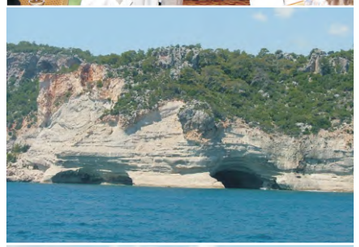

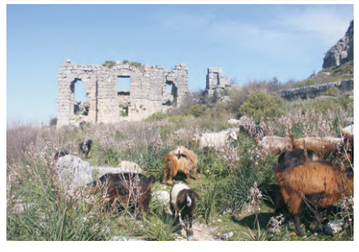

Lifelong Learning Programme

LE:NOTRE III

Antalya's Landscape

LE:NOTRE Landscape Forum 2012

Edited by:
Richard Stiles, Veli Ortaçeşme, Sophia Meeres, Harlind Libbrecht, Simon Bell, Jeroen de Vries

LE:NOTRE III

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Since its inception, the Network has involved some 250 university landscape architecture departments initially from Europe and subsequently worldwide.

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LE:NOTRE Landscape Monographs

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Chapter 1

Introduction

Richard Stiles

1.1 Designing the LE:NOTRE Landscape Forum

Antalya's Landscape (This volume) is the tangible outcome of the first LE:NOTRE Landscape Forum, which was held over four days in April 2012 and hosted by the Department of Landscape Architecture at Akdeniz University. The Forum was the result of an attempt to develop a new kind of academic meeting – one which differed fundamentally in form and approach from the familiar model of the traditional academic conference – and so before introducing this publication in more detail, it is perhaps important briefly to outline the nature, origins and ideas behind the Forum which gave rise to this volume.

Even if it was to be the first of a new kind of event, the Antalya Forum was also the penultimate annual event of the LE:NOTRE[1] Project, which has run as an academic Network Project co-funded by the European Union since 2002 and is due to come to an end in 2013. Previous incarnations of the annual Network meeting had experimented with various formats, but these were mostly variations on the theme of workshops focussing on making progress in developing the formal project outputs. While this may have made sense within the internal logic of the project, it became increasingly unsatisfactory as an approach, with the 'outputs' seeming to become an end in themselves rather than a means to the broader and longer term goal of developing closer cooperation and collaboration within the discipline across Europe and indeed internationally.

Therefore, with a view to starting to secure the achievements of the project for the future, beyond the official end of the project funding period, it was felt that the new format of the meeting should put the landscape itself at the centre of its activities. So, in reflection of all good landscapes, the event was conceived to take the form of a dialogue between people and place, with considerable importance also being given to intensifying the dialogue between the people taking part in the meeting.

'Never enough time for discussion' is a common criticism which is heard of many if not most academic conferences. Participants tend to spend much of their time sitting and being 'presented at' by colleagues who, despite this, never really seem to have enough time to elaborate upon the ideas presented in their papers, while they sit and wait to make their own modest contribution to this process. Many words and much paper result, but the amount of meaningful communication which takes place is often very limited. Frequently the most interesting and productive discussions are the spontaneous ones which take place during the coffee and lunch breaks.

The concept for the LE:NOTRE Landscape Forum sought, therefore, to change all this by reversing the existing situation and putting discussion, dialogue and discourse at the centre of the meeting. There would be no formal presentation of papers apart from a limited number of selected 'keynotes', while the discussion would be initiated in the context of a series of 'round tables' in which invited 'experts' would take part. Both the keynote presentations and the round tables would be based around one of four broad generic landscape themes, which were chosen to provide an overall structure both for the Antalya meeting, but also for future events. These themes were also the basis for four thematic working groups, for one of which each Forum participant was expected to register.

The second 'unique selling point' of the new Forum concept was that its fundamental purpose should also be diametrically opposite to that of the traditional conference. Traditional conferences are devoted in large part to the presentation and (if there is ever time!) discussion of end products, results and outcomes. The LE:NOTRE Landscape Forum, by contrast, would aim to makes its contribution at the other end of the process – in helping to provide a stimulating and creative environment which would help to generate and develop new ideas for research projects; teaching approaches and collaborations.

1 The LE:NOTRE Project is a 'Thematic Network' in landscape architecture, which has been co-funded by the European Union since 2002, as part of its ERASMUS and subsequently Lifelong Learning Programmes. Since its inception, the Network has involved some 250 university landscape architecture departments initially from Europe and subsequently worldwide.

The third characteristic component, the 'place' element, would be provided by the local landscape at the location where the event was held. This would be explored directly through a series of field visits. As already mentioned, the 'people' component was to be focussed around four thematic working groups, in the context of which participants at the Forum would engage in a process of dialogue and discussion relating to different aspects of the four selected landscape themes – education, research and innovative practice – in each case in relation to the local landscape. Furthermore the dialogue and discussion would be broadened and enriched by inviting colleagues from related landscape disciplines to take part in the Forum.

Finally it was resolved that the discourse should not be restricted just to the interchanges which could take place during the Forum itself, but that the four thematic groups should convene 'virtually' in advance of the Forum and subsequently continue their work which would focus on the preparation of a joint publication to provide a record of their deliberations and responses to the landscape which they had explored during the Forum. This, then, was the generic 'recipe' which was created to structure the new LE:NOTRE Landscape Forum, but the proof of concept had to be left to the meeting itself, and this publication is the result.

Figure 1.1. Round table on the morning of the second day of the Forum (Picture: Akdeniz University).

1.2 Sampling 'Antalya's Landscape'

This process of preparing for the Antalya Forum began early in the organisation phase, and most importantly involved the preparation of a basic 'handbook' which was intended to provide 'first look' at the local and regional landscape. In practice this took the form of a detailed document compiled by colleagues from the Department of Landscape Architecture at Akdeniz University that was made available to participants in the meeting well in advance of the Forum itself, and provided an essential introduction to the landscape issues of the city and its surroundings. The intention was to make it possible for everyone taking part to 'hit the ground running' as far as their understanding of local landscape issues was concerned. By providing them with the necessary background information on which to build a more informed and considered contribution, so the argument went, it should be possible to raise the level of the discourse and discussion which were the key ingredients of the Forum.

A revised and edited version of this preliminary document forms Chapter Two of this publication which provides a concise portrait of the landscape of Antalya city and region from an informed academic perspective. It starts by outlining the geographic and ecological context of the city, the development of the cultural landscape and the historic growth of the settlement pattern, in particular the more recent developments and rapid urbanisation in response to Antalya's designation as a focus for tourism development as part of a national strategy. It goes on to address themes such as the main green and open spaces, the demographics of city and region and the ways in which urban open space is used by residents and tourists, as well as considering local landscape planning, design and management issues, in particular the implications of the massive growth of tourism for the city, the region and its landscape. In its final version the chapter not only provides an ideal introduction to Antalya's landscape, but also acts as an example of what could be a more generally applicable structure for organising the presentation of local landscape conditions, which can be widely applied in describing the urban and regional landscapes of a range of cities, perhaps as a basis for future comparative studies.

Figure 1.2. Excursion of the urban and peri-urban landscapes thematic group visiting a local Agenda 21 office (Picture Richard Stiles).

This presentation of Antalya's urban and regional landscapes and open spaces can perhaps be regarded as the first part of another dialogue – that between the Forum's hosts and its participants from other cities and countries. If this is the case, then the participants' response can be said to take the form of the following chapters, one relating to each of the Forum's four themes. Each of these was prepared by a team representing the respective groups who took part in the Forum. Every participant was expected to choose one of these four groups to participate in, and to take part in the relevant excursion and the following workshops, as well as contribute to the preparation of the associated chapter of this publication.

The four themes were:

- Rural change: landscapes and lifestyles
- Heritage and identities
- Sustainable tourism
- Urban growth and peri-urban sprawl

...and the edited and expanded results of the fieldwork, the deliberations of the four groups and the teams which led them make up the remaining chapters of this publication.

The Forum itself was relatively tightly structured, being organised into morning and afternoon sessions of a consistent format: keynote presentations and round table discussions took place before lunch and group work in the four thematic groups in the afternoon. Each of the four round tables was planned to involve a representation of different landscape disciplines as well as spread of interest in terms of education, research and innovative practice. In addition local specialists were also represented. In the afternoon of the first day, the four groups split up and set off out into the landscape by coach on four different field visits to key areas of importance for their chosen themes, each devised and prepared with the support of and accompanied by local experts from Akdeniz University and the municipal authorities.

