READING THE COMPLEXITY OF THE “FRINGE” FROM A PERSPECTIVE OF TERRITORIAL AND HISTORICAL CHANGE: THE CASE OF DATÇA, MUĞLA

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ABSTRACT

READING THE COMPLEXITY OF THE "FRINGE" FROM A PERSPECTIVE OF TERRITORIAL AND HISTORICAL CHANGE: THE CASE OF DATÇA, MUĞLA

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Urban and rural areas have traditionally been defined as separate from each other both spatially and socially. Therefore, their development policies have been different from each other as well. The problems caused by the separation between urban and rural areas are the most striking in urban fringes. This is due to their complex, heterogeneous, and dynamic structure. Another reason is that many multi-dimensional interactions take place in the fringe and many actors are involved. These areas, which for administrative, spatial, and social reasons can neither be defined as urban nor as rural are directly affected by the development pressure that cities put on them. Especially in a fringe with dominant natural and cultural-ecological values, there is often a conflict between the area's characteristics and the respective planning decisions. In this regard, the complexity theory can help with understanding a fringe's features and their functions.

On this basis, the aim of this study is to examine the fringe of the Datça district which is located in the Datça-Bozburun. The fringe's heterogeneous, dynamic, and complex structure and its timeline are examined in terms of horizontal and vertical relations. In

other words, this study provides an integrated reading of the area's socio-economic components and associates them with planning decisions. It does so by outlining the component's relationship to the hierarchical spatial structure and the historical change. The research was conducted on two scales, namely the territorial and settlement scales. A spatial analysis of the data was carried out using GIS applications. This spatial reading also proposes a method to understand the urban fringe in protected areas with its rich natural and cultural values. It furthermore helps with making decisions and policies that are compatible with the protected area's characteristics.

Keywords: Urban Fringe, Complexity, Datça, Protected Site, Special Environmental Protection Area (SEPA)

ÖZ

"ÇEPER" İN KARMAŞIKLIĞINI BÖLGESEL VE TARİHSEL DEĞİŞİM BAKIŞ AÇISI İLE OKUMAK: DATÇA ÖRNEĞİ, MUĞLA

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Geçmişten günümüze kentsel ve kırsal alanlar hem mekânsal hem de sosyal açıdan birbirinden ayrışık olarak tanımlanmış, gelişim politikaları da bu yönde zıtlıklar içermiştir. Kentsel alanlar ve kırsal alanlar arasında süregelen farklılaşma en çarpıcı şekilde karmaşık, heterojen ve dinamik bir yapıya sahip ve çok boyutlu ve çok aktörlü etkileşimlerle işleyen kent çeperlerinde bir sorun olarak karşımıza çıkmaktadır. Yönetsel, mekânsal ve sosyal sebeplerden ötürü ne kır ne de kent olarak tanımlanamayan bu alanlar kentlerin gelişme baskısından doğrudan etkilenirler. Özellikle doğal ve kültürel ekolojik düzenin hakim olduğu bölgelerin kent çeperlerinde, planlama kararları ile yerin özellikleri çatışma yaşamaktadır. Kent çeperlerinin bu özelliklerini ve nasıl işlediğini anlamada karmaşıklık kuramı bazı ipuçları sunabilir.

Buradan yola çıkarak, bu çalışmanın amacı, Datça-Bozburun Özel Çevre Koruma Bölgesi sınırları içinde yer alan Datça ilçesinin kent çeperini mekânsal hiyerarşik yapıdaki ilişkisi ve tarihsel olarak değişimi üzerinden karmaşıklık kuramı çerçevesinde incelemektir. Bunu yaparken, çalışmada, çeper alanının heterojen, dinamik ve karmaşık yapısı, hiyerarşik, yatay ve dikey ilişkileri inceleyen süreçsel bir

pratikle ele alınmaktadır. Bir başka deyişle, bu çalışma kent çeperini anlamak için, çeperin mekânsal hiyerarşik yapısı ile ilişkisi ve tarihsel olarak değişimi üzerinden plan kararları ile ilişkilendiren ve sosyo-ekonomik bileşenleri ile bütünleşik bir okuma sunmaktadır. Araştırma bölgesel bağlam ve yerleşim bağlamı olmak üzere iki ölçekte yürütülmüştür. Analiz çalışmalarında ikincil veriler kullanılmış, CBS uygulamaları aracılığıyla verilerin mekânsal analizi gerçekleştirilmiştir. Çalışmanın bu tür bir mekânsal okuma yaklaşımı, özellikle doğal ve kültürel değerleri yüksek olan ve korunan alanlarda kent çeperini anlamak ve alanın değer özellikleri ile uyumlu karar ve politikalar geliştirebilmek için bir yöntem önerisi de sunmaktadır.

Anahtar Kelimeler: Kent Çeperi, Karmaşıklık, Datça, Korunan Alan, Özel Çevre Koruma Bölgesi

Dedication

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TABLE OF CONTENTS

PLAGIARISM iii

ABSTRACT iv

ÖZ vi

DEDICATION viii

ACKNOWLEDGMENTS ix

TABLE OF CONTENTS x

LIST OF TABLES xiv

LIST OF FIGURES xv

LIST OF ABBREVIATIONS xviii

CHAPTERS

1. INTRODUCTION 1

1.1. Aim of the Study 1

1.2. Methodology 5

2. THEORETICAL FRAMEWORK OF THE RESEARCH 14

2.1. Preliminary Theoretical Framework of the Study 15

2.1.1. Assemblage Theory 15

2.1.2. Complexity Theory 18

2.2. Urban-Rural / Rural-Urban Fringe in Literature 24

2.2.1. Urban Fringes in the Historical Process 28

2.2.1.1. Concentric Zone Model 29

2.2.1.2. Green Belt Model 32

2.2.2. Definitions of the Urban-Rural / Rural-Urban Fringe 34

2.2.2.1. Urban Periphery / Peri-Urban Areas 35

2.2.2.2. Urban Fringe 37
2.2.2.3. Rural-Urban Fringe 40
2.2.2.4. Urban Fringe Belts 47
2.2.2.5. Disintegrated Development Paradigms 50
2.2.2.5.1. Spatial Planning 51
2.2.2.5.2. The Ecosystem Approach 53
2.2.2.5.3. Distinction Between Built and Natural Environments 56
2.3. Interrelated Structural Components in Urban Fringe 59
2.3.1. Complex 59
2.3.2. Diverse (Conflict) 60
2.3.3. Heterogeneous 62
2.3.4. Distinctive 62
2.4. Urban Fringe from an Ecological Perspective 63
2.4.1. Legal Regulations About Protected Areas on an International Level .. 65
2.4.2. Binding Processes and Legal Sanctions in Special Environmental Protection Areas in Turkey 67
3. SPATIAL COMPONENTS OF THE PAST / PRESENT URBAN PERIPHERY LANDSCAPE IN DATÇA 75
3.1. Territorial Context 76
3.1.1. The Surrounding Landscape 78
3.1.1.1. Natural Resources 80
3.1.1.2. Land Cover 86
3.1.1.3. Natural Thresholds and Urban Morphology 104
3.1.2. Position of Datça in the Region 106
3.1.2.1. Historical Development of the District 106
3.1.2.2. Spatial Position of the District 112
3.1.2.2.1. Settlement Connections 112

3.1.2.2.2. Road Network 113
3.1.2.3. Socio-Economic Position of the District 115
3.1.2.3.1. Population and Demography 115
3.1.2.3.2. Agriculture, Industry and Commerce 119
3.1.2.3.3. Tourism 124
3.2. Settlement Context 128
3.2.1. A General Overview of the Settlements in Datça 129
3.2.1.1. Population and Density 130
3.2.1.2. Location of the Settlements 137
3.2.1.3. Agricultural Production 140
3.2.2. Examination of the Urban Fringe in Datça 143
3.2.2.1. Change in the Land Cover Data about the Fringe Neighborhoods 144
3.2.2.2. Land Use Analysis of the Fringe Neighborhoods 163
3.2.2.2.1. Spatial Relations 164
3.2.2.2.2. Land-Use Decisions 166
3.2.2.2.3. Infrastructure and Services 188
3.2.2.2.4. Synthesis of Land-Use Decisions with regard to the Complexity Theory 190
4. EFFECTS OF THE SPATIAL PLANS FOR DATÇA ON ITS URBAN FRINGE 201
4.1. Planning Decisions from the Perspective of the Complexity Theory 204
4.2. Examination of Planning Decisions 213
4.2.1. Managerial Perspective 214
4.2.2. Physical/Structural Perspective 218
4.2.3. Social Perspective 226
5. CONCLUSION 229

REFERENCES 235

APPENDICES

A. TURKISH SUMMARY / TÜRKÇE ÖZET 245

B. THESIS PERMISSION FORM / TEZ İZİN FORMU 256

LIST OF TABLES

Table 1: Methodological Framework in Reference to Research Questions 8
Table 2: The Rural-Urban Fringe Definition and Delineation 38
Table 3: A Framework of Integration in Spatial Planning 52
Table 4: Legal Instruments Used for the Designation of Protected Areas 69
Table 5: CORINE Data Change regarding the Datça-Bozburun SEPA (1990-2018) 95
Table 6: Distribution of the Population by Sectors 118
Table 7: Socio-Economic and Physical Structure of Rural Settlements on the Datça Peninsula 132
Table 8: Change in the CORINE Data about the Fringe Neighborhoods (1990-2018) 147

LIST OF FIGURES

Figure 1: Theoretical Framework of the Urban Fringe 2
Figure 2: Geographical-Hierarchical and Historical Framework of the Research Methodology 12
Figure 3: The Complex Character of Urban Fringe Definitions 19
Figure 4: A Rationality Spectrum For Spatial Planning 23
Figure 5: Methodological Concepts of the Study 27
Figure 6: Concentric Zone Model 31
Figure 7: Schematic Diagram of Land Use in the Rural-Urban Fringe 41
Figure 8: Different Perspectives from the Rural-Urban Fringe and Urban-Rural Fringe 44
Figure 9: Historic Fringe Belts 49
Figure 10: The Ecosystem Approach Concept 55
Figure 11: Datça-Bozburun SEPA as determined by the Council of Ministers 77
Figure 12: The Location of the Datça Bozburun SEPA within the National Territory 79
Figure 13: Map of the Land Cover Classes 81
Figure 14: Distribution of Forest Lands in the Datça-Bozburun SEPA 84
Figure 15: Distribution of Protected Areas in the Datça-Bozburun SEPA 85
Figure 16: CORINE Land Cover (CLC) Nomenclature 87
Figure 17: Legend for the CORINE Data in the Datça-Bozburun SEPA 89
Figure 18: Land Cover Data Change regarding Artificial Surfaces 92
Figure 19: Land Cover Data Change regarding Agricultural Areas 93
Figure 20: Land Cover Data Change regarding Forests and Semi Natural Areas 94
Figure 21: Regional CORINE Data Change regarding the Datça-Bozburun SEPA (1990-2018) 99
Figure 22: The Time-Space Relationship of the Datça-Bozburun SEPA 102
Figure 23: Map of the Datça-Bozburun SEPA Morphology 105
Figure 24: Administrative Division of Datça 107

Figure 25: Timeline of the Milestone Incidents in the Datça 108
Figure 26: Distance from Datça to Other Cities 112
Figure 27: Transportation Scheme of the Datça Bozburun SEPA 114
Figure 28: Change in the Total Population of Datça from 1970 to 2018 116
Figure 29: Change in the Urban-Rural Population in the Datça District 117
Figure 30: Distribution of Agricultural Land in the Datça-Bozburun SEPA 123
Figure 31: Number of Tourist Accomodations in Datça 126
Figure 32: Sectors Providing the Most Employment Opportunities 127
Figure 33: Change in the Number of Buildings Constructed in Datça 128
Figure 34: Population Development in the Neighborhoods of Datça 135
Figure 35: Densities of Datça neighborhoods 136
Figure 36: Distance from the Neighborhoods to the Datça District Center 138
Figure 37: Agricultural Production Pattern of Rural Neighborhoods in Datça 142
Figure 38: Urban Fringe Study Area in the Datça Bozburun SEPA 144
Figure 39: Legend for the CORINE Data 145
Figure 40: CORINE Land Cover in 1990, Datça 150
Figure 41: CORINE Land Cover in 2000, Datça 152
Figure 42: CORINE Land Cover in 2006, Datça 154
Figure 43: CORINE Land Cover in 2012, Datça 156
Figure 44: CORINE Land Cover in 2018, Datça 158
Figure 45: Change in CORINE Data for Fringe Neighborhoods in Datça from 1990 to 2018 161
Figure 46: Spatial Connections of the Fringe Settlements 164
Figure 47: Primary Land Use Decisions in the Fringe Neighborhoods 168
Figure 48: Land Use Decisions in the Old Datça Neighborhood 170
Figure 49: Commerce in Old Datça (A1) 171
Figure 50: Tourism and Housing in Old Datça (A1) 172
Figure 51: Commerce in Old Datça (A2) 173
Figure 52: Commerce in Old Datça (A3) 174
Figure 53: Commerce in Old Datça (A4) 174
Figure 54: Housing in Old Datça (A5) 175
Figure 55: Commerce in Old Datça (A5) 175
Figure 56: Land Use Decisions in the Reşadiye Neighborhood 177

Figure 57: Commerce in Reşadiye (A1) 178
Figure 58: Housing in Reşadiye (A2) 179
Figure 59: Commerce in Reşadiye (A2) 179
Figure 60: Industry in Reşadiye (A3) 180
Figure 61: Commerce in Reşadiye (A4) 181
Figure 62: Housing in Reşadiye (A4) 181
Figure 63: Tourism in Reşadiye (A4) 182
Figure 64: Commerce in Reşadiye (A5) 182
Figure 65: Commerce in Reşadiye (A6) 183
Figure 66: Land Use Decisions in the Hızırşah Neighborhood 184
Figure 67: Commerce in Hızırşah (A1) 185
Figure 68: Housing in Hızırşah (A1) 186
Figure 69: Tourism in Hızırşah (A2) 186
Figure 70: Green Areas in Hızırşah (A3) 187
Figure 71: Housing in Hızırşah (A4) 187
Figure 72: Synthesis Map of Land Use Decisions in the Study Field 191
Figure 73: Characteristics of the Neighborhoods in the Periphery 195
Figure 74: Examination of Planning Decisions from the Perspective of the Complexity Theory 206
Figure 75: The Datça-Bozburun SEPA Environmental Plan (scaled 1/25.000) 211
Figure 76: CORINE Land Cover 2018, Datça Central District 222
Figure 77: Environmental Plan Decisions 2014, Datça Central District 223

LIST OF ABBREVIATIONS

CORINE	Coordination of Information on the Environment
EA	The Ecosystem Approach
EEA	European Environment Agency
EIA	Environmental Impact Assessment Report
ESDP	European Spatial Development Perspective
GIS	Geographic Information System
IUCN	International Union for Conservation of Nature and Natural Resources
NBSAP	National Biodiversity Strategy and Action Plan
RUF	Rural-Urban Fringe
SEPA	Special Environmental Protection Area
SP	Spatial Planning Paradigm
TÜİK	Turkish Statistical Institute
UN	United Nations
UNCBD	United Nations Convention on Biological Diversity

CHAPTER 1

INTRODUCTION

1.1.Aim of the Study

Even though theoretically there already has been a shift in urban planning approaches from a “traditional” perspective focused on formal design issues to a more “spatial” approach engaging holistic, multi-scalar and multi-dimensional perspectives, planning policies and implementations in the urban fringe still often result in conflicts with the existing ecological system. This is particularly problematic in areas which demand a planning approach that gives great significance to a good understanding of such an ecological system that operates in a complex, holistic, multi-dimensional, multi-scalar and dynamic (changing) manner and provides sustainability of the system. Existing management plans cannot establish a legal framework either to handle the planning and management tasks of those sites - regardless of the whether or not they fulfill or disregard the needs of the integrated structure of the area.

Fringe-related problems are usually handled from a single-dimensional and incomprehensive perspective. However, urban fringes of cities include many dynamic variables that change continuously in itself. Ignoring this heterogeneous structure and making theoretical definitions is insufficient to explain what a fringe has to offer. Taking this as a starting point, the main aim and scope of this thesis is to create a better understanding of the interrelatedness of different values in the urban fringe using the example of Datça. The thesis will show how these values change over time, and how different layers vertically assemble and create a holistic, dynamic space that changes over time. The research presented in this thesis makes contributions at three levels: theoretical, methodological and political-professional.

First, theoretically, this research brings together the complexity theory and the assemblage theory at a more philosophical level and critically reflects on them in the context of the urban fringe.

Figure 1 shows a generalized conceptual framework of existing definitions of the urban fringe. This way of looking at the fringe as a complex phenomenon guides into structuring the methodology of this inquiry from a historical and associative perspective.

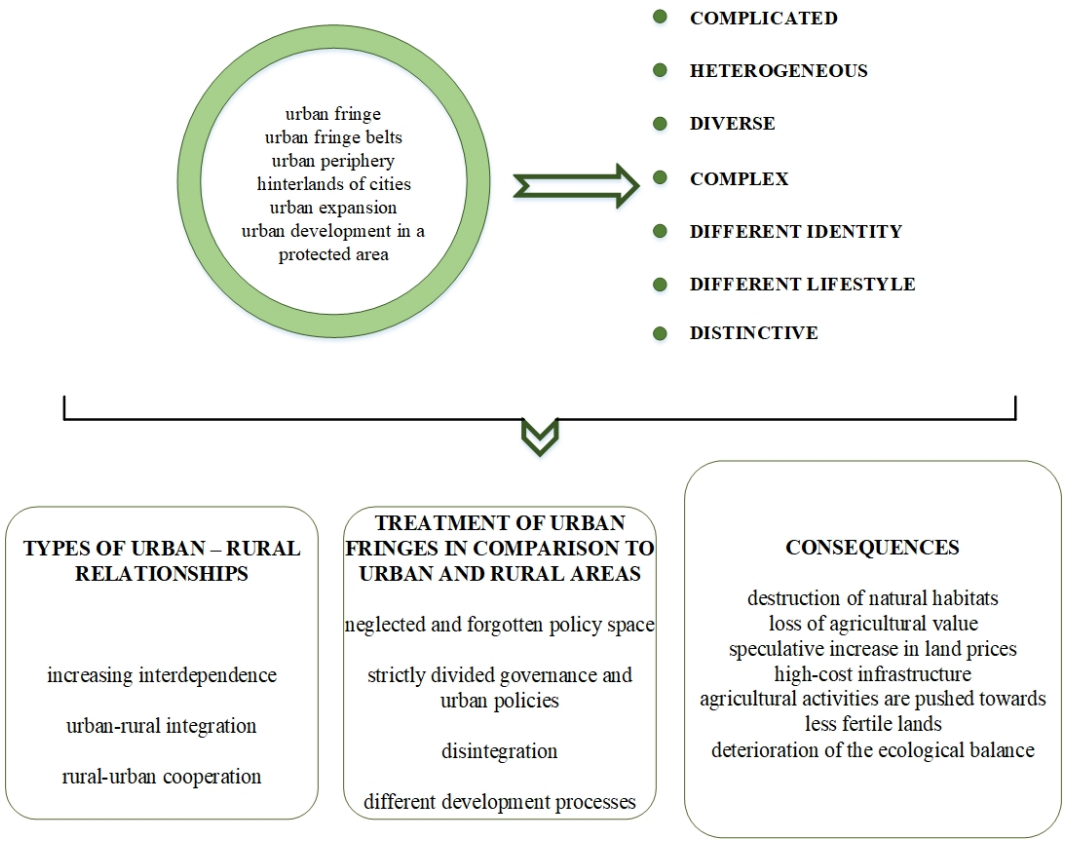


Figure 1: Theoretical Framework of the Urban Fringe

The review of literature shows that the urban fringe phenomena contains a complex variety of concepts. Different researchers from different periods introduce different definitions of the notion of a (rural)-urban fringe. Although those definitions are not entirely distinct from each other, it makes the description of an urban fringe challenging. Figure 1 shows three theoretical ways of defining an urban fringe and its

interrelated concepts characterizing its structure. Accordingly, the first box above refers to different types of urban-rural relationships characterized by increasing interdependence, integration, and cooperation. The second box above refers to how the urban fringe is treated differently from rural and urban areas. According to this, a fringe appears to be a forgotten policy space with governance that is strictly separated from urban and rural places. Besides, in comparison to urban and rural areas they are disintegrated. The last box includes the consequences for the fringe such as destruction of natural habitats, loss of agricultural value, a speculative increase in land prices, high-cost infrastructure, agricultural activities being pushed towards less fertile lands, and deterioration of the ecological balance.

The fringe-related terms used in literature mostly apply to metropolitan cities. However, within the scope of this thesis urban fringe studies were conducted on a small-scale district located within the Muğla metropolitan municipality's administrative boundary. The study area of Datça is located in the Datça-Bozburun Special Environmental Protection Area (SEPA). This area has rich natural and cultural values which are significant not only regionally but also nationally. Because of these values, Datça became a point of interest for tourists. In addition, it plays a great role for agricultural production in the region. Therefore, Datça has many values which make it important also on a national level. Management of the area is already a difficult and challenging task. Urban planning in the periphery of such an area is even more complex. Thus, the periphery of the Datça district has been chosen as the area for this case study. The complex character of the fringe is examined in the following.

The 1/25.000 scaled Environmental Plan for the SEPA aims to ensure urban development. It does so by focusing on the usage of the lands by its population. It favors the human factor. Within the scope of the thesis, land-use decisions were examined in the same context with natural and agricultural areas. Land that serves other purposes than human uses was also considered and sensitive areas were included as well. This study is a spatial analysis which takes into account the natural characteristics in the space. The socio-economic data used in this study was obtained from previous research. No new socio-economic analysis was conducted in the field. Changes in land-use decisions and natural areas were analyzed together. Thus, it was

observed how the construction affected natural areas and agricultural areas over the years. The change caused by human activities in natural spaces was examined.

Without diminishing the value of these studies, they often consider the urban fringe as a single-layered structure. This thesis on the one hand examines relations between structural components in the fringe and on the other hand its relations with the external environment within a hierarchical context (Altınöz et al., 2016). Moreover, while examining this interrelatedness, the time component is also integrated into the study. In addition to that, this study creates a better understanding of this changing interrelatedness with a complex, holistic, multi-dimensional, and multi-scalar manner. Considering the urban fringe as a complex phenomenon and its development as a dynamic process, this research intends to answer the following three questions: What are the interrelated structural components of the urban fringe in Datça within the context of spatial hierarchy? How have the structural interrelations of the urban fringe in Datça changed between 1990 and 2018? And how have the spatial plans in Datça affected the structural change of the urban fringe?

Respectively, the thesis intends to answer these questions in five chapters. The first chapter contains a problem statement which lays out the research questions of this thesis, its rational, and a general overview of the issues to be examined. In the following chapter the theoretical framework of urban fringes is being discussed. It critically examines the literature on urban fringes from the past to the present. The fact that there are different definitions of the fringe indicates distinct concepts. The complexity theory and assemblage theory form the basis for a better understanding of the interrelated results deriving from the heterogeneous structure of the fringe.

The third chapter has two main focuses: interrelatedness between structural components in Datça and how they change over time. Within the scope of interrelatedness, the area of this study is examined from a hierarchical context including its territorial and settlement scales. The territorial part includes an in-depth analysis of previous studies in Datça-Bozburun SEPA and the synthesis of the verbal and spatial data obtained within the study's scope. The primary purposes of the research in a territorial context are to identify the area of study, evaluate the time-space relations through layers at different scales, and determine the settlements in the Datça

district that the urban fringe study will focus on. For this purpose, natural resources and natural thresholds in the region were analyzed. Important characteristics of the city, such as population and demography, agricultural production, industry, and commerce were evaluated as well. In the settlement context, a territorial and spatial analysis was conducted to determine which areas of Datça are to be considered its urban fringe. Geographical Information Systems (GIS) were used as the analysis method.

Within the scope of the change in structural interrelations of the urban fringe, previous studies and data over the time from 1990 to 2018 have been examined, both in territorial and settlement contexts. Spatial data about Datça's urban fringe was obtained from public institutions and analyzed with the help of GIS applications. In the following part of this chapter, the data is presented in tables using the PostgreSQL database to show the change in data over time. Besides, this spatial data is supported with satellite images from the study field.

In the fourth chapter, as a focus point, the effects of spatial plans on structural changes in Datça are examined. Planning decisions and their effects on the Datça-Bozburun SEPA are critically reflected upon from an administrative, physical/structural, and social perspective. Furthermore, it includes an evaluation of the outcomes that the planning decisions have produced within the complexity theory framework. In this context, inferences are drawn about the protection and improvement measures brought by the planning regarding rural-urban fringes in the SEPA.

In the last chapter the results of the study are evaluated. The answers given to the questions raised above and further significant findings will be summarized.

1.2.Methodology

The research in this study consists of two parts. The first part seeks answers the question of how the complex structure of the urban fringe in Datça has transformed within a time-space context. Compared to a metropolitan city, Datça contains a rather small built area and conveys a conservation status due its dense, diverse and spread natural and cultural values. The complex character of the fringe area produces varying values that derive from its relations with the time component in the changing space.

The discussion in this part takes place in reference to the complexity theory. The second part focuses on the changes that have already occurred or could occur in pursuit of existing planning decisions regarding Datça. Respectively, the debate in this part also takes into consideration the effects of the spatial planning on the structural change of the urban fringe. The fringe's complex formation requires attention to detail in theoretical research through which diverse definitions of the notion of the fringe were introduced and relevant interrelated concepts were identified.

To explain the urban fringe as one clearly defined concept appears to be a difficult task. This is because the term urban fringe conveys a complex character. It evolves in multivariate process but is often treated as a singular-component phenomenon. This one-dimensional approach to such areas of cities is inadequate and misleading. The types of urban-rural relationships that emerge in those areas, their reproduction, and their consequences are important components for a better understanding of these territories between urban and rural areas. Moreover, while a description of the structure of this complex area is needed, it should also be taken into account that the way in which various components interact changes through time. This produces complexity and heterogeneity in this area.

Within this context, the main hypothesis of this study is that the complex and heterogeneous structure in this fringe area requires a distinctive way of management. Although theoretically there already has been a shift in urban planning approaches from a “traditional” perspective focused on formal design issues to a more “spatial” approach engaging holistic, multi-scalar and multi-dimensional perspectives, planning policies and implementations in the urban fringe still often result in conflicts with the existing ecological system. This is particularly problematic in areas which demand a planning approach that gives great significance to a good understanding of such an ecological system that operates in a complex, holistic, multi-dimensional, multi-scalar and dynamic (changing) manner and provides sustainability of the system. Existing management plans cannot establish a legal framework either to handle the planning and management tasks of those sites - regardless of the whether or not they fulfill or disregard the needs of the integrated structure of the area.

This thesis poses three research questions as follows:

I. What are the interrelated structural components of the urban fringe in Datça within the hierarchical spatial context?
II. How the structural interrelations of the urban fringe in Datça have changed over time between 1990 and 2018?
III. How have the spatial plans in Datça affected the structural change of the urban fringe? How does the planning process intervene in the fringe?

Studies usually cover fringe-related problems in a uni-directional manner. This type of approach to a site characterized by uncertainty, complexity and dynamic development is insufficient. Within the scope of this thesis, the complex urban fringe structure is examined both time-wise (horizontally) and in a multi-layered manner (vertically) by integrating all existing spatial data. This multi-dimensional perspective helps to decipher how the complex structure of the urban fringe phenomenon developed. Table 1 shows how research questions are systematically answered, the data is used, and data gathering/analysis techniques are applied.

The first question aims at exploring the structural components of the urban fringe in Datça at two spatial scales including territorial (eco-regional) and inter-settlement as well as examining the interrelations between those components. To achieve that, data layers from different resources are brought together to lay out the multi-layered structure. Regarding the eco-regional scale, data on ten variables is gathered for the Datça-Bozburun Special Environmental Protection Area. Those variables include Natural Resources and Thresholds, Agricultural Lands, Protected Areas, Road Network, Socio-Economic Characteristics, Land Cover, Historical Development, Managerial, and Social. As for the inter-settlement scale, data on seven variables is gathered about the center of Datça and four settlements in the vicinity that are structurally affected by urban development. Those variables include Agricultural Production, Socio-Economic Characteristics, Location/Network, Land Cover, Land Use, and planning decisions from a physical perspective.

Secondary data, research reports, theses, TÜİK data, CORINE data, and Google Earth data are used in composing the multi-layered database. GIS is applied to create maps representing the interrelated structure of the area on two scales. Furthermore, tables and graphics show quantitative results of the structural analyses.

The second question's aim is to reveal the change in structural interrelations from 1990 to 2018 in Datça's urban fringe. To do that, the time component is also considered in the multi-layered structure to help tracking the changes that occurred over time in Datça. The structural composition of Datça's urban fringe and its different layers of data are examined for five time periods namely 1990, 2000, 2006, 2012, and 2018. Similar to the first question, to answer the second question, the data is generated on two spatial scales, territorial and settlement. To examine the changes between structural components that occurred over time a GIS database is produced from secondary data resources such as previous research studies and CORINE data. Multi-component analyses are conducted to reveal the structural change. To emphasize this change, multi-layered time-based GIS maps, tables and graphics are generated.

Table 1: Methodological Framework in Reference to Research Questions

Research Questions (RQ)	**Variables**	**Scales**	**Data Gathering Techniques and Resources**	**Data Analysis Techniques and Resources**
RQ-1	Natural Resources and Thresholds	Territorial	Plan Research Report, Thesis	Descriptives, Mapping
	Agricultural Lands			
	Protected Areas			
	Road Network			
	Socio-Economic Characteristics	Territorial	Plan Research Report, TÜİK	Descriptives, Statistical Tables
	Land Cover	Territorial	CORINE	GIS Analysis, Mapping, Correlational Mapping
	Agricultural Production	Settlement	Plan Research Report	Descriptives, Mapping
	Socio-Economic Characteristics	Settlement	Plan Research Report, TÜİK	Descriptives, Correlational Mapping
	Location/Network			

Table 1 (continued)

Research Questions (RQ)	Variables	Scales	Data Gathering Techniques and Resources	Data Analysis Techniques and Resources
RQ-1	Land Cover	Settlement	CORINE	GIS Analysis, Mapping, Correlational Mapping
	Land Use	Settlement	Google Earth	
RQ-2	Historical Development	Territorial	Previous Research	Descriptives, Timeline Mapping
	Land Cover	Territorial	CORINE	GIS Analysis, Database Analysis, Mapping
		Settlement		
RQ-3	Managerial	Territorial	Plans, Plan Research Report, Newsletter, CORINE	Descriptives, Critical, Mapping
	Social			
	Physical	Settlement		

The third research question of the study aims at exploring the effects of existing spatial plans on the structural change of the urban fringe in Datça. Therefore, a general overview of past and present political interventions in Datça's urban geography is given. The starting point for the answer to this question is the assumption that process of urban planning has an impact on the fate of rural-urban fringe areas. Conducting a multi-directional analysis before making decisions helps to identify the problems in the periphery. Subsequently, these issues can be modelled and responded to in a proper manner. In order to answer this third research question, spatial data was gathered from spatial plans, reports, and CORINE.

While trying to better understand the heterogeneous structure of the urban fringe in Datça, relationalities and time-space-value connections are scrutinized in reference to the complexity theory. The analysis of different components both time-wise and

through multi-layeredness made it possible to understand their complex relations in the fringe area of Datça, both in association with the outsider territory and within it. In Table 1, the answers to each research question are presented more specifically.

- For research question number one, on a territorial scale, this study looked at six variables including natural resources and thresholds, agricultural lands, protected areas, road network, socio-economic characteristics, and land cover. Resources for the gathered data include the plan research report, thesis, TÜİK statistical data, and CORINE. To analyze the data on a territorial scale, descriptives, mapping, statistical tables, GIS analysis, and correlational mapping were used.
- For the settlement scale, five variables were analyzed including agricultural production, socio-economic characteristics, location/network, land cover, and land use. The first three variables were gathered from the plan research report. The other two are based on TÜİK, CORINE, and Google Earth. For the urban fringe study area, satellite images were examined and land-use functions were determined. CORINE database provided spatial data which was analyzed using GIS applications. Furthermore, maps were created either representing one or two specific sets of data or correlational data. The land-use analysis provided necessary information about current structural components in the urban fringe of Datça.
- In the second research question, on a territorial scale, historical development and land cover variables were analyzed. For the examination of historical development, the gathered data was supported by previous research about the Datça-Bozburun SEPA. To analyze this data, descriptives, and timeline mapping were used. To evaluate land cover data on both scales, the CORINE database was used. In addition, this data was examined using GIS applications and PostgreSQL database analysis. In order to present the results of these analysis more clearly, maps were created. The CORINE data was provided by the Ministry of Forestry and Agriculture and was displayed in the QGIS Program. For the spatial analysis of the change that these components underwent between 1990 and 2018, the QGIS software program and

PostgreSQL database were used. Database analysis was conducted to reveal the outcomes of the GIS data and show the changes in data over time in Datça.

- For land cover data analysis on both scales, in-depth source analysis was conducted. Obtained data was analyzed spatially with GIS applications. Relationality and multi-directionality of the urban fringe guided the methodology of this study. During the data analysis and synthesis, changes in the collected data over time were inspected. For the spatial analysis of changing land cover areas in the SEPA, Quantum GIS Software (QGIS), and PostgreSQL Database were used. The vector data for land cover and style files (SLD) were provided by the Ministry of Forestry and Agriculture and displayed in the QGIS Program. In addition, the data was transferred to the PostgreSQL database for a digital comparison of the data of the different time frames mentioned above.
- Within the scope of the third research question, spatial plans were examined to observe the structural changes in Datça. This examination considers three main perspectives: managerial, social, and physical. Spatial plans, necessary reports, and CORINE data were used to collect data in this process. Descriptives, critical, and mapping analysis methods were used to examine gathered data. For in-depth analysis, expert reviews and newsletter reports were taken into consideration as well.

In Figure 2, each variable that is put forward in each of the research questions was shown. The figure was divided into two scales, namely territorial and settlement. In accordance with every scale's necessities, variables differed. The years in the middle (1990, 2000, 2006, 2012, 2018) show the timeline for the change in data. Each variable in Table 1 is included in Figure 2 as well. The techniques to gather and analyze the data for the listed variables are displayed in the figure. Land cover and land-use are the most important variables which were analyzed within the scope of this study.

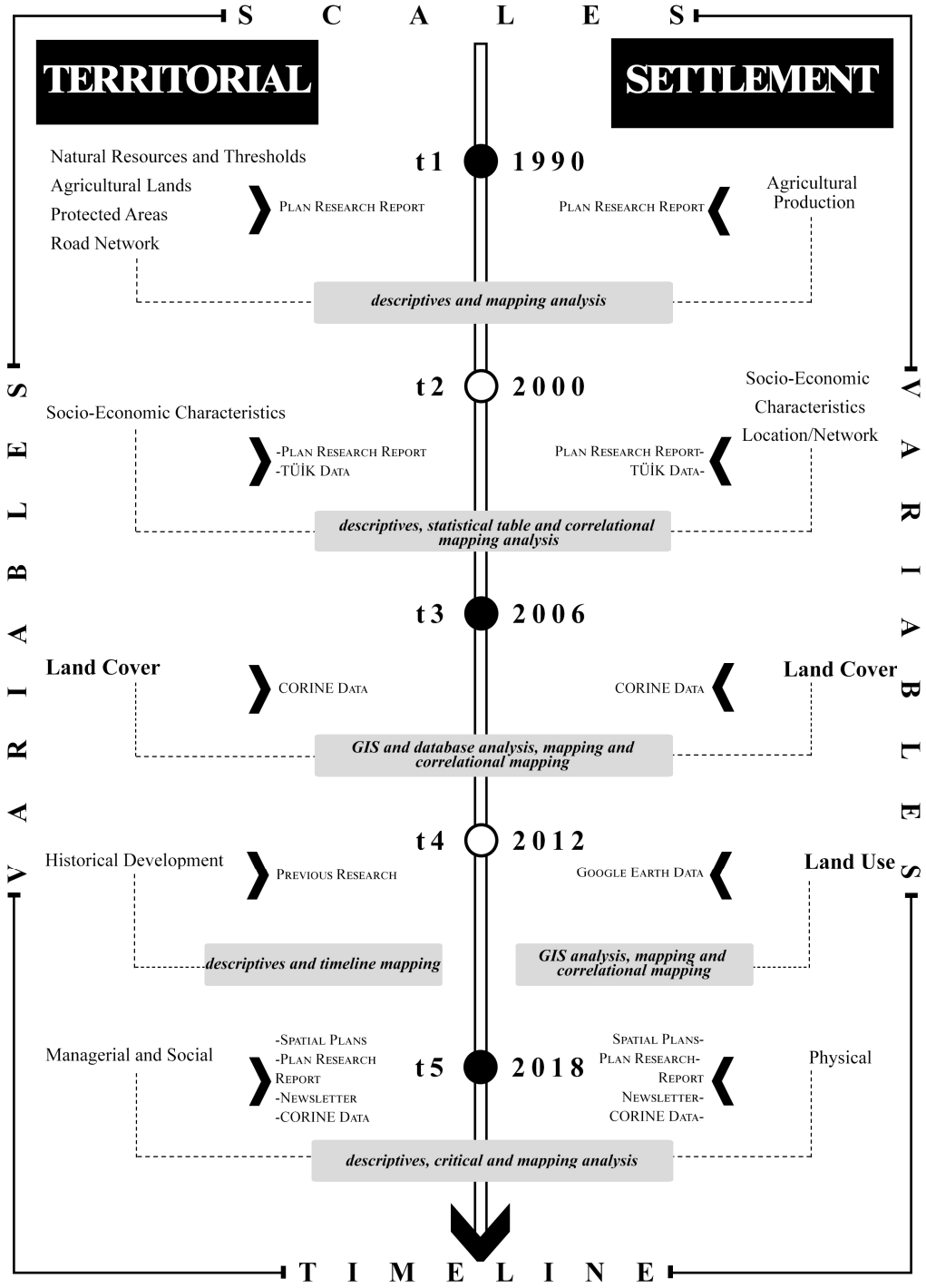


Figure 2: Geographical-Hierarchical and Historical Framework of the Research Methodology

There is a lack of comprehension in traditional planning methods for the complex and heterogeneous structure of urban fringes. Broader concepts to deal with the non-stationary and multi-component structure of fringes are needed. Understanding the fringe's individual components is essential for understanding the fringe as a whole. These components have a relation with their environment as well as with each other. Evaluating on the development of these relations over time is an integral part of this thesis. The complexity theory, of which relationalism is an important part, played a significant role in elaborating on these internal and external relations in the fringe. During the research it became clear that integrating different definitions of the fringe and its structural and functional variables is not enough. Formal and administrative planning tools alone are insufficient for generating an understanding of these relations.

In this context, to understand the complex fringe structure in Datça this study takes different variables into consideration both horizontally and vertically. The scope of this thesis accepts the urban fringe as a complex and dynamic structure that changes over time through interactions and associations of its different variables. Looking at the urban fringe as a complex phenomenon with a dynamic development, this research intends to understand the interrelatedness of the structural components in Datça and how they changed over time. It also examines the spatial plans in Datça to reveal how they have affected the structural change of its urban fringe.

CHAPTER 2

THEORETICAL FRAMEWORK OF THE RESEARCH

This thesis focuses on the spatial change of the urban periphery in a protected area. This change is complex and unpredictable but of great ecological significance. Thus, the theoretical discussion focuses on two main issues: Firstly, the **heterogeneous and complex structure of the urban fringe** and secondly the **urban fringe in ecological perspective**. Respectively, this chapter gives an overview of the theoretical background of the multi-layered structure of the urban periphery. It aims to systemize existing concepts about fringe areas that are defined in different terms in varying literature. To do that, fringe-related terms will be classified in terms of administrative, physical, and social perspectives.

The spatial change in the urban periphery over the last decade is striking from a social, physical, and economic perspective. Increasing migration from rural to urban and rapid population growth have significantly affected metropolitan scaled cities. Over the years, due to a lack of employment opportunities, limited social and educational facilities, and low living standards, the population has migrated from rural areas to the cities. Although migration from rural to urban areas plays a major role in urban sprawl and spatial change in fringe areas, it is not the focal point in this study. This study rather examines the spatial evolution in the fringe of a protected area according to the main principles of complexity theory. To be able to understand the study field's complexity, the primary requirement is to discover the heterogeneous, multi-dimensional characteristic of the urban fringe itself. Therefore, this chapter aims to outline the theoretical ground for the forces catalyzing the complex nature of urban fringes and intends to respond to the following question: “What does complexity in fringe areas arise from?”

2.1.Preliminary Theoretical Framework of the Study

A unidirectional perspective, as opposed to a multi-dimensional perspective, results in a misleading interpretation of the fringe due to its disregard for its complex and heterogeneous nature. Areas with varying components require holistic, multi-dimensional, and multi-scalar interventions. Therefore, to effectively understand a fringe, there is a need for a holistic theoretical basis which is open to take into account its complex, inter-related, multi-dimensional, multi-scalar, dynamic structure.

This chapter introduces a critical discussion in reference to the assemblage theory and the complexity theory. It lays out the argument that the assemblage theory responds to spatial issues with the exteriority of relations and examines different layers together in the same context (Anderson et al., 2012). Collaterally, the complexity theory does not approach planning problems straight forward but associates them with internal and external complexities. It supports the idea that complexity science facilitates the understanding of the holistic process (De Roo et al., 2016).

2.1.1. Assemblage Theory

In general, the assemblage theory constitutes the basis of this study from a broader perspective. As defined in the previous chapter, this thesis aims to generate an understanding of the fringe area's complex structure in a protected site. The area called "fringe" is a transition zone from urban to rural. This means it contains a mixture of both urban and rural characteristics. Besides including features from urban and rural, the study area is located in a special environmental protection area within which tourism activities have accelerated in recent years. Those urban and rural features indicate different structural attributes. With this perspective in mind, it is worth emphasizing that several components of the fringe are connected to each other as well as to the fringe as such. Those components have internal and external relations. Since relationality is a key aspect in understanding the holistic fringe structure, existing geographical debates often refer to the assemblage theory. This part will focus on what assemblage thinking has to offer in the context of the socio-spatial theory.

The assemblage theory emphasizes the 'exteriority of relations' and explains why assemblage thinking can be a distinct response to emerging tensions and problems in

the periphery. Anderson argues that "any entity is relational, and/or is emergent from relations and/or takes place in relations, and this is perhaps the starting point and sometimes even the main claim of contemporary social-spatial theory" (Anderson et al., 2012, p. 172).

Assemblage thinking outlines that different activities can become entangled and interact with each other, which in turn, may result in various activities becoming part of other assemblages (Anderson et al., 2012, p. 173). Within the assemblage theory, DeLanda argues that there is no requirement to reach a consensus about everything. Otherwise homogeneous and uniform outcomes would be inevitable. Different approaches should rather be looked at as enrichments for the theory. The purpose is to see the differences between the ideas and combine them while preserving and recognizing the value that each one of them has for the assemblage theory. To reveal those differences, different ideas should be put together from their rough edges (DeLanda, 2012).

The ideas of Markus and Saka are similar to the ones of DeLanda. According to them, assemblage thinking brings together two forms of social understanding that may seem contradictory at first: ephemeral and structural. The result is characterized as "almost a nervous condition for analytic reason" by Markus and Saka (Marcus & Saka, 2006, p. 102):

> Indeed, the term itself in its material referent invests easily in the image of structure, but is nonetheless elusive. The time-space in which assemblage is imagined is inherently unstable and infused with movement and change . . . Whoever employs it does so with a certain tension, balancing, and tentativeness where the contradictions between the structural and the unstably heterogeneous create almost a nervous condition for analytical reason.

Reaching a consensus about spatial problems brings about homogeneity. This consensus leads to a disregard for the diversity of variables in the urban fringe. Especially in places like the periphery, there are many dynamic characteristics of both urban and rural. Therefore, the transition zone can easily be differentiated from urban and rural. Although the aim of the study is not to make the statement that homogeneity is necessary in the fringe, one of its goal is to point out that there should be harmony between its different spatial variables. Each of those variables should be considered not only individually but also in an interrelated context while creating an assemblage.

In order to be able to make this assemblage more coherent, there may be a need to reshape the "rough edges" of the spatial elements. For a harmonic urban environment in the periphery, a smooth assembly is needed. Therefore, the fringe's ecosystem has to be in balance with its components.

The heterogeneity of the elements and the specific "structuration style" in which well-organized formations are held together form the basis for an assembly-based analysis (Anderson et al., 2012, p. 174). DeLanda explains the assemblage theory using the example of "a horse, a man, a weapon". These three components combined are more than just a collection of individual terms. They form a whole that cannot be reduced to its three individual parts. This man on the horse is now a warrior who knows how to ride a horse and use a weapon. This differentiates him from a simple horse rider. Every component has a significant effect on the whole. It interacts with the other components. which is why assemblage is irreducible (DeLanda, 2012).

In a similar vein, components of an urban environment create an assemblage. This assemblage cannot be reduced to its individual components as their combination creates a unique environment. This entity has characteristics that are different from those of the individual parts that it consists of. While dealing with urban problems, the characteristics of the variables in the urban space need to be considered as well. However, the focus of the assemblage theory is the dynamic which contributes to the uniqueness of an area's character.

Assemblage is a part of the relationship between the variables which creates an irreducible outcome. If a reduction to the parts of an assemblage was possible, it would just be a mere collection of individual components. Their assemblage would not create anything new that was not already in the parts. When components are combined to a new entity, they become more powerful, the entity is more than just its parts (DeLanda, 2012). Since the assemblage way of thinking offers a method to understand the relations between different components and creates a connection between the parts of the whole in a broad perspective, it plays a critical role in the theoretical framework of this study.

2.1.2. Complexity Theory

Spatial planning needs to develop alternative futures related to people, places, and discourses in varying ways. There should be detailed connections between the time-space relationship and the means of places. Planning processes have several complicated stages. Therefore, a growing number of planning issues are not one-dimensional. This is due to the increasing internal and external complexities of real-life processes. Reflectively, deciphering the space and time relationship can be a starting point for understanding planning issues (De Roo et al., 2016, p. 1).

Due to the growing complexities in our society and the dynamics of urban life, most spatial planning issues cannot be easily defined. Approaching problems piece by piece can be a way to resolve this ambiguity. Having said that, understanding the whole is a difficult task. However, complexity science helps to facilitate this process (De Roo et al., 2016, p. 2).

There is a need to consider non-linear causalities as well as causalities that are self-referential. Although the causalities become increasingly unclear, planning theory has always taken this vital, realistic perspective into account. In planning theory, this is considered to be the driving force behind planning and decision making represented by the functional, instrumental, or technical rationale (De Roo et al., 2016, p. 2). This study covers a holistic, multi-dimensional, multi-scalar, and dynamic area. The place has many characteristics and a heterogeneity that requires such a unique approach. For this reason, complexity science provides a broad perspective to understand the spatial components of a fringe, the relationship between its variables, and their interaction over time. The intersection of the rural and urban area has a complex structure which raises the following questions: What is complexity? What does it arise from? Where can complexity be observed? And when does complexity become visible? (De Roo et al., 2016, p. 5) (Figure 3).

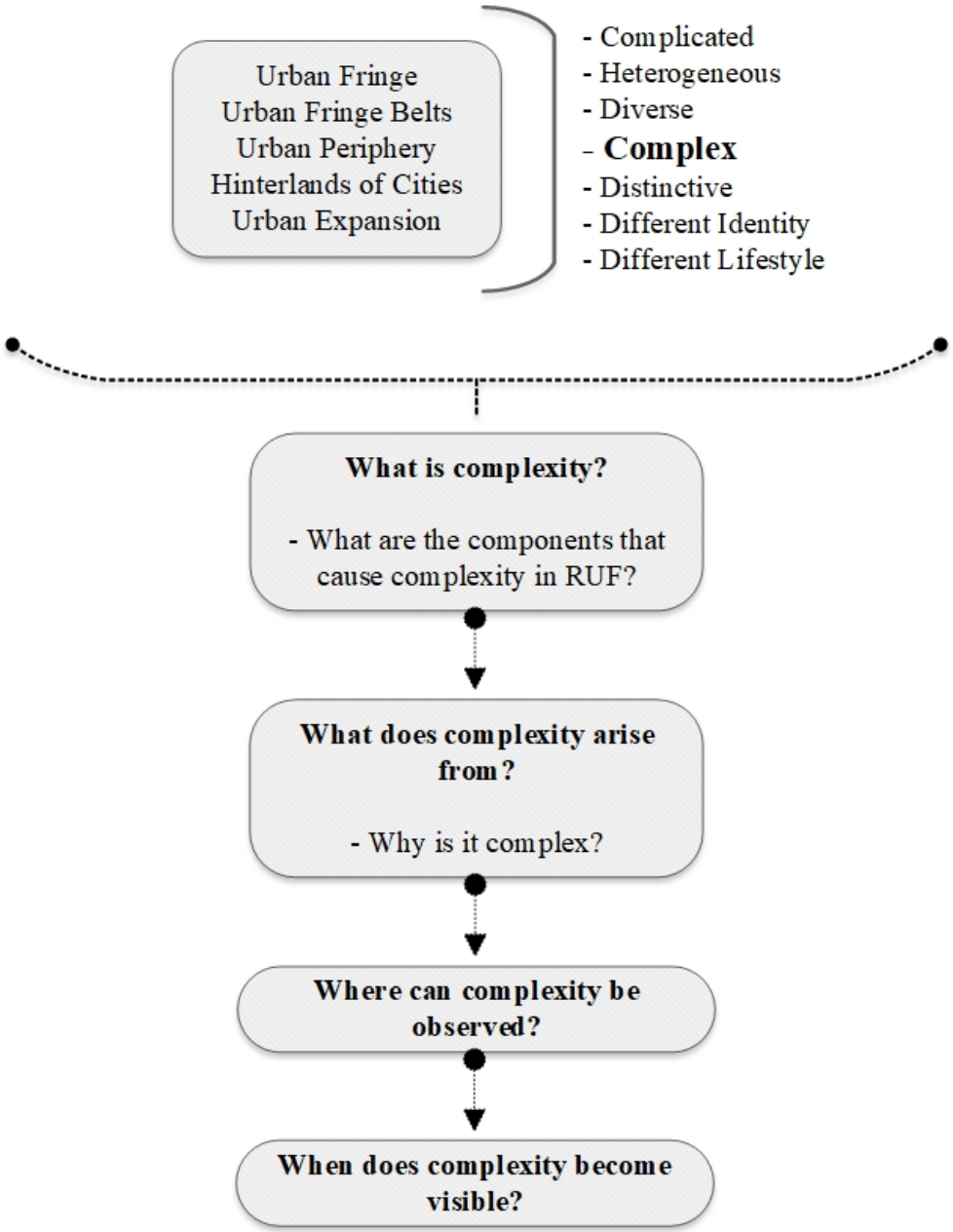


Figure 3: The Complex Character of Urban Fringe Definitions

This school of thought contains two paradigms. The first one applies an analysis-synthesis method known as the basic method of obtaining information in the traditional sense, which means that an analysis divides the whole into meaningful parts and interprets the existing relations between them. The second methodological strategy, which is less commonly used, examines association-creativity. It is based on the traditional method. The association-creativity approach puts less emphasis on the relationships between the whole and its components. This strategy is vital for planners because they must explore virtual "becomings" (outcomes) and map out future paths. Different components of the planning process are reconnected not only by creating new concepts but also by exploring the ways and directions of a related shift in elements that may have affect the development of the planning situation in the past (De Roo et al., 2016, p. 12). The output of the complexity theory related to the connection of the elements, emerging new concepts, and the exploration of different shifts of elements are significant for this study. In the case study chapter, the study area will be examined spatially regarding the relations of the fringe area's components.

According to De Roo " (De Roo et al., 2016, p. 6):

> "Building a fruitful representation is, on the one hand, about simplifying the 'real' (realism) and, on the other hand, about constructing mind frames for considering the various components of the model and how these components (might) interrelate. Idealism is not, however, so much about how the world 'is' but how it 'could be'. It refers to a capacity of our minds to compose 'another' world, however much related to the 'real', it can propose different 'reals-to-come'. In this imagined realm we can play with 'reality'. This allows us to imagine, for example, desired, extreme or 'worst-case' realities which differ from what we consider to be the actual 'real'.

The science of complexity provides an opportunity to see realities from other angles. Considering the idealism that helps concentrate on the world ahead also enables to discuss the temporal context in which systemic and operational transitions, the way they are perceived, the circumstances, and how they all are viewed, shift (De Roo et al., 2016, p. 7).

A straightforward, one-dimensional way of thinking is insufficient to understand the complexity in the urban place. Varying attributes are located, many actors are involved, and many decision-makers are taking part in the spatial, social, economic, and political processes regarding the periphery. Every actor and every decision maker

contributes a different value to the space. Occasionally, those values appear saliently in a place, and sometimes they speculatively occur on the socio-economic level.

According to De Roo et all, relationalism has still not been widely accepted in spatial planning as a frame of reference. The concept of relationalism sees our world as a place where objects, situations, values, ideas, and behaviors gain meaning in their relationships to other objects, situations, values, ideas, and behaviors. As De Roo et all emphasized (De Roo et al., 2016, p. 9):

> Relationalism does not refer to a reality that is 'black and white', provides 'yes and no' answers, or 'zero and one' solutions. Nor is it a reality in which agreement about how to see reality prevails. Rather, relationalism embraces a world with infinite shades of grey, produced on the basis of relationships. These infinite shades of grey can be seen as a metaphor for the endless number of situations with which spatial planners, for example, are confronted.

All these cases can be viewed separately from a relativistic viewpoint and shareholders should decide how to interpret the specific issues and act accordingly. The relational perspectives see how each situation occurs based on different relationships, how it relates to other similar cases, and how they are created and treated (De Roo et al., 2016, p. 9).

In the scope of the complexity theory, the heterogeneous, multi-dimensional structure of the periphery is explained using the color grey as an example. Grey represent the fringe as a transition zone. The urban fringe literature indicates the fringe's characteristics as both urban and rural. It further argues that if "black" indicates urban and "white" indicates rural, then the urban fringe is "grey." This thesis recognizes this approach as valuable for the study of urban fringes.

Furthermore, a conditional reality involves a causal world in which time and space are related. Progress can be observed through situational changes in time and space. This helps to lay out historical events by placing them in time and space dimensions. Moreover, the comparison of physical or material events is not sufficient. Intersubjective phenomena such as power relations are also relevant. These relations guide actions, behaviors, and attitudes with the help of a relational perspective (De Roo et al., 2016, p. 10). Accordingly, in the case study, the comparison of situational

changes in time and space will play an essential role in the discovery of the relationalities in the historical process.

This idea is also reflected in the assemblage way of thought. Kaipayil emphasizes that the relations between the different variables of an entity define its identity. These relations include the entity's intra-relations (relations between its constitutive elements) and inter-relations (relations with other entities) (Kaipayil, 2009, p. 10). According to the assemblage way of thought, every relationship is special in itself. Those relationships are empirically inseparable from each other. However, relations remain "external" as components do not consist exclusively of relationships with other parts in the entity (De Roo et al., 2016, p. 10). An area that includes so many variables and actors is a challenge to the urban environment. In accordance with the assemblage theory, those variables and actors form an assembly and a complex structure with their interior/exterior relationships and their interaction with the time component in the periphery.

De Roo et al. suggest a spectrum that includes technical and communicative rationales for planning problems (Figure 4). The localization of a planning problem in this spectrum depends on its certainty-uncertainty ratio. The transformations occurring along the spectrum, moving from technical to communicative rationale, provides insight into planning and decision-making. While seeking precision in a planning process, it is also important to cope with the uncertainty (De Roo, 2016b, p. 114).

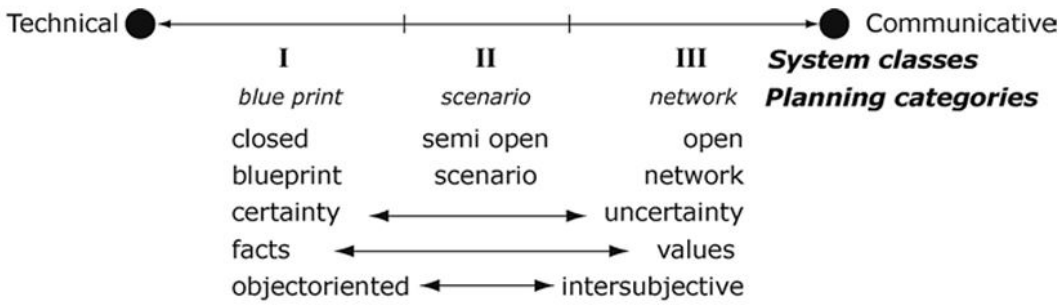


Figure 4: A Rationality Spectrum For Spatial Planning

Source: De Roo, G. 2016.

The technical extreme, the first theoretical pole in the spectrum, represents certainty. Technical interventions are needed here to reach the desired result. The communicative extreme, which is the other theoretical pole, involves varying stakeholders and the conflicts of interest between them. This causes this extreme to be uncertain and fuzzy (Figure 4). De Roo states that there are two different worlds (poles) and planning issues are located in between them. According to him, it is possible to create efficient solutions for planning issues by combining those two different extremes (De Roo, 2016a, p. 4).

