

The pivotal significance of planning in urban sprawl is indisputable. In Türkiye, notably in Ankara, the occurrence of urban sprawl deviates partially from global models as a result of the direct contribution and stimulation of spatial planning towards uncontrolled growth and urban spatial expansion.

Therefore, within the scope of the study, different processes and policies specific to Türkiye regarding the production of surplus land beyond the needs have been evaluated in terms of their causes and consequences through spatial plans. The spatial plans that contribute to the urban sprawl in our cities differ from the global causes and consequences of urban sprawl, as they generate more land than necessary. Therefore, a detailed analysis of the global reasons and effects of urban sprawl has not been conducted within the scope of this study.

As part of the strengthening of local governments, it has been understood that the devolution of planning powers from central government to local governments and the organization of metropolitan municipalities within local governments, has accelerated the process of sprawl in the country's management system. Therefore, the country's management and decision-making mechanisms regarding the planning system have been addressed within the scope of the study.

It has been observed that agricultural lands, wetlands, dam basins, water protection zones, riverbeds and other areas that absolutely need to be protected are being opened up for development purposes without valid reasons or justifications. Furthermore, problematic plans, which play a role in urban sprawl, were approved and implemented before legal regulations were put in place to expand the boundaries of the Ankara metropolitan municipality. These plans were then registered in the land registry through subdivision practices. As a result, surplus land was produced through spatial planning, which led to urban sprawl along with its problems. It has

been determined that in Ankara, planning is strongly related to urban sprawl, which is different from suburbanization caused by lifestyle changes seen in western cities. In other words, urban sprawl in Ankara is a kind of planned suburbanization.

The observation that spatial planning has become a tool for uncontrolled growth rather than a means of preventing sprawl has led this study to examine the planning data and spatial implications of settlements where few people live on the periphery.

It has been observed that throughout this process, a correct policy was not pursued and in fact, there was no policy regarding land production. The plans and implementations were carried out spontaneously, speculatively and through populist approaches shaped by political preferences. Therefore, the issue has been examined in terms of this aspect as well.

With these advancements, there have been associated environmental, economic and societal implications that necessitate taking action to address the threats posed. Managing and regulating urban sprawl is imperative.

The ramifications of this advancement have had profoundly detrimental effects on the economic, social and environmental spheres.

This study will examine the causes, consequences and effects of excessive land production through spatial planning analysis. It has been based on an analysis of existing plans.

This study covers the production of surplus land through spatial plans in Ankara, the macro-plan projections and objectives regarding this issue, the reasons and consequences of surplus land production, the urban sprawl of the city, the relationship between urban sprawl and spatial plans, the impacts and negative effects of surplus land production on the environment, society and economy, as well as the policies that need to be developed to enhance the situation.

The excessive growth in terms of planning in Ankara has been discussed in relation to the development and consequences of Akyurt, Çubuk and Kahramankazan

districts, as well as the ways to reverse the growth and whether planning can develop a new approach for such areas.

1.2 Aim of the Study and Research Questions

Incorporating into the global economy and adopting liberal policies since the 1980s, significant transformations have occurred in the cities of our country, along with factors affecting all cities worldwide.

Large areas have been opened up for development through spatial plans, with the aim of gaining more share from urban rent. Speculative and controversial plans have been made, which are not in line with the city's population dynamics, employment opportunities and economy and which exceed the city's needs. As a result, uncontrolled land production has taken place under the control of planning, but without proper control.

At this point, the question being asked is whether global factors and trends, as well as the dynamics, conditions, basic planning approaches and preferences and political decisions of our country and Ankara, are effective in producing more land than needed through spatial planning.

The aim of this study is to discuss the fundamental planning policies, approaches and preferences of our country's current conditions, as well as the global trends and reasons for producing more land than necessary, resulting in urban sprawl. It also aims to present the dynamics of the city of Ankara through macro-planning decisions and to analyze the causes, consequences and effects of producing surplus land in Ankara specifically.

Drawing on these data that provide significant insights into the consequences and effects of excessive growth from a planning perspective, this study aims to clarify the ways in which growth reversal could be achieved and whether planning can develop a new approach for such areas. These topics are among the other questions of this study, which offers valuable implications for planning.

1.3 Method of the Study

As a component of the unregulated and speculative planning strategy that was spearheaded by local governments, urban planning had a significant influence on the expansion of the city of Ankara.

This thesis examines Ankara as a case study, evaluating the spatial-temporal characteristics and consequences of urban sprawl in the city from the 1980s to the present day through multidimensional analysis of population and physical planning decisions.

In this context, firstly, the plan decisions produced by the municipal and district presidencies that were included in the boundaries of Ankara Metropolitan Municipality with the Law No. 5216 were examined and then, with the Law No. 6360, the plan decisions and projections of all 25 district municipalities that make up the Ankara Metropolitan Municipality were examined for surplus land production needs.

Subsequently, a more comprehensive examination has been conducted specifically on the municipalities of Çubuk, Akyurt and Kahramankazan, which are settled on productive plains and agricultural lands and have the highest potential for being affected by earthquakes due to their proximity to the North Anatolian Fault Zone. These municipalities also host small, medium and large-scale production facilities that provide employment opportunities. In light of this, an analysis was conducted on the master plans procured from the district municipalities and the urban areas that resulted from planning measures over time were assessed utilizing these plan data as the basis for evaluation.

The satellite images of Google Earth have been used to analyze whether the development and transformation of surplus plots of land, which have caused urban sprawl in the northern districts of Ankara, have been carried out in a healthy manner over a period of approximately 20-30 years since their registration in the land registry through planning in the 1980s.

Through satellite images and CAD-based digital data of planned areas, the development and changes in these areas over the years have been analyzed. The outcomes of land production, its impacts on space and the effects of urban sprawl have been discussed based on these sample settlements. The findings of the study have been evaluated in terms of the effects and consequences of urban sprawl.

The evolution and development of the macroform of the city over the years have been analyzed, particularly through satellite imagery. Satellite imagery has been used for these analyses, as it provides a more accurate reflection of the actual situation and real needs and demands, as compared to urban plans.

An attempt has been made to explain the extent of the fringe area caused by excess space in the urban macroform, using satellite images to track the development and transformation of settlements over the years.

Despite the passage of time, areas that have not yet been developed or built upon still exist. Visuals obtained from occupancy gap analyses reveal that decisions made regarding development have not been implemented through construction. As a result, it has been determined that surplus land has been produced and that these plans contain problems.

The data obtained from these analyses provide significant opportunities for evaluating the consequences and effects of excessive growth in terms of planning.

As a part of the research, we utilized data sources including macro-plans and plan description reports available on the website of the Ankara Metropolitan Municipality, demographic statistics and macro-plan projections related to Ankara and research articles and theses written on the topic.

In the course of the investigation, the general use of data was based on the Capital Ankara Master Plan and Ankara Environmental Plan, which are respectively the

1/25000 scale 2023 Capital Ankara Master Plan (BANİP)[1] and the 1/100000 scale 2038 Ankara Environmental Plan (AÇDP)[2]. It is important to note that despite ongoing legal proceedings and the revocation of its implementation by a local court ruling, the Ankara Environmental Plan was still utilized in the study.

In fact, in order to fully express the dimensions of the problem, the issue has been taken into consideration more comprehensively. Along with the district municipalities previously attached by Law No. 5216, the planning projections in the 2038 AÇDP of district municipalities such as Polatlı, Evren, Şereflikoçhisar, Haymana, Beypazarı, Kalecik, Çamlıdere, Nallıhan, Kızılcahamam, which were included in the Ankara Metropolitan Municipality boundaries by Law No. 6360 and had previously planned and approved as independent municipalities, have also been examined.

In this regard, in order to compare the findings made in both macro plans regarding the production of surplus land and to demonstrate that more land has been produced than identified in the 2023 plan, although not legally in force, the plan data of all district municipalities within the scope of the 2038 AÇDP plan have also been evaluated.

After conducting these assessments, it has been observed that the production of excess land has become a culture and habit among local governments that have been incorporated into the metropolitan area through the implementation of Law No. 6360.

Despite the fact that the implementation of the 2038 AÇDP plan is not in effect due to court processes, it can be shown that there has been no excess land production by district and municipal mayors included in the metropolitan boundaries only by Law No. 5216, while excess land production has been carried out by other district

[1]2023 Başkent Ankara Nazım İmar Planı, approval date-number, 16.02.2007-525
[2] 2038 Ankara Çevre Düzeni Planı, approval date-number, 13.01.2017-116

municipalities included in the metropolitan boundaries by Law No. 6360, indicating that excess land production has actually become a general habit. In order to demonstrate and emphasize this, the 2038 AÇDP, which contains data on excess land production and planned urban sprawl, has been utilized for its striking information and documents.

1.4 Structure of the Study

In this study, conducted through a plan analysis, the definition of urban sprawl and the factors causing it, as well as the role of planning, were evaluated. After that, a brief overview of the history and reasons for urban sprawl in developed countries was provided, followed by an examination of the historical and causal factors of urban sprawl in Türkiye.

A comprehensive study has been conducted on the settlements of Çubuk, Akyurt and Kahramankazan, located in the northern part of the Ankara metropolitan area, which have similar characteristics. This study focuses on the role of planning in urban sprawl in the metropolitan district municipalities within the boundaries of Ankara Metropolitan Municipality and the consequences of this excessive growth from a macroplanning perspective.

The thesis is comprised of four primary sections. In chapter 1, The scope, argument and research questions of the study are briefly introduced. In chapter 2, the relationship between urban sprawl and spatial planning is discussed, along with the historical development of urban sprawl, methods for measuring urban sprawl and the environmental, economic, social and societal consequences and effects of urban sprawl. Additionally, the relationship between urban sprawl and financial stress is explored and the role of planning in preventing urban sprawl is examined. Finally, the phenomenon of urban sprawl is briefly analyzed on a global scale. In chapter 3, under the title “Social, Economic and Spatial Consequences and Effects of Excessive Land Production through Spatial Plans in Ankara”, we discussed the decentralization

of planing powers and planning system in Türkiye after the 1980s, as well as the impact of legal regulations on urban sprawl. We also explored the underlying causes of urban sprawl in the country. Macro-plan predictions were examined and surplus land production and the solutions proposed by macro-plans were evaluated. The study delves into the spatial plans that give rise to urban sprawl and their impact on the surrounding areas. It also considers the changes that occur over time and the repercussions of producing excess land. The investigation is conducted within the purview of the metropolitan district municipalities of Akyurt, Çubuk and Kahramankazan. In chapter 4, which is the Conclusion section of the thesis, the consequences of excessive urban expansion from a spatial planning perspective, ways to reverse this growth and whether a new approach can be developed through spatial planning for such areas have been discussed.

.

CHAPTER 2

THE RELATIONSHIP BETWEEN URBAN SPRAWL AND SPATIAL PLANS

2.1 Urban Sprawl and its Historical Development

It is observed that urbanization rates were relatively low worldwide until the mid-20th century. For instance, in Europe, the migration towards urban areas began with the Industrial Revolution and the number of large cities did not increase significantly until the mid-20th century (Öncel & Meşhur, 2021). According to the World Bank's research, the urban population rate worldwide was at 9% in 1900;however, this rate increased to 40% by the 1980s and reached 50% in 2000 (McIntyre et al., 2008). Predictions indicate that by 2050, 70% of the world's population will reside in urban areas (OECD, 2018; Öncel & Meşhur, 2021).

Since the second half of the twentieth century, continuing to the present day, it has been observed that along with the accelerated increase in population in urban areas, almost all cities have rapidly expanded outward into their surroundings. According to OECD data, it is estimated that the total urban area, which was 603, 000 km² worldwide in the year 2000, will reach 3 million km² by 2050 (OECD, 2018).

According to Squires (2002), the population in metropolitan areas increased by 128% while the size of settled areas increased by 181% between 1950 and 1990 worldwide. These data indicate that cities and metropolitan areas are expanding rapidly towards their surroundings (Squires, 2002; Öncel & Meşhur, 2021).

As a result of this change and development, the rapid expansion of cities and metropolitan areas towards their surroundings has become an important topic of

discussion in the literature and has started to be included in the planning agenda, generally referring to the physical expansion of urban areas, known as urban sprawl (Pozoukidou & Ntriankos, 2017).

With the increase in urbanization, the term urban sprawl is commonly used to describe the expansion of cities beyond what is necessary, leaving too much low-density and spaced-out gaps. As the population grows, cities inevitably expand. However, the term "sprawl" highlights that this expansion exceeds the needs of the population (Brueckner, 2000; Öncel & Meşhur, 2021).

Urban sprawl is a phenomenon that emerges as an important issue in terms of urban planning and development. This phenomenon has undergone a unique evolution within the historical development and growth processes of cities. The phenomenon of urban sprawl refers to the outward expansion of cities from their densely populated and compact urban cores towards their peripheries.

The expansion tendency from the compact city centers, especially those surrounded by walls, towards outer areas in historic cities has laid the initial traces of urban sprawl. This expansion has concomitantly occasioned low building density and extensive land use, owing to the surge in population and the concomitant demand for urban spaces. The areas of habitation which emerged beyond the fortifications, particularly in urban centers of the medieval era, provide initial instances of urban expansion (Pozoukidou & Ntriankos, 2017).

The phenomenon of urban sprawl originated concomitantly with the Industrial Revolution. This epoch witnessed a rapid acceleration in industrialization and urbanization, which led to a considerable expansion in suburbs and newly established settlements beyond the boundaries of cities. During the Industrial Revolution in Europe, there was a process that resulted in one of the modern examples of urban sprawl, as noted by Pozoukidou and Ntriankos in their study (2017).

Towards the end of the 19th century, there was a significant increase in the intensity of urban sprawl. In the early 1900s, excessive urban sprawl, which was prevalent in

the major metropolitan centers of the United States and Northern Europe, intensified even further in the rest of Europe after the Second World War (Pozoukidou & Ntriankos, 2017).

Since the mid-20th century, the phenomenon of urban sprawl has deeply affected urban development models. Various definitions originating from Europe and North America reflect efforts to explain the various aspects and effects of urban sprawl. Urban sprawl has been occupying the planning and research agenda for quite some time now, as it is at the center of discussions regarding the ideal form of cities and metropolitan areas.

The characteristics of this settlement are typically described as featuring low-density, disjointed, non-centralized, single-function land use, automobile dependency, lack of planning, strip-like configuration, poor accessibility and inadequate functional open spaces. The emergence of urban sprawl has been decisively influenced by the impact of technological advancements, particularly in American cities.

The term urban sprawl is widely used in the discipline of spatial planning. However, there is still no universal consensus on the definition of this concept and despite its importance for recognizing the issue and promoting sustainable urban development, there is also no standard definition available (Pozoukidou & Ntriankos, 2017).

As per Hess's perspective, the terminology of urban sprawl encompasses a particular kind of urban development, portraying it through a descriptive adjective. Furthermore, it describes the process involved in this development through a verb and identifies a specific type of urban form through a noun (Hess et al., 2001, p.12).

Glaeser and Kahn (2003) assert that urban sprawl is a manifestation of policies related to urban development, which entail settling beyond the city limits and a result of a lifestyle that is highly reliant on automobiles. Furthermore, the term urbanization refers to the process of urban growth that involves low levels of density, continuity, concentration, clustering, centrality, single-core, mixed use and proximity dimensions (Kanbak, 2013).

According to Ewing (2002), fringe areas are defined as spatially low-density and sporadically developing places (Kanbak, 2013). Although different definitions exist in the literature, recent studies generally focus on a definition that separates its causes and effects. Urban sprawl can be summarized as a form of urban growth where population densities decrease and a discontinuous development separated from macro-form is observed (Öncel & Meşhur, 2021).

Urban sprawl refers to the rapid expansion of cities from their centers towards the outer areas. This expansion brings along a series of problems such as unplanned construction, infrastructure deficiencies and traffic issues. Urban sprawl is characterized by a swift increase in population, disorganized construction and environmental issues.

Differences in the definition of urban sprawl can even be observed among official European institutions. An analysis of 16 different definitions of urban sprawl obtained from research articles in the United States and Europe demonstrates that each definition is influenced by specific characteristics of the area being studied and the individual choices of the academics or institutions conducting the research (Johnson, 2001; Pozoukidou & Ntriankos, 2017).

Although in our country, the terms urban sprawl and urban expansion are often used interchangeably in literature, urban expansion more commonly refers to the spread of cities in developing countries in a way that resembles the spread of an oil stain to the surrounding areas. Urban sprawl, refers to the leapfrogging expansion and is actually a type of urban expansion. Urban sprawl not only involves the outward growth of the main city, but also the development of existing settlements that merge with the main city.

Currently, urban sprawl appears in various forms in different geographical and cultural contexts worldwide. Understanding this phenomenon and dealing with its effects remains a crucial issue for sustainable urban development.

2.2 Main Causes of Urban Sprawl

Throughout history, urban expansion has been primarily driven by population growth. Nevertheless, it is inadequate to confine the discussion of contemporary urban growth solely to population increase (Kanbak, 2013).It is possible to mention some basic factors that are valid for all cities in the world in the emergence of urban sprawl. However, each geography and country has its own conditions, causing different dynamics that lead to urban sprawl (Öncel & Meşhur, 2021).

The conditions of each country and city have significant effects on the form and degree of urban sprawl. While it is correct to approach each settlement in its own context, it is still important to address the globally accepted general causes that lead to urban sprawl in the literature, in order to understand the factors that apply to all cities (Öncel & Meşhur, 2021).

During the initial phases of the Industrial Revolution in Europe, the first stages of sprawl were experienced, while in America, suburbs are considered the primary cause for the dramatic emergence of sprawl (Öncel & Meşhur, 2021).

Urban sprawl, which particularly arises from the rapid development of large cities, is caused by various factors (Kanbak, 2013). Economists believe that three main factors trigger urban sprawl. These are population growth, increasing income and the development of transportation facilities (Brueckner, 2000; Öncel & Meşhur, 2021).

According to the report prepared by the European Environment Agency in 2006 (Urban Sprawl In Europe: The Ignored Challenge), the main reasons for urban sprawl are economic growth, globalization, rising standard of living, land prices and availability of cheap agricultural land, population growth, increase in the number of households, lack of urban social facilities, increase in private car ownership, inadequate public transport, weak land use planning, inadequate implementation of existing plans, more space per capita, housing appreciation, deteriorating air quality, noise, unsafe environment, social problems, lack of horizontal and vertical coordination and cooperation (Kanbak, 2013).

Urban sprawl is partly driven by the affordability of new real estate development due to cheap money and physical geography and local amenities (Squires, 2002; Burchfield et al., 2006; Saiz, 2010; Milan & Creutzig, 2016). Dispersed development is compatible with individual preferences for large and affordable land consumption (Fujita, 1989; Milan & Creutzig, 2016). Population growth, changes in spending patterns due to increased purchasing power and transportation infrastructure largely explain sprawl patterns (Small, 1981; Leroy & Sonstelie, 1983; Baum-Snow, 2007; de Bartolome & Ross, 2007; Molloy & Shan, 2012; Rodriguez, 2013; Milan & Creutzig, 2016).

Individual preferences, increasing car usage and market dynamics and the assumption of a lack of regulation and planning are generally considered to be the main causes of the development of urban sprawl (Moroni & Minola, 2019). Also, it is hypothesized that the degree and configuration of the municipal property tax have a catalyzing effect on the expansion of urban areas.

The global human population is expected to increase by 30-70% in this century, leading to a significant shift in population from rural to urban areas and substantial land acquisition for urban expansion (Montgomery, 2008; Gerland et al., 2014; United Nations, 2014; Hennig et al., 2015).

The requirement for both an augmentation in food production and urbanization has the potential to exacerbate the conflict between the demand for high-quality land and appropriate construction grounds (Hennig et al., 2015).

Western and Central Europe are among the most densely populated regions where 75% of the population lives in urban areas (106 people/km² in 2005). Although there are a few regions where the population has not increased, such as East Germany, the expansion of settlement areas has continued in most areas, even in places where the population has decreased (Haase et al., 2013; Hennig et al., 2015).

The various harmful effects of deforestation and the urgent need to find solutions to them are important topics for future research (Hennig et al., 2015).

2.3 Measuring Urban Sprawl

Given the complexity of urban sprawl, it is not surprising that there are many different definitions of it in the literature. Frenkel and Ashkenazi (2008) summed up the situation well by stating: “We know that spread is important, but we are not yet sure exactly what it is or how to measure it” (Steurer & Bayr, 2020, p.1).

Measuring urban sprawl is important because it has significant ecological, social and health consequences. Urban sprawl is a byproduct of urban growth and is directly related to the decrease in mobility costs in the twentieth century. It has been exacerbated by strict development regulations that limit density in many suburban areas (Glaeser & Kohlhase, 2004; Steurer & Bayr, 2020).

The measurement of the degree of urban sprawl largely depends on the local context and available data (Tian et al., 2017). There is a plethora of literature documenting methods for measuring sprawl and comparing the degree of sprawl between various cities (see for instance; Galster et al., 2001; Lopez & Hynes, 2003; Tsai, 2005; Jiang et al., 2007; Schneider & Woodcock, 2008; Bhatta et al., 2010a; Bhatta et al., 2010b; Zhang et al., 2014; Tian et al., 2017).

Studies on urban sprawl have primarily focused on cities in the United States, but recent research has emerged worldwide in countries such as Europe (Antrop, 2004; Kasanko et al., 2006), China (Deng & Huang, 2004), India (Bhatta et al., 2010b), Israel (Frenkel, 2004) and even globally (Jiang et al., 2016) on the phenomenon of urban sprawl.

When considering changing contexts, indicators measuring urban sprawl vary from country to country. Direct comparisons between global cities in different geographical environments have also emerged using remotely sensed data and census information (Schneider & Woodcock, 2008; Tian et al., 2017).

It is observed that a single indicator is not sufficient to measure the phenomenon of urban sprawl and therefore a system of indicators that measures different characteristics of the phenomenon is necessary (Pozoukidou & Ntriankos, 2017).

There is a broad consensus in the scientific literature regarding the negative consequences of urban sprawl (Vermeiren et al, 2022). Measuring the negative effects of urban sprawl can be highly beneficial in local and regional decision-making processes (Vermeiren et al., 2022).

Numerous methods have been developed to measure urban sprawl and its consequences and land use models have been utilized to examine possible future effects. However, the outcomes of these studies do not always reach policymakers as they are often too abstract (Vermeiren et al., 2022).

2.4 Environmental, Economic and Social Consequences and Impacts of Urban Sprawl

Urban sprawl has been extensively studied in recent years, primarily due to the numerous negative consequences brought about by urban expansion (Vermeiren et al., 2022).

There is a wide consensus in scientific literature regarding the negative consequences of urban sprawl. Urban sprawl, characterized by low-density developments scattered outside of urbanized areas (Song & Zenou, 2006), contributes to CO^2 emissions and has a negative impact on the environment due to longer commuting distances (Brandt, 2014) and a dependence on private cars (Brandt, 2014). Furthermore, changes in land use, air and water pollution, reduction in biological diversity and the increase in impervious surfaces can lead to negative externalities such as the escalation of flood risk (Polyakov & Zhang, 2008; Taranu & Verbeeck, 2022).

The effects of urban sprawl have been categorized into three major areas in this study: environmental, economic and social impacts.

2.4.1 Environmental Impacts of Urban Sprawl

Numerous studies have reported the driving forces behind urban sprawl, including cultural, economic, demographic and social factors, in addition to population growth (Mann, 2009). Therefore, population increase is not the sole cause. Urban sprawl has numerous serious environmental, economic and social consequences (Hennig et al., 2015). Significant examples include the conversion of agricultural land and other land into unsuitable areas for food production, which leads to higher energy consumption, increased demand for mobility, greater fragmentation of land, air pollution, increased spread of invasive species, the loss of most ecological soil functions and a reduction in the resilience of ecosystems (Ewing, 2008; Travisi et al., 2010; Wilson & Chakraborty, 2013; Hennig et al., 2015).

Urban sprawl, as emphasized in the International Year of Soils 2015, is a significant challenge for achieving sustainable land use (Hennig et al., 2015). It contributes to the fragmentation of ecosystems and the loss of agricultural or semi-agricultural lands. For instance, in the last twenty years, the European Union has lost approximately 920 km² of land each year due to urban sprawl and other forms of artificial development; 78% of this land was agricultural (European Environment Agency, 2020a; European Environment Agency, 2020b; Steurer & Bayr, 2020).

Johnson (2001) presents a general overview of the environmental impacts of urban sprawl (Vermeiren et al., 2022). These include air pollution caused by increased traffic and mobility demand (Kahn, 2000; Ewing et al., 2002; Cameron et al., 2004), loss of open space and agricultural land (Hasse & Lathrop, 2003), reduction in biodiversity (Theobald et al., 1997; Alberti, 2005), increased water flow and flood risk (Bronstert et al., 2002; McCuen, 2003; Carlson, 2004; Poelmans et al., 2010), aesthetic degradation of the landscape (Sullivan & Lovell, 2006) and fragmentation of the landscape (Jaeger, 2000). Social impacts are generally a direct result of these environmental impacts (Vermeiren et al., 2022).

Urban sprawl is detrimental to the efforts of fulfilling the conditions of the Kyoto Protocol in mitigating climate change (Bart, 2010; Hankey & Marshall, 2010; Jones & Kammen, 2014; Hennig et al., 2015).

2.4.2 Economic Impacts of Urban Sprawl and Financial Stress

Urban sprawl is a multidimensional issue that has various impacts on agricultural lands, ecosystems and beyond. Researchers have also investigated a range of other consequences of urban expansion (Steurer & Bayr, 2020). These issues range from the lack of economies of scale (Frenkel & Ashkenazi, 2008), increasing fragmentation and urban decay, excessive burden on resources, social isolation (Frumkin, 2002), ecological problems (Brueckner, 2000; Nechyba & Walsh, 2004; Morote & Hernández, 2016) to the increasing public expenditures of local governments (Steurer & Bayr, 2020).

According to the literature, there is a consensus that scattered development leads to higher supply costs for local public services based on density or agglomeration economies (Carruthers & Ulfarsson, 2003; Carruthers & Úlfarsson, 2008; Hortas-Rico & Solé-Ollé, 2010; Solé-Ollé & Viladecans-Marsal, 2012;Gómez-Antonio et al., 2014; Hortas-Rico, 2014; Milan & Creutzig, 2016). This highligts the fact that the phenomenon of urban sprawl not only has a direct negative impact on the health and ecology of urban society but also has the potential to damage the financial foundation of urban development (Yan et al, 2022). The results generally indicate that urban sprawl is significantly and positively associated with the financial stress of local governments (Yan et al., 2022).