Chapter Three considers changing rural landscapes and lifestyles and is based around the field visit to the Kumluca district. Before the explosion of tourism, agriculture was the mainstay of the regional economy, and the growth of tourism as well as the expansion of the city of Antalya has created important new markets for the agricultural production of the region, although these also have important national markets too. The following introductory brief was prepared for participants in the Rural landscapes thematic group as a basis for their work during the Forum:

In the workshop we will explore the problems faced by rural change and the potentials offered by landscape planning, design and management for maintaining valued aspects of the cultural heritage, regenerating the rural economy and ways of life and for new landscapes arising from these changes and for opportunities for using the built vernacular heritage. We will sample a "transect" of land running from the city's edge across the fertile and intensive farmed coastal plain, up into a foothill valley and towards the mountains some 30km inland. Stops along the way will look at the greenhouse area, traditional villages and field landscapes and ancient areas where archaeology and traditional settlement occur together. Questions, challenges and themes might include:

- *What is the role of landscape planning in the changing rural landscape of the Mediterranean?*
- *How can landscape character be maintained if the processes that create it are no longer carried out? Can Urban sprawl be guided and regulated so that is comes more into harmony with the inherited ex--rural landscape?*
- *How can new roles for existing rural features be found so as to conserve the cultural landscape?*

Chapter Four of this publication presents the outcomes of the second thematic group, which focussed on 'Heritage and Identities'. If the agriculture and the rural landscape theme concentrated on the role of the contemporary landscape, then the resource presented by the past of the regional landscape was the main theme for chapter four. The field trip and subsequent workshop for the heritage group was centred around Sillyon, a classical urban landscape whose 'heritage potential' seemingly lies 'dormant', still waiting to be 'discovered by the 'heritage industry', something which in turn would threaten the very attractiveness and fascination which currently characterise it: a landscape at the cross-roads?

The briefing document for the Forum participants emphasised a broad perspective on heritage and landscape, thus:

For the workshop, heritage will mean not only monumental heritage 'sites', nor only the most ancient, but also everyday heritage even if relatively 'modern',

'small' heritage, working heritage, and taking into account heritage as associations, activity, custom etc. Locations will be visited centred on Sillyon, an urban centre from probably the later Bronze age to the 13th century, and whose surrounding landscape provides a chance to consider a wide range of time--depth, multi-temporal layering, presumed local and regional identity, and landscape as well as building/ site heritage. One aim will be to raise awareness about the relationship between individual ('public', 'tourist') monuments and sites on the one hand and on the other hand the wider functional, historical, perceptual and symbolic landscape which underlies present day identities. Questions, challenges and themes might include

- *How is heritage regarded by different groups such as local town-dwellers, rural populations, incomers, tourists, professionals and practitioners, politicians)?*
- *What meaning can we afford to read into heritage as landscape in regions with long visible histories as they undergo rapid change; to what extent is the local population aware of cultural / historical values in the landscape?*
- *How far and in what ways is/can be/ should be heritage and inherited character (e.g. building styles, layout, values) used to influence development and design? Are local or national registers of monuments useful?*
- *Is professional practice currently involved in heritage / identity? What are the interdisciplinary relations between University Departments (archaeology, landscape architecture, social science or tourism etc)?*

The fifth Chapter looks at the landscapes of tourism from the point of view of their sustainability, using two case study examples which were visited during the Forum excursion. One of these, Kemer, was characteristic of the kind of mass tourism which has been seen both in Turkey but also on many other Mediterranean coasts during previous decades, while the second example at Çıralı, provided an example of small-scale local tourism. The following is an excerpt from the brief for the workshop prepared for the members of the tourism group in advance of the Forum.

In the workshop we will explore the pressures and risks of tourism in this coastal landscape by sampling several tourism areas squeezed between the sea and the mountains. We will examine the opportunities offered by landscape management, planning and design for protecting the inherited scenic, heritage and cultural characteristics of the landscape, for repairing past damage from inappropriate development and for developing new possibilities for sustainable tourism. The study will focus on one example "transect" heading west from Antalya along the coast, looking firstly at Kemer, a medium-scale urbanised tourism resort located at the mouth of a river and then heading to Olympos where a less developed area presents possibilities for more sustainable tourism in a place with a superb landscape, important archaeological remains and an endangered species. Questions, challenges and themes might include

- *What kind of tourism development should/could be accommodated in future in*
- *Mediterranean landscapes?*
- *Is the heritage and landscape of tourism interesting, characteristic and valuable in its right?*
- *How and to what extent can tourism direct the future character of landscapes?*
- *How can the negative effects of already existing tourism development be rectified*
- *How can the landscape be maximised as an asset for sustainable tourism*
- *What does a sustainable tourism landscape look like?*

In Chapter Six the outcome of the work of final thematic group is presented. Here the focus was on the urban landscape and the way it is spreading out into a new peri-urban landscape in the region. Here the themes included the natural landscape structure of the city as well as examples of key urban green spaces. The excursion took the group to four sites which were representative of a cross-section of urban development situations, from the old town centre, through a new planned satellite development with mass housing and industry, and included a typical 'spontaneous' squatter settlement as well as Ataturk Culture Park, one of the main elements of the city's green structure. The brief for the workshop participants focussed on the following issues:

The workshop will explore how landscape management, planning and design can contribute to coming to terms with this enormous development pressure? What influence has the landscape architecture already had and what ought to be the future strategy for the region to ensure that the landscape of the region

can adapt to this massive onslaught. What is the role of landscape in:

- *Public participation to help prevent/manage urban sprawl (Local Agenda 21)?*
- *Promoting green infrastructure within new urban areas?*
- *Designing public space as a strategy for stimulating high quality urban development?*
- *Influencing landscapes of urban metabolism in a rapidly growing metropolitan region: inputs and outputs – water supply; urban farming; refuse disposal, sewerage and waste management?*
- *Research approaches for studying the urban landscape in growing cities?*
- *Understanding the [Antalya] Urban Region as a Teaching Resource for landscape planning and design?*
- *Ameliorating th*e impacts of climate change?

As well as considering its own chosen issues in relation to the specific landscape sites visited, each of the thematic groups also had the brief to reflect on how these issues might be dealt with in the context of landscape teaching, to consider possible research needs and look at how these might be addressed and finally to focus on some examples of good, innovative practice in the field. These three topics provided a common thread running through each of the four thematic groups, and – in line with the wider goals of the Forum, to initiate new projects and collaborations – it is to be hoped that these deliberations will bear fruit so that the results can be presented at the 'traditional academic conferences' which the LE:NOTRE Landscape Forum is intended to complement.

Chapter 2

Urban and Regional Landscapes in Antalya

Veli Ortaçeşme, Meryem Atik

2.1 General Introduction to the Country and the City-Region's Place in its Wider National Context

The total area of Turkey is 779.452 sq km, of which Anatolia, the Asian portion of the country, makes up about 97 percent. Most of Anatolia is mountainous and arid, with the exception of the narrow plains along the Aegean, Black, and Mediterranean coasts. Eastern (or Turkish) Thrace in south-western Europe makes up the remainder of the country. This area is characterized by rolling plains surrounded by low mountains.

Turkey can be divided into seven geographic regions (see Fig. 2.1): Marmara, Aegean, Mediterranean, Black Sea, Central Anatolian, Eastern Anatolian and South-Eastern Anatolia regions

Marmara Region, which also includes Thrace, in the north-east of the country, comprises a central plain of gently rolling hills with few changes in elevation. About one-quarter of this fertile, well-watered area is farmed. The eastern portion of this region is more mountainous, reaching its highest point of 2.543 m. at Uludağ (ancient Mount Olympus of Mysia).

The coastlands of the Aegean and Mediterranean regions in the west and south are narrow and hilly. Near the Mediterranean coast, the peaks of the Taurus Mountains reach 3,700 m, while along the Aegean coast, a series of low ridges generally rise toward the east to an average elevation of 1.500 to 1.850 m.; with a few