The technical rationale expresses that there can be only one true world. It has a certainty that is clear and well-defined. The communicative rationale is the other end of the spectrum representing a world full of uncertainty. This second extreme correlates to relativism. The technical rationale has the main goal of establishing a well-defined task. Contrary to this, the communicative rationale aims for process optimization and agreement by consensus. Within this second rational, uncertainty has been accepted as the reality of the planning process (De Roo, 2016a, p. 5). Fringe-related problems within the context of this thesis are also located in between the two poles of the spectrum. For this reason, considering both uncertainty and certainty in the same context, understanding their relationships, and taking complexity into account can lead the way while establishing a framework for the study.

It is argued in complex science that in a world where the Newtonian viewpoint of an endless cycle of repetition prevails, development and progress cannot be expected.

There is a perfect equilibrium in this world in which time has no role, and interactions between entities are permanently fixed. There is no change apart from the motion itself. The discrete linear movement from A to B has no impact. In other words, in the equilibrium there can be no progress or improvement. For this reason, ecologists argue that such a system is a dead system (De Roo, 2016b, p. 150).

Only in a disequilibrium where conditions are "complex", and certainty and predictability are replaced by emergence and non-linearity, development becomes possible. In this case, there is no definite development that can lead to a concrete result. In contrast, there is an infinite number of possible paths, each with a different result. Repeated processes based on the same initial conditions will not produce the same outcome. A complex world (non-linear and out of equilibrium) can lead to a magnificent evolutionary process. This process may be chaotic, but according to chaos theory, it is likely to emerge a new order (De Roo, 2016b, p. 150).

Having said this, the definition of "out of equilibrium" is constructed in the human conception. Humans often sense roughly the wholeness of the world's system in general terms yet cannot describe the way the system operates. Although the facts sometimes appear off the lines and parts cannot be made sense of, they serve as meaningful to the whole. Thus, when a system is assumed to be out of equilibrium, this may because the logic of its operation cannot be grasped so easily.

This way of thinking supports the method of this study:

- Examining the spatial components in the working area's fringe
- Analyzing their relations with the timeline and with each other
- Synthesizing the outcomes and values obtained from analyses.

2.2.Urban-Rural / Rural-Urban Fringe in Literature

Within the scope of this study, the multi-layered and multi-component structure of the urban fringe is analyzed within the broad theoretical framework provided by the complexity and assemblage theories. In urban studies, this transition area has been defined in various different ways. Although those definitions are not contrary to each other, they reveal different variables. Concepts that emerged as a result of different

approaches in literature were divided into groups in order to place theoretical studies on concrete foundations. The process was carried out according to the administrative, physical, and social variables and the models derived from these variables. Besides, the models were categorized according to their urban and rural features. In this context, this part of the study evaluates on the concepts, models, and variables within existing research and provides a detailed examination of them.

Figure 5 describes the theoretical method of the study. The table rows contain models that guide this research in understanding urban fringes. The columns show the models' variables. Besides, models are classified according to their content and scope. They are located under umbrella paradigms including Spatial Planning and The Ecosystem Approach. Concepts emerging from different researches reveal individual parameters. Literature lays out that some parameters were used more than once. In the figure, main parameters from each models are written on the relevant line. The parameters which are connected to the complexity theory are colored in the same shade of the grey as the theory.

Understanding the relationship between time, space and the variables within the scope of the complexity theory is one of the major findings of this work. Figure 5 gives an overview of the examination of existing fringe models in two ways. While they are classified according to different planning paradigms, the implications and arguments put forward in these models with regard to administrative, physical and social aspects are also outlined. Accordingly, eight fringe models are classified as spatial planning, as ecological approaches, or as both: (1) The Concentric Zone, Urban Fringe, and Urban Expansion models pursue Spatial Planning paradigm; (2) The Rural-Urban Fringe and Green Belt models pursue the Ecosystem Approach. Three of the fringe models, namely the Urban Fringe Belt, Urban Periphery, and Hinterlands of Cities display characteristics from both Spatial Planning and the Ecosystem Approach.

In the figure, the parameters listed in the table's rows emerged from the relations between the models and the variables. A model and a variable create a parameter together. In some of those models, only one parameter appears, while in some other models several parameters can be found. As an example, three physical parameters derive from the Rural-Urban Fringe model within the context of the Ecosystem

Approach. Those parameters represent the disintegrated, diverse, and complicated nature of rural-urban fringes. Simultaneously, being diverse and complicated is one of the main characteristics of the complexity theory in reference to spatial planning. Therefore, the model of the rural-urban fringe contains two features indicating complexity.

Firstly, from a spatial planning point of view, the administrative variable is limited to land prices and property values. Since there is not a sufficient integration between planning paradigms and the ecological approach, significant issues arose in the historical and geological development of cities. In the ecological paradigm fringe areas were completely forgotten. Secondly, the physical variable only considers urban and rural areas individually. It looks at fringes as a growing part of the city which is either already integrated or will be integrated into the city in the future. Therefore, there are no specific physical interventions that consider the unique and individual character of fringe areas. Last but not the least, within the scope of the social variable, inhabitants of fringes have unique identities and lifestyles. To conclude, there is no specific way to deal with fringes. Understanding its complex structure is like coping with an uncertainty.

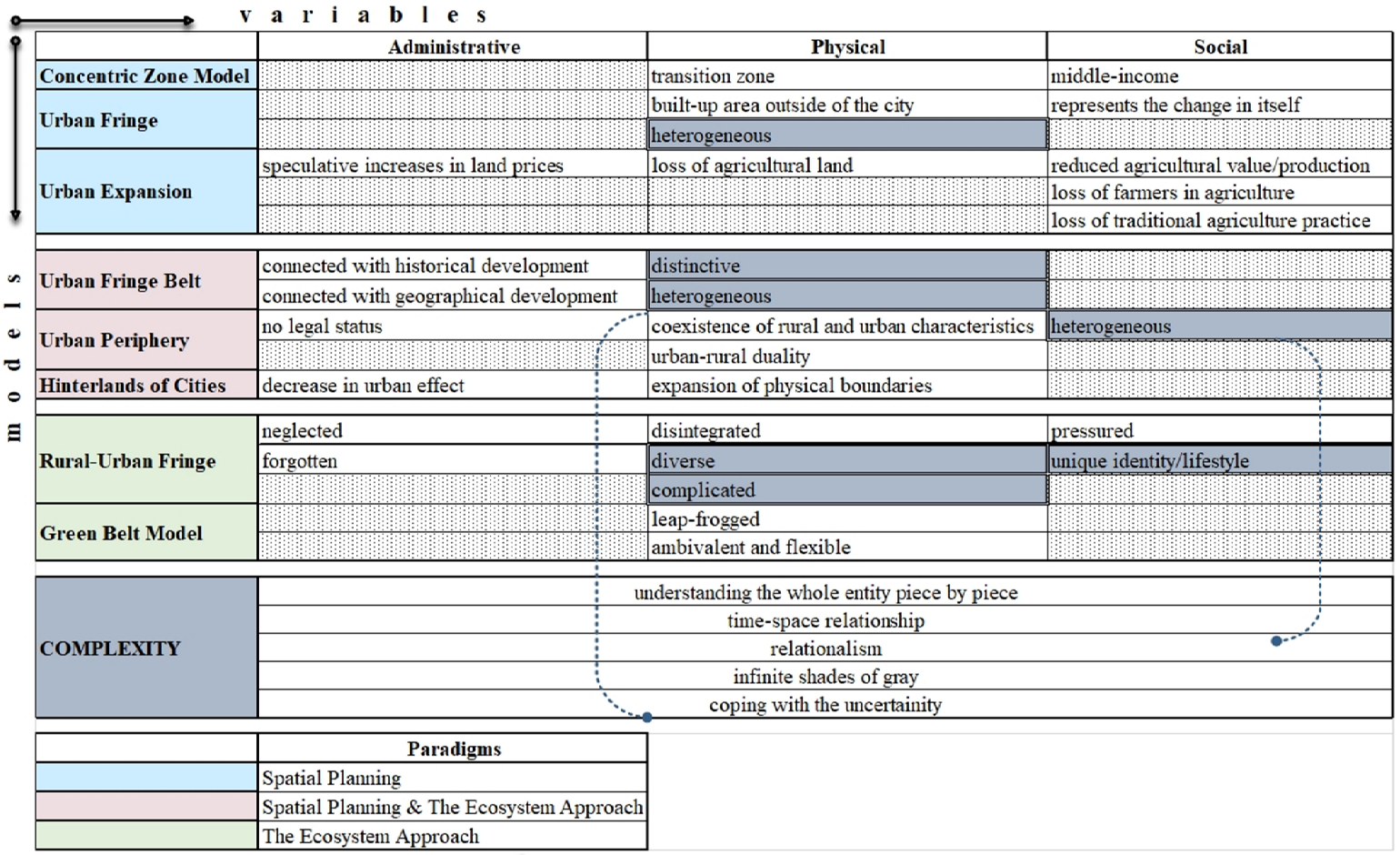


Figure 5: Methodological Concepts of the Study

According to the results obtained from the models, it was possible to divide them into two groups, the group “dealing with a single variable” and the group “regarding relationalities”. It became apparent that models focusing on a single variable did not produce solutions for comprehensive fringe management. For understanding the structure of the fringe, it is necessary to consider models with more than just one component that take their relationality into account. Accordingly, the parameters obtained from the models considering the relationality were marked in Figure 5. Those parameters will be used as a guide for the analysis of the Datça area.

In this structure, the complexity theory examines the individual parts of the whole in a time-space relationship and focuses on relationalities. Urban fringes are neither black nor white but rather an infinite shade of gray with inherent uncertainties. The focus will be on parameters from different models in the Datça case study and the examination of their relationality. The aim is to generate a better understanding of the complexity of the fringe’s structure.

2.2.1. Urban Fringes in the Historical Process

As outlined in Figure 5, different models and variables have been taken into account within the scope of this study. The models were evaluated on from administrative, physical, and social perspectives. In the historical process two main models have emerged. While the first one, the Concentric Zone Model, pursues the spatial planning paradigm, the second one, which is the Green Belt Model, follows the ecosystem approach. The first model includes variables that have more urban characteristics and a clearly defined urban environment. It lays out parameters on physical and social variables such as the urban fringe as a transition zone and middle-income inhabitants in the area. The second model shows rural-dominant features and focuses on the changes in the periphery. It outlines physical variables such as leap-frogged development and ambivalent and flexible transition.

Urbanization emerges out of need for public services. It increases the demand for land which puts constant pressure on the areas around the city to develop. Increasing growth in cities cause urban expansion. This affects the periphery the most because it is located on the edge of a city. The concept of urban-rural/rural-urban fringes is associated with other professions such as sociology, geography, and planning. In order

to understand the concept of fringes, it is important to consider former policies to be able to respond to the fringe-related issues accordingly.

The urban fringe is not a concrete reality but rather a theoretical structure (A. J. Scott et al., 2013, p. 12). This abstract structure causes uncertainty. Some theories and models are able to explain the evolutionary process of the fringe. However, one-sided solutions and models cannot be applied to the fringe because of its disintegrated components and its complex structure. Although individual models are not sufficient to comprehensively characterize a place, attention should be paid to them nevertheless. They can be helpful in making accurate assumptions about a fringe area and its complex structure. In this respect, this section will present the Concentric Zone Model and the Green Belt Model. It will also critically reflect on these models and outline why their contribution to today's structural development of the urban periphery is limited.

2.2.1.1.Concentric Zone Model

In settlement geography, the urban fringe is an important concept which also represents a transition zone that includes both urban and rural uses together. Characteristics of the land use in this area are mostly dormitory houses in which middle-income people live. They commonly commute from home to work and back. According to the periphery's dominant usage, the transition zone is known as mostly urban or mostly rural.

The most common discourse on urban form and structure was initiated by Burgess, Hoyt, and the Chicago School of Sociology with Burgess's "concentric zone" diagram of urban land uses (A. J. Scott et al., 2013, p. 12). The structural layers of cities were modified over time. The original "Central Business District" later also covered what used to be the "zone in transition" and eventually the working-class housing, the residential, and the commuting zones as well. However, the original model of concentric zones remains a simple and powerful concept (Burgess, 2008, p. 73). There is also a transition from working-class housing to the residential and commuting zone.

Figure 6 presents five different zones which are explained in detail below (Hoyt, 1964, pp. 3–10):

- Central Business District (CBD): It was located at the focus point of the commercial, social, and civic life and in the center of the city. CBD refers to the heart of the city with its varying urban land-uses. Burgess used this definition to identify most American cities in 1929, which remained valid until the end of World War II.
- Transition Zone: It surrounded the CBD. There was a residential deterioration because of business and industry. Emerging factory districts in the transition zone on the inner belt led to a retrogressing of neighborhoods on the outer ring. The transition zone was considered an unsafe place during those years.
- Working Class Zone: It describes another immigrant neighborhood. Residents of this zone were located in a close distance to their work place but not too close to where they lived. It was not a housing area in Chicago with tenements or apartments or single apartments. Its limits were determined mainly by the arrangement of apartment buildings with two flats, usually of the frame structure, with the owner living on the bottom floor and the tenant on the other.
- Residential Zone: This zone was located further out past the immigrant settlements and was known as the "Zone of Better Residences". The middle-class, small business people, professionals, clerks, and salespeople were living in this zone. Small houses in Chicago became apartment houses and residential-hotel areas.
- Commuter Zone: It was located outside of the "Zone of Better Residences" and was surrounded by small towns. The commuter zone was also known as the

dormitory suburbs. Most of the residents who lived there spent only the nights in the neighborhood and went back to the CBD to work during the day.

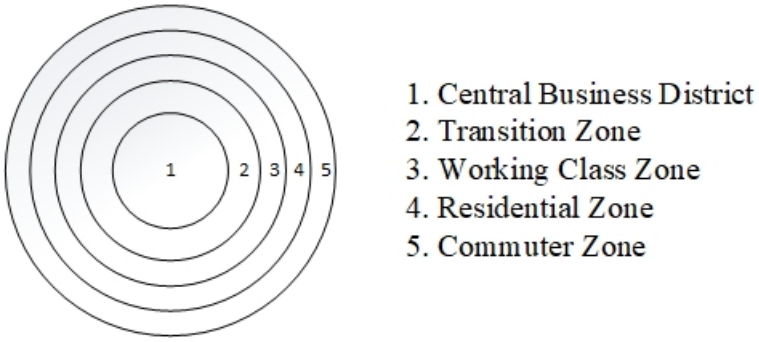


Figure 6: Concentric Zone Model

Source: (Hoyt, 1964). Figure is re-graphed by the author.

The Concentric Zone Model appeared in the 1920s. Already then the heterogeneity in the transition zone was visible. In the model, the transition zone was pushed towards the cities' outer edge over time. Varying land-uses and transition features remain a part of its character even today.

Burgess' model was developed in reference to the empirically driven research of the Chicago School and was also impacted by the historical development and expansion of cities. He supported the idea of a relationship between land use and social processes in the cities, and he suggested that (A. J. Scott et al., 2013, p. 12):

> The phenomena of urban growth were a result of organization and disorganization. . . Disorganization is preliminary to reorganization of attitudes and conduct . . . In the expansion of the city a process occurs which sifts and sorts and relocates individuals and groups by residence and occupation.

However, it was argued that in its simplicity this model ignored the complexity of current cities and the changes that occur in them during a short time. Besides, it has been criticized for being "sketchy and muddled" and, in particular, for not being universally applicable to all cities (A. J. Scott et al., 2013).

One of the most important points in Burgess' model was the application of the ecological principle of succession to urban or peri-urban land. According to him, over

time, in any location, there is a succession of land: What was once the urban edge later becomes wealthy residential, working-class residential, industrial, and so on (A. J. Scott et al., 2013).

2.2.1.2. Green Belt Model

The "green belt" was a model that greatly influenced the historical processes of urban development in the United Kingdom. Not all towns or cities have a formal green belt designation. However, cities who are under pressure to extend and pursue a focused growth within their urban limits do. This applies particularly at a time of high demand for new housing (A. J. Scott et al., 2013).

Very often, urban researchers used greenbelts to achieve a sustainable urban form. According to Kühn, greenbelts could serve two different purposes. The first one is to connect settlements within city regions to a Regional City. The second purpose is to indicate separation between the city and the countryside (Kühn, 2003, p. 2). Greenbelts are used both as a connection tool to create continuous open space and as a tool to shape the landscape. However, for the purpose of this study, the focus is on the greenbelt as an element that can be used to identify urban-rural separation. All the way from urban areas to the countryside, it is possible to see major green areas in such transition zones.

The concept of a green belt is still relevant today because it is a step towards achieving urban containment. However, with the development of new technology, individual transportation became more accessible and green belts have become "leap-frogged". Containments achieved through the establishment of a green belt did not reduce the developmental pressure. Instead, the development then took place in another area. This resulted in high social and economic costs. Nevertheless, the green belt has become "one of the most tangible successes in social and democratic planning after the War" and has been widely adopted worldwide (A. J. Scott et al., 2013, p. 14).

Greenbelt policies differ depending on the local authority. The green belt plays a vast role in the change of landscapes in transition zones. It functions as more than just a protection from urban expansion. Green belts, as a transition zone, are considered *"ambivalent and flexible*." Abbott (2002) suggests, among others, that green belts

support and advocate their own goals to protect and save rural and open areas. If cities prevent expanding "normally and organically" (although both can be debated), more land-intensive housing development is needed beyond the green belt boundaries. As long as leapfrogging continues, people will have to commute by car. Therefore, this process cannot be considered sustainable (A. J. Scott et al., 2013, p. 14).

According to Kambites and Owen, green infrastructure planning can be seen *holistic* (covering all human and natural functions), *strategic* (extending beyond administrative boundaries and extending well into the future to include long term changes in ecosystems and social systems), *inclusive* (includes overlapping stakeholders such as local communities, landowners, elected representatives, professional advisors or developers) and *qualitative* (encompassing concepts such as biodiversity value, water quality and human satisfaction) (Kambites & Owen, 2006, p. 484). However, as mentioned above, spatial problems in urban fringes are challenging and multi-dimensional. The Green Belt model considers natural functions and ecosystem changes while also including different stakeholders. Yet it only does that within the scope of the model. It does not take into account the dynamic structure of the transition zone (the urban fringe). Elements of the periphery and spatial changes over time require a more comprehensive way of thinking to understand the fringe-related problems in this study.

Scott et al. evaluates on the concept of "green infrastructure" and outlines that appropriate strategic planning of an urban area and its hinterland must take place. The result could be a more flexible preservation of the existing landscape (A. J. Scott et al., 2013, p. 14). Besides, Kambites and Owen stated that (Kambites & Owen, 2006, p. 484):

> Green infrastructure planning is therefore seen to be more complex, in both subject matter and process, than conventional open space planning—and potentially more effective in enhancing "liveability" for human communities while nurturing the intrinsic values of the natural environment.

When the green belt model was applied, it became clear that this theory of an ideal urban development was not actually successful in practice. Cities faced urban sprawl and postmodern urbanization appeared in urban forms that were different from the ones that had been planned according to the Concentric Zone Model and the Green

Belt Model. The messy and complicated structure of the rural-urban fringe and its constant change were already making it difficult to plan this area and to apply this plan. This is an important reason why the green belt model could not be applied successfully as well. Planners tried to minimize the changes in the landscape but could not manage to do so because "all landscapes change". In addition to that, the rigid planning structure helped neither the city nor the fringe. Because of the rapid change in cities, none of the plans could be fully implemented (A. J. Scott et al., 2013, p. 14).

The urban-centered models often focus on land-use variables instead of taking environmental components into account. They disregard the multi-dimensional and multi-functional structure of the fringe. This is why they are of limited value in practice. These urban development models should consider the continuous urban growth and accept that urban sprawl is an important issue. Although the green belt model reduced urban expansion, it also caused higher-density development, including "edge cities" and "leapfrogging" in the urban fringe. A rural-urban fringe is a flexible area with different uses of land. Implementing a too rigid planning approach could reduce this flexibility (A. J. Scott et al., 2013, p. 15).

2.2.2. Definitions of the Urban-Rural / Rural-Urban Fringe

According to the assemblage theory, elements have individual meaning and features that altogether create an entity. When these parts come together, they create a powerful and unique assembly that is different from the separated individual parts. The new whole has the characteristic of the elements it is composed of but is now has become a completely different, unique object. It is now irreducible to its constituents. A RUF is also an assemblage that consist of two parts, namely rural and urban. RUF carries features of both parts but it is an entirely different phenomenon. Because it has a strong and robust structure, it can be reduced to neither rural nor urban. Their combination brings about complexity and heterogeneity. Although it is possible to understand the elements that create an assembly, when understanding an entity, the first precondition is to understand its complexity.

One of the most critical terms that call for clarification is "peri-urban", which is often regarded as a rural area in cities or within city-regions. Although peri-urban areas are not entirely rural, there is a consensus that they have different land uses, settlement

patterns, and living conditions than urban areas, which means that they are neither urban nor rural. The second important term that will be examined in this section is the "urban fringe". This term describes the area where the countryside meets the town. Its dynamics are different from urban and rural. Many different terminologies have been used throughout history to describe the fringe. Although they differ in their wording, they are similar in terms of their underlying meaning and the perspectives they use. In this part of the study, in addition to the examination of fringe-related terminology, the terminology regarding spatial development paradigms will also be evaluated on. Although these terms are defined similarly, their paradigms guide the way to understanding them.

Theoretical discussions in this context reveal different ***administrative***, ***physical***, and ***social*** variables. These variables were divided into groups within the framework of particular development paradigms and associated with the complexity theory. The interrelated structural concepts that emerged from this chain of relationships were explored in the next part of the study.

2.2.2.1.Urban Periphery / Peri-Urban Areas

The growth of urban centers has a continuous impact on rural areas. This is regardless of whether or not they are densely populated. This impact is one of the most critical signs of growing interdependence among these areas. Rural areas are gradually being integrated into the cities' environments. This integration leads to new forms of development in rural areas. Although there is no agreed upon definition of the peri-urban interface, professionals and institutions are becoming increasingly aware that rural and urban characteristics co-exist within and beyond the cities. The urban-rural duality, which is deeply incorporated into the planning frameworks, is making it difficult to tackle environmental and development issues in the peri-urban area (Allen, 2003, p. 135).

The European Spatial Development Perspective (ESDP) emphasizes the future benefits of urban-rural integration in achieving balanced development in Europe. According to this perspective, the formation of competing cities and their future destinies depend on the surrounding rural areas. Towns and rural areas form a region within themselves. To achieve urban development, the integration of this region into

the city must be ensured. Accordingly, the ESDP has introduced some key spatial planning policies. With these policies, they intended to: (i) support functional regions to ensure rural-urban cooperation; (ii) integrate rural areas into the surrounding metropolitan areas using spatial development strategies; (iii) ensure efficient land-use planning; (iv) improve the life quality in both urban and rural environments (Briquel & Collicard, 2005, pp. 19–20).

Although the peri-urban area's definition is controversial, there is agreement that this concept embraces slightly more than the urban fringe (Errington, 1994). Peri-urban areas are the hinterlands of cities that cover up next-to-built-up areas. This term refers to the physical expansion of the settlement areas that absorbs the land of the urban periphery. The term emphasizes the expansion of a settlement's physical boundaries and the decrease of the urban effect on rural areas as the distance to the city center increases. Peri-urban areas show fewer urban characteristics and more rural features than core cities (Briquel & Collicard, 2005, pp. 20–23).

In peri-urban areas, the traditional opposition between urban and rural areas has decreased. These areas' dual nature makes it challenging to separate them from urban and rural areas. They tend to be seen as regions that do not have a legal status as they are hardly mentioned in legal documents. Another challenge regarding peri-urban areas is that it is difficult to decide what the values in these areas are. It is necessary to determine the spatial scope of these areas and examine the possible differences between peri-urban areas and other areas (urban and rural) within the scope of development policies (Briquel & Collicard, 2005, p. 21).

Therefore, the variables created by each model within the scope of different standpoints and paradigms were examined in this section. Accordingly, from an **administrative perspective**, since there are no specific legal regulations for the urban periphery, they have no legal status. From a **physical perspective**, urban peripheries emerge as hinterlands of cities, thereby expanding its physical boundaries. The term periphery describes the coexistence of rural and urban characteristics and urban-rural duality. Last but not least, from a **social perspective**, a periphery has a heterogeneous character because of its social duality. It has both, the identity of a city as well as the

identity of the countryside. At the same time, this heterogeneity is one of the main features of the complexity theory in a broader sense.

2.2.2.2.Urban Fringe

The term urban fringe refers to the area where the countryside and a town meet (urban fringe). Since it is the most pressured part of the city, many actors actively use this area (A. J. Scott et al., 2013). Assuming that the urbanization process, migration from rural to urban, and the increase of population continues in the same way as it has in the past, the destruction of natural habitats and the deterioration of the ecological balance will be inevitable.

Urbanization leads to urban expansion and a development of the fringe, which may have problematic consequences. With the outward growth through the urban edge, rural settlements and agricultural areas in close distance are transformed and peri-urban regions are formed. When agricultural lands are located within the urban development area, it causes a loss of agricultural value as well as a speculative increase in land prices. Consequently, farmers in this area are not able to generate a sufficient income anymore. They move away and start working in other urban areas. The former agricultural land in rural areas is then evaluated as land stock (Banu & Fazal, 2016).

One of the most important issues caused by urban growth is that most of the fringe areas have very fertile agricultural lands. As a result of urbanization, agricultural activities are pushed towards less fertile lands, thus reducing agricultural production. Urban sprawl also causes other problems such as higher costs for infrastructure, social segregation, and land-use fragmentation. Within the scope of this study, using the example of Datça, it is shown how alongside the loss of fertile agricultural lands, the traditional/ancient agricultural production techniques also disappear. Farmers have turned away from conventional production. Instead, large agricultural corporations have taken over, producing on a much bigger scale.

T.L. Smith defined the term “urban fringe” for the first time in 1937, signifying “the built-up area just outside the corporate limits of the city” (Pryor, 1968). Several attempts were made to explain different definitions of this area and distinguish between them. For example, Kurtz and Eicher differentiate between the terms “fringe”

and “suburb”. Wissink describes a “fringe”, “suburbs,” “pseudo-suburbs”, “satellites” and “pseudo-satellites”, whereas Schnore distinguishes only between “satellites” and “suburbs”. Several other writers have defined different types of suburbs, some of which may be synonymous with another researcher’s work. Pryor also emphasized that areal differentiations have been made within the fringe, the “urban fringe” and the “rural-urban fringe”, the “limited fringe” and the “extended fringe”, and “the suburban fringe zone” and the inner and outer fringe areas (Pryor, 1968, pp. 203–204).

Pryor summarized the definitions and delineations from previous case studies about urban fringes and underlines that none of these various fringe components have successfully integrated with theories of urban invasion and practical delineation techniques. Table 2, which proposes parameters of the fringe, is a review of some 60 case studies on fringe areas (Pryor, 1968, p. 204). These various components of a fringe have not been successfully integrated so far because they do not consider the relationship to the other components. As mentioned above, in accordance with the complexity theory, diverse alternatives are needed which consider the relationship between people and places. The urban fringe is an area representing the change in itself. Therefore, this table is only have limited value as it is too formal and does not consider the change in the structural components of the fringe sufficiently. The variables presented in the table only consider the managerial aspect. To really understand the above mentioned change, it is also necessary to look at the temporal and spatial dimensions of an area.

Table 2: The Rural-Urban Fringe Definition and Delineation

Structural Content		**Functional Content**	
Definition	**Delineation**	**Definition**	**Delineation**
Location	Census categories (direct or derived) e.g., non-village RNF, urbanized area minus central city. Contiguous census units e.g., “first-tier countries”	**Land Use**	Specific e.g., market gardens. Mixed e.g., between limits of exclusively urban or rural land Valuation changes

Table 2 (continued)

Structural Content		Functional Content	
Definition	**Delineation**	**Definition**	**Delineation**
Administration	Non-census areal units beyond control of central city e.g., school, voting districts.	**Employment**	Census categories e.g., RNF Commuting zone beyond central city boundary
Population density	Selected parameter e.g., 500 sq. mile	**Population Density**	Rate of growth per year or inter-censal
Zoning regulations	Zoned mixed land use (rural and urban) Lack of subdivision control	**Utility Services**	Area not served by specific services
Dwelling Age	Selected parameters e.g., proportion in recent intercensal period	**Social Orientation "transition" "dynamism"**	Rural location, urban orientation of social activity Undergoing change e.g., increase in population density or vacant or urban land

Source: (Pryor, 1968)

Heterogeneity became a characteristic of the fringe due to the mixed land-use decisions that were made in respect of these areas. The characteristics of the urban fringe must be compared to the characteristics of the related urban and rural areas and be described accordingly, although that alone is not sufficient to define the complexity of these areas. (Pryor, 1968, pp. 204–205).

Pryor has introduced definitions and delineations for rural-urban fringes based on structural and functional variables. He used five different variables to define the fringe. The heterogeneity of the fringe is outlined on the basis of the different aspects in the table above. The table shows the different characteristics of a fringe that all together create a heterogeneity in a structural and functional sense. The different variables suggested by Pryor do not fully reveal the complex structure of the fringe.

Nevertheless, looking at them provides important information about the characteristics of an area.

The columns in Table 2 outline various aspects that help with the examination of the structural and functional content of Rural-Urban Fringes. For example, in his table Pryor defines the fringe's location in a structural scope as an "urbanized area minus central city". From the beginning of this study, it has been emphasized that one-way assumptions and simple definitions do not do the fringe's dynamic and multi-dimensional structure justice. Every element in the space contributes to the complexity of the fringe. Although those definitions do not show an obvious path to understanding the fringe, they indicate what it consists of.

2.2.2.3.Rural-Urban Fringe

> Like the poor, the rural-urban fringe we have always had with us. Certainly, it has been with us since civilization first emerged over 6000 years ago, and settlements gradually began to expand in function and size at the expense of the rural sector (Thomas, 1990, p.131).

The place where the countryside meets the town is called the rural-urban fringe (RUF). It is often characterized as one of society's most valued and pressured places. (A. J. Scott et al., 2013). It is important to clarify the differences between urban, rural, and fringe areas. The place where urban and rural areas meet is called a fringe, but it does not have the same characteristics as urban or rural areas. It has a different identity. People in this space have different lifestyles and understandings. RUF represents a neglected and forgotten space that is often not treated adequately considering its rights, needs, and priorities. Governance and urban policies are strictly divided between urban (the built environment) and rural (natural environment). Shucksmith (2010) uses the

term “disintegrated” to describe this division and problematize the examination of rural development policy and practice (A. J. Scott et al., 2013, p. 2).

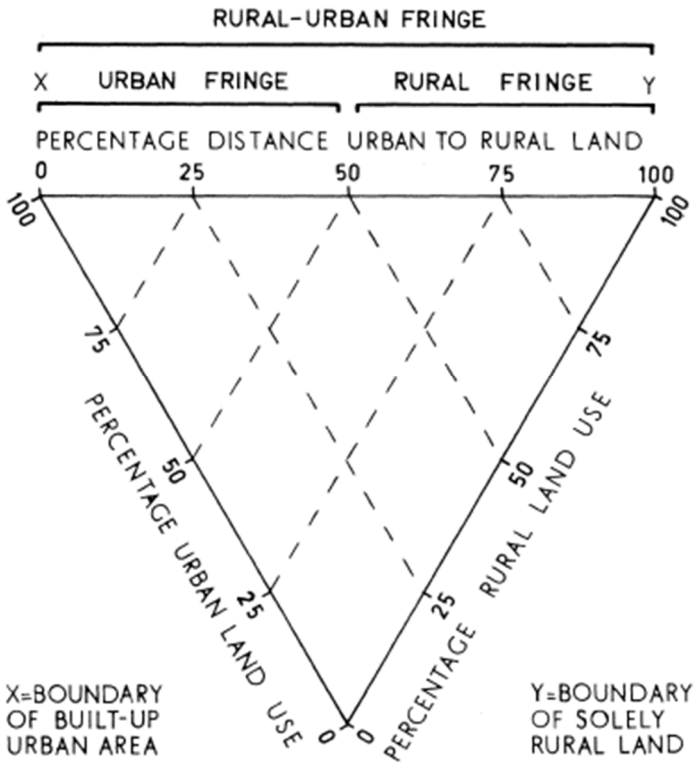


Figure 7: Schematic Diagram of Land Use in the Rural-Urban Fringe

Source: (Pryor, 1968)

Pryor explains that an RUF naturally is always located in between a continuously expanding urban area and its rural hinterland. He calls it a “residual zone between two more readily defined poles.” Nevertheless, its characteristics are not exclusively made up of those of the surrounding urban and rural areas but are unique to the fringe as such. Its characteristics should therefore be looked at as something more than just the average of those of the surrounding rural and urban areas. This makes it possible to establish a definition of the fringe of its own (Pryor, 1968).

For further explanation, Figure 7Figure 7 “combines the concept of urban invasion with the heterogeneous land use typical of the fringe; it also introduces the possibility

of the “rural-urban fringe” being used as a collective term for the “urban fringe” plus the “rural fringe””. It also shows how the growth of cities results in the transformation of land use, a decline in the agricultural land, and a decrease in rural population (Pryor, 1968, p. 205). These definitions by Pryor describe the fringe mostly from a **physical perspective**. He explains that the level of dominance of rural characteristics in a fringe is depended on the growth of the city. In this regard, with an increasing expansion of a city through its edges the dominance of urban characteristics over the rural ones also increases. Although the fringe’s definition is too complex to be limited to physical components only, this model successfully shows its spatial categorization.

The zone where a city meets the countryside is a diverse and dynamic place. Gallent et al. suggest the key attributes below to define the rural-urban fringe (Gallent et al., 2006, p. 223):

- “a multi-functional environment, but often characterized by essential service functions;
- a dynamic environment, characterized by adaptation and conversion between uses;
- low-density economic activity including retail, industry, distribution and warehousing;
- an untidy landscape, potentially rich in wildlife”.

Gallent et al. thereby establish a more systematic description of the RUF that goes beyond the merely physical definitions suggested by Pryor. In the city’s low-density zone, there is a combination of different characteristics on its edges, which are generally surrounded by natural areas. This proves the complex structure of urban fringes, which means that an only physical approach is not sufficient.

Pryor also tried to define the transition zone more comprehensively (Pryor, 1968, p. 206):

> The rural–urban fringe is the zone of transition in land use, social and demographic characteristics, lying between (a) the continuously built-up urban and sub-urban areas of the central city, and (b) the rural hinterland, characterized by the almost complete absence of non-farm dwellings, occupations and land use, and of urban and rural social orientation; an incomplete range and penetration of urban utility services; uncoordinated zoning or planning regulations; areal extension beyond although contiguous with the political boundary of the central city; and an actual and potential increase in population density, with the current density above that of

> surrounding rural districts but lower than the central city. These characteristics may differ both zonally and sectorally, and will be modified through time.

In comparison, this description now includes **administrative**, **physical**, and **social perspectives** as well as an objective convergence. In this way, he aims to show where the fringe area stands between urban and rural. This examination reveals the heterogeneous, multi- dimensional structure of the fringe and accepts the variety of elements that exist within the fringe's boundary.

Rather than being clearly defined, the fringe's boundaries are considered to be "fuzzy" and "permeable", which differentiates them from other urban and rural places (A. J. Scott et al., 2013, p. 9). According to Ravetz (2010), this complexity and heterogeneity reflects rural-urban areas' multi-level, multisectoral, multi-functional and multi-scalar attributes. Therefore, making any general assumptions about rural urban fringes is fallacious. There have been many attempts to define the RUF, for example as landscapes at the edge (Gallent, Bianconi, & Andersson, 2006), places of transition (Whitehand & Morton, 2004), heterogeneous mosaics (Allen, 2003), landscapes of disorder (Qviström, 2007), chaotic landscapes (Gant, Robinson, & Fazal, 2011), new geography of urban sprawl (Micarelli & Pizzoli, 2008), the last frontier (Griffiths, 1994), ephemeral landscapes (Qviström & Saltzman, 2006), edgelands (Farley & Roberts, 2012; Shoard, 2002), and forgotten landscapes (Scott, 2012). This large variety of terms implies "uncertainty" in the terminology. The RUF is a "space waiting for something better to come along". Uncertainties have negative consequences economically, politically, and socially. However, otherness and uncertainty also bring uniqueness and creativity to the RUF (A. J. Scott et al., 2013, p. 9). Spedding describes the vision for rural urban fringes as follows (Spedding, 2004, p. 1):

> The vision is for a rural urban fringe that is attractive, accessible, diverse and multi-functional and which serves the needs of both urban and rural communities, strengthens the links between town and country, and contributes fully towards sustainable development. The fringe is not just the place where town meets country but a collection of dynamic and productive environments set in inspiring cultural landscapes, meeting the needs of both the present and helping to change the way we live in the future.

Many researchers studying fringes have recognized the dynamic and variability of this field. Some argue that this complexity and uncertainty made the area open to new opportunities, while others point to the possible negative consequences. Since rural

urban fringes do not have clearly defined political boundaries, there is a lack of suitable administrative decisions. It is undisputed that there are many fringe-related problems, yet there is no consensus on how to solve them. Therefore, urban fringes need to obtain a legal status so that decisions can be made on an administrative level which are tailored to their needs and priorities.

Besides, the RUF zone of influence transforms and extends to areas that are generally regarded as rural. Nevertheless, the changes in social dynamics and rural and urban growth complexities now correlate with urban interests as well. This means that land use functions and landscapes in rural areas can be transformed by urban values and interests (Giorda, 2012). This emphasis on either the urban or rural fringe has resulted in two separate approaches in literature that are related to the urban-rural fringe and the rural-urban fringe (A. J. Scott et al., 2013, p. 9).

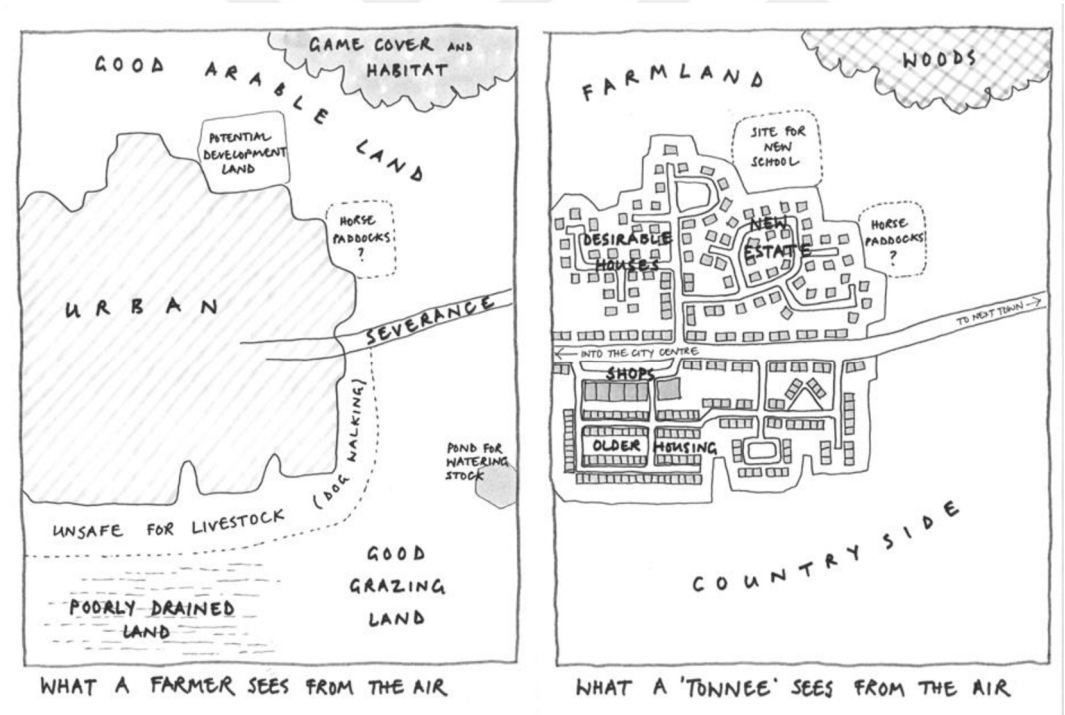


Figure 8: Different Perspectives from the Rural-Urban Fringe and Urban-Rural Fringe

Source: (P. A. Scott & Collier, n.d.)

Figure 8 presents the differences between an Urban-Rural Fringe and the Rural-Urban Fringe. The two images above display the same area. All boundaries and objects are identical.

On the one hand, the image on the left shows the rural area from a rural-centric perspective of a farmer. Accordingly, the urban site contains only the macroform, while the rural area is depicted in detail, including all the spatial elements. The objects symbolizing the countryside from the outside of the city are classified into fertile and not fertile agricultural lands, livestock areas, and areas not suitable for animal husbandry.

On the other hand, the image on the right depicts the urban-centric perspective of a "townee". Accordingly, desirable houses, new estates, shops, and older houses are shown in detail. In the urban-centric interpretation, the rural area is divided only into "countryside", "farmland", and "woods". This divergence outlines the two contrasting standpoints from which a RUF can be seen: rural-oriented and urban-oriented. This dualism provides an opportunity to combine literature arguing for a more enlightened, holistic approach that deals with the RUF as a multi-functional entity.

According to Hough, the impact of the rural-centric approach is remained limited in practice because of the continuous transformation in rural areas. From an urban-centric perspective, the fate of rural areas in the urban periphery is merely to provide additional space for housing subdivisions, industrial estates, and mobile-home parks. There has always been a dilemma with regard to the question of whether urban development should continue or rural areas need to be protected. Fringe areas have always been a battlefield for those who desire to preserve rural land and those wanting to drive forward the process of urbanization (Hough, 1990, p. 88). This battle has turned rural urban landscapes into an area that can be best characterized as inherently disordered and messy, as outlined in the research of Qviström (Qviström, 2007).

Fringe areas are located in between two separate poles (urban and rural) and therefore in the midst of chaos in spatial, political, and social terms. The conflict between development in the urban area and the effort to protect the rural area's nature takes place in the fringe. It is the most prominent structural component in complex,

heterogeneous, and uncertain fringe. The variables and effects of this conflict in the study field will be discussed in the following sections.

The existing research in US literature focuses on the ex-urban, while the literature from the UK is more centered on the green belt and urban sprawl. Both US and UK literature advertise mostly urban-centric points of view. They rarely consider urban fringes as a whole.

There is no integrated policy-making process for rural-urban fringes (A. J. Scott et al., 2013, p. 11). The prevailing view is that planning decisions regarding urban fringes are "out of order" because of their large-scale, low quality "homogenized" and placeless nature. However, there is a convergence between the RUF residents' desire for development and the overall impact of national planning policy on the area. Power and political influence are critical factors for disintegration of the RUF (A. J. Scott et al., 2013, p. 11).

For an improvement of rural-urban fringe management, the focus should be on the generic concepts of time, connections, and values as central components in this area. This idea is based on the complexity theory. The transition that takes place in this area is very much related to the time component. When looking at the fringe, it is crucial to consider its long-term changes. To understand those change, connections between different approaches and different land-use decisions should be inferred (A. J. Scott et al., 2013, p. 42).

Within the scope of the term RUF, different researchers' definitions show that this term includes administrative, physical, and social perspectives variables. From an **administrative standpoint**, neglecting the RUF during decision-making processes led to it being referred to as a forgotten place.

The RUF, which has both urban and rural characteristics, reveals spatially diverse and complicated variables from a **physical perspective**. It is referred to as disintegrated

because of not being fully integrated with neither urban nor rural. The features of diversity and complicatedness comply with the complexity theory and relationalism.

From a **social perspective**, the rural urban fringe is under development pressure due to the city's expansion. At the same time, the rural core aims to provide a sustainable space in the RUF and to preserve its natural character. Two different poles make the space socially complicated and put it under pressure. Unique identities and lifestyles are present in this area where features from the city and the countryside are blended.

2.2.2.4.Urban Fringe Belts

Urban morphologists have contributed to the fringe-belt work for more than 80 years (Gu, 2010, p. 44). According to them, urban fringe belts appeared because of settlement development on the edge of the cities. They mainly appeared on the periphery of urban areas during periods of low residential growth. These places are heterogeneous in its spatial plans, building forms, land, and building use (Gu, 2010, p. 44).

The word Stadtrandzone (in English "urban fringe belt") was first applied by geographer Herbert Louis (1936). It is used to describe areas that formed during times of pronounced urban growth hiatuses, in which the urban fortifications were particularly apparent (Whitehand & Morton, 2004, p. 275).

Residential growth leads to urban fringe belts being absorbed by urban areas. Some factors affect fringe belt formation: Socio-economic development, new transport modes, land reclamation, and topology. (Gu, 2010, p. 44).

Research about fringe belts can be divided into three phases:

a) From 1936 to the mid-1960s: European geographers defined the fringe belt phenomenon. In 1936, Herbert Louis' fringe belt study about Berlin was the first recorded fringe belt research (Whitehand, 1967). During the same period M.R.G. Conzen studied the fringe belt phenomenon and associated urban growth process as well (Gu, 2010, p. 44).
b) Between the mid-1960s and the late 1990s: The relationship between fringe belts and building cycles, land values, and developments in transport was

evaluated on by Whitehand (1967, 1977, 1987). He discussed that fringe belt formations increased during the recession because the creation of fringe belts was linked to the development of slums. While the land value was low, high-density housing was predominantly created during the housebuilding booms. (Gu, 2010, p. 44). The different developments of urban fringe belts were divided into fringe belt growth, fringe belt adaptation, and fringe belt alignment during that time. These terms were explained as urban forms rather than from as a planning perspective (Gu, 2010, p. 45).

c) From the late 1990s to the present day: Researchers began to study the connection between the fringe belt planning and urban landscape management. Discussions about the urban fringe took place within the integrated planning approach. Besides, urban morphologists, particularly in the UK, systematically analyzed the meaning of fringe belts for urban design management and their significance for urban ecology and sustainable development (Gu, 2010, p. 45).

Conzen describes the fringe belt concept as follows (M. R. G. Conzen, 1969, p. 125):

> A belt-like zone originating from the temporarily stationary or very slowly advancing fringe of a town and composed of a characteristic mixture of land-use units initially seeking a peripheral location. In towns with a long history, this geographical result emerging gradually from these dynamics is often a

system of successive, broadly concentric fringe belts more or less separated by other, usually residential integuments.

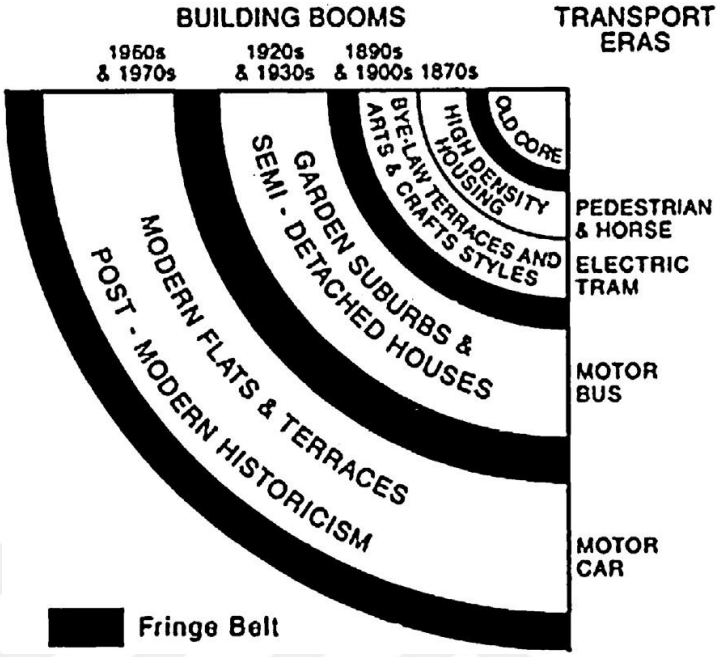


Figure 9: Historic Fringe Belts

Source: (Whitehand, 2001)

During the times that not so many new houses were constructed, the major fringe belt elements marked by low street density and large plots started to occupy their positions (Gu, 2010, p. 49). These fringe belts are of great importance in understanding and planning cities, although they are rarely recognized in planning documents. This is because they have distinct physical characters and provide a frame of reference for the physical structure of an urban space (Gu, 2010, p. 50).

Fringe belts have already been examined by planners for more than 50 years, yet they have rarely been referred to in research so far. This is although they have initially been considered to derive of one of the earliest elements of European planning, which is the fortification zones around medieval towns (Whitehand & Morton, 2004, p. 275). Whitehand argues that fringe belts are not results of coherent strategy-making or decision-making in the historical context. They are rather to be looked at as the results of a large number of separate individual site decisions. Historically, decision-makers

often did not know each other. Therefore, most of the time there was no understanding of how the individual decisions would be combined and how that would impact the fringe belt areas (Whitehand, 2001).

Although continuous fringe belts are ecological urban corridors, protecting and maintaining them is neither the primary concern nor a policy issue on an administrative level. Fringe belts may only be conserved under circumstances in which important landmarks are located in the area (Gu, 2010, p. 50). The concept of the fringe belts is primarily connected to the historical and geographical development in an area and should not be confused with more static concepts such as the green belt (Elson 1986) and the concentric zone model (Burgess 1925) (Gu, 2010, p. 57).

From an **administrative perspective**, the relation of the term urban fringe and its historical and geographical development is important to note. With the city's spatial growth towards its edges over the years, the fringe belt areas which used to be located on the city limits now remained inside of the city and formed inner fringe belts. Historical development led to several generations of fringe belts. From a **physical perspective**, spatial features in these areas were squeezed into the city due to urban expansion. In literature, urban fringe belts were defined as spatially distinctive and heterogeneous. Today, fringe belts help to provide a framework for a more organized decision-making process in urban planning (Whitehand & Morton, 2004, p. 275).

2.2.2.5.Disintegrated Development Paradigms

As mentioned before, there are clear differentiations between rural and urban areas both from the physical and political perspectives. Governance arrangements and policies that lead to different developments for urban and rural areas are strictly polarized for those areas.

Within the interdisciplinary framework, two paradigms have been developed, and each of them represents alternative points of view to manage and improve the policies concerning the cities. These paradigms are Spatial Planning (SP) and The Ecosystem Approach. When examining them, it is important to take the city and the countryside as two separate focal points. This helps to establish a broad framework for examining

urban fringes. Spatial Planning focuses on the built (urban) environment, whereas the focus of the Ecosystem Approach is on the natural (rural) environment.

2.2.2.5.1. Spatial Planning

From a theoretical standpoint, Spatial Planning has shifted from a traditional perspective to a more spatial approach also considering design issues. It now emphasizes the importance of the allocation and restriction of land use. These decisions are made while considering a more multi-scalar and multi-sectoral perspective. Therefore, spatial planning became a constructive actor for positive social, economic, and environmental change (Albrechts, 2004). It addresses urban problems with a holistic approach and integrates different sectors and actors. However, when doing so, the city is at the center of the focus.

Table 3 shows Sectoral, Territorial, and Organizational Integration within the framework of SP. Integration within the sectoral context has been divided into two parts: Cross-sectoral Integration and Inter-Agency Integration. Sectoral integration emphasizes the importance of integrating different public policy domains as well as public, private, and voluntary activities. In the Territorial context, which includes Vertical Integration and Horizontal Integration, the aim is to integrate planning activities on different scales as well as to integrate spatial planning activities between adjoining areas or areas with some shared interest. The Organizational context includes Strategic Integration, Operational Integration, and Disciplinary/Stakeholder Integration. The aim of Strategic Integration is the integration of spatial planning with other strategies, programs, and initiatives within a territory. The purpose of Operational Integration is to integrate spatial planning with the delivery mechanisms in all relevant agencies within a territory. Finally, the intend of Disciplinary/Stakeholder Integration is the integration of different disciplines and stakeholders within a territory.

Table 3 provides an overview of the integration between categories and dimensions that is required in spatial planning. The table summarizes that the integration in spatial

planning requires not only a new approach but also major changes in organizational culture and practice (Kidd, 2007, p. 167).

Table 3: A Framework of Integration in Spatial Planning

Sectoral	Cross-sectoral Integration	Integration of different public policy domains within a territory.
	Inter-agency Integration	Integration of public, private and voluntary sector activity within a territory.
Territorial	Vertical Integration	Integration between different spatial scales of spatial planning activity.
	Horizontal Integration	Integration of spatial planning activity between adjoining areas or areas with some shared interest.
Organizational	Strategic Integration	Integration of spatial planning with other strategies, programmes and initiatives within a territory.
	Operational Integration	Integration of spatial planning with the delivery mechanisms in all relevant agencies within a territory.
	Disciplinary/Stakeholder Integration	Integration of different disciplines and stakeholders within a territory

Source: (Kidd, 2007)

The framework of integration in Spatial Planning presented by Kidd is noteworthy because it shows how different components needed to resolve urban problems can be integrated. Her multi-scalar and multi-disciplinary perspective supports the assemblage theory and the complexity theory in terms of incorporating different components and observing their relationships. However, this concept is mostly applied in urban spaces. In rural and fringe areas the integration of various elements has remained limited so far.

According to Albrechts (Albrechts, 2004, p. 748):

> The term "spatial" brings into focus the "where of things", whether static or dynamic; the creation and management of special "places" and sites; the

interrelations between different activities in an area, and significant intersections and nodes within an area which are physically collocated.

It moves the focus from the places themselves towards the networks and connections between different areas and individuals (A. J. Scott et al., 2013, p. 4).

Some models put forward fringe-related definitions that are directly related to the Spatial Planning paradigm. The Concentric Zone Model is one of them. In the framework of the model, the urban area and urban components are at the focus. Besides, Urban Fringe and Urban Expansion concepts have urban-centered approaches while defining and interpreting the fringe.

2.2.2.5.2. The Ecosystem Approach

The Ecosystem Approach is defined as "a strategy for the integrated management of land, water, and living resources that equitably promotes conservation and sustainable use" by the United Nations Convention on Biological Diversity (UNCBD, 2019). In the convention, the 12 core principles of the Ecosystem Approach are outlined. These principles are listed below (UNCBD, 2007):

- "The objectives of management of land, water and living resources are a matter of societal choice.
- Management should be decentralized to the lowest appropriate level.
- Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.
- Recognizing potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context.
- Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.
- Ecosystem must be managed within the limits of their functioning.
- The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.
- Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term.

- Management must recognize the change is inevitable.
- The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.
- The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.
- The ecosystem approach should involve all relevant sectors of society and scientific disciplines".

Waters argues that these principles represent a fundamental cultural change in the management of the natural and the built environment (Waters, 2010, p. 2). Other literature also underlines the value of integrated, long-term, complex adaptive systems, social inclusion, and social learning (A. J. Scott et al., 2013, p. 5).

Ecosystem services are divided into groups of supporting, provisioning, regulating, and cultural services. Supporting services are the services which are necessary for the production of other ecosystem services, such as soil formation, photosynthesis and nutrient cycling. Provisioning services concern ecosystem products like food and water. Furthermore, regulating services include processes such as stabilization and erosion regulation. Last but not the least, cultural services provide non-material benefits to the ecosystems, such as cognitive development and recreation (A. J. Scott et al., 2013, p. 5).

The literature on ecosystem services emphasizes the reliance of human wellbeing on "natural capital". This strongly anthropocentric view focuses on what humans depend on and what they can get from nature. Thus, the people, including the majority who lives in an urban surrounding, are connected to their environment. Figure 10 outlines human dependence on the environment and recognizes nature as a life-support system. However, people tend to disrupt their environment rather than to protect it and to make use of the privileges it offers (Norgaard, 2010, p. 1221).

Like Spatial Planning, the Ecosystem Approach accepts that the existing systems are complex and therefore emphasizes the value of integration. The indispensability of the relationship between humans and nature is the focus of this approach. The importance

of these relationships is also taken into account within the scope of this thesis. In this context, the Rural-Urban Fringe and Green Belt Model have been associated with the Ecosystem Approach because of their nature-based elements.

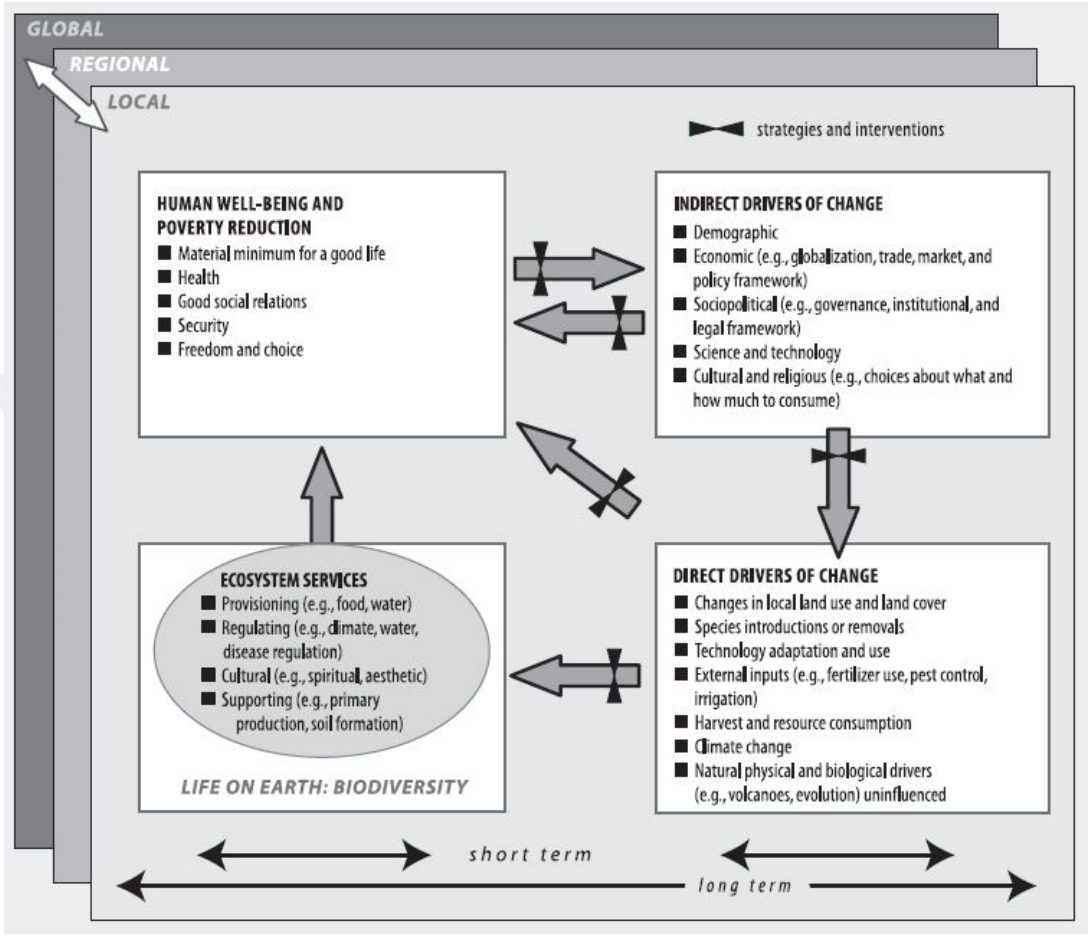


Figure 10: The Ecosystem Approach Concept

Source: (Alcamo et al., 2003)

In order to reduce environmental degradation in developing countries, Norgaard suggests a "transition from metaphor to scientific framework" as an innovative approach. He argues that major structural changes are needed to significantly reduce

human pressures on ecosystems and invest in/develop multi-scalar frameworks for environmental governance (Norgaard, 2010, p. 1219).