Financial stress refers to the ability of a local government to meet its expenditure requirements using revenue sources (Levine et al., 2012; Bird & Slack, 2015; McDonald, 2018; Leiser & Mills, 2019). For many countries, especially those that have undergone industrialization and urbanization, financial stress has become a major challenge (Chapman et al., 2003; Dethier, 2013;Chernick & Reschovsky,

2017; Xi et al., 2017). To date, many international studies have been conducted on the financial stress in numerous countries (Yan et al., 2022).

As expected, urbanization is increasing public expenditures because local governments have to take on more responsibility for providing public services to the growing number of city residents (Osman et al., 2008; Benito et al., 2010; Hortas-Rico, 2014; Fregolent & Tonin, 2016). Furthermore, it is expected that they manage the increasing operation and maintenance costs of urban infrastructure (Carruthers & Ulfarsson, 2003; Hortas-Rico & Solé-Ollé, 2010; Goodman, 2019; Gielen et al., 2021; Yan et al., 2022). Although the financial revenues are frequently inadequate to meet the expenditure requirements, this circumstance can have extensive and significant consequences on the well-being of the inhabitants of the region (Yan et al, 2022).

Up to this point, the financial implications of urban sprawl have continued to be a matter of inquiry. On one hand, urban sprawl results in a noteworthy escalation of government expenditures. When a city expands, it requires additional infrastructure investment to expand road networks, electricity transmission lines, water supply and drainage pipelines to provide a certain level of public service to all city residents (Carruthers & Ulfarsson, 2003; Benito et al., 2010; Bo et al., 2017). Simultaneously, the dispersal of a city also increases the cost of providing public services (Yan et al., 2022).

Considering that urban sprawl is becoming increasingly common in the spatial expansion of cities worldwide, the overall detrimental effect of financial stress is a significant concern for cities that adopt this spatial style of urban development (Yan et al., 2022).

The negative financial consequences of urban sprawl may not be alleviated as optimistically anticipated by some academics and policymakers, especially in developing countries. Instead of yielding positive outcomes, opting for urban sprawl often hastens financial crises for most cities. Therefore, caution should be exercised in adopting urban sprawl as a city development strategy. This caution is warranted

not only due to its demonstrated adverse effects on ecological and social systems, as evidenced in literature, but also because of the substantial financial risks faced by governments. The uncertainty persists regarding the extent of harm urban sprawl inflicts on municipal financial stress, which cities are more financially susceptible to its effects, and what measures can be implemented to mitigate financial risks in urban development. (Yan et al., 2022)

2.4.3 Social Effects of Urban Sprawl

Economic theory and analysis have identified various market failures that can explain urban sprawl (Vermeiren et al., 2022). Inadequate pricing of infrastructure and public services, unpriced traffic congestion and environmental externalities lead to suboptimal land use and urban size (Wheaton, 1998; Brueckner et al., 2001; Vermeiren et al., 2022). Incomplete pricing fails to provide the correct price signal to individuals or businesses searching for land, resulting in suboptimal land use and additional costs that are borne by society as a whole or specific groups. The consequences will be borne either by vulnerable groups or by future generations (Thompson, 2013; Vermeiren et al., 2022).

The necessity of paying these costs will lead to a reduction in living standards, unfulfilled expectations regarding public services and disappointments, as well as a lack of resources for other needs. Furthermore, specific groups or future generations will be responsible for paying these expenses.

Social impacts include longer commuting times, greater spatial segregation of social classes (Power, 2001; Le Goix, 2005), health effects due to the urban heat island effect and air pollution and a changing perception of the landscape scenery and its character and identity (Hennig et al., 2015).

2.5 Preventing Urban Sprawl

The escalating competition for suitable land for food production, energy generation and urban development has been identified by Haber (2007) as three central "ecological traps" that threaten humanity. The expected continuation of urban sprawl and the associated threats necessitate taking action to control and manage the sprawl of settlements (Hennig et al., 2015).

"Due to the time lag to take effect, steps to prevent further spread of settlement areas should be taken soon. Such efforts to control sprawl can be taken right away and do not depend on the cooperation of other countries, in contrast to problems that need to be addressed globally such as climate change and overfishing of oceans. There is no need to wait for better data because the improvements in data quality will not lead to major changes in the results" (Hennig et al., 2015, p.491).

We don't require exhaustive lists of potential negative consequences of sprawl to tackle its aftermath. Addressing a few of the most evident and unmistakable drawbacks is adequate to seek solutions. Extensive lists of effects only diminish the impact of the fundamental problems at hand. A neo-institutional approach to the issue of fringe benefits does not necessarily require the addition of political measures, as is often the case with other types of driving forces. It is necessary to acknowledge that the corporate environment and public measures create a framework in which various socio-spatial events can occur. If further sprawl is to be prevented, the ways in which land use is regulated and taxed, as well as the role of public decisions related to infrastructure, must be re-examined (Moroni & Minola, 2019).

Rather than giving more weight to certain planning methods that most people assume to be more orthodox, it may be beneficial to change the fundamental rules of the game. Clark (2010: 16) writes as follows on this issue: "Many authors have acknowledged the importance of political institutional factors in the land-use change

process, yet the literature has been lacking a theoretical framework for analysing those factors." (cited in Moroni & Minola, 2019).

To reduce urban sprawl, a series of concrete measures can be implemented by national, regional and local authorities (Hennig et al., 2015). In this context;

- First and foremost, it is crucial to prevent the opening up of more areas for urbanization and construction, as this is the most effective and, consequently, the most important measure.
- Comprehensive and multifaceted planning policies are necessary for controlling urban sprawl and ensuring sustainable urban development.
- To reduce urban sprawl, it is predicted that less flexible planing will be effective in the long term.

In order to prevent and control the negative effects of the city's sprawling growth, it is important to take measures to prevent an uncontrolled and spontaneous process and make it controlled. The fundamental determinants of urban development should be plans that prioritize the preservation of natural resources, plan the future of the city, are supported by various analyses and include every possible development scenario and seek solutions for unexpected situations that may arise during the planning period. These plans should be dynamic and flexible documents. Furthermore, they should possess a pioneering identity that directs rather than follows developments. This can be achieved by reconsidering all aspects of planning processes, such as authority, legislation, approval and planning approach (Sezgin & Varol, 2012).

2.6 The Role of Spatial Planning in Urban Sprawl

In today's era, urban sprawl has become a crucial issue due to the haphazard and unregulated expansion of cities. Therefore, the role of spatial planning, especially in the generation of excess land, holds significant importance. Spatial planning

conducts a demand analysis for the future needs of cities. However, these analyses can sometimes lead to land production above demand predictions. Surplus land production may arise as a result of spatial planning.

The production of excess land can often be a trigger for unplanned development. The unplanned production of land is often located in areas far from the city center, which can increase urban sprawl. The utilization and development of these parcels of land can result in issues stemming from inadequacies in spatial planning.

Plans have been demonstrated to be crucial instruments for urban policy and a catalyst for urban transformation (Tian et al., 2017).

Urban sprawl is often considered the antithesis of good planning in today's context. The phenomenon of urban sprawl is commonly perceived as the opposite of sound planning in contemporary times.

Urban sprawl is a byproduct of urban growth and is directly related to the decrease in mobility costs in the 20th century. It is further exacerbated by rigid development regulations that limit density in many suburban areas (Glaeser & Kohlhase, 2004; Steurer and Bayr, 2020).

Many people who believe that urban sprawl should be prevented argue that "more comprehensive land use planning is necessary" (Morriss & Meiners, 2000: 112; Moroni & Minola, 2019).

According to Dieleman and Wegener (2004), the absence of robust planning interventions at the regional and local level leads to a greater likelihood of urban densification. Similarly, Ewing and Hamidi (2015:426) advocate for proactive policy measures and support the implementation of strong planning interventions to address sprawl. Consequently, there is a need for an "active planning" approach (Ewing, 1997; Stanganelli, 2009; Moroni & Minola, 2019).

Urban planning shapes land use decisions, connectivity and accessibility to urban services, their attractiveness and ultimately their perceived value in the real estate market. Therefore, the location preferences of households and the decisions of

private investors are largely dependent on how municipal intervention is designed (Milan & Creutzig, 2016).

A city master plan predicts the size and boundaries of a city's settlement area, as well as its population over a 20-year period. It designates areas for various land use types, such as residential, commercial, industrial and agricultural lands and regulates major infrastructure and city-wide arrangements. In contrast to the demographic expansion, the growth limit set forth by the master plan has emerged as a significant and concrete mechanism to steer the city's development. Planning has been utilized by local authorities as a potent instrument for creating fresh growth areas to maximize land revenue or generate taxes. Thus, planning contributes to local growth (Wu, 2015; Tian et al., 2017).

With the rapid and large-scale urban constructions, local governments need to increase their control over urban development. Local planning is an important tool that serves this purpose. The growth approach led by the state entails that planning serves as a means to cater to the needs of growth, rather than functioning as a tool to curb sprawl (Tian et al., 2017).

Cirilli and Veneri (2009) indicate that one of the main reasons for urban sprawl in Italy is the liberalization of planning. More generally, urban sprawl is sometimes referred to as "unplanned development" (Oueslati et al., 2015) or "uncontrolled development" (Resnik, 2010). A comprehensive literature portrays scattered settlements as the worst among all livable worlds, while there are widespread calls for strong planning capable of providing a solution to the problem both regionally and locally (Moroni & Minola, 2019).

In Türkiye, problems during the planning process lead to deeper sprawl. In addition to fundamental factors such as changes in transportation modes, weak public transportation and fluctuations in land prices, the main problem can be attributed to the lack of an effective planning process that can manage all these variables efficiently (Öncel & Meşhur, 2021).

The regulations and standards that impact planning are influential in encouraging planned urban sprawl in Türkiye. Cities with dense urban sprawl tend to exhibit prominent urban functions that are determined by regional distinctions. However, dividing all functions with regional distinctions and then positioning their structures in accordance with standards between roads and other structures results in a building construction where urban areas are not effectively utilized. Standards are generally created to protect public health, but in cities where sprawl is intense, excessive separation of functions can be problematic. The disparity is perceptible, particularly in contrast to historic urban regions (Gillham, 2002; Öncel & Meşhur, 2021).

2.7 Urban Sprawl over the World

Urban Sprawl in American Cities

Approximately 100 years ago, city planner Patrick Geddes predicted that urbanization on the northeast coast of America would eventually extend up to 50 miles along the coastline. This prediction was considered unrealistic at the time, but it has since become a reality (Gillham, 2002).

An analysis conducted by the American Farmland Trust in 2002 revealed that between 1982 and 1997, while the population of America increased by 17%, the urban area expanded by a staggering 47%. According to another study, there have been significant changes in the density of metropolitan areas between 1950 and 1990. Metropolitan areas housed 84 million people in 208, 000 square miles, whereas in 1990, this area housed 193 million people in 585, 000 square miles. In other words, population density decreased from 407 people per square mile to 330 people per square mile. Similarly, in 1950, 57% of the population and 70% of the workforce resided in urban centers, whereas in 1990, these figures decreased to 35% and 45%, respectively (Squires, 2002; Powell, 2007; Öncel & Meşhur, 2021).

The suburban areas in American cities have experienced more rapid and extensive development compared to their European counterparts. Furthermore, there exist

profound disparities between suburban neighborhods and residential districts located in urban centers across America. The term “urban sprawl” refers to a settlement pattern characterized by a low population density and high reliance on automobiles, exemplified by the spacious, garden-filled houses typical of American suburbs. The adoption of a suburban form of urban development has been a major driver of the extensive spatial expansion of American cities. Certain factors specific to America also contribute to the reasons behind the sprawl of American cities. These include high housing prices in city centers, low transportation costs and a higher rate of car ownership compared to other countries (Öncel & Meşhur, 2021).

In addition to these factors, the rapid growth of suburbs can be attributed to the increase in household incomes between 1950 and 1980, the decrease in mortgage interest rates, limited public investment in urban centers, increased investment in transportation infrastructure and America’s higher immigration rates compared to Europe (Nechyba & Walsh, 2004). The process has also been influenced by the heterogeneous population structure, as middle-class white Americans have sought to distinguish themselves from blacks and highly ethnic urban centers, thus accelerating the suburbanization. This situation has led to an increase in the percentage of the population living outside the city center from 40% in 1950 to 60% in 1990 (Couch, 2009; Öncel & Meşhur, 2021).

Studies have shown that urban sprawl accelerates in settlements with dense ethnic minority populations and high crime rates in city centers in America (Oueslati et al., 2015). In addition to all of these factors, the idea of having access to housing with sufficient open and green space, free from traffic, noise and crime, has also contributed to the increase in suburbanization (Cobbinah & Amoako, 2012; Öncel & Meşhur, 2021).

Urban Sprawl in European Cities

European cities have traditionally had a more compact and dense historical core as they were established before modern transportation systems shaped urban areas. One advantage of European cities is their strong local governance (Couch et al., 2009).

Furthermore, unlike in America, significant public resources are allocated for public transportation in Western Europe and great efforts are made to improve the facilities of the city center (Nechyba & Walsh, 2004).

However, a similar process has also been observed in Europe and all indicators have shown that urban areas have grown faster than population growth since the post-war period. Moreover, there has been no slowdown in this trend. In all European cities, despite the compact centers of historical cities, urban areas have been rapidly expanding outwards in recent years. Since the 1950s, European cities have experienced a 78% expansion, while population growth has remained at 33%. The trend is shifting towards independent housing units replacing densely populated areas with attached apartments. For instance, in Palermo, Italy, while the population increased by 50%, the built-up area increased by 200% (Ludlow, 2006).

After the reconstruction process following World War II, Western European countries entered into a long period of economic growth. This growth brought about rapid urbanization, with urban areas expanding by 15% in Belgium and 23% in both Denmark and France within a 12-year period. While some urban areas continue to grow, urban regions in Northwest Europe reached their economic peak in the mid-20th century and subsequently began to experience a shift of employment opportunities away from the city center (Öncel & Meşhur, 2021).

Europe has been able to relatively control urban sprawl through strong planning systems. However, it is not correct to evaluate all European cities from a single perspective and the different conditions within European countries have also influenced the growth patterns of cities (Couch et al., 2009).

In Southern Europe, the majority of cities sustained growth until the end of the century. Conversely, Eastern European nations effectively managed to regulate urban sprawl by means of robust central planning during the post-war era. For instance, in Warsaw, suburban population growth rate has exceeded that of the city center only after 1978 (Couch et al., 2009). Even in socialist countries, the process of suburbanization before 1985 was not as effective on urban growth as in capitalist

countries. Hence, in socialist nations, urban areas have evolved in a more condensed configuration, exhibiting substantial resemblances with each other until the 1990s.

However, a dramatic change occurred with the collapse of communism in 1989. Socialist structures underwent changes in political, economic and institutional aspects, evolving into a democratic and free market economy. Thus, along with the structural changes in Central and Eastern European cities, Western values have begun to take root. Cities have become integrated into global processes with functions influenced by American values and lifestyles, such as shopping centers, new housing types, golf courses and theme parks (Öncel & Meşhur, 2021).

The Mediterranean cities and Baltic countries have witnessed a significant increase in secondary (vacation) residences, resulting in peculiar patterns of suburbanization away from city centers. Conversely, post-socialist countries have developed entirely different expansion models due to their unique land-use policies (Couch et al., 2007; Pozoukidou & Ntriankos, 2017).

From 2000 to 2006, Europe lost 1, 117.9 km² of natural and semi-natural areas per year due to urban and other artificial land development (almost 50% of which is arable or cultivable land), according to the European Environment Agency (EEA, 2014). According to Seto et al (2012), there is a high probability (>75%) that approximately 77, 500 km² of Europe will be converted into urban areas between 2000 and 2030. Future predictions indicate that urbanization will increase by up to 80% by 2050 (United Nations, 2014; Hennig et al., 2015).

Urban Sprawl in Chinese Cities

When first introduced in China in the 1980s (Fung, 1981), the concept of urban sprawl was often referred to as rapid urban growth (Wu & Yeh, 1997; 1999). The concept was later expanded to encompass the inefficient spatial development model at the urban periphery (Deng & Huang, 2004; Wei & Zhao, 2009; Tian et al, 2017).

The spread observed in Western cities, which is mainly attributed to alterations in lifestyle, differs from the spread in China, which is substantially affected by the government (Squires, 2002).

It cannot be denied that the government-led style of urban expansion has to some extent encouraged China's continuous and rapid urbanization, particularly the local governments of cities in central and western China as well as small and medium-sized cities with low demand for urban areas, who have approached urban development from a GDP-oriented perspective and recklessly built new towns, new urban areas and various industrial parks. However, they have failed to take into account the special development needs and investment costs and benefits of their cities. Therefore, most of these cities have become "empty cities" and "ghost towns" where markets can no longer operate (Yu, 2014; Jin et al., 2017; Woodworth & Wallace, 2017). Ironically, such outcomes have resulted in a constant increase in the financial burdens of these cities (Yan et al., 2022).

According to the data released by China's National Bureau of Statistics, the total urban land area in China increased from 6720 km² in 1981 to 55, 155 km². These figures represent a 721% increase in 2017 and underscore a significant change in urban development (Yan et al., 2022).

In the context of an imperfect land market and a process of decentralization, local governments have become facilitators of market forces and drivers of economic growth (Zhu, 2005). Local governments, driven by the pressure from developers to acquire land and the incentive to maximize benefits from land leasing, tended to oversupply land, leading to urban sprawl problems (Tian, 2014; Tian et al., 2017).

The current planning model in China adopts a top-down approach that is administratively dominant and land-focused, with its fundamental objectives being economic growth and urban image enhancement (Wu, 2015; Tian et al., 2017).

2.8 Summary of the Findings from the Literature Survey

Urban sprawl is caused by various factors such as rapid population growth in cities, unplanned urbanization, infrastructure deficiencies, and environmental factors. With the increase in population, urban areas expand while struggling to meet the demand for infrastructure and services, inevitably becoming a significant issue. The role of planning is critical in this context. Sound planning guides the growth and development of cities by strengthening infrastructure, preserving green spaces, and creating a sustainable environment. However, approaches to this issue vary greatly worldwide. In developed countries, strict planning and regulations are implemented to reduce urban sprawl, while in developing countries, this control may be weaker, leading to more pronounced urban sprawl. Therefore, in addition to universal solutions for reducing urban sprawl, flexible approaches that take into account local conditions are also necessary.

CHAPTER 3

SOCIAL, ECONOMIC, SPATIAL RESULTS AND EFFECTS OF THE SURPLUS LAND PRODUCTION THROUGH SPATIAL PLANS IN ANKARA

3.1 Urbanization and Urban Sprawl in Türkiye

As an institution, urban and regional planning differs significantly from country to country, depending on each state's legal and institutional context (Uzun et al., 2019). The economic policies implemented by the government, since the establishment of the Republic in 1923, have had an impact on urbanization. As Uzun et al. (2019) highlighted, different economic policies and models implemented since 1923 have defined various periods of urbanization in the country, which also leads to alterations in urban and regional planning system. Among these diverse economic development models the foremost one was a centralized, government-centered model that persisted until the 1950s. The second model, liberalization, was adopted in the 1950s. This period, which is characterized by rural-urban migration and rapid increase in the urbanization rate, lasted until the 1980s when the privatization model came into play in the context of globalization and the Turkish economy underwent fundamental changes. The fourth term, which began after the 2002 general elections, can be considered a continuation of the third term. The economic and political changes during this period have had significant impacts on the cities (Uzun et al, 2019).

The urbanization process in Türkiye has followed a different course than the Industrial Revolution in the West, starting with migration movements in the 1950s (Öncel & Meşhur, 2021). In the Western hemisphere, urbanization is frequently considered to be equivalent to industrialization. In the West, the rise of industry directed agricultural labor to work in industries in large cities, leading to the majority

of the population concentrating in service sectors along with economic development (Öncel & Meşhur, 2021).

The urbanization process in Türkiye gained momentum from the 1950s onwards. However, before that time in the early years of the Republic, the insufficient capacity of the country's capital accumulation to create new job opportunities, build infrastructure and housing has resulted in urbanization problems (Tekeli, 2013; Öncel & Meşhur, 2021). Also, the low speed of capital accumulation has led to limited revenues for local governments, with little flexibility to increase their income. Additionally, the breakdown in rural areas has resulted in an increase in migration to urban areas. The increased rate of migration from rural areas to cities in the 1950s increased the housing shortage particularly in major cities. The emergence and rapid spread of squater housing areas around the outskirts of the cities constitutes a significant phenomenon during this period. At the same time, increased urban housing demand triggered the construction of apartment blocks, through build-sell processes, particularly in the existing built-up areas of cities. This process was supported with the enactment of Flat Ownership Law in 1965.

Urbanization has been considered synonymous with development in developed countries, as the population shifts from agriculture to urban areas. However, in developing countries, urbanization generally occurs before industrialization and the workforce shifts directly from agriculture to service sectors. The aforementioned circumstance results in a heightened level of inequitable income distribution within the urban regions of said nations (Keleş, 1996; Öncel & Meşhur, 2021).

After the 1950s, there was a significant migration from rural areas to urban centers in Türkiye, resulting in a population increase in cities. During this period, there was a surge in informal settlements and illegal construction due to the housing shortage in major cities, subsequently leading to the expansion and sprawl of urban areas. The phenomenon of squatter housing, which emerged particularly on public lands in the outskirts of the city, has gradually become legal over time. During this process, the transformation of squatter housing areas has played an important role in the

expansion of large cities (Yaşar, 2010; Öncel & Meşhur, 2021). The squatter housing structures situated on the outskirts of the city initially opposed the demolition attempts made by the local authorities. However, upon reaching a particular threshold of population, these structures evolved into a political entity (Öncel & Meşhur, 2021). The squatter housing settlements that typically emerge in an unregulated and illegal manner on the periphery of the cities have increasingly begun to impact urban dynamics. The aforementioned circumstance has given rise to the emergence of requests for ownership rights and construction authorizations concerning the current structures (Tercan, 2018;20).

The urban form dominant from the 1950s to the 1980s was shaped by mechanisms driven by economic reasons. The accumulation conditions of capital and the understanding of development during this period proved insufficient to solve the housing problem, leading to the emergence of the entrepreneurial model of build-and-sell in the provision of housing (Öncel & Meşhur, 2021). Cities during this epoch expanded in an uncontrolled and sprawling manner, with buildings being erected on individual parcels of land. Thus, cities that have grown with buildings constructed on individual parcels like a spreading oil stain can be described as cities transformed by weak capitalism (Tekeli, 2013). Türkiye's urbanization policy has been shaped by the faster growth of urban population compared to the general population and policies have been adopted to reduce the density in major cities and to develop medium-sized cities.

From the 1980s onwards, there has been a paradigm shift in Türkiye's economic landscape, resulting in the formation of capital markets and an increased demand for land on the outskirts of cities to support large-scale projects. During this period, the construction sector experienced significant growth and urban planning authorities were devolved to local governments, leading to an increase in urban planning and construction activities. (Öncel & Meşhur, 2021). The decentralization of public investments led to an acceleration of speculation and expansion on the outskirts of cities. After 2002, the government, with the motivation of construction-led economic growth, implemented various interventions to stimulate the construction sector, such

as land allocation. As a result of this process, cities began to expand through the joining of large urban pieces, the development of highways led to the emergence of large extensions around the periphery of the city.

After the late 1980s, a new understanding of municipal governance emerged in Türkiye and the process of globalization accelerated local policies. During this process, local government policies underwent rapid changes and some legal arrangements were made. However, due to the influence of the neo-liberal period, there has been an increase in urban sprawl. Uncontrolled development in the growth areas of metropolitan cities has led to discussions about the size of these areas in the 2000s and this process has led to new searches in large city administrations (Yenigül & Çamur, 2013). Especially in light of the accession process to the European Union, there has been a heightened impetus to undertake reform initiatives within the public administration system, resulting in the restructuring of municipal governance in major urban centers. In this period, various legal arrangements have been made and new management models have been developed to strengthen local governments. These include regulations such as the Metropolitan Municipality Law. Nevertheless, the unbridled proliferation of urban areas and persistent planning issues remain a pressing concern (Yörükoğlu, 2009).

With the advent of Türkiye's economic transformation and increased integration into the global economy, capital markets emerged as a crucial component of the financial landscape. The availability of large pools of capital enabled the financing of significant projects that were previously beyond reach. This development marked a significant turning point in the country's economic evolution, as it paved the way for increased investment and growth. During this epoch, a novel presentation format for housing, commonly known as mass housing projects, emerged. These projects were accompanied by mass transportation systems (such as metro, etc.) that commenced altering the dynamics and structures of cities. Furthermore, during this period, projects such as industrial zones, free trade zones, university campuses, hospital campuses and mass housing have been implemented (Öncel & Meşhur, 2021).

The expansion of urban areas is now occurring through the amalgamation of significant segments, rather than the connection of singular structures. This progression has been expedited by the advent of highways, which have facilitated the rapid outward dissemination of cities in sizeable blocks. The construction sector has been utilized as a means to achieve both economic and political objectives through Türkiye's neo-liberal transformation policies. The first growth period of the construction sector took place between 1982 and 1988, while the second growth period was observed between 2002 and 2008 (Balaban, 2011). With the implementation of the Law on Land Development Planning and Control in 1985, planning authorities were largely devolved to local governments. During this period, there was a significant increase in urban development and construction activities in cities, with peri-urban lands being rapidly and easily transformed into urban plots and subject to construction activities. During the same period, the decentralization of public investments came into effect, leading to speculation at the outskirts of cities and faster expansion of urban areas than usual. Similar processes were observed during the second growth period of the construction sector after 2002 and the government turned to structures like TOKİ to promote growth in the construction sector. In this era, government interventions have also included the provision of land and plots for real estate investments (Öncel & Meşhur, 2021).

In Türkiye, the process of urbanization that transpired in major cities subsequent to the 1950s can be delineated as the amalgamation of small areas that spread out like a "stain." Nevertheless, commencing in the 1980s, a type of urban expansion manifested, which was typified by unconnected macroforms and generally low-density areas. This development was observed as the application of wider areas outside the perimeter of the city became more prevalent. The aforementioned phrase denotes a model of urban growth known as urban sprawl (Öncel & Meşhur, 2021).