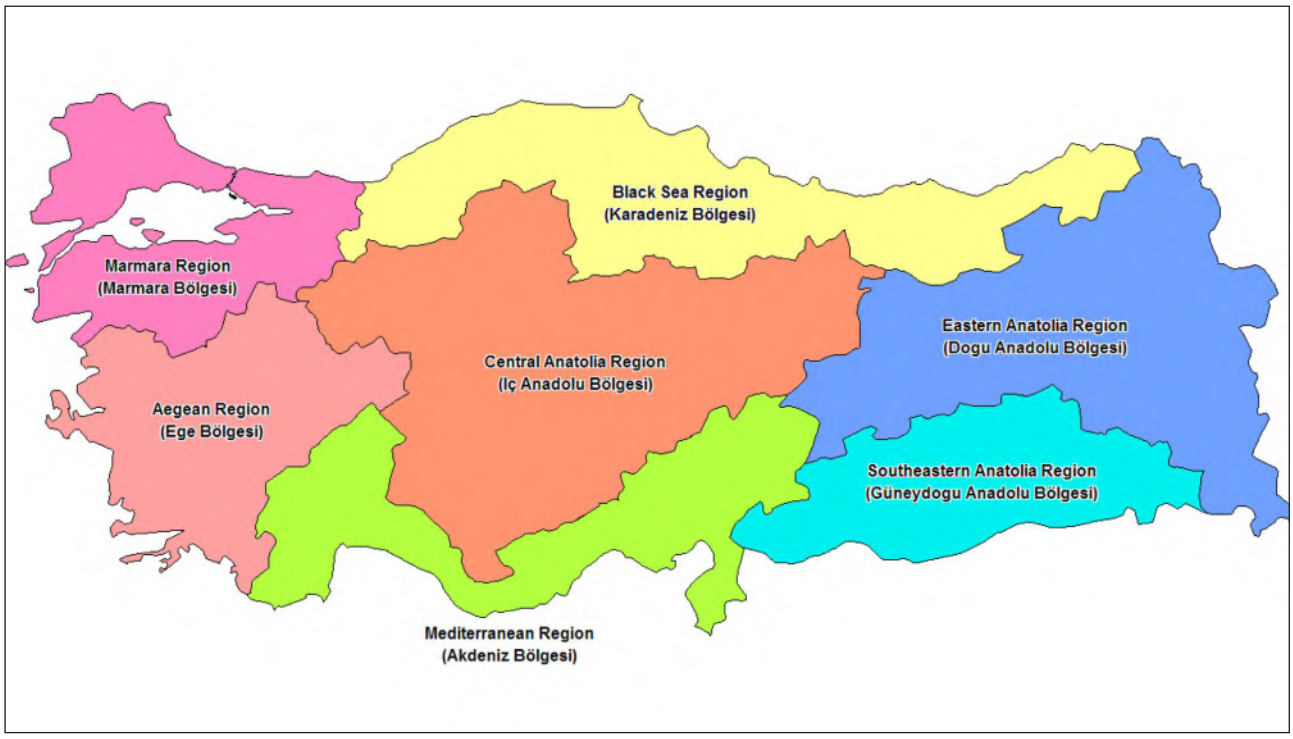


Figure 2.1. The geographical regions of Turkey
http://upload.wikimedia.org/wikipedia/commons/f/f8/Turkey_regions.png

peaks approaching 3.050 m. The broad, flat valleys between the ridges contain some of the most productive soils in Turkey.

To the north, the Anatolian coastlands of the Black Sea region rise directly from the water to the heights of the Northern Anatolian Mountains.

Central Anatolia consists of irregular ranges and interior valleys and is composed of several interconnected basins. These basins are surrounded on all sides by mountains, which reach their highest point at the summit of Mount Erciyes (3.916 m). The plateau itself has a general elevation of between 900 and 1.500 m. above sea level.

Eastern Anatolia is the most mountainous and rugged part of Turkey; Mount Ararat (Ağrı Dağı) is the country's highest peak in the at 5.165 m. Many Christians and Jews believe it to be the same Mount Ararat mentioned in the Bible as the place where Noah's ark came to rest. The eastern highlands are the source for both the Tigris (Dicle) and Euphrates (Fırat) —two of south western Asia's principal rivers.

South Eastern Anatolia is a rolling plateau enclosed to the north, east, and west by mountains. A part of the so-called Fertile Crescent, this region has been an important agricultural centre since Neolithic times.

The Antalya Region

The Mediterranean Region, where the province of Antalya is located, is one of Turkey's seven geographical regions. It is bordered by the Aegean Region to the west, the Central Anatolia Region to the north, the Eastern Anatolia Region to the northeast, the South Eastern Anatolia Region to the east, Syria to the southeast, and the Mediterranean Sea to the south.

Antalya is one of the eight provinces in the Mediterranean Region of Turkey. With a population of 2.000.000, it is the country's eighth most populous province. The city of Antalya, located in the centre of the province, is one of the 17 metropolitan cities in the country. It lies approximately 550 km. from Ankara, the national capital, and 730 km. from Istanbul, the largest city of the country.

The history of settlement in Antalya region dates back to prehistoric times. Research has shown that the Karain Cave to the northwest of the city was among the first places in the world to have been settled. The foundation of a city on the site of Antalya dates back to 159-138 BC when Attalos II, the second king of Pergamon, founded a city which was named "Attaleia" after him:. Subsequently it was ruled in turn by the Romans, Byzantines, Seljuks and Ottomans ruled the city, respectively. After the division of the Roman Empire, Attaleia remained under Byzantine domination. The city was one of the most important trade harbours of the Eastern Mediterranean during the Byzantine Period, and its ownership changed continuously between Byzantines, Turks and Arabs from the beginning of the 12th century. Finally, Seljuk Turks took over Attaleia in 1207 in the period of Sultan Gıyaseddin Keyhüsrev. The Seljuk Turks and Anatolian Turkish Tribes ruled the city for 183 years (Onat, 2000). In 1390, the city was taken by Ottoman forces in the period of Sultan Yıldırım Beyazıd. By the mid-19th century Antalya had lost its importance as a trading port and become an agriculture centre. During the Ottoman period the administrative status of Antalya was a kind of provincial subdivision known as a "sanjak". Then Antalya was given the status of a"province" following the provincial organisation in 1864. After the establishment of the Turkish Republic in 1923, Antalya became one of the 81 provinces of Turkey.

The economy of Antalya depends on a mixture of tourism, agriculture, and commerce, with some light industry. Antalya is known as the capital city of tourism as it hosts one third of tourists visiting Turkey. In 2010, Antalya was the fourth mostly visited city in the world after Paris, London and New York with 9.3 million tourists.

2.2 Landscape Structure and Ecology

Figure 2.2. The city of Antalya on a coastal plain surrounded by Taurus Mountains.

The Taurus mountain range of southern Anatolia runs parallel to the Mediterranean in an east-west direction, resulting in the formation of narrow coastal plains surrounded by mountains on three sides and the sea on the fourth. Some parts of the coast are characterised by mountains plunging sharply into the sea, forming small natural bays and peninsulas. Antalya city is situated on one such plain where the mountains recede from the shore, consisting of two flat areas formed of travertine rock at a mean height of 35 meters above sea level; the town centre is located on the rocky plain closest the coast, with urban sprawl extending inland to the Kepezüstü Plain.

The geology of Antalya is characterised by travertine, alluvial and conglomerate material. The western part around Boğaçay Stream is widely covered by travertine and conglomerate, while eastern coast is typically sand dunes where Mesozoic formations are most common. Two travertine plateaus are present: the upper plateau (Döşemealtı) lies between 280-320 metres whereas the lower plateau lies between 30-150 metres above sea level (Şenel, 1997).

Antalya City is characterized by a Mediterranean climate with mild and rainy winters, and hot dry summers. Around 300 days of the year are sunny and

Table 2.1. Meteorological data for Antalya City between 1975–2006 (Meteoroloji İşleri Gen. Müd., 2008).

Months	Average Temperature (°C)	Aver. Max. Temperature (°C)	Aver. Min. Temperature (°C)	Average Relative Humidity (%)	Average Rainfall (mm)	Average Wind Velocity (m/s)
January	9,5	22,0	- 2,0	66	228,5	3,2
February	9,9	23,4	- 4,0	64	134,4	3,4
March	12,2	28,2	- 1,6	67	107,0	3,0
April	15,8	33,2	1,4	68	64,8	2,8
May	20,3	40,2	6,7	66	32,5	2,4
June	25,3	41,0	11,1	59	8,3	2,8
July	28,4	45,0	14,8	56	3,0	2,7
August	27,8	43,3	15,3	60	2,0	2,4
September	24,3	41,2	10,6	60	9,8	2,5
October	19,5	37,7	4,9	61	87,5	2,5
November	14,2	33,0	0,8	65	187,3	2,7
December	10,8	25,4	- 1,9	67	267,8	2,9

Antalya has over 3000 hours of sunshine annually. According to meteorological data between 1975 and 2006, the annual average temperature was 18.2 ºC, and the maximum temperature was recorded in July with 45 ºC and with a minimum temperature of -4 ºC recorded in February.. Average sea water temperature is 21.6 ºC, with a maximum of 25.3 ºC and a minimum of 15.1 ºC.

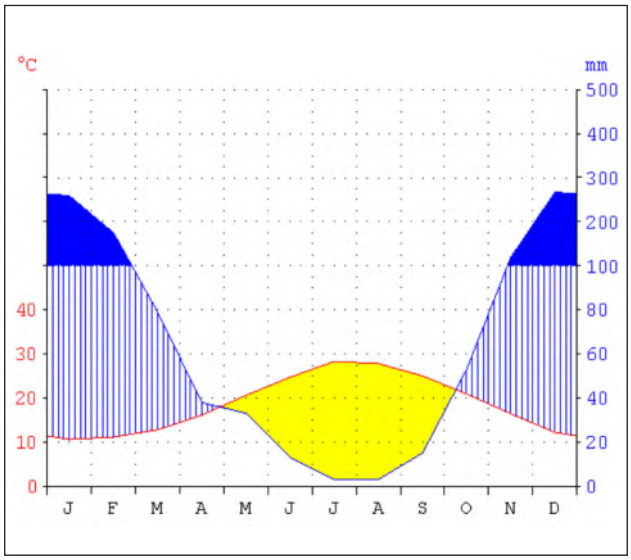


Figure 2.2. Climate Diagram for Antalya (source: http://www.erdpunkte.de/klima-t%C3%BCrkei.html).