Instead of simply focusing on ecosystem services, it is crucial to recognize that humans are an integral part of nature rather than isolated from it. However, in the context of spatial planning, few efforts have been made to use an ecosystem-centered approach to examine how future development can and reduce a negative impact on the provision of ecosystem services (A. J. Scott et al., 2013, p. 5).

2.2.2.5.3. Distinction Between Built and Natural Environments

Both SP and EA paradigms have evolved separately. This had an influence on the fact that policies and organizational structures only considered either the urban/built or the rural/natural environment. This division is most notable in the fringe, in which both frameworks coincide with everyday practice and policy making (A. J. Scott et al., 2013, p. 7).

The separation between policies for the built and for the natural environment was developed during the post-Second World War planning legislation in the UK (Town and Country Planning Act, 1947). Two planning systems were created: town and country planning on the one hand (associated with SP ideas) and resource planning on the other hand (associated with EA ideas). With increasing suburbanization, urban development gained more and more importance in country planning (A. J. Scott et al., 2013, p. 7). At the same time, the opposing objective was to revitalize rural areas by intensifying agricultural efforts as well as forestry. The underlying objective was the concern about food safety that originated during the time of war (Curry & Owen, 2009, p. 579).

These disintegrated paradigms which focus either on the built environment or the natural environment create a clear division between urban and rural areas in terms of planning theory and practice. They define two separate planning systems. This separation causes conflicts and incompatibilities in urban fringes. The distinct organizational structures and environments that have developed because of this divide

have resulted in the RUF's spatial complexity and shaped it into a challenging area (A. J. Scott et al., 2013, pp. 7–8).

SP (urban-centered) and EA (nature-centered) both provide comprehensive views for their areas of focus. However, the outputs offered by these two paradigms conflict because of the contrast of the places they aim to develop. SP suggests solutions mostly for the problems in built-up areas, whereas EA offers ideas to improve rural areas and the natural environment. Neither of them takes into consideration the output of the other. The place that is effected the most by this conflict is the RUF. Without a distinctive decision-making process and specific policies for the rural urban fringe, it is trapped between two different poles that are focused only on urban and rural.

The SP approach was preserved and supported by some planning academics, but according to Scott at al., it is insufficient in practice. Planning with a focus on commercial building interests and economic development leads to a lack of local community amenities. Opposed to that, EA has secured occupation with ecological, economic, and political perspectives. However, the operational problems remained. Since people from the local environment are not familiar with difficult terms and academic language, integrating the scientific studies with the local surroundings was complicated (A. J. Scott et al., 2013, p. 25).

Natural and environmental values and sustainability are closely related. Humans and nature are the two main factors that impact sustainability. Approaches in research differs according to which factor is more important. Definitions of weak and strong sustainability were established with regard to the relation between humans and nature. The definition of weak sustainability focuses on the relationship between humans and the capital they produced. According to this approach, the economy and nature substitute each other. Opposed to that, the term strong sustainability focuses on nature. Accordingly, natural resources serve the production process and human capital cannot replace this input (Tekeli & Ataöv, 2017, pp. 18–19). Two paradigms studied within the scope of this thesis, SP and EA, have similar structures on the level of sustainability

(weak and strong). Weak sustainability focuses on the unnatural environment, while strong sustainability emphasizes the natural area.

The concept of strong sustainability is considered by some to be an obstacle to economic development. However, according to Ayres et al., this is justified because technology, mechanization, and infrastructure inherited to future generations cannot replace used up natural resources and fractured social structures (Ayres et al., 2001).

Both SP and EA have operational problems, but more importantly, the division between those two approaches emerge institutionally. For different approaches, there are separate governance arrangements and institutional architecture. The preservation of the environment on the one hand and spatial planning decisions on the other hand are under the governance of different institutions. Therefore, the policies and strategies put forward by those institutions are not coordinated and harmonized.

This disintegration of policies aggravates issues in the urban-rural fringe. The dynamic and constant change in the fringe takes place very rapidly. This is why it is difficult to make spatial plans for such areas. By the time a plan is applied, quite often the space will have already changed again due to urban expansion. A once well-planned urban edge will then all of a sudden find itself in an awkward location in the center of the now enlarged city (A. J. Scott et al., 2013, p. 26).

Within the scope of this study, it is vital to examine the disintegrated paradigms to understand the complexity of an RUF and conflicts resulting from it. In most of the studies carried out so far, it was observed that the city and the countryside were always considered separately from each other. Therefore, only divergent solutions and planning approaches have been introduced in these areas. These two disintegrated paradigms (SP and EA) examined in this part of the study help to take on a more holistic point of view. It is that kind of a distinctive, comprehensive, and integrated approach that the fringe needs. Although those two paradigms are critical, they still remain limited in their scope since their focus is only either on urban or on rural. They

lack integration of the other approach. Thus, it is important to use two broader theories, namely the assemblage and the complexity theory, as the basis of this study.

2.3.Interrelated Structural Components in Urban Fringe

Fringe-related concepts and their relation with disintegrated paradigms within the scope of the theoretical framework reveal some variables. These variables will be discussed in this part of the study. When explaining the periphery associatively using the assemblage and the complexity theory, its main interrelated structural components become clear: Complex, diverse, heterogeneous, and distinctive.

2.3.1. Complex

Recent discussions about inner urban fringes tend to focus on their transition from rural to urban land use and rural-urban conflicts instead of their landscape at the city's edge itself. This shift in the focus of these discussions leads to a neglect of the complexity, the values, and the conflicts in the fringe's landscape (Qviström, 2007). Understanding its complexity is a prerequisite for understanding the multi-dimensional structure of the fringe. Describing the fringe in clear definitions, black or white, leads to an underestimation of its complexity and ignorance about its values. It would result in an incapability to understand and resolve fringe-related issues. The fringe is gray. It contains many gradations, levels, and components. Planning studies should accept this before making decisions about this area.

According to Qviström, a way to analyze the complex development of landscapes in the fringe is to examine the relation between different efforts that have been made in spatial planning "to design orderly places for urban expansion and the evolvement of places out of order". Such an analysis may provide for a more multifaceted perspective on the landscape and therefore give way to a more versatile discourse on the use of land and its values (Qviström, 2007, p. 269).

Although management of a complex structure is not an easy task, the complexity can also enrich a place. The complexity is due to different variables. Every variable has a relation not only to the other variables but also to the place itself. A change in any of the given variables has the potential to affect these relationships. Together, they create

a dynamic environment. This dynamic offers more opportunities for a space than a monotonous system. Therefore, urban fringes are always open to new developments. However, this land which can be used to realize new opportunities must be planned in accordance with its surrounding natural and cultural values and ecological system.

2.3.2. Diverse (Conflict)

The contradiction between urban and rural areas is one of the leading causes of conflict in the rural-urban fringe. This area, trapped between two poles, contains many physical, social, and economic components of both poles. Engels discusses eliminating the concept of contradiction between rural and urban areas in his book *The Housing Question*. He stated that eliminating this conflict between urban and rural is utopic. He emphasizes that this contrast is the product of a natural process and has emerged historically. It is vital to strive for political and social forms that will make the opposite pole more efficient, rather than eliminate it (Engels, 1873).

What is urban? What is rural? And which characteristics and components define an area as urban or rural? Those are important questions to answer. An area should be defined as urban or rural not only according to its physical components but also to its social and economic characteristics. Engels gives the example of how urban and rural areas conquer each other. Previously, urban area conquered rural areas when the industrial sector expanded. Later, it also conquered rural areas as new real estate markets. The relation between urban and rural became stronger over time, which is particularly visible in the rural-urban fringe (Engels, 1873).

Increasing urban growth in the city causes rising tension between urban and rural areas in the periphery. While urban areas tend to grow, the rural areas try to preserve the natural environment and agricultural production. The conflict between them can be considered both on a national scale and a city scale. For example, on the national level, this conflict could play a dominant role in the decision making process on the administrative level. On the domestic level, the conflict can be observed in the different lifestyles and land use decisions. The periphery serves as a battlefield for this

conflict between urban and rural areas. The rural-urban fringe presents the characteristics of both of these areas on varying levels.

Hägerstrand emphasizes that every landscape has a double character "as a graveyard and a cradle of creation" (Hägerstrand, 1983, pp. 238–256). Sooner or later a place which is created for a certain activity will be used for another activity. Therefore, it will at some point be reinterpreted and/or transformed into something almost new.

Bryant et al. define the inner urban fringe as (Bryant et al., 1982, p. 13):

> Land in the advanced stages of transition from rural to urban uses – land under construction, land for which subdivision plans have been approved – in short, land where there is little doubt over much of its area about its urban-oriented function and ultimate conversion to.

Hough explains the conflict in urban fringe as follows (Hough, 1990, p. 88):

> It has long been the fate of the rural landscape at the edge of the city to be the raw material for housing subdivisions, industrial estates, and mobile-home parks. The notion that urban development is the highest and best use for nonurban land is written into the lexicon of every urban planner. The changing scene at the edge and the placelessness that goes along with it has become a battleground between efforts to preserve rural land and the relentless forces of urbanization.

He evaluates on the ongoing conflict between the ceaseless effort to protect the rural land and the power of urbanization. He describes the fringe as a battlefield between rural activities (predestined to disappear) and the ever-expanding city (Qviström, 2007, p. 270).

Allen criticizes "the artificial distinction between 'urban' and 'rural', a distinction that (mis)informs not only the setting up of institutional arrangements but also, and more broadly, the deployment of planning approaches and tools" (Allen, 2003, p. 135). When trying to understand the fringe, describing urban and rural features independently is not helpful but rather causes more difficulties. Instead of making distinct definitions, emphasis should be put on the relationship between ordered and

disordered places to facilitate the examination of "power relations" and different land-use decisions at the fringe (Qviström, 2007, p. 272).

2.3.3. Heterogeneous

In the urban fringe, urban as well as rural land-uses, identities, and lifestyles emerged parallel to each other. With urban development, cities tend to expand, and this expansion occurs through the edges. The fringe was once located on the edge of the city, however, due to urban development and cities' growth it eventually finds itself inside of the city. New urban fringes then start to develop at the cities' borders. These places can neither be described as urban nor as rural but rather as heterogeneous.

Different definitions that were established for the urban fringe bring to light its heterogeneous character as well. On the one hand, this area is considered to be problematic with inherent different conflicts and complex structures. It is therefore difficult to make for it plans. On the other hand, the fringe also offers opportunities for different kinds of development thanks to its flexible structure.

Bruegmann states that from the beginning, cities and urban areas have been distinguished between according to the urban and rural lifeways practiced in the area. It is possible to differentiate between places by looking at the structure of buildings, congested streets or croplands and thereby determine if it is an urban or a rural land. The sharp distinction between those areas is like the distinction between black and white. However, a gray area also exists. This gray zone is the region located on the edge which constitutes a transition zone between the two black and white poles. This heterogeneous place is defined as the urban-rural fringe. It differentiates itself from the urban in terms of land-use decisions, the density of the area, and distance to the city's core. The way of life in the fringe and its mixture of patterns separates it from the rural (Bruegmann, 2005, p. 21).

2.3.4. Distinctive

In planning literature, definitions emphasize the transition from rural to urban land use and conflicts between rural and urban populations. To understand the relationship between urban fringes and urban areas, its changing nature must be considered. Some

definitions define the fringe as a phase rather than a place. They claim that rural activity disappears within a few years, while urban activity is the forerunner of the city which persist. For this reason, there is a transformation in the land use at the fringe from rural to urban use (Qviström, 2007, p. 269).

The way in which a rural space echoes and reflects the characteristics of the urban space which it surrounds is summarized by Lefebvre (Lefebvre, 1991, p. 235):

> "As image of the universe (imago mundi), urban space is reflected in the rural space that it possesses and indeed in a sense contains. Over and above its economic, religious and political content, therefore, this relationship already embodies an element of symbolism, of image-and-reflection: the town perceives itself in its double, in its repercussions or echo; in self-affirmation, from the height of its towers, its gates and its campaniles, it contemplates itself in the countryside that it has shaped - that is to say, in its work. The town and its surroundings thus constitute a texture."

The distinctive structure of the fringe was shaped by its location, components, and unique values. The fringe can neither be classified as urban nor as rural because it does not have the essential features of urban and rural. Hence, it requires a different categorization. The fringe has a rich environment, it also has a close relationship with both the city and the town. Its diversity has an advantage in the way that it brings new opportunities for development. Nevertheless, it also poses a challenge due to its complex structure that is a result of this diversity.

To conclude, the fringe's characteristic components lead to new opportunities but also to some struggles. All these values and features create a distinctive form and uniqueness.

2.4. Urban Fringe from an Ecological Perspective

Rapid urban growth and increasing population causes extensive urbanization in cities. With this increase in population, the demand for land increases as well, and urban expansion occurs in the periphery of the city in which empty land can still be found. This development results in the relocation of some land-uses from the city center to the city's periphery, such as commercial, residential, and open green areas.

Furthermore, production that was once located in the city was relocated to the fringe. In this way, urban expansion and the change of land-uses causes pressure in the

periphery which before was mainly used for agricultural production. Historically, this area had mostly been inhabited by the rural population. However, new forms of production started to become more important than traditional agricultural production. Therefore, the size of farmlands as well as the number of people working in traditional production decreased in the periphery. The replacement of green areas and agricultural lands with urban uses leads a radical change of the fringe's geography from an ecological perspective.

In many countries, rapid urbanization and population growth caused an increase in the demand for land, affecting rural-urban fringes. The congested development in the center spatially moved towards the periphery. This development affects cities not only physically but also socially, economically, and politically. With the center becoming more crowded, the high-level income groups start to move to the city's periphery which drives up land prices.

The structure and regulation of administrative legislation (for example, the distinction between regional and local authorities' branches of nature conservation and cultural heritage) reinforces the separate treatment of regulated and exclusive areas. Besides, distinct legislative measures on rural and urban planning increase the division and prevent comprehensive planning of the fringe area (Qviström, 2007, p. 271).

Fringe belts are often important urban architecture features as well as eco-urban corridors in which the urban population can move freely. Recognizing this while planning an urban landscape will help to increase the potential for tourism on the site. Planning this area accordingly also provides protection to the sense of tradition and continuity of its inhabitants. Fringe belts display urban growth pulsations and illustrate the need for urban space outside the residential and retail sectors (M. Conzen, 2009, p. 48).

Land markets related to private property often require state intervention to ensure order. For example, the government intervenes in several ways (such as sectoral policy or as an agent for development) to protect common interests and values. Environmental protection is one of the most compelling examples of such

interventions. It requires an approach that sufficiently regulates land uses and land markets (Thuo, 2013, p. 5).

In this study's scope, the fringe of Datça located within the boundaries of the Datça-Bozburun Special Environmental Protection Area (SEPA) in Turkey will be examined. For this examination, it is critical to define the importance of protected areas, the national precautions, international conventions, and their objectives. In this section, the legal constraints, international conventions, and objectives regarding protected areas on the international level will be examined at first. Then, the protected area status sites in Turkey, binding process, and sanctions in these areas will be discussed.

2.4.1. Legal Regulations About Protected Areas on an International Level

> A protected area is a clearly defined geographical space that is recognized as and dedicated to achieving the long-term conservation of nature — with its associated ecosystem services and cultural values — and is managed, through legal or other effective means, to do so. This is the essence of the definition provided by the International Union for Conservation of Nature (IUCN). (European Environment Agency, 2020a).

The efforts made to sustain the protected areas for future generations should not vary on local, national, or international levels. It must be taken into consideration that the protection of local areas will gain increasing importance also on a global scale in the future. For this reason, decisions regarding the conservation of nature will eventually be made not only on a local, but also on a national and international level. In this section, conventions and processes, which have an influential role in raising awareness about protected areas on a global scale, will be discussed.

The consequences of environmental problems that arise on the local level will eventually also have an impact on a regional and even global scale. According to Turgut, all environmental elements in the form of living (flora and fauna-plants and animals) and non-living (water, air, soil) organisms are interconnected within the world eco-system, as scientific research has shown. Thus, it is evident that in addition to national measures, global and regional efforts are also necessary to fight the

negative consequences that will arise if these national measures of environmental protection are not implemented (Turgut, 2014).

Protected areas cover a wide variety of natural and semi-natural environments. They emerged in response to different needs. Historically, they have taken many different forms, from sacred spaces of indigenous communities, medieval hunting reserves, to modern national parks and nature reserves. According to the European Environment Agency (EEA), the widespread idea after World War II was that protected areas should be used to preserve biological diversity (European Environment Agency, 2020a).

In the 1970s, the field of protected areas started to become more complex. They are now crucial elements of the life-support network and the biodiversity reserve. At the same time, it constitutes a future source of economic resources, provided that these resources are used in a sustainable way. Protected areas are now part of the ecological system. The international collaboration for the protection and preservation of natural heritages gained importance in the 1970s, which led to the emergence of international protection areas such as the Ramsar Wetlands (European Environment Agency, 2020a).

Protected areas are distinguished between according to their type and their management regime. In some of these areas, all activities such as hunting and extraction of natural resources are prohibited. In others, humans are part of this environment. Participation and interaction with society are critical aspects of providing protection and sustainability. IUCN has defined different categories of designated areas according to different management approaches and site features (European Environment Agency, 2020a).

Natura 2000 and the Emerald Network are prominent on EU level with regard to the conservation of natural habitats and species. The Council of Europe established the Emerald Network within the framework of the Bern Convention. Together, the two form the most coordinated network of protected areas in the world. It was completed under the name Natura 2000 which consist of two different parts. The first one is the Birds and Habitat Directives which concerns the terrestrial environment. The marine

component is still not complete for many countries (European Environment Agency, 2020a).

There are two primary sources for protected areas in the European Union's policy: The United Nations Convention on Biological Diversity and the European Union itself. Besides, tools such as the Ramsar Convention, the World Heritage Convention, UNESCO Man, and Biosphere Program have been supportive of the creation and sustainability of protected areas (European Environment Agency, 2020a).

The conventions and measures mentioned above are aiming to ensure the sustainability of protected areas. Especially in a heterogeneous and complex area such as an urban fringe, many variables affect urban development. When decisions are being made about areas which are conservation areas and also have characteristics of an urban fringe, these decisions should specifically consider the vulnerability of such areas. When changes and developments occur in the periphery of a city, and this periphery is a protected area that also has touristic characteristics, these changes and developments are directly related to conservation policies.

Urban development occurring in the fringe can pose a threat to the natural environment, agricultural areas, and in some cases, protected areas. For these reasons, spatially oriented theories alone are not sufficient to explain the urban-rural fringe phenomenon. In this context, non-spatial theories should also be taken into consideration (Thuo, 2013). While planning studies for such areas or making development decisions regarding the city, it is necessary to consider its features and its importance on a local, national, and international levels. Socio-cultural, economic, and political consequences of the decisions should be taken into account.

2.4.2. Binding Processes and Legal Sanctions in Special Environmental Protection Areas in Turkey

After examining legal regulations at the international level within the scope of protected areas, in this part it will be discussed how these regulations impact the legal framework in Turkey. Datça, which is the district that is subject to this study on urban

fringes, is located in the Datça-Bozburun SEPA. Therefore, Specially Protected Areas that have the status of protected areas in Turkey will be the focus point of this section.

Problems related to conservation gained importance for the first time during the Conference on the Human Environment (also known as the Stockholm Conference) in 1972 when the concepts of "development and urban growth" and "environmental protection" were discussed in the same context. These concepts were previously looked at as separate from each other. The most crucial objective of the Conference was to emphasize each country's responsibility towards the environment (*Çevreyi Koruyucu Uluslararası Sözleşmelerin Yadsınamaz Önemi*, 2014, p. 8).

The "Human and Environment Declaration" outlined that economic development should be in harmony with the environment. Subsequently, the concept of sustainable development became increasingly important. Humanity started to look for new ways to protect the natural environment without giving up on economic development. The declaration recommends intergenerational equity in resource use in order to achieve this goal (Tekeli & Ataöv, 2017, pp. 4–5).

The national and international conventions about conservation areas are critical for the protection and sustainability of their natural and cultural heritage. The objectives of these conventions contribute to a decrease of human influence on natural and cultural values in these areas. The approach of preserving those values must be supported by the implementation of legal regulations. In this context, there are many protected areas governed by different regulations and varying institutions in Turkey (Table 4).

Table 4: Legal Instruments Used for the Designation of Protected Areas

Designation Type Category	Designation Type Name	Legal Reference Name	Legal Reference Official Journal Identification	Competent Authority Organization Name
A	National Park	2873	18132 Numbered and 11 August 1983 Dated Official Gazette	Ministry of Forestry and Water Affairs, General Directorate of National Conservation and National Parks
A	Nature Park	2873	18132 Numbered and 11 August 1983 Dated Official Gazette	Ministry of Forestry and Water Affairs, General Directorate of National Conservation and National Parks
A	Natural Monument	2873	18132 Numbered and 11 August 1983 Dated Official Gazette	Ministry of Forestry and Water Affairs, General Directorate of National Conservation and National Parks
A	Nature Protection Areas	2873	18132 Numbered and 11 August 1983 Dated Official Gazette	Ministry of Forestry and Water Affairs, General Directorate of National Conservation and National Parks
B	Special Environmental Protection Areas	383	20341 Numbered and 13 November 1989 Dated Official Gazette	Ministry of Environment and Urbanization, Directorate General for Preservation of Natural Heritage

Source: (European Environment Agency, 2020b), accessed on August 8, 2020.

Table 4 (continued)

Designation Type Category	Designation Type Name	Legal Reference Name	Legal Reference Official Journal Identification	Competent Authority Organization Name
B	Wetlands	645	27984 rep. Numbered and 04 July 2011 Dated Official Gazette	Ministry of Forestry and Water Affairs, General Directorate of National Conservation and National Parks
B	RAMSAR Sites	3958	21937 Numbered and 17 May 1994 Dated Official Gazette	Ministry of Forestry and Water Affairs, General Directorate of National Conservation and National Parks
B	City Forest	6831	9402 Numbered and 08 September 1956 Dated Official Gazette	Ministry of Forestry and Water Affairs, General Directorate of Forestry
A	Wildlife Conservation Areas	4915	3603 Numbered and 13 May 1937 Dated Official Gazette	Ministry of Environment and Forestry, General Directorate of National Conservation and National Parks
B	Protected Forests	6831	9402 Numbered and 08 September 1956 Dated Official Gazette	Ministry of Forestry and Water Affairs, General Directorate of Forestry

Source: (European Environment Agency, 2020b), accessed on August 8, 2020.

Table 4 (continued)

Designation Type Category	Designation Type Name	Legal Reference Name	Legal Reference Official Journal Identification	Competent Authority Organization Name
B	Gene Conservation Forests (in situ)	6831	9402 Numbered and 08 September 1956 Dated Official Gazette	Ministry of Forestry and Water Affairs, General Directorate of Forestry
B	Seed Stands	6831	9402 Numbered and 08 September 1956 Dated Official Gazette	Ministry of Forestry and Water Affairs, General Directorate of Forestry
B	Seed Orchard (ex situ)	6831	9402 Numbered and 08 September 1956 Dated Official Gazette	Ministry of Forestry and Water Affairs, General Directorate of Forestry
B	Natural Preservation Sites	648	28028 Numbered and 17 August 2011 Dated Official Gazette	Ministry of Environment and Urbanization, Directorate General for Preservation of Natural Heritage

Source: (European Environment Agency, 2020b), accessed on August 8, 2020.

Table 4 shows legal instruments used for the designation of protected areas. Different categories of protected areas in Turkey are listed in the table above. The columns provide detailed information about the protected areas such as designation type category, designation type name, legal reference name, legal reference official journal identification, and name of the competent authority.

The designation type describes and classifies legal instruments used to achieve long-term sustainability in protected areas. European countries designate protected areas in compliance with sub-national, national, and EU legislation as well as international conventions and agreements. Protected areas are categorized into three groups (A, B, and C). The definitions of each of the groups of protected areas are listed in detail below (European Environment Agency, 2020b):

> Category A: Designation types used with the intention to protect fauna, flora, habitats and landscapes (the latter as far as relevant for fauna, flora and for habitat protection);
>
> Category B: Statutes under sectorial, particularly forestry, legislative and administrative acts providing an adequate protection relevant for fauna, flora and habitat conservation;
>
> Category C: Private statute providing durable protection for fauna, flora or habitats.

There are 14 different types of statuses for protected areas in Turkey, as shown in the table above (Table 4). The designation types of protected areas are as follows: National Park, Nature Park, Natural Monument, Nature Protection Areas, Special Environmental Protection Areas, Wetlands, RAMSAR Sites, City Forest, Wildlife Conservation Areas, Protected Forests, Gene Conservation Forests, Seed Stands, Seed Orchard, Natural Preservation Sites. Within this study's scope, Special Environmental Protection Areas will be the examined field because the study area, Datça, is located within the boundary of Datça-Bozburun SEPA.

Turkey has significant ecological regions such as the Mediterranean Coastal Region, the Aegean Coastal Region, the Black Sea Coastal Region, the Thrace and Marmara Regions, and the Central Anatolia Region, South-eastern Anatolia Region, and the Eastern Anatolia Region. Especially coastal areas are fertile agricultural lands with a Mediterranean climate. Cultivated fields can mostly be found in steppe zones. They

make up 35% of the country's surface area. In these agricultural lands, the most essential agricultural activities are the growing of orchards, vegetables, wine, and olives (*UN Convention on Biological Diversity Fifth National Report*, 2014, p. 6). In addition to agricultural production, forests, and mountains, inland waters as well as coastal and marine ecosystems also play an essential role in the country's natural structure. The country's natural resources lead to a diversity of species. All these reasons make biodiversity important for Turkey (*UN Convention on Biological Diversity Fifth National Report*, 2014).

The Republic of Turkey signed the Convention on Biological Diversity in 1992 and ratified it in 1996. When the convention entered into force, public institutions, universities, and non-governmental organizations developed the National Biodiversity Strategy and Action Plan (NBSAP). The Ministry of Environment coordinated the development process. Thereunder, the NBSAP outlined necessary actions that should be taken in protected areas and advised for a sustainable use of natural resources. The Turkish Constitution and further regulations listed in the table above provide a legal framework for the preservation of protected sites and their biodiversity. Within this scope, different political decisions regarding protected areas should be harmonized and integrated with each other. Turkey's national strategy to fulfill the Biological Diversity Convention requirements acknowledges that it is vital to cooperate with other countries (*UN Convention on Biological Diversity First National Report*, n.d.).

There are no special incentive programs for the conservation and sustainability of biological diversity. Nonetheless, development plans and annual programs designate policies that function as incentives for protection and sustainable usage. The lack of political decisions and legislation is a legal gap in the preservation and sustainability of biological diversity. Besides, incentives in some other sectors may have negative impacts on biodiversity and coastal ecosystems. For instance, the Tourism Incentives Law prioritizes the tourism sector over environmental protection due to the economic significance of this sector. This law is known to have a negative impact on biological diversity and coastal ecosystems. Therefore, development policy and protection policy

are not entirely consistent (*UN Convention on Biological Diversity Fifth National Report*, 2014, p. 33).

The Environmental Impact Assessment Report (EIA) addresses the factors that may cause a decline in biodiversity and suggests necessary actions to fight this issue. Turkey's biodiversity data is not adequate at the genetic variety level, which is why insufficiencies have to be evaluated on a case-by-case basis. Due to this lack of data, the exact area which should be protected cannot be identified. Therefore, regulations that protect even wider areas are needed in order to comply with the rules set forth by the EIA. Due to development pressure in cities, there is a lack of progress with regards to tackling environmental problems (*UN Convention on Biological Diversity Fifth National Report*, 2014, p. 35).

To conclude this section, it can be summarized that cities expand beyond its edges by means of urbanization which causes development pressure on the natural environment. Rural areas with vast agricultural lands become increasingly embraced by the city's development area. Similarly, protected areas with touristic potential are facing the threat of distortion. In both situations, the natural environment and protected sites should be conserved with the help of legal statutes and regulations that grant environmental interest better protection.

This thesis' study area is the Datça-Bozburun SEPA. Within this area, the focus of the study will be the fringe area of the Datça district. Within the scope of this thesis the natural environment and a status of Datça as a protected area will be discussed. From a theoretical perspective, the examination of the legal framework from an ecological perspective is an important input that helps to understand the fringe's complex structure.

CHAPTER 3

SPATIAL COMPONENTS OF THE PAST / PRESENT URBAN PERIPHERY LANDSCAPE IN DATÇA

The theoretical framework of this study is based on the different definitions of urban fringes and its related concepts in literature. Research has revealed that due to its complex structure, the urban fringe requires a holistic, multi-scalar, and multi-dimensional perspective. Traditional planning policies and implementations cause problems in the urban fringe and its ecological system. Management plans that disregard the needs of the fringe's integrated structure cannot establish an adequate legal framework for the planning and management of those sites.

For an improved management of the rural-urban fringe, generic concepts of time, connections, and values will be discussed in the case study. The values that shaped the Datça area are rooted in its time-space relationship. These values include natural resources, agricultural lands, protected areas, a road network, land cover, and land use. They will be measured using a spatial GIS analysis for more concrete results. The complex structure of the fringe makes it difficult to plan this area in a way that addresses its challenges sufficiently. It requires a versatile way of thinking that takes its different components into account. While examining the fringe of Datça, social, spatial, and economic changes over time should be considered.

The theoretical concept of the urban fringe is examined using Datça as an example. In order to understand this fringe, it is vital to recognize the different characteristics of the study area in a territorial and in a settlement context. Fringe characteristics are unique for each city and differ according to its spatial, social, and economic dynamics. In this chapter, firstly, the territorial context of Datça's surrounding landscape and its position in the region are examined from a historical, spatial, and socio-economic

perspective. Secondly, the focus is on the settlement context and the analyses of Datça's near periphery in terms of locations of the settlements, land-use decisions, and land cover data.

3.1. Territorial Context

Some regions are given a legal status with a particular name in order to preserve their natural resources and their values. Examples for such statuses are national parks, natural parks, and special environmental protection areas. The Datça-Bozburun SEPA is one of them. It is of national and international importance in terms of its natural heritage and its protected sites. 43.292 hectares (62.7%) of the area consist of natural protected areas and 5.340 hectares (7.7%) are archaeological protected areas (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 360).

Turkey has been a party to many international treaties for the protection of biodiversity. The Convention on the Conservation of European Wildlife and Natural Habitats, known as the "Bern Convention," is committed to protecting endangered species. The protection of these species and habitats is also protected by the "Barcelona Convention." One of the additional protocols of this convention aims for the "Establishment of Special Protected Areas in the Mediterranean." Following the ratification of these conventions and upon the publication of the Decree No. 383 dated 19.10.1989 in the Official Gazette on 13.11.1989, the Special Environmental Protection Agency was established in Turkey. The purpose of its establishment was to

protect the environmental values in the areas designated as Special Environmental Protection Areas by the Council of Ministers (T.C. Çevre ve Orman Bakanlığı, 2014).



Figure 11: Datça-Bozburun SEPA as determined by the Council of Ministers

Source: (Esri Satellite), (Tarım-Orman Açık Veri Portalı, 2019). Map created by the author.

The Datça-Bozburun region is one of those protected areas and has been declared to become a SEPA in the cabinet's decision of 21.11.1990. Figure 11 shows the administrative boundary of the Datça-Bozburun SEPA. It is the largest of the 18 SEPAs in Turkey. It is protected because of its vegetation, natural, and archaeological values. It covers 1443.89 km² and the region's population was 26.324 in the year 2009. The area accounts for 0.185% of all of Turkey's total area (*ÖÇK Bölgeleri*, n.d.).

With the declaration of this region as a SEPA, some land-use restrictions have been introduced. The main objective of the restrictions is to prevent the destruction of the natural environment which has taken place in natural areas of other developing cities that did not have any limitations to protect their values. The Datça-Bozburun SEPA consists of two peninsulas, Datça and Bozburun. Some places in the region have been closed for human activities as archaeological sites, and some of them have been classified as natural sites, agricultural, and forest areas (Taşlıgil, 2008).

Although there are specific restrictions about the SEPA, these have been loosened over time. During the planning process, the increased demand for development in the region

was taken into consideration. Reflections of this demand appeared in planning decisions, which will be examined in the upcoming chapter.

Within the administrative boundary of the Datça-Bozburun SEPA, there are 12 settlements. Three of them, namely İskele, Old Datça, and Reşadiye are central neighborhoods. Due to their location, they have potential for tourism and agricultural production. In the upcoming sections, there will be more detailed information about those neighborhoods. Within the SEPA, Old Datça, Reşadiye, and Hızırşah are the three settlements where the fringe characteristics are the most visible. There is a conflict between urban and rural features, and those three settlements are in the focus of this conflict. Their close relationship to the center and their socio-economic and cultural values cause a blurry structure. Although they are in a close distance to the center, they still show rural characteristics. This is why those neighborhoods were chosen for the case study.

During the territorial analysis, there will also be an examination of those three settlements in the region. The analysis of the study field will be conducted both in the territorial and the settlement context of five different years. Their change over the years will thereby be examined. This multi-dimensional analysis contributes to a better understanding of the complex structure of the fringe.

3.1.1. The Surrounding Landscape

This section elaborates on the natural resources, land cover values, natural thresholds, and urban morphology in the region. With the help of Figure 12, it shows the location of the Datça-Bozburun SEPA within the region and examines the surrounding landscape. The SEPA has an area of 1474 km² and includes district centers of Datça and Marmaris. Datça is the largest settlement in the SEPA (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 17). The Muğla province consists of the Datça and Marmaris districts and two sub-districts as well as 17 other districts. The Datça district is located

in the south-west of the Muğla province. There is the Gökova Gulf in the north and the Hisarönü Gulf in the south (*ÖÇK Bölgeleri*, n.d.).



Figure 12: The Location of the Datça Bozburun SEPA within the National Territory

Source: (Esri Satellite), (Tarım-Orman Açık Veri Portalı, 2019). Map created by the author.

In Figure 12, the Old Datça, Reşadiye, and Hızırşah neighborhoods are marked as well. Their location is in a close distance to the district's center. Their land-use patterns, socio-economic structures, and development habits are affected by this close relationship with the center. This relationship also causes development pressure in these settlements as the district's center expands.

There were no highways on the two peninsulas of the Datça-Bozburun SEPA until 1937. Since it could only be reached via the sea, this region was not damaged to a great extent compared to other shores in the Aegean Region. After 1937, with the construction of the highway, the region's accessibility increased. However, the low

quality of the roads has partially prevented the negative environmental impacts of tourism (Taşlıgil, 2008).

3.1.1.1.Natural Resources

Some of the most important assets of the Datça region are its natural resources, biodiversity, and vegetation. The Datça-Bozburun SEPA is especially rich in vegetation. Olive trees, red pines, Theophrastus' date palm (phoenis theophrast), almonds, local thyme, oleander, bay, and carob reflect the typical Mediterranean flora. 807 species belong to the region's marine fauna and flora, 1047 taxa belong to the flora. Some 167 terrestrial invertebrates, 110 fish, 4 amphibians, 27 reptiles, and 123 bird and mammal species were identified in this region (Tabiat Varlıklarını Koruma Genel Müdürlüğü, n.d.).

Figure 13 shows the land cover classes in the Datça-Bozburun SEPA. Accordingly, woodlands, pine trees, and maquis areas are common in this region. In addition to the anthropogenic area where the settlements of the district center (Old Datça, Reşadiye, and Hızırşah) are located, there are vast agricultural lands towards which the city is developing. As it can be seen in the figure, there are not so many agricultural areas in the SEPA. Agricultural areas are concentrated on the Datça Peninsula. Therefore, it is important to preserve those existing ones which have agricultural value. For the three settlements of the district, "maquis" and "maquis with trees" are also common land cover values.

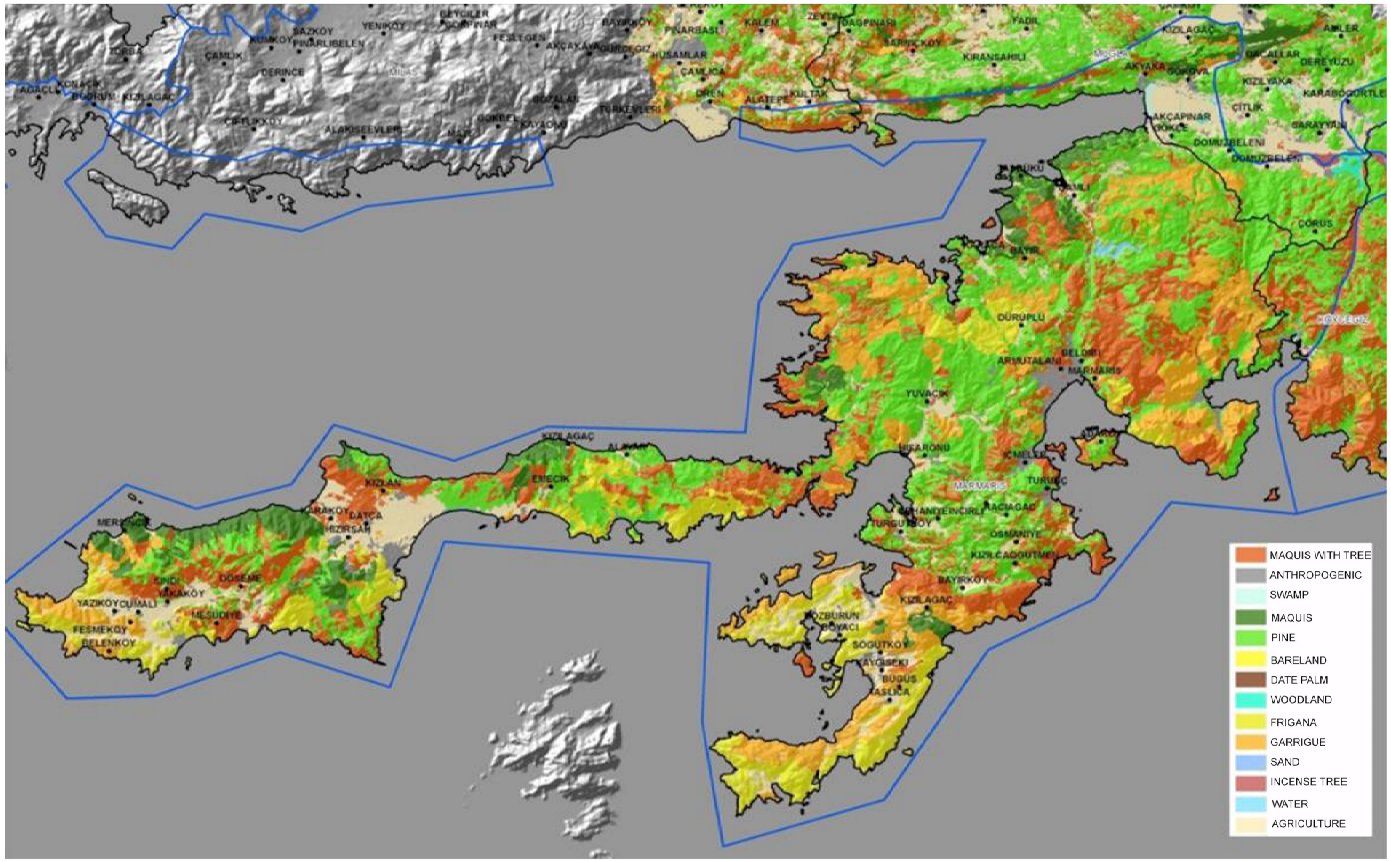


Figure 13: Map of the Land Cover Classes

Source: (Doğa Koruma Merkezi, 2013)

The region in which Datça is located is wealthy in terms of forests. According to the General Directorate for Protection of Natural Assets and Marmaris Department of Forestry, total forest assets of the Datça-Bozburun SEPA accumulate to 110,359 hectares (Tabiat Varlıklarını Koruma Genel Müdürlüğü, n.d.). In the Environmental Plan Research Report, The Regional Directorate of Forestry states that 47.334 hectares (69%) of the planning area is forest. The total 2B status areas that have lost their forest quality amount to 264 hectares (0.7%). It was stated by the Provincial Directorate of Food, Agriculture, and Livestock that there are 10.070 (14%) hectares of agricultural land in the SEPA. Only 369 hectares (0.5%) of these lands are absolute agricultural lands. The size of olive grove areas is 3.453 hectares (5%), the planted areas are 2.323 hectares (3.4%), and the marginal agricultural lands are 3.926 hectares (5.7%). Besides, 530 hectares (0.8%) of the planning area consists of pastures (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 360).

In accordance with the Plan Research Report published by the Ministry of Environment and Urbanization, Figure 14 shows the forest, non-forest, and 2B lands in the Datça-Bozburun SEPA. The share of forest area of the overall land was examined on both peninsulas. The result showed that there is a high amount of forests. However, the amount of forest on the Datça Peninsula is higher than on the Bozburun Peninsula. Although the settlement areas of Old Datça, Reşadiye, and Hızırşah are in non-forest areas, they are surrounded by forests. Any development in these areas such as urban development, tourism expansion, and housing construction may cause the destruction of forest areas in the district.

Apart from the forest areas, there are many other protected areas in the region (Figure 15). The Datça-Bozburun SEPA includes natural site areas, archeological site areas, urban protected areas, and conservation zones. The north-east and north-west of Datça's district center are protected areas. However, the further development of the city, which closes the gap between the city and those areas, poses a threat to their status as a protected site. Eventually, these sites could become a part of the urbanized areas. The figure shows districts, towns, and villages in the region. Especially the Old Datça, Reşadiye, and Hızırşah neighborhoods have protected areas. The most prominent of these are the 1st-degree archeological site areas within the boundary of Old Datça and Hızırşah. Besides, there are archeological sites in the district's center (Old Knidos).

These neighborhoods, which are examined in this fringe study are important for the natural environment. They also include cultural and historical protection sites.

In terms of groundwater, the Plan Research Report indicates that the basin's water potential will not be sufficient to meet the area's demand for water in the long run. This is due to an increase in population, developments in agriculture, and tourism. For this reason, it is necessary to use the Datça basin's water potential sustainably. Especially increasing tourism creates a higher level of consumption of water compared to previous years. Because of the decreasing water potential, the issue of availability of water should be addressed in the region's upcoming plans (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 125).

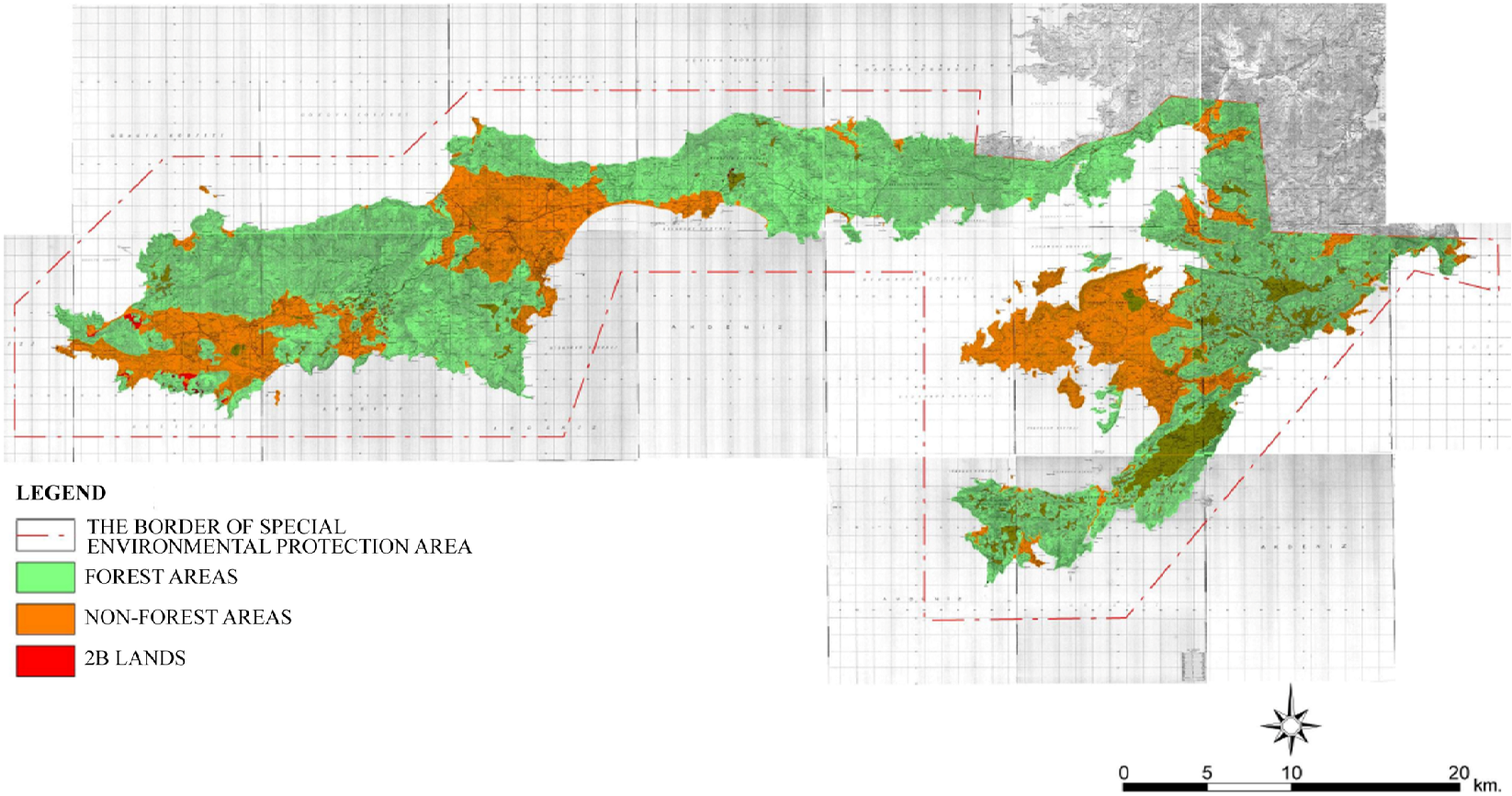


Figure 14: Distribution of Forest Lands in the Datça-Bozburun SEPA

Source: (T.C. Çevre ve Şehircilik Bakanlığı, 2014)

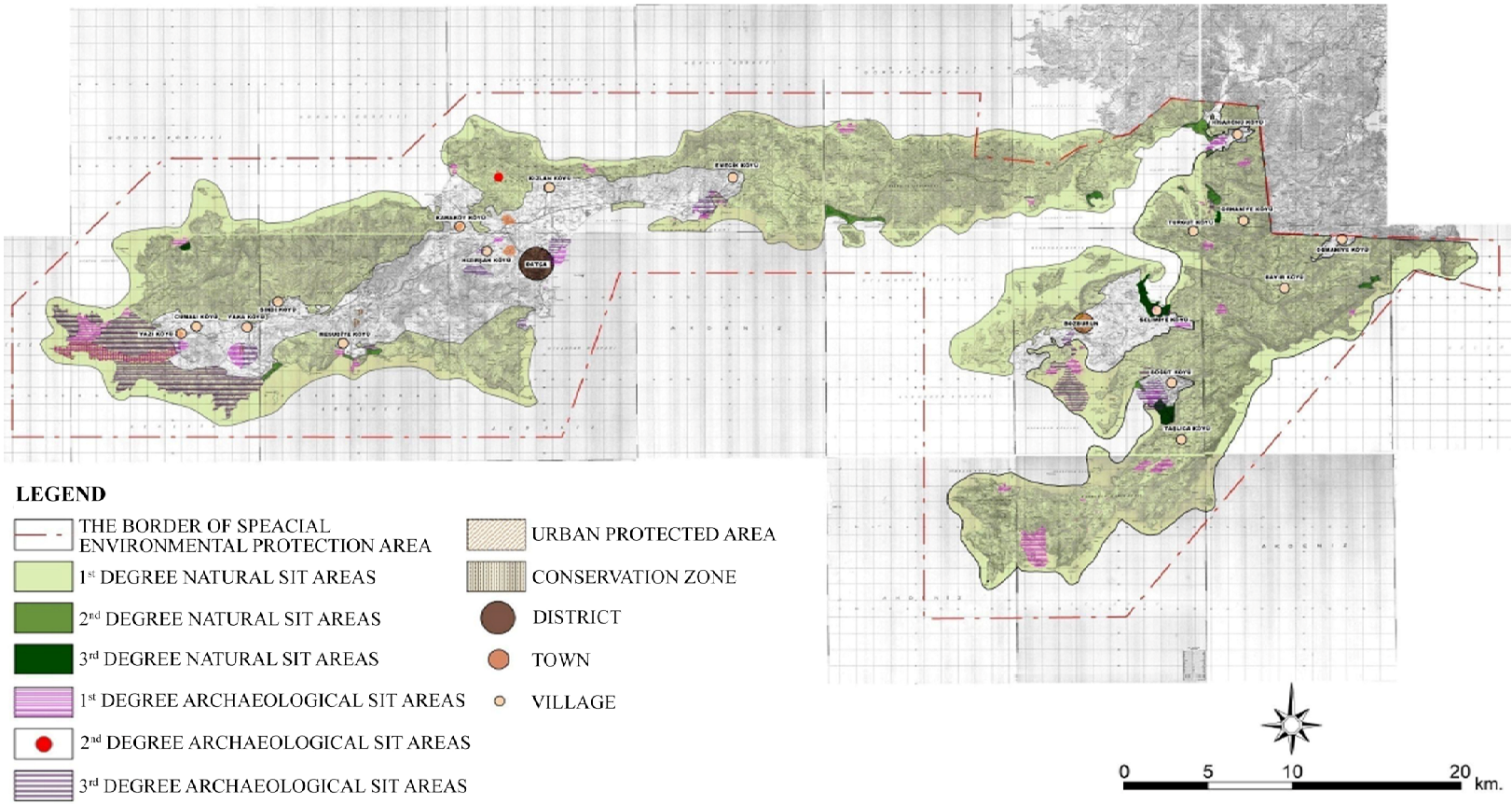


Figure 15: Distribution of Protected Areas in the Datça-Bozburun SEPA

Source: (T.C. Çevre ve Şehircilik Bakanlığı, 2014)

3.1.1.2.Land Cover

After the natural resources in this region have now been analyzed, in this section of the study the change in land cover (CORINE) data in the region over time will be examined. The complex structure of the fringe has different spatial elements in the Datça-Bozburun SEPA. Land cover is one of them. It changes over time in terms of development pressure, land-use decisions in spatial plans, and construction policies in the region. Land cover data shows such major changes in the study field over time as urban development took place. Therefore, analyzing CORINE data on both territorial and settlement scales has been useful in this study's scope.

For the spatial analysis of changing land cover areas in the Datça-Bozburun SEPA, Quantum GIS Software (QGIS) and a PostgreSQL Database were used. The vector data for land cover and the style files (SLD) were provided by the Ministry of Forestry and Agriculture and displayed in the QGIS Program. The land cover data of five different years was transferred to the PostgreSQL database and digitally analyzed for each of those years. For each individual land cover value (see Figure 16), data from all parts of the region was added to calculate the total amount of land that each one of them cover. The results of this calculation are presented in Table 5. The GIS analysis revealed that the changes of land cover values in the Datça-Bozburun SEPA affect the entire region.

Figure 16 shows the classification system for CORINE data. According to the figure, there are three levels of classification for land cover data: Level 1, Level 2 (subgroup of Level 1), and Level 3 (subgroup of Level 2). Levels and subgroups are defined by the European Environment Agency (EEA) and applied in Turkey as well. There are five groups defined within Level 1, 15 subgroups defined within Level 2 and 44 subgroups defined within Level 3 in the EEA classification document. To facilitate identification of land cover values, a land cover "code" for each value was determined on each level. The five primary land cover uses defined by the EEA are Artificial

Surfaces, Agricultural Areas, Forests and Semi-Natural Areas, Wetlands, and Water Bodies (*CORINE Land Cover*, 1995).

Level 1	Level 2	Level 3
1 Artificial surfaces	11 Urban fabric	111 Continuous urban fabric
		112 Discontinuous urban fabric
	12 Industrial, commercial and transport units	121 Industrial or commercial units
		122 Road and rail networks and associated land
		123 Port areas
		124 Airports
	13 Mine, dump and construction sites	131 Mineral extraction sites
		132 Dump sites
		133 Construction sites
	14 Artificial, non-agricultural vegetated areas	141 Green urban areas
		142 Sport and leisure facilities
2 Agricultural areas	21 Arable land	211 Non-irrigated arable land
		212 Permanently irrigated land
		213 Rice fields
	22 Permanent crops	221 Vineyards
		222 Fruit trees and berry plantations
		223 Olive groves
	23 Pastures	231 Pastures
	24 Heterogeneous agricultural areas	241 Annual crops associated with permanent crops
		242 Complex cultivation patterns
		243 Land principally occupied by agriculture, with significant areas of natural vegetation
		244 Agro-forestry areas
3 Forest and semi natural areas	31 Forests	311 Broad-leaved forest
		312 Coniferous forest
		313 Mixed forest
	32 Scrub and/or herbaceous vegetation associations	321 Natural grasslands
		322 Moors and heathland
		323 Sclerophyllous vegetation
		324 Transitional woodland-shrub
	33 Open spaces with little or no vegetation	331 Beaches, dunes, sands
		332 Bare rocks
		333 Sparsely vegetated areas
		334 Burnt areas
		335 Glaciers and perpetual snow
4 Wetlands	41 Inland wetlands	411 Inland marshes
		412 Peat bogs
	42 Maritime wetlands	421 Salt marshes
		422 Salines
		423 Intertidal flats
5 Water bodies	51 Inland waters	511 Water courses
		512 Water bodies
	52 Marine waters	521 Coastal lagoons
		522 Estuaries
		523 Sea and ocean

Figure 16: CORINE Land Cover (CLC) Nomenclature

Source: (Copernicus Land Monitoring Service, n.d.)

For the Datça-Bozburun SEPA, the CORINE data reveals three primary groups of land cover values on Level 1 in addition to Water Bodies and 19 subgroups on Level 3, which indicates the land cover patterns for the region. Within the Artificial Surfaces

of the region, Discontinuous Urban Fabric, Construction Sites, and Sport and Leisure Facilities can be found. From a planning perspective, artificial surfaces indicate urban growth. They appear when new settlement development, construction in the field, or new facilities are established. This implies human intervention towards the natural environment. It means that either settlement boundaries expand or vacant areas in the settlements fill up. Either way, artificial surfaces appear during settlement development.

The Agricultural Areas of the region mostly consist of Non-Irrigated Arable Land, Permanently Irrigated Land, Fruit Trees and Berry Plantations, Olive Groves, Pastures, Complex Cultivation Patterns, and Land Principally Occupied by Agriculture with Significant Areas of Natural Vegetation. Those areas show that there is either agricultural activity or the site is available for different kinds of production in that field. The type of production differs according to the label of the land cover use.

Finally, the land cover uses in the Forests and Semi-Natural Areas are Broad-leaved Forest, Coniferous Forest, Mixed Forest, Natural Grasslands, Shrubbery, Sclerophyllous Vegetation, Transitional Woodland-shrub, Sparsely Vegetated Areas, and Burnt Areas. Broad forest areas with different vegetation are examined in this group. Open spaces with no vegetation are also examined in this group, and burnt areas

are one of them. They indicate a site without vegetation because of natural or artificial reasons.