The urban sprawl extending outward from cities has first altered the qualities of the rural settlements and agricultural lands in the nearby vicinity, turning these areas into semi-rural, semi-urban environments. Cities are faced with a range of issues in their planning and development processes, including the use of urban land, housing and

municipal services, transportation infrastructure, increasing urban infrastructure requirements and environmental pollution. The aforementioned issues pose challenges to the management of cities and prompt the exploration of novel management frameworks (Tekel 2000; Yenigül & Çamur, 2013).

As problems have escalated over time, the efficacy of current management models has been hindered. Furthermore, the presence of multiple local government entities operating within the same urban area has resulted in inefficiencies and coordination difficulties. This scenario has emphasized the imperative need for a fresh management model. Particularly in regions with high population density, where the principle of participation -a fundamental tenet of local governance- becomes challenging, metropolitan areas necessitate a new form of organization. In 1984, the law numbered 3030 defined metropolises as Metropolitan and evaluated them differently from other cities in the country's governance system (Yenigul & Camur, 2013).

In 1984, a new governance model was introduced for major cities, which derived its legal basis from Article 127 of the 1982 Constitution, allowing for special forms of governance for large settlements. Thus, the implementation of the Metropolitan Municipality system began. In the 1980s, with the changes in the planning system and legal regulations in Türkiye, Ankara, İstanbul and İzmir were designated as the country's three metropolitan cities with the Decree Law No. 195 issued in 1984 and the subsequent implementation of the Metropolitan Municipality Law No. 3030 (Yenigül & Çamur, 2013).

Initially, the metropolitan municipality model, which was implemented in İstanbul, Ankara and İzmir, was expanded to include Adana in 1986, Bursa, Gaziantep and Konya in 1987, Kayseri in 1988 and Mersin, Eskişehir, Diyarbakır, Antalya, Samsun, İzmit and Erzurum in 1993 under the scope of Law No. 3030.

With regard to the metropolis, specifically the small and medium-sized municipalities located within its jurisdictional area, it has been observed that the Law No. 3030 has not been effective in curbing independent planning practices based on

legislation that are implemented outside the scope of planning and control with the main city, thereby jeopardizing plan integrity and consistency. As a consequence of these applications, disconnected and rapid developments have emerged on the periphery of metropolitan cities, which are separate from the main city (Yenigül & Çamur, 2013).

The 1980s marked the beginning of a new understanding of municipal governance. More importantly, it accelerated the localization policies in management due to the globalization process of the era. This transformation has led to a rapid change process in local government policies in Türkiye and has entered a restructuring process. During this period, the elimination of the obligation for the Ministry of Development and Housing to approve the master plans approved by the municipal councils was considered as an important development (Eryılmaz, 1995; Yörükoğlu, 2009).

In 1985, the delegation of urban planning authority occurred with the enactment of the new Development Law (Law No. 3194), which granted local governments the power to plan and regulate land use. The elimination of central planning by the neo-liberal era's approaches has led to adverse effects on the areas undergoing urban and urban transformation, contributing to the rise of speculative activities (Yenigül & Çamur, 2013).

With the strengthening of local governments, municipal councils have approved numerous master plans on various dates during this process and each municipality has opened up quite large areas within its borders for development purposes. As a result of conjunctural factors, extensive urbanization efforts have been undertaken, resulting in the unnecessary opening of hectares of land to urban development and the production of excess land. Thus, as a result, remote settlements with a small population disconnected from the main city have emerged.

After the 1980s, plans that were produced by municipalities around the city and boasted exaggerated population projections, resulting in massive problem areas that were disconnected from the metropolitan area, started to manifest the issues that came along with them. The urban landscape has undergone significant expansion,

propagation and progress towards the rural regions situated beyond the periphery of the city. Consequently, this phenomenon has given rise to novel patterns of development that are disjointed, where areas of protection or significance are utilized without purpose or not utilized at all. Furthermore, they are characterized by unused areas situated between the urban-rural fringe that lack continuity and a distinct identity, in addition to being distanced from the city center (Aydın, 2016).

The phenomenon referred to as urban sprawl has been shaping the physical environment as one of the components of the process of urbanization in our country since the 1980s. In this market-driven urbanization model, both central and local governments have resisted upper-scale planning on the grounds that public interest is being disregarded and the master plans cannot keep up with the current pace of urban development. The municipalities of smaller and medium size, which are subject to the influence of metropolitan cities, have developed independent plans that do not require compliance and monitoring with the main city. Moreover, the surge in private car ownership since the 1980s has resulted in an elevation in the accessibility threshold, leading to an uncontrollable sprawl process that is difficult to regulate today (Yenigül & Çamur, 2013).

With the advent of the 21st century, unregulated expansion in metropolitan areas has prompted novel quests and regulations in large-city management. During the 2000s, there was a notable acceleration in the reconstruction process. A primary external factor that stood out was the European Union Process and the effects of globalization were also significant and cannot be disregarded. However, the presence of a determined political will and the emergence of societal needs have materialized these efforts. Amongst the regulations made regarding local administrations, there are the modifications made to the Municipal Law No. 1580 through the Municipal Law No. 5393 and the swap of the Metropolitan Municipality Law No. 3030 with the Metropolitan Municipality Law No. 5216. Furthermore, regulations have been made with Law No. 5747 for the establishment of districts within metropolitan boundaries and with Law No. 6360 for the expansion of metropolitan municipality boundaries. The Law No. 6360 expanded the boundaries of metropolitan municipalities and

defined the territorial limits of district municipalities. This law enabled municipalities to exercise development authority in wider areas and the boundaries of district municipalities were determined by metropolitan municipalities. In Türkiye, there exist a number of statutes that direct the planning procedures, which comprise the Development Law (No. 3194), Municipal Law (No. 5393), Metropolitan Municipality Law (No. 5216) and Law No. 6360. The aforementioned legislations have bolstered the power of local authorities and afforded them greater jurisdiction in the formulation of urban development schemes. In Türkiye, with regards to the self-governance of local administrations, a centralised and bureaucratic framework holds sway.

The Municipal Law of 1580, which has been the primary law since 1930 and the concept of municipalism have reached their end and Türkiye has embraced a new understanding of municipalism with the Municipal Law of 5393 and the Metropolitan Municipality Law of 5216.

With the enforcement of the Metropolitan Municipality Law No. 5216 in 2004, the duties, authorities and responsibilities of metropolitan municipalities were redefined and the boundaries were redrawn to include some independent municipalities as metropolitan district municipalities that were previously not within the scope of metropolitan municipalities.

Finally, with the implementation of Law No. 6360 on December 6, 2012, 13 more metropolitan municipalities were established and the boundaries of the existing 16 metropolitan municipalities were redefined by expanding them in conjunction with these new metropolitan municipalities.

The Law No. 6360 has expanded the boundaries of metropolitan municipalities. This law has made regulations regarding the increased planning authority of municipalities in larger areas and the territorial boundaries of district municipalities have been recognized as the border of district municipalities.

The boundaries of all district municipalities within the provincial borders have been adopted as the boundaries of the Metropolitan Municipality. As a result, the planning authorities in all these expanding areas are now being utilized jointly by both the district and metropolitan municipalities.

The Development Law (No. 3194) was established with the aim of strengthening local governments. Through this law, the preparation and approval of urban plans have been entrusted to municipalities and governorships, thereby increasing the authority of local administrations in this matter.

In Türkiye, where the central government has control (due to extreme centralization), the regulations implemented regarding local administrations throughout history have been crucial steps, particularly for municipalities within the limits of local administrations.

At this point, it is necessary for the central government to take measures to ensure that autonomy is not used outside of the interests of society and that national services are not harmed. When local governments in Türkiye are evaluated in terms of autonomy, it can be seen that a centralized and bureaucratic local government structure is dominant in Türkiye (Kaşlı, 2019).

3.2 Spatial Plans and Planning System in Türkiye

According to the Constitution of the Republic of Türkiye, everyone has the right to live in a healthy and balanced environment. It is the duty of municipalities and citizens to improve the environment, protect environmental health and prevent environmental pollution. Municipalities are public entities established to meet the local common needs of their citizens, with their decision-making bodies being elected by voters according to the principles set out in the law.

In order to ensure organized urbanization, taking into account the characteristics and environmental conditions of the cities and meeting the housing, industrial and commercial area needs of the city, producing planned and infrastructure-supported

plots and providing services or having them done are among the authorities and duties of municipalities.

In the planning system of Türkiye, master plans are prepared in accordance with the provisions of the Development Law (No. 3194), the Metropolitan Municipality Law (No. 5216) and the Municipal Law (No. 5393), as well as the relevant regulations and are put into effect upon approval by the municipal councils.

Spatial plans are comprised of spatial strategy plans, environmental plans and master plans, each with varying areas and objectives. Master plans consist of a master master plan and an implementation master plan. The plan is prepared according to the plan at the higher level and the development and implementation plans of the areas within the municipal boundaries are prepared or commissioned by the relevant municipalities. It is reviewed and approved by the municipal council. The provincial environmental layout plan in metropolitan and provincial municipalities is also sanctioned by the municipal council.

In accordance with the planning legislation, the central government is responsible for developing and implementing spatial strategy plans at scales of 1/500.000 and 1/250.000, while local governments are responsible for developing and implementing more detailed environment plans and master plans at larger scales.

In Türkiye, according to the provisions of the planning legislation, local governments that are authorized to prepare or commission master plans present their plan proposals to the decision-making body, the municipal council, after conducting necessary and mandatory plan analyses and master plans come into effect upon the approval of the municipal council. Subsequently, the newly enacted master plans are shared with the public through display procedures and any objections are evaluated by the municipal council, if any, to reach a decision.

As per the finalized master plans by the local authorities, land partition plans are being carried out or outsourced for implementation. The subdivision plans are finalized with the approval of the municipal council, which is the decision-making

body. Afterwards, a cadastre examination and verification of land registry records are carried out, followed by the reorganization and registration of the land title deed. As a result, the land parcel that loses its agricultural status gains the status of a plot and with the building permit to be obtained from the municipality, it becomes suitable for construction. The process of producing urban land is concluded in this manner.

In order to construct a building, everything may seem ready on paper, but it is also necessary to plan the process of developing the infrastructure, acquiring the necessary land rights and other related matters by creating an urban development program.

The Housing Development Administration (TOKİ), the Privatization Administration Presidency, the Provincial Bank and certain Ministries have been granted the authority to make and approve plans through laws and regulations, in addition to the power of local governments.

In our planning system, the multi-headed planning approach and the master plans made and commissioned by central management institutions have resulted in the inability to control the boundaries of urban space, leading to urban sprawl in many of our cities. According to the Constitution of the Republic of Türkiye, “The State takes measures to meet the housing needs within a planning framework that takes into account the characteristics of cities and environmental conditions and also supports collective housing initiatives.” Nevertheless, the planning activities undertaken by TOKİ have resulted in the creation of living spaces that are detached from urban areas. It appears that this organization has facilitated and endorsed urban sprawl.

According to Parker (1995), the expectations of a successful local government are bound by certain institutional and legal conditions. These conditions can be summarized as the legal framework, civil society participation, capacity and accountability to the public.

It is necessary to establish a legal framework that regulates local government units. These legal regulations determine the tasks, powers, financing and other important issues of local governments. The presence of coherent and efficient legal regulations is instrumental in enabling local governments to operate effectively.

It is necessary to ensure active participation of civil society organizations in shaping local government units. The participation of civil society representatives democratizes local government decision-making processes and helps to better respond to the needs of the people.

It is important that local governance organizations have the capacity to carry the authority and responsibilities transferred to them by the central administration. This includes having adequate resources, knowledge and expertise in management, finance, infrastructure, human resources and other areas. It is important for local government institutions to be established in a way that enables them to fulfill their responsibilities to the public. The implementation of principles such as transparency, accountability, participation and responsiveness to the needs of the people ensures that local governments fulfill their responsibilities to the public. However, it has become evident that local governments providing services in urban planning in Türkiye are far from having the capacity to carry out the powers and responsibilities transferred to them by the central administration and are not fully capable of fulfilling their responsibilities towards the public.

3.3 Urban Development of Ankara

According to the decision of the National Security Council dated June 30, 1965, by the Law No. 6/4970 dated July 20, 1965, issued by the Turkish Council of Ministers, the Ministry of Public Works and Settlement was assigned to establish and determine the duties of Urban Planning Offices in Istanbul, Ankara, and Izmir. Firstly in Istanbul (1965), then in Izmir (1968), and thirdly with the decree dated January 29, 1969, the Ankara Metropolitan Area Urban Planning Office (AMNPB) was

established and became operational. These planning offices represent an important period in our country's urban planning history.The Ankara Urban Planning Office undertook a comprehensive planning task with a limited number of qualified personnel from different disciplines and successfully implemented research and analysis techniques not previously applied. New approaches emerged with the Planning Advisory Group report in England in 1968, which were taken into account. These new approaches initiated a transition to structural planning, supported by flexible policies and strategies and open to participation (Altaban, 2002).

The office developed a model that not only dealt with physical environment but also with the economic and social structure of the city, aiming to research the best solutions for the problems of Ankara and its population.AMNPB aimed not only to prepare the plan but also to establish and institutionalize interactive planning bridges between planning and implementation. Acting on this understanding, the office played an active role in the implementation process after the approval of the plan, rather than completing its task (Altaban, 2002).

The Ankara Metropolitan Area Urban Planning Office developed the 1990 target urban plan scheme by conducting comprehensive research and analysis between 1970-1973. The planning process was initiated with a comprehensive understanding, and collaboration was established with relevant authorities, entrepreneurs, and other stakeholders to develop major projects to guide implementation. The 1/50.000 scale scheme produced by AMNPB was defined as a flexible principles-based structural plan aimed at channeling the development of the city in a certain direction. It was advocated that the actual implementations of the plan should be carried out within a certain programming framework, and this approach was generally accepted in planning circles (Bademli, 1986; Günay, 1988; Altaban, 1998; Altaban, 2002).

In Ankara, a systematic and comprehensive approach to planned development and tradition was initiated through the efforts of Lörcher, Jansen and their plans. Subsequently, during the 1950s, a period of significant migration to the city, the Yücel-Uybadin Plan continued to uphold the trend of planned development. This

plan has been widely recognized as an exemplary model of a comprehensive planning process and implementation within the country's planning literature. The Ankara 1990 Master Plan carried forward this legacy of planned development.

The 1990 Ankara Metropolitan Area Master Plan has played a significant role in the formation of the periphery of Ankara metropolitan city. Prior to this, the Lörcher, Jansen and Yücel-Uybadin plans contributed to the formation of the core area of Ankara, while the 1990 Master Plan was effective in creating the periphery. According to this plan, a corridor has been identified for Ankara to grow with minimal cost without damaging its natural basin and environmental values. Accordingly, it is planned that large residential and industrial areas will be located in the west of the city (AMNPB, 1977; Altaban,2002)

Ankara's experience with the 1990 Master Plan demonstrates that the city's development could be guided by planning and policies. Particularly between 1974 and 1980, the successful implementation of mass housing, new settlement areas, industrial zones, and institutional area projects exemplifies this guidance. The Ankara Metropolitan Area Urban Planning Office (AMNPB) consistently made accurate population forecasts until 1985. However, after 1985, Ankara's growth rate slowed down, reaching a population of only 2.8 million by 1990. This was achieved through the understanding and comprehension of Ankara's issues by the AMNPB, which established reliable relationships and collaborations with decision-makers, politicians, professional circles, universities, civil and official institutions, and the public (Altaban, 2002).

Between 1970 and 1985, Ankara's urban population increased by 85%, while the total housing area expanded by 59%. The total urban area increased by 95%, directed by the plan. While the planned development of regular housing areas increased significantly by 160%, the addition of informal settlements and illegal construction areas remained at 17% (Altaban, 2002).

In 1970, informal housing areas constituted 44.5% of the urban footprint and 69% of the total housing area. However, by 1985, these proportions changed significantly,

with the weight of informal housing areas in the urban footprint decreasing to 27%, and their share in the total housing area dropping to 51%. This indicates that informal housing areas concentrated with vertical growth on themselves. With the practices seen since 1983 and the expectation of regularization, informal settlements entered a process of apartmentization. However, in 1985, the population living in informal areas still remained high at around 45% (Altaban, 2002).

Between 1970 and 1985, the planned land supply and realization rate in Ankara were quite significant. During this period, 87% of the planned land supply consisted of urban lands provided by the government. However, only 64% of the lands opened for residential use as government property could be realized. The private titled land market was influential in Ankara during this period. Nevertheless, it was observed that an active and continuous planning institution, despite difficulties, significantly succeeded in guiding urban development in Ankara between 1970 and 1984 (Altaban, 2002).

However, after 1983, the structure of the planning institution changed, and the Ankara Master Plan Office was perceived as an obstructive institution to projects of entrepreneurs involved in land and housing markets under the new political era. With the changes made during this period, it was observed that Ankara lost its unique institutional structure in planning. This situation led to fragmentation rather than integrity in planning and implementation, bringing contradictions and conflicts instead of inter-agency coordination, and creating disorder and inconsistency with local plans instead of compliance with the main plans (Altaban, 2002).

Ultimately, Ankara's development was largely left to market forces. Developments after 1984 demonstrated fragmentation instead of integrity in planning and implementation, contradictions and conflicts instead of interagency coordination, and disorder and inconsistency created by local plans instead of compliance with the main plans (Altaban, 2002).

As a result of the impact of the neo-liberal era, the elimination of central planning and the adoption of a market-driven urbanization model have resulted in speculative

movements that disregard the public interest(Yenigül & Çamur , 2013). During this process, both central and local governments have avoided the binding nature of upper-level planning, citing that the master plans cannot keep up with the urban development pace of the era.

Nonetheless, a novel planning system has been embraced, which operates via local development plans and plan revisions. This system concentrates on individual gain rather than public interest, leading to an emphasis on urban development projects with a similar approach. Until the late 1970s, the city grew and concentrated within the topographic basin, but after the 1980s, it began to spread and grow along the main transportation corridors. The growth process, which started with the 'West Corridor' envisaged in the 1990 Master Plan and continued to spread in the southwest and south directions (largely) in line with the demand of the middle-upper and upper income groups, gained momentum with the transfer of urban planning powers to local governments (AMNPB, 1977; Altaban,2002; Yenigül & Çamur, 2013).

The metropolitan area has created difficult conditions for small and medium-sized municipalities that are affected by the city, as they require independent planning applications that do not require plan coherence and control with the main city. The increase in private car ownership that has accelerated since the 1980s has raised the accessibility threshold in parallel and the conditions have been created for a difficult fringe process that is difficult to define and control at the current level.

Since the 1980s, due to the Law No. 3030, independent planning applications that are not in line with the main city have not been prevented in small and medium-sized municipalities within the contiguous area. This situation has led to rapid and uncontrolled development on the periphery of metropolitan cities. As a result of these developments, various settlements have emerged, some of which are rural, some semi-urban and some urban in nature. Over time, these different settlements have become integrated into the city and have become a part of the metropolitan area (Yenigül & Çamur, 2013).

3.4 Why was Ankara Chosen as a Case Study?

Ankara is the capital city of the Republic of Türkiye, where the philosophy of planning has been implemented since its foundation. It has a tradition of planning and a tendency for development and determination at the highest level. Therefore, Ankara has been a city of planned urbanization since its early years of establishment, thanks to its urban planning efforts.

The "Ankara Reform" stands as a noteworthy model for planning initiatives and city development in Turkey's historical context. The capital's evolution, planning endeavors, urbanization phases, and institutional practices offer valuable lessons encompassing both positive and negative outcomes. Thus, it is crucial not to overlook the rich experiences of Ankara's planning history as they provide insights for future planning endeavors (Duyguluer, 2012).

The interplay between planning and political considerations has always been evident, especially in the context of Ankara's selection as the capital city during the Republican Era. This decision and subsequent planning efforts underscore the close relationship between politics and planning. Throughout history, various political factors have influenced planning initiatives in Ankara, including the emphasis on "free enterprise" initiatives in the 1950s, comprehensive planning experiences post-1960, and diversified planning activities aligned with privatization programs since the 1980s (Duyguluer, 2012).

With a population of almost six million, it is the second largest city in Türkiye and the third largest city in terms of land area, which exceeds 2,5 miilion hectares. In addition to its political representation mission, it is of great importance for Türkiye due to its central location in the country’s geography and intersection of transportation networks, as well as its historical, social and cultural heritage and its contribution to the country’s economy in all sectors. Therefore, it is one of the most important cities for Türkiye.

The capital city has traditionally served as a mirror of hope for the Anatolian cities, embodying the ideals of the modern and contemporary world and symbolizing the aspirations of the populace.

In the implementation of the planning tradition and in the unique planning studies that have entered the planning literature, often setting the first example of its kind, Ankara's consciousness, education level, determination and appreciation for urban values, which are valued and developed, have been dominant in the city's socio-economic, socio-cultural values and originality.

Ankara, which is the city where the importance of city planning was realized during the Republican era and various attempts were made for its implementation, has tried to maintain its determination to develop in a planned manner, even during the years when it was under intense migration pressure. This planning experience, which is often expressed among the people as a "regular city" and the "capital", has been constantly undermined by many difficulties and dilemmas.

The significance of Ankara stems from the social and spatial dimensions of the nation-state formation project. This project transformed Ankara from an ordinary Anatolian town into Türkiye's second-largest city, playing a central role throughout the country. After the declaration of the Republic, economic, social and spatial changes occurred in Ankara, followed by the process of metropolitanization. During this process, legal and administrative changes were made, firstly by determining the municipality boundaries, then defining the metropolitan municipality boundaries, followed by drawing the surrounding area limits and finally determining the metropolitan area boundaries, which represent metropolitanization (Yenigül & Çamur, 2013).

The changes in planning methodology and legal regulations in Türkiye during the 1980s became apparent with the 195 Decree Law enacted in 1984 and the subsequent implementation of the Metropolitan Municipality Law No. 3030. With this legal regulation, Ankara has taken its place among Türkiye's three metropolitan cities, together with İstanbul and İzmir. In 1985, the authority for urban planning was

transferred to local governments through the new development law (3194). Until the late 1980s, Ankara Municipality consisted of five districts: Altındağ, Çankaya, Keçiören, Mamak and Yenimahalle. With the establishment of Sincan in 1988 and the inclusion of Gölbaşı and Etimesgut districts into the metropolitan municipality in 1990, the structure of Ankara Municipality transformed into a system of eight districts (Yenigül & Çamur, 2013).

In 2004, with the Metropolitan Municipality Law No. 5216, Akyurt, Bala, Çubuk, Elmadağ, Haymana, Kalecik and Kahramankazan districts were annexed to the Metropolitan Municipality, transforming it from 15 to 16 districts. Later, in 2008, with the Law No. 5747, Pursaklar district was established, further adding to the number of districts in the metropolitan city. With the 5216 numbered law, Ankara Metropolitan Area has become the metropolitan city with the widest authority and service area in Türkiye, with a surface area of 855 thousand hectares. This situation has led to a re-evaluation of the size of metropolitan areas in the 2000s due to uncontrolled growth and development in the development zones of metropolitan cities. Especially the process of adaptation to the European Union and the reform efforts in the public administration system have made it necessary to restructure the regulations regarding municipal governance for cities and metropolises, as well as to revise laws that have been in effect for many years (Yenigül & Çamur, 2013).

During this process, the Municipal Law No. 1580 was transformed into the Municipal Law No. 5393 and the Metropolitan Municipality Law No. 3030 was transformed into the Metropolitan Municipality Law No. 5216 and necessary regulations were made in metropolitan areas. Through the enactment of Law No. 5747, regulations were established concerning the establishment of districts within the boundaries of metropolitan municipalities and amendments to certain laws. Law No. 5216 assigns the task and responsibility of creating a comprehensive upper-level plan to the Metropolitan Municipalities, while also linking town municipalities to the Metropolitan Municipality as a first-level municipality, thus including a region that can be considered as the city's broad impact area within the municipal borders (Yenigül & Çamur, 2013).

According to Temporary Article 1 of the Law, “Metropolitan municipalities are obliged to prepare or have prepared the 1/25,000 scale master plans of the metropolitan area within two years from the date of entry into force of the law” with the provision of making a macro plan.

Through a legal regulation, the boundaries of the metropolitan municipalities of İstanbul, Ankara, İzmir, İzmit, Sakarya, Bursa, Eskişehir, Antalya, Mersin, Kayseri, Diyarbakır, Gaziantep, Erzurum and Samsun have been expanded. In metropolitan areas with a population of more than 2 million, the boundary of a circle with a radius of 50 km forms the boundary of the metropolitan municipality. According to the law, the districts within the municipality borders are transformed into metropolitan district municipalities and the towns into first-level metropolitan municipalities, thus establishing a new administrative structure. During the period of Law No. 3030, Ankara Metropolitan Municipality consisted of 8 district municipalities and had an authority area of approximately 200 thousand hectares. In the new period, the Municipality has reached an authority area within a 50-kilometer radius. The aforementioned expansion of authority is to be noted. This area encompasses 8 district municipalities in addition to 7 district municipalities and 21 primary level settlements, consisting of 740 neighborhods and 86 forest villages, covering a total area of 855 thousand hectares. With the expansion of its authority and responsibilities by 4 times, Ankara Metropolitan Municipality has become one of the municipalities with the widest range of responsibilities, including Istanbul (Yenigül & Çamur, 2013).

In the execution of the planning tradition and in the distinctive planning studies that have been introduced into the planning literature, often serving as the first example of their kind, the consciousness, education level, determination and adherence to urban values of Ankara have consistently been prevalent. Furthermore, the city’s socio-economic, socio-cultural values and distinctiveness have also been dominant factors.

In Ankara, a comprehensive approach to planned development and tradition, starting with Lörcher and Jansen's plans, continued with the Yücel-Uybadin Plan during the 1950s, when the city experienced its most intense migration. This plan has been recognized as one of the best examples of comprehensive planning process and implementation in the country's planning literature. The Ankara 1990 Master Plan has continued this tradition. As a result of the rapid "liberalization" tendencies that have been experienced throughout the country and in all of our cities since 1980, efforts have been made to address urban environmental problems. The aim has been to find solutions to air pollution and to produce the first Transportation Master Plan in the country. In line with these objectives, the 2015 Planning Study was carried out (AMNPB, 1977; Altaban, 2002). This was followed by the 2023 Ankara Metropolitan Area Master Plan and, most recently, the 2038 Ankara Environmental Plan. These planning efforts have introduced the concept of "Structural Planning" to the planning literature in our country.