Due to the prevailing climate of warm to hot dry summers and mild to cool wet winters, water courses in Antalya display great seasonal changes. In summer most streams and creeks dry up, beginning to run again as a result of the autumn and winter rains and the melting snow on the Taurus Mountains. Until the mid1960's small and large streams and waterfalls were typical of Antalya City. Some 30 waterfalls were reported, falling from the rocky cliffs to the Mediterranean Sea. Today, three big streams are characteristic: Boğaçay Stream to the west is the largest water course within Antalya City, with a course of 25 km and draining an area of 833 km^2 (Dipova, 2010). Düden Stream, which flows through the east-central area the city, has a length of 30 km. and forms two waterfalls, one 8 km. inland and the other where it meets the Mediterranean Sea. Aksu Stream to the east of the city is the longest stream with its 163 km length. In Antique times, it was known as "Kestros" and used by trading ships.

Gürkavak, Mağara, Duraliler, İskele, Hurma, Arapsuyu and Düden aquifers and the Meydan wells are main groundwater sources in Antalya. Due to urban sprawl which has taken place over the last three decades, most of these sources have remained within the urban fabric. Some, such as Gürkavak, Hurma and Düden, which are still away from dense urban area are classified as having a high drinking water quality.

Antalya City has a great diversity of natural, cultural and historical features. Mountains, agricultural areas, forests, coasts, valleys and rivers add to the variety of urban landscapes (Manavoğlu and Kutlu, 2007). Unlike many other big cities, Antalya has still wetland, dunes, waterfalls and attractive coastal landscapes with a high natural and ecological value. Göktürk and Sümbül (1997) identified a total of 1027 plant species within Antalya urban area, 866 of them occur naturally and 75% of them are endemics. Mansuroğlu *et al.* (2006) pointed out that despitethe very heavy urbanization pressure, there are still valuable biotopes within Antalya city.

Among the main natural features in the city are:

Lara and Konyaaltı Coastal Rocky Cliffs: Coastal cliffs are a unique natural feature of Antalya City. They comprise a geomorphological landform created by the action of high waves on the coast. The nature of the process is defined as the combination of limestone deposition with sandstone sculpted by winds, rain and sea waves.

Lara Sand Dune and Dune Forest: Sand dunes are vulnerable landforms of rounded hills, ridges, or mounds of windblown material, formed by the interaction with the sea and coast. The Lara sand dunes, covering an area of 10 km. long and 250 m, wide are a distinct example of a natural formation which has been retained within Antalya City (Atik and Akgül, 2005). Lara Dune forest, characterized by natural Mediterranean vegetation: *Pinus brutia, Pinus pinea, Ceratonia siliqua* and many other plant species, comprise important ecosystems. Lara Sand Dune is home to the endemic sea daffodil (*Pancratium maritimum*).

Yamansaz Marsh: Yamansaz Marsh is the only coastal wetland ecosystem left in the western Mediterranean region of Turkey (Ortaçeşme *et al.*, 2002a). Woody plants, low-growing shrubs and reed beds in Yamansaz provide a valuable habitat especially for avifauna species. Erdoğan *et al.* (2002) recorded 161 bird species from 51 families and confirmed that 95 are likely to be under threat.

Güver Crag: Güver crag represents a canyon based on karstic geomorphologic formation.

Varsak Sinkhole: Varsak sinkhole is a 200 m. long and 50 m. wide depression with an interesting geology and landform.

Düden Waterfalls: Düden waterfalls are unique examples of the few remaining waterfalls within Antalya City. One of them drops into the Mediterranean from 40 m high rocky cliffs while the other is located 8 km inland.

Caves: Caves that are found in Antalya City include Karain, Kızılini, Öküzini, Çarkini, Koyunini, Mustanini, Macarini, Suluin, Harunini and Kocain (Vuruşkan, 2009). The Karain Cave to the north of Antalya city is among the first caves by settled human beings.

Mountain Ranges: The Taurus mountain range of southern Anatolia runs parallel to the Mediterranean Sea. The highest point in Antalya urban area is Tünektepe Hill at the western end of the city, providing a perfect overview of Antalya at an elevation of 618 m.

2.3 Traditional Cultural Landscapes of the Region and Contemporary Developments

Cultural landscapes are the combined products of the interaction of man and nature through time. Tradition involves the transmission of long-lasting cultural elements from generation to generation through various forms of communication. Accordingly, traditional cultural landscapes are areas which contain the accumulation of such elements of the cultural heritage rooted on the land and involving rich layers of historical and local knowledge passed from past to present in the form of buildings, land use patterns or vernacular elements.

Cultural landscapes have become recognized as an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity.

The Mediterranean Region of Turkey possesses a great diversity of natural, semi-natural and cultural landscapes since it has been attracting people for centuries and providing opportunities for settlement, trade, shipping, agriculture, fishing, mining, etc. (Atik

Figure 2.3. Ancient agricultural stone terraces at Selge in the Köprülü Kanyon National Park.

et al., 2010). One of the unique examples of traditional cultural landscape is provided by the 2000 year-old agricultural stone terraces at Selge in the Köprülü Kanyon National Park (Figure 2.3). Found by 1200 BC, basic commodity of ancient Selge city was agriculture and oil production. Wine, timber, medicinal plants and plants for spiritual ceremonies were grown in large fields and forests (Atik and Altuntaş, 2011). Considered to be the world's second oldest terraces, the stone terraces in Selge have maintained the traditional land-use pattern since ancient times, and represent a masterpiece of human creative genius. Today, Selge lies within the boundaries of Köprülü Kanyon National Park, some 80 km east of Antalya city, and, as a result, it has been largely able to maintain its original character.

The traditional cultural landscapes in the Antalya region consist of rural, agricultural and mountain landscapes maintaining long-lasting traditions of housing and agricultural patterns accompanied by customs such as the nomadic life style in the upper highlands.

2.3.1 Rural Landscapes

Rural landscapes are expansive areas of open country with low populations, isolated from urban and industrial areas. In relation to some descriptions, such as rustic or pastoral, rural landscapes may also be sparsely settled and/or agricultural territory with horticulture or viticulture (Atik and Ortaçeşme, 2008). Rural landscapes in Antalya are interspersed with natural areas around village settlements, agricultural fields and orchards, and exhibit a great variety from east to west of the region due to the geographical differences and cultural diversity.

There are more than 600 villages in Antalya province. Remote villages are quite rural, but the villages located along the coast are subject to a process of rapid transformation from rural to urban in character, due to tourism developments along the eastern and western coasts of the region. Two stages can usually be identified in the changes taking place in rural landscapes: the first involves the conversion of natural forests around the villages into agricultural land, while the second takes the form of tourism-driven urban developments on the agricultural land.

2.3.2 Agricultural Landscapes

Agriculture is the second major economic activity in Antalya region after tourism. Citrus fruits, vegetables, olives, pomegranates, grapes, bananas and ornamental flowers and trees are the major agricultural products. Antalya is the leading producer of greenhouse vegetable crops in the country, a development which first started in the 1940s. Low interest loans given by the Agricultural Ministry for the improvement of vegetable production in the 1980s speeded up greenhouse developments and, consequently the growth of such agricultural landscapes. Today 85 % of greenhouse production of Turkey comes from Antalya region. Major agricultural landscape types are as follows:

Olive Groves: Olive (*Olea Europea*) is a native plant as well as a traditional tree and crop widely grown in the Turkish Mediterranean region. Olive groves are established by the grafting on to native olive trees, but are often also commercially planted (Atik *et al.*, 2010). However the majority of the olive groves are located in the rural areas as local communities substantially depend on them for their livelihood. Olive groves in Antalya Region appear in two forms; either setting through establishing new plantations or through grafting on native olive trees.

Citrus Groves: Most citrus groves take the form of orange (*Citrus sinensis*) and lemon (*Citrus lemon*) plantations, but grapefruit (*Citrus paradisi*), citron (*Citrus aurantium*) and mandarin (*Citrus reticulata*) are also to be found. Major citrus production is carried out in western part of Antalya around Kumluca, Finike and Kemer, where traditional landscape patterns of citrus groves are to be found.

Banana Plantations: Banana (*Musa cavendishii*) plantations were introduced to Turkish Mediterranean region as a commercial agricultural crop and have become a part of the regional landscape pattern due to its tropical-like climate. They are mainly found along the costs of Alanya and Gazipaşa districts of Antalya Region and have special market brand.

Vineyards: Grape (*Vitis vinifera*) is a native species to Anatolia, and the history of the viticulture goes back 3000 years in the Mediterranean region. The Turkish Mediterranean is the second largest region in grape production. However vineyards in Antalya are mainly found in the Elmalı, Akseki, İbradı districts, which are characterised by terrestrial climates.

Pomegranate Orchards: Turkey is the third most important country for pomegranate production, a branch with increasing economic value. Pomegranate orchards have historical roots in Antalya, as the ancient city of Side, 60 km east of Antalya city, derived its name from Pomegranate itself. Most recently, due to the increasing market value of the fruit, pomegranate orchards have been expanding within the region.