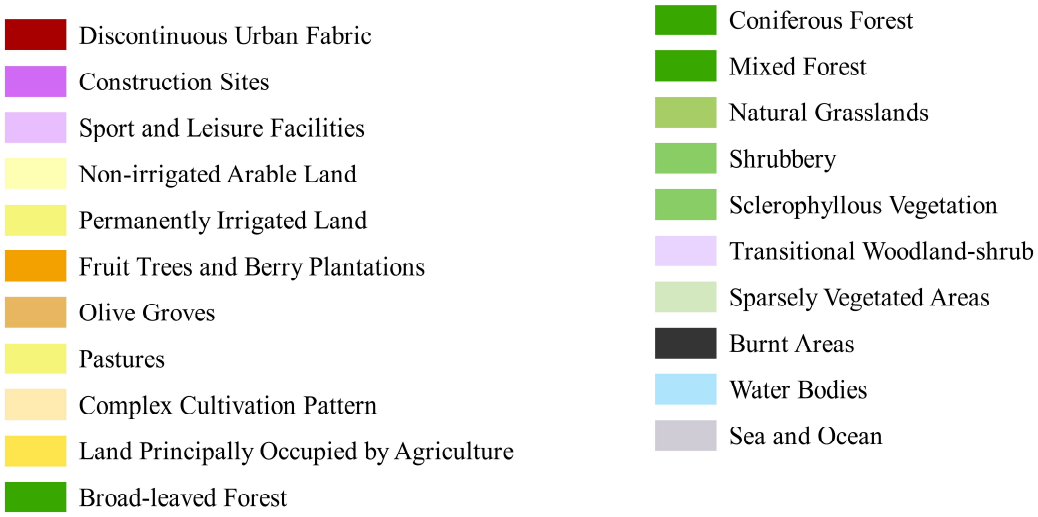


Figure 17: Legend for the CORINE Data in the Datça-Bozburun SEPA

Source: (T.C. Tarım ve Orman Bakanlığı, n.d.)

The land cover class values which appear in the study are displayed in the legend above (Figure 17). These values were defined by the European Environment Agency (EEA) as follows (Kosztra et al., 2017):

- Discontinuous Urban Fabric is assigned when urban structures and transport systems are the most common features in the area. In these areas, there are uses such as buildings and roads. Vegetated areas and bare soil can also be seen rarely.
- Construction Sites are the areas which are planned for future land-scape development. They are affected by human activities. Therefore, they have already been transformed or are transformed into artificial surfaces over time.
- Sport and Leisure Facilities are areas assigned for sports, leisure and recreational purposes. Camping grounds, sports grounds, leisure parks, golf courses, and racecourses are some of the uses which belong in this category.

- Non-irrigated Arable Land indicates cultivated land parcels for annually cultivated non-permanent crops. They are under rainfed agricultural usage and involves fields with periodic sprinkler-irrigation.
- Permanently Irrigated Land shows cultivated agricultural areas that are irrigated permanently or periodically. This kind of irrigation requires using irrigation channels, a drainage network, and additional irrigation facilities. Agricultural products in these areas cannot grow without a permanent water supply.
- Fruit Trees and Berry Plantations are cultivated areas including fruit trees, shrubs, nuts.
- Olive Groves include olive trees, vines or fruit plants intermixed with olives, bare soil or herbaceous vegetation among olive trees, and scattered patches of semi-natural vegetation (greenery).
- Pastures are used for the production of fodder. They include natural or sown herbaceous species, unimproved or lightly improved meadows, and grazed or mechanically harvested meadows.
- Complex Cultivation Patterns include different small cultivated lands and cultivation types. Annual crops, pastures, permanent crops, and scattered houses with gardens are in this group.
- Land Principally Occupied by Agriculture include mostly natural and semi-natural areas which are used for agricultural production. Forests, shrubs, wetlands, and water bodies can also be in this mosaic pattern.
- Broad-leaved Forest includes the development of vegetation consisting mainly of trees, including the understorey of shrubs and bushes, where broad-leaved species predominate.
- Coniferous Forest shows the vegetation formation composed principally of trees, including shrub and bush understorey, where coniferous species predominate.
- Mixed Forest shows the vegetation formation composed of trees, including shrub and bush understorey, where neither broad-leaved nor coniferous species predominate.

- Natural Grasslands are the green areas in which there is no or low human interference. Most of the time they are located in rough, steep slopes and include rocky areas.
- Sclerophyllous Vegetation is bushy sclerophyllous vegetation including maquis, matorral, and garrigue.
- Transitional Woodland-shrub include transitional bushy and herbaceous vegetation with occasional scattered trees.
- Sparsely Vegetated Areas include steppes, tundra, lichen heath, badlands, karstic areas and scattered high-altitude vegetation.
- Burnt Areas are areas affected by fires.
- Water Bodies include inland waters and marine waters.
- Seas and Oceans include sea water, floating marine vegetation, floating aquaculture installations, such as cages, tanks, buoy lines, narrow coast defense structures such as breakwaters, seawalls, sea dikes, groins, and jetties.

Table 5 shows the land cover data for the Datça-Bozburun SEPA for the years 1990, 2000, 2006, 2012, and 2018. In this table, land cover values are classified according to their land cover codes and levels defined by the EEA. The table gives an overview of the changes in every land cover value as well as the changes in size of the areas covered by these values. The size of land cover areas is not only displayed but also divided into sub-groups, namely the Level 3 classes. They were rounded to an approximate value in the database.

Accordingly, a continuous increase in the amount of land that falls under the Artificial Surfaces category can be observed. This is an expected consequence of urban development in the region. In the 1990s, Artificial Surfaces covered 577.6 hectares. However, the total artificial surface area now amounts to 813.6 hectares which is a 40.9% increase over the last twenty-eight years (Figure 18). Although the area covered by Discontinuous Urban Fabric is increasing, the percentage of Sport and Leisure Facility areas is decreasing in this group. The reason for the increase in Artificial Surface is the settlement development in this area. Old Datça, Reşadiye and Hızırşah settlements are considered to be urban fabric. They spatially developed over time.

Social facility areas are not increasing at the same rate. Therefore, the existing facility areas may not be sufficient to satisfy the inhabitants' demand.

When the Agricultural Areas group was examined, it showed that from 1990 to 2018, agricultural areas increased by 2.1% (Figure 19). There was an impressive increase in Olive Groves. At the same time, the Complex Cultivation Pattern decreased significantly. Since olive production economically gained more economic importance for the Datça region over the years, the high increase in olive lands does not come as a surprise.

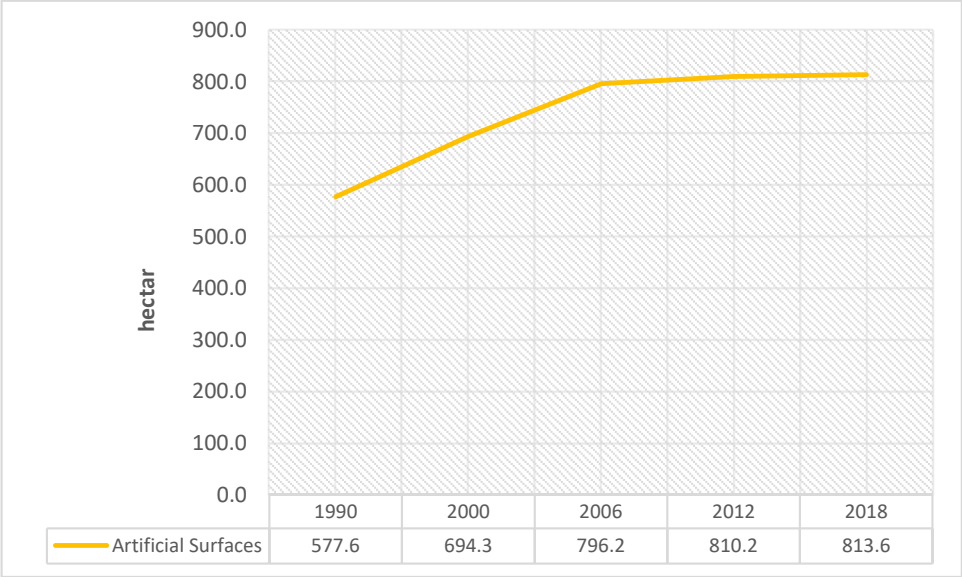


Figure 18: Land Cover Data Change regarding Artificial Surfaces

Source: *(T.C. Tarım ve Orman Bakanlığı, 2018)*. Graph created by the author.

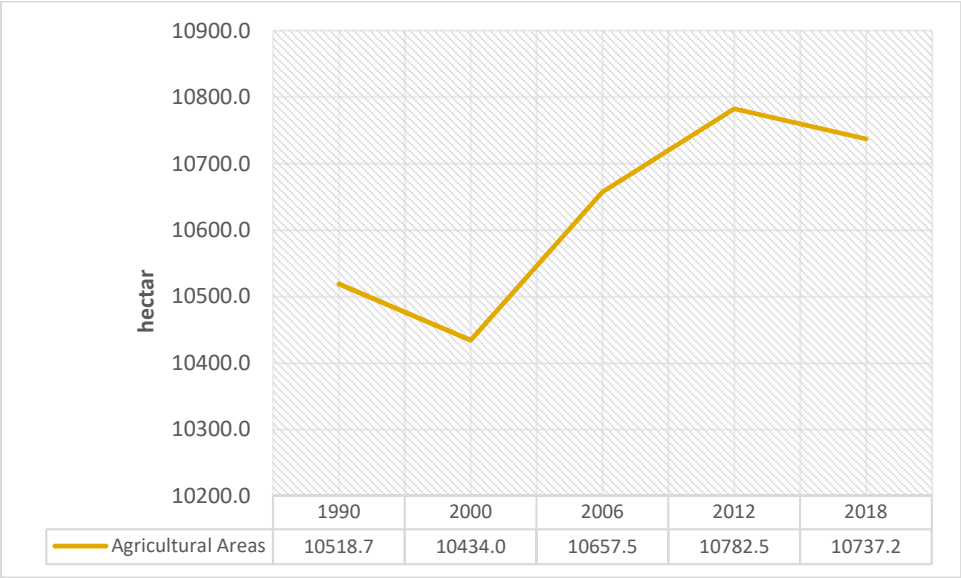


Figure 19: Land Cover Data Change regarding Agricultural Areas

Source: *(T.C. Tarım ve Orman Bakanlığı, 2018)*. Graph created by the author.

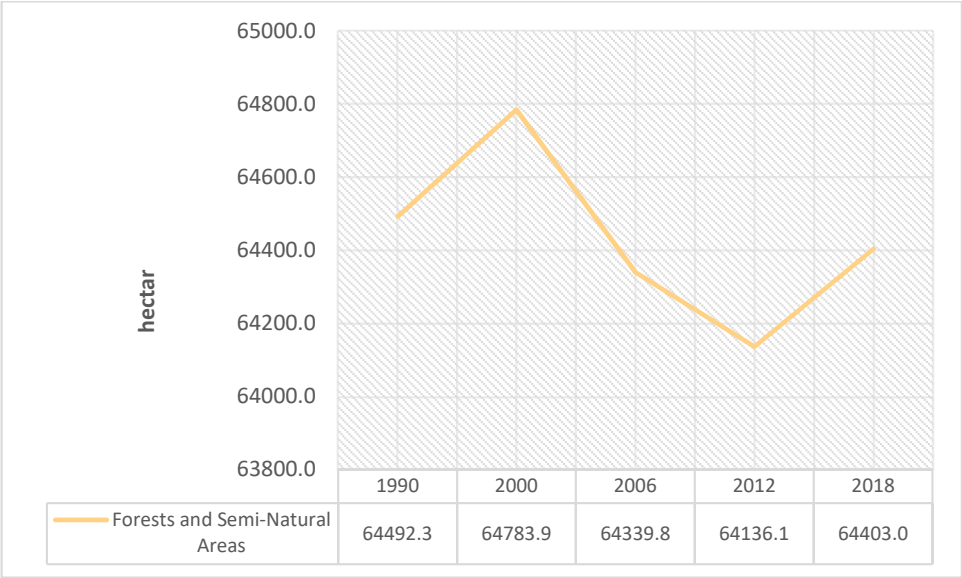


Figure 20: Land Cover Data Change regarding Forests and Semi Natural Areas

Source: *(T.C. Tarım ve Orman Bakanlığı, 2018).* Graph created by the author.

During the same years (1990-2018), Forests and Semi-Natural Areas decreased by 0.14% (Figure 20). In the region, there was mostly a decrease in forest and vegetation areas which can be explained with the increase in Burnt Areas.

Based on the calculated data, it appears that the most significant change in the land cover data during the above mentioned time frame occurred because of development and growth in urban areas.

Table 5: CORINE Data Change regarding the Datça-Bozburun SEPA (1990-2018)

CORINE Land Cover Nomenclature			CORINE 1990	CORINE 2000	CORINE 2006	CORINE 2012	CORINE 2018
Code	**Level 1**	**Level 3**	**Area (ha) ~**	**Area (ha) ~**	**Area (ha) ~**	**Area (ha) ~**	**Area (ha) ~**
112	Artificial Surfaces	Discontinuous Urban Fabric	300.4	385.1	554.4	568.3	571.7
133	Artificial Surfaces	Construction Sites	49.6	x	25.1	25.1	25.1
142	Artificial Surfaces	Sport and Leisure Facilities	227.6	309.2	216.8	216.8	216.8
211	Agricultural Areas	Non-irrigated Arable Land	244.3	244.3	470.6	512.5	470.6
212	Agricultural Areas	Permanently Irrigated Land	x	x	79.2	79.2	79.2
222	Agricultural Areas	Fruit Trees and Berry Plantation	x	x	86.5	86.5	86.5
223	Agricultural Areas	Olive Groves	238.1	238.1	4032.8	4032.8	4028.5
231	Agricultural Areas	Pastures	x	x	48.2	48.2	48.2
242	Agricultural Areas	Complex Cultivation Pattern	7997.4	7912.7	3173.6	3189.2	3373.4
243	Agricultural Areas	Land Principally Occupied by Agriculture, with Significant Areas of Natural Vegetation	2038.9	2038.9	2766.6	2834.1	2650.7

Source: (Tarım-Orman Açık Veri Portalı, 2018.), (CORINE Land Cover (CLC) 2018, 2019). Table created by the author.

Table 5 (continued)

CORINE Land Cover Nomenclature			CORINE 1990	CORINE 2000	CORINE 2006	CORINE 2012	CORINE 2018
Code	**Level 1**	**Level 3**	**Area (ha) ~**	**Area (ha) ~**	**Area (ha) ~**	**Area (ha) ~**	**Area (ha) ~**
311	Forests and Semi-Natural Areas	Broad-leaved Forest	6413.9	6413.9	329.8	329.8	315.9
312	Forests and Semi-Natural Areas	Coniferous Forest	7687.6	8571.6	14282.6	14251.4	14218.1
313	Forests and Semi-Natural Areas	Mixed Forest	4986.1	4894.1	5361.1	5361.1	5460.7
321	Forests and Semi-Natural Areas	Natural Grasslands	5810.8	5810.8	4971.7	4992.6	4951.2
323	Forests and Semi-Natural Areas	Shrubbery	9153.2	9121.2	16547.5	16286.7	16207.7
324	Forests and Semi-Natural Areas	Sclerophyllous Vegetation	21502.3	21072.5	13749.6	13556.3	14085.8
331	Forests and Semi-Natural Areas	Transitional Woodland-shrub	35.5	35.5	29.5	29.5	29.5
333	Forests and Semi-Natural Areas	Sparsely Vegetated Areas	8864.4	8864.4	9067.9	8889.7	8694.9
334	Forests and Semi-Natural Areas	Burnt Areas	38.5	x	x	439	439

Figure 21 shows the CORINE data change for the Datça-Bozburun SEPA from 1990 to 2018. As displayed in the figure, the most noticeable change occurred in the Artificial Surface class on the regional scale because of urban growth in settlements. The increase in olive grove area is also an important change for the region. Although it is possible to observe changes during the entire time frame from 1990 to 2018, the most significant changes occurred between 1990 and 2012. To focus on the spatial changes over time and to examine the change in the three major settlements in a territorial context, Figure 22 was created.

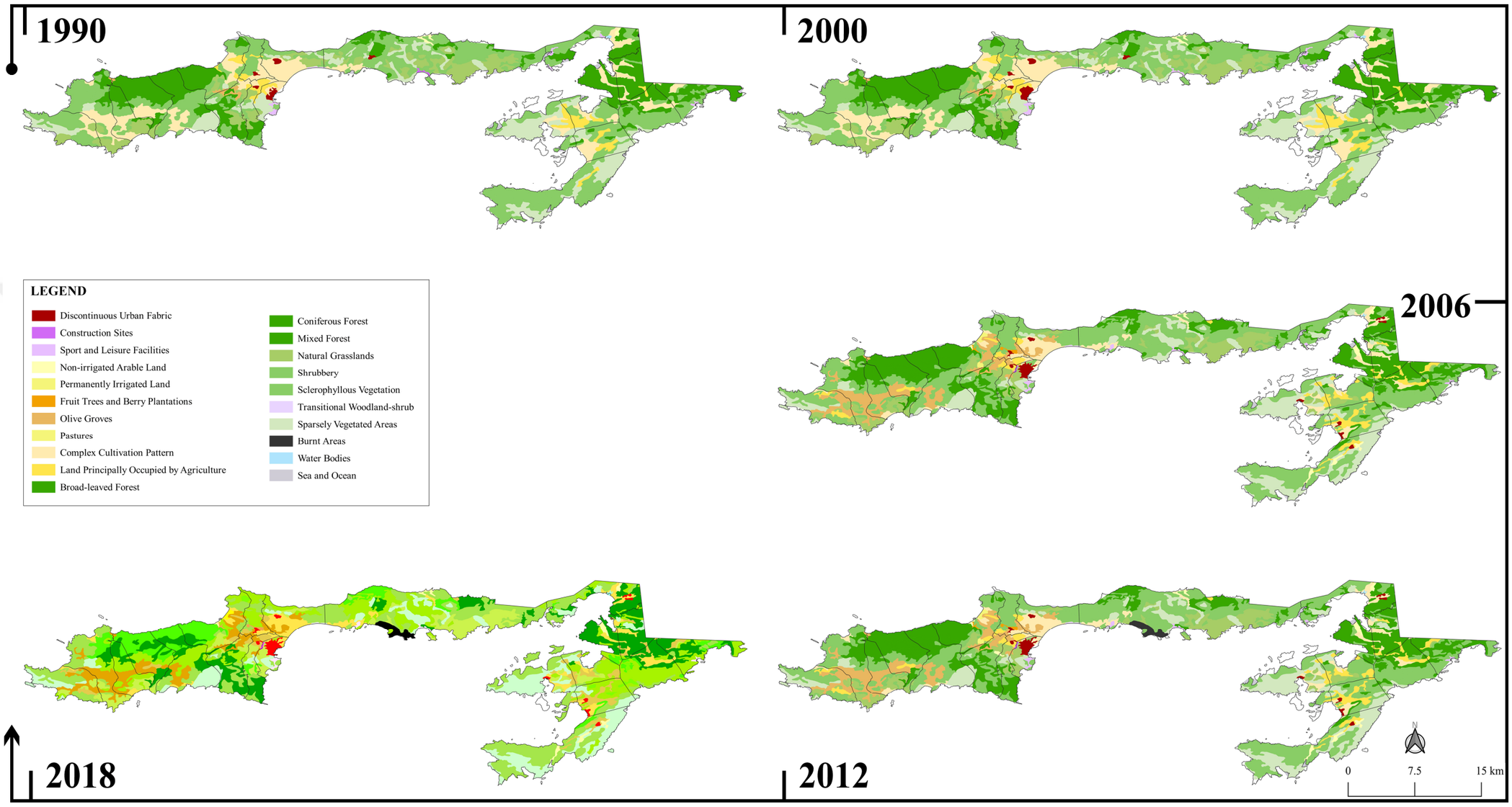


Figure 21: Regional CORINE Data Change regarding the Datça-Bozburun SEPA (1990-2018)

Source: *(T.C. Tarım ve Orman Bakanlığı, 2018)*, (CORINE Land Cover (CLC) 2018, 2019). Figure created by the author.

As a result of the CORINE data analysis conducted with the help of GIS tools, Figure 22 was created to synthesis this data and to emphasize the major changes in the region and their time-space relationship. The areas that underwent significant changes were circled and numbered. The Figure aims to evaluate on the transformation of natural and non-natural spatial elements in the region between 1990 and 2012.

The area marked with the number **one** represents two different changing lands with the same characteristics. The first one consist mainly of the Cumalı and Yaka neighborhoods which are located in the western part of the region. The second one comprises the Karaköy and Reşadiye neighborhoods, which are located in the district center's northwestern part. According to the CORINE data from 1990, these fields were labeled to be part of the "Complex Cultivation Pattern". These patterns were surrounded by "Sclerophyllous Vegetation" and "Natural Grasslands." Over the years, with the changing of agricultural production habits and methods in the rural area, land use has switched to "Olive Groves" which also applies to the Yazı and Sındı neighborhoods in the west. Olive groves spread widely throughout the Datça district. The transformation into vast lands used for olive production is remarkable for the region because the focus on olive-based production significantly affects the region's economy. The increase in agricultural land-use occurred mainly through the emergence of additional olive groves. Although according to CORINE data, the Datça district now has a significant amount of olive groves, no olive groves are to be found in the Bozburun district.

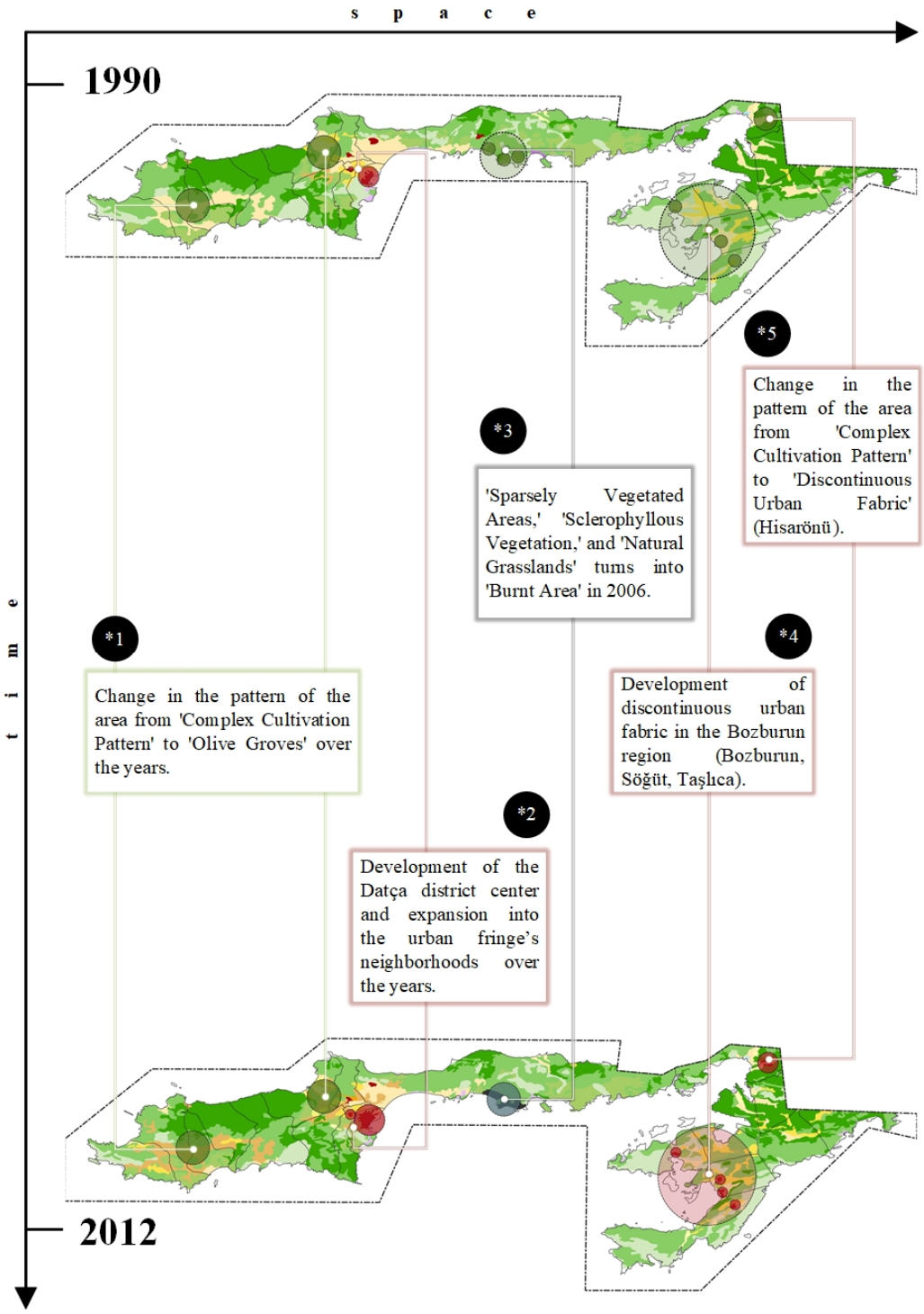


Figure 22: The Time-Space Relationship of the Datça-Bozburun SEPA

Source: *(T.C. Tarım ve Orman Bakanlığı, 2018)*. Figure created by the author.

Area number **two** in Figure 22 shows the growth of the center of the Datça district and of the central neighborhood called Old Datça. CORINE data from 1990 indicates that agricultural lands strictly separate them (the district center and Old Datça) and position them as two independent neighborhoods. Such a separation between urban and rural could also be observed in other cities during the 1990s. However, by the year 2012, the Old Datça neighborhood on the periphery had expanded towards the district center and the district center had expanded towards the fringe. The two settlements that were previously described as urban and rural and which had been separated from each other had now almost become spatially united. The distinction between the city and the countryside had blurred. This development led to an increase of settlement construction on agricultural land and caused a decrease in area used for agricultural purposes.

The examination of area number **three** revealed three different land cover values in the circled places, namely Sparsely Vegetated Areas, Sclerophyllous Vegetation, and Natural Grasslands in the Emecik neighborhood. The most significant change has occurred in these areas after the year 2006. They have mostly turned into Burnt Areas since then. Historical research about the burned regions shows a fire in the marked places. "The Forest Fires Assessment Report" published by the General Directorate of Forestry stated that a fire burned 95 hectares of land in the Emecik District (Koçaslan, 2006). According to 2018 data, the land cover value continues to be described as a burnt area.

The area marked as number **four** shows the development of settlements in the Bozburun district's rural parts over the years. There are three different settlements in the circled area, namely the Bozburun, Söğüt, and Taşlıca neighborhoods. According to data from the year 2012, as urbanization increased, more Discontinuous Urban Fabric appeared in areas that used to be dominated by Complex Cultivation Patterns and agricultural areas in the 1990s. This shows that regions in the SEPA which were highly rural in the past often turned into areas with predominantly urban characteristics over time.

Finally, in area number **five** a transition can be seen from Complex Cultivation Patterns to Discontinuous Urban Fabric. While the data from the year 1990 defined

the land cover value of this area as Complex Cultivation Pattern, the data from 2012 shows that the Hisarönü settlement has now emerged in the same place. Just as an area four, a transition from rural to urban can be observed. Again, this is a natural result of the process of urbanization in the SEPA.

As described above, CORINE data analysis showed the change of the Datça-Bozburun SEPA's main characteristics in built-up and natural areas. When looking at the regions of the SEPA which are classified as Artificial Surfaces it becomes clear how the urban areas have grown. Agricultural lands and forest areas make up the SEPA's natural surroundings. As mentioned before, a review of literature shows that such a complex structure of an urban fringe requires a multi-dimensional and holistic way of managing it. CORINE data analysis and synthesis was conducted to verify this theory using the example of Datça. The study area in this thesis is the fringe of Datça district, which is located in Datça-Bozburun SEPA and includes three neighborhoods: Old Datça, Reşadiye, and Hızırşah. While conducting this study on Datça's fringe, land cover data from the years 1990, 2000, 2006, 2012, and 2018 was examined. During this examination, these neighborhoods of the fringe were always in the focus point to analyze how they changed in the regional context.

3.1.1.3.Natural Thresholds and Urban Morphology

The Datça-Bozburun SEPA forms the western end of the Taurus Mountains and extends perpendicular to the Aegean Sea. It consists of numerous islands and peninsulas. The region reaches a height of 900-1100 meters above sea level. The elements that dominate the region's morphology are the bays, gulfs, and harbors which emerge in the areas west of the Datça-Bozburun peninsulas and the Gökova and Marmaris Gulfs. The Datça peninsula generally has a rugged terrain, which can be seen in Figure 23. As can be seen in this figure, the Old Datça, Reşadiye and Hızırşah neighborhoods are the few plain areas which are habitable. The most important coastal plains, which cover narrow and small areas on the Datça Peninsula, are the Palamutbükü, Mesudiye, Kızlan, and Reşadiye plains. Besides, the Bozburun Peninsula is dominated by a rugged topography due to its many mountains. Areas with

significant elevations include Güvençdağı, Kumatepe, Oyuk Tepe, Türkmen Tepe, and Öğütmen Tepe (T.C. Çevre ve Şehircilik Bakanlığı, 2014).

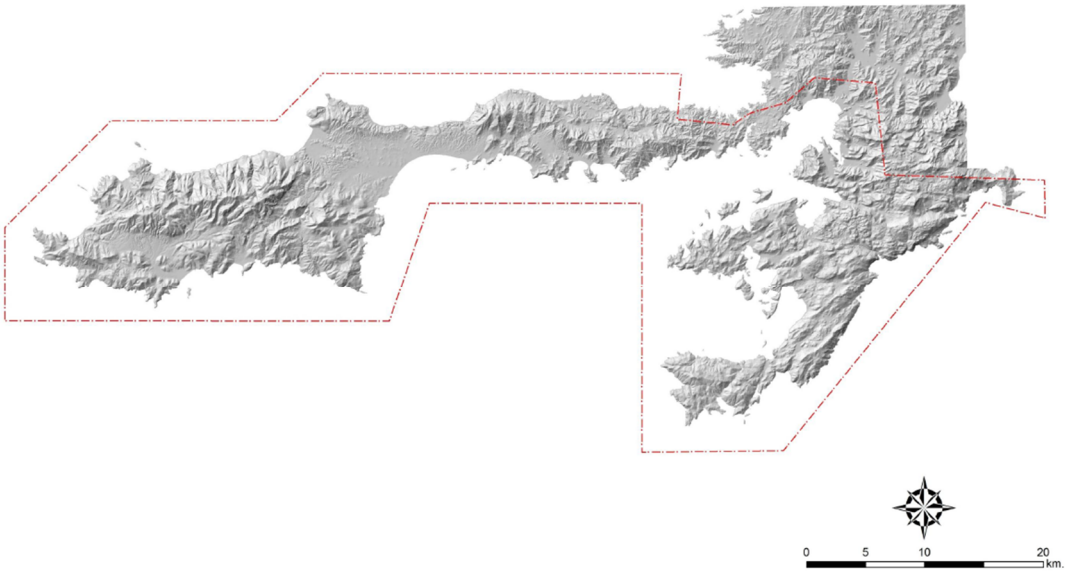


Figure 23: Map of the Datça-Bozburun SEPA Morphology

Source: (T.C. Çevre ve Şehircilik Bakanlığı, 2014)

The Datça-Bozburun SEPA is a dynamic area with high slope values. According to the Plan Research Report published by the Ministry of Environment and Urbanization, the slope is very high in 72.4% of the region and high in 15.1% of this region. The slope is one of the most critical physical thresholds in 87.5% of the region (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 111). As shown in Figure 23, there are no vast plain areas for settlement in the region. Natural thresholds cause dispersed settlement patterns in the area and lead to growth in some specific parts that do not have a high slope ratio.

The Datça-Bozburun SEPA is located in a 1st Degree Earthquake Zone. It is important to understand such natural thresholds when determining which areas in the Datça region are inhabitable. One of the most important fault lines in the SEPA is the Hamzalıdağ fault line to the west of Hızırşah. Fault lines are forming the Datça graben, Kızlan in the east, and Datça in the west. Another critical fault line in the region is the

NW-SE trending Alazeytindağı, the D-B trending Knidos, and the Karadağ faults (T.C. Çevre ve Şehircilik Bakanlığı, 2014).

3.1.2. Position of Datça in the Region

This section focuses on the position of Datça within the protection zone. In this context, the district's historical development is examined and the events that affected this development are outlined. Subsequently, the district's spatial location within the context of connections with other settlements and road networks are discussed. Last but not least, an evaluation on the district's socio-economic position takes place, particularly considering its population and its economic activity.

3.1.2.1.Historical Development of the District

Datça is a district within the administrative boundary of the city of Muğla. There are nine administrative units: Cumalı, Emecik, Hızırşah, Karaköy, Kızlan, Mesudiye, Sındı, Yakaköy, and Yazıköy. They are neighborhoods of Datça (Figure 24). Besides that, Datça has three central neighborhoods, namely İskele, Old Datça, and Reşadiye. Two of the settlements examined within the scope of the fringe analysis are central neighborhoods: Old Datça and Reşadiye. Hızırşah is the third one which is in close distance to the center.

The history of the Datça Peninsula dates back to 2000 BC. Knidos is one of the first settlements in the region and is located 1.5 km northeast of today's center of the Datça district. Simultaneously, one of the most important archaeological remains in the area is the ancient city of Knidos. At the end of the Roman period and the beginning of the Byzantine period, the city's population was up to 70.000 people. During the last period of the Byzantine Empire, it was abandoned due to both earthquakes and pirate attacks. Its population decreased to a few thousand people (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 21).

The city was incorporated into the Ottoman Empire in the 15th century and renamed Datça. Although the name was changed to Reşadiye during the Ottoman period, it was renamed Datça again once the Republic was established. In 1928, it became a district of Muğla and in 1947, the İskele neighborhood was determined to become the

administrative center of the district which it is still today (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 21). Figure 24 shows the administrative division of Datça. It shows the district center, the settlement center for each neighborhood, the administrative boundaries of each settlement and the road network between them.

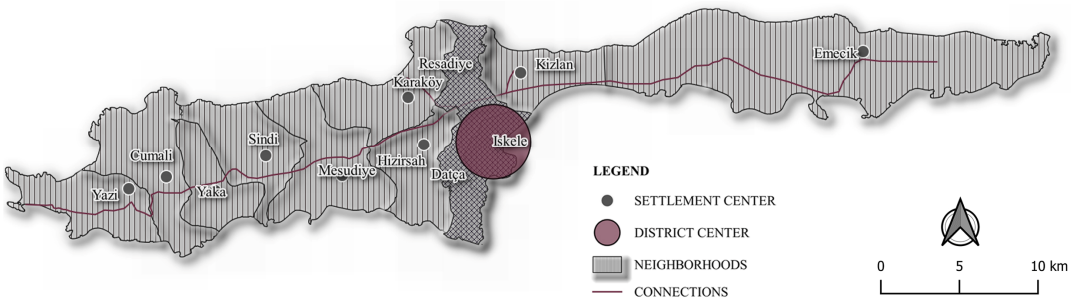


Figure 24: Administrative Division of Datça

Source: Figure created by the author.

Socio-economic and spatial characteristics are elements of the complex structure of the fringe. Examining changes of those elements over time helps to understand the dynamics between them and delivers important insights about the study field. Therefore, these changes that occurred in urban, rural, and fringe areas must be paid attention to. Figure 25 shows the most important incidents that took place in the district from 1858 to 2014 which contributed to shaping Datça into the area that it is today.

The first significant change in Datça's rural areas occurred in **1858** when the **Ottoman Land Code** came into force, which led to changes in land ownership. The regulation's goal was to protect the existence of small-scale lands and farms. It aimed to prevent the monopolization of rural properties which would have occurred if they had been turned into large farms. However, in some cases, the formation of broad land ownership could not be avoided (Naycı, 2012, p. 85). Although this code was considered to be beneficial to agricultural productivity, it could not prevent monopolization in some cases.

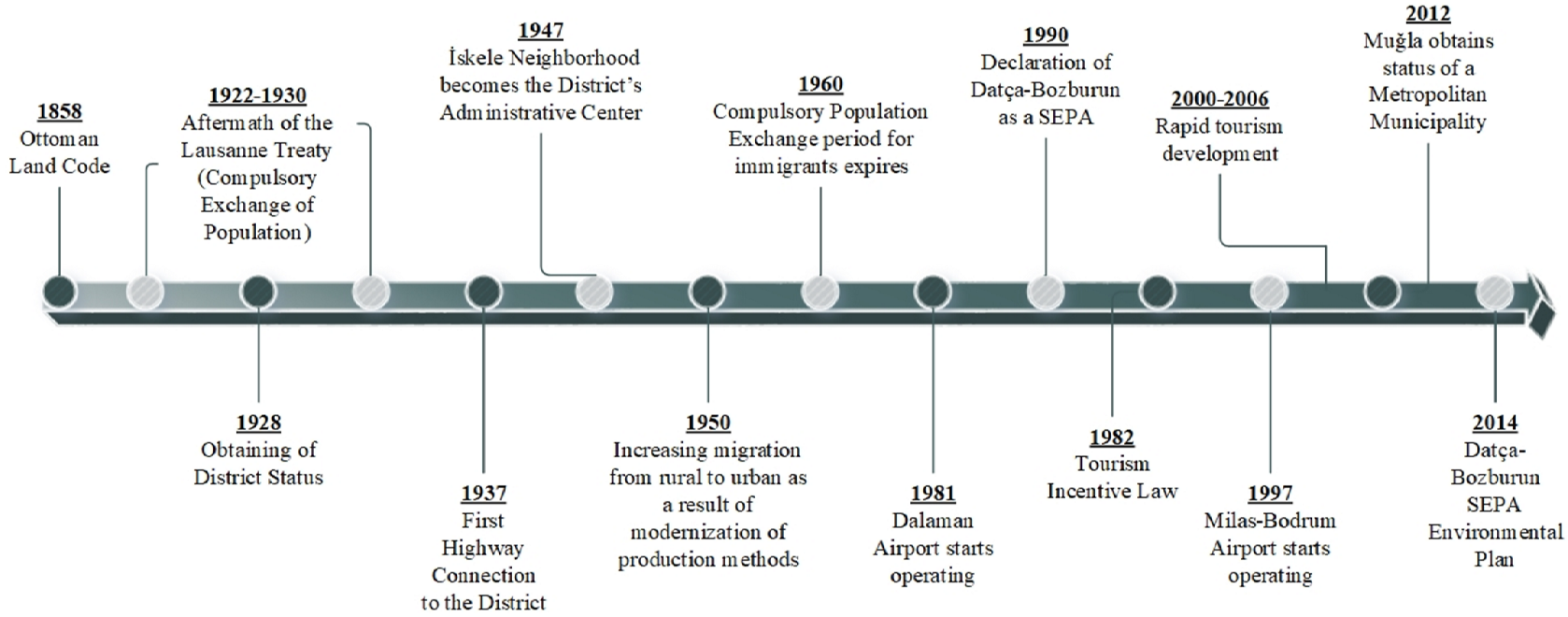


Figure 25: Timeline of the Milestone Incidents in the Datça

Source: Figure created by the author.

The second notable incident was the evacuation of agricultural settlements in the region due to the compulsory population exchange between **1922** and **1930** because of the **Great Exchange Program** signed by Turkey and Greece following the Lausanne Treaty. Families previously living in Datça left their homes and new families began to settle. Those new families that immigrated during the population exchange settled primarily in the Reşadiye neighborhood (Naycı, 2012, p. 86).

In this process, a clearing model was created by establishing a central commission. This commission directed incoming families to the areas more suitable for them according to their production skills and professions. The state encouraged the new immigrants to become producers and to contribute the economy. Although not everything went according to the original plan, these initiatives show that the government aimed to ensure continuity in agricultural production. Even if landowners and people involved in agricultural production differed, continuity of production was essential. However, not all people had the necessary skills to contribute to production and the land on which they had settled did not always provide for the adequate conditions which were needed for the particular agricultural land use. As a result, some families wanted to relocate to other places, waiving their rights (Naycı, 2012, p. 86).

It was another important milestone when Datça became an administrative district in **1928.** It thereby became independent from Marmaris. With this status, the identity of Datça became more clear and well-defined. For many years, accessing Datça was problematic due to a lack of roads. However, a highway to Datça was built in **1937**. Although the establishment of a road network was a significant development for the district, transportation problems continued in the following years due to poor road quality. The roads were too narrow, wiggly, and dangerous along steep parts of the mountains. Nevertheless, it was a step towards increasing tourism in the area. After 10 years, in **1947**, following another administrative regulation, the district's administrative center was moved from the Reşadiye to the İskele neighborhood (TEPAV, 2017).

During the **1950s**, rural to urban migration increased due to a transition from traditional economic activities and production styles to increased mechanization in agricultural production. This caused the population that had previously been employed

in agriculture to start working in other sectors. Poverty increased in rural areas. Consequently, visible changes occurred in the characteristics of rural settlements. In addition to the migration factor, the socio-economic organization of the city and the policies regarding agriculture, economy, population, and housing were played a role in the spatial change of traditional rural settlements in Datça (Naycı, 2012).

After **1960**, the time frame of the Compulsory Population Exchange for immigrants expired. Greek people mostly left the area because they did not feel like they belonged there. In this process, traditional agricultural terraces and production areas for products such as wine and olive oil were abandoned. They are still empty today. (Naycı, 2012, p. 100).

The most effective step towards making the region more accessible was taken in **1981** when the Dalaman Airport was opened. It is located in Fethiye, another district of Muğla, which is 160 km east of Datça. The operation of the airport strengthened the connection of the district to both domestic and international destinations. In the 1980s, tourism in Datça started to really develop. In **1990**, when the Datça-Bozburun region was declared a SEPA, the touristic development started to stagnate. This year was also the first year of reference for the land cover data of the Datça-Bozburun SEPA. In **1997**, Milas-Bodrum airport started to operate. With this development, and with increasing tourism in the nearby Bodrum and Marmaris regions, alternative transportation routes to Datça were created (TEPAV, 2017).

The Tourism Incentive Law entered into force in **1982.** Subsequently, the tourism sector became more important throughout the entire country. The demand for touristic accommodation began to increase especially in the areas on the western coastline (Çanakkale-Mersin). Large-scale hotel construction gradually increased between 1982 and 2006. The incentive given by the new Tourism Incentive Law led to a rapid increase of tourism in Datça especially between **2000** and **2006** (Heinrich Böll Stiftung Derneği, n.d.). The combination of this rapid growth and better accessibility brought the tourism sector to the fore. This observation is also supported by the related land cover data (Figure 21).

In **2012**, when the Law No. 6360 (“The Establishment of Fourteen Metropolitan Municipalities and Twenty-Seven Districts and Amendments at Certain Law and

Decree Laws") came into force, the Muğla province obtained the status of a 'Metropolitan Municipality.' According to this law, the areas that were previously defined as villages became neighborhoods. The villages within the realm of authority of the Datça district became neighborhoods of Datça. The responsibility for those districts and neighborhoods was transferred to the Muğla Metropolitan Municipality. This means that instead of the district municipality, the responsibility for public services and other issues of those neighborhoods was now assigned to the metropolitan municipality. This transfer of authority from the local to a centralized level had a negative impact on the awareness of local needs and localization.

In **2014**, the Ministry of Environment and Urbanization published an Environmental Plan for the Datça-Bozburun SEPA. Experts critically analyzed the decisions made within the scope of this plan. Restrictions imposed by policies concerning protected

sites such as Datça have a visible impact on the space. Such planning decisions regarding the Datça area are analyzed from a critical perspective in the next chapter.

3.1.2.2.Spatial Position of the District

3.1.2.2.1. Settlement Connections

Datça is a touristic area which is rich in protected natural and cultural values. That makes it one of the most important seaside and cultural tourism destinations in the region and the country.

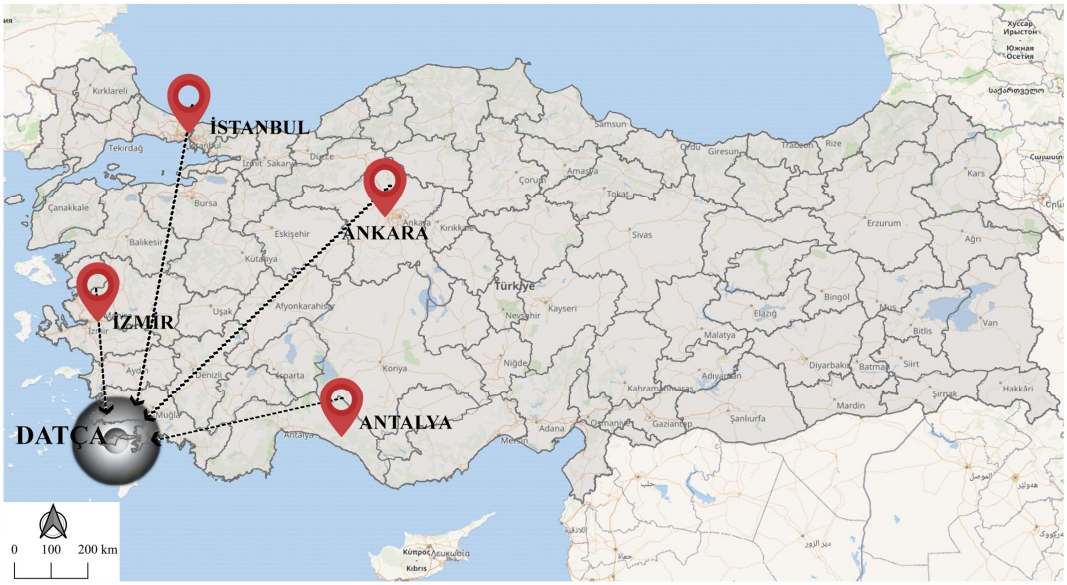


Figure 26: Distance from Datça to Other Cities

Source: Figure created by the author.

With the development of road nodes, Datça has become more accessible. In 1981, Dalaman Airport in Muğla started to operate. Datça has become a point of attraction for tourists from many different cities in Turkey, including İstanbul and Ankara, and from abroad (Figure 26). In the figure, location marks indicate the cities where the majority of tourists in Datça come from. The tourism in Datça stagnated in 1990 when it was declared a SEPA. Since then, more tourists have travelled to the Bodrum-Marmaris area than to Datça. Later, with the opening of the Milas-Bodrum Airport in 1997, Bodrum began to develop faster than Marmaris and Datça, although alternative

means of transportation have been established to improve the accessibility of Datça. Moreover, Marmaris has always been more accessible due to its location closer to the Dalaman Airport. This made it more attractive for tourists.

The Old Datça, Reşadiye, and Hızırşah neighborhoods are the settlements which are the closest to the district center. Although they are mostly inhabited by locals, tourists from big Turkish cities visit them frequently as well. In addition to that, people choose this destination not only for touristic purposes but also to migrate to it. Therefore, there is a strong connection between big cities in Turkey and Datça.

3.1.2.2.2. Road Network

The Datça-Bozburun SEPA is made accessible via the highway from Marmaris. People regularly drive from Datça to Muğla and Marmaris. Apart from that, there are regular bus services between Datça's neighborhoods and the center. For sea transport, there are yachts, ships, and fishing boats. They offer daily connections to the center of Datça, which are highly frequented by tourists during summer months. In the summer, there are also ferries that commute between Bodrum and Datça. There are also sea buses that connect Datça to the islands of Rhodes and Symi in Greece during the summer. The transportation scheme is presented in Figure 27 and shows the different types of roads in the region (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 342).

This figure shows the settlements, graded centers, and roads on different levels. The İskele, Old Datça, and Reşadiye neighborhoods, which are the district’s central neighborhoods, are 3rd-degree centers. The rest of the neighborhoods are defined as the 2nd-degree center. The Hızırşah neighborhood is one of them. The figure also depicts the state highway, provincial roads, and village roads. The state highway provides a connection from the Datça-Bozburun peninsula to other cities.

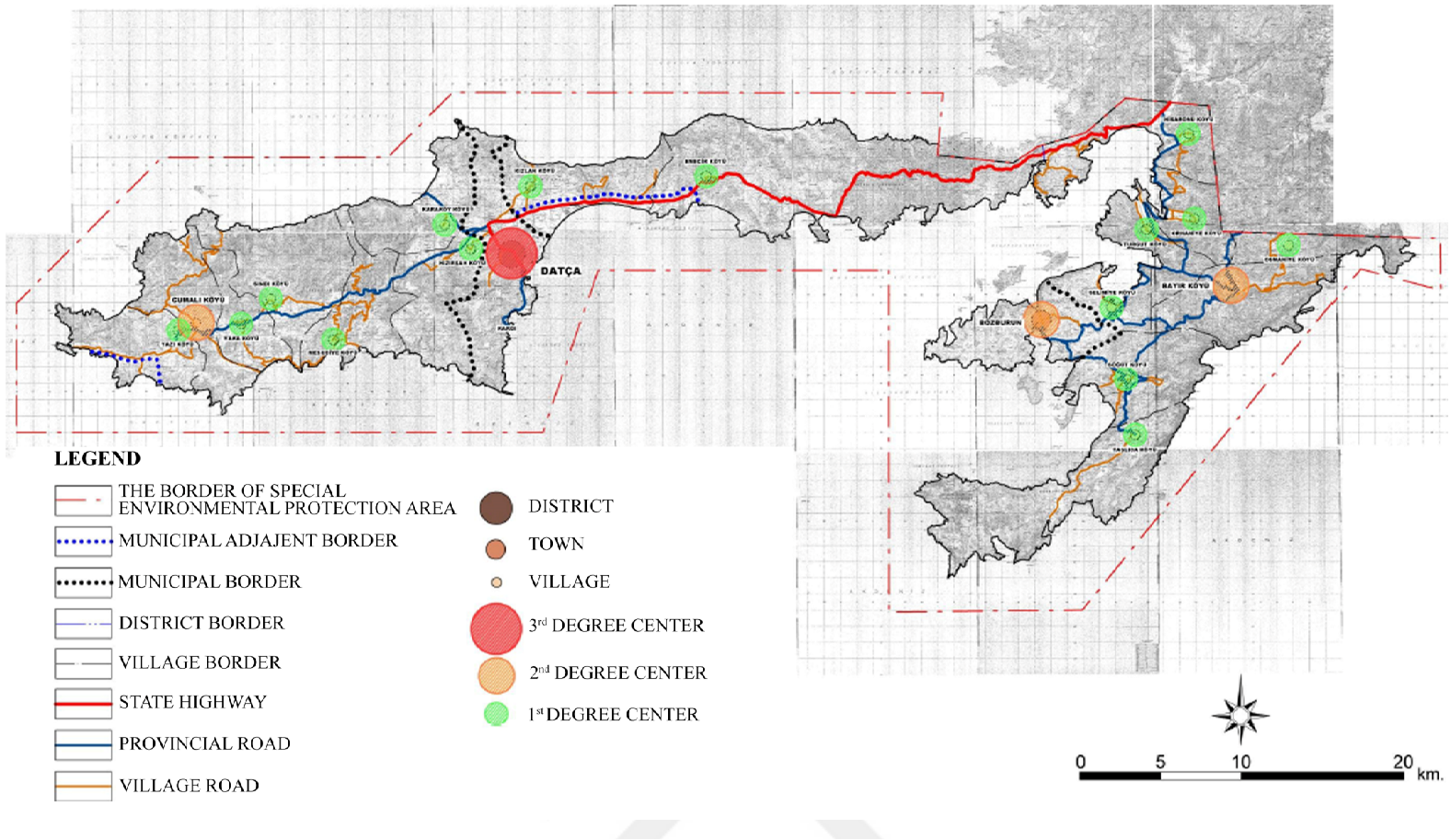


Figure 27: Transportation Scheme of the Datça Bozburun SEPA

Source: (T.C. Çevre ve Şehircilik Bakanlığı, 2014)

3.1.2.3.Socio-Economic Position of the District

3.1.2.3.1. Population and Demography

The bays of the Datça and Bozburun Peninsula are suitable for sea travel. This is one of the reasons why settlements have flourished since the Ancient Age. Another reason is that because of the close proximity to the water, the lands are very fertile. According to historical records, 70-100 thousand people lived in the region during the ancient period. However, the population decreased due to earthquakes and limitations in transportation. The population census of the year 2000 showed that the region's population was 27.774 people. The population density was 19 people per km². In the same year the population of the Datça district amounted to 13.914 inhabitants (Figure 28). Compared to Turkey's national average, Datça's population density is relatively low both in the region and in the district. Small agricultural areas, a lack of economic resources, and limited transportation opportunities are among the main reasons for the

regions' low density. The rapid increase in population in Datça since the 1970s is remarkable, as Figure 28 underlines (Taşlıgil, 2008, p. 77).

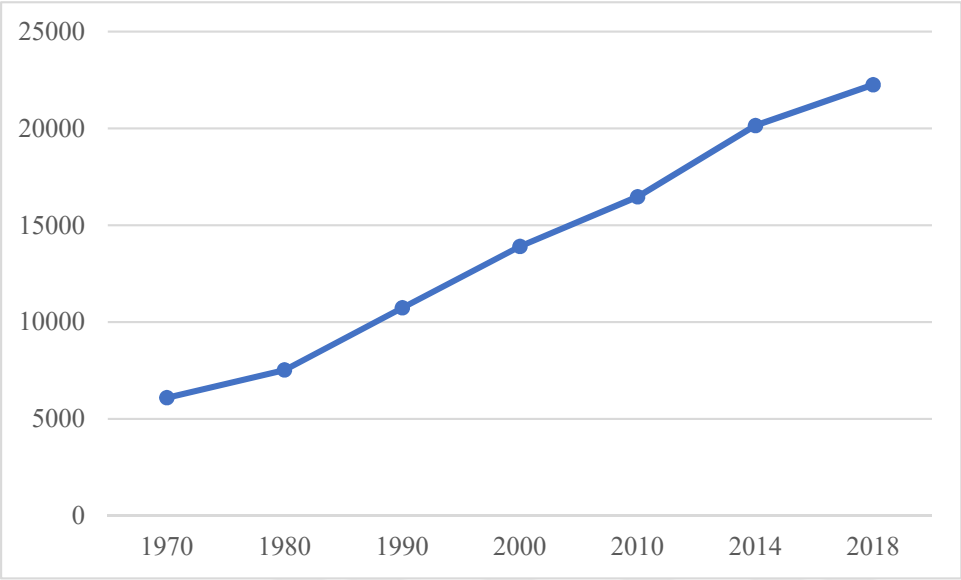


Figure 28: Change in the Total Population of Datça from 1970 to 2018

Source: (Türkiye İstatistik Kurumu (TÜİK), 2018). Graph created by the author.

According to TUİK's Address-Based Population Registration System, the Datça district population was 22,261 in the year 2018. As shown in Figure 29, while the urban population is increasing rapidly, the rural population is almost steady. Datça's rural population was higher than its urban population until the 2000s. In 1970, more than 70% of the population lived in the countryside. However, the number of people who live in cities started to increase in the 1990s. In the year 2000, 60% of Datça's

population lived in the urban area of Datça (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 141).

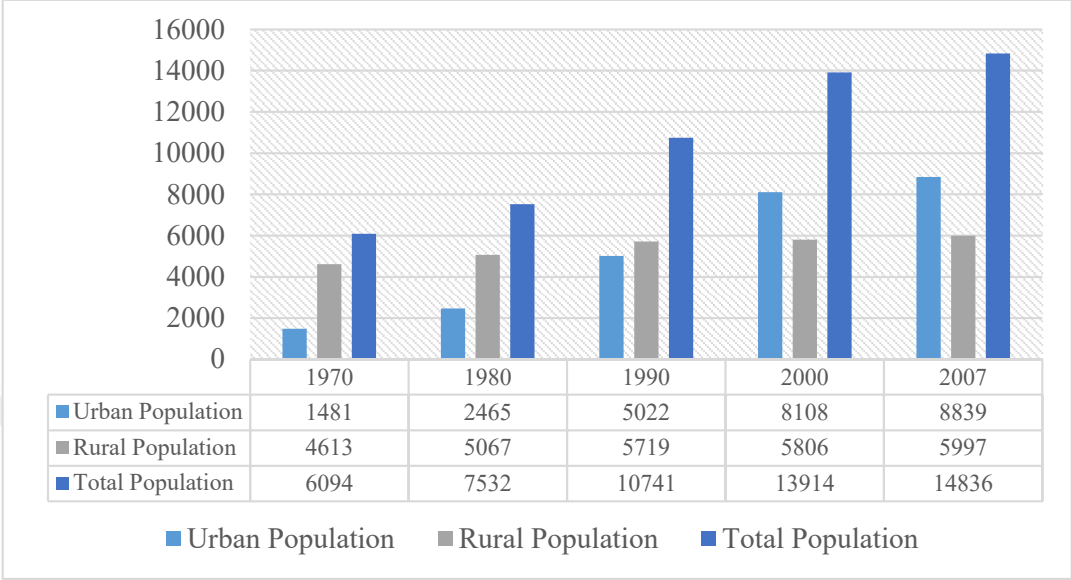


Figure 29: Change in the Urban-Rural Population in the Datça District

Source: (Türkiye İstatistik Kurumu (TÜİK), 2018). Graph created by the author.

According to the population census of the year 2000, people living in the Datça district (96%) and the Marmaris district (97%) have the highest level of education in Muğla province. The levels of education were determined with regard to the literacy rate. The high education level might indicate that more immigrants came to from regions in which the population has high level of education (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 159). Nevertheless, Yazıköy might be the most educated village not because of immigration but because it is one of the settlements which is located the furthest away from the center. Perhaps, the distance to the center made Yazıköy inaccessible and excluded. Thus, inhabitants may have had to leave the village in order to get an education, worked outside, and came back to the village when they retire (Ataöv,

2019). In addition to the İskele neighborhood, Old Datça and Reşadiye, which are also among the central settlements have a high educational level as well.