The production of surplus land in Ankara, where the understanding of Structural Planning is predominant, has led to urban sprawl and chronic problems. It is crucial to perceive these problems and develop intervention methods that will guide all cities in Türkiye. Due to all of the aforementioned reasons, the city of Ankara, which represents high expectations, has been selected as an exemplary case.

3.5 Surplus Land Production and Urban Sprawl in Ankara

According to the population data for the year 2023, Ankara constitutes 6.77% of Türkiye's population with a total of 5.8 million people and 3.5% of Türkiye's land area with a total of 2.5 million hectares.

Ankara has witnessed significant social and spatial changes since it was assigned the role of the capital city after the declaration of the Republic. In 1923, it was a small Central Anatolian town with a population of around 30 thousand. However, by 1927, its population had grown to 74.5 thousand and by 1960, it had reached 650 thousand.

In 1990, Ankara became Türkiye's second-largest metropolitan city with a population of 2.6 million. By 2000, its population had increased to 3.4 million and in 2011, it reached 4.9 million (Yenigül & Çamur, 2013). As of the year 2023, it is still the second largest metropolitan city of Türkiye with a population of 5.8 million.

The urban expansion process in Ankara, which manifested as oil stain-like formations resulting from the merging of small areas, was observed in the 1950s. Subsequently, from the 1980s onwards, a form of urban growth that conformed to the definition of urban sprawl became prevalent in the city's periphery. This type of urban growth was characterized by extensive use of large areas, disconnection from the macroform and generally lower population densities.

After the 1980s, a structure emerged in the city in which every type of development trend was observed and speculation increased. As a result, plans were produced by town municipalities around the city that were disconnected from the metropolitan area and had exaggerated population projections. These plans can be defined as huge problem areas and brought about various problems.

The urban sprawl has caused fringe developments that initially altered the characteristics of nearby rural settlements and agricultural areas, transforming them into semi-rural and semi-urban environments. This has resulted in challenges such as the need for expanded transportation and urban infrastructure as well as environmental pollution.

However, the phenomenon of urban sprawl observed in Ankara is different from the sprawl seen in western cities, which is mainly caused by lifestyle changes and is significantly influenced by the actions and policies of local governments. In the process of identifying settlement areas that are spread out over vast areas with very few people living in the outskirts of Ankara, planning has become a tool that facilitates uncontrolled growth rather than a means of preventing sprawl.

It is apparent that there is a strong correlation between urban sprawl and planning, specifically, the sprawl observed in Ankara is a form of planned sprawl.

Until the 1980s, urban planning services were only carried out by Ankara Municipality and the Ministry of Public Works, based on laws numbered 3030 (Metropolitan Municipality Law), 5216 (Metropolitan Municipality Law) and finally, as shown in Figure 3.1, with the authority limits set by the Law numbered 6360, these services started to be carried out in collaboration with Ankara Metropolitan Municipality and the 25 district municipalities.

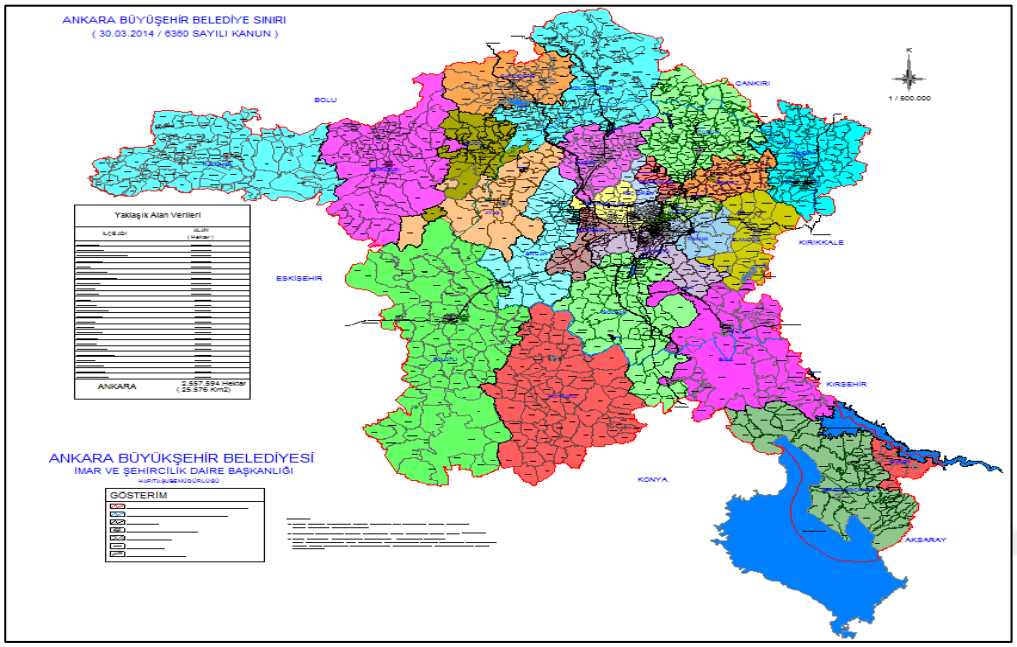


Figure 3.1 Ankara Metropolitan and District Municipalities within the scope of Law No. 6360

Source: Ankara Metropolitan Municipality, Planing and Urbanization Department

In the preceding years of the 2000s, municipalities in towns and districts that could function independently from metropolitan development and decision-making processes, particularly in planning regions located on the peripheries of settlement areas which were frequently subject to speculation, produced land with exaggerated population projections that were disconnected from the metropolitan area. By creating subdivision plans, title deeds were registered and these areas were designated for land use.

Local governments, driven by pressure from property owners who seek to obtain a greater share of urban rent, have tended to prioritize the distribution of urban rent through planning. As a result, they have shown a tendency to offer more developed land. Through the implementation of spatial plans, surplus land has been produced.

In Ankara, all findings related to urban sprawl suggest that there was an excess production of land, specifically in Ankara, resulting in urban sprawl. Furthermore, it indicates that the planning process was not properly managed, especially prior to the enactment of Law No. 5216, through spatial plans made by local governments.

Throughout this process, local governments that were able to operate independently of metropolitan restructuring and decision-making processes before being included within metropolitan municipality boundaries under Law No. 5216 have pursued policies that were not based on sound reasoning but rather on speculative, populist approaches influenced by political preferences, resulting in the depletion of agricultural land and natural structures. It is understood that common values that must be absolutely protected, such as wetlands, dam basins, water conservation zones, riverbeds and fertile agricultural land, are being opened up for development purposes in a controversial manner without proper assessment.

The approach of opening up more land for development affects everyone involved, including the residents of the city, decision-making politicians, technocrats and all stakeholders. It compels them to live with this reality and brings with it social, economic and environmental problems.

The production of excess land and the phenomenon of urban sprawl, which cannot be prevented, have left all stakeholders facing the fact that solutions must be found for these problems.

Before being included within the metropolitan borders, it has been identified that hectares of land were planned and opened for development by independent municipalities that operated separately from the metropolitan administrative

structure and that these plans were highly problematic and required solutions. This has been recognized for the first time with the 2023 Capital Ankara Master Plan.

The 2038 Ankara Environmental Plan (AÇDP) features numerous assessments and conclusions related to the creation of excess land, which align with those found in the 2023 Capital Ankara Master Plan (BANİP).

At this point, the study aims to demonstrate that planning decisions are one of the most important factors contributing to urban sprawl in Ankara, which sets it apart from international examples.

Furthermore, with the claim that the areas opened to urbanization through plans after 1980 are excessive, the aim of the study in the example of Ankara is to monitor the areas opened to urbanization, especially around the city periphery and to question the meaningfulness of urban planning decisions based on their usage status over the years.

3.6 Macro Plan Predictions for Surplus Land Production in Ankara

Following the current legal regulations, the provincial boundaries of Ankara also constitute the municipal boundaries of Ankara Metropolitan Municipality, which includes 25 metropolitan district municipalities.

Approximately 89% of the population is concentrated in a total of 9 districts, which comprise about 15.57% of Ankara's surface area. The remaining 11% live in the 84.43% of Ankara's total surface area.

The average density of Ankara per city is approximately 2.26 people/ha. According to the data from the Turkish Statistical Institute (TÜİK), Ankara's density is significantly higher than the Turkish average of approximately 1 person/hectare.

The 2023 Capital Ankara Master Plan, which covers an area of 855 thousand hectares and was approved in 2007 and the 2038 Ankara Environmental Plan, which covers an area of 2.5 million hectares and was approved in 2017 (although its

implementation has been suspended due to court decisions), comprehensively address the production of surplus land in Ankara. Information, documents, evaluations and recommendations related to the subject have been thoroughly explained in the detailed plan reports of these macro plans.

In this study, we have conducted an examination based on the population projection, property and development rights data and the physical and population sizes of the surplus developed lands in order to determine their transformation and intervention methods. Firstly, the 1/25,000 scale 2023 Ankara Master Plan and then the 1/100,000 scale 2038 Ankara Environmental Plan (although its validity has been suspended by the local court decision) were analysed through a total of 43 municipal and district municipality data. The determination and evaluation of surplus land production and planned urban sprawl in Ankara were based on these data.

3.6.1 Examination of Population, Projections and Basic Projections of The 2023 Capital Ankara Master Plan (1/25.000 Scale)

The limits of the 2023 Capital Ankara Master Plan, which was approved and put into effect by the Ankara Metropolitan Municipality Council in 2007, cover an area of 855.000 hectares with a radius of 50 km from the center of Ankara, as seen in Figure 3.2.

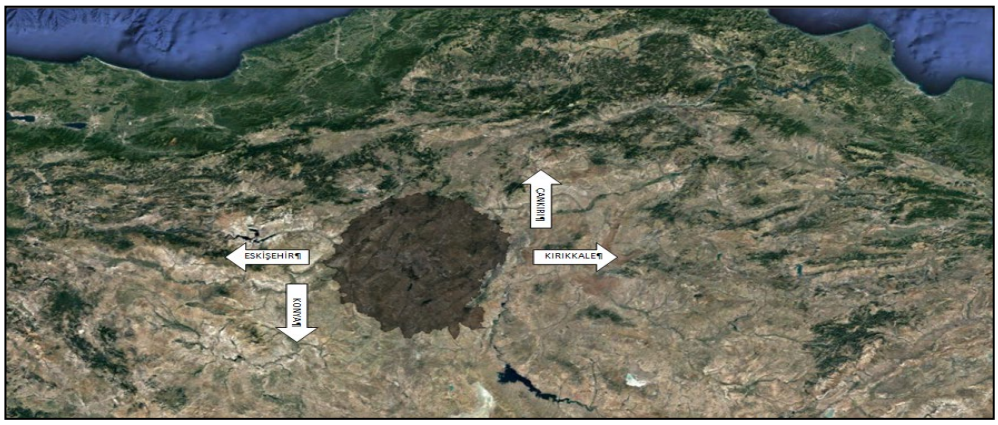


Figure 3.2 Ankara Metropolitan Municipality borders determined by Law No. 5216

Source: Produced by the Author, using. Google Earth data, 2023

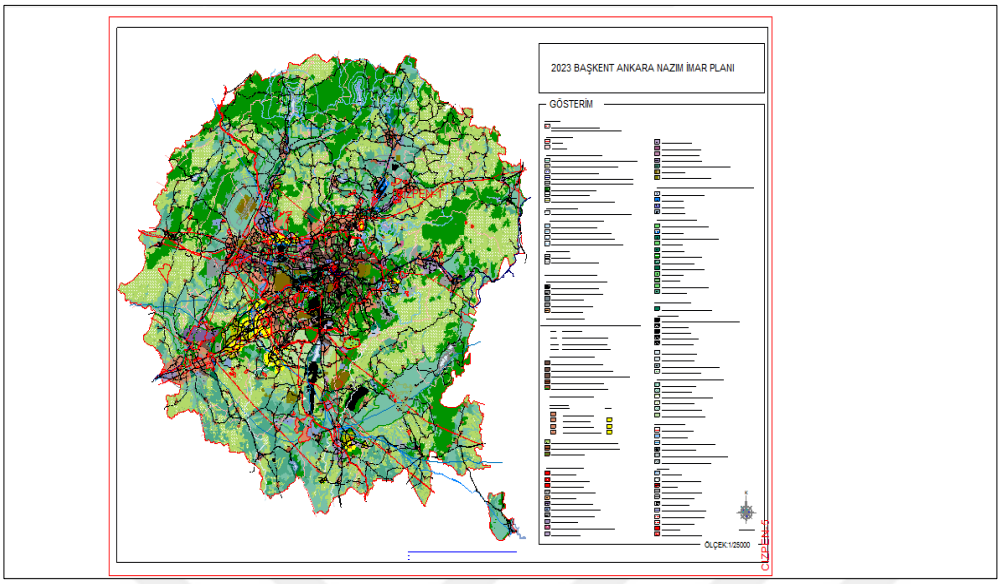


Figure 3.3 2023 Capital Ankara Master Plan (BANİP)

Produced by the author based on GIS data of the plan

The 2023 BANİP plan as seen in Figure depicts the general development and process of Ankara city, which differs from the previously independent municipalities that were included within the metropolitan municipality boundaries through Law No. 5216. Prior to their inclusion, these local administrations could operate independently from the metropolitan structuring and decision-making processes. The spatial planning decisions produced by these local administrations have been examined in terms of their shortcomings, impacts, consequences and intervention methods.

In accordance with the BANİP plan, the territory of Ankara Metropolitan Municipality, spanning an area of 855 thousand hectares, has been partitioned into six primary planning zones.

The Northern Planning Region, where important agricultural lands and water catchment areas are located, is characterized by the Altındağ, Keçiören, Çubuk and Akyurt districts, which are centered around the Esenboğa-Çankırı road and the

Çubuk Basin. These areas also include the primary level municipalities established within them.

The North Planning Region's population as of 2000 was around 1 million. However, the approved plans within the region suggest an unrealistic population allocation of 4.1 million.

If this unrealistic population assignment, which exceeds the city of İzmir, is accepted as is, there is a potential to create Türkiye's 3rd largest city in the north of Ankara.

In the 2023 BANİP macro planning decisions, it has been determined that the approved plans that are spread over agricultural lands (such as plains, watersheds and other farming areas) and do not integrate with each other are far from defining city centers, consisting only of residential developments, and must be revised urgently. In line with this approach, the approved plan capacity that exceeds 4 million people were attempted to be kept at the level of 1.9 million people.

The Western Planning Region is located along the western corridor, which includes the districts of Yenimahalle, Etimesgut and Sincan. This region comprises the areas of Batıkent, Eryaman, Sincan Shanty Prevention Zone and Organized Industrial Zone, as well as the Kazan corridor and Ayaş district.

According to the population census data of 2000, the population of the region was approximately 1 million and nearly 3 million people were assigned to this are. The aim is to keep the population in the region at the level of 1.8 million.

The eastern planning region is the most problematic area in terms of the city's physical thresholds and socio-economic structure. It encompasses the districts of Mamak, Elmadağ and Kalecik.

According to the population census data of the year 2000, approximately 426 thousand people were living in this planning region and around 1.67 million population assignments were made based on approved plans. The goal is to keep the population in the region at around 900 thousand people.

The Southwest Planning Region defines the area where the city has experienced the most speculation and significant urban developments since the late 1980s. This region encompasses parts of Çankaya, Yenimahalle and Gölbaşı districts, with Eskişehir road serving as the primary backbone.

According to the 2000 census data, the population of the region is approximately 139 thousand people. However, with approved plans, a population assignment has been made between 2 – 2.9 million. Nevertheless, exaggerated population assignments have been intervened to keep the population in the region at a level of 1.6 million people.

The planning region of the south comprises the regions of the city that are mainly evolving along the axis of the Konya road. It incorporates a part of the district of Çankaya, along with the districts of Gölbaşı and Bala.

According to the planning region data of the 2023 BANİP plan;

- In the northern planning region, a population allocation of four times the current population has been made based on approved plans and the plan capacity created,
- In the eastern planning region, a population allocation of four times the current population has been made based on approved plans and the plan capacity created,
- In the western planning region, a population allocation of three times the current population has been made based on approved plans and the plan capacity created,
- In the southwest planning region, it has been determined that a population allocation of 15 times the current population has been made based on approved plans and the plan capacity created.

Furthermore, it has been concluded that it is essential to intervene in the approved plans and carry out revisions in some planning areas, in order to cancel the exaggerated and unrealistic population assignments, as the approved plans allocate a population of 13.5 million while the labor force projections only estimate a city population of 6.6 million to 9.5 million in Ankara. It is also necessary to create a

development that includes mixed uses, including living and working areas, with a relatively compact macro-form that will consolidate expansion.

In the scope of the 2023 Ankara Master Plan, the planning team of the local administration has conducted an examination and evaluation which indicates unrealistic population assignments and excessive land production beyond the actual demand.

In this study, the municipalities and neighborhods within the planning regions of North, West, South, Southwest and East have been examined in detail. These include Akyurt, Çubuk, Sirkeli, Esenboğa, Pursaklar, Saray, Bağlum, Altınova in the North; Kazan, Ayaş, Çanıllı, Sinanlı, Yenikent in the West; Kesikköprü, Karagedik, Bezirhane in the South; Temelli in the Southwest; and Kıbrıs-Y. Bayındır, Kalecik, Elmadağ, Hasanoğlan, Lalahan, Yeşildere, Kutludüğün in the East planning regions. The current population, urban area sizes, highly exaggerated population projections and plan capacities, as well as the potential errors in the use of authority by local decision-making bodies have been examined. This study aims to highlight the inaccurate use of authority by local decision-making bodies in the context of the 2023 plan data.

The shared overarching characteristic of the 24 municipalities, including districts, towns and first-level administrative divisions, that are the subject of examination is that they are areas without any existing development and are experiencing planned urban expansion.

The municipalities that are attached to the Metropolitan Municipality as district and first level municipalities according to the Law No. 5216 frequently engage in the practice of inaccurate population allocation and the production of surplus planned land.

Prior to the enactment of Law No. 5216, it has been determined through the decisions of the local decision-making body, namely the Municipal Council, that development

of urban land with high building intensity and beyond the needs of settlements were carried out.

Taking into account the natural and environmental values, as well as the requirements and interaction with the city center, one of the fundamental approaches of the 2023 BANİP plan is to carry out comprehensive revisions of the sub-scale plans approved before the settlements were connected to the metropolitan municipality, without approval from the Metropolitan Municipality.

3.6.1.1 The Situation of the Municipalities and Neighborhods within the Scope of the Northern Planning Region

3.6.1.1.1 Akyurt District Municipality Residential Areas

According to the 2000 population census, Akyurt settlement, where 18.9 thousand people reside, has an area planned to accommodate a minimum of 263 thousand and a maximum of 328 thousand people. It is observed that an area, which can serve a population at least 15 times larger than the current population, has been opened for development and settlement.

The 2023 plan seeks to achieve its objectives by incorporating plan decisions and revising plans in various areas. The plan is designed to be based on a population of 65 thousand individuals and construction conditions will be reflected within this framework. Nevertheless, it has been observed that there is no indication of a reduction in the areas that have acquired urban land status, despite the projection suggesting a decrease of 11 times the population in the settlement area as of 2000.

3.6.1.1.2 Çubuk District Municipality Residential Areas

According to the 2000 population census, it can be understood that in the Çubuk settlement where 58.9 thousand people live, in the planned areas, a population

ranging from a minimum of 282 thousand to a maximum of 574 thousand can live and an area that can serve a population at least 6 times larger than the current population has been opened up for development and settlement.

The 2023 plan has set a goal of revising planning decisions in the aforementioned areas and incorporating a plan population of over 120 thousand individuals. Construction conditions will be reflected in accordance with this goal. However, with this projection, it is considered to reduce the projected population of the settlement area to four times less than the population in 2000. However, no record has been found indicating a reduction in the areas that have gained urban land status in terms of their surface areas.

3.6.1.1.3 Sirkeli Neighborhod Residential Areas

According to the 2000 census, Sirkeli settlement has a population of 2.8 thousand individuals. It has been planned that the designated areas can accommodate a population ranging from a minimum of 126 thousand to a maximum of 157 thousand individuals. This area, which has been opened up for urbanization and settlement, can serve a population at least 40 times larger than the current population.

The 2023 plan seeks to implement decision-making processes and revise plans in specific areas. The objective is to establish a plan population of 15.6 thousand individuals and incorporate building conditions within this framework. With this prediction, it is being contemplated to reduce the projected population of the settlement area by 35 times the population of the year 2000. Nonetheless, there is no evidence of any reduction in the surface area of the land that has acquired urban land status.

3.6.1.1.4 Esenboğa Neighborhod Residential Areas

According to the 2000 population census, it has been determined that the Esenboğa settlement, where 7.1 thousand people live, has a planned area that can accommodate a population ranging from a minimum of 119 thousand to a maximum of 149 thousand. It is evident that an area, which can serve a population at least 17 times larger than the existing population, has been opened up for development and settlement.

The 2023 plan aims to revise the existing plans in the relevant areas and incorporate the decisions made. The plan will be based on a population of over 30 thousand and the building conditions will be reflected in the plan accordingly. Based on the aforementioned projection, it is being contemplated to decrease the anticipated population of the settlement area by a factor of fourteen times the recorded population in the year 2000. Nevertheless, it has been observed that no documentation exists to indicate a reduction in the surface area of land that has been designated with urban land status.

3.6.1.1.5 Pursaklar District Municipality Residential Areas

According to the census of 2000, Pursaklar settlement has a population of 27.9 thousand. In the planned areas, an estimated minimum of 496 thousand and a maximum of 620 thousand people could reside. It is evident that an area, which is open to development and settlement, could serve a population at least 18 times larger than the current population.

The objective of the 2023 plan is to incorporate decision-making related to various areas through a revision of the existing plans. The plan will be based on a population of over 350 thousand and the conditions of construction will be reflected accordingly. However, based on this prediction, it is considered that the projected population of the settlement area will be reduced by a factor of 5 from the population

in 2000. Nevertheless, no record has been found regarding any reduction in the areas that have obtained the status of urban land.

3.6.1.1.6 Saray Neighborhod Residential Areas

According to the 2000 census, Saray settlement has a population of 6 thousand. Within the planned areas, an estimated population ranging from a minimum of 469 thousand to a maximum of 587 thousand could reside. It is evident that an area capable of serving a population at least 75 times larger than the current population has been opened for development and settlement.

The 2023 plan endeavors to integrate determinations pertaining to modifications in designated areas and to construct the plan relying on a populace exceeding 150 thousand individuals, whilst ensuring that the conditions for construction are appropriately reflected in the plan. However, it has been predicted that the projected population of the settlement area will be reduced by 50 times the population in the year 2000. Nevertheless, no record has been found indicating a reduction in the land area that has been designated for development.

3.6.1.1.7 Bağlum Neighborhod Residential Areas

According to the 2000 population census, Bağlum settlement is home to 13.6 thousand people. Within the planned areas, an estimated population of minimum 461 thousand and maximum 576 thousand could reside. This area, which is at least 35 times larger than the current population, has been opened for development and residential purposes and has the capacity to serve a significant population.

The 2023 plan aims to incorporate decision-making with regards to revision of plans in order to reflect the conditions of urban development, with a target population of over 60, thousand people. This will be achieved by updating the plans in the relevant areas. However, according to this prediction, it is considered that the projected

population of the settlement area will be reduced by 30 times the population of the year 2000, but no record has been found indicating that a reduction will be made in the areas that have gained urban land status.

3.6.1.1.8 Altınova Neighborhod Residential Areas

According to the 2000 census, Altınova settlement has a population of 3 thousand. In the planned areas, an estimated population of minimum 94 thousand and maximum 117 thousand could reside. This area, which is capable of serving a population at least 31 times larger than the current population, has been opened for construction and settlement.

The 2023 plan aims to revise plans in certain areas and to base population projections on a figure of 30 thousand people. The aim is to reflect building conditions within this framework. However, with this prediction, it is expected that the projected population of the settlement area will be reduced by 21 times the population of the year 2000. Despite this, there is no record of a reduction in the surface area of the land that has been granted urban land permission.

3.6.1.2 The Situation of the Municipalities and Neighborhods within the Scope of the Western Planning Region

3.6.1.2.1 Kahramankazan District Municipality Residential Areas

According to the population census of 2000, Kahramankazan has a population of 30 thousand people. In the planned areas, an estimated minimum of 492 thousand and a maximum of 573 thousand people can reside. It is evident that an area, which is at least 16 times larger than the current population, has been opened up for development and settlement that can serve such a large population.

The 2023 plan is aimed at implementing decisions related to planning revisions in various areas and basing the plan's population on a minimum of 75 thousand individuals. Furthermore, building conditions will be reflected in the plan in accordance with this framework. Nevertheless, in light of this projection, it is being contemplated to decrease the anticipated population of the settlement area by a factor of 14 relative to the population recorded in the year 2000. However, there is no evidence of any reduction in the surface area of the urban lands that have been granted development status.

3.6.1.2.2 Ayaş District Municipality Residential Areas

According to the population census of 2000, Ayaş settlement has a population of 10 thousand. It is understood that in the planned areas, an estimated population ranging from a minimum of 74 thousand to a maximum of 89 thousand can live. This area, which can serve a population at least 7 times larger than the current population, has been opened to development and settlement.

The 2023 plan has set its objectives to include revising plans in specific areas and incorporating a population of over 25 thousand individuals into the plan. Additionally, the plan aims to reflect construction conditions within this framework. According to the aforementioned forecast, it is anticipated that the projected population of the settlement area will decrease by a factor of 5 in comparison to the population in the year 2000. Nevertheless, it has been observed that there is no indication of any reduction in the surface area of the land that has been designated for development.

3.6.1.2.3 Çanıllı Neighborhod Residential Areas

Based on the census conducted in 2000, it has been determined that the settlement of Çanıllı, which houses 2 thousand individuals, has a designated area that can accommodate a population ranging from a minimum of 9 thousand to a maximum of

12 thousand individuals. This area is open for development and settlement and has the capacity to serve a population at least four times the size of the current one.

The 2023 plan has been formulated with the objective of revising plans in different areas and reflecting them in the plan's framework according to a population of over 4 thousand individuals and building conditions. However, based on this forecast, it is being considered to reduce the projected population of the settlement area by half of the population in 2000. However, there is no record of any reduction in the areas that have been designated for development.