Wheat Fields: Wheat is the basic food commodity for people and fodder for livestock in Anatolia, and its cultivation can be traced back to 9000 BC. Today, wheat production and the wheat fields are generally found in inland areas such as Elmalı and Korkuteli districts in Antalya Region. However in history, as Lloyd (2000) pointed out, ancient city Myra owed its fame for being an important harbour from which huge grain ships traded in cereals and in second century Horrea Hadriani, reference is made to the silos of Emperor Hadrian: the massive structures which were built to store supplies before they were transported. So, wheat production has been one of the oldest agricultural activities in Antalya Region.

Greenhouses: Greenhouses can be defined as buildings covered with glass or plastic sheeting, where horticultural products are grown. Today the Antalya region provides the great majority of greenhouse production, mainly in Finike, Demre and Kumluca districts. Antalya accounts for 85 % of the Turkish greenhouse production, while 50 % of the country's total production of fresh vegetables crops also takes place in the Antalya Region.

Floriculture: Production of ornamental cut flowers and indoor plants as well as outdoor flowers, trees and shrubs is one of the primary horticultural activities in Antalya, which is mainly located in the eastern part of the region. Antalya meets 75 % of the export-oriented cut flower production in Turkey.

2.3.3 Highland Landscapes

Highlands are defined as the areas located on relatively high ground or in upland. Highland landscapes represent mountainous and hilly section of the country often above or between tree line in the forest zone. Some of the highlands in Antalya Region are still characterised by nomadic life styles and land use patterns of Yörüks (nomadic local people) which are based on travelling along the highlands of Taurus Mountains and involve the sustainable use of natural resources.

2.4 History and Development of the City's (Open Space) Structure

Antalya city and the surrounding areas made their living from mainly agriculture until the 1980s. At that time the city was a medium sized one and then in 1982 the Tourism Incentives Act was passed by the Turkish Parliament, and Antalya started to become a favourite location for investors due to its rich natural and cultural assets, clean and beautiful coastline, historic ruins and mild climate. Many big hotels and holiday villages were constructed along the coast. As the employment opportunities increased as a result, immigration from the rural regions of Turkey started.

The infrastructure of the city has been improved in accordance with tourism investments and Antalya has also become a favourite place to live in for Turkish citizens, particularly for retired people from other cities of the country. As the tourism infrastructure improved, Antalya has also become a popular destination for tourists, mainly for Europeans. The number of arriving tourists was dramatically increased from 1.9 million in 1995 to 9.3 million in 2010, which represents a fivefold increase.

The transformation of the urban fabric and the changes in the identity of Antalya started in the 1950s in parallel with the urbanisation process in Turkey as a whole. In 1950, the area of the city was only 270 hectares and the population only 27.515. The 1950s and the beginning of the 1960s were the years when the first public and industrial investments started. Among the first industrial establishments were ANTBİRLİK (Cotton and Citrus Selling Cooperatives Union) in 1952, Antalya Ferrochrome Factory in 1957 and Antalya Cotton Weaving Factory and Kepez Electric Plant both in 1961. The first development plan of Antalya City was prepared in 1956 and included the Old Town (Kaleiçi) area as well as three surrounding quarters, namely Bahçelievler, Şarampol and Yenikapı. The first migrations to Antalya and associated squatter settlements were seen in this period around the factories (Anonymous, 1996; Anonymous, 2006; Manavoğlu, 2009).

During the 1960s and 1970s, rapid population increases and consequently, rapid social, cultural and spatial changes were seen in Antalya. The population reached to 50.908 in 1960 and rose to 95.616 in 1970. A new development plan was needed and this was prepared in 1969. The State Planning Office (DPT) prepared a regional development project for Antalya between 1960 and 1965, and Antalya was identified as a tourism priority region for the first time in 1969. From 1974 onwards, a tremendous construction boom took place. Among the reasons were the declaration of South Antalya as a tourism zone, the building of new Antalya Harbour, the expansion of the airport capacity and the construction of the highway connecting Antalya to the western towns such as Fethiye and Kaş. As a result of all these developments, the population of the city grew to 173.501 in 1980. Squatter settlements also expanded during this period. It is known that there were more than 10.000 squatter houses in Antalya at the beginning of Antalya (Güçlü, 2002). The first local planning offices were opened between 1970 and 1980 and the 1979 Development Plan, which guided the development of the city with various revisions and additions until 1995, was prepared by one of these local offices (Manavoğlu, 2009).

The 1980s were the years during which a population boom took place in Antalya. The population of the city reached to 173.501 in 1980 and 378.208 in 1990, with the annual increase reaching to 82.97% between 1985 and 1990. With the Tourism Incentives Act No. 2634, which entered into force in 1983, the investments and touristic bed capacity increased greatly during this period. Tourism development led to the expansion of social and technical infrastructure of the city as well as to the provision of urban services. In this period, the economic importance of the tourism sector started to increase in Antalya, while the contribution of agriculture to the local economy started to decline. The establishment of Akdeniz University in 1982 gave a new vision to the city.

Population increase and migration continued in 1990s and 2000s in Antalya and there were population censuses in both years. The results showed that Antalya was the city with the highest population increase in the country as a whole in both periods. Because of the rapid development, Antalya was given metropolitan city status in 1994 and three districts belonging to three sub-municipalities were integrated

into metropolitan municipality. In the same year the preparation of a new development plan for the city was started, and finished in 1995. Important investments in new urban developments were also made during this period.

The Metropolitan Municipalities Act No. 5216, which entered into force in 2004, enlarged the boundary of metropolitan area so as to include neighbouring towns and villages and also gave new competences and responsibilities to the Antalya Metropolitan Municipality. The 2000s witnessed the preparation of new plans for Antalya. The new Environmental Plan for the provincial area was prepared in 2005 by the Ministry of Housing and the Metropolitan Municipality prepared a Strategic Physical Plan based on the Environmental Plan which covered the period up until 2020. Another Environmental Plan covering the neighbouring cities of Isparta and Burdur as well as Antalya was prepared by the Ministry of Environment and Forestry in 2007.

In 2008, the number of districts belonging to the metropolitan area was increased to five with the addition of two new ones. Today, Antalya metropolitan area consists of five districts, namely Muratpaşa, Kepez, Konyaaltı, Aksu and Döşemealtı (Figure 2.4).

In 2000s, a number of urban renewal and revitalization projects were started in Antalya as a result of new legal arrangements in Turkey regarding urban renewal. In Antalya, the historical core, covering the Old Town area and surrounding historical city quarters of Balbey and Haşim İşcan, has been the subject of an urban revitalisation project. Some urban renewal projects for squatter settlements areas were also started (Figure 2.5).

Limited data is available regarding green and open space developments before the last urban development plan in 1995. Because green space standards were incorporated into Turkish legislation for the first time in 1972, it can be said that there were no standards for planners to be followed when preparing the first two structural plans of the city. The most comprehensive consideration of green space issues can be seen in the 1995 plan. Here the touristic character of the city was taken into consideration and appropriate planning approaches were developed. Per capita green space was planned as 11.67 m² (DAMPO, 2004).

The first survey on the existing urban green spaces in Antalya city was done by Ortaçeşme *et al.* (2000). Quantitative data from this study is given in the following table.

As can be seen from the Table 2.2, a total of 200 active green spaces were found in Antalya metropolitan area. The total area represented by these green spaces amounted to 1,702,140 m². The per capita active green space in the metropolitan are was found to amount to 3.1 m², with 59 % of the city's districts having at least one active green space. The average size of the green spaces was 8.510 m². However, when a

Figure 2.4. Districts in Antalya Metropolitan Area.

Figure 2.5. Urban renewal (yellow) and revitalization (purple) areas.

Table 2.2. Data related to active green spaces in Antalya City in 2000.

	Muratpaşa District	Kepez District	Konyaaltı District	Metropolitan Area
Number of active green spaces	84	91	25	200
Total surface (m^2)	911.980	715.700	74.460	1.702.140
Population in 1999	281.653	247.439	24.448	553.540
Per capita active green space (m^2)	3.2	2.9	3.0	3.1
Number of quarters	56	51	24	131
Number of quarters with green spaces	29	37	11	77
Rate of quarters with green spaces (%)	51	72	45	59

few large urban parks and the zoo are not taken into consideration, the average area of the green spaces dropped to 2.400 m^2. A similar survey of green spaces of the city was been done by the same authors in 2005 (Table 2.3).

These findings show that both the number and the total area of green spaces almost doubled in the five years between 2000 and 2005. There was also a significant increase in per capita green space. The number and percentage of districts with green spaces also increased, however, there was still a shortage of green space in comparison to the standards defined by the legislation: namely 10 meters square per person.

The study also revealed some other problems associated with the planning and implementation of the green spaces. One of these is one of access: people must be able to access to urban green and open spaces within a reasonable walking distance. The distance can either be measured in terms of distance from the green space (200-800 meters) or in terms of walking time (10-15 on foot). A recent study by Manavoğlu (2005) of the Konyaaltı sub-municipality area revealed that inhabitants of some parts of the urban area did not have access to the existing green spaces within a reasonable walking distance.