The level of education in Datça's population is higher than the level of the overall population of Turkey including Bodrum and Marmaris. The number of people with a higher education degree has increased rapidly in the district especially since 2012. However, despite its highly qualified labor force, economic activities in Datça are limited (TEPAV, 2017, p. 54). This is because a big part of its population only spends the summer in Datça without participating in its economy as a labor force. Another factor is a relatively high percentage of retired inhabitance.

Table 6 gives an overview of Datça's sector-based distribution of labor force using the population data from the year 2007. More recent data is currently not available. While the table's columns show the current population, the working population, the labor force participation rate, and the distribution of the population's labor force by sector. The table's rows list all neighborhoods in the district. Datça's neighborhoods, except for Emecik and Kızlan, have a ratio of the labor force working in agriculture that is higher than 50%. However, the central neighborhoods of İskele, Old Datça and Reşadiye were not included in this data. In comparison to the other sectors, agriculture is the most crucial for the population to cover its living expenses (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 381).

Table 6: Distribution of the Population by Sectors

Neighbor-hood	Current Population (2007)	Working Population (2007)	Participation Rate in the Labor Force (%)	Distribution of the Labor Force by Sector (%)			
				Agriculture	Tertiary Sector*	Retired	Other **
Cumalı	750	539	71.9	71.4	4.8	19	4.8
Emecik	884	611	69.1	26.9	42.4	23	7.7
Hızırşah	489	362	74	50	14.3	14.3	21.4
Karaköy	804	526	65.4	60.9	30.5	4.3	4.3
Kızlan	1009	780	77.3	41.4	31	6.9	20.7
Mesudiye	547	380	69.5	61.1	27.8	0	11.1
Sındı	378	310	82	66.7	33.3	0	0
Yaka	559	344	61.5	58.9	17.6	23.5	0
Yazı	577	282	48.9	70.6	5.9	23.5	0

* Tourism, Commerce, ** White Collar Employee & Blue Collar Employee

Source: (T.C. Çevre ve Şehircilik Bakanlığı, 2014). Table translated and rearranged by the author.

In addition to the central neighborhoods of Old Datça and Reşadiye, the rural settlement of Hızırşah is also within the scope of this study. According to this table, the labor force participation rate in Hızırşah is the third highest in the district. Agriculture is of the highest importance. Other sectors have a lower rate of labor force participation.

3.1.2.3.2. Agriculture, Industry and Commerce

Agricultural production is one of the main livelihoods of Datça. A large part of the population's income is based on the agricultural sector. Especially in neighborhoods which are shaped predominantly by rural characteristics, agricultural activities are carried out throughout all seasons of the year. The roughness of the area and the difficulties in accessing it make it challenging to deliver agricultural products from Datça to external markets. For this reason, farmers prefer products with high profitability (TEPAV, 2017, p. 22).

While the economy of the Datça Peninsula was entirely based on agriculture until 20 years ago, the district's economy has now changed and developed with an increase in the means of transportation to Datça over the years. According to a study conducted by the State Planning Organization in 2004, the socio-economic development of all districts in Turkey was ranked. In this study, Datça ranked in 80th and Marmaris ranked in 22nd place out of 872 districts in total. An examination of the Muğla province's development revealed no significant differences between its districts (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 159).

The Datça Peninsula has a closed economic structure. Agriculture is the most common way to earn a livelihood in rural settlements. Almonds and olives are the most frequently grown products in the region which are being sold to different cities. In addition to agriculture, tourism also plays an important role in Datça's economy.

Especially the Mesudiye and Yaka neighborhoods, which are located on the coast, generate a lot of income through tourism and fishery (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 106).

The topographic characteristics of the region only allow for a limited amount of land to be used for agricultural purposes. In Datça, which consists of eroded soils that are generally sloped, very stony, and damaged land structures, approximately 95% of the 47,698 hectares of land are rough. The area that can be used efficiently for agriculture does not exceed 10,000 hectares. 8,500 hectares of this area is on the Datça Peninsula, the rest of it is to be found on the Bozburun Peninsula. On approximately 1,350 hectares of land dry farming is carried out, and seasonal vegetables and fruits are grown in the gardens, most of which were acquired from forest areas (*Datça-Bozburun - Tabiat Varlıklarını Koruma Genel Müdürlüğü*, n.d.).

Agricultural activities in Datça form the basis of the district's economy. Within this sector the focus is mostly on the growth of almonds, olive oil, and tomatoes as well as the production of honey. A significant amount of almonds, tomatoes, and honey is exported to other cities. A large amount of olives and olive oil is consumed by locals, while only a small amount of olive-based products are exported. During the 19th century, wine-growing became a part of the local economy of Datça as well. Terraced lands have been used for this purpose. Wine export and viniculture significantly contributed to economy. However, these activities have lost their importance over time and the number of vineyards has decreased. The remaining 32 hectares of vineyard area are located in the center of Datça and the neighborhoods of Emecik and Kızlan (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 168).

In the region, waterless agriculture is also common. Irrigated agriculture takes place in an area not exceeding 300 decares. Husbandry has not developed in the area due to limited pastures (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 166). The breeding of goats is still a source of income in some areas of Datça (Kızlan and near Kargı bay). However, lately it has declined as tourism continues to develop. Nevertheless, there are efforts to develop husbandry again in the area (Ataöv, 2019). Since the agricultural land in Datça is limited, existing lands are even more valuable. As mentioned in the CORINE data (*see 3.1.1.2*), the Old Datça, Reşadiye, and Hızırşah neighborhoods are

located in close proximity to agricultural lands. Those settlements are developing over time and create pressure on the surrounding agrarian lands. In order to preserve the existing agricultural lands, development restrictions for these areas are needed.

Although Datça is privileged with prosperous agricultural production, industrial development has been limited due to its insufficient transportation infrastructure. Until recently, Datça was significantly limited in its access to the national market due to poor transport connections. Compared to other provinces and districts in this sector, Datça's industry developed relatively slowly. There are no large-scale industrial facilities in the Datça district. However, several small businesses can be found in Datça's district center, Reşadiye, Kızlan, Yaka, Karaköy, and Mesudiye (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 172).

Figure 30 outlines the distribution of the agricultural lands in the Datça-Bozburun SEPA differentiated by their features. Accordingly, "Permanent Olive Cropland" and "Permanent Cropland," which can be found in many parts of Datça, spatially surround its district center especially to the north. Permanent Croplands and Permanent Olive Croplands in the agricultural economy play a critical role in Datça's agricultural economy. Those areas are mostly located between the district center and the Reşadiye and Hızırşah neighborhoods. The economic and agricultural importance requires a necessary sensitivity for these areas when spatial plans are developed. The need of these agricultural lands need to especially be considered when the direction is determined in which the city is to develop. Necessary restrictions should be applied to protect the existence of olive lands in Datça. Land speculations will emerge in these areas if they are under development pressure.

The Environmental Plan Research Report for the SEPA states that due to the peninsula's physical structure, the amount of agricultural land is limited. The most critical areas for income generated from agricultural production are the areas in which almonds and olives are grown (1st and 2nd-degree agricultural areas). Thus, such areas need to be protected from urbanization. This needs to be addressed in planning decisions as well (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 219).

As part of the Environmental Plan Research Report surveys with households in the region were conducted. Questions about agricultural production and related production

methods were asked. According to the survey, 96% of the 295 people that were interviewed use the agricultural production techniques they learned from their families. In other words, agricultural activities in the region continue to be based on traditional methods (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 259). It is important that agricultural production is carried out by local people using traditional methods and is not transferred to large-scale corporations. Only in this way can the local characteristics of agricultural production be sustained. If local farmers abandon agricultural production, they will immigrate to cities for better job opportunities.

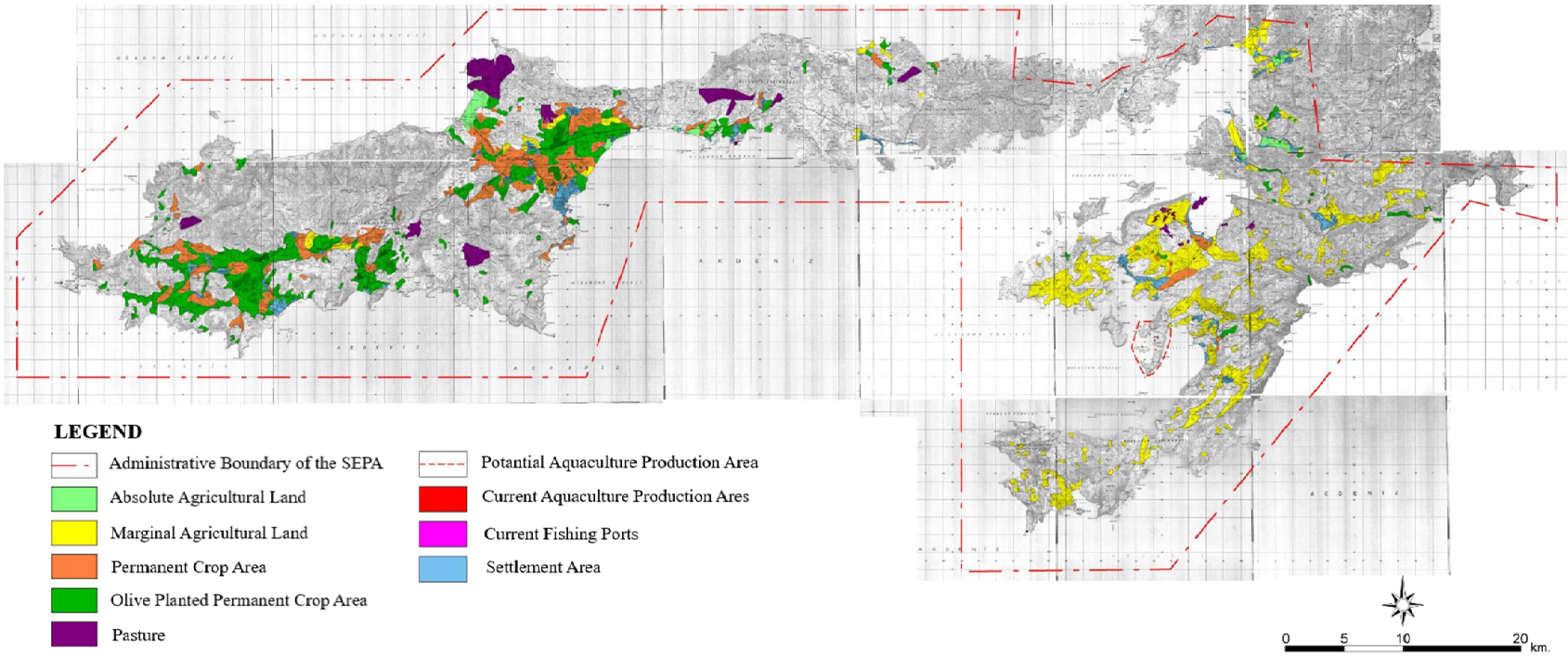


Figure 30: Distribution of Agricultural Land in the Datça-Bozburun SEPA

Source: (T.C. Çevre ve Şehircilik Bakanlığı, 2014)

3.1.2.3.3. Tourism

Datça is one of Turkey's most popular destination for tourists, just like Muğla's other districts such as Bodrum, Marmaris, and Fethiye. Especially, the Datça-Bozburun SEPA, which extends to the Aegean Sea, has become a preferred tourist destination for visitors from all over the country as well as from abroad. This is mainly due to its well-preserved nature, rich biodiversity, and cultural history. For Datça, tourism is a sector that is increasingly gaining importance.

Declaring Datça a Special Environmental Protection Area has made it easier to preserve the nature on the peninsula, including its 235 km coastline, 52 coves, various flora and fauna, and the ancient city of Knidos. Nevertheless, tourism is rapidly developing in the SEPA. It is located on an important route for boats and yachts. Besides being a preferred location for outdoor activities and water sports, it is also an important ecosystem that contains many endemic plant species (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 173).

Knidos, one of the port cities on the peninsula, stands out archaeologically and historically. Apart from that, Triopion in Palamutbükü, Akantos in Kargı Bay, and Stadeia between Kızlan and Datça's district center are the most significant ancient ruins on the Peninsula. Houses in the Reşadiye and Datça neighborhoods, which are protected areas, the Reşadiye Mosque, Selçuklu Mosque in Hızırşah Neighborhood, and the mills in the windiest area of the peninsula, which are located eight kilometers away from Datça, are other important elements of the region (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 174).

In addition to these features, which are popular with tourists, the region is becoming more prominent due to its agricultural capacity and the diversity of its local products. As a result, the development of agricultural tourism (agro-tourism) became a goal in the region as well. The importance of agro-tourism is also reflected in the spatial plans for this region. Since there still is untouched nature in Datça, the area is convenient for organic farming and attracts the attention of tourists. According to data gathered by the Muğla Investment Support Office in the year 2016, there are three active organic

farming companies in Datça which produce olive oil, honey, and grapes (processing, packaging, and marketing) (Muğla Investment Support Office, 2017, p. 18).

As mentioned above in Figure 25, which depicts the historical development of the region, the years 1937, 1981, and 1997 were particularly important milestones in the process of developing the tourism sector in Datça. In 1937, access to the district via highway was provided for the first time. In 1981, the Dalaman Airport which is located in close proximity to Datça, started to operate. The nearby Milas-Bodrum Airport opened in 1997. These new infrastructures were highly beneficial to the tourism industry in this region as they facilitated access to Datça (TEPAV, 2017, p. 6).

Types of accommodation for tourists are diverse and include hotels, motels, holiday villages, hostels, and camping grounds (Figure 31). The bar chart lists the neighborhoods in Datça while the different colors indicate varying types of accommodation. According to this figure, touristic accommodations are most common in the center of Datça, including the Old Datça and Reşadiye neighborhoods. Hızırşah, which is the third neighborhood in the scope of this study, has a smaller amount of accommodation when compared to Old Datça and Reşadiye.

Among the rest of the settlements, Mesudiye and Yaka have the highest capacity of accommodation. Emecik, Kızlan, and Karaköy follow with an even lower number of facilities. The most common type of accommodation for tourists is secondary housing (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 174). The constant demand from tourists for accommodation in Datça increases the pressure on lands on which no additional

construction is taken place yet. The impact of this demand is reflected in the planning decisions for this region, which will be examined in the upcoming chapters.

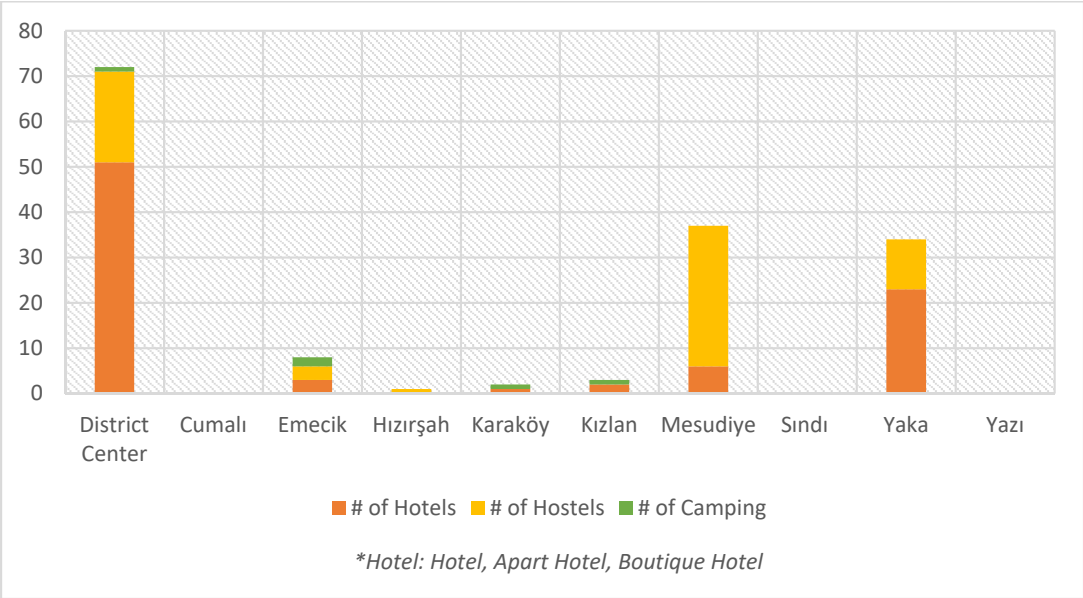


Figure 31: Number of Tourist Accommodations in Datça

Source: (T.C. Çevre ve Şehircilik Bakanlığı, 2014). Figure created by the author.

A study conducted by the South Aegean Development Agency examined which sectors contribute the most to the district's economy and provide the most employment opportunities in Datça. As can be seen in Figure 32, the number of the overall employment opportunities that were provided by each of the sectors changed significantly over the years. The sector that provides for the most employment is the sector of "construction of residential/non-residential buildings" (TEPAV, 2017). In

addition to construction sector, trade, cleaning services, carriage services, and food services are the other major sectors in Datça that locals are employed in.

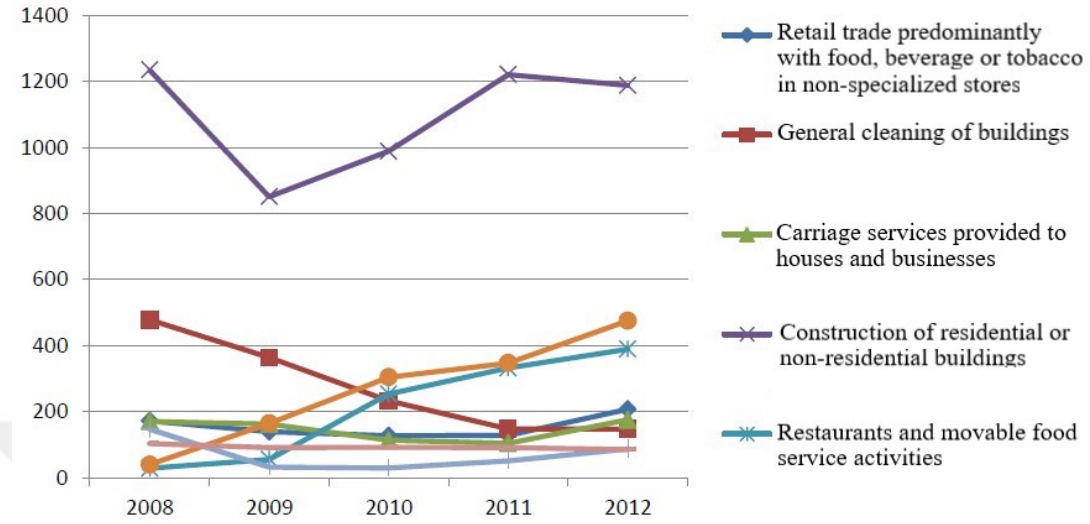


Figure 32: Sectors Providing the Most Employment Opportunities

Source: (TEPAV, 2017)

The construction sector's employment rate is directly proportional to the increase in the number of buildings constructed in Datça. Accordingly, with the increasing amount of buildings in Datça, the number of people employed in this sector has also increased. Figure 33 shows the change in the number of buildings built in Datça over the years (TEPAV, 2017, p. 43). As presented in the figure, the rate of construction was relatively stable during the periods from 2004 to 2005, 2006 to 2007, and 2009 to 2010. A decrease can be observed during to period from 2012 to 2013. However, those were the only years since 2008 during which there was no continuous increase in the number of newly constructed buildings. Improved accessibility to the region and the related rapid development in the tourism sector contributed to an increased demand and therefore to a boost in the construction industry.

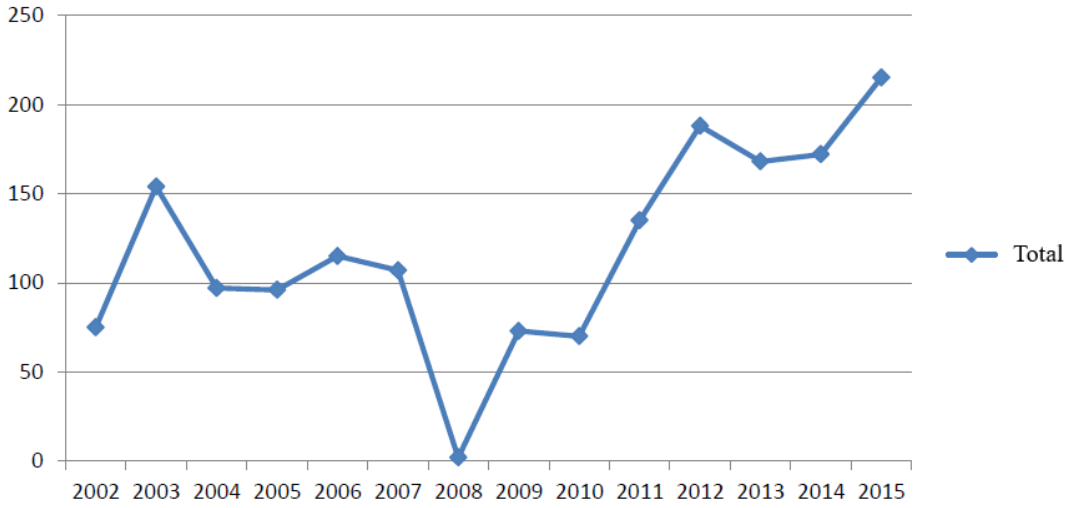


Figure 33: Change in the Number of Buildings Constructed in Datça

Source: (TEPAV, 2017)

Touristic activities in the area are directly linked to the construction of residential and non-residential buildings. The majority of the newly constructed buildings are hotels or secondary residences. It has previously been mentioned that the district benefits from its prosperous agricultural production. However, urban development and a change in the employment rates by sector (see Figure 32) indicate that the tourism sector is becoming increasingly dominant in parts of the region. The construction industry is growing rapidly. Consequently, the question arises, if this development in the construction sector will slow down in Datça, which is a natural and cultural conservation area, or if it will keep developing and thereby destroy the natural areas that surround it.

3.2. Settlement Context

After the area has now been examined in the territorial context and according to its regional characteristics, the upcoming section analyzes the study area in the settlement context. This part of the study is divided into two main parts. The first one gives a

general overview of the settlements in the Datça district. In the second part, the urban fringe in Datça is examined.

The fringe's complex structure requires a holistic, multi-dimensional, and multi-leveled planning approach. The analysis in a settlement context, as opposed to a territorial context, aims to create a better understanding of the study field on a more detailed scale. Its goal is to examine spatial elements even further. This section explores values on different scales and timelines, which will bring to light the time-space relationship of the spatial components.

Firstly, the introductory section provides a general overview of the neighborhoods of Datça in terms of population, demography, spatial position, and agricultural production patterns. Secondly, to examine the fringe of Datça, the conclusions from the previous section are used for further site selection analysis. In light of this information, the fringe study is carried out with land cover and land use data about selected fringe neighborhoods. During this analysis, GIS applications are used to manage the data and to evaluate on it.

3.2.1. A General Overview of the Settlements in Datça

The Old Datça and Reşadiye neighborhoods are among the first settlements on the Datça Peninsula. They are protected sites. The architectural texture of the two neighborhoods is similar. They consist of single-story and two-story buildings. According to Naycı, the researches carried out in the region show that the oldest settlements on the peninsula flourished due to successful agricultural production and sea trade. The ancient Knidos settlement, located in the west of the peninsula, is a well-known port city. Wine production also had an important place in the economy of the ancient city (Naycı, 2012, p. 87).

Scattered settlements are typical because of the physical geography of the peninsula which include rough terrain and mountains. Local people are inhabiting almost none of the traditional buildings in the district. Instead, new buildings are added to the

texture frequently which the locals live in. This development causes the district's conventional pattern to deteriorate over time (Naycı, 2012, p. 88).

Before the Law No. 6360 on "The Establishment of Fourteen Metropolitan Municipalities and Twenty-Seven Districts and Amendments at Certain Law and Decree Laws" of the year 2012, the number of neighborhoods in Datça amounted to only three, namely İskele, Old Datça and Reşadiye. Within the scope of this law, the status of the areas was changed from "villages" to "neighborhoods" of Datça. Thereby the number of neighborhoods for Datça rose to twelve. This section of the study will analyze those twelve settlements in terms of population, density, spatial location, and agricultural production. The aim is to understand the neighborhoods' characteristics and to determine which settlements in the urban fringe are to be further examined.

The purpose is to understand those the dynamics of Datça's periphery. In the first chapter it was shown that the periphery has a different identity than the urban space. Its uniqueness requires a multi-dimensional perspective. Therefore, the individual characteristics of the Datça neighborhoods must be defined as this is a precondition for understanding the fringe's complex structure.

3.2.1.1.Population and Density

Datça is made up of twelve neighborhoods. Three sites were chosen for further examination within the scope of this thesis. During the selection, it was especially considered which of the neighborhoods are the most dynamic settlements and have a close relationship to the district center. To understand the dynamic and characteristic of each of these neighborhoods, the demographic data had to be examined first.

When the three sites were chosen, the population and the density in the settlements were looked at in detail. The size of its population is one of the most critical components of a space as it creates movement and dynamism. Besides, the population determines the rate of production and consumption in an area. In other words, the behavior of a population and its interaction with the environment determines the shape of a place. Table 7 shows the socio-economic and physical structure of the rural settlements on the Datça Peninsula. The table includes the size of the population, settlement types, geographical locations, livelihoods, and agricultural production

patterns. According to this table, Kızlan has the highest population of all rural settlements, while Sındı is the neighborhood with the lowest population. Out of nine settlements on the peninsula, six of them are dispersed settlements, and the rest are gathered settlements which are concentrated in one place. According to this table, agriculture constitutes the most important source of income for the peninsula's settlements. Other source of income include apiculture, fishing, livestock, and forest products. Around 50-60% of the almonds and olives produced in Datça are sold to the Izmir, Denizli, Aydın, Uşak, and Manisa provinces as well as to other parts of the Muğla province. Around 30% are sold on local markets in Datça itself. The rest is sold to cities such as Ankara, Istanbul, and Antalya (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 324).

The fringe neighborhood of Hızırşah is a gathered type of settlement which is located on the outskirts of a hill far from the coast. The major sources of income in Hızırşah are agriculture, husbandry, and apiculture. Almonds and olives are the most commonly planted agricultural products in this settlement.

Table 7: Socio-Economic and Physical Structure of Rural Settlements on the Datça Peninsula

SETTLEMENT NAME	SETTLEMENT TYPE		NEIGHBORHOODS (2018)		MAIN SOURCES OF INCOME	AGRICULTURAL PRODUCTION PATTERN
	Gathered	Dispersed	Population	Geographic Location		
Hızırşah	x		538	located on the outskirts of a hill; far from the coast	agriculture husbandry apiculture	almonds, olives
Karaköy	x		807	located on a slightly sloping land in the inner part of the peninsula; away from the coast	agriculture fishery apiculture	olives, almonds, tomatoes
Kızlan	x		1320	located on the plain at the foot of the mountain, in the inland; away from the coastal zone.	agriculture husbandry apiculture	olives, almonds, tomatoes, fruits, vegetables

Source: (T.C. Çevre ve Şehircilik Bakanlığı, 2014). Table created by the author.

Table 7 (continued)

SETTLEMENT NAME	SETTLEMENT TYPE		NEIGHBORHOODS (2018)		MAIN SOURCES OF INCOME	AGRICULTURAL PRODUCTION PATTERN
	Gathered	Dispersed	Population	Geographic Location		
Mesudiye		x	1004	Some parts located away from the coast on the sloping inland of the peninsula; some parts located by the sea	agriculture husbandry apiculture tourism fishery	almonds, olives, greenhousing
Emecik		x	1291	located by the sea	agriculture husbandry apiculture	tomatoes, fruits, vegetables, olives, almonds
Sındı		x	347	located in the inland on the mountain and valley slopes; away from the coastal zone	agriculture apiculture forestry	almonds, olives, sage, laurel, thyme

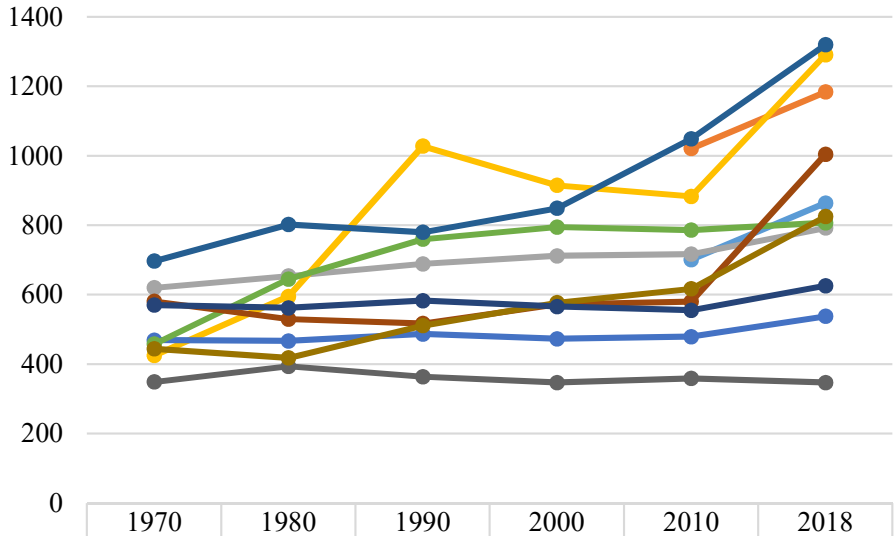
Source: (T.C. Çevre ve Şehircilik Bakanlığı, 2014). Table created by the author.

Table 7 (continued)

SETTLEMENT NAME	SETTLEMENT TYPE		NEIGHBORHOODS (2018)		MAIN SOURCES OF INCOME	AGRICULTURAL PRODUCTION PATTERN
	Gathered	Dispersed	Population	Geographic Location		
Yaka		x	825	located at the foot of a mountain in the inland; partly away from the coastal zone, partly located by the sea	agriculture husbandry apiculture fishery tourism	almonds, olives
Yazı		x	626	Located in the inland, partly on the outskirts of a hill and partly on flat terrain; away from the shore	agriculture husbandry apiculture fishery	almonds, olives
Cumalı		x	792	Located partly in the inland; away from the shore and partly located by the sea	agriculture apiculture fishery husbandry	almonds, olives

Source: (T.C. Çevre ve Şehircilik Bakanlığı, 2014). Table created by the author.

As depicted in Table 7, the main sources of income in each of the rural settlements is agriculture. The table shows how vital agricultural production is for the rural settlements in Datça. In most cases, the sector which plays the second largest role is husbandry. However, in Sındı and Cumalı, apiculture is the second most prominent sector. In the Mesudiye and Yaka neighborhoods, tourism is one of the biggest sources of income. The importance of the tourism sector for those neighborhoods is also presented in Figure 31.



	1970	1980	1990	2000	2010	2018
Eski Datça					701	864
Reşadiye					1021	1184
Cumalı	620	654	689	712	717	792
Emecik	425	595	1028	915	883	1291
Hızırşah	469	467	487	473	479	538
Karaköy	458	645	760	795	786	807
Kızlan	697	802	780	849	1049	1320
Mesudiye	581	530	517	572	580	1004
Sındı	349	394	364	347	359	347
Yakaköy	444	418	511	577	617	825
Yazıköy	570	562	583	566	555	626

Figure 34: Population Development in the Neighborhoods of Datça

Source: (Türkiye İstatistik Kurumu (TÜİK), 2018). Graph created by the author.

Figure 34 shows the population development in the neighborhoods of Datça from 1970 to 2018. Each color represents a different settlement while each of the curves depict

the change of the respective population. Since Old Datça and Reşadiye are central neighborhoods, no data existed for those two neighborhoods before the year 2010.

The most significant change in population occurred in Emecik. As mentioned before, Emecik is a dispersed settlement where agriculture and animal husbandry are the main sources of income. Apart from İskele, the neighborhoods with the highest populations are Kızlan, Emecik, and Reşadiye. Kızlan is located in a close proximity to the district center. A seasonal increase in population can be observed in Mesudiye and Yaka during the summer months, where tourism is an important sector (Figure 31). Although some neighborhoods may have a relatively high population, it must be taken into account that they are often also much larger in land size. Therefore, the decisive aspect is population density. In this context, Emecik serves as a good example. It may have a larger population than other neighborhoods, yet its settlements often have a lower population density than settlements in other neighborhoods.

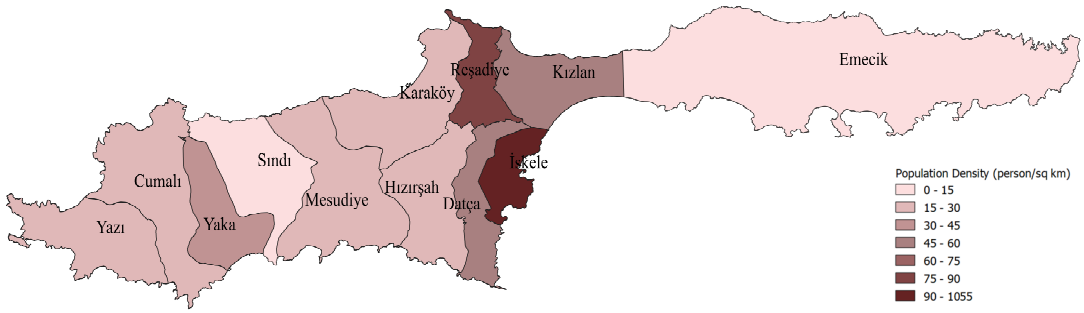


Figure 35: Densities of Datça neighborhoods

Source: (Türkiye İstatistik Kurumu (TÜİK), 2018).Figure created by the author.

Figure 35 shows the population density of the neighborhoods of Datça. While the lightest color indicates the lowest density, as the shades get darker density increases. Accordingly, Sındı and Emecik, which are colored on the map in the lightest shade, have the lowest density among the neighborhoods. The density is between 0-15 people/sq. km. Although Emecik is one of the neighborhoods with the highest

population (Figure 34), since the settlement covers a large area its population density is rather low.

The districts of Old Datça and Kızlan are denser in population than other neighborhoods. It amounts to 45-60 people/sq. km. Reşadiye follows with a density of 75-90 people/sq. km which is higher than the density of Old Datça and Kızlan. The Iskele neighborhood constitutes the center and has the highest density among all of the settlements. Its density is 1055 people/sq. km.

3.2.1.2.Location of the Settlements

After examining the population and density of the settlements, this part of the study outlines how far away from the district center the neighborhoods are located. To define the boundary of the three study area settlements (Old Datça, Reşadiye, Hızırşah), their distance to the center must be considered. The neighborhoods' locations are an important criterion in understanding the dynamics of the periphery. Since the services and commercial areas are located in the center, it is crucial to observe what kinds of changes occur in the area between the center and the edge of the city. The compact, dense settlement pattern disappears and wider green areas and open spaces increasingly dominate the area the further one gets to the periphery. The housing density decreases in the periphery. Besides, as the distance between the center and the

neighborhoods in the fringe decreases, urban and rural areas' interaction increases, and the heterogeneous structure becomes more visible.

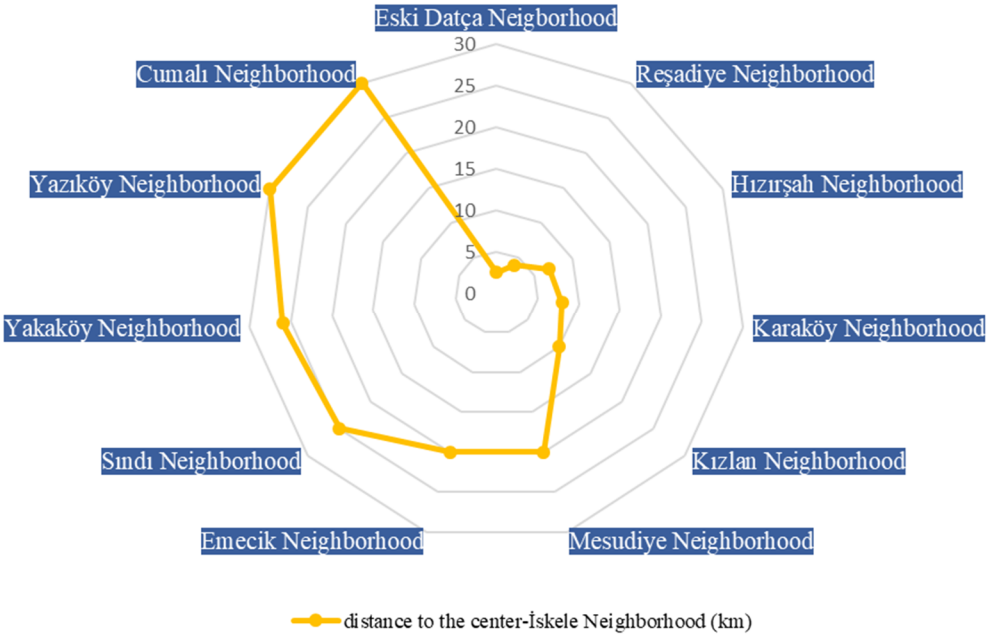


Figure 36: Distance from the Neighborhoods to the Datça District Center

Source: (Coğrafi Konum, n.d.). Graph created by the author.

Figure 36 shows the neighborhoods' distance to the Datça district center. The first neighborhood is Old Datça, which out of all the settlements is located the closest to the center. The distance from the neighborhoods to the center increases as the figure is read clockwise. Cumalı is the settlement which is the furthest away from the center. The area determined as the district center is also known as the İskele Neighborhood. For this reason, it is not part of the settlements in the figure.

The neighborhood closest to the center is **Old Datça**, with a distance of 2.5 km. With the center's growth over the years, this neighborhood has become a part of the center, rather than continuing to be its own rural neighborhood. During the urban development process, the center expanded to the northwest to Old Datça. At the same time, the settlement of Old Datça itself developed towards the center. The neighborhood located the second closest to the city center is **Reşadiye**, again to the northwest of the center

and with a 4 km distance. This neighborhood is located on the spine of the city, which can be described as the development axis. The neighborhoods primarily develop in the area surrounding the road that connects them to the center. Since settlements tend to develop around city centers, the Datça district center serves as such a point of attraction for the Reşadiye settlement. Old Datça and Reşadiye on the development axis are the most prominent points of references for defining the fringe of Datça.

Hızırşah is also in close distance, being located only 7 km away from the city center. Although there is no direct road to the city center, it is close to Reşadiye and Hızırşah. The connection to the district center is provided via the spine that runs through the Reşadiye neighborhood. The reason why Hızırşah is important for this study is because it is located in close proximity to the development area and has been able to preserve its rural texture better in comparison to Old Datça and Reşadiye.

Karaköy and **Kızlan** are two neighborhoods that are almost equidistant to the center but from opposite directions. Karaköy is close to the marina from where ferries connect Datça to Bodrum. Marina, fishermen's shelters, and ferry services were useful for the development of the neighborhood. Minibuses provide transportation to the center. Kızlan, which is located in the inner parts of Datça, mostly preserved its rural identity (Özgen, 2014).

Mesudiye and **Emecik** are 20 km away from the center. Mesudiye is located in the southwest of the district center while Emecik is located to the northeast. Since both districts have a coastline, there are beaches. Therefore, these settlements have a highly touristic character.

Sındı is 25 km away from the center and is away from the coastal zone. It is located on the mountain and valley slopes. The rural quality of the neighborhood is high, and there is an Agricultural Development Cooperative within its borders (Özgen, 2014).

The **Yaka** neighborhood is located 26 km from the center, inland and partly away from the coastal zone, however also partially settled by the sea. The area has a traditional

rural settlement texture with dwellings. Palamutbükü beach is to be found within its borders, which is why its potential for tourism is significant (Özgen, 2014).

Yazı and **Cumalı** are 30 km away from the center. The settlement pattern has been well-preserved because the Yazı neighborhood is located within an urban protected area. Apart from this, there is an Agricultural Development Cooperative in the neighborhood. In the Cumalı Neighborhood, there are old and historical buildings. Some parts of the settlement are located by the sea, others are further away from it (Özgen, 2014).

When determining the area that is to be studied, the distance from the neighborhoods to the center is an important parameter because a close location to the center affects a neighborhood's character. The district center is a dynamic area with many commercial and public amenities. Those amenities serve the neighborhoods. Whenever they are at a close distance to the center, social and cultural facilities are also more easily accessible. Besides, such settlements are even more dynamic and heterogeneous. Those characteristics are due to the complex structure of the urban fringe. Therefore, Old Datça, Reşadiye, and Hızırşah are included in the study, as they are the three settlements which are the closest to the center.

3.2.1.3.Agricultural Production

The agricultural quality and rural diversity of the Datça-Bozburun Peninsula has continued through the ages and survived to the present day. One of the most critical features of the traditional rural settlements in the region are the vast agricultural areas. Agricultural terraces and production areas have developed around the settlements. Terraces were built on the slopes to enhance agricultural activities. Archaeological research in the region shows that production already took place in ancient times. Traditional agricultural terraces indicate cultural continuity on the peninsula in terms of land use and agricultural production (Naycı, 2012, p. 98).

Since the Datça-Bozburun SEPA has a hilly structure, the amount of land suitable for agricultural use is insufficient. Irrigation is mandatory because the summers are scorching and dry. Besides, the scarcity of irrigable land further limits agricultural production. However, there are 8,500 hectares of agricultural land on the Datça

Peninsula. Dry farming and fruit and vegetable growing are conventional (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 166).

As mentioned before, the economy of the neighborhoods of Datça are mostly based on agriculture. Almonds and olives are the most widely grown agricultural products and also sold to other cities. Figure 37 gives an overview of the main agricultural products which are produced in Datça's rural neighborhoods. The figure also outlines the production pattern. It is supported by information from Table 7, which concerns the socio-economic and physical structure of rural settlements on the Datça Peninsula. Almonds and olives are the most widely produced products in the district and can be found in every neighborhood. In the figure, fruits, vegetables, and green housing are displayed under the umbrella term "gardening." They are common products, especially in Karaköy, Kızlan, Mesudiye, and Emecik. Fruits and vegetables are generally produced in the Kızlan and Emecik neighborhoods. In Mesudiye, green housing is an essential livelihood for its inhabitants. Unlike in other settlements, in Sındı, sage, laurel, and thyme are important. In the figure, they are summarized under the term "herbs".

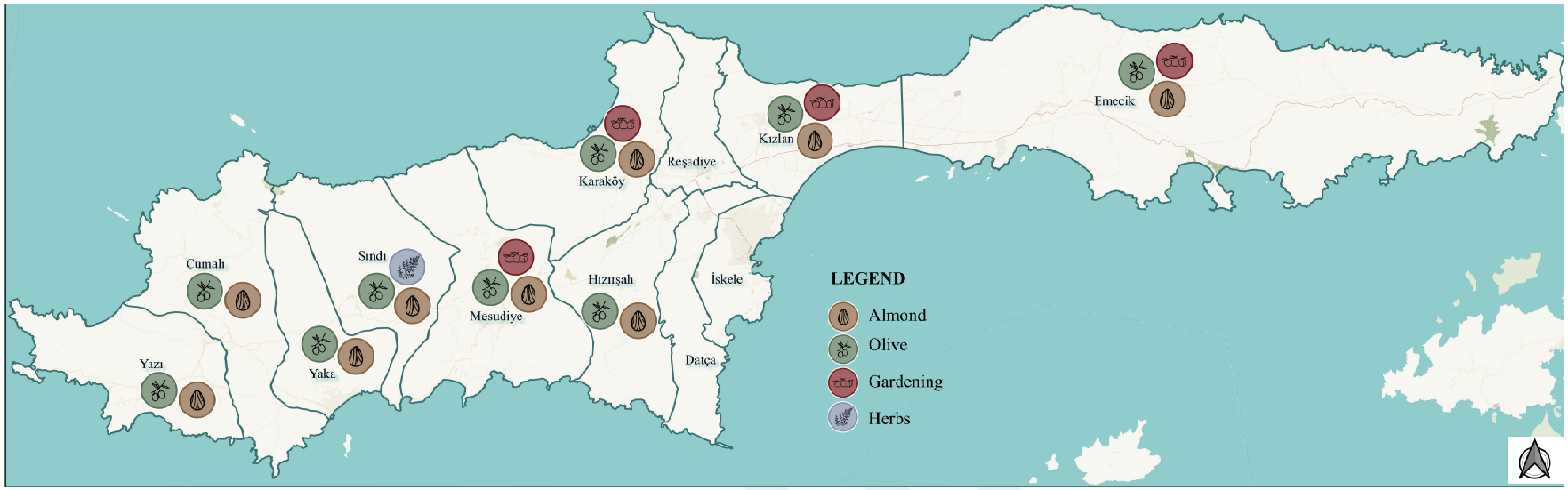


Figure 37: Agricultural Production Pattern of Rural Neighborhoods in Datça

Source: (T.C. Çevre ve Şehircilik Bakanlığı, 2014). Map created by the author.

To conclude, this section gave a general overview of the population and density, locations, and agricultural production patterns of the settlements on the Datça Peninsula. It aimed to determine the study area's boundary in accordance with the definitions set forth by the literature on urban fringes. When this site was selected, it was critical to choose neighborhoods which reflect the desired mixed urban-rural characteristics and heterogeneity of fringe. In Datça, three neighborhoods comprise such a complexity that is typical for urban fringe: Old Datça, Reşadiye, and Hızırşah. These neighborhoods, which also have the highest population density, come to the fore as the neighborhoods closest to the district center.

The Old Datça and İskele neighborhoods are almost physically connected. There is a development trend from the district center to Old Datça and from Old Datça to the center. This trend causes for the formerly clear separation between urban and rural to become more and more blurry over time. Reşadiye is another settlement on the district center's development axis which has the highest population density outside of the center. The district center is an attraction point in which social, cultural and administrative facilities are located and which serves as a "magnet" for smaller settlements. Fringe neighborhoods tend to develop towards the direction in which the center is located. There is a direct road connection between Old Datça, Reşadiye, and the center. However, the route from Hızırşah to the center necessarily leads through the main road that runs through Reşadiye. Therefore, there is no direct physical connection from Hızırşah to the center as a detour via Reşadiye must always be made. The inclusion of Hızırşah into the scope of the study is important because of its partially preserved rural texture.

3.2.2. Examination of the Urban Fringe in Datça

Until this part of the study, the Datça-Bozburun SEPA and specifically the Datça neighborhoods were examined in terms of natural resources, historical processes, settlement connections, population, and economy. The scope of the study includes varying elements that help to understand the complex structure of the Datça's urban fringe. Holistic and multi-dimensional perspectives are key elements in this context. A detailed analysis regarding the time-space-values relationship is conducted for Old Datça, Reşadiye, and Hızırşah. In each part of this section, characteristics such as land

cover and land use is analyzed for each of the chosen neighborhoods. Figure 38 shows the boundary of the study area within the SEPA.

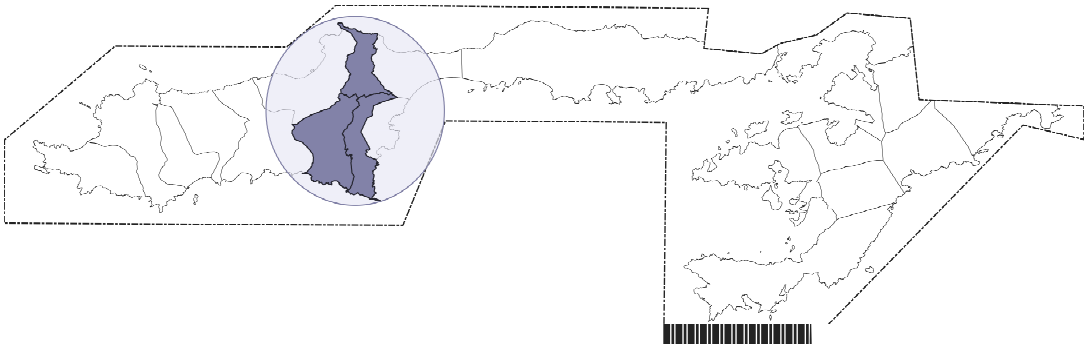


Figure 38: Urban Fringe Study Area in the Datça Bozburun SEPA

Source: Map created by the author.

3.2.2.1.Change in the Land Cover Data about the Fringe Neighborhoods

One of the components examined within the time-space-value relationship is land cover data and its change over time with regard to specific fringe settlements. In this part, land cover data from different years is compared in order to gain an overview of the settlements' spatial change from 1990 to 2018.

According to the complexity theory, it is not adequate to consider only the change in a space as a whole. For a better understanding of the fringe, each small development that contributes to the change must also be looked at individually. Furthermore, it is necessary to examine the relationships that the fringe's individual components have to each other. Notably, the heterogeneous and dynamic structure of the fringe is due to a large variety of its components. For this reason, the effects of different elements on the space must be considered. In this part of the study, CORINE data is used to investigate the aforementioned spatial change.

The Ministry of Agriculture and Forestry collected CORINE data according to the Land Cover/Use Classification via a computer-aided visual interpretation method using satellite images. CORINE data is measured in hectare. For the first period of reference, data was collected during a time frame of ten years (1990-2000). Since then,

new data has been provided every six years (T.C. Tarım ve Orman Bakanlığı, 2019). The land cover data used in this analysis was obtained from the Ministry for the years 1990, 2000, 2006, 2012, and 2018. The data needed to examine the study area was cropped using the QGIS program. The Datça district center as well as its fringe area were included in the analysis. Old Datça, Hızırşah, Reşadiye, İskele, Karaköy, and Kızlan Neighborhoods were included in the land cover analysis since they are located in close proximity to the center.

While conducting this analysis, the primary goal was to observe the spatial change in the urban-rural structures. In order to do so, the information deducted from the legend of the CORINE data is used, which can be seen in Figure 39.



Figure 39: Legend for the CORINE Data

Source: (T.C. Tarım ve Orman Bakanlığı, n.d.)

The data collected within the scope of CORINE reveals that three primary groups of land cover value (Artificial Surfaces, Agricultural Areas and Forests, and Semi-Natural Areas) and 18 sub-patterns can be found in the study field. More detailed information about land cover data, how to measure it, its different levels as well as different codes of each level was already given in section 3.1.1.2.

Artificial Surfaces include Discontinuous Urban Fabric, Construction Sites, and Sport and Leisure Facilities. Agricultural Areas are divided into Non-Irrigated Arable Land, Permanently Irrigated Land, Fruit Trees and Berry Plantations, Olive Groves, Pastures, Complex Cultivation Patterns, and Land Principally Occupied by Agriculture with Significant Areas of Natural Vegetation. Finally, Forests and Semi-Natural Areas are divided into Broad-leaved Forest, Coniferous Forest, Mixed Forest, Natural Grasslands, Shrubbery, Sclerophyllous Vegetation, Transitional Woodland-shrub, and Sparsely Vegetated Areas (Table 8).

Table 8: Change in the CORINE Data about the Fringe Neighborhoods (1990-2018)

CORINE Land Cover Nomenclature			CORINE 1990	CORINE 2000	CORINE 2006	CORINE 2012	CORINE 2018
Code	**Level 1**	**Level 3**	**Area (ha)**	**Area (ha) ~**	**Area (ha) ~**	**Area (ha) ~**	**Area (ha) ~**
112	Artificial Surfaces	Discontinuous Urban Fabric	262.9	347.6	381	394.9	398.4
133	Artificial Surfaces	Construction Sites	x	x	25	25.1	25.1
142	Artificial Surfaces	Sport and Leisure Facilities	92.4	107.1	79.2	79.2	79.2
211	Agricultural Areas	Non-irrigated Arable Land	x	x	25.4	67.3	25.4
212	Agricultural Areas	Permanently Irrigated Land	x	x	79.2	79.2	79.2
222	Agricultural Areas	Fruit Trees and Berry Plantations	x	x	86.5	86.5	86.5
223	Agricultural Areas	Olive Groves	207.9	207.9	1316.6	1316.6	1312.3
231	Agricultural Areas	Pastures	x	x	48.2	48.2	48.2
242	Agricultural Areas	Complex Cultivation Patterns	2432.5	2347.7	1177.9	1193.4	1194.1
243	Agricultural Areas	Land Principally Occupied by Agriculture, with Significant Areas of Natural Vegetation	814.8	814.8	444.9	512.5	512.7

Source: (Tarım-Orman Açık Veri Portalı, 2018), (CORINE Land Cover (CLC) 2018, 2019). Table created by the author.

Table 8 (continued)

CORINE Land Cover Nomenclature			CORINE 1990	CORINE 2000	CORINE 2006	CORINE 2012	CORINE 2018
Code	**Level 1**	**Level 3**	**Area (ha) ~**	**Area (ha) ~**	**Area (ha) ~**	**Area (ha) ~**	**Area (ha) ~**
311	Forests and Semi-Natural Areas	Broad-leaved Forest	4748.3	4748.3	86.3	86.3	72.5
312	Forests and Semi-Natural Areas	Coniferous Forest	x	x	2995.1	2995.1	3038.9
313	Forests and Semi-Natural Areas	Mixed Forest	1632.6	1632.6	3004.4	3004.4	3106.1
321	Forests and Semi-Natural Areas	Natural Grasslands	1633.5	1633.5	1244.6	1135.2	1143.1
323	Forests and Semi-Natural Areas	Shrubbery	868.6	853.9	3003.5	3003.5	2946.6
324	Forests and Semi-Natural Areas	Sclerophyllous Vegetation	4931.3	5019.9	3273.6	3244.1	3308.9
331	Forests and Semi-Natural Areas	Transitional Woodland-shrub	35.5	35.5	29.5	29.5	29.5
333	Forests and Semi-Natural Areas	Sparsely Vegetated Areas	2006.8	2006.8	1195.5	1195.5	1195.5

Source: (Tarım-Orman Açık Veri Portalı, 2018), (CORINE Land Cover (CLC) 2018, 2019). Table created by the author.

To understand the changes that have occurred in urban and rural areas, it must be looked at how the proportions at which a certain land use dominated in an area have changed in relation to other emerging land uses in that area. Some areas are now primarily used for other purposes. Changes in the size of certain land use areas and new spreads of urban patterns can often be observed. For this reason, CORINE data has been analyzed spatially. An open-source PostgreSQL database and QGIS programs were used for the data analysis. The vector data provided by the Ministry of Agriculture and Forestry was displayed on different maps with the help of the QGIS program. The attribute table was inspected for information regarding different land cover values and the scope of the data was narrowed down to the data relevant for the Datça district center and the fringe neighborhoods. This data and its attributes were then transferred to the PostgreSQL database. The sizes of the respective areas were calculated for each of the Level 3 land cover classes using this database. They were rounded to their approximate value. These calculations revealed that the size of the different land covers had changed significantly over the years.

Within the complexity theory, both vertical and horizontal elements are important. Land cover is one of the vertical elements that were analyzed during this study. From a horizontal perspective, the change of variables over time was analyzed. An examination of the spatial data was conducted to examine how the different land covers had developed during the years from 1990 to 2018. In a place which is as dynamic as an urban fringe, an analysis of the change of the structural components is an important input to understand its complex structure.

Table 8 shows the three groups (classes) that the different types of land cover were divided into. On Level 1, the land covers are divided into three classes. On Level 3, they are further divided into eighteen sub-classes. The table also shows the calculations of the proportions that each of the sub-classes cover in Datça's fringe area. For each level, land cover data of the years 1990, 2000, 2006, 2012, and 2018 is listed in

hectares in the table's columns. Within the scope of the analyzes, a change in the spatial data over the years can be observed.

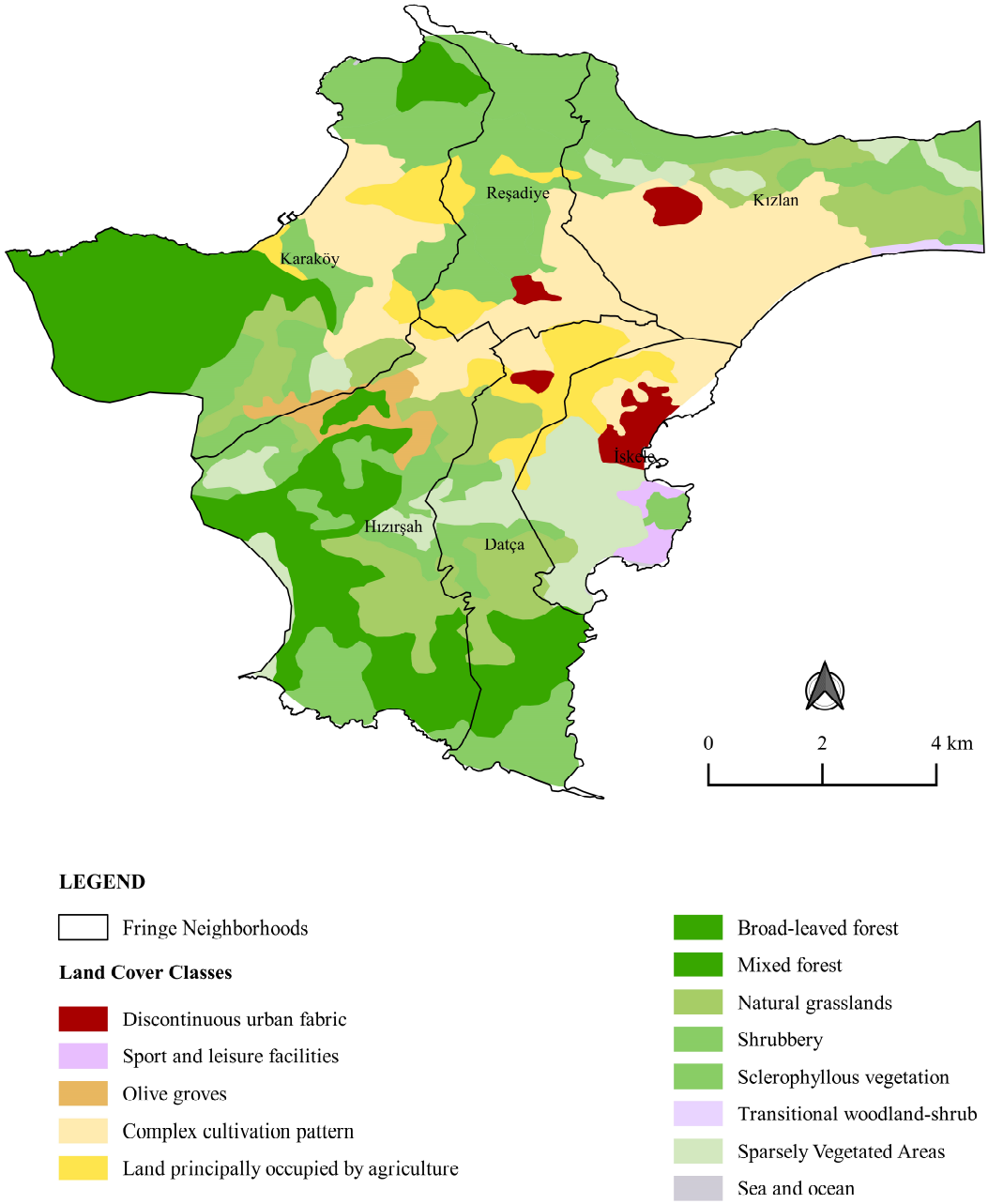


Figure 40: CORINE Land Cover in 1990, Datça

Source: *(T.C. Tarım ve Orman Bakanlığı, 2018)*. Map created by the author.