3.6.1.2.4 Sinanlı Neighborhod Residential Areas

According to the population census in the year 2000, Sinanlı settlement has a population of 3 thousand people. The planned area has been opened to development and habitation and can accommodate a population ranging from a minimum of 81 thousand to a maximum of 89 thousand people. This area can serve a population at least 26 times the size of the current population.

The 2023 plan aims to revise plans in these areas based on decision-making processes. The plan will be designed with a population of over 10 thousand people and building conditions will be incorporated into the plan accordingly. However, with this projection, it is considered to reduce the projected population of the settlement area by 23 times the population in the year 2000. However, no record has been found indicating a reduction in the areas that have gained urban land status in terms of their surface areas.

3.6.1.2.5 Yenikent Neighborhod Residential Areas

According to the 2000 population census, Yenikent settlement, where 12 thousand people live, has an area that has been planned to accommodate a population ranging from a minimum of 288 thousand to a maximum of 360 thousand people. It is

understood that an area that can serve a population at least 24 times larger than the current population has been opened to development and settlement.

The 2023 plan has been formulated with the intention of revising plans in various fields and reflecting the conditions of development within the framework of a plan population of over 45 thousand people. This will involve revising the plan in order to ensure that the conditions of development are accurately reflected and that the population is properly accounted for. The aim of this revision is to ensure that the plan is as effective and efficient as possible in achieving its objectives. With this projection, it is being considered to reduce the projected population of the settlement area by 20 times the population in 2000. However, no record has been found indicating a reduction in the area of land that has been granted urban land status.

3.6.1.3 The Situation of the Municipalities and Neighborhods within the Scope of the Eastern Planning Region

3.6.1.3.1 Kıbrıs– Y. Bayındır Neighborhod Residential Areas

According to the census conducted in the year 2000, the settlement of Kıbrıs-Y. Bayındır has a population of 35.5 thousand people. It has been observed that in the planned areas of the settlement, an estimated population of 105 thousand people could reside comfortably. This area, which is open for development and habitation, can cater to a population size at least three times larger than the current population.

The 2023 plan intends to achieve its objectives through the revision of plans in specific areas and the inclusion of building standards that align with a population exceeding 60 thousand people. Nevertheless, based on this projection, it is under consideration to reduce the projected population of the settlement area by one-third of the population in the year 2000. However, there is no evidence indicating a reduction in the surface areas that have been granted urban urban land status.

3.6.1.3.2 Kalecik District Municipality Residential Areas

According to the census of 2000, Kalecik settlement has a population of 15.9 thousand. It has been planned that the designated area can accommodate a population ranging from a minimum of 74 thousand to a maximum of 92 thousand individuals. This area, which has been opened up for development and settlement, can serve a population size that is at least five times larger than the current population.

The 2023 plan aims to revise decision-making in these areas and incorporate a plan population of over 30 thousand people, while reflecting the construction conditions within this framework. However, based on this forecast, it is envisaged that the projected population of the settlement area will be reduced by three times the population in 2000. Nevertheless, there is no evidence of any reduction in the surface areas of the areas that have obtained urban land status.

3.6.1.3.3 Elmadağ District Municipality Residential Areas

According to the 2000 population census, Elmadağ settlement, where 25.7 thousand people live, has a planned area that can accommodate a population ranging from a minimum of 102 thousand to a maximum of 119 thousand. It is understood that an area, which is at least four times larger than the current population, is open to development and settlement and can serve a population of that size.

The 2023 plan aims to revise the plans in these areas through decision-making processes. The plan's population is designed to be based on over 80 thousand people and building conditions will be reflected in the plan accordingly. However, with this projection, it is considered to reduce the projected population of the settlement area by one times the population in 2000. However, no record has been found indicating a reduction in the areas that have gained urban land status.

3.6.1.3.4 Hasanoğlan Neighborhod Residential Areas

Based on the 2000 census, it is understood that in the settlement of Hasanoğlan, where 9.9 thousand people live, an area planned for development can accommodate a population ranging from a minimum of 212 thousand to a maximum of 265 thousand. This area can serve a population at least 21 times the size of the current population and has been opened for urbanization and settlement.

The 2023 plan aims to revise plans in various areas, taking decisions into account. The plan will be based on a population of over 35 thousand people and building conditions will be reflected accordingly. According to the aforementioned projection, it is under consideration to decrease the projected population of the settlement area by a factor of 17 in comparison to the population in the year 2000. However, no documentation has been found indicating any reduction in the surface areas of lands that have been granted urban land status.

3.6.1.3.5 Lalahan Neighborhod Residential Areas

According to the census conducted in the year 2000, Lalahan settlement, where 4.9 thousand people were living, has an area that has been planned to accommodate a population ranging from a minimum of 107 thousand to a maximum of 134 thousand people. This area can serve a population that is at least 21 times larger than the existing population and has been opened up for development and settlement.

The 2023 plan has set a target to revise plans in certain areas and reflect building conditions based on a population of over 25 thousand individuals. This will be achieved through plan decisions, which will ensure that the plan is tailored to meet the needs of the targeted population. The plan revision will also take into account the necessary conditions required for building within the established framework. Nevertheless, based on this projection, it is under consideration to decrease the anticipated population of the settlement area by a factor of 16 in comparison to the

population of the year 2000. Nonetheless, there is no evidence indicating a reduction in the surface areas that have obtained the status of urban land.

3.6.1.3.6 Yeşildere Neighborhod Residential Areas

According to the 2000 population census, it has been determined that the settlement of Yeşildere, where 2.7 thousand people reside, has an area designated for development that can accommodate a population ranging from a minimum of 17 thousand to a maximum of 21 thousand people. This area is capable of serving a population at least six times larger than the current population and has already been opened up for urbanization and settlement purposes.

The 2023 plan intends to achieve its objectives by making revisions to plans in various sectors. The plan aims to incorporate these revisions into the overall plan, which will be based on a projected population of more than 12 thousand individuals. Additionally, the plan will reflect the conditions that pertain to construction. However, based on this prediction, it is being considered to reduce the projected population of the settlement area to half of the population in the year 2000. However, no record has been found indicating any reduction in the area of land that has gained urban land status.

3.6.1.3.7 Kutludüğün Neighborhod Residential Areas

According to the 2000 census, Kutludüğün settlement is inhabited by 5.2 thousand people. It is understood that in the planned areas, an estimated population of a minimum of 92 thousand and a maximum of 116 thousand could reside. This area, which has been opened up for development and habitation, could serve a population at least 18 times larger than the current population.

The 2023 plan has been devised to incorporate decisions related to revisions in various areas. The plan aims to be designed based on a population of over 30

thousand individuals and the construction conditions will be reflected accordingly. However, based on this projection, it is deemed that the projected population of the settlement area will be reduced by a factor of 12 in comparison to the population of the year 2000. However, no documentation has been discovered indicating a reduction in the surface area of the zones that have been granted urban land status.

3.6.1.4 The Situation of the Municipalities and Neighborhods within the Scope of the Southern Planning Region

3.6.1.4.1 Kesikköprü Neighborhod Residential Areas

According to the 2000 census, Kesikköprü settlement has a population of 2.8 thousand people. However, it is evident that there is an area designated for urban development that can accommodate a population of at least nine times larger than the current population, serving up to 26 thousand people.

The 2023 plan aims to revise the current plan for these areas, with a target of planning for a population of at least 10 thousand people and reflecting the building conditions accordingly. However, while the plan aims to reduce the projected population by five times the 2000 population, there is no record of any reduction in the designated land area that has already been urban land for development.

3.6.1.4.2 Karagedik Neighborhod Residential Areas

According to the 2000 population census, the settlement of Karagedik, where 4 thousand people lived, has an area that has been opened up for development and habitation and can accommodate a population ranging from a minimum of 230 thousand to a maximum of 275 thousand, which is at least 57 times larger than the current population.

The 2023 plan aims to revise the plan for these areas by basing the plan's population on a minimum of 20 thousand people and reflecting the building conditions within this framework. However, while the projection of the settlement's population was intended to be reduced by 52 times that of the 2000 population, no record has been found indicating that reductions will be made to the surface area of the areas that have obtained development rights.

3.6.1.4.3 Bezirhane Neighborhod Residential Areas

According to the 2000 population census, it is understood that in the settlement of Bezirhane where 4.2 thousand people live, in the planned areas, an population ranging from a minimum of 17 thousand to a maximum of 31 thousand can live and an area that can serve a population at least 4 times larger than the current population has been opened for development and settlement.

The 2023 plan aims to revise the existing plans in the following areas and reflect the conditions of development in line with a plan population of over 13 thousand people. The decisions made in the plan will be based on this goal. However, it has been anticipated that the projected population of the settlement area will be reduced by one times the population in 2000, but no record has been found indicating a reduction in the areas that have gained urban land status in terms of their surface areas.

3.6.1.5 The Situation of the Municipalities and Neighborhods within the Scope of the Southwest Planning Region

3.6.1.5.1 Temelli Neighborhod Residential Areas

Based on the 2000 population census, it is evident that the Temelli settlement, which housed 9.3 thousand individuals, has designated areas for development and settlement capable of accommodating a minimum of 713 thousand people.

Furthermore, these areas have the potential to serve a population size that is at least 76 times larger than the current population.

The 2023 plan has been formulated with the aim of revising plans in various areas and reflecting the population of over 400 thousand individuals and construction conditions in the plan decisions. However, based on this prediction, it is considered that the projected population of the settlement area will be reduced by 33 times the population in the year 2000, but no record has been found indicating a reduction in the areas that have gained urban land status.

In all of these domains, it is anticipated that population forecasts and decisions regarding density in plans will be decreased and restructured.

3.6.2 Results and Intervention Forms of the 2023 Capital Ankara Master Plan: "Concerning the Production of Surplus Land"

In the pre-2000s era, particularly in the planning areas on the city's periphery that were subject to speculation, local governments engaged in excessive land production, based on exaggerated population projections. As a result, there was a surplus of goods that exceeded demand, which led to urban sprawl, as indicated by the data from BANİP. During this process, it is absolutely necessary to protect wetlands, dam basins, water protection belts, riverbeds and fertile agricultural lands by planning them properly, as they are unnecessarily opened for development purposes, leading to the depletion of soil and natural structure. The district and district municipalities have produced surplus land in the respective settlements as illustrated in Table 3.1. The year 2000 population, projection population, minimum and maximum population that may occur as a result of the development rights granted by the plans and the minimum and maximum population of the district municipalities and neighborhods included in the borders of Ankara Metropolitan Municipality Law No. 5216 projections

Table 3.1 Population of District Municipalities and Neighborhods[3] in Ankara

District municipalities/ ***Neighborhods***	Projection population for 2023 (person)	Population in 2000 (person)	Minimum population predicted by plans	Maximum population predicted by plans
Akyurt	65000	18907	262760	328464
Çubuk	120000	58971	282700	574600
Çubuk/*Esenboğa*	30000	7092	119792	149748
Pursaklar	350000	27974	496164	620208
Pursaklar/*Saray*	150000	6014	469868	587340
Pursaklar/*Sirkeli*	15600	2865	126212	157776
Pursaklar/*Altınova*	30000	3023	94336	117924
Keçiören/*Bağlum*	60000	13662	461308	576644
Kahramankazan	75000	30289	492000	573000
Ayaş	25000	10078	74000	89000
Ayaş/*Çanıllı*	4000	2395	9500	12750
Polatlı/*Sinanlı*	10000	3344	81000	89000
Sincan/*Yenikent*	45000	12191	288000	360000
Sincan/*Temelli*	400000	9339	713200	713200
Mamak/*KıbrısY. Bayındır*	60000	35503	105000	105000
Mamak/*Lalahan*	25000	4997	107724	134668
Mamak/*Kutludüğün*	30000	5287	92000	116000
Kalecik	30000	15973	74500	92000
Elmadağ	80000	25739	102000	119000
Elmadağ/*Hasanoğlan*	35000	9922	212728	265916
Elmadağ/*Yeşildere*	12000	2716	17492	21872
Bala/*Kesikköprü*	10000	2836	26196	26196
Gölbaşı/*Karagedik*	20000	4090	230000	275000
Gölbaşı/*Bezirhane*	13000	4297	17640	31392
TOTAL	1586600	317504	4956120	6136698

Source: 2023 Capital Ankara Master Development Plan explanation report

The legal entities of certain municipalities illustrated in the table have been terminated as a result of legal amendments implemented during the process. The corresponding district municipality presidencies to which they are affiliated are also indicated in the far-right column.

[3] Bold ones are district municipalities, italic ones are neighborhoods

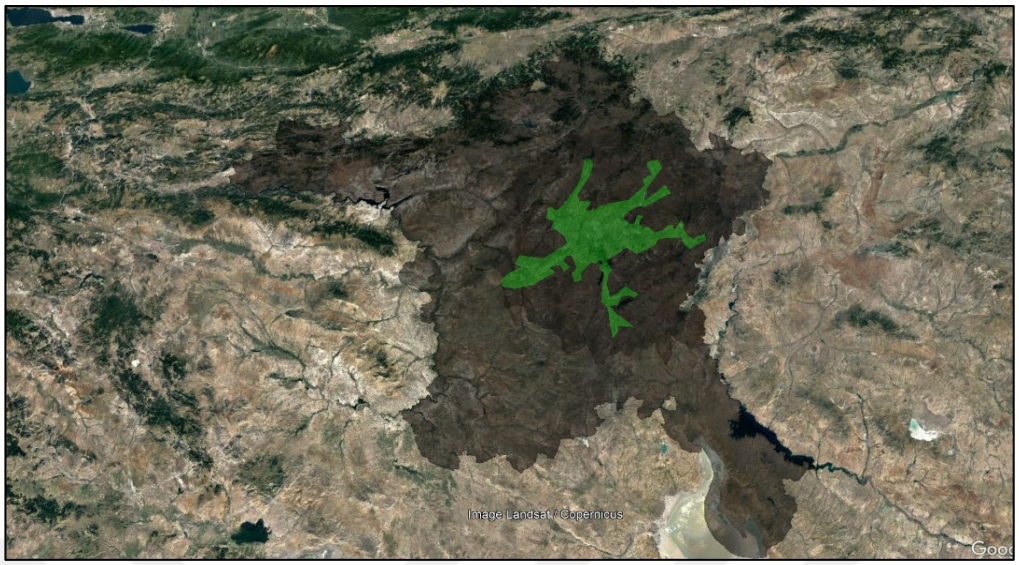


Figure 3.4 Ankara city macroform in the 2023 plan and the situation of urban sprawl within the borders of Ankara Metropolitan Municipality

Source: Produced by the Author, using. Google Earth data, 2023

Figure 3.4 shows the macro form of the city which is a direct consequence of the production of surplus land. Additionally, it also illustrates the scope and magnitude of urban sprawl.

Prior to the Law No. 5216, there were 24 separate municipalities with a total population of 317 thousand residents according to the 2000 census. However, it is evident that an additional population and settlement area, ranging between 16 to 20 times the existing population, was anticipated in the planning of settlement areas. This would potentially accommodate a population of 4.9 million to 6.1 million.

In the areas beyond the settled areas of Ankara's metropolitan area, plans have been formulated that would enable the establishment of a second Ankara settlement in terms of population.

The projected population estimate of 1.5 million people aimed for by the BANİP plan in these areas, which is being endeavored to be reduced through plan revisions, is observed to be significantly elevated and unrealistic. It is not feasible for the population of the 24 settlements, which was 317 thousand in 2000, to attain 1.5 million individuals in 2023 or undergo a five-fold population increase.

It has been determined that the plans approved by district and town municipalities within the boundaries of Ankara Metropolitan Municipality, which were included in accordance with the Law No. 5216, have exaggerated and unrealistic population assignments, causing sprawl, carrying content that may create pressure on values that need to be protected and needing intervention in these plans.

According to the BANİP plan, it is expected that the city's population will reach 6 million by 2023. However, approved plans have assigned a population twice as much and the highest possible intervention has been made for speculative purposes, leading to the decision to hold an election.

In these areas where urban sprawl is also causing inefficient use of resources, it has been determined that it is mandatory to implement necessary interventions within the context of strategies such as approval, cancellation, revision, etc. in these approved plans.

The BANİP plan aims to address the chronic issues of the city by implementing interventions such as reducing the projected population in designated residential areas, developing plans based on the reduced population and revising weak points in the master plans. These interventions are designed to alleviate the problems faced by the city and are based on an exaggerated population projection.

By intervening in the planning decisions and revising the plans accordingly, unique strategies were developed such as canceling settlement projections and planning decisions within dam basins, riverbeds, plains and absolute protection zones and leaving water resources and protected values as reserve areas after the planning period. Gradual density reduction was considered. The transportation system will be redesigned and gradual phasing was implemented. Urgent intervention methods were developed to improve inadequate social facilities both in terms of quantity and quality. Necessary social facilities and technical infrastructure will be separated and the fragmented structure of the green area arrangement will be integrated. These are the objectives of the plan revisions.

In these sectors, it has been observed that there is a requirement for reorganization through the reduction of population projections and density decisions in plans. This is widely acknowledged as the 2023 plan.

However, despite the aim of reducing the density of decisions and population projections in plans, it is stated that plans will be cancelled for the recovery of lost productive agricultural lands and absolute conservation areas, which were opened up for development and unnecessarily produced plots will be restored to their previous state. Nevertheless, there is no concrete and applicable foresight on how this process will be managed and what method will be followed.

The comprehensive examination of the political, social, legal, technical and regulatory infrastructure behind the cancellation and termination of these approved master plans by local government councils, despite their approval with profit, has not been adequately explored. This matter is an important fact that needs to be emphasized and discussed thoroughly.

From the 2000s to the present day, comprehensive plan revisions have been attempted by metropolitan and district municipalities such as Bağlum, Pursaklar, Çubuk, Kahramankazan, etc. in order to make partial improvements in planned areas. However, it has been observed that the ultimate goal of reaching the cancellation of plans and the restoration of unnecessarily produced plots to their original state cannot be achieved due to political, social, legal, technical and legal reasons. The continuation of planned sprawl is being considered.

It can be understood that the current situation has become a deadlock where it is accepted, no solution is found and no action is taken.

The fundamental reason for this is that property rights and development rights are considered acquired rights in terms of legislation, judiciary, administration and rights holders. The legal de facto situation is evaluated as inviolable.

3.6.3 2038 Ankara Environmental Plan (1/100.000 Scale) Projections and Basic Forecasts

The 2023 BANİP plan has disclosed the extent of surplus land production in district and town municipalities that were incorporated into the boundaries of Ankara Metropolitan Municipality Law No. 5216. However, as per the information provided in the 2038 plan, there appears to be no distinct approach in district municipalities that were included in the metropolitan boundaries by Law No. 6360.

Under the 2023 BANİP plan, only the areas within the boundaries of municipalities that have been transformed into registered plots of land through development have been identified. However, under the 2038 AÇDP plan, due to the fact that the boundaries of municipalities correspond to the district administrative boundaries, all registered planned plots of land that have been created by municipalities and governorships within the district administrative boundaries, which encompass a much wider area, have been examined. The extent of surplus land production has been determined and documented.

In this study, we have examined the situation of all district municipalities in the general boundaries of Ankara Metropolitan Municipality, which have been expanded to include the jurisdiction and responsibility area covering the provincial borders, not limited to the planned areas that have been completed and are in excess of the 2023 BANİP plan and the municipalities of the districts and towns included in this plan.

In fact, in order to fully express the dimensions of the problem, the issue has been taken into consideration more comprehensively. Along with the district municipalities previously attached by Law No. 5216, the planning projections in the 2038 AÇDP of district municipalities such as Polatlı, Evren, Şereflikoçhisar, Haymana, Beypazarı, Kalecik, Çamlıdere, Nallıhan, Kızılcahamam, which were included in the Ankara Metropolitan Municipality boundaries by Law No. 6360 and

had previously planned and approved as independent municipalities, have also been examined.

In this regard, in order to compare the findings made in both macro plans regarding the production of surplus land and to demonstrate that more land has been produced than identified in the 2023 plan, although not legally in force, the plan data of all district municipalities within the scope of the 2038 AÇDP plan have also been evaluated.

After conducting these assessments, it has been observed that the production of excess land has become a culture and habit among local governments that have been incorporated into the metropolitan area through the implementation of Law No. 6360.

The municipal council of Ankara has approved the Ankara Environmental Plan in 2017, which is now in effect until the year 2038. The plan covers an area of nearly 2.5 million hectares within the provincial boundaries of Ankara.

Despite the fact that the implementation of this plan is not in effect due to court processes, it can be shown that there has been no excess land production by district and municipal mayors included in the metropolitan boundaries only by Law No. 5216, while excess land production has been carried out by other district municipalities included in the metropolitan boundaries by Law No. 6360, indicating that excess land production has actually become a general habit. In order to demonstrate and emphasize this, the 2038 AÇDP, which contains data on excess land production and planned urban sprawl, has been utilized for its striking information and documents.

It can be observed that in all 25 district municipalities, including the 8 district municipalities that were later included, the culture of planning surplus land has become widespread.

In the 2038 plan, numerous evaluations and determinations have been made with regard to the production of surplus land, many of which were already made in the 2023 plan.

According to the "2038 AÇDP", it is mandatory to adhere to the population projections for the target year in any sub-scale planning work carried out within the boundaries of the plan after its approval. This requirement has been accepted as a general concept to enable revisions that will reduce the population by rejecting population assumptions resulting from surplus land production.

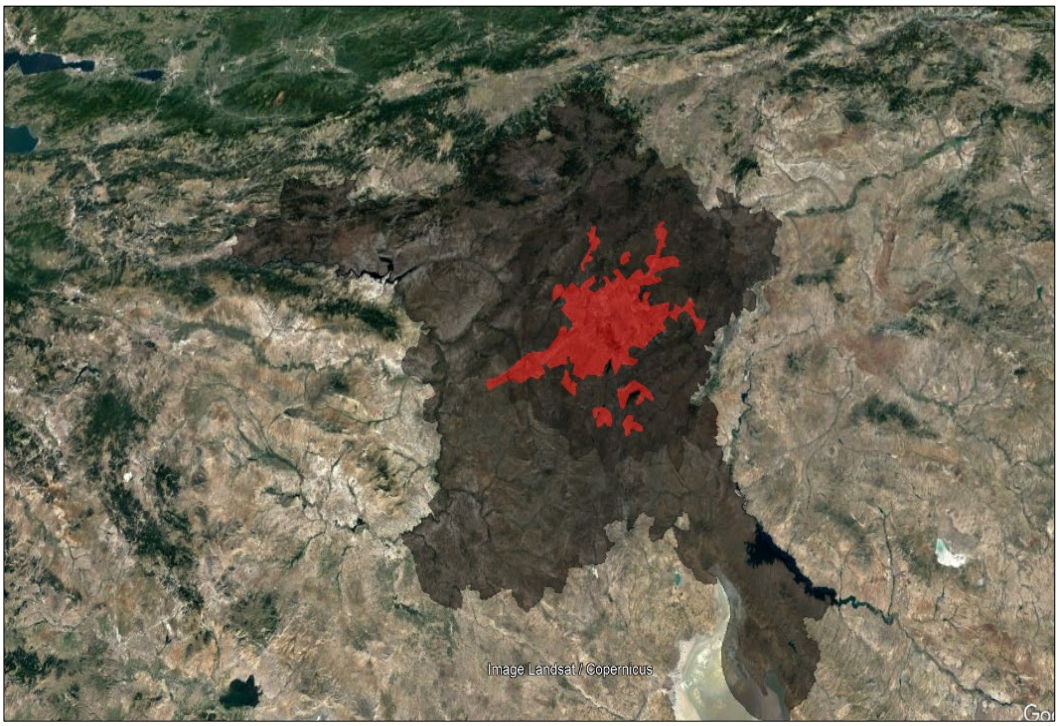


Figure 3.5 Ankara city macroform in the 2038 plan and the situation of urban sprawl within the borders of Ankara Metropolitan Municipality

Source: Produced by the Author, using Google Earth data, 2023

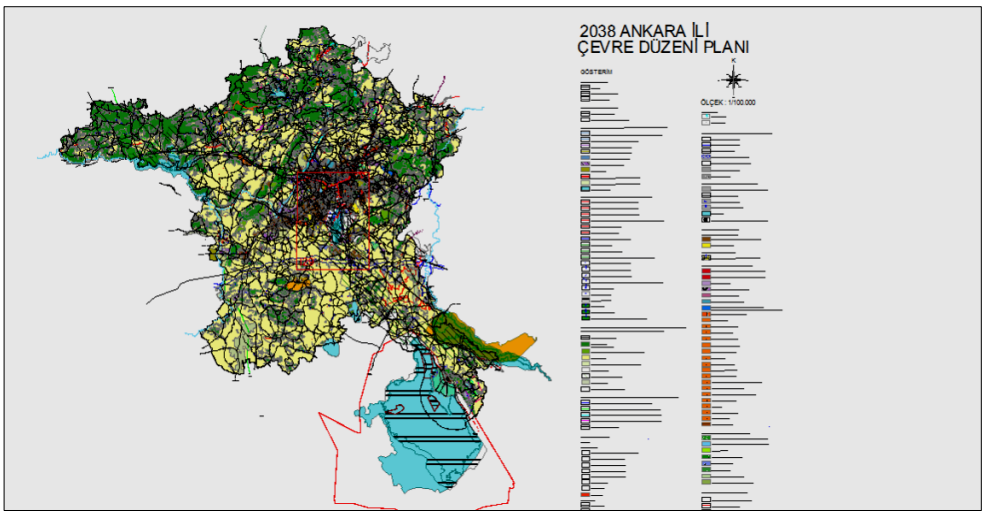


Figure 3.6 Ankara Environmental Plan for 2038 (AÇDP)

Source: Ankara Metropolitan Municipality, Planing and Urbanization Department

Figure 3.5 and Figure 3.6 display the city's macro form and the extent of urban sprawl resulting from surplus land production of the 2038 Ankara Environmental Plan and plan boundaries.

3.6.3.1 Akyurt District Municipality

According to the population data of 2015, there are 30.2 thousand people living in the settlement of Akyurt, which also serves as the boundary of the district municipality. However, based on the density decisions provided in the master plans, it has been determined that the population is estimated to be 491.8 thousand According to the Environmental Plan, the projected population for the year 2038 has been estimated to be 100 thousand individuals.