Table 2.3. Data related to active green spaces in Antalya City in 2005.

	Muratpaşa D istrict	Kepez District	Konyaaltı District	Metropolitan Area
Number of active green spaces	171	164	56	391
Total surface (m^2)	1.130.407	1.887.770	271.679	3.289.856
Population in 2005	376.865	328.513	43.183	748.561
Per capita active green space (m^2)	3.0	5.7	6.3	4.4
Number of quarters	56	51	24	131
Number of quarters with green spaces	35	42	14	91
Rate of quarters with green spaces (%)	63	82	58	69

2.5 Main Landscape Features of the Region and 'City Images' of Antalya

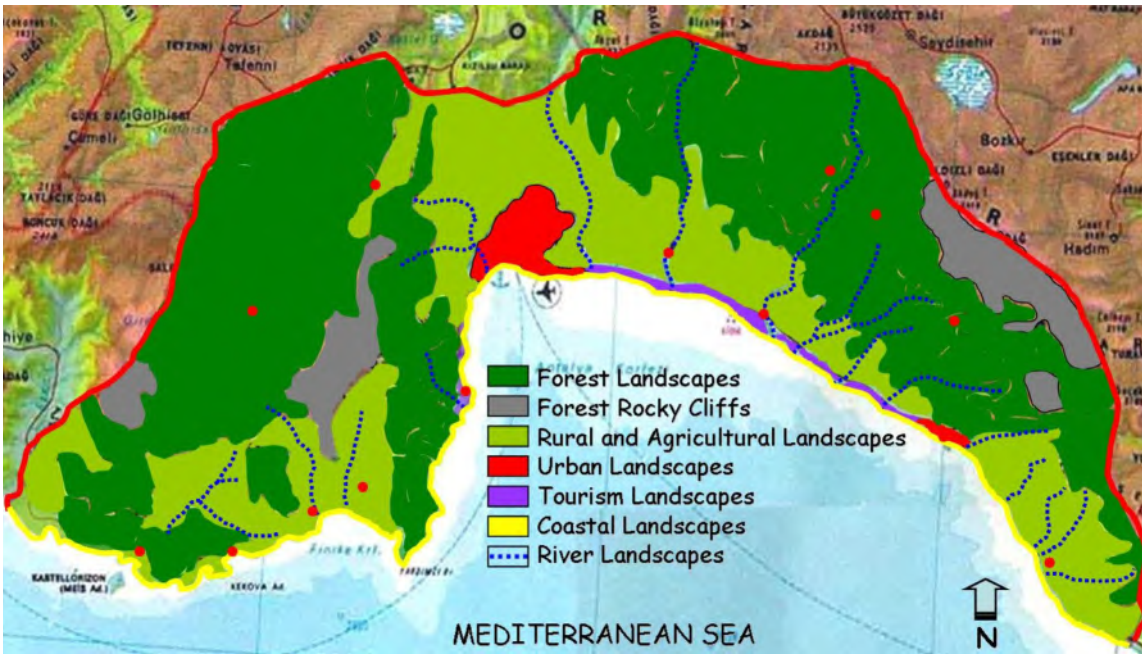


Figure 2.6. Main Landscapes of Antalya Region.

2.5.1 Main Landscape Features of the Region

Landscape is an area as perceived by people, the character of which is the result of the action and interaction of natural and/or human factors (Council of Europe, 2000). The phrase 'action and interaction between natural and human factors' allows us to understand the variations to be found within the landscape. Landscape diversity may refer to variations in landforms and vegetation for natural landscapes and the variety of cultures in time, land use density in space for cultural landscapes.

Antalya possesses a great diversity of natural, semi-natural and cultural landscapes since the region has been under human occupation for centuries, providing opportunities for settlement, trade, shipping, agriculture, fishing, mining, etc. Besides the variety of natural landscapes, habitation since prehistoric times has brought with it a diversity of cultural landscapes. Landforms such as Taurus Mountains, Teke Peninsula, Antalya Gulf can be regarded as the major landscape features in the region.

Urban Landscapes: As complex units, urban landscapes are characterised by relatively large and permanent settlements, high numbers of inhabitants and densely built-up areas including commercial and industrial sites (Atik *et al.,* 2010). The major example of an urban landscape in Antalya is the city of Antalya itself, located in the middle of the region. There are also 14 other district centres, but most of these represent rather a mix of urban and rural landscapes. Another example for urban landscapes can be seen in Alanya, the largest district of Antalya on the eastern coasts of the province.

Rural Landscapes: Rural landscapes are expansive and open country areas with low population densities. In the Antalya Region there are more than 600 village settlements and surrounding natural and semi natural areas, which represent rural landscapes with agricultural fields and orchards.

Tourism Landscapes: If industry refers to the production of economic goods including services, then tourism is the most important industrial activity in Antalya, with 10 million annual visitors generating 35-40 % of the country's tourism income. Tourism landscapes are concentrated both eastern and south-western coastline in the region with residential accommodation as well as services and infrastructure facilities.

Historic Landscapes: Antalya region has a high diversity of historic landscapes. Human habitation goes back to prehistoric times, and the region was settled by Hittite, Lydian, Persian, Macedonian, Phrygian, Roman, Greek, Byzantine, Seljuk and Ottoman civilisations during its subsequent history. Lycia and Cilicia were the regions under federation of Pamphylia "land of all tribes", with many cities such as Phaselis, Olimpos, Perge, Selge, Side, Patara in ancient times (Atik and Ortaçeşme, 2008). During the Byzantine Period, Side was a provincial centre and the seat of the Bishopric of Eastern Pamphylia, Myra was metropolis and St Nicolas of Lycia was the bishop during the reign of Emperor Constantine (Güçlü, 1997). Alanya and Kaleiçi (Old Town of Antalya) were important cultural and commercial centres in the Seljuk and Ottoman periods, respectively.

Mountain Landscapes: Mountains are the landforms that stretch above the surrounding geographic zones reaching up to the hills and peaks of differing altitudes. The Taurus mountain range dominates the region's landscape, as it stretches parallel to the coastline. These mountains are covered by different forest types, such as Red Pine (*Pinus brutia*), Cedar (*Cedrus libani*) and Taurus Fir (*Abies cilicica*) forests. Macchia or maquis is also a typical vegetation cover of the Mediterranean reagion. Anthropogenic effects have created macchia cover of xerophilous trees and bushes with Kermes Oak (*Quercus coccifera*), Olive (*Olea europea*), Mastic Tree (*Pictacia lentiscus*), Terebinth (*Pistacia terebinthus*), Carob Tree (*Ceratonia siliqua*), Laurel (*Laurus nobilis*), Oleander (*Nerium oleander*), Sage (*Salvia fruticosa*), Myrtle (*Myrtus communis*), Strawberry Tree (*Arbutus andrachne*), Cistus (*Cistus creticus, Cistus salvifolius*), Mock Privet (*Phillyrea latifolia*), Buckthorn (*Rhamnus alaternus*), Spiny Broom (*Calicotome villosa*) and many other species (Yılmaz, 1998; Altan, 2000).

Rocky Forest Cliffs: Rocky Forested Cliffs are present on very steep often non-vegetated outcrops in the forests. In the Antalya Region, rocky forested cliffs appear as patches with sparse tree cover, where very steep slopes and poor soil texture are found, that is prone to erosion and thus do not allow plant growth.

River Landscapes: Rivers are the natural water courses and river landscapes are natural accompanying corridors, passing generally through rural and/or urban areas. There are many water courses in Antalya region. Most of them originate in the Taurus Mountains and drain into the Mediterranean Sea. From east to west the Gürçam Stream, the Dim Stream, the Kargı Stream, Mara Stream, Karpaz Stream, Manavgat River, Aksu Stream, Boğaçay Stream, Sarısu Stream, Göynük Stream, Ağva Stream, Ulupınar Stream, Alakır Stream, and Demre Stream are the main water courses in Antalya Region.

Plain Landscapes: In geographical terms, the plain is a relatively low flat or gently rolling area of the earth's surface. Plain's are often formed by large rivers and are valuable areas for agricultural activities. Manavgat, Alanya, Antalya, Finike and Elmalı are the main plains in Antalya Region each comprising fertile lands.

Coastal Landscapes: Coastal areas are found where the borders of the territory meet the sea and where there is constant interaction between land and water. Coastal landscapes in Antalya Region are quite diverse due to varied geology and topography along the 640 km. coastline. Rocky sea cliffs, sand dunes and beaches are the main coastal landscape features in the region. Rocky sea cliffs are geomorphological landforms, created by the action of high waves on the coast, particularly in and around the city centre of Antalya. Regarded as very fragile geomorphologic formations and ecosystems, sand dunes still represent some of the unique landforms in Antalya Region, and are scarcely found in Lara, Belek, Patara, Side and Kumköy locations. Konyaaltı and Lara in Antalya city, Patara in Kaş district, and İncekum in Alanya district are major beaches in the region.