According to the analysis of land cover data from the year 1990 (Figure 40), there are twelve Level 3 land cover values in the study area. All land cover classifications are listed in Table 8. The most common land uses are urban fabric, agricultural lands, and forest areas. The CORINE data from 1990 shows that the space allocated to urban fabric amounts to approximately 262.9 hectares. The Datça district center is the settlement that constitutes most of this area. However, the centers of Old Datça, Reşadiye and Kızlan are also covered by urban fabric. Apart from this, the non-urban classes that cover most of the remaining area are Sclerophyllous Vegetation, Broad-leaved Forest, Complex Cultivation Patterns, and Sparsely Vegetated Areas. There are built-up areas in the study field which are surrounded by forests and agricultural lands. Because of the close distance between agricultural lands and built-up areas, development pressure on non-built areas can emerge. For this reason, the development trends in urban fabric areas should be tracked. If there is further development near

agricultural lands and forest areas, this may constitute a threat to those lands. In this case, the necessary restrictions to such developments should be put in place.

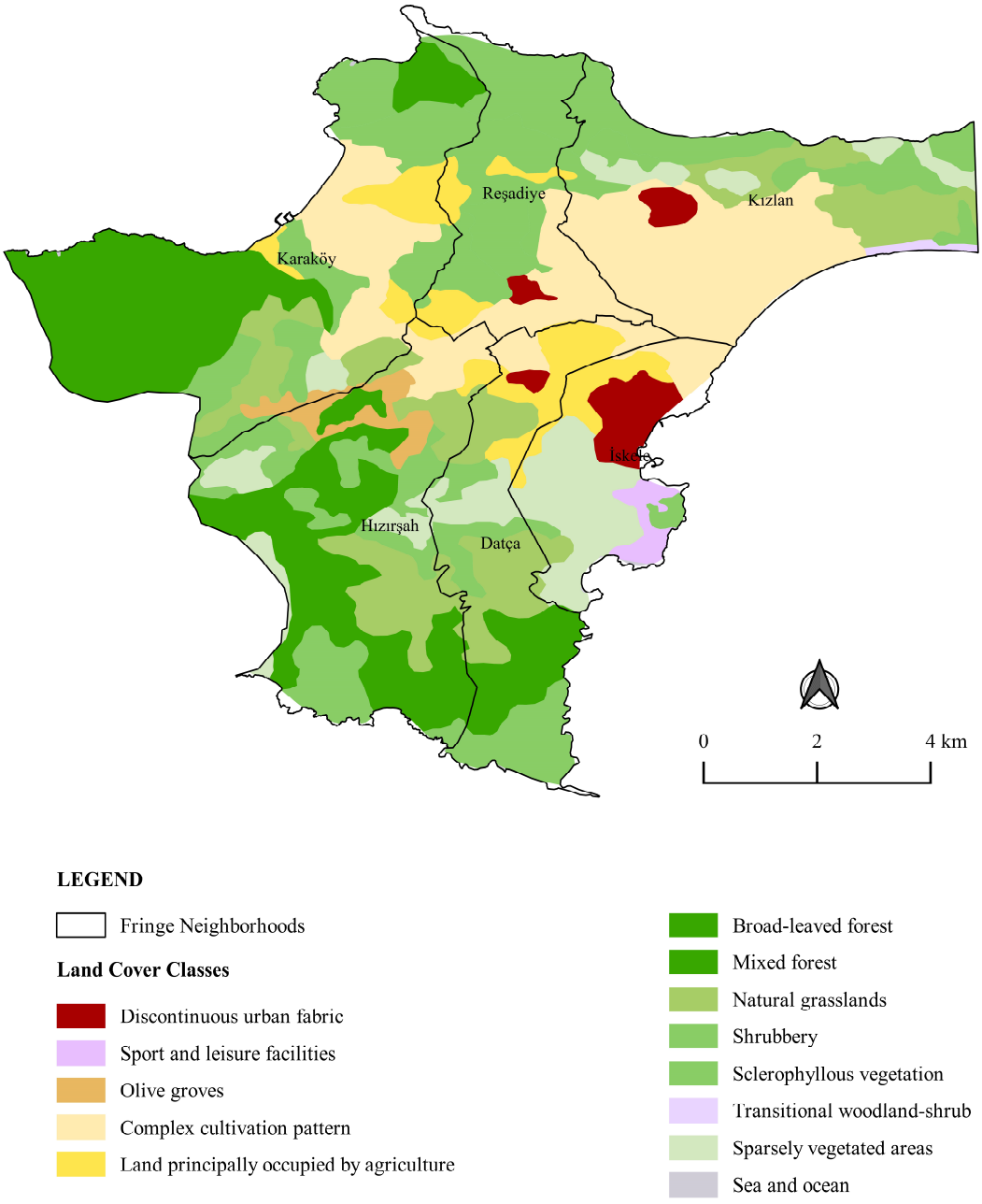


Figure 41: CORINE Land Cover in 2000, Datça

Source: *(T.C. Tarım ve Orman Bakanlığı, 2018)*. Map created by the author.

The analysis of the CORINE data from the year 2000 (Figure 41) shows that the area covered by Artificial Surfaces (Discontinuous Urban Fabric and Sport and Leisure Facilities) increased by 28% compared to 1990. This underlines how urban development has expanded over time. The size of land that falls into the Agricultural Area category decreased by 2.7%, while Forest Area increased by 0.5%. This shows a significant increase in the built areas between 1990 and 2000. When this change is spatially examined in more detail, it becomes clear that urban development and construction took place in the north-east and north-west of the district center. It is

especially noteworthy that urban growth takes place in the direction of Old Datça, which is located to the north-west of the district center.

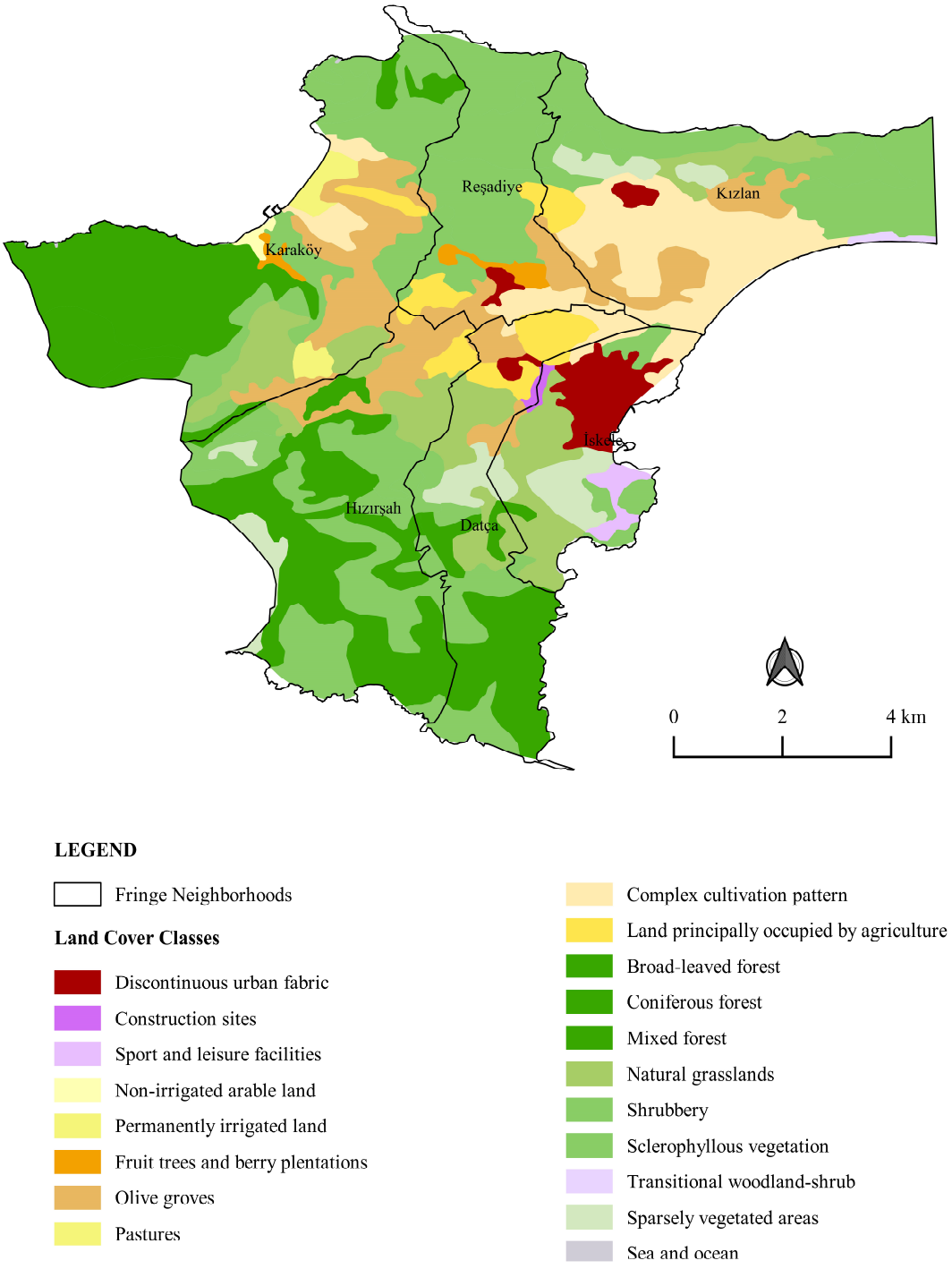


Figure 42: CORINE Land Cover in 2006, Datça

Source: *(T.C. Tarım ve Orman Bakanlığı, 2018)*. Map created by the author.

According to the CORINE data from the year 2006 (Figure 42) the growth of Artificial Surfaces continued at a rate of 6.7%. The built areas' growth was lower between 2000 and 2006 than it was between 1990 and 2000. However, it must be considered that here the reference interval was six years instead of ten years. Regardless of this, it can be said that urban growth continued. The decrease in Agricultural Area continued during this interval as well. At a rate of 5.7%, it was even stronger in comparison to previous years. Forest Area was reduced by 6.9% between 2000 and 2006.

When the change is spatially analyzed in statistical numbers, it can be observed that the trend of growing urban areas which took place in the north-east and north-west in the 2000s continued from 2000 to 2006. Contrary to holistic growth, the district center grew in all directions except for the direction of the coastal area. The district center not only continued to grow in the direction of Old Datça. In addition, Old Datça itself also expanded in the direction of the district center. Thereby, the built areas of both settlements increased.

As the district center and Old Datça grew closer towards each other, Old Datça started to become a part of the settlement of Datça. The Old Datça part eventually became Datça's urban fringe. In addition to the increase in new residential zones in the area between the district center and Old Datça, construction sites also formed in this same area, as can be seen in the land cover data. It shows that built-up areas continue to grow in the fringe areas. The settlements which are surrounded by agricultural lands

are expanding into their periphery. These areas are likely to become a part of the Datça district center in the future.

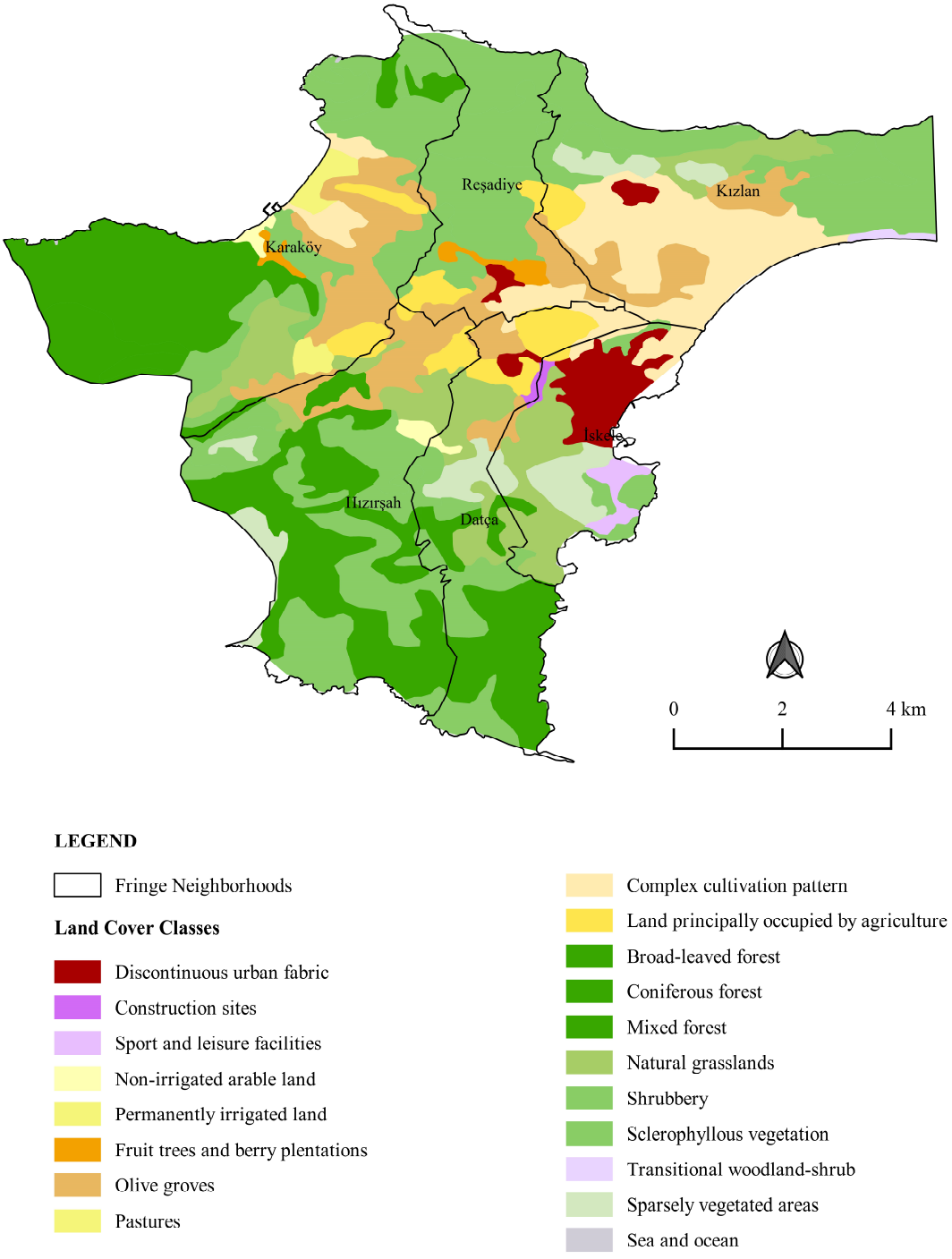


Figure 43: CORINE Land Cover in 2012, Datça

Source: *(T.C. Tarım ve Orman Bakanlığı, 2018)*. Map created by the author.

An analysis of the CORINE data of the year 2012 (Figure 43) showed that the area covered by Artificial Surfaces increased by 2.9% between 2006 and 2012. Agricultural Areas, the size of which had decreased in previous years, increased by 3.9% during this period. Forests and Semi-Natural Areas decreased by 0.9%.

When the spatial change in the study area was examined, the statistical data revealed that the urban development in the north-western part of the Datça district center had

come to a hold. Instead, an urban development has emerged to the north-east of the city center.

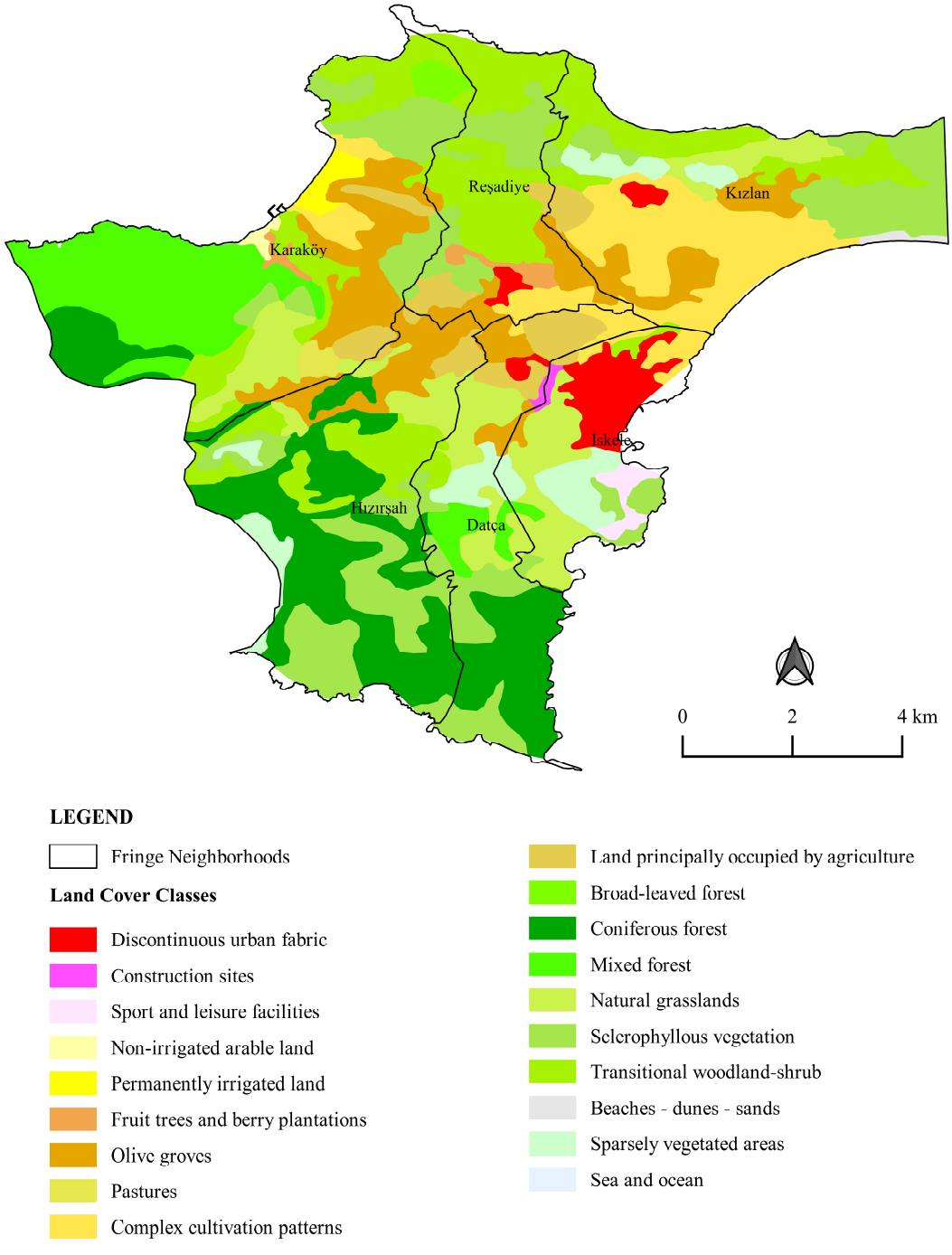


Figure 44: CORINE Land Cover in 2018, Datça

Source: (CORINE Land Cover (CLC) 2018, 2019). Map created by the author.

Finally, an examination of the data of the years from 2012 to 2018 shows that there was no significant change in comparison to the previous time frame. (Figure 44). In six years, Artificial Surfaces have increased by only 0.7%. The few newly emerged Artificial Surfaces are Discontinuous Urban Fabric. Contrary to the increase during the previous period, Agricultural Areas decreased by 1.4%. In the Forests and Semi-Natural Areas category, there was an increase of 1%.

Figure 45 shows the change in CORINE data for fringe neighborhoods in the Datça district from 1990 to 2018. As depicted in the figure, the most noticeable change occurred in the category of Artificial Surfaces due to urban growth in the settlements. There is continuous urban growth in the district center of Datça. It is growing in the north-western and north-eastern directions. Since to the north-west, there are fringe neighborhoods in a close distance, the İskele neighborhood started to unite with Old Datça over the years. An increasing development pressure on the fringe neighborhoods, which is caused by the city center, can also be observed. This may cause an increase in Artificial Surfaces, especially built-up areas, in the future.

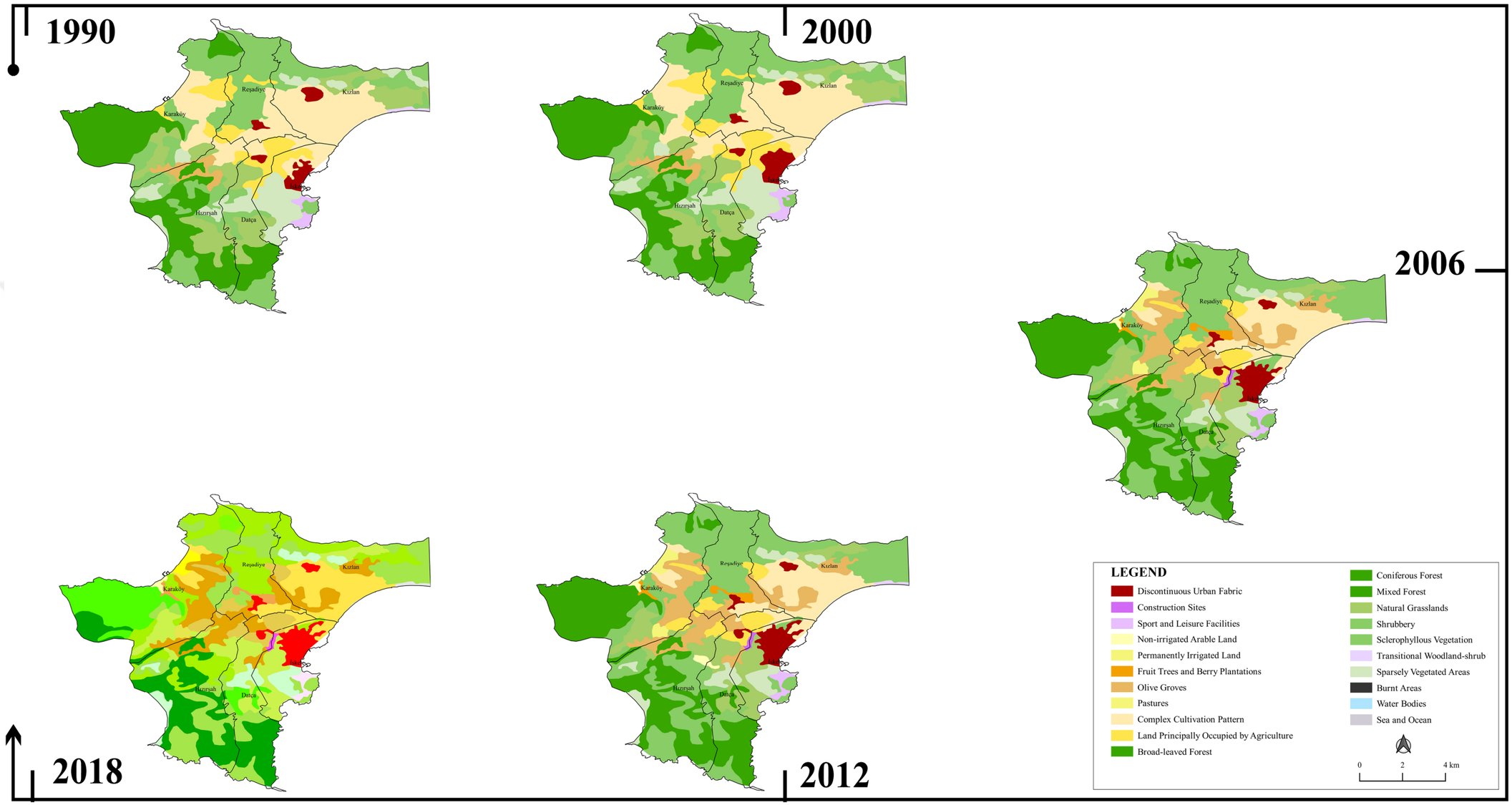


Figure 45: Change in CORINE Data for Fringe Neighborhoods in Datça from 1990 to 2018

Source: *(T.C. Tarım ve Orman Bakanlığı, 2018)*, (CORINE Land Cover (CLC) 2018, 2019). Figure created by the author

In this section, the spatial change of land cover data over the years was examined. Reference years for this analysis were 1990, 2000, 2006, 2012, and 2018. The main reason for choosing these years was that CORINE was collected for these time frames. While the data was analyzed, the main focus was on the areas in which land cover values changed significantly and where urban development causes pressure on the rural patterns. With the help of this data the changes in the periphery and the growth of urban fabric could be observed.

In addition to the use of Discontinuous Urban Fabric, which has increased steadily, the change of Agricultural Areas and Forest and Semi-Natural Areas over the years has served as a guide in understanding the character of the study area. In this context, a decrease in natural areas as opposed to the increase in urban areas can be observed. Thanks to this spatial analysis, changes in the study field can be measured in hectares and be examined. This data provided a valuable information about what kind of changes occurred in which areas of Datça's urban fringe.

The examination of land cover data is one layer of the multi-dimensional analysis conducted in this study. Because of the fringe's heterogeneous structure, it has a dynamic that cannot be explained with a single variable. It requires a way of thinking that takes its complexity into the consideration and examines its multi-layered structure. As laid out in Chapter II, understanding the components that create the whole is the key to developing a holistic way of thinking that takes the specific characteristics of the urban-rural fringe into account.

3.2.2.2.Land Use Analysis of the Fringe Neighborhoods

Within the scope of the land use analysis, in this section, the relationships between the fringe neighborhoods and the center, land-use decisions, and the neighborhoods' infrastructure are examined.

As discussed in the chapter regarding the theoretical framework of the study, the complex character of an urban fringe requires a unique approach in the planning process. A fringe has many interrelated structural components which change over time. It is the most dynamic place in a city which means it is affected the most by every decision made about the city. Every decision in the planning process has an impact on

this area and land-use decisions are one of them. When it comes to deciding about the future destiny of a city, land use decisions are the most important components. They determine in which direction is a city going to develop.

Current land-use decisions about Datça's fringe neighborhoods are examined in this part of the study. This constitutes an important structural component in the multi-dimensional and multi-layered analysis of the fringe. For this reason, the land-use decisions are analyzed individually for each of the fringe neighborhoods, namely Old Datça, Reşadiye, and Hızırşah. After that, the results will be synthesized to understand the interrelatedness between different spatial components. It can also help to predict future developments that might occur in these areas.

3.2.2.2.1. Spatial Relations

In order to examine the fringe of Datça, the relations of the three selected neighborhoods with the center are analyzed. Figure 46 shows the connections of the neighborhoods to each other and to the center.

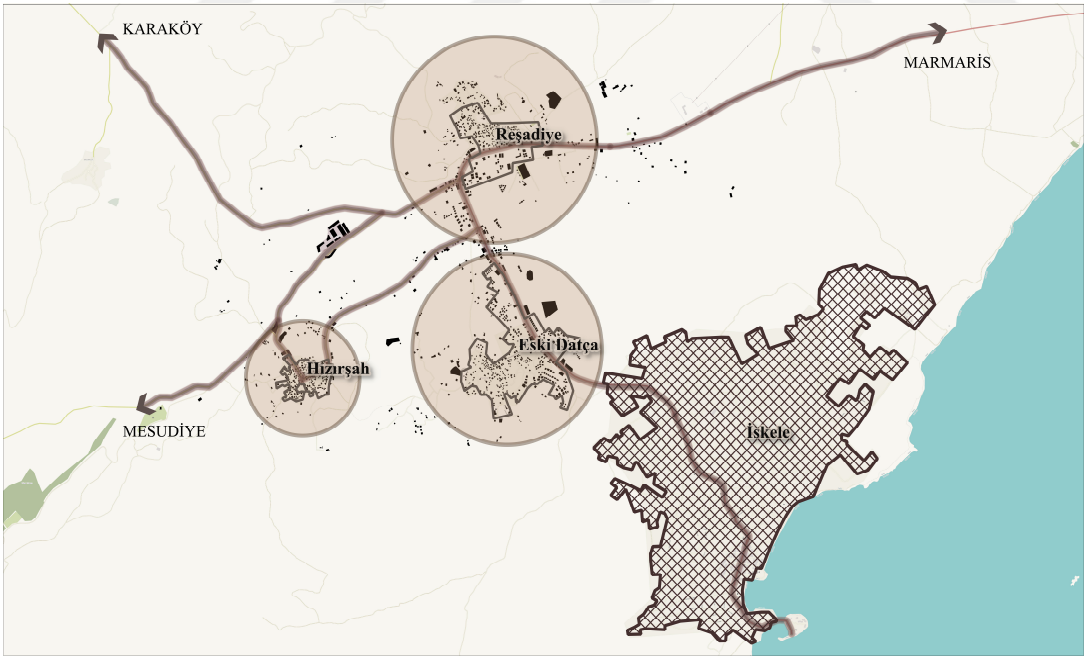


Figure 46: Spatial Connections of the Fringe Settlements

Source: (Google Earth). Map created by the author.

Firstly, the **Old Datça** neighborhood is located in between the İskele neighborhood to the east, the Reşadiye neighborhood to the north and the Hızırşah neighborhood to the west. Between Old Datça and İskele, industrial construction sites are located which separate the two settlements from each other. With increasing expansion in both areas, the gap between them is becoming more narrow. Taking this development into account, there is a high chance that those neighborhoods will unite soon. Due to Old Datça's close distance to the center, the necessary social and technical facilities can be accessed easily. It is located close to the central and local level institutions and organizations.

Secondly, the **Reşadiye** neighborhood is another one of Datça's central neighborhoods It is located 4 km away from the center towards the inland. It is also located to the north-west of İskele and is connected to the center via the main road. Apart from the Datça Central District, Reşadiye is the neighborhood with the highest population density.

Thirdly, the **Hızırşah** neighborhood is located 7 km to the west of the district center. Between Hızırşah and the center there is Old Datça. Hızırşah has 250 residences (T.C. Çevre ve Orman Bakanlığı, 2014, p. 21). Compared to Reşadiye and Old Datça, it is smaller in size. It is connected by road to Reşadiye and Old Datça, although there is no direct road that connects it to the İskele neighborhood. There are regular minibus services between the center and Hızırşah. The rural character is more dominant in the Hızırşah neighborhood when compared to Reşadiye and Old Datça. This is due to both the distance and the spatial disconnection to the center.

In Hızırşah, the main source of income is the production of almonds and olives. Husbandry and apiculture are other ways to earn a livelihood. Income from tourism is limited. Although there is an agricultural infrastructure, the inability to further develop to methods of irrigated farming is an obstacle to a higher income generated from agriculture. Most households in the neighborhood produce almonds and olives. They

also earn an income from beekeeping, animal husbandry, stockbreeding, and natural plant harvesting (T.C. Çevre ve Orman Bakanlığı, 2014, p. 21).

3.2.2.2.2. Land-Use Decisions

In urban fringes in general, the further one gets away from the center towards the edge of the city, the further the housing density decreases. Accordingly, open and green spaces expand and the transition from urban to rural patterns becomes more and more apparent. The grid system of the city center is taken over by organic street texture and traditional residential structures in rural areas. With regard to the study area, it is worth to remember that Datça's characteristics are different from those of a metropolitan city. In accordance to the analysis made so far, it can be said that Datça Central District distinguishes itself from large-scale cities not only in terms of general characteristics but also in terms of population, density, transportation, and production patterns. The abovementioned population growth and urbanization in metropolitan cities take place more slowly in Datça.

On the one hand, in rural areas the life quality is high and the living expenses are low. On the other hand, urban areas offer better employment opportunities and more diverse social and cultural services. Because of these aspects there is competition between the two. Urban fringes, however, cannot clearly position itself in this competition between urban and rural as it stands somewhere in the middle. They do not have a status in the process of making planning decisions. According to Weaver and Lawton, the urban-rural fringe represents rural participation closer to the rural border and urban development closer to the urban boundary. As in tourism destinations, the rapid change creates tension and defines periphery areas as a region of competition and conflict between urban and rural (Weaver & Lawton, 2001, p. 440).

In this section, the land-use decisions regarding the three neighborhoods of Old Datça, Reşadiye, and Hızırşah are examined, which constitute the fringe of Datça. During this examination this study will consider the multi-dimensional and holistic approach suggested by the complexity theory. Figure 47 shows the land-use decisions for these three neighborhoods in general. There is mainly commerce, tourism, and open space use in this area. In the figure, the red shades mark commercial areas, orange shades mark tourism facilities and green shades mark open and green spaces in the study field.

The İskele neighborhood, which is the central quarter, is connected to Old Datça in a close distance and to the Reşadiye neighborhood a bit further away via Kazım Yılmaz Avenue. This avenue constitutes the central axis of the Datça Central District which can be considered to be the city's spine. The primary commercial and residential areas are located along this axis. Those areas surrounding it make this axis well-defined.

Considering the development since the 1990s, it can be observed that urban development has taken place in the north-western and north-eastern parts of the Datça Central District. As a result, the commercial areas on the spine now connect the İskele neighborhood to Old Datça, which is located in a close distance. Apart from that, the crossing of the spine with the road from Hızırşah (Knidos Road) constitutes a junction that connects Hızırşah to the center. It further leads to Reşadiye. In the direction of Old Datça, the commercial areas can be seen the most frequently. Towards Reşadiye, they become less numerous.

The dominance of the touristic character of the city has also had an effect on the neighborhoods in the periphery. Although Mesudiye and Yaka are more important in comparison to other neighborhoods in terms of tourism (Figure 31), the number of tourism facilities are the highest in the Datça Central District. Since Old Datça and Reşadiye are the central neighborhoods, most of the accommodations are located here. The areas marked in orange indicate the locations of those accommodation which can be used for touristic purposes. As laid out in the figure, Old Datça and Reşadiye are the areas in which tourism mostly takes place.

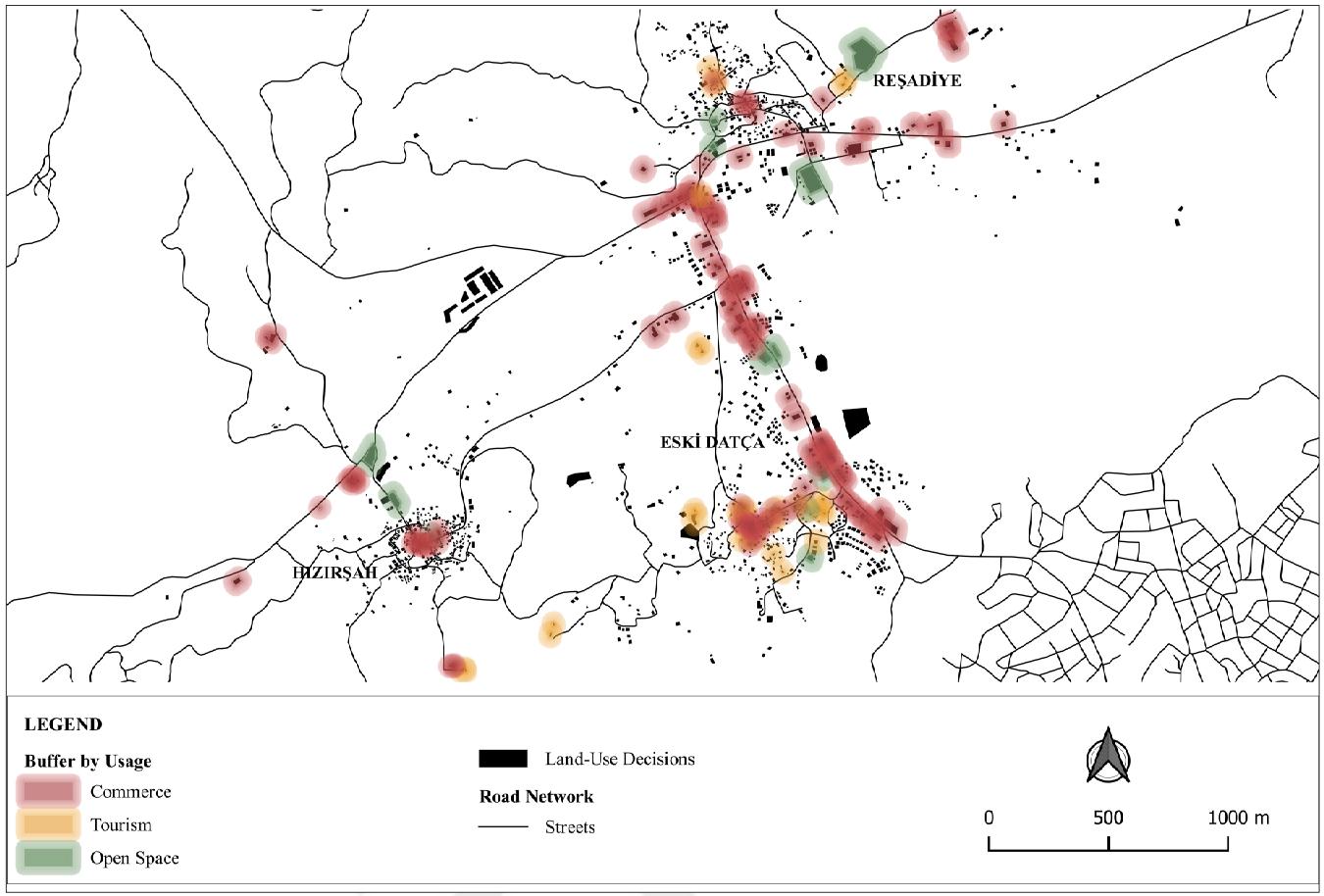


Figure 47: Primary Land Use Decisions in the Fringe Neighborhoods

Source: (Google Earth). Map created by the author.

According to Figure 47, Old Datça has a more compact structure than Reşadiye and Hızırşah. The Hızırşah neighborhood, which has succeeded in partially preserving its rural structure, has a traditional street texture, squares and residential buildings. In comparison, in Old Datça newly built residences attract attention.

The detailed examination of the land-use decisions regarding the neighborhoods in the study area starts with Old Datça. Figure 48 comprises information about the land uses

in the area. The map shows the main avenue and streets as well as land-use decisions. The areas that are in the focus are circled and enumerated.

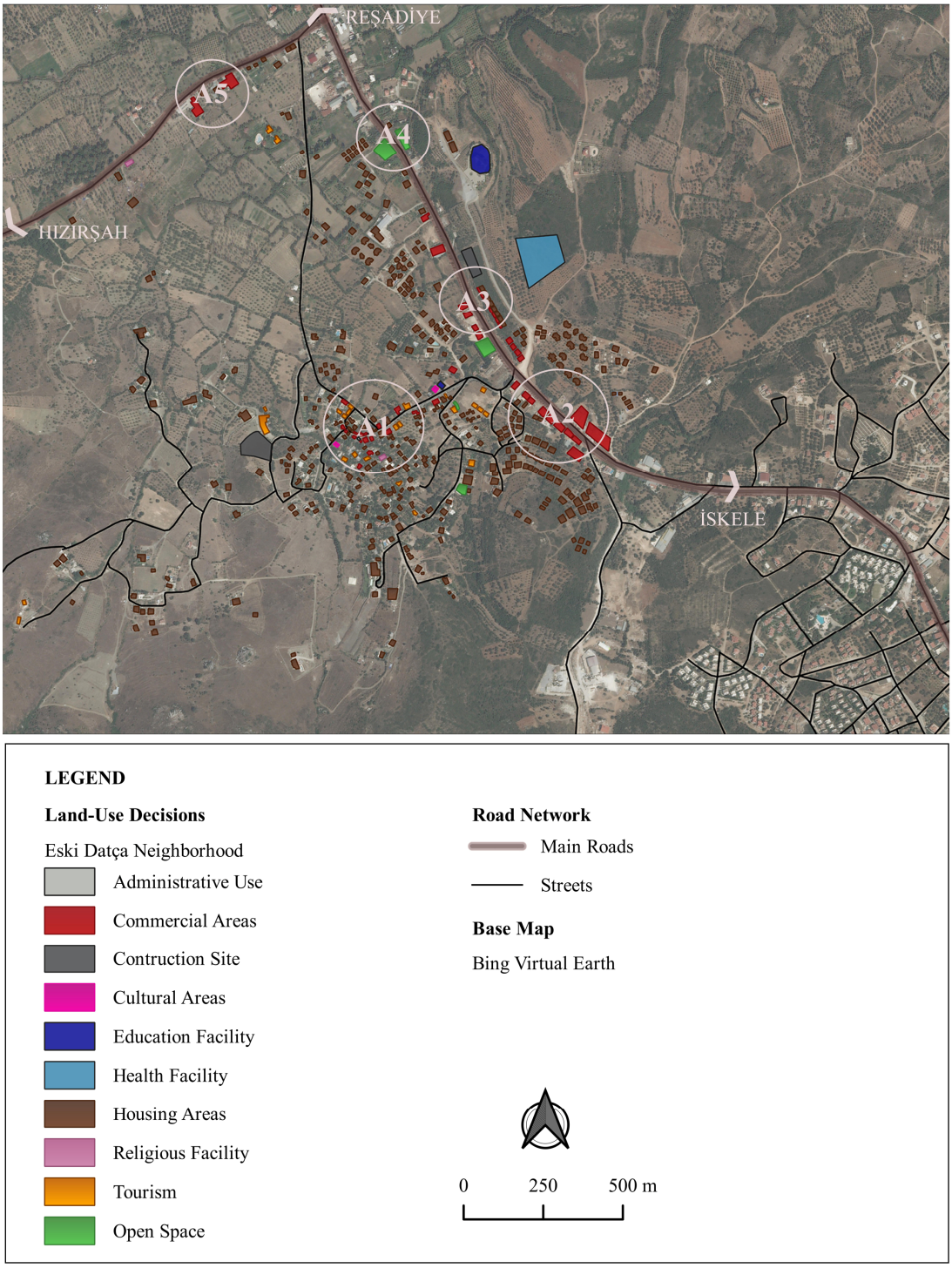


Figure 48: Land Use Decisions in the Old Datça Neighborhood

Source: (Google Earth). Map created by the author.

The examination starts with the first out of five fields in Old Datça. This area constitutes the center of the neighborhood and is marked as **A1** on the map. There is a large number of commercial and residential areas here. In addition, the Can Yücel House, which is used for cultural purposes, as well as a religious facility are also located in this area. Furthermore, there are cafes, restaurants, and small-scale businesses for shopping and touristic purposes (Figure 49). Besides, there are some small-scale businesses where local people trade hand-made products. Last but not least, the mukhtar[1] building is also situated in this commercial area.

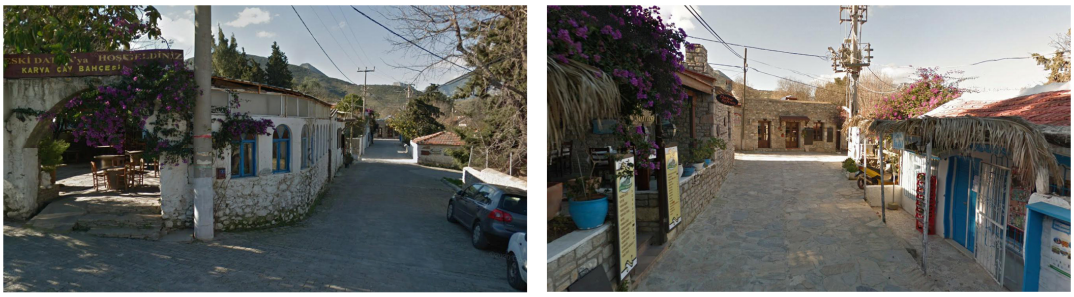


Figure 49: Commerce in Old Datça (A1)

Source: (Google Earth)

The area marked as A1 can be considered as the heart of Old Datça, which is the neighborhood located the closest to the district center. There are newly built two-story residences which are intertwined with trade and tourism (Figure 50). Although in the

[1] The building of the head of the administration of a village or neighborhood

settlement texture, mostly newly built houses are located in the area, the neighborhood's street texture still maintains its organic structure.



Figure 50: Tourism and Housing in Old Datça (A1)

Source: (Google Earth)

The area marked as **A2** has the vital function to connect the district center to the surrounding neighborhoods. It serves as a transition area and is located next to the road that connects the İskele neighborhood directly to Old Datça. There is significant commercial activity in this area. In the field between A2 and the İskele neighborhood, there are commercial and residential areas. Commercial areas which are located in the A2 circle have different characteristics than the ones in A1. While there are mostly small-scale enterprises, local product sales, and touristic businesses in the A1 area, there are larger-scale businesses that sell products such as construction materials, forestry equipment etc. in the area marked as A2 (Figure 51). Commercial areas in A2 mostly serve urban areas. The fact that the sale of building materials and materials

related to construction is widespread in the fringe area is an indication that the construction sector has significant importance in the Datça Central District.



Figure 51: Commerce in Old Datça (A2)

Source: (Google Earth)

A3 is located on the main spine, which connects the district center to the neighborhoods located in the periphery. Similar to A2, there are mostly commercial areas. However, in this part, unlike the single-story and two-story commercial buildings in A2, there are three-story apartments which serve both commercial and residential purposes. Since the Datça Central District is still growing especially to the north-west, some of these buildings in which housing and commerce are combined have just recently been built. Some parts of these buildings are still under construction (Figure 52). This shows that the city's development pressure is effecting the settlements in the near periphery.

New investments are made in the area around A3. An example for such a new investment is the district hospital (colored in light blue). The hospital, which is located just behind the commercial areas, is used by citizens living in the district center and the surrounding rural neighborhoods. Such investments affect Old Datça on the main spine. They make the area around A3 a vital point as for example this hospital draws in crowds from all other neighborhoods in Datça who are seeking medical treatment.



Figure 52: Commerce in Old Datça (A3)

Source: (Google Earth)

A4 is the area which connects the neighborhoods of Reşadiye and Old Datça. As one approaches Reşadiye, open and green areas increasingly take over from areas used for commercial purposes. On the side of the road there are small businesses which for example sell flowers on the open air. There are residential areas and buildings under construction (Figure 53). Besides, the Vocational School of Muğla University (colored in dark blue) is located just to the south-east of the area marked as A4. This educational institution, built in 2006, positively affects the liveliness of the area. Naturally, such institutions lead to an enhancement in commerce and residential housing in the area.



Figure 53: Commerce in Old Datça (A4)

Source: (Google Earth)

A5 shows the location of the Hızırşah Road, which connects Hızırşah to Old Datça and the district center, which is still within the borders of the Old Datça neighborhood. In addition, there is a connection to Reşadiye to the north of this road. The area marked

as A5 is located further north and further away from the center than the other numbered areas in Old Datça. The rural characteristics are also more dominant in this area. Land uses and built-up areas are found even less frequently and green areas take up even more space. A structure of low density, large gardens, and old detached houses can be observed (Figure 54). Urban texture has lost its effect in this area, although it is not far from the city center.



Figure 54: Housing in Old Datça (A5)

Source: (Google Earth)

Another type of land use commonly found in the area of A5 is commerce. There are businesses that sell materials which are used in construction. Besides, there are large-scale production areas alongside Hızırşah Road. These areas are located in wide open and green regions that are far away from the dense housing textures (Figure 55). In a way, Old Datça is considered to be as the fringe of the Datça Central District, while A5 can be referred to the fringe of Old Datça.



Figure 55: Commerce in Old Datça (A5)

Source: (Google Earth)

The other neighborhood in which the land-use decisions are examined in detail is the Reşadiye neighborhood. Figure 56 shows general information about the land-uses in the area. The map displays the main avenue, other streets, and the land-use decisions in Reşadiye. While examining the neighborhood, the focus is on the circled and enumerated areas. In this context, six areas are analyzed.

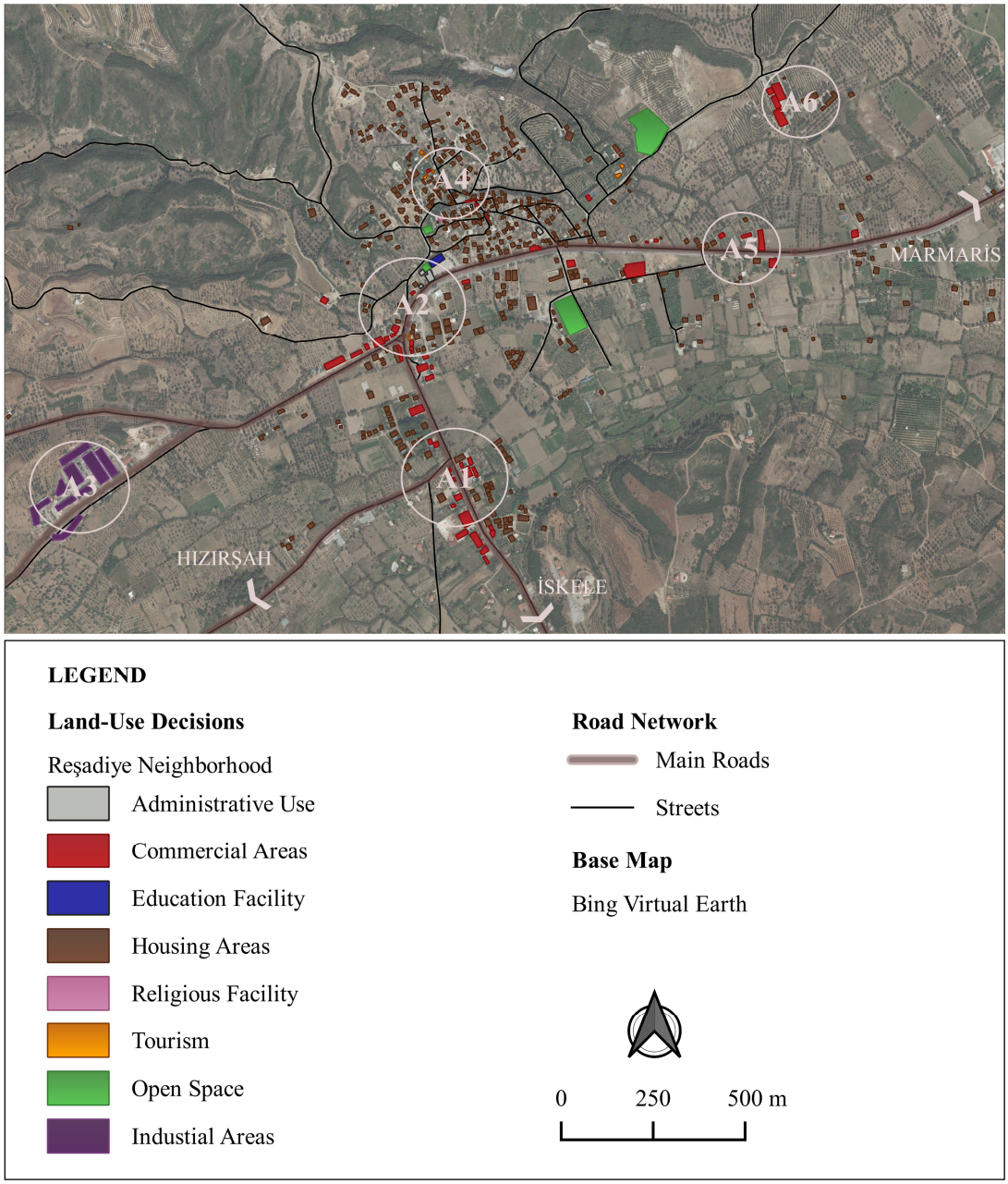


Figure 56: Land Use Decisions in the Reşadiye Neighborhood

Source: (Google Earth). Map created by the author.

The examination of the land-use decisions in the Reşadiye neighborhood starts with the area marked as **A1**. This area is crucial because it is a node that connects Old Datça, Hızırşah, and Reşadiye. This junction is located in the intersection area that is used very frequently for several different purposes. It is an area used extensively for

transport to the center as it is close to three neighborhoods located in the periphery. Furthermore, this junction is located on the main spine.

The most frequently observed land-uses in A1 are commercial, particularly for businesses that sell materials needed for construction (Figure 57). Since A1 is located on the connection point between Old Datça, Reşadiye, and Hızırşah, land-uses can be found that serve both urban and rural needs. Places that sell building materials and other equipment related to residential purposes mostly serve urban areas' development needs. In addition to urban-related uses, there are also land-uses related to agriculture.



Figure 57: Commerce in Reşadiye (A1)

Source: (Google Earth)

A2 is another junction that connects Reşadiye and Hızırşah. This area is also used for commercial, residential, and touristic purposes. Like A1, this area is also frequent used by its citizens. Remarkably, the buildings in A2 are newly built and different from the traditional style. Residential and commercial areas are intertwined. This area on the spine, which provides a connection to the Datça Central District, is not a rural neighborhood but rather an urban area. In addition to the local shopping areas, there are large-scale markets that are characteristic for urban environments. The newly built buildings also indicates that urban characteristics are dominant here (Figure 58).



Figure 58: Housing in Reşadiye (A2)

Source: (Google Earth)

Another land-use in the area marked as A2 is commerce. The spatial examination of Old Datça revealed that on the land on the spine that is used for commercial purposes, mostly construction-related materials are sold. The same applies to Reşadiye where commercial areas are intertwined with residential areas on the node and on the main avenue. Markets in these areas mostly sell construction materials (Figure 59). Besides, there are administrative land-uses in the area, for example the Fire Station and General Directorate of State Hydraulic Works. The impact of these uses can not only be seen in Reşadiye but also in the center and all other neighborhoods. Therefore, it can be concluded that some of the general land used for administrative purposes is not located in the Datça Central District but in the fringe areas.



Figure 59: Commerce in Reşadiye (A2)

Source: (Google Earth)

The **A3** area, located next to the road between Hızırşah and Reşadiye, is an industrial zone. There are no surrounding settlement areas. It is located relatively far away from the district center. The industrial site is home to blacksmiths, carpenters, automobile repair shops, automobile paint shops, and boat repairs (Figure 60) (*Datça Sanayi Sitesi*, n.d.).



Figure 60: Industry in Reşadiye (A3)

Source: (Google Earth)

The area marked as **A4** is the center of the Reşadiye neighborhood. There are many commercial land-uses alongside the road to the district center which do not only serve Reşadiye. All other neighborhoods profit from them as well because they can be accessed easily. A4 is an example for a well-defined, traditional rural neighborhood center that is located within settlements. In this area, there is a mukhtar building, local markets, a religious facility, and residential areas. Housing areas are mostly comprised of old buildings in an organic and traditional texture. In addition to commercial and residential areas, there are also touristic area to the north of the neighborhood's center.

The commercial areas consist of small scale local markets and a coffee house (kahvehane)[2]. The area's texture has a pattern that is characteristic for a typical village. Narrow streets, small local businesses, religious facilities, and a square where all these uses are interconnected are its prominent features (Figure 61).

[2] A traditional place comparable to a coffee house in which locals meet up and interact with each other.



Figure 61: Commerce in Reşadiye (A4)

Source: (Google Earth)

The traditional housing texture in the A4 area is remarkable. Generally, there are single-story and two-story buildings and houses with gardens. Unlike the housing texture next to the main avenue (A2), buildings have preserved their rural identity. In the area marked as A4, rural features clearly dominate over urban features (Figure 62).



Figure 62: Housing in Reşadiye (A4)

Source: (Google Earth)

The area marked as A4 is also used for tourism. There is a mansion used for touristic purposes which nevertheless fits in with the organic texture. Besides, in this area open spaces and residential structures are intertwined. In terms of location, it is far away from the Datça Central District and can therefore not be accessed so easily when compared to the touristic areas in Old Datça (Figure 63).

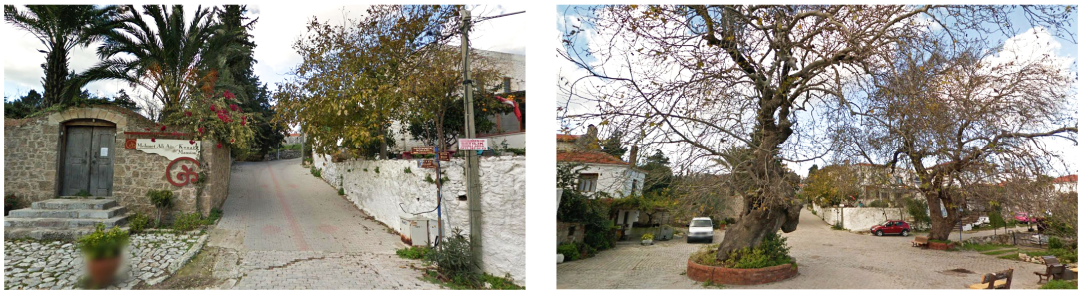


Figure 63: Tourism in Reşadiye (A4)

Source: (Google Earth)

The area marked as **A5** is next to the Datça-Marmaris road. It connects Datça to Marmaris via the Reşadiye neighborhood. In this area, land uses and housing density become dispersed. There is construction-based and concrete production in the marked area. As one gets further away from the neighborhood's center, the rustic texture turns into large-scale production areas (Figure 64).