The district covers an area of 36.9 thousand hectares, of which 12.26% (4.5 thousand ha) is designated as planned areas. The remaining 87.74% of the municipality's boundaries are considered non- planned areas. The planned areas consist of 29.4% residential areas, 2.56% educational areas, 15.53% open green areas, 0.3% health facility areas, 0.18% social and cultural facility areas, 0.26% worship areas, 20.7% industrial and storage areas, 5.6% fairgrounds and 25.47% other usage areas.

According to the decisions and provisions of the 2038 plan, it has been determined that in planned areas where sufficient equipment areas have not been allocated, the property and development rights envisaged in existing planned areas are sufficient to accommodate a population of 16 times the current settlement population and 5 times the projected population and there is no need to create new additional residential development areas.

3.6.3.2 Altındağ District Municipality

According to the 2015 population data, there are 363.6 thousand people living in Altındağ, which is also the border of the district municipality. However, based on the population calculation made according to the density decisions given in the master plans, it has been determined that a population of 943 thousand has been assigned. As per the Environmental Plan, the projected population for the year 2038 has been forecasted to be 365 thousand individuals.

The district has a total area of 16.1 thousand hectares, out of which 28.34% (4.5 thousand ha) are planned areas. The remaining 71.66% of the municipal boundaries are non- planned areas. The planned areas consist of 45.23% residential areas, 1.63% educational areas, 7.7% open green areas, 0.62% health facility areas, 0.90% social and cultural facility areas, 0.43% worship areas and 44.12% other usage areas.

In the 2038 plan provisions and decisions, it has been determined that in planned areas where sufficient equipment areas are not allocated, the property and development rights envisaged in the existing planned areas are sufficient to accommodate a population three times the size of the current settlement population and therefore there is no need to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated according to the needs of the population in lower-tier plans.

3.6.3.3 Ayaş District Municipality

According to the population data of 2015, there are 12.6 thousand people living in the settlement of Ayaş, which also serves as the boundary of the district municipality. However, based on the population calculation made according to the density decisions given in the master plans, it has been determined that a population of 291.8 thousand has been assigned. As per the Environmental Plan, the anticipated population for the year 2038 has been projected to be 15 thousand individuals.

The district covers an area of 99.2 thousand hectares, of which 3% (2.9 thousand ha) are designated as planned areas. The remaining 97% of the municipality's boundaries are classified as non- planned areas. The planned areas consist of 45.6% residential areas, 1.16% educational areas, 8.38% open green areas, 0.38% healthcare facility areas, 2.77% social and cultural facility areas, 0.23% worship areas, 4.6% work areas and 36.88% other usage areas.

In the 2038 plan provisions and decisions, it has been identified that in planned areas, there is insufficient allocation of amenity areas. The property and development rights envisaged for existing planned areas are at a level that is sufficient to accommodate a population 20 times that of the current settlement. There is no need to create new additional residential development areas. However, in smaller-scale plans, social and technical infrastructure areas should be allocated according to the needs of the population.

3.6.3.4 Bala District Municipality

According to the population data of 2015, there are 21.6 thousand people living in Bala, which is also the boundary of the district municipality. Based on the density decisions given in the urban planning, a population assignment of 294 thousand has been calculated. The projected population for the year 2038 has been estimated to be approximately 25 thousand individuals according to the Environmental Plan.

The district covers an area of 184.8 thousand hectares, of which planned areas make up 1.17% (2.3 thousand ha). The remaining 98.83% of the municipality's boundaries consist of non- planned areas. The planned areas consist of 51.6% residential areas, 1.55% educational areas, 15.56% open and green areas, 0.52% healthcare facility areas, 0.97% social and cultural facility areas, 0.22% worship areas, 2.9% work areas and 26.68% other usage areas.

In the 2038 plan provisions and decisions, it has been determined that in planned areas where sufficient facilities are not allocated, the existing property and development rights foreseen in the current planned areas are sufficient to accommodate 15 times the population of the current settlement area and 10 times the projected population and there is no need to create new additional residential development areas. However, in smaller scale plans, social and technical infrastructure areas should be allocated according to the needs of the population.

3.6.3.5 Beypazarı District Municipality

According to the 2015 population data, Beypazarı settlement, which is also the boundary of the district municipality, has a population of 47.5 thousand. However, based on the population calculation made according to the density decisions given in the master plans, a population of 250 thousand has been assigned. The projected population for the year 2038 has been estimated to be 62 thousand individuals as per the Environmental Plan.

The district has a total area of 175.7 thousand hectares, of which 1.03% (1.8 thousand ha) is composed of planned areas. The remaining 98.97% of the municipality's boundaries consist of non- planned areas. The planned areas consist of 44.5% residential areas, 5.56% educational areas, 6.69% open and green areas, 0.52% healthcare facility areas, 0.96% social and cultural facility areas, 0.31% worship areas, 5.8% tourism areas, 5.3% work areas and 30.36% other usage areas.

In the 2038 plan provisions and decisions, it has been determined that in planned areas, where sufficient areas for facilities have not been allocated, the property and development rights envisaged in existing planned areas are sufficient to accommodate five times the population of the current settlement area and four times the projected population, which is adequate to accommodate one population. Therefore, there is no need to create new additional residential development areas. However, in smaller-scale plans, social and technical infrastructure areas should be allocated according to the needs of the population.

3.6.3.6 Çamlıdere District Municipality

According to the population data from 2015, there are 6.4 thousand people residing in the settlement of Çamlıdere, which is also the administrative boundary of the district municipality. However, based on the density decisions provided in the master plans, it has been determined that a population of 66 thousand is assigned to the area through population calculations. As per the Environmental Plan, it has been anticipated that the projected population for the year 2038 will be 10 thousand individuals.

The district covers an area of 78.5 thousand hectares, of which 0.79% (0.6 thousand ha) is made up of planned areas. The remaining 99.21% of the municipality's borders are outside of the city's planning zone. Planned areas consist of 54.6% residential areas, 1.41% educational areas, 8.75% open and green areas, 0.46% healthcare facility areas, 0.87% social and cultural facility areas, 0.22% worship areas and 33.69% other usage areas.

In the 2038 plan provisions and decisions, it has been determined that in planned areas where adequate equipment areas have not been allocated, the existing property and development rights envisaged in the current planned areas are sufficient for a population 10 times the size of the existing settlement area and 6 times the size of the projected population, which is sufficient to accommodate one population. It is

not necessary to create new additional residential development areas, however, in lower-tier plans, social and technical infrastructure areas should be allocated according to the needs of the population.

3.6.3.7 Çankaya District Municipality

According to the 2015 population data, there are 922.5 thousand people living in the Çankaya settlement, which is also the boundary of the district municipality. Based on the population calculation made according to the density decisions given in the master plans, a population allocation of 1.8 million has been determined. According to the Environmental Plan, it is estimated that the projected population for the year 2038 will be 1.1 million individuals.

The district covers an area of 46 thousand hectares, of which 36.10% (16.6 thousand ha) is designated as planned areas. The remaining 63.90% of the municipality's boundaries are classified as non- planned areas. The planned areas consist of 35.2% residential areas, 4.84% educational areas, 13.40% open and green areas, 1.23% health facility areas, 1.49% social and cultural facility areas, 0.27% worship areas, 1% commercial areas, 4.32% government institution areas and 32.7% other usage areas.

In the 2038 plan provisions and decisions, it has been determined that in planned areas where sufficient equipage areas are not allocated, the existing property and development rights envisaged in the current planned areas are sufficient to accommodate twice the population of the current settlement area and 1.8 times the projected population and there is no need to create new additional residential development areas that would suffice to accommodate a population.

3.6.3.8 Çubuk District Municipality

According to the population data of 2015, Çubuk settlement, which is also the border of the district municipality, has a population of 86 thousand. However, based on the population calculation made according to the density decisions given in the master plans, it has been determined that a population of 746.9 thousand has been assigned. According to the Environmental Plan, the projected population for the year 2038 has been estimated to be 98.7 thousand individuals.

The district has a total area of 117.5 thousand hectares, with planned areas accounting for 4.52% (5.3 thousand ha). The remaining 95.48% of the municipality's boundaries are classified as non- planned areas. The planned areas consist of 40% residential areas, 4.44% educational areas, 8.29% open and green areas, 0.31% health facility areas, 0.70% social and cultural facility areas, 0.26% worship areas and 46% other usage areas.

According to the 2038 plan provisions and decisions, it has been determined that in planned areas where adequate equipment areas are not allocated, the existing property and development rights foreseen in existing planned areas are sufficient to accommodate 9 times the population of the current settlement area and 8 times the projected population and there is no need to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated according to the needs of the population in lower-tier plans.

3.6.3.9 Elmadağ District Municipality

According to the 2015 population data, Elmadağ settlement, which has the same boundaries as the district municipal boundaries, has a population of 43.7 thousand people. However, based on the population calculation made according to the density decisions given in the master plans, it has been determined that the population

allocation is 103.6 thousand people. As per the Environmental Plan, the anticipated population for the year 2038 has been forecasted to be 73.3 thousand individuals.

The district covers an area of 63.2 thousand hectares, of which 1.2% (5.3 thousand ha) is designated as planned areas. The remaining 98.8% of the municipality's boundaries are classified as non- planned areas. The planned areas consist of 39.5% residential areas, 1.87% educational areas, 9.75% open and green areas, 0.30% health facility areas, 1.42% social and cultural facility areas, 0.39% worship areas, 10.5% official institution areas, 7.9% working areas and 28.37% other usage areas.

In the 2038 plan provisions and decisions, it has been determined that in planned areas where adequate equipment areas have not been allocated, the property and development rights envisaged in the existing planned areas are sufficient to accommodate 2.5 times the population of the current settlement area and 0.5 times the projected population and there is no need to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated according to the needs of the population in lower-tier plans.

3.6.3.10 Etimesgut District Municipality

According to the population data of 2015, Etimesgut settlement, which is also the border of the district municipality, has a population of 527.9 thousand. Based on the density decisions given in the master plans, it has been determined that a population of 2.3 million has been assigned. As per the Environmental Plan, it has been projected that the population for the year 2038 will reach up to 1.4 million individuals.

The district covers an area of 28.3 thousand hectares, of which 52.6% (14.9 thousand ha) consists of planned areas. The remaining 47.4% of the municipal boundaries are designated as non- planned areas. The planned areas consist of 38.14% residential areas, 2.41% educational areas, 8.85% open and green areas, 0.29% healthcare

facility areas, 0.85% social and cultural facility areas, 0.19% worship areas and 49.27% other usage areas.

In the 2038 plan provisions and decisions, it has been determined that in planned areas where sufficient provision areas have not been allocated, the existing property and development rights foreseen in the current planned areas are sufficient to accommodate four times the population of the existing settlement area and 1.5 times the projected population and there is no need to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated in small-scale plans according to the needs of the population.

3.6.3.11 Evren District Municipality

According to the 2015 population data, there are 2.8 thousand people living in the Evren settlement, which is also the boundary of the district municipality. However, based on the density decisions given in the master plans, it has been determined that a population of 41 thousand has been assigned. According to the Environmental Plan, the projected population for the year 2038 is estimated to be around 5 thousand people.

The district covers an area of 22.3 thousand hectares, of which 1.22% (0.2 ha) is designated as planned areas. The remaining 98.78% of the municipality's boundaries consist of non- planned areas. The planned areas consist of 73.6% residential areas, 1% educational areas, 2.58% open and green areas, 0.23% healthcare facility areas, 0.1% social and cultural facility areas, 0.32% worship areas and 22.27% other usage areas.

According to the provisions and decisions of the 2038 plan, it has been determined that in planned areas, the existing planned areas do not have sufficient designated areas for facilities. Additionally, the property and development rights envisaged in the existing planned areas are sufficient to accommodate 14 times the population of

the current settlement area and 8 times the projected population, which is adequate to meet the housing needs of one population. Therefore, there is no need to create new additional residential development areas. However, it has been identified that in smaller-scale plans, social and technical infrastructure areas should be designated according to the needs of the population.

3.6.3.12 Gölbaşı District Municipality

According to the population data of 2015, there are 122 thousand people residing in the settlement of Gölbaşı, which also serves as the boundary for the district municipality. However, based on the density decisions outlined in the municipal master plans, it has been determined that the area can accommodate a population of up to 803 thousand. As per the Environmental Plan, the projected population for the year 2038 has been estimated to be approximately 657.9 thousand individuals.

The district covers an area of 150.8 thousand hectares, of which 14.3% (21.6 thousand ha) is comprised of planned areas. The remaining 85.7% of the municipal boundaries are designated as non- planned areas. The planned areas consist of 44.5% residential areas, 3.34% educational areas, 14.27% open and green areas, 1.08% healthcare facility areas, 0.01% social and cultural facility areas, 0.79% worship areas and 26.01% other usage areas.

According to the provisions and decisions of the 2038 plan, in planned areas where sufficient space has not been allocated for facilities, the property and development rights envisaged in existing planned areas are adequate to accommodate a population five times the size of the current settlement area and 0.2 times the projected population, which is sufficient to provide housing for one population. Therefore, there is no need to create new additional residential development areas. However, it has been determined that social and technical infrastructure areas should be allocated in small-scale plans according to the needs of the population.

3.6.3.13 Güdül District Municipality

According to the 2015 census data, there are 8.3 thousand inhabitants residing in the Güdül settlement, which also serves as the administrative boundary of the district municipality. However, based on the population calculations derived from the density decisions stipulated in the master plans, it has been determined that the area is designated to accommodate a population of 21 thousand individuals. The projected population for the year 2038 has been estimated at 10 thousand individuals as per the Environmental Plan.

The district covers an area of 60.1 thousand hectares, of which 0.32% (0.2 thousand ha) is designated as planned areas. The remaining 99.68% of the municipal boundaries are considered non- planned areas. The planned areas consist of 59.7% residential areas, 1.81% educational areas, 7.71% open and green areas, 0.21% healthcare facility areas, 0.28% social and cultural facility areas, 0.04% worship areas and 30.25% other usage areas.

According to the provisions and decisions of the 2038 plan, it has been determined that in planned areas where sufficient open spaces have not been allocated, the existing property and development rights foreseen in current planned areas are sufficient to accommodate 2.5 times the population of the current settlement area and twice the projected population, thus there is no need to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated according to the needs of the population in small-scale plans.

3.6.3.14 Haymana District Municipality

According to the 2015 population data, Haymana settlement, which is also the boundary of the district municipality, has a population of 28.3 thousand. However, based on the population calculation made according to the density decisions given in the master plans, it has been determined that a population of 93 thousand has been

assigned. According to the Environmental Plan, the projected population for the year 2038 is estimated to be around 35 thousand people.

The district covers an area of 220 thousand hectares, of which 0.84% (2.9 thousand ha) is designated as planned areas. The remaining 98.16% of the municipality's boundaries are considered as non- planned areas. The planned areas consist of 15.88% residential areas, 1.53% educational areas, 19.82% open and green areas, 0.39% health facility areas, 1.97% social and cultural facility areas, 0.29% worship areas, 13.11% tourism areas and 47.01% other usage areas.

According to the provisions and decisions of the 2038 plan, it has been determined that in planned areas where sufficient facilities are not allocated, the property and development rights envisaged in the existing planned areas are sufficient to accommodate three times the current population of the settlement area and three times the projected population, enough to house one population. Therefore, there is no need to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated in small-scale plans according to the needs of the population.

3.6.3.15 Kalecik District Municipality

According to the population data of 2015, Kalecik settlement, which is also the border of the district municipality, has a population of 13.3 thousand. However, based on the population calculation made according to the density decisions given in the master plans, it has been determined that a population of 92.4 thousand has been assigned. The projected population for the year 2038 has been estimated to be approximately 15 thousand individuals, as per the Environmental Plan.

The district covers an area of 105.9 thousand hectares, of which 0.83% (0.8 thousand ha) is designated as planned areas. The remaining 98.17% of the municipal boundaries are categorized as non- planned areas. The planned areas consist of 41.14% residential areas, 1.39% educational areas, 7.28% green and open spaces,

0.08% health facility areas, 1.48% social and cultural facility areas, 0.14% worship areas and 48.49% other usage areas.

According to the provisions and decisions of the 2038 plan, it has been determined that in planned areas where sufficient equipment areas have not been allocated, the property and development rights envisaged in the existing planned areas are sufficient to accommodate six times the population of the current settlement area and six times the projected population. Therefore, there is no need to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated in small-scale plans according to the needs of the population.

3.6.3.16 Kahramankazan District Municipality

According to the population data of 2015, Kahramankazan settlement, which has the same boundaries as the district administrative boundaries and the district municipality, has a population of 51.7 thousand. However, based on the population calculation made according to the density decisions given in the master plans, it has been determined that a population of 472.7 thousand has been assigned. As per the Environmental Plan, the anticipated figure for the projected population in the year 2038 has been estimated at 150 thousand individuals.

The district covers an area of 59.2 thousand hectares, of which 13.66% (8 thousand ha) are planned areas. The remaining 86.34% of the municipality's boundaries are non- planned areas. The planned areas consist of 17.4% residential areas, 1.42% educational areas, 21.53% open and green areas, 0.53% healthcare facility areas, 0.78% social and cultural facility areas, 0.53% worship areas, 23.3% industrial areas and 34.51% other usage areas.

In the 2038 plan provisions and decisions, it has been determined that in planned areas where adequate allocation of infrastructure areas has not been made, the existing property and development rights envisaged in existing planned areas are

sufficient to accommodate a population 9 times the size of the current settlement area population and 3 times the size of the projected population and therefore there is no need to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated according to the needs of the population in lower-tier plans.

3.6.3.17 Keçiören District Municipality

According to the population data of 2015, there are 889.8 thousand people living in Keçiören, which is also the border of the district municipality. Based on the density decisions given in the master plans, it has been determined that a population of 1.5 million has been assigned through population calculations. As per the Environmental Plan, the projected population for the year 2038 has been forecasted to be 1.2 million individuals.

The district has a total area of 15.1 thousand hectares, of which 54.6% (8.2 thousand ha) is comprised of planned areas. The remaining 45.4% of the municipality's boundaries consist of non- planned areas. Planned areas consist of 50.23% residential areas, 1.62% educational areas, 6.93% open and green areas, 0.42% health facility areas, 0.48% social and cultural facility areas, 0.34% worship areas and 39.98% other usage areas.

According to the provisions and decisions of the 2038 plan, in planned areas where sufficient space has not been allocated for infrastructure facilities, the property and development rights stipulated in existing planned areas are sufficient to accommodate 0.7 times the population of the current settlement area and 0.2 times the projected population, which is adequate to meet the housing needs of a single population. Therefore, there is no need to create new additional residential development areas. However, it has been determined that social and technical infrastructure areas should be allocated in lower-tier plans according to the needs of the population.

3.6.3.18 Kızılcahamam District Municipality

According to the population data of 2015, there are 25.1 thousand people living in Kızılcahamam settlement, which is also the border of the district municipality. However, it has been determined that a population allocation of 60 thousand has been made based on the density decisions given in the master plans. According to the Environmental Plan, the projected population for the year 2038 is estimated to be 30 thousand people.

The district has a total area of 165.8 thousand hectares, of which 0.57% (0.9 thousand ha) is designated as planned areas. The remaining 99.43% of the municipality's boundaries consist of non- planned areas. The planned areas consist of 29.2% residential areas, 6.68% educational areas, 23.48% open and green areas, 1.10% healthcare facility areas, 4.81% social and cultural facility areas, 0.80% worship areas, 9.55% tourism areas and 24.38% other usage areas.

According to the decisions and provisions of the 2038 plan, in planned areas where sufficient space for facilities has not been allocated, the property and development rights projected for existing planned areas are deemed sufficient to accommodate 2.5 times the current population and 2 times the projected population. Therefore, there is no need to create new residential areas for additional development. However, in smaller-scale plans, social and technical infrastructure areas should be allocated according to the needs of the population.

3.6.3.19 Mamak District Municipality

According to the population data of 2015, Mamak settlement, which is also the border of the district municipality, has a population of 607.8 thousand people. However, based on the population calculation made according to the density decisions given in the master plans, it has been determined that a population of 2.3million people has been assigned. As per the Environmental Plan, it has been

estimated that the projected population for the year 2038 will be 1.3 million individuals.

The district covers an area of 33.5 thousand hectares, of which 42.82% (14.3 thousand ha) is designated as planned areas. The remaining 57.18% of the municipality's boundaries consist of non- planned areas. The planned areas consist of 48.05% residential areas, 2.14% educational areas, 11.46% open and green areas, 0.28% healthcare facility areas, 0.18% social and cultural facility areas, 0.26% worship areas and 37.01% other usage areas.

In the provisions and decisions of the 2038 plan, it has been determined that in planned areas, where sufficient facilities are not allocated, the current property and development rights anticipated in planned areas are adequate to accommodate four times the population of the existing settlement area and twice the projected population. Therefore, there is no need to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated according to the needs of the population in lower-tier plans.

3.6.3.20 Nallıhan District Municipality

According to the 2015 population data, there are 29.2 thousand people living in the settlement of Nallıhan, which is also the border of the district municipality. Based on the population calculation made according to the density decisions given in the municipal development plans, a population allocation of 75 thousand people has been determined. According to the Environmental Plan, the projected population for the year 2038 is estimated to be around 30 thousand people.

The district has a total area of 199.8 thousand hectares, out of which 0.39% (0.7 thousand ha) comprises planned areas. The remaining 99.61% of the municipality limits are classified as non-planned areas. The planned areas consist of 48.2% residential areas, 2.58% educational areas, 13.49% open and green areas, 0.41%

healthcare facility areas, 1.97% social and cultural facility areas, 0.54% worship areas, 7.9% working areas and 24.91% other usage areas.

In the 2038 plan provisions and decisions, it has been determined that in planned areas where adequate facilities have not been allocated, the existing property and development rights foreseen in the current planned areas are sufficient to accommodate 2.5 times the population of the current settlement area and twice the projected population, thus making it unnecessary to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated in accordance with the needs of the population in lower-tier plans.

3.6.3.21 Polatlı District Municipality

According to the 2015 population data, there are 121.8 thousand individuals residing in the Polatlı settlement, which also serves as the administrative boundary for the district municipality. Based on the population calculations made in accordance with the density decisions given in the master plans, a population assignment of 754.4 thousand individuals has been determined. As per the Environmental Plan, it has been estimated that the projected population for the year 2038 is 190.4 thousand individuals.

The district covers an area of 353 thousand hectares, of which 1.57% (5.5 thousand ha) is designated as planned areas. The remaining 98.43% of the municipality's boundaries consist of non-planned areas. The planned areas consist of 41.5% residential areas, 3.13% educational areas, 9.32% open and green areas, 0.40% health facility areas, 2.91% social and cultural facility areas, 0.41% worship areas, 2.9% working areas and 26.68% other usage areas.

In the 2038 plan provisions and decisions, it has been determined that in planned areas where sufficient equipment areas have not been allocated, the existing property and development rights foreseen in the current planned areas are sufficient to

accommodate 6 times the population of the existing settlement area and 4 times the projected population and there is no need to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated in lower-tier plans according to the needs of the population.

3.6.3.22 Pursaklar District Municipality

According to the population data of 2015, there are 133.9 thousand people living in Pursaklar, which is also the border of the district municipality. Based on the density decisions given in the master plans, it has been determined that a population assignment of 1 miilion has been made. As per the Environmental Plan, the projected population for the year 2038 has been estimated to be 334.4 thousand individuals.

The district covers an area of 13 thousand hectares, of which 30.43% (4 thousand ha) is designated as planned areas. The remaining 69.57% of the municipality's boundaries are considered to be outside the development zone. The planned areas consist of 54.81% residential areas, 0.84% educational areas, 5.50% open and green areas, 0.21% healthcare facility areas, 0.15% social and cultural facility areas, 0.19% worship areas and 38.3% other usage areas.

In the 2038 plan provisions and decisions, it has been determined that in planned areas where sufficient areas for facilities have not been allocated, the property and development rights envisaged in existing planned areas are sufficient to accommodate the population of the current settlement area multiplied by 8 and the projected population multiplied by 3, without the need for new additional residential development areas. However, in smaller-scale plans, social and technical infrastructure areas should be allocated according to the needs of the population.

3.6.3.23 Sincan District Municipality

According to the population data of 2015, there are 506.9 thousand people residing in Sincan, which also serves as the boundary for the district municipality. However, based on the density decisions specified in the current master plans, it has been determined that a population allocation of 2.2 million is feasible. As per the Environmental Plan, it has been forecasted that the projected population for the year 2038 will be 908.7 thousand individuals.

The district covers an area of 87.8 thousand hectares, with planned areas accounting for 21.60% (18.9 thousand ha). Meanwhile, 78.60% of the municipal borders consist of non- planned areas. According to the data, planned areas consist of 33.6% residential areas, 2% educational areas, 9% open and green areas, 0.3% healthcare facility areas, 1% social and cultural facility areas, 0.30% worship areas, 29% industrial areas and 24.8% other usage areas.

The 2038 plan has determined that in planned areas where adequate equipment areas have not been allocated, the property and development rights envisaged in existing planned areas are sufficient to accommodate 4.5 times the population of the current settlement area and 2.5 times the population projection and there is no need to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated according to the needs of the population in lower-tier plans.

3.6.3.24 Şereflikoçhisar District Municipality

According to the 2015 population statistics, the settlement of Şereflikoçhisar, which also serves as the boundary of the district municipality, has a population of 33.7 thousand individuals. However, it has been determined that a population assignment of 133.5 thousand has been made based on the population calculation carried out according to the density decisions provided in the master plans. As per the

Environmental Plan, it has been estimated that the projected population for the year 2038 would be approximately 48 thousand individuals.

The district covers an area of 200.6 thousand hectares, of which 0.57% (1.1 thousand ha) is designated as planned areas. The remaining 89.43% of the municipal boundaries are classified as non-planned areas. Planned areas consist of 53.3% residential areas, 3.04% education areas, 10.93% open and green areas, 0.54% healthcare facility areas, 0.47% social and cultural facility areas, 0.24% worship areas and 31.48% other usage areas.

In the 2038 plan provisions and decisions, it has been determined that in planned areas where sufficient areas for facilities have not been allocated, the property and development rights envisaged in existing planned areas are sufficient to accommodate four times the population of the current settlement area and 2.5 times the projected population and there is no need to create new additional residential development areas. However, it has been identified that social and technical infrastructure areas should be allocated in lower scale plans according to the needs of the population.