Island Landscapes: Islands are defined as a body of land surrounded by water, usually much smaller in size than a continent. Antalya has 11 islands, most of which are small in size. Most of the islands like Sıçan Island (Mouse Island), Üç Adalar (Three Islands), Beş Adalar (Five Islands), Devecitaşı Island, Sulu Island, and Pırasalı Island are located off the south-western coast of Antalya Region.

2.5.2 The "Image" of the City of Antalya

The components of the perceived city image, are related to physical features of the urban fabric, and can be classified into five types of elements: paths, edges, districts, nodes, and landmarks according to Lynch (Lynch, 1960).

PATHS are defined by Lynch as the channels along which the observer customarily, occasionally, or potentially moves. They may be streets, walkways, transit lines, canals, railroads. For many people, these are the predominant elements in their image. People observe the city while moving through it, and along these paths the other environmental elements are arranged and related.

In downtown Antalya, the main paths which act as transport routes, which channel the traffic and govern the perception of the city, are the streets of the Old Town (Kaleiçi) area which reflects the historical and cultural texture of the city. These are: Atatürk Street and its continuation Işıklar Street are fashionable streets; Yüzüncü Yıl Avenue which connects the eastern and western parts of the city; Güllük Street which is a shopping street used intensively by pedestrians; and Konyaaltı Street and Akdeniz Boulevard (Konyaaltı Coast Road) which run parallel to the Mediterranean.

• *The Old Town Streets:* In this area, which reflects the historical and cultural texture of the city is, can be found a number of monuments including the Clock Tower, which is one of the most important iconic symbols of the city; Hıdırlık Tower, the Grooved Minaret and Fluted Minaret. The old city (see Figures 2.8 and 2.9) was formerly completely surrounded by Hellenistic style walls from Roman Period. These were reconstructed many times during the Roman, Byzantine, Seljuk and Ottoman periods. The area is characterized by its harbour (today a marina), which once played a very important role in the Mediterranean. The Old Harbour was primarily built for defensive purposes, but in the Byzantine Period it became an important trading harbour from which commercial goods were imported and exported to and from other Mediterranean countries or overseas.

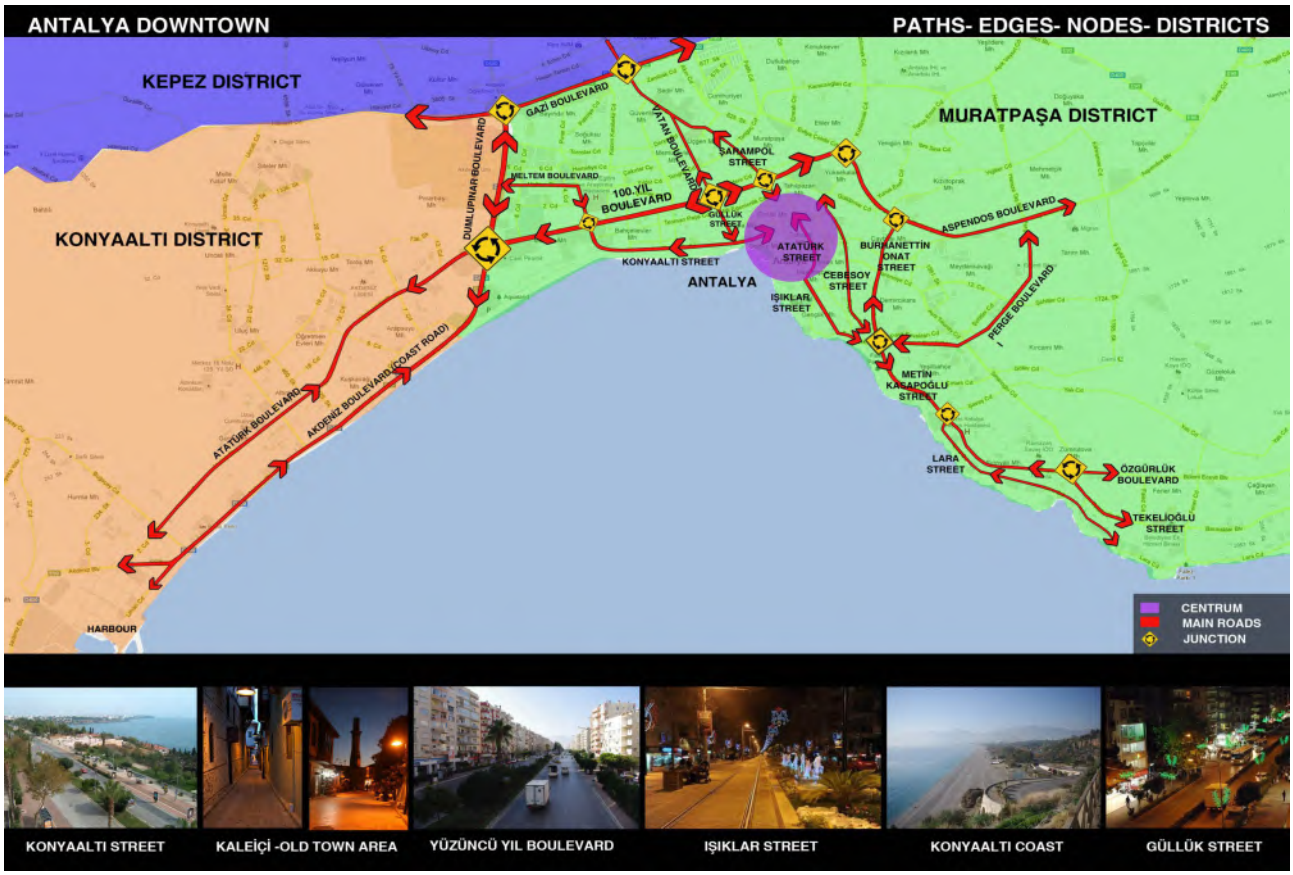


Figure 2.7. Paths, edges, nodes and districts serving the city image in Antalya.

Figure 2.8. Old Town streets.

It was also the first harbour in the Mediterranean Basin to be captured by the Turks.

The harbour retained its commercial character during the Seljuk Period, and grain, mines and fabrics from the Central Anatolia being exported to European countries, while goods from India, Egypt and Syria were imported via the same harbour and distributed in the hinterland (Güçlü, 1997). During this period, the city walls were strengthened, and additional ship storage areas and breakwaters were constructed. A shipyard was also constructed during the Seljuk Period as the Seljuks understood the commercial importance of the harbour. A fleet was constructed using cedar wood from the Taurus Mountains in the surroundings of Antalya (Sayan and Çavdar, 2003). The remaining street and buildings, have retained their original character as a result of protection and restoration works, and provide a connection between Antalya's past and its present. The area, is heavily frequented by both domestic and foreign tourists, and serves the nightlife as well as daily life of the city.

Figure 2.9.
Aerial view of the Old Town.

Figure 2.10. Atatürk Street, the oldest street of Antalya .

• *Atatürk Street* (Figure 2.10). This is the oldest Street of Antalya city and divides the downtown area in a north-south direction. Tall palm trees along the median strip are characteristic elements of this street, which is bordered on one side by the Old Town and by the first settled area of the city at the other side. Hadrian's Gate at the edge of the Old Town opens on to Atatürk Street. Karaalioğlu Park, which is the oldest urban park of Antalya, is also to be found here, as are a few fine examples of old Greek houses, such as Antalya High School and Teacher's Guesthouse. Today, it is one of the most crowded shopping streets of Antalya.

• *Işıklar Street:* This is the continuation of Atatürk Street, and was completely renovated in 2011. Işıklar is the most well-designed street of Antalya (Figure 2.11). It is a shopping and strolling street during the night time as well as the daytime.

Figure 2.11.
Işıklar Street, the most stylish street of Antalya.

• *Yüzüncü Yıl Avenue:* This Avenue is one of the two main axes connecting the eastern and western parts of the city. It is characterised by vehicle underpasses and pedestrian overpasses and carries and channels the main load of vehicle traffic in the downtown area. The avenue is heavily used by pedestrians as it also a shopping and business area (Figure 2.12).

Figure 2.12.
Yüzüncü Yıl Avenue,
one of the main avenues of Antalya.

• *Güllük Street:* This relatively narrow street, is one of the oldest streets of Antalya and connects the Yüzüncü Yıl Avenue to the north and Konyaaltı Street to the south. It is the most busy shopping street in downtown Antalya, and is also a business centre. For this reason, it is very crowded at all times (Figure 2.13).

Figure 2.13.
Güllük Street, o
ne of the busiest shopping
streets in Antalya.

• *Konyaaltı Street:* The Street is located between Atatürk Park on the 35 m high rocky coastal cliffs and the Bahçelievler quarter, which was the first extension of the urban area of Antalya in 1970s beyond the Old Town area and its surroundings (Figure 2.14). It is characterised by tall buildings facing to the Mediterranean Sea along the northern side of the street and the 19-hectare Atatürk Park lying along the southern side. The tramline, which starts from the western end, is also a characteristic element of the street, which connects the downtown area to the Beach Park at the western end. It is also a very popular as a promenade.