Figure 64: Commerce in Reşadiye (A5)

Source: (Google Earth)

A6 is located in the countryside of Reşadiye. There are only a few residential areas. In the close periphery, there are mostly large green areas and cemeteries. Agro-tourism areas integrated with rural nature can also be found. These lands are mostly used as farm areas. Local people use them for agricultural production while also introducing their production methods to the tourists. Besides, businesses that sell these agricultural products play an essential role in attracting tourism to Datça. The A6 area includes one

of these agro-tourism farms in the district. The farm covers a wide area. Although there are also some touristic places and accommodation next to the road leading up to the farm, the marked area is where the sale of local products takes place. Such production and sales areas are essential for the promotion and sale of locally produced crops. It increases the awareness of agricultural products in the region and supports local producers working in agriculture (Figure 65).



Figure 65: Commerce in Reşadiye (A6)

Source: (Google Earth)

The last neighborhood which is examined in the context of this land-use analysis is Hızırşah. Figure 66 comprises information about the land-uses in the area. The map shows the main avenue and streets as well as land-use decisions. There are four areas which the focus is on during this analysis. They are circled and enumerated.

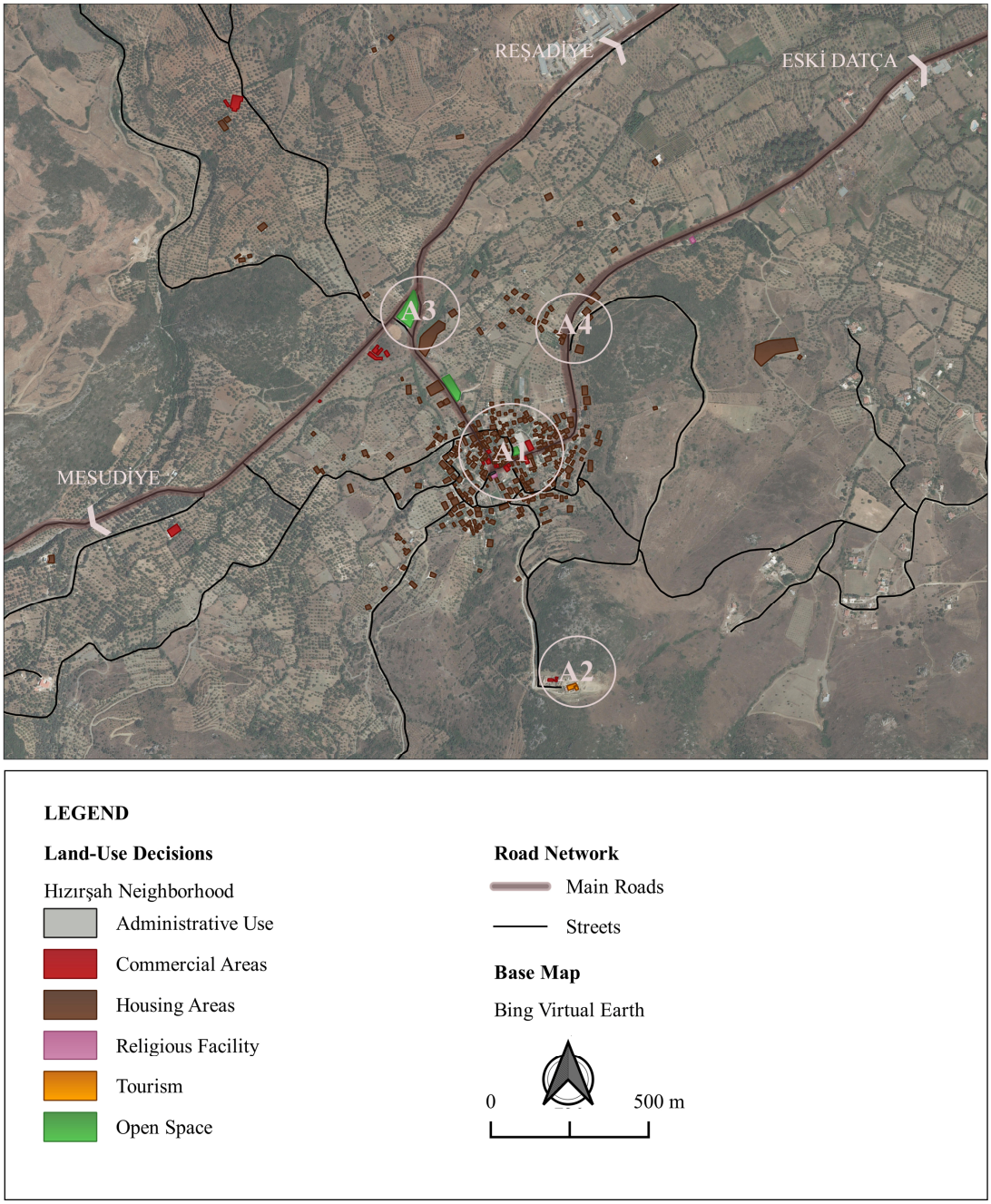


Figure 66: Land Use Decisions in the Hızırşah Neighborhood

Source: (Google Earth). Map created by the author.

The first of the four areas is the neighborhood center which is marked as **A1**. In this area, which emerges as the heart of the neighborhood, there are commercial land-uses as well as a large square, open spaces, grocery stores, a religious facility, and a kahvehane. Many features that appear in a rural neighborhood can be found here. Old

one-story and two-story residential buildings surround the commercial area. Commercial uses include small-scale grocery shops, a real estate office, a local handicraft workshop, and a barbershop. These uses serve the needs of the neighborhood. Accordingly, the residents of Hızırşah use the commercial area for their daily needs. However, they take advantage of the offers provided by the businesses located in the district center and on the spine when they require products or services that go beyond their above-mentioned daily needs (Figure 67).



Figure 67: Commerce in Hızırşah (A1)

Source: (Google Earth)

Small-scale grocery shops are the main type of commercial land-use in the center of the neighborhood. There is a kahvehane, an open green area, and a children's playground located in the center as well. Local people fulfill their daily needs here. Those land-uses in the center are spatially connected to the main square.

The housing texture in the A1 area is similar to the housing texture in the inner parts (A4) of the Reşadiye neighborhood. The residential areas located here consist of old one-story or two-story buildings. It appears that these areas are not used for touristic purposes but are rather inhabited by local people. It has a traditional rural texture that is utterly different from the settlements on the main avenue. There are narrow streets between the buildings and detached houses with gardens (Figure 68).



Figure 68: Housing in Hızırşah (A1)

Source: (Google Earth)

A2 is a farm area. The farm is located on a hill above Hızırşah. Apart from the farm itself, commercial areas and touristic accommodations belong to it as well. Additionally, there is a small scale, organic farm with vegetable gardens, olive trees, and vineyards. It is an important location for agro-tourism in the region (Figure 69) (*Tepe Ev Farm*, n.d.). The other farm that was examined during the land-use analysis of the Reşadiye neighborhood is an important location for this sector as well.



Figure 69: Tourism in Hızırşah (A2)

Source: (Tepe Ev Farm, n.d.)

The area marked as **A3** is located to the north-west of Hızırşah. There is a road to Reşadiye in the north and a road to Mesudiye in the south. It is an area where the use is sparse, and the housing density is low. At the intersection of these roads, there is a

cemetery. Apart from that, light green areas are spread throughout the field. There are some commercial uses in the direction of Mesudiye (Figure 70).



Figure 70: Green Areas in Hızırşah (A3)

Source: (Google Earth)

A4 is an area nearby the road that connect Hızırşah to Old Datça. There is a settlement and a religious facility next to the road. The hill on the right side of the road appears to be a threshold that restricts development. There are lands for sale and newly built buildings on this road. Besides, there are agricultural production areas around the same route (Figure 71). Between the area marked as A4 and the residential areas in the center (A1) there are large green areas.



Figure 71: Housing in Hızırşah (A4)

Source: (Google Earth)

Newly built housing areas and land for sale indicate a trend of urban development in the area. Since there is agricultural soil around the newly built houses, this development might be concerning for the future of agriculture in the area.

Regarding the multi-dimensional, heterogeneous, and complex structure of the urban fringe phenomena, in this part of the study land-use decisions were discussed, which are one of the important components of the urban fringe concept. The urban fringe is the most dynamic place in the city. Every small change can directly affect it. For this reason, as mentioned in the Chapter II, interrelated structural components of Datça's urban fringe need to be examined in detail to understand its complexity.

In this chapter, land-use decisions in Datça's fringe were examined with regard to the complexity theory. Detailed spatial research about the region revealed the characteristics of the chosen neighborhoods. Although all the settlements of Old Datça, Reşadiye, Hızırşah are in close distance to the Datça Central District, these neighborhoods themselves still have a traditional rural center. However, development pressure caused by the center is starting to affect those settlements. This is in particular because of the main avenue. Next to this main avenue, housing and commercial areas connect the Datça Central District to the Old Datça and Reşadiye neighborhoods. They mostly have urban characteristics and serve the urban areas. However, in the inner parts of the settlements, rural characteristics can be found more often.

There is no road that directly connects Hızırşah to the Datça Central District. It is also not as close to the center like as Old Datça and Reşadiye. These circumstances helped to preserve its rural characteristics. However, an urban development trend can now also be observed in Hızırşah due to the road that connects it to Old Datça. This means that the impact of the Datça Central District is starting to affect Hızırşah as well.

3.2.2.2.3. Infrastructure and Services

Due to its location close to the center, in **Old Datça** there is sufficient social and technical infrastructure. Spatially, Old Datça is almost integrated with İskele. Most types of land-uses are easily accessible. Public offices and buildings are located in the nearby İskele neighborhood. The district governorate and affiliated units, the courthouse, the municipality building, a hospital, the gendarmerie and a police, a post

office as well as a primary, secondary and vocational school are located in a close distance. Although there are drinking water and sewage networks and a wastewater treatment plant, the infrastructure is not entirely sufficient. It cannot adequately meet the needs of an increasing population especially during the summertime. (T.C. Çevre ve Orman Bakanlığı, 2014, p. 17).

The **Reşadiye** neighborhood, like Old Datça, was declared an urban site in 1978 (T.C. Çevre ve Orman Bakanlığı, 2014, p. 136). It has both urban and rural characteristics that are reflected in the local land-use decisions. In terms of social infrastructure, there is a primary school in Reşadiye. Students who live in the neighborhood do not need to commute for educational purposes. Besides, there is a football field with a capacity of 1000 people (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 222).

In addition to the İskele, the Reşadiye neighborhood also has its own drinking water infrastructure. Especially its water reservoir is important for the district. Regarding the electricity infrastructure, there is an administrative unit in Reşadiye (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 358). Besides, there are small industrial enterprises in Reşadiye that produce oil, vinegar, jam, olives, cosmetic products, and packaging for ready-to-eat food (T.C. Çevre ve Şehircilik Bakanlığı, 2014, p. 189).

In the **Hızırşah** neighborhood, a mukhtar building, a mosque, and a kahvehane operate in the same building. There is no health center in the area which is why the Datça Central District must be visited for such services. The neighborhood has its own drinking water network. However, during the summertime, the neighborhood's population is doubling and the demand cannot be met. The reason for the increase in population during the summer is not immigration but the return of the population living outside of the settlement during the winter. Necessary works were carried out in the neighborhood to improve the wastewater infrastructure but could not start operating due to financial deficiencies and lack of personnel. There is no NGO in the area. However, the Hızırşah Agricultural Development Cooperative is actively working (T.C. Çevre ve Orman Bakanlığı, 2014, p. 21).

An open area in Hızırşah, which is the only recreational area in the Datça district, was rented from the forest administration. Although necessary legal permissions have been

obtained, the area cannot be used due to financial difficulties (T.C. Çevre ve Orman Bakanlığı, 2014, p. 21).

3.2.2.2.4. Synthesis of Land-Use Decisions with regard to the Complexity Theory

The interrelatedness of each component creates different values in the area. While understanding the holistic urban fringe concept, there is a need to understand and evaluate on every component individually. After that, the values that emerged from the relations of those components need to be analyzed.

So far, a detailed examination about the land-use decisions in the neighborhoods located in the periphery has been conducted. The following section goes one step further and examines the interrelated structural components from a relationalistic perspective. The purpose is to investigate how the values emerged from the relationships between the respective elements.

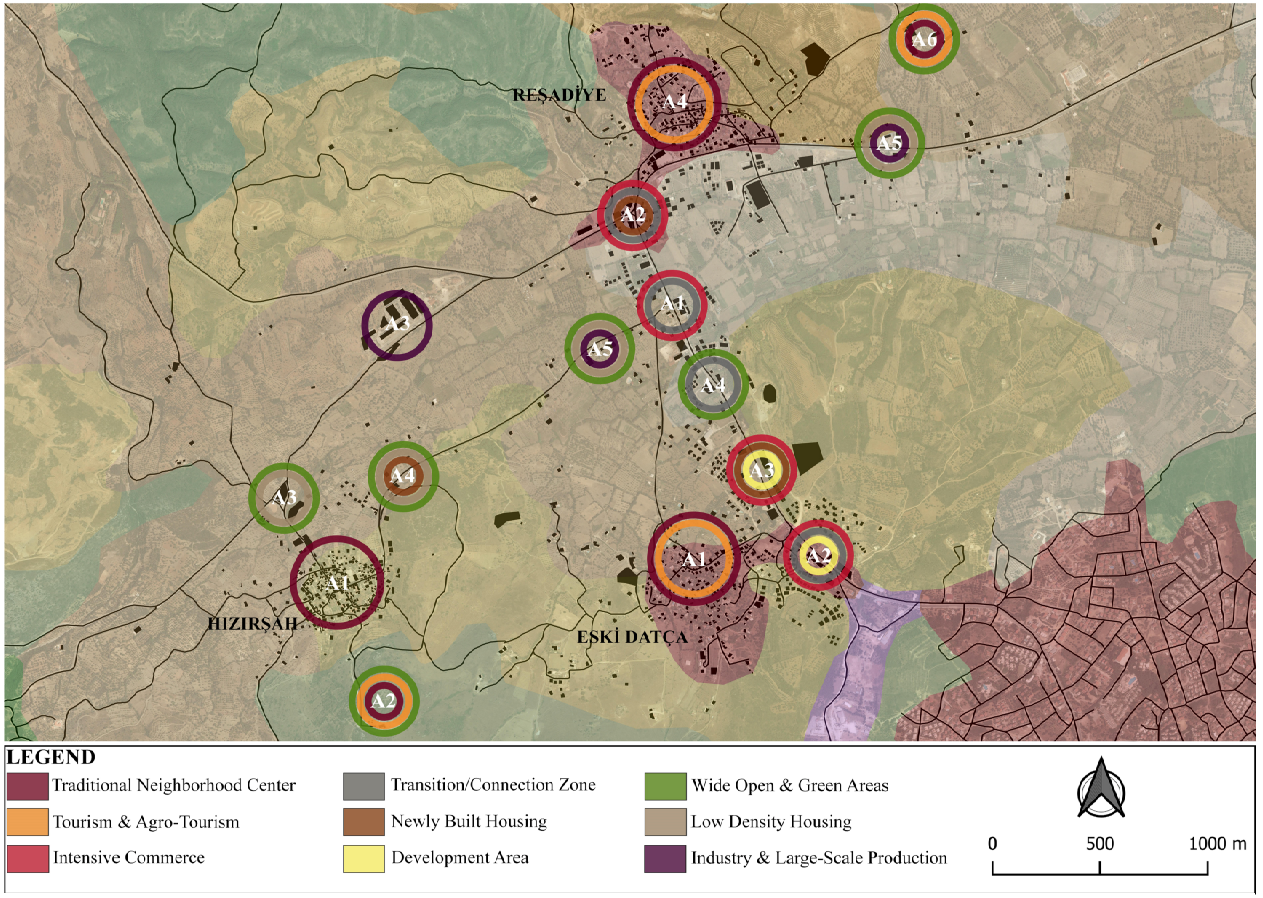


Figure 72: Synthesis Map of Land Use Decisions in the Study Field

Source: (Google Earth). Map created by the author.

A synthesis map is created and presented in Figure 72 in light of the information obtained from the land-use analysis. This map shows the land-use decisions combined with CORINE and Google Earth data. Accordingly, the largest circles in a dark red color mark the traditional neighborhood centers. They are located in the center of the settlements of Old Datça, Reşadiye, and Hızırşah. All the samples examined have the same general characteristic features. The land in these neighborhood centers is commonly used for small-scale trade, religious facilities, and the sale of local products. At the farms located in Reşadiye (A6) and Hızırşah (A2), small-scale local products are sold. For this reason, there are dark red circles around these areas as well.

In the traditional central area of the Old Datça and Reşadiye neighborhoods, there is also tourism, indicated by an orange circle. There are touristic accommodations which are intertwined with residential areas in the center, mostly in Old Datça (A1 and A4). Besides, local farms for agro-tourism are popular attraction points that helped the agriculture and tourism potential in the region to be recognized. The farms in Reşadiye (A6) and Hızırşah (A2) are the examples for such agro-tourism. They are located away from the neighborhoods' centers with large open and green spaces around them.

The map shows how the main avenue connects the İskele neighborhood to Old Datça, Reşadiye, and Hızırşah. Alongside the road there are a lot of businesses. This indicates that there is a lot of commercial activity in the area, especially the sale of construction materials. Commercial areas on the spine are not primarily used for businesses that fulfill the daily needs of the inhabitants. They are not like traditional neighborhood centers but rather large-scale businesses. These areas also stand out as a transition or connection zone, in which the transition from İskele to Old Datça as well as from Old Datça to Reşadiye takes place. The land-use changes in each area to the north of each of the areas marked with a gray circle. Besides, the A2 and A3 regions in Old Datça, which are located in the direction of the city's growth, are also the development areas. They are marked with a yellow circle. In these areas, newly built housing stands out. Land-use decisions in the field show that the density along the spine will increase in

terms of residential and commercial use. The new construction areas in the north-west of the Datça Central District are a sign for growth and development.

Areas with significant commercial activity can also be found in the Reşadiye neighborhood. Especially in the area marked as A2, newly constructed residential areas also exist in addition to commerce. The residential areas are marked with dark brown circles. The land-use changes from areas used for large-scale businesses to local trade areas to the north of the area marked as A2. This indicates a transition connection zone.

There is a less dense connection zone between the areas with significant commercial activity and the ample green spaces in Old Datça which are located at the connection between Hızırşah and Old Datça (A4 and A5). The main characteristics of this node are low density and vast green spaces. There are some production sites located nearby. Settlements with a lot of green space around them constitute one of the main characteristics of an urban fringe and are part of the periphery's complex structure. In the fringe, intertwined uses and increasingly less dense structures can commonly be observed. There is a similar structure in Reşadiye (A4) and Hızırşah (A1). Typical traditional and relatively dense neighborhood centers disappear towards the fringe area and are replaced with large green areas towards the neighborhood edges (A5 and A4).

In general, as mentioned in the theoretical part of the study, interrelated structural concepts appear in Datça's fringe. Its complex structure was examined using the examples of the three chosen settlements. Due to its diverse structure, there are conflicts between the different types of land-uses. In the neighborhood centers, only five hundred meters away from the traditional rural structures, there are urban uses such as health facilities, educational institutions, and newly built luxury housing. On the one hand, there are conventional old houses that are home to local shops. They serve the neighborhood center. On the other hand, there are newly constructed buildings. There are large-scale trade areas around those buildings which serve the entire district. Such an environment is representative for the diversity and conflict in the field. While neighborhood centers are enclosed and self-organized areas, the places

located near the main avenue are more open to interaction and are also used by people from different neighborhoods.

Figure 73 shows the characteristics of those neighborhoods. Accordingly, the blue boxes are areas in which urban characteristics prevail. The pink boxes are the areas in which rural characteristics are dominant. The boxes colored in green indicate that an area has rural-urban fringe characteristics and is shaped by heterogeneity. The three selected neighborhoods located in the periphery are listed on the columns. The rows contain the areas marked in different colors in Figure 72.

neighborhoods

marked areas

	Old Datça	Reşadiye	Hızırşah
A1	traditional neighborhood center	transition/connection zone	traditional neighborhood center
	small-scale trade	intensive commerce	small-scale trade
	tourism		
	cultural facility		
	religious facility		religious facility
A2	transition/connection zone	transition/connection zone	wide open and green areas
	intensive commerce	intensive commerce	agro-tourism
	development area	newly built housing	trade of local products
		administrative facility	
A3	development area	industrial zone	wide open and green areas
	district hospital	isolated from the residential areas	low density housing
	intensive commerce		
	newly built housing		
A4	transition/connection zone	traditional neighborhood center	wide open and green areas
	wide open and green areas	small-scale trade	low density housing
	educational facility	tourism	newly built housing
		religious facility	
A5	wide open and green areas	wide open and green areas	
	low density housing	low density housing	
	large-scale production	large-scale production	
A6		wide open and green areas	
		agro-tourism	
		trade of local products	

	Field Characteristics	Paradigms
	Urban Character	Spatial Planning
	Rural Character	The Ecosystem Approach
	Rural-Urban Fringe	Spatial Planning & The Ecosystem Approach

Figure 73: Characteristics of the Neighborhoods in the Periphery

Although these uses apply differently in each neighborhood, from a general perspective, the variety of urban and rural uses shows a “heterogeneity”. Especially in Old Datça and Reşadiye, the heterogeneity and complexity is more obvious. In terms of the characteristics of land-uses, the separation between urban and rural areas is not clear in these neighborhoods. Those areas neither “black” nor “white”. If anything, these areas could be described as “gray”. Small-scale local businesses located in Old Datça’s neighborhood center only serve this area. However, it is also a visiting point for people from other neighborhoods, especially from the Datça Central District. The many touristic areas located in the neighborhood are one of the reasons why Old Datça is a popular visiting point. This makes it more than just a neighborhood center.

Although tourism is not quite as present in Reşadiye when compared to Old Datça, there are still touristic accommodations too. Especially the tourism capacities in these regions prevent the settlements from remaining enclosed settlement areas. They bring new potentials and business opportunities to the area. As a result, commercial spaces are concentrated around Kazım Yılmaz Street, which provides a connection to all the settlements.

In Hızırşah, the circumstances are different than in Old Datça and Reşadiye in many aspects. Hızırşah also has a traditional neighborhood center but this center is less touristic and a lot more local than in Old Datça. There are some religious facilities. Conventional commercial areas mostly host markets and grocery stores. In comparison, in Old Datça, there are cafés and restaurants in the central area.

Among the three neighborhoods examined within the scope of the study, Old Datça has the most dominant urban features. The most rural neighborhood is Hızırşah. Reşadiye is somewhere in the middle in these aspects (Figure 73). The main reason for Hızırşah’s prevailing rural character is its location which is relatively far from the center. Therefore, its relationship to the center is weaker than in other neighborhoods. It also has fewer touristic facilities and opportunities than other neighborhoods.

This study revealed the fringe characteristics of the three selected neighborhoods. It did so by analyzing the relationships between their different components as well as the historical development of these relations. The three neighborhoods in the periphery

were chosen because of their complex structure. The analysis in this chapter was conducted to prove their complexity.

The structure of the space was defined in accordance with the complexity theory. Different concepts such as uncertainty, dynamism, and flexibility were considered within the thesis' scope as well. One of the many contributions of this theory to this thesis is that no matter how dynamic the area is, organic development in fringes leads to creative solutions to respond to spatial issues. Thanks to their flexible and blurry structure, urban fringes can adapt to changes quickly.

For many years Old Datça, Reşadiye, and Hızırşah have shown traditional characteristics in their settlement patterns and social structure. Especially at the end of the 1980s, the social structure of Old Datça started to change. The main reason for this change were the increasing number of secondary housing as well as internal migration from the eastern part of Turkey. At the end of the 1990s, Can Yücel, a Turkish poet, started living in Old Datça. This helped Datça to become even more well-known throughout the country. Even though many internal migrants from urban areas started to move to Old Datça, the traditional architectural structure was not disrupted until the last decade. During recent years, Datça became one of the primary escape areas for Istanbul residents, just like other coastal cities in the Aegean region. It started to become gentrified. This gentrification can especially be seen in the change of commercial uses in the area.

Reşadiye is located in a flat area and next to the main avenue. Its location is an advantage for wealthy urban migrants. After migrating to Datça, they often buy extensive agricultural lands and build some farms. They start to produce local agricultural products and sell them. Due to its location further away from the Datça Central District when compared to Old Datça, Reşadiye's social structure is better preserved than the social structure of Old Datça.

Hızırşah has always been the neighborhood with the most traditional Greek structure. Morphologically, it does not provide many opportunities. It is located on the hillside and has narrow streets. Therefore, the Hızırşah neighborhood does not have vast areas for more settlement development. It had an advantage due to being located next to the Datça-Marmaris road which leads to Knidos and to the touristic sea sides. However,

three years ago the connection between Hızırşah and this road was closed. This had a negative impact on the popularity of Hızırşah as a tourist destination. However, because of the poor road connections, Hızırşah is now less affected by development pressure than Old Datça and Reşadiye. Changes in the social and spatial structure can still be observed in Hızırşah. Nevertheless, Greek culture and tradition are still at least partly preserved in the neighborhood. It is a settlement that does not have many touristic facilities.

The main avenue, starting in the Datça Central District and leading to Reşadiye via Old Datça, displays the most dominant urban character when compared to Old Datça, Reşadiye, and Hızırşah. This urban character is a result of the development which took place during the last decade. Two main reasons can be named for this development:

- Firstly, the Datça Central District has limited areas suitable for urban development. It is located on the hillside. Besides, the coastline has been protected by locals who are members of city councils, nature conservation associations, and professional chambers. Therefore, the city could not develop to other directions. As a result, development took place mostly alongside the main avenue which connects Datça to Marmaris.
- Secondly, in addition to smaller health centers in the Datça Central District, a hospital was constructed next to the main avenue in 2017. After it had been completed, the construction of new settlements in the area between the center and the hospital increased. Commercial and residential buildings were built on the formerly vacant land. Overall, the hospital as a new public facility increased the demand for newly built buildings in the area.

The structural change in the three neighborhoods was analyzed using the methodology developed in this study with the help of the complexity theory. In this context, two types of fringes can be defined, namely urban-rural fringes and rural-urban fringes. The first one is an area that aims to keep the density of its current settlements within its boundaries. Nevertheless, because of development pressure it eventually grows towards the most accessible axis. It constitutes a mostly urban pattern on this axis (**urban-rural fringe**). The second one preserves its traditional pattern thanks to its status as a protected area. Although it is protected and it generally maintains its rural

identity, urban characteristics become increasingly present in physical and social terms as well. This means that the urban character is strengthened inside the rural (**rural-urban fringe**).

Old Datça is allegedly a preserved traditional area. However, this is questionable. Socially, the area started to transform during the 1990s when workers and artists started to migrate here. The result of this migration is gentrification. The transformation in Hızırşah can be observed parcel by parcel and building by building. However, its rural identity is somewhat protected due to its poor road connection to the center. In this way, what used to be a locational disadvantage has now become an advantage. Reşadiye has a better urban-rural balance when compared to the other two neighborhoods. Its large-scale farms and commercial areas are an important asset for the district. It is a fringe settlement with a traditional physical and social structure.

Protection regulations and conservation statuses play a crucial role when it comes to containing uncontrolled urban growth of in those areas. Cities that transform especially because of social pressure from the outside can rapidly lose their unique characteristics. Urban development and its management can weaken the natural environment. Providing conservation principles on the spatial level is an effective way of drawing boundaries for urban growth. Large green-blue areas, which are rich in biodiversity and contain legal constraints to urban growth, can serve as an example. Nevertheless, settlements that continuously expand can cause pressure on a development axis in close proximity. This axis often runs through fringe areas and causes transformation due to development pressure.

This transformed area in a fringe is often a result of the interaction of many components. Some of them, especially urban components, are more dominant than others and therefore have the potential to change the natural environment. Before these transformations take place, a spatial planning process should be conducted which is based on the methodology suggested in this thesis. This process should consider all components and dynamics of an area and take urban-rural balance into account.

Moreover, during the planning process, strategies and policies should be put forward with regard to the needs of each of the components.

Within the scope of this methodology, social and spatial characteristics of the area should be examined. This includes the relationships between the characteristics themselves and their change over time. Only in this way can an area's dynamic structure be understood entirely. To develop such an understanding for the fringe of the Datça Central District in the Datça-Bozburun SEPA is one the primary goals of this thesis.

CHAPTER 4

EFFECTS OF THE SPATIAL PLANS FOR DATÇA ON ITS URBAN FRINGE

When Datça-Bozburun was declared a SEPA in 1990, ninety percent of its area obtained the status of a protected area. The basis for this decision was its rich biodiversity and reckless interaction of humans with the nature in this area posed a threat to the natural environment. Because of its rich biodiversity and culture in its protected areas, the Datça district is one of the most important touristic centers in Muğla. However, with the continuing development of tourism and increase in construction, the relationship between people and nature is weakening. In addition, traditional and eco-friendly methods of agricultural production are disappearing more and more, which also contributes to the deterioration of the environment. Although the measures undertaken by the state aim to slow down this endangerment of the nature, they have been only partly effective in doing so (Argun et al., 2014, p. 146). Also, with the arrangements made within the scope of Law No. 6360 of the year 2012 (The Establishment of Fourteen Metropolitan Municipalities and Twenty-Seven Districts and Amendments at Certain Law and Decree Laws), all villages in Datça gained the status of neighborhoods. This had an impact on all activities in the district, especially on agriculture and animal husbandry (TEPAV, 2017, p. 7).

Conservation areas can be sustained with the help of decisions to enact precautions and conservation acts. For such areas, preventing the construction of new buildings and the destruction of the area's natural character is critical for ensuring their sustainability. In protected areas, the biggest threat is often the development pressure caused by the construction of new settlements which is a result of an increasing demand in tourism. Areas with significant historical, cultural, and natural values are often in high demand among tourists. Therefore, touristic capacities in such areas are

expanded. Especially the areas that stand out in terms of their natural character and capacity for agricultural production are the most affected by the development pressure caused by construction.

An effective way to control this inter-sectoral impact on conserved regions and to ensure their sustainability is to enact laws and regulations through planning decisions. Within this context, it is an urgent need to restrict construction and include clear regulations about the conservation of protected areas in planning decisions. In the Datça-Bozburun SEPA, it is the Directorate-General for Preservation of Natural Heritage at the Ministry of Environment and Urbanization which was responsible for the 1/25.000 scaled Environmental Plan published in 2014.

The main environmental and social challenges that the plan addresses include agricultural livelihoods under pressure from tourism, seasonal immigrants, and housing development. The plan highlights the increase in population which is approximately five times higher during the summer months. This is due to summer housing and a steep increase in touristic activities during this time. As a result, there is considerable stress on the region's natural resources, water reserves, and environmental quality. Concentrated touristic activities encourage local people to sell their land to investors from the tourism sector, which in turn leads to a loss of attachment of local residents to their environment (Argun et al., 2014, p. 147). Such circumstances accelerate the loss of natural values in the region and make legal measures inevitable. It is evident that they are needed in order to minimize the pressure on the protected areas which is caused by tourism. It is the only way to maintain a naturally and culturally significant area like the Datça-Bozburun SEPA and sustain it in the future.

This section critically assesses the existing plans for the region in terms of how they could respond to the complex and dynamic nature of the area more effectively. To do so, firstly the decisions made in the 1/25.000 scaled Environmental Plan are discussed with particular consideration for the complexity theory. Secondly, the planning decisions are evaluated on from three perspectives, namely **managerial**, **physical/structural**, and **social**. These perspectives support the multi-dimensional and multi-layered approach which is based on the complexity theory. As mentioned in

Chapter II, this theory lays out the general theoretical framework for this study. While examining the planning decisions for the SEPA, the variables that emerged due to the relationship of its different layers are analyzed. This analysis especially considers the complex structure of the fringe in the SEPA. It thereby contributes to the understanding of its heterogeneous and dynamic structure.

In planning decisions, managerial and administrative perspective often dominate. This study aims to enrich this administrative point of view by also putting emphasis on the physical and social perspectives. It does so by including physical and social components during the analysis of planning decisions and thereby provides a comprehensive and relational perspective.

Since an urban fringe is a dynamic place which consists of many components, establishing plans for such areas should be a holistic and integrated process. In addition to being a transition zone, Datça has a multi-layered structure in terms of its natural and cultural values. Therefore, a comprehensive and holistic perspective is inevitable in order to create a suitable plan.

In traditional urban planning, especially for protected areas there is a lack of comprehensive perspectives. Although continuity and integrity of the spatial components and authenticity are important characteristics of those regions, spatial plans often do not include context-based decisions that recognize those specific characteristics. Plans that disregard the relation between the components and that do not consider social and economic connections are unable to produce suitable results.

The urban fringe is the most dynamic and changing place in a city. When a city transforms, fringe areas are the part of the city that is effected by that transformation the most and the earliest. In those areas, there is always a conflict between urbanization and natural values. Plans determine the future fate of these areas. Therefore, due to the

importance of planning decisions for such areas, it is necessary to examine them from a complex, integrated, and holistic perspective before making a decision.

4.1.Planning Decisions from the Perspective of the Complexity Theory

Before examining the 1/25.000 scaled Environmental Plan for the Datça-Bozburun SEPA in detail, this part of the study evaluates on the methods to analyze planning decisions. In doing so different perspectives are considered and examined on the basis of the complexity theory. While the planning decisions are reviewed, they are categorized according to the paradigms and variables laid out in Chapter II. A classification of the models used in this study is conducted. The relationship of the variables offered by these models are examined. The variables that emerge from the planning decisions within the scope of managerial, physical, and social perspectives are classified according to the related paradigms.

The examination of the spatial plan conducted within the scope of this study includes different steps. The first step is to evaluate on the planning decisions from a managerial perspective. Planning is a process of decision-making that determines a city's future destiny. Making plans can either be a step towards complete success or towards significant failure. Administrative decisions made in this process can be considered as the long term action plans for a city.

The socio-economic and physical development of cities is guided by the decisions made in the plans. In the plan for the Datça-Bozburun SEPA, many decisions were made to ensure the development, protection, and sustainability of the region. However, some of the decisions made on the administrative level may not always have positive results in terms of physical and social aspects. Decisions made to ensure urban development can have negative consequences for the natural environment. These changing dynamics can be understood by looking at the relationships between the different components. Although planning decisions may be beneficial for example in an administrative sense, they can at the same time be disastrous for example from a

socio-economic and spatial perspective. Therefore, the consequences of planning decisions always need to be critically analyzed on all levels.

In this section, the planning decisions relevant to the fringe area of the SEPA are critically assessed on the basis of its managerial, physical, and social components. These components are outlined in Chapter II about fringe literature (See Figure 5). While the rows show the categorized planning decisions of the report on the Datça-Bozburun SEPA Environmental Plan, the columns outline different aspects and variables considered while examining the decisions. The critical assessment of the planning decisions is based on how much they respond to the complexity nature of these areas. Figure 74 summarizes this assessment respectively. The figure assigns the decisions to the managerial, physical, or social category and reflects on them from a complexity perspective. The planning decisions may affect the fringe are analyzed in the context of the Datça Central District and its surrounding neighborhoods. Some decisions about cultural heritage and protected areas, which are located further away from the center, are also discussed.

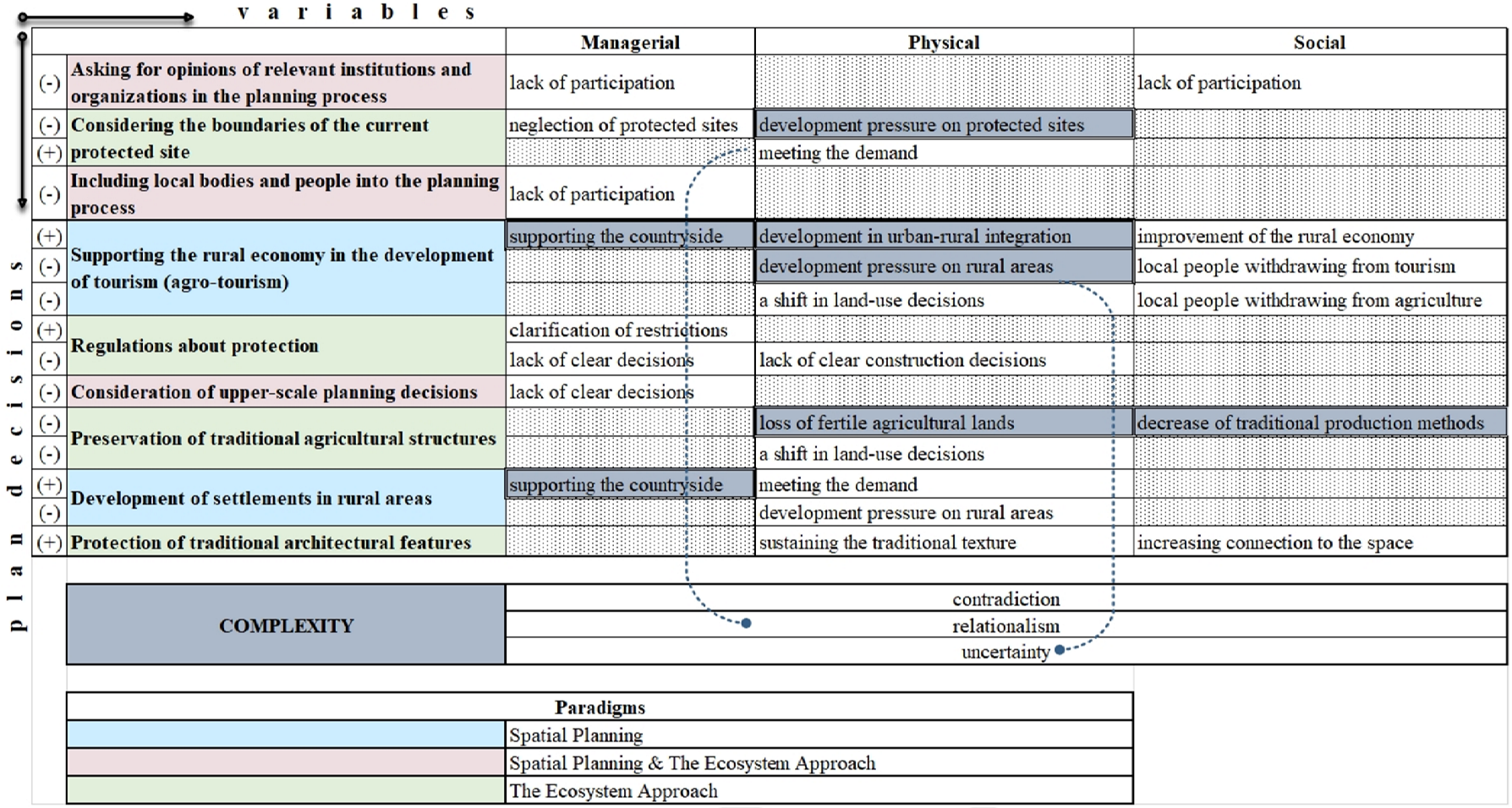


Figure 74: Examination of Planning Decisions from the Perspective of the Complexity Theory

In Figure 74, the symbols (-) and (+) indicate whether a planning decision positively or negatively impacts the space. For example, not providing a participatory process during the planning and not asking for the opinions of the relevant institutions and organizations are problematic from a managerial and social perspective. As mentioned in the chapter about the theoretical framework, there are two paradigms to classify urban fringe models, namely Spatial Planning and the Ecosystem Approach. In this chapter, those paradigms are applied to classify planning decisions. The colors red, blue, and green show which planning decision is mostly related to which paradigm. The decisions are evaluated on from a managerial, physical, and social perspective. The variables, which are the result of this evaluation, are then filled in into the rows.

Firstly, in Figure 74 the color blue indicates that a planning decision is related to the Spatial Planning paradigm. Spatial-focused decisions take the complex nature of the rural parts in the region into account. They do so by supporting the rural economy with the development of agro-tourism and including development decisions about rural settlements. This enhances the balance between urban development and conservation of natural areas and encourages more integration between urban and rural. However, these kind of spatial-based decisions can also lead to a degradation of the natural environment. They can cause development pressure on the agricultural lands. Besides, agro-tourism may be seen as more profitable for locals when compared to agricultural production. Therefore, these development decisions may have a negative impact on the agricultural sector in the long run.

Secondly, the color red shows that a decision integrates the spatial and ecological perspectives. These decisions remain insufficient when it comes to responding to fringe-related issues from managerial and social points of view. Their deficiency is due to a lack of participation by locals, institutions and organizations in the region. For such an important protected area, it is another weakness of the planning decisions that they do not include clear conservation decisions. These problems show that the Environmental Plan is not adequate for Datça's fringe when according to the Spatial Planning and the Ecosystem Approach paradigms.

Last but not least, the color green indicates that a decision is related to the Ecosystem Approach. From an ecological point of view, the plan includes regulations for the

protection and preservation of the SEPA's traditional agricultural structure. Nevertheless, construction pressure on fertile agricultural lands can be observed in a lot of places. This contradicts the declared goals of the plan to not only protect the nature but to also secure sustainability of the existing agricultural practices. The loss of traditional agricultural lands and production methods in the area results in suppression of the conservation of its natural character.

On the basis provided by Figure 74, the spatial-focused approach of the planning decisions was revealed. This is mainly apparent in the managerial and physical categories. According to the figure, planning decisions which integrate spatial and ecological perspectives are managerially insufficient. Ecosystem-focused planning decisions are problematic physically and socially due to the human factor. Social consequences for spatial planning decisions are ignored.

To conclude, the Environmental Plan is insufficient for such an area which is so unique and rich in terms of biodiversity, nature, and culture. The plan has a dominant spatial-focused perspective. This perspective is not adequate for a fringe area that is protected and growing in ecological and cultural values. The special characteristics of Datça's periphery were evaluated on and synthesized in Chapter III (See *3.2.2.2.4*).

Figure 74 also shows the relations and conflicts between different planning decisions. Each decision deeply affects the current and future developments in the space. The physical and social consequences of a management decision that is meant to achieve positive results for a city may in fact be negative. It is therefore necessary to not only look at planning decisions by themselves but also at the physical and social impact they may have for a city. In addition, comparing different planning decisions to each other can help to reveal in which ways they may be conflicting. As the figure shows, a decision to enhance the development of tourism (agro-tourism) stimulates the rural economy leads to urban-rural integration. However, at the same time, it may cause development pressure on rural areas and speculation with agricultural lands. It may also cause local people to get out of the tourism and agricultural industries if they

cannot cover their expenses by working in those sectors. Because of the fragile and diverse structures in urban fringes, this conflict arises particularly in such areas.

This part outlines the main method used to examine planning decisions within the complexity theory in the Datça-Bozburun SEPA. The analysis was conducted from three main perspectives, namely managerial, physical, and social. In the upcoming section, planning decisions will be examined in detail according to these perspectives and the outcomes of the Environmental Plan will be evaluated on.

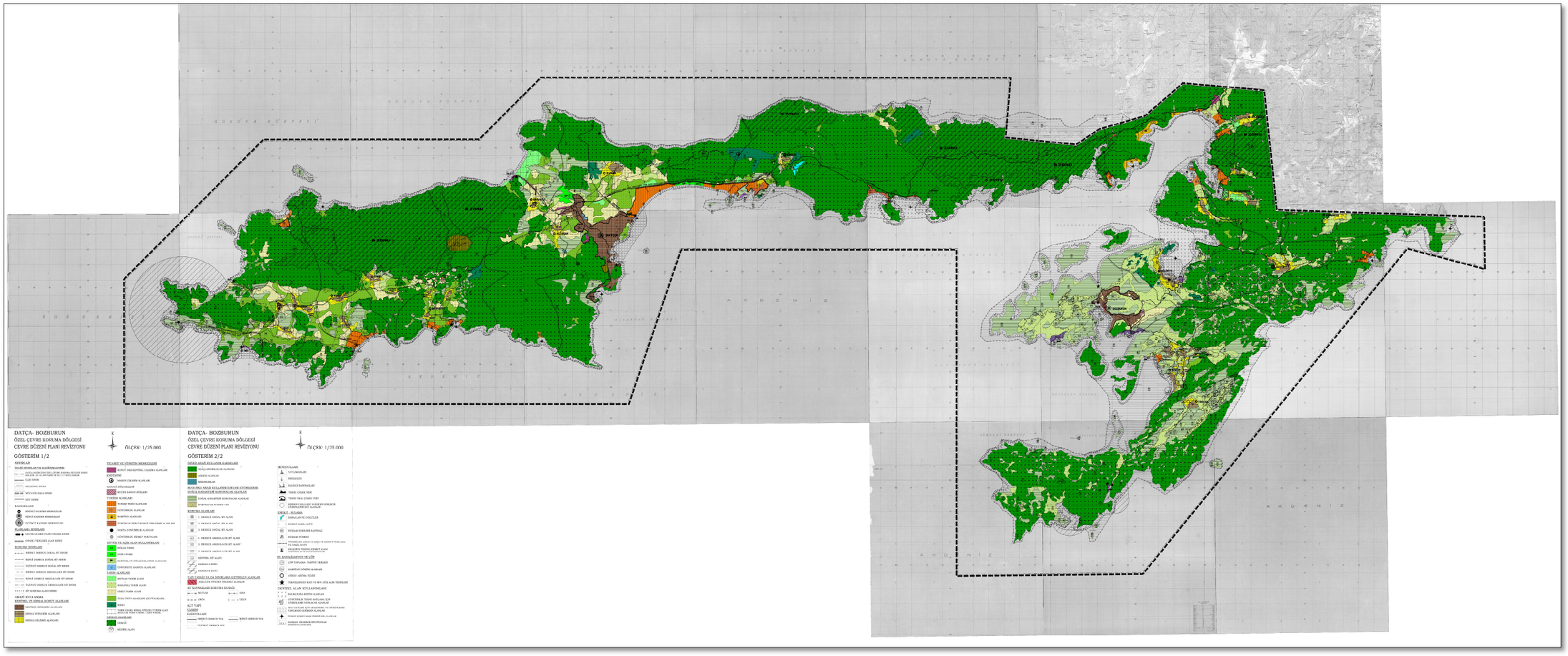


Figure 75: The Datça-Bozburun SEPA Environmental Plan (scaled 1/25.000)

Source: (İmar ve Çevre Düzeni Planları, Muğla Çevre Platformu (MUÇEP), 2017)

4.2.Examination of Planning Decisions

The natural resources, protected areas, and extensive tourism potential require unique planning decisions for the Datça-Bozburun SEPA. The existing 1/100.000 scaled Environment Plan for the Aydın-Muğla-Denizli planning zone is not sufficient to provide for the necessary administrative, physical, and social precautions in the region. In order to obtain a more detailed and comprehensive plan for the SEPA, a revision of the 1/25.000 scaled Environment Plan for the Datça-Bozburun SEPA was created by the Directorate General for Preservation of Natural Heritage. It is presented in Figure 75. Within the scope of this plan, there are provisions regarding agricultural lands, forest areas, integration between agriculture and tourism, housing issues, settlement areas, etc. One of the main focuses of the plan is to provide a connection between agricultural production and tourism in the region. Since both agricultural and touristic characteristics play an important role in the field, planning decisions about them are crucial as well.

The 1/25.000 scaled Environment Plan, prepared for the Datça-Bozburun SEPA in 2014, caused controversy among the public. It was approved in April of 2014. Many institutions and organizations, especially the Union of Chambers of Turkish Architects and Engineers (TMMOB) and local civil organizations hesitated to support the intentions pursued with the plan. They therefore objected to the Ministry. Their objections are separately examined from every perspective in this part of the thesis.

Within the scope of the Environment Plan, the focus of this study is on residential areas, tourism areas, protected areas, agricultural areas, forest areas, other natural areas, and construction in these areas. The significant expansion and the development of residential areas are envisaged in the plan. The plan report emphasizes that this plan has a rural planning approach. In accordance with this approach, the balance between protecting the environment and also having to use the land for different purposes must be kept. In addition, the goals and principles laid out in the plan stated that the natural and cultural assets in the Datça-Bozburun SEPA were taken into account as well when the plan was developed. Furthermore, the report states that land-use decisions have

been made that will allow the local potential and resources of the region to be converted into economic value (Tabiat Varlıklarını Koruma Genel Müdürlüğü, 2014).

The plan report, which recognizes the potential of the diverse natural and cultural assets in the region for the development of tourism, states that such tourism in rural areas contributes to their economy. In this context, there are different articles in the planning decisions about the development of agriculture-based rural tourism (agro-tourism). Furthermore, the plan report contains many requirements about how to construct settlements. Roof types, architectural styles, and materials to be used for the buildings are described in detail in these articles. Besides, the conditions under which construction can take place in agricultural areas are also specified in the plan (Tabiat Varlıklarını Koruma Genel Müdürlüğü, 2014).

This part of the study examines the planning decisions for the study area from three different perspectives: managerial, structural/physical, and social. The process starts with the decision-making about planning the field. This can be considered as the managerial stage because, in this context, administrative decisions about the space are made. The considerations and reasons for the decisions are explained in the plan documentation. After the plan is approved, implementations of the decisions begin to emerge physically in the space. The physical changes also lead to social changes and other issues, which shows that planning steps include require a consideration of all three aspects, namely managerial, physical, and social.

4.2.1. Managerial Perspective

Plans prepared for the protected areas and the planning decisions made are critical for keeping the balance between on the one hand protecting an area and on the other hand also using it for different purposes. Any failure to adequately protect natural and cultural values in such areas can lead to a disappearance of such values in a way that they cannot be replaced again. In this context, administrative decisions play a catalyzing role in protecting those values. The implementation of administrative

decisions which preserve the natural and cultural character of the region should be the primary goal of the plans made for these areas.

As mentioned above, the plan for the Datça-Bozburun SEPA focuses on the development of rural areas especially by using their potential for tourism. The land-use decisions made in the plan aim to transform the region's local resources into economic value. The main goal of the plan is to use local resources like agriculture in order to increase the tourism capacity (agro-tourism). However, this process may at the same time pose a threat to the natural resources in the area due to the increase in construction that is connected to this economic development. Besides, in the planning decisions, there are articles about settlement areas, protected areas, and natural areas as well. In this context, planning decisions are taken into account and examined in order to understand the changing socio-economic and spatial dynamic.

Different institutions and organizations appealed against the 1/25.000 scaled Environmental Plan for varying reasons. The Chamber of Geological Engineers claimed that the planning process was not inclusive and disregarded the boundaries of the current protected area (TMMOB Jeoloji Mühendisleri Odası Yönetim Kurulu, 2014). The Muğla Metropolitan Municipality argued that outdated data was used during the planning process and that the plan did not contain clear articles about protected areas (Muğla Gelişim Hareketi, 2014a). The Chamber of Architects appealed on the grounds that the opinions of the local institutions were not taken into account and that the plan allowed for inadmissible construction on certain sites of the protected area (TMMOB Mimarlar Odası, 2014). Last but not least, the Chamber of City Planners opposed the plan as well. It argued that it did not include information about the population and the demography (TMMOB Şehir Plancıları Odası, n.d.).

While making decisions in a planning process, opinions from other institutions and organizations must be heard in order to obtain necessary information about the forest, water, agriculture, and protected sites in the area. Especially in an area like Datça-Bozburun with its wide variety of natural and cultural values it is crucial to fulfil this requirement. Only in this way can a comprehensive and consistent plan be developed. The Chamber of Geological Engineers brought forward one of the most significant criticisms of the Environmental Plan for the Datça-Bozburun SEPA. They stated that

the plan disregarded the current archaeological, urban, and natural site boundaries (TMMOB Jeoloji Mühendisleri Odası Yönetim Kurulu, 2014). The opinions of the Muğla Regional Board of Preservation of Cultural Heritage were not considered in the Environmental Plan which violated the Protection Law No. 2863. The chamber further argued that, since the protected site boundaries in the plan were out of date, the new land use decisions for these areas should be revised. They gave the camping sites in the 1st Degree Natural Protected Site in Hisarönü Bay as an example which could pose a threat to this area (TMMOB Jeoloji Mühendisleri Odası Yönetim Kurulu, 2014).

The Muğla Metropolitan Municipality appealed against the plan for the same reason. They referred to the outdated protected boundaries as well. The municipality stated that the plan disregarded the 1st-degree archaeological site in Karaköy which had recently been established by the Muğla Cultural Heritage Preservation Board in April 2013. Besides, they emphasized that the 1/25.000 scaled Environment Plan made three different suggestions for the 1st-degree archeological site which was not even open to construction in the SEPA (Muğla Gelişim Hareketi, 2014a). For this reason, the decisions made in this plan could pose a threat to the preservation of the region's values.

The Chamber of Architects in Muğla also appealed against this plan. According to their appeal, the Ministry of Environment and Urbanization should have obtained the opinions of locals, local administrations, professional associations, and non-governmental organizations not only during the planning process but also after it was completed. They stated that because these opinions were not given, the planning process had a solely center-focused approach. Local bodies were not included in the process. Besides, the chamber emphasized that if the ministry approves this plan, the same problem will arise with regard to the sub-scale plans which are based on that plan. Once again, local administrations will not be involved in the planning process, which violates the planning procedure (TMMOB Mimarlar Odası, 2014). In every planning process for cities, there should be a hierarchy from upper-scale to sub-scale plans. When this hierarchy is ignored, the planning process does not work efficiently.

If there is no local opinion or participation in the process for upper-scale plans, then local level plans will not include a participation either.

It has been stated in general provisions Article 6.13.1. of the plan that the protected areas such as afforested areas, green spaces, parks, wetlands, marshlands, forest areas, sensitive areas, habitats, and biogenetic reserve areas cannot be opened for construction (Tabiat Varlıklarını Koruma Genel Müdürlüğü, 2014). It is important to pass regulations about these areas. However, it remains unclear why agricultural lands were not included into the list of areas protected under Article 6.13.1. Their preservation is vital as well and should therefore be regulated in the same way.

Furthermore, the Chamber of Architects in Muğla raised concerns about the facilities and camping areas planned in various bays. They may eventually expand and be used for other purposes as well which could cause further harm to the environment in those bays. It gave the newly established camping areas in the First Degree Natural Protected Area in the Gulf of Hisarönü as an example. A settlement with a density of E = 0.08 has been determined for these areas, which is a high-density ratio for a place with rural characteristics (TMMOB Mimarlar Odası, 2014). Proposing a dense settlement area in a protected zone is problematic because it may cause land speculations.

The Chamber of City Planners also appealed against the Environmental Plan. As the implementation of the Muğla-Aydın-Denizli 1/100.000 upper-scale plan was partly put on hold, the chamber stated that the criteria for the projections about the population and the employment in different sectors in the SEPA were not clear (TMMOB Şehir Plancıları Odası, n.d.). Although demographic information plays an important role in the planning process, the plan did not consider this information. The planning process should cover different variables, including population and demography, for more comprehensive and accurate planning.

As mentioned above, the plan claims to keep the balance between protecting the area while at the same time allowing for its use for different purposes. However, separating

the principles of conservation and the principles of rural development from each other creates the perception that the policies are not intended to provide this balance.

An urban fringe has heterogeneous characteristics that neither urban nor rural areas have. Its multi-layered and dynamic structure requires a unique approach. The Datça district within the Datça-Bozburun SEPA is a protected region with a lot of potential for tourism. This means that Datça's fringe has even more components and variables than usual, which affects the area's structural changes (Figure 74). One of those variables are spatial plans. For regions with such a unique character, preserving their natural character is critical for ensuring sustainability.

For this reason, legal constraints to conserve this area should be established within the planning decisions. The examination of the 1/25.000 scaled Environment Plan from a managerial perspective revealed the important variables in the area. It also reveals the importance of the participation of local bodies, clear planning decisions, and sufficient restrictions. It emphasized that the consequences of neglecting protected sites should be considered in detail. Besides, while increasing touristic activities in rural areas, the plan must also attach importance to the interests of locals living there.

4.2.2. Physical/Structural Perspective

The second perspective from which planning decisions for the Datça-Bozburun SEPA are analyzed is the physical or structural perspective. Within the complexity theory, physical aspects of spatial plans are the second variables. There is a physical impact that each planning decision has on a place. The planning process starts with managerial decisions. Subsequently, the plan is implemented spatially in the field. Planning decisions are of critical importance in guiding the future of a city. Therefore, this part of the study will examine their possible consequences and analyze how they will shape the development in terms of urban expansion and economic growth.

The Chamber of Architects criticized the plan with regard to the protected areas that it contains. Article 7.7 of the plan defined a development density of E = 0.05 and a total construction area of 150 m² for these areas. The chamber stated that this is problematic because this decision could lead to issues with 2B applications and eventually result in construction in the area. For this reason, the chamber emphasized that the ministry

should redefine the conditions for housing, agriculture, and animal husbandry in these areas (TMMOB Mimarlar Odası, 2014). Since there are no clear regulations for protection and the plan also lacks clear provisions about construction, there may be development pressure in naturally preserved areas. Concrete regulations about these issues are needed in planning decisions about these areas.