3.6.3.25 Yenimahalle District Municipality

According to the population data of 2015, Yenimahalle settlement, which also serves as the border of the district municipality, has a population of 632 thousand people. However, based on the population calculation made according to the density decisions given in the master plans, it has been determined that a population of 1.7 miilion people has been assigned. The projected population for the year 2038 has been estimated to be 1.2 million people as per the Environmental Plan.

The district covers an area of 23.3 thousand hectares, of which planned areas make up 60.75% (14.1 thousand ha). The remaining 39.25% of the municipal boundaries constitute non- planned areas. Planned areas consist of 28.3% residential areas, 3.12% educational areas, 10.27% open and green areas, 1.39% health facility areas,

1.43% social and cultural facility areas, 0.33% worship areas and 55.16% other usage areas.

According to the 2038 plan provisions and decisions, in planned areas where sufficient areas for facilities have not been allocated, the existing property and development rights envisaged in the current planned areas are adequate to accommodate three times the population of the current settlement and 1.5 times the projected population and there is no need to create new additional residential development areas. However, it has been determined that social and technical infrastructure areas should be allocated according to the needs of the population in lower-tier plans.

3.6.3.26 Evaluation of 2038 Ankara Environmental Plan

2038 Population Projection of Ankara Districts (According to Increase Rate, Bank of Provinces and Exponential Methods) and population assignments of planned areas are presented in Table 3.2.

Table 3.2 2038 AÇDP Population Projection of Ankara Districts

DISTRICTS	Population in 2015	Increase rate method- projection	Bank of Provinces method- projection	Exponential method- projection	Projection population Avarages	Planned areas population acceptance	2038 AÇDP plan acceptance
Etimesgut	527959	1269347	818357	2171335	1419680	2313971	1419680
Mamak	607878	876472	1302534	826742	1001916	2339211	1302534
Keçiören	889875	1273097	1667568	1292948	1411204	1551875	1273097
Yenimahalle	632286	1221542	1474800	1446210	1380851	1735055	1221542
Çankaya	922536	1070213	1059980	1205440	1111878	1754702	1111878
Sincan	506950	764442	908752	863941	845712	2258587	908752
Gölbaşı	122288	317218	208509	657938	394555	803074	657938
Pursaklar	133961	295856	237382	470103	334447	1091354	334447
Altındağ	363687	345932	274466	336296	318898	943097	365000
Polatlı	121858	170012	190406	155473	171964	754469	190406
K.Kazan	51764	82383	58313	100620	80439	472754	150000
Çubuk	86055	93689	108455	94160	98768	746925	98768
Elmadağ	43776	64319	73362	56308	64663	103680	73362
Beypazarı	47582	53038	62073	48564	54558	250148	62073
Akyurt	30245	44439	50245	50278	48321	491818	100000
Ş. Koçhisar	33729	36205	48013	28398	37539	133546	48013
Nallıhan*	29209	22562	23140	25442	23715	74939	30000
K. Hamam*	25179	17685	19069	18579	18444	60057	30000
Haymana*	28355	3471	26085	12218	13925	93283	35000
Kalecik*	13388	5623	11314	5960	7632	92435	15000
Bala*	21618	3272	17844	1390	7502	294139	25000
Ayaş*	12678	1950	10503	7399	6617	291874	15000
Güdül*	8392	2381	7018	4511	4637	21178	10000
Çamlıdere*	6479	389	6196	1288	2624	66059	10000
Evren*	2847	111	2856	449	1139	41104	5000
Total	**5270574**	**8035648**	**8667240**	**9881990**	**8861628**	**18779334**	**9.492.490**

Source: 2038 Ankara Environmental plan &Transportation Master Plan Study

According to Table 3.2 data, it is predicted that Etimesgut will be the largest district in terms of population for Ankara in the year 2038, with the highest percentage increase being in Gölbaşı district with 438%. When compared to the 2015 population data, it is estimated that there will be a population increase of 438% in Gölbaşı, 230% in Akyurt, 190% in Kazan, 169% in Etimesgut, 150% in Pursaklar and 114% in Mamak. If no intervention is made, it is expected that the population in the districts of Kızılcahamam, Haymana, Kalecik, Evren, Çamlıdere, Nallıhan, Güdül, Bala and Ayaş, excluding Beypazarı, Polatlı, Şereflikoçhisar and Elmadağ located on the outskirts of the city, will decrease. Given the situation, population assignments made based on plans are not realistic. Furthermore, in these plans, it has been determined that the designated areas for equipment are not sufficient in the planned areas and the property and development rights anticipated in these areas would allow for a population significantly higher than the current population to reside, thus rendering the creation of new additional residential areas unnecessary. Instead, it has been deemed necessary to set aside additional social and technical infrastructure areas.

Ultimately, a common characteristic of district municipalities that were later included within the borders of the Ankara metropolitan municipality by the Law No. 6360 is that more land has been produced than what will be required by the future population residing in these settlements.

3.6.4 Spatial Reflections of Surplus Land Production Created Through Spatial Plans, Changes Over Time and Consequences: Akyurt, Kahramankazan and Çubuk Districts

Akyurt, Çubuk and Kahramankazan districts, which have undergone significant changes due to urban development trends and industrialization potential, are excellent examples of areas in the north of Ankara where expansion and sprawl processes have occurred, as well as where surplus land production has been intensively carried out through spatial planning.

The districts of Çubuk, Akyurt and Kahramankazan have high agricultural production potentials. However, due to planning preferences that prioritize industrial and storage facilities, which cover a significant area, they are also prominent for residential use. Recently, areas have been favored by investors who prioritize production and employment for their investments in factory and production facilities.

The decision-makers and demand owners in these fields share a common characteristic, which is their preference for producing excessive amounts of land for housing purposes, while disregarding the agricultural production and livestock potentials of the region.

The study examines the spatial implications and effects of surplus land production in the settlement areas of Çubuk, Akyurt and Kahramankazan districts, which are located on efficient plains and agricultural lands and have the highest potential to be affected by earthquakes due to their proximity to the North Anatolian Fault Zone. These districts also house small, medium and large-scale production facilities with employment opportunities within their municipal boundaries. The study utilizes digital master plan data obtained from the district municipalities to investigate the spatial implications and effects of surplus land production.

According to the Metropolitan Municipality Law No. 3030, the districts of Akyurt, Çubuk and Kahramankazan, which are outside the borders of Ankara Metropolitan Municipality, have continued their development through independent planning practices that do not require plan integrity and control with the main city until the implementation of the Law No. 5216.

Following the empowerment and strengthening of local governments' planning and approval authorities, coupled with the impact of conjunctural factors, intensive urbanization efforts were carried out. Numerous master plans were approved by municipal councils at various dates and each municipality opened up quite large areas for development, even when it was unnecessary.

The macro form of the city has expanded extensively and sprawled due to the surplus production of land. In order for investment to be feasible in these areas, it is imperative to enhance the infrastructure and other transportation facilities. Nevertheless, this probability does not seem to be imminent at present.

The commencement and culmination of the production of surplus land, as well as its present condition, signify the historical era prior to the enactment of the 5216 legislation. Plans that are produced by municipalities in isolation from the metropolitan area and are based on exaggerated population projections have resulted in associated issues.

The overproduction of land has led to the expansion of urban areas, both in residential areas and in Ankara as a whole. This has had a number of negative consequences and impacts which must be addressed.

Prior to being incorporated into the metropolitan boundaries, it has been identified that hectares of land were planned and developed by independent district municipalities that could operate independently from the metropolitan administrative structure and these plans were highly problematic. For the first time, in the 2023 Capital Ankara Master Plan, it has been determined that these plans were also present in district municipalities.

To address these issues, it is pointed out that comprehensive revisions need to be made to these plans and concrete findings and interpretations have been developed to improve the plans. The issue of surplus land production has become one of the fundamental elements of the BANİP plan.

In order to address these issues, it is indicated that comprehensive revisions need to be made to these plans and suggestions for improving the plans are developed through concrete findings and interpretations. The issue of producing surplus land has become one of the fundamental elements of the BANİP plan. It has been recorded in the AÇDP plan that there is no longer a need for more planned land.

Both macro plans predict that there is no need for new settlement areas in the boundaries of the municipalities of these three districts and it will not be necessary for a long time to come, which is clearly stated.

According to the population data of the year 2000, Akyurt, Kahramankazan and Çubuk had populations of 20 thousand, 30 thousand and 60 thousand, respectively. In 2015, these populations increased to 30 thousand, 50 thousand and 85 thousand, respectively. It is projected that by 2023, the populations will increase to approximately 40 thousand, 59 thousand and 91 thousand, respectively. However, it is apparent from the implemented urban plans that the settlements have been organized to accommodate populations that are 8 to 12 times greater than the current population.

The anticipated population capacities of these settlements, which fluctuate between 40 thousand to 91 thousand individuals, along with the corresponding land production, appear implausible. Considering the estimated possibilities of accommodating 490 thousand, 470 thousand, and 746 thousand people, the current population figures seem inadequate.

The growth of these settlements by 8-12 times and reaching these population sizes does not seem realistic at all. The population data of the last 20 years also supports this situation.

In order to demonstrate the outcomes and spatial implications of the production of surplus land through spatial plans, the boundaries of planned areas in Çubuk, Akyurt and Kahramankazan districts have been evaluated in conjunction with satellite imagery.

In the regions where a deliberate urbanization has been implemented, satellite images from 2002 until the present (2002, 2010, 2016, 2020), have been superimposed with land use plans. At this point, care has been taken to create the data with the same region and angle.

Based on this data, the development and transformation of the municipalities of Çubuk, Akyurt and Kahramankazan during the period when spatial plans were generally implemented between 1980 and 2000 have been examined.

It has been observed that in these three districts, excessive land has been produced, resulting in urban development areas that have been created by jumping and leaping rather than in the form of oil stains. This has led to the loss of productive agricultural land, limited public transportation and accessibility and a high volume of vehicular traffic and exhaust emissions in these areas.

It has been determined that the planned plots of land are subject to speculative buying and selling movements, wherein they are solely purchased and sold without any investments being made. Furthermore, it remains unclear whether or not these plots are suitable areas for the proper investment purposes.

The properties that have been converted into planned land by municipalities through development changes can be a financial burden for property owners due to property tax payments and can also cause significant economic burdens for public institutions that invest in public infrastructure due to the demand and pressure for their realization.

Furthermore, there is a necessity for the expropriation of numerous urban social and technical infrastructure areas that have been designated in the master plans, which would have a negative economic impact on local administrations.

Local governments have attempted to intervene in these problematic plans by making revisions and striving to improve them through these revisions. Due to the problematic plans causing urban sprawl, comprehensive revisions need to be made. Therefore, Çubuk and Kahramankazan district municipalities have undertaken phased revisions of the master plans to correct the faulty and deficient aspects of the plans.

Although the aforementioned revisions aim to rectify the deficiencies of current plans, they fail to offer any tangible recommendations concerning the ramifications of deviation and their mitigation.

According to the current legal and technical framework, it is not possible to do so. Reverting the status of a planned plot of land to its previous condition is almost impossible.

The conversion of the rights of the landowners into land is perceived as the elimination of property and development rights. Therefore, the option of restoring these lands to their original state is not feasible.

The revisions implemented had led to relinquishing some gains for property and development rights holders, thereby necessitating judicial intervention and subsequently resulting in cancellation of many of these revisions through court orders.

A delicate balance is at play here, where property and development rights must be balanced with considerations for public interest, urban planning principles and the future of the city. Without achieving this balance, any actions taken are unlikely to yield the desired results.

The efforts and endeavors made in this regard may still face a high chance of being reversed by the judiciary, as it has happened in the past.

The pivotal factor is the proper and systematic determination of the development plan for a certain location.

Decisions should be made more carefully, attentively and with greater control. Otherwise, due to existing legislation and actual circumstances, many times the results of such actions cannot be reversed or compensated for.

The current legal arrangements, combined with our existing knowledge and capabilities, make planning activities that will enable the acquisition of these areas for the city seem like the most viable solution.

In order for our cities to develop into more livable and sustainable areas that encompass principles of urban planning and public interest, while minimizing damage to public finance, it is imperative that planners and political decision-makers who oversee the planning process manage their planning activities and processes with great care.

The future of the city can be safeguarded through measures that are not excessively radical, without placing it under mortgage. It is imperative to provide the involved parties with a comprehensive understanding of the issues and encourage public participation.

3.6.4.1 Akyurt District Municipality Results

It can be understood from the implemented urban plans that the settlement of Akyurt, with a population of 20 thousand people in the year 2000, 30 thousand people in the year 2015 and an estimated population of around 40 thousand people in the year 2023, has been organized to accommodate a population that is more than 12 times the current population.

The current population of this settlement is 40 thousand people, but the projected population facilities for 490 thousand people and the resulting land production do not correspond to reality.

The data indicates that one of the most significant factors contributing to urban sprawl is the planning decisions made in the post-1980 period, which resulted in excessive development of land for residential purposes through planned initiatives.

It does not seem realistic for the district of Akyurt to grow 12 times its current size and reach such population levels. The population data from the last 20 years also support this situation. These data also show that much more land has been produced than the population needs.

In order to demonstrate the consequences of surplus land production through spatial plans, the boundaries of planned development areas in Akyurt district were evaluated along with satellite imagery.

In these areas where a planned settlement has taken place, satellite images from 2002 to present (2002, 2010, 2016, 2020) have been overlaid with master plans.

When analyzing the usage status of the fringe areas located within the Akyurt settlement area, it can be observed from Figure 3.7 and Figure 3.8 that despite the passage of at least 25 years since the development of the master plans, approximately 25% of the area (indicated by dark brown) has been developed, while 75% of it remains as empty spaces that shape the city's macroform.

It has been noted that even though urban plans were established years ago, the designated areas continue to exist only in written form, with no significant progress being made over time. This procedure is expected to persist in the forthcoming years.

It has been observed that parcels of land with development permits are subject to transactions primarily for speculative purposes, without any significant investments being made. In reality, it is not known whether there are suitable areas for making the correct investment.

In this case, it is possible to talk about a spatial plan that exists only on paper. These plans do not have any counterpart in the field.

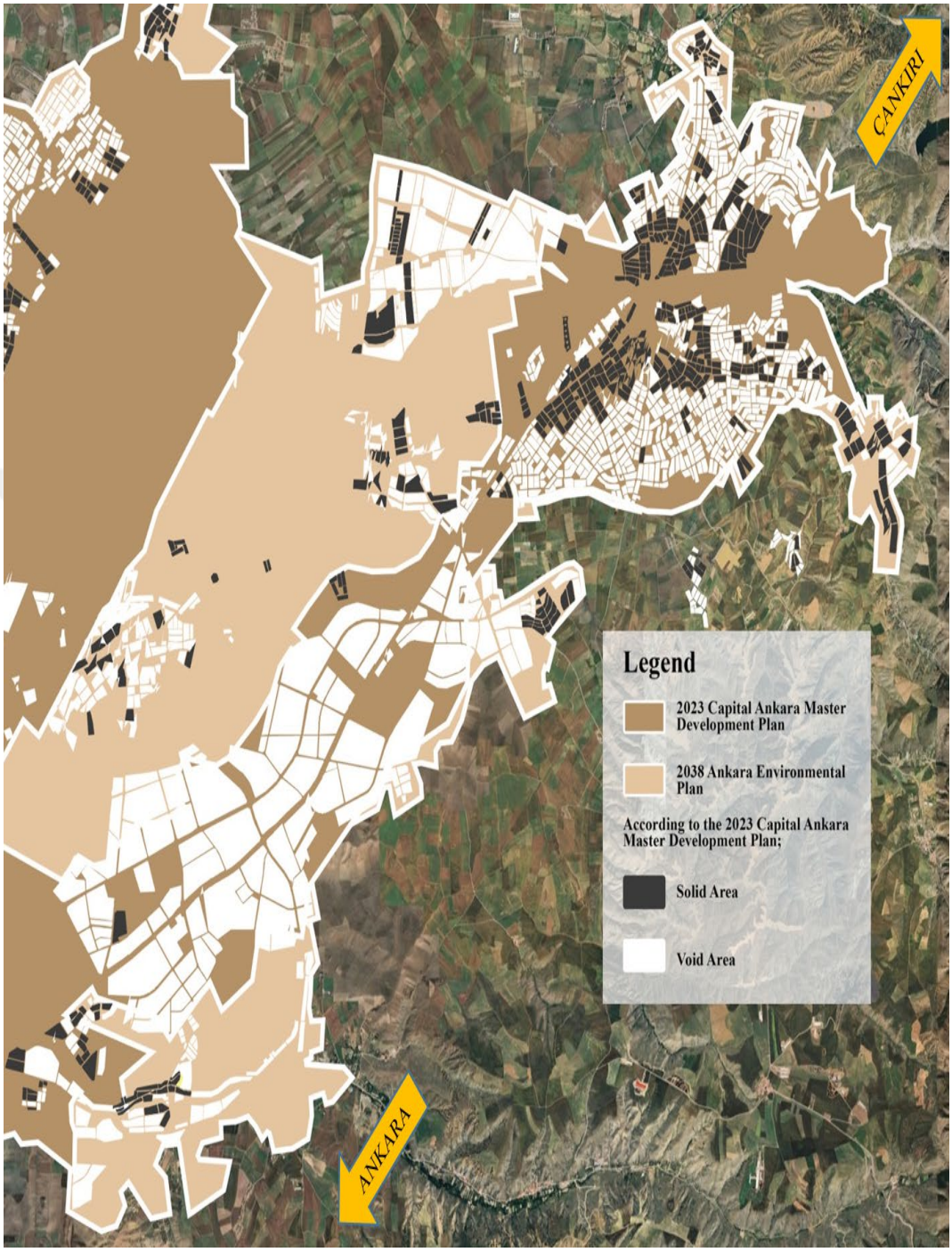


Figure 3.7 Satellite image of built-up and unbuilt areas in Akyurt spatial plans

Source: Produced by the author, using Google Earth data, 2023

2002

2010

2016

2020

Figure 3.8 Satellite images of built-up and unbuilt areas in Akyurt spatial plans from 2002, 2010, 2016, 2020

Source: Produced by the author, using Google Earth data, 2002, 2010, 2016, 2020

3.6.4.2 Çubuk District Municipality Results

According to the population data, Çubuk settlement has a population of 60,000 people in 2000, 85,000 people in 2015 and is expected to have a population of around 91,000 people in 2023. It is apparent from the implemented master plans that the settlement has been organized to accommodate a population that is over eight times larger than the current population.

The projected population facilities of 746,000 people in this settlement, which has a population of 90,000, do not correspond with the reality in terms of land production and reflection.

The data indicates that one of the most significant factors contributing to urban sprawl is the excessive opening up of areas for development through planning decisions in the post-1980 era.

The prospect of Çubuk district undergoing an eight-fold expansion and achieving the aforementioned magnitudes of population appears implausible. This assertion is corroborated by the population statistics from the past two decades.

The data presented indicate that a surplus of land has been generated in excess of the needs of the population.

In order to demonstrate the consequences of producing surplus land through spatial plans, the boundaries of planned areas in Çubuk district have been evaluated in conjunction with satellite imagery.

In areas where a planned expansion has occurred, satellite images from 2002 to present (2002, 2010, 2016, 2020) have been overlaid with master plans.

When the settlement of Çubuk is analyzed in terms of the usage status of the fringe areas located within the city perimeter, as depicted in Figures 3.9, it can be observed that approximately 35% of the area (indicated in dark brown) has been developed, while the remaining 65% still remains as empty spaces shaping the urban macroform, despite at least 25 years having passed since the development plans were established.

In this context, it has been determined through Figure 3.10 images that despite the fact that urban plans were made years ago, the planned areas have continued to exist only on paper without any development over the years.

It is apparent that this process will persist in the forthcoming years.

Plotted lands are noted to solely undergo buying and selling transactions, change ownership and experience speculative purchases for the purpose of profit without any investment being made. In reality, the existence of appropriate areas for making sound investments remains uncertain.

In this case, it is possible to speak of a spatial plan that only exists on paper. These plans have no corresponding presence in the field.

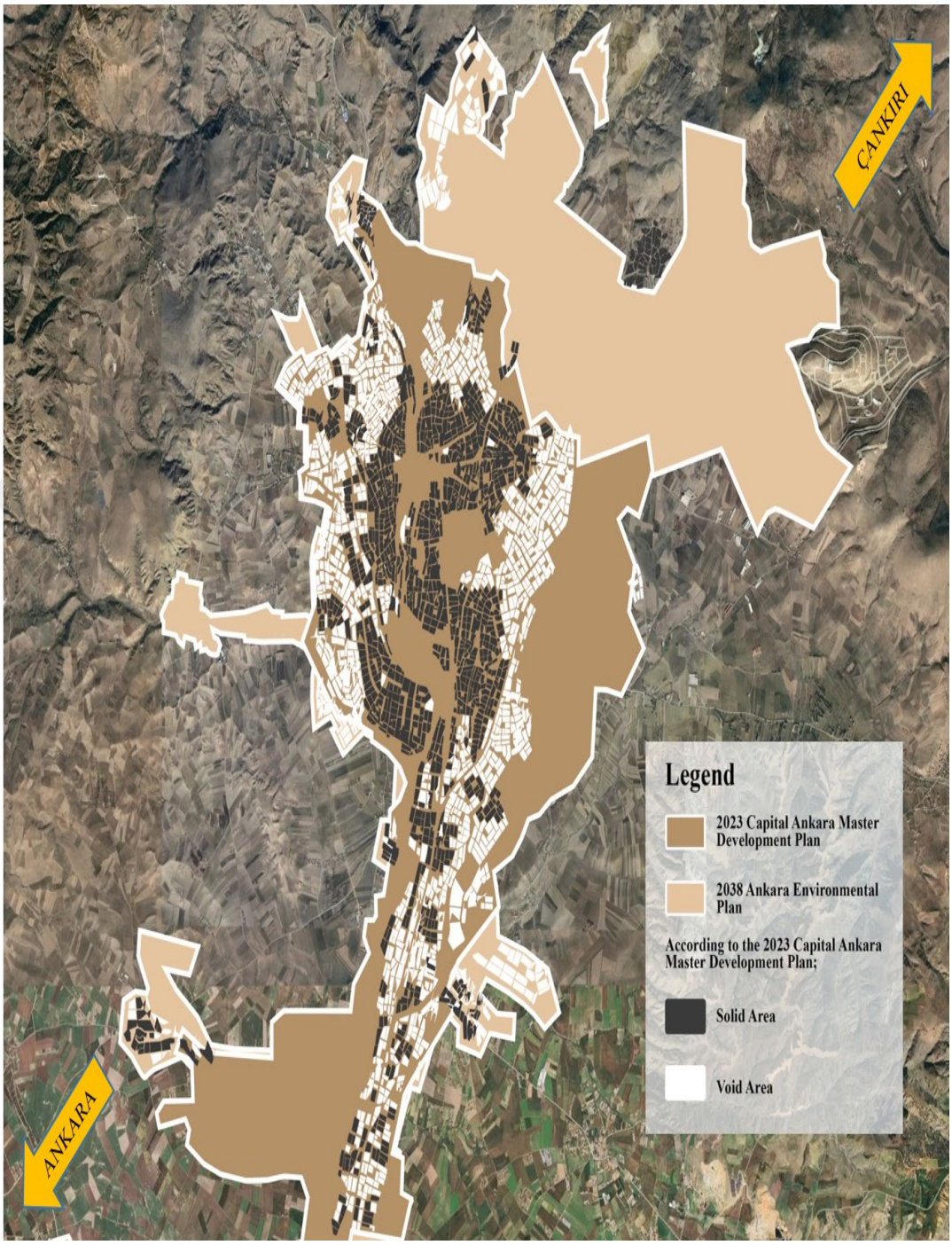
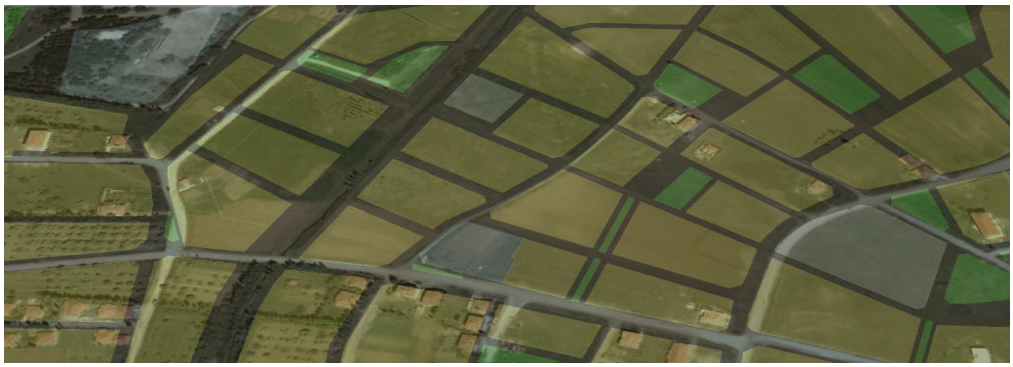


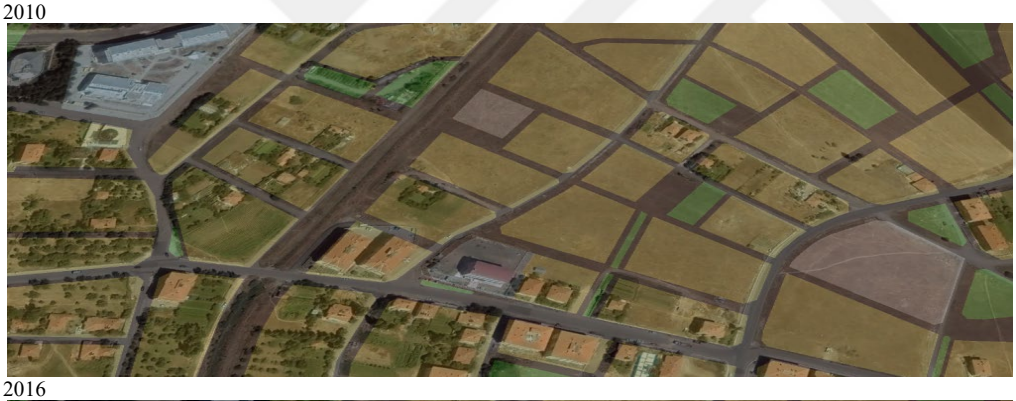
Figure 3.9 Satellite image of built-up and unbuilt areas in Çubuk spatial plans

Source: Produced by the author, using Google Earth data, 2023

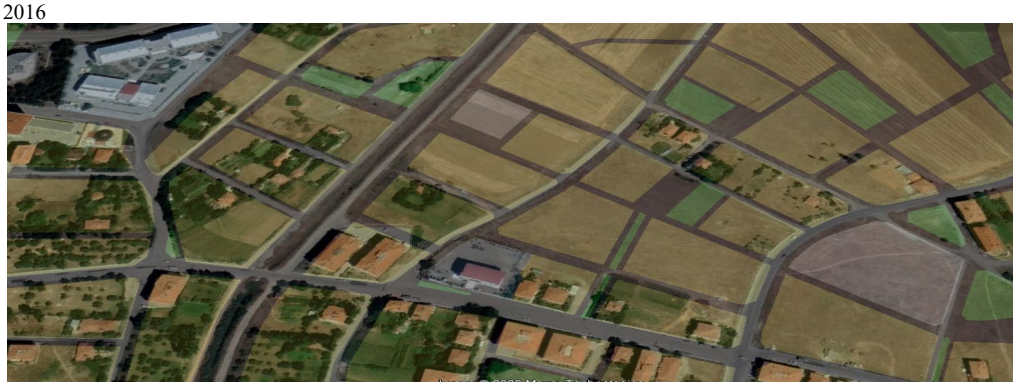


2002

2010



2016



2020

Figure 3.10 Satellite images of built-up and unbuilt areas in Çubuk spatial plans from 2002, 2010, 2016, 2020

Source: Produced by the author, using Google Earth data, 2002, 2010, 2016, 2020

3.6.4.3 Kahramankazan District Municipality Results

It has been observed that Kahramankazan, a settlement area, has a population of 30 thousand people in the year 2000, 50 thousand people in the year 2015 and is expected to have a population of around 59 thousand people in the year 2023. With the implementation of the master plans, it is evident that the settlement area has been organized to accommodate a population that is more than eight times the current population.

The current population of 59,000 individuals is not in accordance with the anticipated population capacity of 470,000 individuals and the consequent land production in this locality.

The data indicates that one of the most significant factors contributing to urban sprawl is the planning decisions made regarding the excessive amount of land opened up for development through plans in the post-1980 era.

The expansion of Kahramankazan district by 8 times and reaching such population sizes does not seem realistic at all. The population data of the last 20 years also supports this situation.

The aforementioned data demonstrate that an excessive amount of land has been generated in comparison to the requirements of the populace.

In order to demonstrate the consequences of surplus land production through spatial planning, the boundaries of the planned urban areas in Kahramankazan district have been evaluated in conjunction with satellite imagery.

In areas where planned urbanization has occurred, satellite images from 2002 to present (2002, 2006, 2010, 2020) have been overlaid with master plans.

When examining the usage status of the fringe areas surrounding the settlement of Kahramankazan, located on the outskirts of the city, based on the data presented in Figures 3.11, it can be inferred that despite at least 25 years having passed since the development of the urban plans, approximately 20% of the area (represented by dark

brown) has been developed, whereas 80% remains unoccupied and continues to shape the city's macroform.

It has been observed through Figure 3.12 that although master plans were made years ago, the designated areas still exist on paper without any development over the years.

It is apparent that this process will persist in the upcoming years.

Observations indicate that plots with development permission are subject to speculative buying and selling activities, with no investment being made. The existence of appropriate investment opportunities is not known with certainty.

In this case, it is possible to speak of a spatial plan that only exists on paper. These plans do not have any corresponding presence in the field.

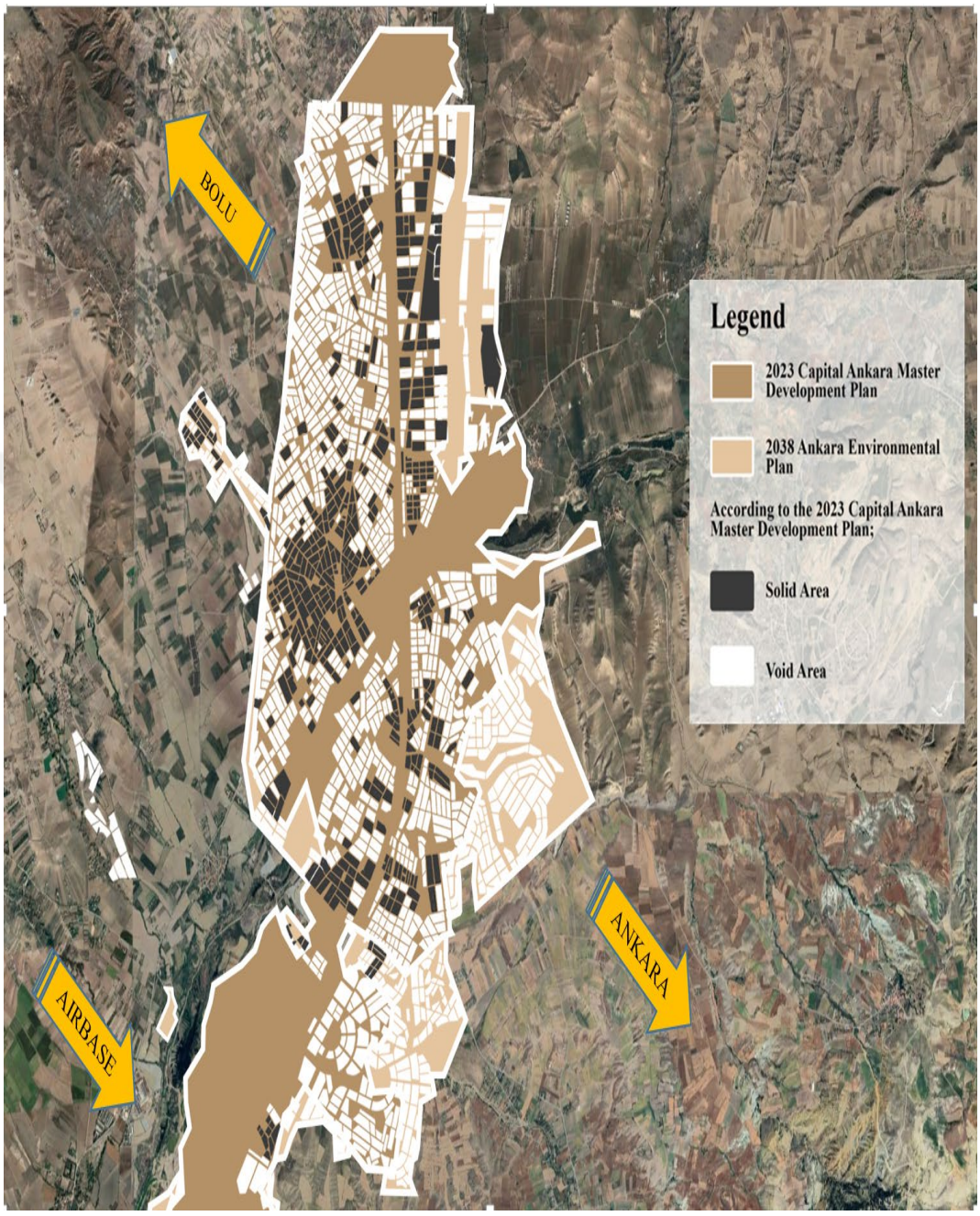


Figure 3.11 Satellite image of built-up and unbuilt areas in Kahramankazan spatial plans

Source: Produced by the author, using Google Earth data, 2023

2002

2010

2016

2020

Figure 3.12 Satellite images of built-up and unbuilt areas in Kahramankazan spatial plans from 2002, 2010, 2016, 2020

Source: Produced by the author, using Google Earth data, 2002, 2010, 2016, 2020

In conclusion, it has been observed that in Akyurt, Kahramankazan and Çubuk settlements, despite the fact that urban plans were made years ago and registered in the land registry, the existence of these planned areas only remains on paper. However, it has been determined that these areas are surplus to requirements and as a result, there has been no development in these areas over the years. It is understood that this process will continue in the coming years and that these plans have no practical implementation in the field.

Despite the fact that urban plans have been created for many areas for a long time, there are still many regions where no construction has taken place, with limited access due to the lack of roads. In areas where roads have not been opened, it is likely that infrastructure investments such as electricity, sewage and natural gas are also nonexistent. The lack of infrastructure makes it even more difficult for construction and transformation to take place.

The reconfiguration of the role of planning, which plays a crucial role in the urban sprawl, is evidently necessary.

The optimal course of action in this matter is to cease the production of new land in these areas, regardless of the underlying reasons. The generation of additional land through spatial planning will not be necessary within the forthcoming 50-100 year period.

It is imperative that all parties involved recognize that there is no need for further planning to generate new plots with new development regulations, thus enabling the creation of new land under development.

CHAPTER 4

CONCLUSION

4.1 Consequences of Excessive Growth in Terms of "Spatial Planning

After the 1980s, the influence of neo-liberal policies caused the cities in Türkiye to sprawl and develop, resulting in significant changes in their social, economic and spatial structures. The Law No. 3030 and subsequent legal arrangements, the expansion of municipal borders, independent planing practices of municipalities, spontaneous speculative and populist approaches of politicians and society, urban rent, TOKİ aplications and municipal policies have accelerated the tendency of large cities like Ankara to sprawl. Throughout this process planning methodology and structures of local governments have changed. It is necessary to examine the factors that contribute to the growth of metropolitan cities and develop strategies to control urban sprawl.

The concept of urban sprawl is widely used in the discipline of spatial planning. The phenomenon of urban sprawl has been on the planning research agenda for over fifty years, primarily through discussions about the ideal form of cities and metropolitan areas. In the realm of scientific literature, there exists a broad consensus regarding the adverse consequences as well.

All the global factors that trigger urban sprawl worldwide have led to the emergence of urban sprawl in Türkiye, while the country's unique structures and policies also play a role in the growth of cities (Öncel & Meşhur, 2021).

After the 1980s, it has been observed that cities in Türkiye have undergone rapid development by expanding into the periphery due to the influence of neo-liberal policies. As a result of this process, peripheral settlements have entered into a dynamic process of change. The rural settlements close to metropolitan areas are

undergoing transformation from administrative, demographic and economic perspectives, due to the influence of the city. This transformation is causing significant changes in social and spatial structures (Yenigül & Çamur, 2013).

With the advent of urban sprawl, various changes have occurred that have had significant impacts on the environment and society. One of the most notable effects has been the emergence of an irregular settlement pattern that has disrupted the natural landscape of areas outside the city's settled area. This has resulted in the destruction of agricultural areas located between urban functions selected at the periphery, leading to significant harm to the environment

The surplus production of land due to spatial planning and the phenomenon of urban sprawl can lead to situations where local authorities may become helpless or insensitive. This can result in consequences that may have an adverse impact on the budget, city life and its residents.

The demand and pressure for the provision of infrastructure services such as roads, water supply and sanitation, electricity, natural gas and public transportation in an unplanned, unprogrammed and untimely manner, which is not feasible, increases the additional costs and budget deficits for local governments and other service providers.

The assessment of property and development rights in the legal and judicial realm, the manner in which administrative and judicial authorities address the urban sprawl and hence the legal viewpoint, all pose challenges to the adoption of a correct approach and formulation of policies to control urban sprawl. Due to legal regulations and judicial decisions, sometimes there is no possibility to create a policy. Administrations may only be faced with the option of acquiring land through expropriation and the cost is usually high.

Due to the budget deficits caused by infrastructure and expropriation costs, public administrations are unable to provide other services they are obligated to offer,

resulting in negative impacts on urban life. The lack of provision of public services leads to the deprivation of rights for urban residents.

The outcomes of the extensive expansion throughout the nation are similarly manifested within the metropolitan region of Ankara. In Ankara, planning has contributed to economic growth, but has become a tool that serves uncontrolled physical growth rather than preventing sprawl. Spatial plans made by local governments have resulted in excessive production of land, mismanagement of planning processes and generally, implementation of development that has been registered in the land registry, which has now acquired the status of land and cannot be turned back into farmland by changing its status. As a result, settlement areas have spread over vast areas with few people living on the outskirts.

It has been realized that all these problematic plans, which have a role in urban sprawl, were actually made and approved before the legal regulations that led to the expansion of Ankara metropolitan municipality boundaries came into effect and their results were highly destructive in terms of economic, social and environmental aspects.

Spatial plans enable planned and sustainable urbanization, but it is not always possible for these plans to be approved and put into effect at the end of an ideal preparation and decision-making process. In some cases, this can lead to unresponsiveness to real needs and harboring new problems.

Due to Law No. 5216, the authority and process of spatial planning and approval will now be used by district and metropolitan municipalities since 2004. Therefore, before this structural transformation takes place, plans were approved by independent municipalities and councils within the boundaries of Ankara province and agricultural lands were converted into land with building permission, disregarding scientific and technical justifications for basic planning principles.

The spatial plans made by independent municipalities include areas containing public technical infrastructure investments such as electricity, natural gas and

drinking water lines that cannot be displaced due to their costs, as well as areas unsuitable for settlement such as riverbeds, flood-prone areas, fault zones and landslide areas and special environment protection areas and sites protected by laws are disregarded. As a result, new urban areas that are both risky and unnecessary have been included within the boundaries of already developed areas, leading to an excess production of land.

Planned areas frequently fall short in meeting actual needs because they are often constructed without undergoing an ideal preparation and decision-making process.

The surplus of developed land supply is posing a hindrance to the realization of new spatial planning initiatives that are being developed through appropriate procedures.

The failure to meet the criteria for suitability of settlement is leaving the planning authorities helpless and insensitive, imposing unbearable burdens on the city and public economy.

Due to the lack of necessary care and attention towards protecting the agricultural and livestock lands safeguarded by the Soil Protection Law and the Grazing Law, the loss of agricultural areas and disruption of agricultural integrity have been caused.

Areas that should be excluded from settlement include riverbeds, floodplain boundaries, drinking water catchment areas, geologically hazardous areas. However, by ignoring the criteria for site selection based on soil and seismicity, new risky areas are actually being created.

Due to insufficient attention given to areas and uses requiring protection, such as infrastructure for electricity, natural gas, water and sewage, there are additional costs associated with relocating or expropriating these facilities.

Many times, planning is carried out with a fragmented approach, resulting in inadequate development or design of transportation, accessibility and infrastructure facilities. This leads to prolonged travel times, elevated emissions of exhaust gases and environmental and economic harm.

Furthermore, it is understood that the spatial plans in Ankara that have led to the production of surplus land have not included different land use decisions, generally regulating residential use decisions, not taking into account the relationship between employment and living areas, resulting in high population density in some planning areas, while inadequate and below standards in terms of equipped areas and transportation, accessibility and infrastructure facilities have not been developed or properly designed.

Despite the fact that at least 15-20 years have passed since the implementation of development and subdivision plans, no structural transformation has taken place along with the plans. It has been observed that the infrastructure of these areas has not been established despite the time that has passed and that basic services such as drinking water, sewage, electricity and natural gas infrastructure have not been provided or planned. In fact, it has been determined that everything has remained on paper and will continue to do so, as areas prone to land speculation have been designed. These plans have not been implemented due to the lack of interest from those who will reside in the settlement areas and the contractors/builders who have not found them profitable.

The surplus of unused land that is generated through spatial planning poses a common problem in obtaining permission for non-agricultural purposes in these planned areas. This is due to the protection of agricultural land in the evaluation of alternative areas by soil protection committees during the process of obtaining permission for non-agricultural use. As a result, it hinders the allowance of new planned areas that are properly designed, have completed groundwork and are in line with upper-scale planning decisions, which would truly meet the needs of the area. The surplus of needs generated through spatial plans can impede the progress of urban planning initiatives that are being executed with appropriate processes.

Due to expropriation lawsuits in these fields, the resulting compulsory economic burden leads to budget deficits that pose unsustainable and unmanageable burdens on city and public economies. In order to address this issue, the legal regulations,

plan revisions and changes made by local and central authorities are frequently insufficient, resulting in the creation of new and distinct issues.

Various solutions to the problem are being brought up at different times and in different ways and the legislative body is obliged to make legal arrangements for the resolution of this issue. However, temporary solutions that are brought about as a result of these efforts are unable to fully resolve the problem.

Local governments are opening up new agricultural areas for development in order to integrate and relate disconnected areas and reduce the cost of expropriation. However, this approach poses a threat to the planning of more agricultural areas, resulting in the loss of highly productive agricultural land even today.

In conclusion, municipal policies have the potential to lead to disaster in the long run. The urban sprawl in Ankara has been fueled by municipal actions and it is not possible to speak of success in terms of local governance.

Throughout this process, it has become evident that local administrations in Ankara are lacking the capacity to carry the responsibilities and authorities that are assigned to them by the central government in terms of urban planning. They are not fully capable of fulfilling their obligations towards the public. In the urban planning process of Ankara metropolitan area, the generation and allocation of urban rent failed to serve the public interest, resulting in distorted urbanization.

In Ankara, the planning activities being conducted by TOKİ have led to the creation of living areas that are disconnected from the city, thereby causing urban sprawl through this institution.

Through the agency of TOKİ, a completely property-focused approach is demonstrated in the production of land, whereby unproductive areas of public property such as riverbeds and grazing lands are made into a part of the land production policy and means of mediation, while simultaneously seeking financing through the sale of these areas to private individuals. As a result of the assumption of infrastructure and transportation costs by the government, the public is required

to bear additional costs in the short and medium term. The sale of lands that have been produced in these fields and remain in public ownership to private individuals adds further complexity to the situation.

4.2 Ways to Reverse Growth, Can a New Attitude be Developed for Such Areas Through "Spatial Planning"?

After the 1980s, urbanization in Türkiye also witnessed a trend of decentralization. Prior to the legal regulations of Law No. 5216 and Law No. 6360, small and medium-sized municipalities under the influence of metropolitan cities commonly implemented independent planning practices that did not require any coordination or control with the main city's planning and development. The increase in private car ownership during the same period, along with the rise in the accessibility threshold, has created the conditions for the current sprawl process in Ankara. This situation has led to a difficult-to-control sprawl process before the Law No. 5216 and 6360 (Yenigül & Çamur, 2013).

The urban expansion observed in Ankara is distinct from the sprawl witnessed in western metropolises, which predominantly stems from alterations in lifestyle.

Local governments that aim to increase the share of property owners in urban rent by exerting pressure created by them and use planning as a distribution tool for urban rent, tend to have a tendency to supply more land. Through the implementation of spatial planning, surplus land has been produced.

In regards to this issue, it can be established through analysis of spatial planning conducted by local authorities that an excess of land has been produced beyond the requirements of the population in Ankara, thus resulting in fundamental determinations of macro planning decisions.

It is apparent that throughout this process, a correct policy was not pursued and in fact, there was no policy in place for producing planned land. Instead, spontaneous,

speculative and populist approaches were utilized, shaped by political preferences in the planning and implementation of projects.

The continuation of urban sprawl and its associated threats require urgent measures to control and manage residential areas. Failure to take timely action may lead to further sprawl of residential areas. Therefore, swift actions must be taken to control deforestation. Such efforts can be implemented faster and independently compared to global issues like climate change. This approach has the potential for local implementation and efficacy, independent of international collaboration (Sezgin & Varol, 2012).

In order to mitigate the negative impact on the environment, it is crucial to take steps to prevent the expansion of urban areas and to limit the amount of new construction. This is the most effective strategy for preserving natural habitats and reducing the carbon footprint of human activity. As such, it is imperative that we prioritize policies and regulations that discourage urban sprawl and encourage sustainable development practices. By doing so, we can ensure that future generations have access to a healthy and vibrant natural environment.

To effectively manage urban sprawl and promote sustainable urban development, it is imperative to implement multifaceted and comprehensive planning policies along with less lenient planning approaches. Transitioning from growth-oriented physical planning to a comprehensive planning approach that includes social, economic and spatial dimensions is necessary. The traditional city growth model must be replaced with a more green, sustainable and inclusive development model.

The current social and economic transformations require a shift from a land-centered approach to a more human-focused approach.

So, instead of introducing new top-down planning methods, we need to change the rules of the game. In other words, we need new fundamental laws to solve planning problems, not more plans.

It is a widely known fact that local governments are dependent on limited financial resources. Therefore, it is of utmost importance to examine how major cost items, especially infrastructure, will develop in the future when considering alternative planning strategies. In order to design effective tools to limit urban sprawl, it is important to understand who benefits from it and who bears the cost, in terms of achieving the desired impact of the measures and strategies (Vermeiren et al, 2022).

Urban sprawl in Ankara is a significant threat to sustainable land use and it is rapidly increasing. Therefore, it is necessary to monitor urban sprawl by documenting landscape changes, comparing regions, identifying hotspots of sprawl, estimating change rates (especially if past data is available) and detecting changes in trends.

Furthermore, it is imperative to effectively preserve the remaining vast uncultivated areas and areas susceptible to cultivation, such as arable lands and forests.

The ongoing expansion of cities through urban sprawl and its resultant outcomes have become a significant issue that city planners and officials are giving utmost attention to.

Indeed, the local authorities (planners and managers) have realized that these plans, which lead to uncontrolled urban sprawl, are generally problematic and require a comprehensive revision. In the 2023 Ankara Master Plan and the 2038 Ankara Environmental Plan, it has been identified and evaluated that excessive population assignments and surplus land production need to be addressed and recommendations have been made for comprehensive revisions in these areas.

In this context, revisions that would enable the reduction of population by rejecting the population projections generated by the current master plans have been generally accepted as a concept.

The local administrations in Ankara have endeavored to address these troublesome plans by implementing revisions and engaging in efforts to enhance them through the process of revision.

The revisions that were implemented entailed relinquishing certain gains on property and development rights from the perspective of the rightful owners. Consequently, the affected parties initiated legal proceedings and, through court decisions, a significant number of these revisions were invalidated.

A delicate balance exists here, where property and development rights must be balanced with considerations for public interest, urban planning principles and the future of the city. Without striking this balance, actions taken will not yield the desired outcomes.

The efforts and endeavors made may still result in the possibility of reversal by the judiciary in the future, similar to what has happened in the past.

Furthermore, while these revisions address the shortcomings of the current plans, they do not contain any concrete proposals regarding the ramifications of sprawl, the consequences of sprawl and the elimination of these consequences.

The current legal and technical framework does not provide the opportunity for such a possibility to exist.

It is highly unlikely that the status of a land with development designation can be reversed to its former state.

The conversion of land into plots often leads to the perception that the retrieval of the rights of the original owners involves the forfeiture of their property and development rights.

Therefore, the option of restoring these lands to their former state cannot be considered.

The most optimal course of action on this matter would be to cease all production of new land henceforth, irrespective of the underlying cause. In the forthcoming period of 50-100 years, there will be no requisite for the generation of fresh land in Ankara through the medium of spatial planning.

The crucial factor is ensuring that the decision to open up an area for development is made through a sound process and methodology.

Decisions should be made more carefully, meticulously and with greater control. Contrary practices are often irreversible and irreparable due to existing legislation and actual circumstances.

It is clear that the role of planning, which has an important role in the suburbanization of the city in Ankara, needs to be restructured.

The incorporation of these areas into the city should be approached through careful planning, taking into account the existing legal framework, as well as our knowledge and capabilities. This approach represents the most effective solution.

It is essential to contemplate the transformation of the urban development model, which is primarily characterized by long-term expansion, into a compact and intensive model.

Furthermore, when different types of urban sprawl are considered, residential sprawl significantly increases the financial stress of cities, while the impact of industrial sprawl on urban financial stress is not significant. Therefore, the conversion of residential overhangs into production and employment uses through revisions will enable the reduction of financial stress at the very least. Comprehensive master plan revisions that transform these areas, which have been excessively produced for residential purposes, into production-oriented functions appear to be the most viable solution. In order to strengthen the country's production capabilities, it is necessary to focus on the transformation of production areas to meet the need for production space.

To ensure that the fiscal interests of the public sector are not harmed and that urban planning principles and public welfare are incorporated into development plans, it is essential that decision-makers in the planning process, namely politicians, manage planning efforts and processes very effectively in response to the expectations of demanding stakeholders and the plans that are required to meet those expectations.

The future of the city can be ensured without jeopardizing it by implementing moderately radical measures and by effectively communicating the situation to all stakeholders. It is essential to encourage public participation in the process with a constructive approach.

Nowadays, it is imperative that all parties involved comprehend that further planning is not required to generate additional newly planned land, which will promote new land development.

Officials, decision-makers and governing bodies must be able to resist pressures and demonstrate an uncompromisingly firm stance in their decision-making.

In macro planning, it is imperative to accurately identify needs and develop sub-scale plans accordingly. It is crucial to prevent the proliferation of speculative plans and incorporate value-added tax into new planning.

In order to control urban sprawl, specific quantitative targets, limits and criteria should be established and performance control should be applied to policies aimed at preventing sprawl (Hennig et al., 2015).

Planning, development and infrastructure projects often lead to an increase in property values. However, this can also cause issues such as gentrification and displacement of lower-income residents. Therefore, it is important to have economic tools such as taxes in place to offset the increase in property values. These measures should be implemented alongside control and monitoring mechanisms to ensure that the projects are carried out in a fair and ethical manner. This will help to prevent any negative consequences for the community and promote sustainable development.

In spatial planning, conducting more precise demand analyses is a crucial step in minimizing the production of surplus land. Realistic demand estimations can prevent unplanned construction and urban sprawl.

Increasing the participation of the local community in spatial planning processes is important to better understand the needs and expectations of city residents. This can reduce unplanned land production and make urban development more balanced.

The impact of surplus land production through spatial planning on urban sprawl is a complex issue. Spatial plans that are carefully managed and adopt sustainable use principles can play an important role in overcoming this problem.

As a result, the tendency for urban sprawl has become significant in metropolitan cities in Türkiye since the 1980s. Specifically in Ankara, the increase in private vehicle usage and improvements in accessibility have accelerated the process of urban sprawl. However, the utilization of planning processes by local administrations to increase urban rent has led to unplanned and speculative land production. As a result, urban sprawl has rapidly increased, posing significant threats in terms of urban planning principles. However, urgent steps can be taken to address these issues. Planning policies and practices need to be addressed in a more comprehensive and balanced manner to ensure sustainable urban development. Efficient utilization of existing land, controlling sprawl and creating livable cities are particularly important. To achieve this, effective planning processes, participatory methods and a balanced property policy are necessary. Furthermore, it is essential for the planning processes to ensure the participation of all segments of society and conduct realistic demand analyses. This way, problems such as urban sprawl and unplanned construction can be minimized and more balanced and sustainable cities can be created.

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