The 1/25.000 scaled Environmental Plan contains a lot of decisions regarding rural development. In general terms, the primary purpose of the plan is to support agricultural and non-agricultural activities by using the rural/agricultural potential of the area. This is necessary due to the limited sources of income in the region. In this context, the most prominent concept was the idea of agro-tourism which is considered to have the ability to revive the rural economy. Nevertheless, it must be taken into account that such planning decisions, supporting construction in rural and agricultural areas, simultaneously impact ecological agriculture in a negative way.

Therefore, the Muğla Metropolitan Municipality appealed against Article 7.6.1.6 of the plan which states the conditions for constructing structures for ecological agricultural tourism. According to the plan, a maximum number of ten tourism structures can be established in the area with a rural nature. They must have and a ground area of no less than 45 square meters, a height which does not exceed two floors and a total construction area which does not exceed 150 square meters, within the specified E = 0,05 determined in the planted agricultural lands. One swimming pool not exceeding 30 square meters can be built. The municipality stated in the appeal that the construction of buildings such as parking lots, terraces, and pools would lead to a loss of agricultural quality in the area. They emphasized that with such decisions, agricultural fields turn into garden tourism that does not provide any agricultural benefits and can only be used as a hobby (Muğla Gelişim Hareketi, 2014a).

Decisions about agro-tourism which aim to support the rural economy by allowing the construction of new structures can result in a loss of fertile agricultural lands and a shift from agricultural to touristic land-uses. With the promotion of construction, the

demand for the development of settlements in rural areas may be fulfilled. However, this can cause speculation with agricultural lands and result in development pressure.

Additional measures should be taken in the study area to prevent a shift from productive agricultural land-use and farming to a land-use for tourism. It is essential for the region to maintain its agricultural potential. Especially the Mesudiye Plain, the Palamutbükü Plain and Kızlanaltı located in Datça are valuable agricultural lands which formed over millions of years (Muğla Gelişim Hareketi, 2014c).

One of the planning decisions which had negative consequences was the construction of a marina in Bağlarözü, which is located in close proximity to the ancient city of Knidos. As mentioned before, Knidos is of great historical importance for the SEPA. The decision to build a marina in an area which is a 1st-Degree Archaeological Protection Site may result in more construction in the surrounding area and lead to an increase in pollution as well (Muğla Gelişim Hareketi, 2014d). Unlike large part of the public, the Mayor of Datça had a positive attitude towards the Environmental Plan for the SEPA and stated that it included the necessary protective measures. The mayor argued that although the project had been controversial, the marina planned in Bağlarözü had been on the municipality's agenda for ten years. Furthermore, this marina does not have the scale and capacity of a modern port. He also claimed that it would not be right for Datça to be deprived of modern investments just because it has been declared a protected area. In addition, pollution could be prevented by limiting the capacity of the marina. For this reason, he raised no objections to the planning decision (Muğla Gelişim Hareketi, 2014b).

Another objection from the Chamber of Architects concerns agricultural tourism areas in the region. It stated that the conditions for the construction of agriculture-based rural tourism (agro-tourism) facilities should be explained in more detail. In addition, traditional architecture should be a priority in rural and agricultural areas while combining agriculture and tourism in the region (TMMOB Mimarlar Odası, 2014). In this context, any article in a plan which is not clear enough might cause damage in a naturally and culturally protected area.

Article 5.2.2.7.4 states that in order to develop adequate accommodation in rural settlements to diversify and sustain many activities organized in rural areas such as

eco-tourism, agro-tourism, cultural trips and nature sports is one of the purposes of the Environmental Plan (Tabiat Varlıklarını Koruma Genel Müdürlüğü, 2014). Such decisions are essential for the economic development in rural areas. However, with regard to adequate tourism facilities, the protection of rural potential should be a primary goal. Activities that may disrupt agricultural production (which can already only be conducted in a limited area) and which may create development pressure should not be allowed. It is noteworthy that according to the plan the residential areas in Kızlan, Hızırşah, and Karaköy, which are located close to the center, almost doubled in size. There is a risk of deterioration of the rural texture. However, the Datça Municipality evaluated on this issue and concluded that people from metropolitan cities found living in Datça attractive. Therefore, it is necessary to construct new housing in order to meet the demand. Besides, the mayor stated that if construction

within the SEPA was not allowed, people would build anyway. It would just be more difficult to control this construction (Muğla Gelişim Hareketi, 2014b).

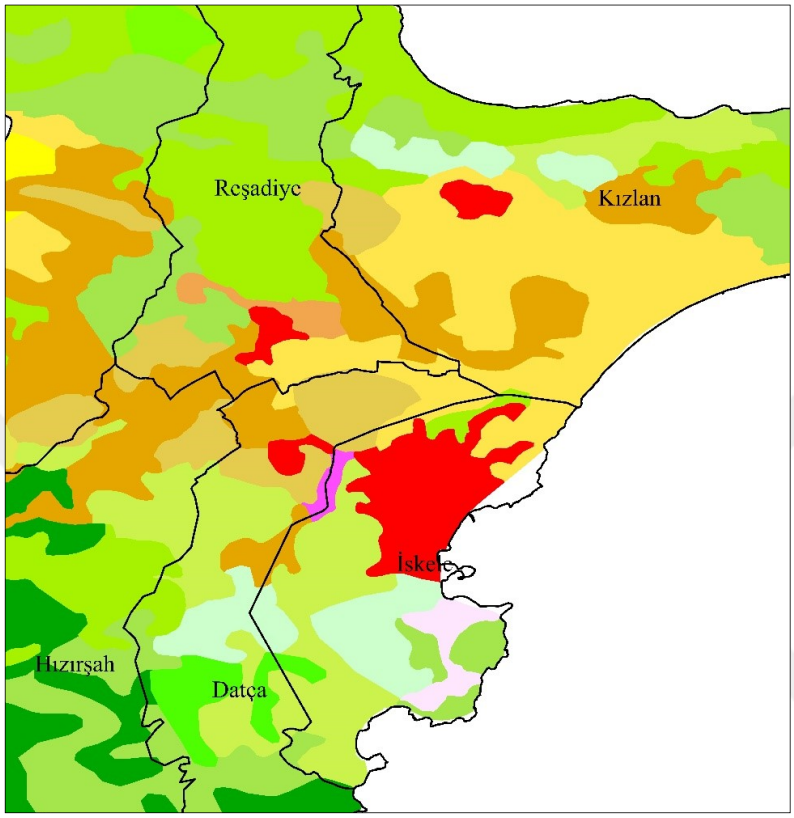


Figure 76: CORINE Land Cover 2018, Datça Central District

Source: (CORINE Land Cover (CLC) 2018, 2019). Map created by the author.

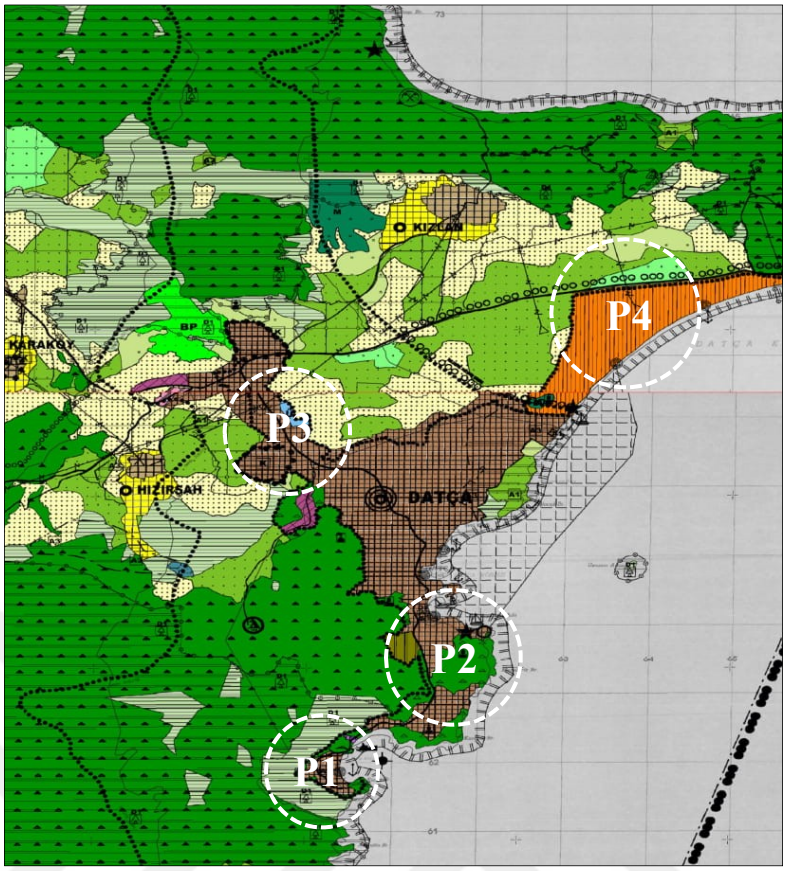


Figure 77: Environmental Plan Decisions 2014, Datça Central District

Source: (İmar ve Çevre Düzeni Planları, Muğla Çevre Platformu (MUÇEP), 2017)

One of the main objections the Chamber of City Planners raised about the plan concerned the planning decisions within the scope of agro-tourism. As stated in Article 4.33 and 4.34, the main aim is to establish areas for rural tourism with a focus on agriculture. The provisions allow for the construction of touristic buildings in these areas. The chamber argued that these decisions about construction pose a threat in terms of converting agricultural areas into secondary residential-like areas that are used for agro-tourism. In its appeal, the chamber emphasized that agricultural areas were opened to construction although there were no legal grounds for that (TMMOB Şehir Plancıları Odası, n.d.). This development may lead to an even further decline in

the size of agricultural land, which is already limited. Allowing for construction on these lands and increasing touristic activities will have a negative impact in the future.

While Figure 76 shows the land cover data from 2018, Figure 77 shows the spatial planning decisions of the 2014 Environmental Plan. Both of them cover the same area, which is the Datça Central District and the neighborhoods in its periphery. The planning decisions that are examined are marked in Figure 77 as P1, P2, P3, and P4. The area obtained by cropping the relevant part of the Environmental Plan is the same area of which the CORINE land cover data was examined in Chapter III. The reason why these two sets of data were compared was to reveal the spatial change which results from the implementation of planning decisions. For this reason, land cover data was used to observe proposed settlement developments in the study area. From a general perspective, this plan envisages spatial development on the north-east, north-west, south, and south-west axes of the urban settlement's border. It is suggested in this plan that the neighborhoods, which were defined as the fringe areas in the third chapter (Old Datça and Reşadiye), will be connected to the urban settlement pattern (Datça Central District) in the future.

Kargı Bay, which is located close to the İskele neighborhood, is opened up for housing construction in the plan map. The bay is a 3rd Degree Archaeological Site with its reeds and wetlands which makes it very valuable for the region. As an archeological site, it is not suitable for urban settlement. Kargı Bay has been a protected area since 1982 and construction is prohibited. The idea of converting this area into an urban settlement in the Environmental Plan has been met with criticism (Muğla Gelişim Hareketi, 2014d). The area marked as P1 shows Kargı Bay, which located close to the İskele neighborhood mentioned above. The map shows that this area, which like the Datça District Center is colored in brown, opened up its boundaries for the construction of new settlements in Kargı Bay. When taking a closer look at the 2018 land cover data it can be observed that the areas which are intended to be opened up to construction are located in the Natural Grasslands.

The area marked as P2 shows the city's development towards the south and then towards the south-west. It can be said that secondary housing and other settlements will become widespread with the proposed development decision for this region. So

far, only a few hotels, secondary residences, and a few other public land-uses can be found here. According to the 2018 land cover data, the land covers in this area are mostly Shrubbery and Sparsely Vegetated Areas. Apart from that, there are also Sport and Leisure Facilities in the same area. Even though there are natural areas which should be protected, the plan proposed a new development axis around them.

P3 shows the connection between the periphery's neighborhood of Reşadiye and the center. Currently, there is a low-density settlement pattern around the road from the center to Reşadiye which disperses around a large area. According to the map, the Reşadiye and İskele neighborhoods are spatially connected to each other. There is a new settlement development suggested nearby the main avenue between these two neighborhoods. This poses a threat to the olive groves in the area in which the new settlements are proposed. Regarding the importance of these olive groves for the region, this decision will likely have negative consequences for the ecological environment.

P4 was declared a Tourism Facility Area. Currently, summer holiday resorts are only covering approximately nine hectares of this area. However, as can be seen on the map, the proposed area for new tourism facilities is wider. According to the land cover data from 2018, in this area, there are Complex Cultivation Patterns that occupy a vast space. Olive Groves ca be found nearby. The proposed wide-ranging tourism facilities would destroy these cultivation patterns and also pose a threat to the nearby olive groves.

While examining the planning decisions, the physical/structural perspective was the second variable (Figure 74). Every administrative decision in spatial plans has a physical impact in the field. Some decisions on the managerial level do not always provide spatial improvement. Their consequences depend on many economic and social dynamics. Within the complexity theory, understanding the physical perspective as a separate variable and considering its consequences during the planning process is critical. The dynamic character of the fringe causes a constant change of its spatial and structural components.

In this part of the study, an examination of planning decisions from a structural perspective was conducted. Two sets of spatial data (CORINE and the Environmental

Plan) were compared in order to reveal the physical changes in Datça's urban fringe. The importance of considering protected site boundaries and the negative consequences of neglecting them were discussed. In addition, the positive and negative aspects of supporting the rural economy through the development of the tourism sector (agro-tourism) were outlined. Besides, the plan contains articles about maintaining the traditional architectural textures, which is a positive aspect. To conclude, it can be said that there must be clear planning decisions and that spatial plans should prevent development pressure.

4.2.3. Social Perspective

After examining the Environmental Plan in a managerial and structural context, in this part the social effects of the plan in the Datça-Bozburun SEPA are discussed. It shows that the decisions made within the scope of the plan have led to different social and economic consequences for the space.

In addition to agriculture, tourism is one of Datça's largest sources of income. These are the most significant sectors for locals both socially and economically. Therefore, planning decisions are expected to support these sectors in the region. In order to do so, the plan intended to combine agriculture and tourism by means of developing agro-tourism. This aim is also reflected in the decisions made within the scope of the plan.

Without diminishing the value of this intention, in this study it is critically examined if the planning decisions could put an economic and social burden on the region. The scope of tourism laid out in the plan may have even forced locals to turn away from the tourism sector. Accordingly, the Chamber of Architects stated that while boutique hotels and local pensions were the typical means of accommodation in the region before, large tourism investments became more widespread with the implementation of the planning decisions. The plan also grants tourism facilities with a size of at least 5 acres the chance to be certified by the Ministry of Culture and Tourism. Such big hotels covering large parcels are becoming more and more common in the region (Muğla Gelişim Hareketi, 2014d). However, obtaining such a certificate is not possible for accommodations run by locals because they are usually of a much smaller size. As a result, the development of tourism is now mostly carried out by large operators

(Muğla Gelişim Hareketi, 2014c). Locals usually only work as maids or waiters in the newly established big hotels and their restaurants.

In the planning decisions it is stated that it is mandatory to construct a pitched roof in accordance with the original architectural features of the buildings in the region. This decision is a notable effort to maintain existing structural elements. It can contribute to increasing the connection of locals to the space and create a sense of belonging.

As mentioned before, the most critical decisions contained in the plan concern agro-tourism. The plan's primary purpose is to combine agriculture and tourism to revive the rural and agricultural potential of the region. This aim is reflected in the planning decisions. However, they could also have a negative impact. On the one hand, increasing tourism in rural areas has the potential to strengthen the agricultural sector. It is beneficial especially to farmers who are still practicing in agricultural production but at the same time want to have an additional source of income. On the other hand, such planning decisions can also lead to a withdrawal of farmers from the agricultural sector. There could be speculations with agricultural land due to their anticipated use for agro-tourism, which is supported by the planning decisions. The idea of selling their land instead of continuing to use it for agricultural production may seem more appealing to farmers from an economic standpoint. Agricultural production would then be transferred to large producers. This development should be avoided.

The social perspective is the last variable in the examination of the planning decisions. Every administrative and physical decision in the plan leads to social changes over time. Managerial, physical, and social values are interrelated to each other. Within the complexity theory, the social aspect is an independent variable. It outlines the consequences of every political and physical decision in the field. Society is a dynamic and continuously changing variable. The social impact of a spatial plan can change even many years after the plan has already been implemented.

In this part of the study, the 1/25.000 scaled Environmental Plan's positive and negative effects were examined from a social perspective. Since during the planning process, opinions from related institutions were not considered sufficiently, there was a lack of participation of the public. Local organizations did not feel included. As suggested in the plan, Articles about supporting the rural economy through the

development of tourism can improve the rural economy. However, they can also lead to the withdrawal of locals from both tourism and agriculture. Besides, when local people are driven out of their agricultural land, the consequence is also that traditional methods of agricultural production will be lost.

CHAPTER 5

CONCLUSION

Over time there has been a shift in urban planning theories from a "traditional" perspective to a more comprehensive "spatial" approach which includes different scales and dimensions. However, this shift by itself could not prevent problems in the ecological system. Ecological issues are even more visible in dynamic and complex systems. In order to resolve these issues, holistic, multi-dimensional, and multi-scalar interventions are required. The urban fringe is one of the most complex systems. Tackling fringe-related problems from a single-dimensional perspective leads to more difficulties in the management of those areas rather than to sustainable solutions.

Throughout this thesis, the concept of the urban fringe has been discussed in a theoretical manner with respect to the assemblage and complexity theories. In addition, the ecological perspective on the urban fringe has also been evaluated on. Moreover, this thesis aimed to reveal interrelated structural components of the urban fringe in Datça within the hierarchical spatial context. It furthermore showed how those components have changed over time between 1990 and 2018. It was also discussed how the spatial plans in Datça have affected the structural change of its urban fringe. This was analyzed based on the case study of Datça in order to understand the impact that the plans have had on the fringe.

Cities develop and expand constantly due to economic progress in those areas. Spatially and socially, urban and rural areas are always defined as two opposite poles. This separation between them also causes conflicts with regard to the strategies for their respective development. Urban fringes are affected the most by this disintegrated development in urban and rural areas. They can neither be described as urban nor as rural because of administrative, physical, and social reasons. However, the ongoing

conflict between urban and rural areas is the most striking in urban fringes. It leads to severe development pressure on the fringes.

Firstly, from an **administrative** perspective, urban fringes are often considered as "neglected" and "forgotten" spaces in literature (A. J. Scott et al., 2013). The reason is that they do not have any status in spatial plans. In the decision-making process, disintegrated planning decisions for urban and rural areas affect the urban fringe the most because they are under pressure from the two poles. One pole are the urban areas which are continuously developing and expanding. The other pole are the rural areas which aim to preserve their traditional pattern. The lack of clear decisions about the fringe makes it even more challenging to manage them.

Secondly, from a **physical** perspective, urban fringes are usually defined either as part of urban or as part rural areas, depending on the approach. The research conducted in this thesis has shown that in literature, these areas are often classified as urban or as rural according to whether their features are urban-dominant or rural-dominant. In some instances, fringes are described as the areas towards which a city grows and in which the borders of a city expand. They are considered to be transition zones in which urban and rural characteristics coexist. Regardless of the large variety of attempts that have been made to define the urban fringe, there is agreement that all urban fringes have to cope with the uncertainty of being neither urban or rural. They can never be a clearly defined pole. Fringes are neither black nor white but rather an infinite shade of gray.

Last but not least, from a **social** perspective, fringes can be differentiated from urban and rural areas by their unique identity and the unique lifestyles that its people have. In some cities, the fringe can be located in a closer distance to the urban area than to the rural area. They can even appear as an integrated part of the city. The closer one gets to the city, the more the urban character and urban land-use prevails. It works the same the other way around: As the distance from the city increases, rural characteristics dominate. To conclude, this shows that fringes are socially heterogeneous and do not only contain urban but also rural characteristics.

Administratively, physically and socially it is difficult to understand and manage the heterogeneous, distinctive, diverse, and complex urban fringes. To generate a better

understanding of such an area and all of its contrasts, in this thesis an approach which combines the complexity theory and the assemblage theory is suggested. Relations between different variables were evaluated on from holistic, dynamic, and multi-dimensional perspectives. In accordance with this approach, different layers and relationships of layers were examined vertically. In addition, the change in the layers and values that emerged from those layers were analyzed horizontally.

Within the scope of this thesis, the Datça district was chosen to conduct the above-mentioned urban fringe studies. Datça is a district of the Muğla province which is located in the Datça-Bozburun SEPA. It is a protected area which has rich natural and cultural values. These values are significant not only regionally but also nationally and make Datça an attraction point for tourists. In addition, there is agricultural production in Datça, especially of olives and almonds. Management of such an area is already difficult. The management of a fringe in such a complex space is even more challenging. The periphery of the Datça Central District has such a complex character and was thus chosen for this study.

An examination of the changes in the fringe of an area with the above-mentioned features is not easy. Urban fringes have a dynamic structure. In fact, these areas can change even before the spatial plans about them are approved. On the one hand, if the necessary conservation precautions are taken, fringes can maintain their natural features. On the other hand, without restrictions to urban development they may turn into urbanized areas. The desired result is the development of a fringe while still preserving its natural and cultural values. In the case examined in this study, this result can only be achieved if urban planners fully understand Datça's importance for the SEPA. This means that its dynamic values need to be examined and considered during the planning process. In order to be able to understand the complex as a whole its different layers (parts) need to be brought together. An assemblage of its parts reveals important structural details that go beyond the individual components that the fringe consists of. In this way, the fringe area can contribute to the city in the long run.

In this thesis, the complex structure of Datça's fringe was examined both time-wise (horizontally) and in a multi-layered manner (vertically) by integrating all existing spatial data. Vertically, spatial data of different scales, namely the territorial and

settlement scales, was examined. Table 1 shows the different layers. Horizontally, spatial data was analyzed to reveal its change over time from the year 1990 to 2018.

Examining the spatial changes in Datça's fringe significantly contributed to this study. It revealed how urban features are taking over in the periphery. The city can be compared to a magnet that is pulling the fringe closer to itself. The fringe neighborhoods of Old Datça, Reşadiye, and Hızırşah are the settlements which are affected the most by this development. Urban features can mostly be observed in close proximity to the center and alongside the main avenue. Commercial land-uses can especially be found at the junction where Old Datça and Reşadiye are connected to the main avenue. There are mostly newly constructed buildings and construction sites in this area. If the urban development in Datça continues the same way that it has until now, Old Datça, which is the closest neighborhood to the city center, will eventually become a part of the city.

In this study, the change in nature caused by the human factor was examined. Potential changes in the Datça Central District and its surroundings which could be caused by the development of the fringe were evaluated on. In terms of keeping the balance between protecting and using the land, Old Datça and Reşadiye became gentrified not only because of external development but also because of internal migration. Therefore, urban-focused land-uses can be seen in the area. Although the farms in Reşadiye caused gentrification in the neighborhood, they also provided physical and natural protection in terms of agricultural production. In order to protect the natural, cultural, and social texture of Old Datça, it is necessary to take precautions against the gentrification that occurs here. The aggressive transformation in the fringe destructs the center's organic pattern. In the future, gentrification will likely be seen in Reşadiye and Kızlan as well. Planning decisions also support this development. The poor road connection from Hızırşah to the Datça District Center serves as a buffer between the neighborhood and the growing city. There is a balance in terms of protection and use. With the spatial plans, social and economic development should be ensured in this area. Planning decisions that could lead to gentrification should be avoided.

The case study revealed that although traditional settlement patterns still exist in Old Datça and Reşadiye, those neighborhoods could not wholly preserve their rural

structure. Among the three fringe neighborhoods, Hızırşah is the one that has the most well-protected rural pattern. Unlike Old Datça and Reşadiye, it is not located in close proximity to the district center and is not directly connected to it by road. This physical distance to the center has helped Hızırşah to preserve its rural character.

The characteristics of all fringe neighborhoods differ. In light of this, Old Datça can be considered as the urban-rural fringe or the periphery of the Datça Central District. In comparison, Hızırşah is rather its rural-urban fringe.

In this study, the fringe's different layers and the change in its data over time were examined. Moreover, the impact of the planning decisions about the region were analyzed from administrative, physical, and social perspectives. The three following questions were answered: What are the interrelated structural components of Datça's urban fringe within the hierarchical spatial context? How have the structural interrelations within the fringe changed between 1990 and 2018? And how have the spatial plans for Datça affected structural change of its fringe?

From a theoretical perspective, this study offers a different point of view when compared to existing urban fringe studies and spatial planning approaches. It follows a unique methodology. In accordance with this methodology, a multi-layered and complex area like the fringe is integrated with a surrounding larger territory (Datça and the SEPA) in terms of hierarchy and time. Therefore, instead of looking at the fringe separately from its surrounding environment, it is rather analyzed as a part of this environment. This integration facilitates the understanding of the fringe's complexity and its development over the years.

During a planning process, policymakers should take this holistic approach into account while deciding about the future of a city and especially its urban fringe. Planning processes should be considered as a whole and not only an accumulation of its individual components (whether spatial or not). The change of those components over time must also be paid attention to. Ensuring this integration facilitates the understanding of complex spatial problems.

The conflict between urbanization and the protection of the natural environment is so complicated that it cannot be resolved with a unidirectional approach. It also plays an

important role for cities. So far, there has been a lack of adequate planning approaches that tackle the issue. In the future, a more comprehensive and multi-layered perspective is needed which combines the ideas of the complexity theory and the assemblage theory. This includes collecting, analyzing, and synthesizing the necessary data about the different layers. To ensure both development and conservation simultaneously in the Datça-Bozburun SEPA, such a planning approach should already have been followed. Since Datça is a small-scale district with a traditional pattern and a natural environment, it is different from metropolitan cities. However, planning theories are for the most part focusing on large cities. They are not suitable for Datça due to its smaller scale, its dynamics and the values in the district.

In this thesis, the Datça-Bozburun SEPA was examined on a territorial and on a settlement scale. For additional research about Datça's fringe, it would be beneficial to conduct a further analysis on an intra-settlement scale. The examination of decisions about conservation and land-use on a building-street scale would bring a new perspective to this research. In addition, the fringe's complexity could be evaluated on further on this scale. The examination of this additional scale in the periphery would expand the scope of this study and facilitate a better understanding of its structure.

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APPENDICES

A. TURKISH SUMMARY / TÜRKÇE ÖZET

Kentsel ve kırsal alanlar geçmişten günümüze hem mekânsal hem de sosyal açılardan birbirine zıt iki kutup olarak tanımlanmışlardır. Bu iki alan arasındaki ayrışma söz konusu alanların gelişim politikalarında da zıtlıklar ortaya çıkarmıştır. Kentsel alanlar ve kırsal alanlar arasında süregelen çatışma en çarpıcı şekilde kent çeperinde ortaya çıkar. İdari, fiziksel ve sosyal sebeplerden ötürü ne kır ne de kent olarak tanımlanamayan bu alanlar kentlerin gelişme baskısından doğrudan etkilenirler. Her ne kadar teorik olarak kentsel planlama yaklaşımlarında biçimsel tasarım konularına odaklanan "geleneksel" bir perspektiften, bütüncül, çok boyutlu ve çok ölçekli perspektifleri, planlama politikalarını ve çeper uygulamalarını içeren daha "mekânsal" bir yaklaşıma doğru kayma olsa da planlama yaklaşımları hala sıklıkla mevcut ekolojik sistemde çatışmalara neden olmaktadır. Bu durum, özellikle karmaşık, heterojen ve dinamik bir yapıda işleyen kent çeperleri için bir sorun olarak ortaya çıkmaktadır.

Buradan yola çıkarak, bu çalışmanın amacı, kent çeperinin kendine özgü yapısını karmaşıklık teorisini çerçeve alarak Datça-Bozburun Özel Çevre Koruma Bölgesi sınırları içinde yer alan Datça ilçesi özelinde incelemektir. Kentsel planlama yaklaşımlarında çeper alanı ile ilgili sorunlar genellikle tek boyutlu ve kapsamlı olmayan bir bakış açısıyla ele alınmaktadır. Ancak çeper alanının kendi içinde sürekli değişen yapısı birçok dinamik değişkeni de beraberinde getirmektedir. Bu değişken ve heterojen yapıyı göz ardı eden teorik tanımlamalar, çeper alanının sahip olduğu değerleri anlamak konusunda yetersiz kalmaktadır. Bu çalışmada, çeper alanının heterojen, dinamik ve karmaşık yapısı hiyerarşik, yatay ve dikey ilişkileri birlikte inceleyen süreçsel bir pratikle ele alınmıştır. Analiz çalışmaları hiyerarşik olarak "bölgesel bağlam" ve "yerleşim bağlamı" olmak üzere iki ölçekte yürütülmüştür. Dikey eksende Datça'da yer alan sosyo-ekonomik ve mekânsal bileşenlerin birbirleri

ve çeper alanıyla olan ilişkileri incelenirken, yatay eksende ise bu bileşenlerde zaman içinde meydana gelen değişim analiz edilmiştir.

Analiz çalışmalarında ikincil veriler kullanılmış, CBS uygulamaları aracılığıyla verilerin mekânsal analizi gerçekleştirilmiştir. Bu çalışma, çeper kavramının anlaşılmasına ve çeper alanlarında uygulanması gereken mekânsal planlama yaklaşımlarına yönelik mevcuttan farklı bir bakış açısı ve yöntem sunmaktadır. Bu yöntem yardımıyla, çok katmanlı ve karmaşık çeper alanını hem hiyerarşik olarak ve hem de zamansal olarak daha geniş çevresine (kente) entegre etmek mümkündür. Bu entegrasyon, kent çeperinin karmaşıklığını ve yıllar içindeki değişimini anlamayı kolaylaştırır.

Çeper alanı kapsamındaki literatür çalışmaları, söz konusu alanı tanımlamak amacıyla birbirinden farklı kavramların kullanıldığını göstermektedir. Farklı yıllarda birbirinden farklı araştırmacılar tarafından yapılan çalışmalarda ortaya çıkan çeper tanımları her ne kadar birbirinden tamamen farklı olmasa da, "çeper" tanımlamalarının tek bir çatı altında toplanmasını zorlaştırmaktadır. Çeper alanları için yapılan bu tanımlamaların çoğunlukla büyük ölçekli (metropol) kentler için geçerli olduğu göz ardı edilmemelidir. Bu çalışma kapsamında bulunan çalışma alanı Datça-Bozburun Özel Çevre Koruma Bölgesi içinde yer alan Datça ilçesidir.

Çalışma alanı, hem bölgesel hem de ulusal açıdan önem taşıyan zengin doğal ve kültürel değerlere sahiptir. Bu değerler nedeniyle Datça, yerli ve yabancı turistler için Türkiye'nin çekim noktalarından biridir. Turizme ek olarak bölgede bulunan tarımsal üretim de yerel halk için öneme sahiptir. Datça gibi ulusal düzeyde öneme sahip değerleri olan bir kentin yönetimi ve planlanması zorlu bir süreçtir. Böyle bir kentin çeper alanının anlaşılması ve planlanması ise daha da karmaşıktır. Bu nedenle, Datça'nın kent çeperi bu tez kapsamındaki çalışma alanı olarak belirlenmiştir. Çeper kavramını daha anlaşılır kılmak için araştırmacılar tarafından yapılan farklı tanımlamalar idari, fiziksel ve sosyal olmak üzere üç farklı perspektifte ele alınmıştır.

İlk olarak mekânsal planlarda herhangi bir statüye sahip olmamaları nedeniyle çeper alanları literatürde idari açıdan "göz ardı edilmiş" ve "unutulmuş" alanlar olarak

tanımlanmıştır. Mekânsal planların karar verme ve yapım süreçlerinde kentsel alanlar ve kırsal alanlar için verilen ayrışmış plan kararları en çok kent çeperlerini etkiler. Bu alanlar, bir tarafta sürekli gelişme eğiliminde olan kentler, diğer tarafta ise geleneksel dokusunu korumaya çalışan kırsal alanlar arasında ikilemde kalır. Bu durum da çeper alanlarında baskıya neden olur. Dolayısıyla, özellikle çeper alanları ile ilgili planlama kararlarının bulunmaması ve yasal statülerin yer almaması nedeniyle bu alanların yönetimi zorlaşmaktadır.

İkinci olarak, çeper alanları, fiziksel olarak bu alanlarda uygulanan planlama yaklaşımlarında bağlı olarak kır ya da kentle ilişkili olarak tanımlanırlar. Literatürde çeper alanları için yapılan tanımlamalar, alandaki kentsel veya kırsal özelliklerin baskın olma durumuna göre değişkenlik göstermektedir. Çeper, bazı durumlarda kentin büyüme şekli veya sınırlarının genişlemesi durumu olarak ifade edilmektedir. Bazı durumlarda ise kentten bağımsız olarak gelişen, kentsel ve kırsal özelliklerin bir arada var olduğu geçiş alanları olarak tanımlanırlar. Ancak her durumda çeper alanları belirsizliklerin hüküm sürdüğü alanlar olarak ortaya çıkmaktadır. Bu alanlar hiçbir zaman siyah ya da beyaz gibi net olarak tanımlanamamaktadır. Bu alanlar ancak grinin farklı tonları olarak ifade edilebilmektedir.

Son olarak çeper alanları sosyal açıdan kente ve kıra ait özellikler taşısa da sahip olduğu özgün kimlik ve bu alanlarda yaşayanların sahip olduğu özgün hayat tarzı nedeniyle kentsel ve kırsal alandan ayrışmaktadır. Çeper olarak bahsedilen alanlar bazı durumlarda kentsel alana kırsal alana olduğundan daha yakın mesafede bulunabilir. Hatta neredeyse kentle bütünleşmiş olarak ortaya çıkabilirler. Bu durumda çeperin kente olan uzaklığı azaldıkça bu alandaki kentsel karakter ve kente ait kullanımlar baskınlık gösterir. Bunun tersi de aynı şekilde doğrudur: Çeperin kente olan mesafesi arttıkça sosyo-ekonomik açıdan kırsal özellikler baskınlık gösterir. Bu alanlar sosyal açıdan da heterojen yapıdadır.

Çeper alanlarının idari, fiziksel ve sosyal açılardan heterojen, kendine özgü, çeşitli, değişken ve karmaşık yapıda olması bu alanların anlaşılmasını ve yönetilmesini zorlaştırır. Bu derece zıtlıkların bir arada olduğu bir çatışma alanının karmaşık yapısını çözümlemek için bu çalışma hem yatay hem de dikey ilişkileri birlikte ele alan bunu

yaparken de karmaşıklık teorisinden faydalanan kapsamlı, dinamik ve çok boyutlu yöntemsel bir yaklaşım önerisi getirir. Bu yaklaşıma göre dikey eksende birbirinden farklı katmanlar ve katmanlar arası ilişkiler incelenirken, yatay eksende ise bu katmanların zaman içindeki değişimleri ve ortaya koydukları değerler incelenir.

Datça gibi sosyo-kültürel, tarihi ve doğal değerlere sahip bir alanın çeperinin incelenmesi karmaşık bir süreçtir. Kent çeperleri dinamik yapıya sahip ve sürekli değişim içinde olan alanlardır. Hatta bu alanların hazırlanan mekânsal planlar onaylanmadan bile değiştiği durumlar söz konusu olabilmektedir. Bir yandan gerekli koruma önlemleri alınırsa çeper alanları sahip oldukları doğal karakteri koruyabilirler. Öte yandan kentsel gelişim kısıtlaması olmaksızın kentleşmiş alanlara dönüşebilirler. Ancak bu alanlarda gerçekleşmesi istenen asıl sonuç, çeper alanlarının doğal ve kültürel değerlerini korurken aynı zamanda da gelişmeye devam etmesidir. Datça örneğinde ise bu sonuca ancak karar mercilerinin ve plancıların Datça'nın Özel Çevre Koruma Bölgesi için önemini tam olarak anlamasıyla ulaşılabilir. Bu amaca ulaşabilmek için de alanın dinamik değerlerinin planlama sürecine dâhil edilmesi ve detaylı olarak incelenmesi gerekmektedir. Karmaşık bir bütünün anlaşılabilmesi için birbirinden farklı parçaların bir araya getirilmesi gerekir. Farklı parçalardan oluşan bu birliktelik, kendini oluşturan parçaların ötesinde bütüne dair önemli detaylar ve yapısal ayrıntılar sunar. Böylelikle kentin çeperi uzun vadede kent bütününe katkı sağlayabilir.

Bu tezde, Datça merkez ilçesinin çeper yapısı, mekânsal verilerin analiz edilmesiyle hem zamansal açıdan (yatay) hem de çok katmanlı (dikey) bir şekilde incelenmiştir. Dikey olarak, bölgesel ve yerleşim ölçeği olmak üzere iki farklı ölçekteki konumsal veriler incelenmiştir. Yatay olarak ise, mekânsal verilerin 1990'dan 2018'e kadar zaman içindeki değişimi analiz edilmiştir.

Datça'nın çeperindeki mekânsal değişimlerin incelenmesi, kentsel özelliklerin çeper alanına nasıl yansıdığını göstermektedir. Kentler, çeper alanlarını kendilerine çeken bir mıknatısa benzetilebilir. Eski Datça, Reşadiye ve Hızırşah mahalleleri Datça'nın kent merkezinde yaşanan gelişmelerden en çok etkilenen yerleşim yerleri olarak ortaya çıkmıştır. Bu mahallelerdeki kentsel özellikler daha çok merkeze yakın yerlerde ve ana cadde boyunca görülmektedir. Ticaret amaçlı kullanılan alanlar özellikle Eski

Datça ile Reşadiye'nin ana caddeye bağlandığı kavşakta ortaya çıkmaktadır. Bu alanda çoğunlukla yeni inşa edilmiş binalar ve şantiye alanları bulunmaktadır. Buradan yola çıkarak, Datça'daki kentsel gelişimin şimdiye kadar olduğu gibi devam etmesi durumunda, kent merkezine en yakın mahalle olan Eski Datça'nın kent ile bütünleşeceği gözlemlenmektedir.

Eski Datça ve Reşadiye mahallelerinde geleneksel yerleşim dokusu görülmekle birlikte, bu mahallelerin kırsal yapılarını tam olarak koruyamadıklarını görülmektedir. Datça kent merkezinin çeperinde yer alan üç mahalle arasında Hızırşah, kırsal dokusu en çok korunmuş mahalledir. Kent merkezine Eski Datça ve Reşadiye'den görece daha uzak mesafede bulunmakla birlikte merkez ile doğrudan karayolu bağlantısı bulunmamaktadır. Merkezle Hızırşah arasında bulunan mesafe, bu mahallenin kırsal karakterini korumasındaki en büyük etkenlerdendir.

Eski Datça, Reşadiye ve Hızırşah yerleşim dokuları ve toplumsal yapıları nedeniyle uzun yıllar boyunca geleneksel özellikleri ile ön plana çıkmıştır. Eski Datça'nın sosyal yapısı özellikle 1980 yılı sonlarına doğru artan ikincil konular ve Türkiye'nin doğusundan gelen göç ile birlikte değişmeye başlamıştır. 1990 yılı sonlarına doğru ise Can Yücel'in Datça'ya yerleşmesi ile birlikte Eski Datça da dâhil olmak üzere Datça'nın Türkiye içindeki tanınırlığı artmış oldu. Eski Datça, büyükşehirlerden gelenlerin koruma koşullarına da uyarak taş ve ahşap evler yaptıkları bir yer haline geldi. Bununla birlikte son on yıla kadar Eski Datça'nın geleneksel mahalle yapısı korunmuş oldu. Ancak, son yıllarda, Datça, Ege Bölgesinde yer alan diğer kıyı kentlerinde de olduğu gibi, özellikle İstanbul gibi büyükşehirlerden gelenlerin kaçış noktalarından biri haline geldi. Bu durum kentte soylulaşmaya yol açtı. Kentte yaşanan bu değişim, bu tez kapsamında gerçekleştirilen analiz çalışmalarında da vurgulandığı gibi baskın olarak ticari kullanımların değişiminde kendini gösterdi.

Reşadiye Mahallesi ana yol üzerinden olmasının ve düzlük bir alanda konumlanmasının getirdiği bir avantaj ile kentten gelen yüksek gelir grubunun büyük çiftlikler aldığı ve üretim yaptığı (zeytin, zeytinyağı) bir yer haline geldi. Bununla birlikte, göreceli olarak ilçe merkezine olan uzaklığından dolayı Reşadiye'nin toplumsal yapısı Eski Datça'ya kıyasla daha iyi korunmuştur.

Hızırşah Mahallesinde ise geleneksel Rum köyü yapısının çoğunlukla korunduğu gözlenmektedir. Mahallenin yamaca konumlanmış olması nedeniyle morfolojik olarak yayılarak gelişme için mekânsal alanı dardır. Gelişim alanı kısıtlı olan Hızırşah, dar sokakları ile geleneksel kırsal dokusu hala korunmakta olan bir mahalle niteliğindedir. Son yıllarda mahalleye Datça-Marmaris yolundan sağlanan girişinin kapanmış olması nedeniyle Hızırşah, turistlerin uğrak noktası olan Knidos ve Mesudiye'de yer alan kıyı alanlarına giden yolun üzerinde olma özelliğini yitirmiş oldu. Her ne kadar ilçe merkezi ile doğrudan bağlantısı olmasa da, son yıllarda Hızırşah Mahallesinde de parsel ve bina bazında dönüşüm gözlenmektedir. Bu dönüşüme rağmen mahallede Rum kültürü ve geleneksel yapı hala korunmaktadır. Eski Datça ve Reşadiye Mahallelerine kıyasla kentsel baskının en az hissedildiği mahalledir.

Datça'nın merkezinden başlayıp Eski Datça ve Reşadiye Mahallelerine uzanan ana cadde, çalışma alanı sınırı içindeki kentsel karakteri en baskın olan alan olarak ortaya çıkmıştır. Alanın kentsel karakteri son on yılda meydana gelen gelişmelerin sonucudur. Bu gelişme için iki temel neden gösterilebilir. İlk olarak, yamaçta yer alıyor olması nedeniyle Datça'nın merkezinde kentsel gelişime elverişli alan sınırlıdır. Buna ek olarak, sahil şeridi kent konseylerine, doğa koruma derneklerine ve meslek odalarına üye yerel halk tarafından korunmaktadır. Bu nedenle kentin gelişme alanı sınırlı olarak kalmıştır. Kentsel gelişme daha çok Datça'yı Marmaris'e bağlayan ana cadde boyunca gerçekleşmiştir. İkinci neden olarak ise Datça Merkez ilçesinde yer alan sağlık ocaklarına ek olarak 2017 yılında ana cadde üzerinde inşa edilen hastane gösterilebilir. Hastane inşaatının tamamlanmasının ardından ilçe merkezi ile hastane arasındaki alanda yeni yerleşim yerlerinin inşaatında önemli derecede artış görülmüştür. Önceden herhangi bir amaçla kullanımda olmayan boş arsa üzerine ticari alanlar ile birlikte konut alanları da inşa edilmiştir. Büyük ölçekli bir kamu hizmeti sunan hastane, bölgede yeni inşa edilen binalara olan talebi de artırmıştır.

Eski Datça, Reşadiye ve Hızırşah Mahallelerindeki yapısal değişim karmaşıklık teorisinin de yardımıyla, bu çalışma kapsamında geliştirilen yöntem kullanılarak analiz edilmiştir. Bu bağlamda, çalışma alanı içindeki mahalleleri sınıflandırmak için kentsel-kırsal çeper ve kırsal kentsel çeper olmak üzere iki farklı çeper tanımlaması

yapılabilir. Birincisi, mevcut yerleşim yerlerinin yoğunluğunu kendi sınırları içinde tutmayı hedefleyen bir alandır. Bununla birlikte, bu alan kentsel gelişme baskısı nedeniyle en erişilebilir eksene doğru büyüme göstermektedir. Bu eksende genellikle kentsel bir desen oluşturmaktadır (kentsel-kırsal çeper). İkincisi ise koruma alanı statüsü sayesinde geleneksel dokusunu korumaktadır. Bu alanda bulunan kırsal kimlik çoğunlukla korunmuş olmakla birlikte kentsel özellikler fiziksel ve sosyal açılardan alandaki etkisini giderek artırmaktadır. Kentsel karakter kırsal alanda baskın hale gelmektedir (kırsal-kentsel çeper). Bunun ışığında Eski Datça, kentsel-kırsal çeper ya da kent çevresi olarak düşünülebilir. Buna karşılık Hızırşah Mahallesi kırsal-kentsel çeper özelliği göstermektedir.

Eski Datça, geleneksel dokusu oldukça iyi korunmuş bir alan olarak anılmaktadır. Ancak bu çalışma kapsamında yapılan analizlere göre bu durum sorgulanabilir niteliktedir. Sosyal açıdan, işçilerin ve sanatçıların göç etmeye başlamasıyla birlikte bu alan 1990'lardan itibaren dönüşmeye başlamıştır. Göç hareketinin sonunda da Eski Datça'da yoğun bir soylulaşma gözlemlenmektedir. Hızırşah Mahallesinin merkez ile olan zayıf yol bağlantısı nedeniyle kırsal kimliği korunmaktadır. Buna rağmen, bu mahallede de dönüşüm, parsel ve bina bazında görülebilmektedir. Hızırşah için eskiden yerel bir dezavantaj olan yol bağlantısı kırsal kimliğin korunmasında bir avantaj haline gelmiştir. Reşadiye Mahallesinde ise Eski Datça ve Hızırşah Mahallelerine kıyasla daha dengeli bir kentsel-kırsal gelişmeden bahsetmek mümkündür. Burada yer alan çiftlikler ve ticari alanlar ilçe geneli için önemli arazi kullanımlarındandır. Bu alan, geleneksel fiziksel ve sosyal yapısını nispeten koruyabilmiş bir yerleşim alanıdır.

Doğal ve kültürel koruma kapsamında yapılan düzenlemeler ve koruma statüleri, söz konusu bölgelerdeki kontrolsüz kentsel büyümeyi sınırlama konusunda önemli rol oynamaktadır. Özellikle dışarıdan gelen toplumsal baskı nedeniyle dönüşen kentler, kendine özgü özelliklerini hızla kaybedebilmektedir. Kentsel gelişme ve bu gelişmenin doğru yönetilememesi doğal çevreyi zayıflatabilen etkenler haline gelebilmektedir. Koruma ilkelerinin sağlanması kentsel gelişmenin sınırlandırılabilmesi için etkili bir yöntemdir. Biyoçeşitlilik açısından zengin olan ve yasal kısıtlamalar ile kentsel büyümesi kısıtlanmış alanlar koruma ilkelerinin

uygulanmasının teşviki hususunda diğer kentler için örnek teşkil eden alanlardır. Sürekli genişleyen yerleşim yerleri, yakın mesafede bulunan kentsel büyüme ekseni üzerinde gelişme baskısına neden olmaktadır. Bu eksen de genellikle çeper alanlarından geçmekte ve bu alanlarda dönüşüme neden olmaktadır.

Sonuç olarak, dönüşüm gerçekleşmiş olan bir çeper alanı genellikle birçok bileşenin etkileşiminin bir sonucudur. Özellikle kentsel bileşenler çoğu durumda diğerler bileşenlere kıyasla daha baskındır ve bu nedenle doğal çevreyi değiştirme potansiyeline sahiptir. Bu şekilde gerçekleşen kontrolsüz dönüşümlerin önüne geçilmesi amacıyla bu tez kapsamında önerilen metodolojiye dayalı bir mekânsal planlama süreci yürütülmelidir. Bu süreçte planlanan alanın tüm bileşenleri ve dinamikleri dikkate alınmalıdır. Kent-kır dengesinin sağlanması kapsamında idari, fiziksel ve sosyal tüm bileşenler alana özgü olarak değerlendirilmelidir. Ayrıca, planlama sürecinde planlama alanı içinde yer alan her bir bileşenin gereksinim duyduğu stratejiler ve politikalar ortaya konmalıdır.

Bu çalışma kapsamında, alanda yer alan bileşenlerin mekânsal analizlerine ek olarak Datça-Bozburun Özel Çevre Koruma Bölgesi için hazırlanmış olan 1/25.000 ölçekli Çevre Düzeni Planı incelenmiş ve çeper alanına etkisi olabilecek planlama kararları detaylı olarak değerlendirilmiştir. Buna göre, söz konusu planlama kararlarının mekânsal odaklı yaklaşımı ortaya çıkmaktadır. Özellikle idari ve fiziksel açılardan alınan plan kararlarında mekânsal odaklı yaklaşım ön plana çıkmaktadır. Bunun yanında ekolojik değerleri ve mekânsal sorunları bir arada değerlendiren yaklaşımlar açısından planda eksiklikler gözlemlenmektedir.

Planlama kararları çeper alanında neden olabileceği idari, fiziksel ve sosyal etkilere göre incelenerek kararların pozitif ve negatif etkileri değerlendirilmiştir. Mevcut planlama yaklaşımlarındaki en büyük eksiklerden bir tanesi planlama alanlarının kendine özgü özelliklerinin ve değerlerinin göz önünde bulundurulmadan plan hazırlama sürecinin yürütülmesidir. Planlama alanında yer alan özgün değerler özgün müdahale yöntemlerini gerekli kılmaktadır. Herhangi bir kentte daha önceden uygulanmış bir plan kararının aynı şekilde bir başka kentte başarıya ulaşması beklenmemelidir. Datça'nın doğal, kültürel ve tarihi olarak ulusal ölçekte önemli

değerlere sahip olması nedeniyle mekânsal plan yapım sürecinde alanın tüm özgün değerleri farklı ölçeklerde ve zamansal olarak değişimleri de göz önünde bulundurularak değerlendirilmelidir. Ancak bu şekilde planlama alanını bütünüyle anlamak ve alana yönelik çözüm önerileri getirmek mümkündür.

Datça-Bozburun Özel Çevre Koruma Bölgesi için hazırlanmış olan planın öncelikli amacı olarak belirtilen "bölgenin var olan kapasitesinin ortaya konulması ve bunun geliştirilmesi, kaynakların rasyonel kullanılmasıyla hem kırsal kalkınmanın hem de bölgedeki tarihi kültürel değerlerin, ekolojik dengenin ve eşsiz doğal güzelliklerinin korunmasının sağlanması"[3] nın plan kararlarına aynı şekilde yansımadığı gözlemlenmektedir. Her ne kadar bölgedeki tarımsal potansiyelin turizm ile birleştirilmesi ve bu kapsamda da tarımsal turizmin (agro-turizm) önem kazanması ön görülmüş olsa da bu durumun sonuçları mekânsal ve sosyal açılardan sorunlar ortaya çıkartabilmektedir. Söz konusu plan kapsamında ise bu sonuçlar için herhangi bir öngörüde bulunulmadığı gözlemlenmektedir.

Biyoçeşitlilik, doğa ve kültür açısından oldukça zengin olan bir koruma alanı için hazırlanan Çevre Düzeni Planı hem bölgesel hem de yerel ölçekte yetersiz kalmaktadır. Söz konusu planda baskın bir mekânsal odaklı perspektif bulunmaktadır. Bu bakış açısı, ekolojik ve kültürel değerlerle korunan ve aynı zamanda gelişen bir alan için yeterli değildir. Böyle bir alan için hazırlanan planın bölgenin kendine has özelliklerini göz önünde bulundurması ve alana özel özgün yaklaşımlar geliştirmesi beklenmektedir.

Ayrıca, Çevre Düzeni Planında farklı planlama kararları arasında uyuşmazlıklar da gözlemlenmektedir. Her bir plan kararı, planlama alandaki mevcut olan değerleri ve gelecekteki gelişmeleri derinden etkiler. Kent için olumlu sonuçlar elde etmeyi hedefleyen bir plan kararı mekânda fiziksel ve sosyal açılardan olumsuz sonuçlara yol açabilmektedir. Bu nedenle, planlama kararlarına tek bir perspektiften bakmak yerine

[3] Datça-Bozburun Özel Çevre Koruma Bölgesine Ait 1/25.000 Ölçekli Çevre Düzeni Planı Revizyonu Plan Hükümleri Birinci Madde

bütüncül olarak alanda kısa ve uzun vadede neden olabilecekleri etkileri de hesaba katan kapsamlı bir değerlendirme yapmak gerekmektedir. Ayrıca, farklı planlama kararlarını birbirleriyle karşılaştırmak ve söz konusu kararlar arasındaki çelişkili hususları ortaya çıkarmak bütüncül bakış açısı için faydalıdır. Datça-Bozburun Özel Çevre Koruma Bölgesi Çevre Düzeni Planından örnek vermek gerekirse, bölgedeki agro-turizmi geliştirme kararı, kırsal ekonomiyi canlandırarak kentsel-kırsal entegrasyonu sağlama yönünde önemli bir adım olarak değerlendirilebilmektedir. Ancak bu karar aynı zamanda kırsal alanlarda kentsel gelişme baskısına ve tarım arazilerinde spekülasyona neden olabilecek niteliktedir. Bu durum, tarım sektöründe çalışmakta olan yerel halkın sektörü terk etmesine ve geleneksel yöntemlerle devam etmekte olan tarımsal üretimin zaman içinde kaybolmasına neden olabilecektir. Kırılgan ve değişken yapısı nedeniyle bu gibi plan kararlarının neden olduğu çatışmalar özellikle çeper alanlarında ortaya çıkmaktadır.

Bu çalışmada, çeper alanında yer alan farklı katmanların ve verilerin zaman içindeki değişimi incelenmiştir. Ayrıca bölge ile ilgili planlama kararlarının etkisi idari, fiziki ve sosyal açılardan analiz edilmiştir. Bu kapsamda üç soru cevaplanmıştır: Hiyerarşik mekânsal bağlamda Datça'nın çeperinde yer alan birbiriyle ilişkili yapısal bileşenler nelerdir? Çeper alanındaki yapısal ilişkiler 1990-2018 yılları arasında nasıl değişmiştir? Datça için hazırlanan mekânsal planlar, çeperde gerçekleşen yapısal değişimi nasıl etkilemiştir?

Teorik açıdan bakıldığında, bu çalışma, mevcut çeper çalışmaları ve mekânsal planlama yaklaşımlarına kıyasla farklı bir bakış açısı sunmaktadır. Bu kapsamda da özgün bir yöntem içermektedir. Bu yönteme uygun olarak, çeper gibi çok katmanlı ve karmaşık bir alan, hiyerarşik olarak ve zaman açısından kendisini çevreleyen daha geniş bir bölge (Datça ve Özel Çevre Koruma Bölgesi) ile entegre edilmiştir. Bu nedenle çeper alanının incelenmesi kapsamında kent ve bölge genelinden izole bir bakış açısı yerine kentin ve bölgenin bir parçası olarak çeper alanı incelenmiştir. Bu entegrasyon, çeperin karmaşıklığının ve yıllar içindeki gelişiminin anlaşılmasını kolaylaştırır.

Planlama sürecinde, politikacılar ve karar mercileri bir kentin geleceğini ve özellikle kent çeperlerini etkileyecek kararlar verirken bu çalışmada bahsedilen bütüncül yaklaşımı dikkate almalıdır. Mekânsal olsun ya da olmasın kentte yer alan bileşenler bireysel olarak düşünülmemelidir. Planlama süreçleri bir bütün olarak ele alınmalıdır. Bu bileşenlerde zaman içinde meydana gelen değişiklikler de planlama sürecinde dikkate alınmalıdır. Bu entegrasyonun sağlanması, karmaşık mekânsal problemlerin ve alanların anlaşılmasını kolaylaştırır.

Kentleşme ile doğal çevrenin korunması arasındaki ikilem tek yönlü bir yaklaşımla çözülemeyecek kadar karmaşıktır. Bu ikilemde dengenin sağlanması kentlerdeki sürdürülebilir gelişmenin sağlanmasında önemli rol oynar. Şimdiye kadarki planlama yaklaşımlarında, plan yapılan bölgenin sahip olduğu benzersiz karakterlerin dikkate alınmaması eksikliğe neden olmuştur. Gelecekte yapılacak olan planlarda, karmaşıklık teorisinin mekânsal planlama ile ilgili sunduğu ipuçlarını dikkate alan, daha kapsamlı ve çok katmanlı bir perspektife ihtiyaç vardır. Bu perspektif, farklı katmanlar hakkında verilerin toplanmasını, analiz edilmesini ve sentezlenmesini içermektedir. Datça-Bozburun Özel Çevre Koruma Bölgesinde hem kalkınmayı hem de korumayı aynı anda sağlamak için böyle bir planlama yaklaşımının izlenmiş olması gerekirdi. Datça, geleneksel bir dokuya ve doğal bir çevreye sahip küçük ölçekli bir ilçe olduğu için büyükşehirlerden farklı karakteristiğe sahiptir. Metropol kentler için geliştirilmiş olan genel planlama teorileri küçük ölçekli ve kendine özgü dinamikleri olan Datça için uygun değildir.

Bu tezde, Datça ilçesi bölgesel bağlam ve yerleşim bağlamında incelenmiştir. Datça'nın çeper alanıyla ilgili araştırmalara devam edilmesi kapsamında yerleşim içi ölçekte analiz çalışmalarına devam edilmesinin faydalı olacağı değerlendirilmektedir. Koruma alanları ve arazi kullanımı ile ilgili alınan kararların bina-cadde ölçeğinde incelenmesi bu araştırmaya yeni bir bakış açısı daha getirecektir. Ek olarak, çeper alanının karmaşıklığı yerleşim içi ölçekte daha da detaylı incelenebilecektir. Bu ölçeğin incelenmesi, çalışmanın kapsamını genişletecek ve Datça'nın çeper alanı yapısının daha iyi anlaşılmasını sağlayacaktır.

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