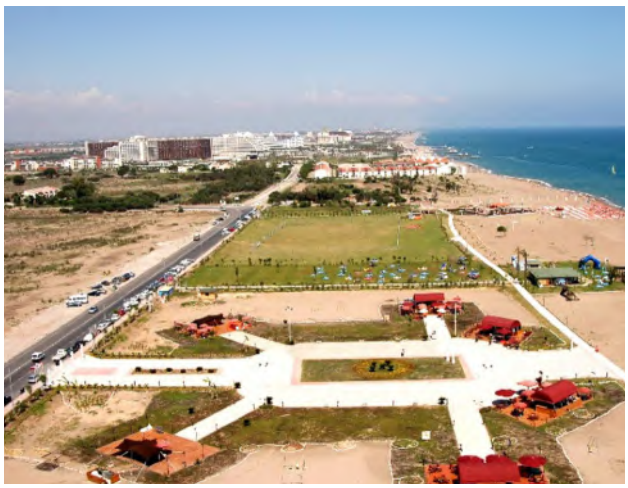
Figure 2.14. Konyaaltı Street.

According to Lynch, "edges" are linear elements not used or considered as paths by the observer. They act as boundaries between two phases, linear breaks in continuity: shores, railroad cuts, edges of development, walls. They are lateral references rather than coordinate axes.

In downtown Antalya, Konyaaltı and Lara Beaches on the western and eastern ends of the city, respectively; the rocky coastal cliffs (falaises) between these two beaches and Boğaçay and Aksu Streams - again on the western and eastern ends of the city respectively – are significant natural elements acting as edges.

• *Konyaaltı Beach:* Konyaaltı Beach (Figure 2.15) is a very popular and easily accessible public beach located 2.5 km west of the city centre. It starts from the western end of the rocky coastal cliffs and ends in the Antalya Free Trade Zone on the west. The beach is 7.15 km in length and 110 m wide. Akdeniz Boulevard (Antalya-Kemer Highway) forms the northern border of the beach and many buildings and big hotels are situated along it. An impressive view of the Western Taurus Mountain range can be enjoyed to the west of the beach.

Figure 2.15.
Konyaaltı Beach.



• *Lara Beach:* The sandy Lara Beach (Figure 2.16) stretches along the eastern coast, some 15 km from Antalya city centre. It is 2 km. long and 45 m. wide. The beach extends between the Antalya urban area and Kundu Tourism Area, where many big thematic hotels and holiday villages are located The beach is bordered by the sand dunes to the north, and an international Sand Sculpture Exhibition takes place on Lara beach every summer.

Figure 2.16.
Sandy Lara Beach
to the east of Antalya.

• *Rocky coastal cliffs:* Rocky cliffs of travertine are characteristic elements of Antalya's coastal landscapes (Figure 2.17). The cliff zone extends between Konyaaltı and Lara beaches and has a total length of 17 km and an average height above sea level of between 30 and 40 m.

Figure 2.17.
Coastal rocky cliffs (falaises).

• *Boğaçay Stream:* Boğaçay stream flows into the Mediterranean on Konyaaltı beach (2.18). And arises from the confluence of three other streams, namely Karaman, Doyran and Çandır, in addition to being fed by groundwater from its travertine bedrock. The dynamics of the stream are varied as it carries large amount of storm water in both the winter and spring seasons, but it flows all year round as a result of of the inflow of groundwater.

Figure 2.18.
Boğaçay Stream and the bridge over it on Akdeniz Boulevard.

• *Aksu Stream:* This has its source in the Taurus Mountains, and it flows into the Mediterranean after crossing Antalya city from north to south. In Ancient times, it was known as "Kestros" and used by trade ships. Today, it flows very close to the former city of Perge.

DISTRICTS, according to Lynch, are the medium-to-large sections of the city, conceived of as having two-dimensional extent, which the observer mentally enters "inside of", and which are recognizable as having some common, identifying character.

In downtown Antalya, the Old Town, known as "Kaleiçi"; Lara Beach and the Dune Area; Konyaaltı Beach and Beach Park Area; Çakırlar Citrus Plantations and the Kepez Squatter Settlement Area are the main "districts" of Antalya according to Lynch's definition. Since Lara and Konyaaltı beaches have already been described, the other three districts are given below:

• *Old Town (Kaleiçi):* "Kaleiçi" is the name of the historicl centre of Antalya (Figure 2.19). The Old Town was formerly completely surrounded by Hellenistic style walls which were reconstructed many times throughout the Roman, Byzantine, Seljuk and Ottoman periods. One of the monumental additions made to it is Hadrian's Gate, which was built in honour of a visit by Roman Emperor Hadrian's in 130 A.D. (Yılmaz, 2002). The city was divided into two sections by an inner wall built for public safety to separate the Turks from the Rums (the Anatolian Greeks) in the Seljuk Period (Güvenç, 1997). The area is characterized by a harbour (today a marina), which once played a very important role in Mediterranean trade. Most of the buildings in the Old City area were constructed in the 19th century, with Anatolian Greek architecture being dominant before 1923, while traditional Turkish houses were built mainly after that date. Turkish and Anatolian Greek houses differ in terms of architectural layout (Çavdar, 2005), and today, many examples of traditional Turkish and Anatolian Greek houses can be found in the Kaleiçi area.

Figure 2.19.
Old Town and Old Harbour of Antalya.

• *Çakırlar Citrus Growing Area:* Antalya is one of the major citrus growing region of Turkey, however, citrus orchards were very much affected by urban development and they were taken out of agricultural use as they became more valuable in economic terms for construction. The only area where citrus orchards can still be extensively seen is Çakırlar district to the west of the city, which still retains its agricultural character (Figure 2.20).

Figure 2.20.
A citrus orchard from Çakırlar District.

Figure 2.21. General view from Kepez district.

Figure 2.22. Cumhuriyet Square with National Rising Monument.

• *Kepez Squatter Settlements Area:* Kepez District to the north of Antalya city is characterized by squatter settlements. The district is surrounded by pine forests by three sides. Houses are generally one or two storey and have gardens. Kepez is known to be the district of low income inhabitants and migrants (Figure 2.21).

Lynch defined "nodes" as points: the strategic spots in a city into which an observer can enter. They are intensive foci to and from which he or she is travelling. They may be primarily junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another. Or nodes maybe simply concentrations, which gain their importance from being the condensation of some use or physical character, as a street corner hangout or enclosed square. Some of these concentration nodes are the focus and epitome of a district, over which their influence radiates and for which they stand as a symbol. They may be called cores. The concept of node is related to the concept of path, since junctions are typically the convergence of paths, events on the journey.

In Antalya downtown, Cumhuriyet Square and Çallı and Antalyaspor Roundabouts are the main nodes of the city.

• *Cumhuriyet Square:* The history of Cumhuriyet Square goes back to 2nd. Century B.C (Figure 2.22). The provincial governorship building is situated on this square and all formal and non-formal ceremonies are held here and on the street connected to the square. The National Rising Monument erected in the centre of the square in 1965 characterises Cumhuriyet Square. From the square, there is good view of the Old Town and several Antalya landmarks, such as Grooved Minaret and historicl Clock Tower.

• *Çallı and Antalyaspor Roundabouts:* Çallı roundabout is the oldest and the most well- known roundabout in Antalya. It is located on the ring road of Antalya and has a huge Atatürk sculpture in the centre of its green circle. Antalyapor roundabout, on the other hand, is relatively new and connects the main avenues of Antalya. Both roundabouts have vehicle underpasses while Çallı also has a tram underpass (Figure 2.23).

Figure 2.23. Çallı (left) and Antalyaspor (right) roundabouts.

LANDMARKS, according to Lynch, are another type of point-reference, but in this case the observer does not enter within them, they are external. They are usually a rather simply defined physical object: building, sign, store or mountain. They maybe within the city or at such a distance, that for all practical purposes they symbolize a constant direction. They may take the form of isolated towers, golden domes, or great hills, and they are frequently used clues of identity and even of structure, and seem to be increasingly relied upon as a journey becomes more and more familiar.

Among the main landmarks in Antalya are Cumhuriyet Square, the Historic Clock Tower, the Grooved Minaret, Hadrian's Gate, Hıdırlık Tower, Ataturk's House, the Glass Pyramid, the Atatürk Culture Centre, the Provincial Governorship Building, the Metropolitan Municipality Building, the Teacher's Guesthouse, the Old Town area, the Old Harbour and Tünektepe Hill. Most of these are located in the heart of the city, while the Glass Pyramid, the Atatürk Culture Centre and Tünektepe Hill are situated to the west of the city (Figure 2.24).

Figure 2.24. Landmarks serving the city image of Antalya.

2.6 Urban and Regional Population, Social Issues and Demographic Trends

The province of Antalya is located in the Mediterranean Region of Turkey. And has an area is 20,909 km2 making up 2.7 % land of Turkey. It is the 6th largest province in the country, with 19 districts and 640 km of coastline, representing 7.7 % of the total coastline of Turkey.

The development of the population of Antalya province is shown in Table 2.4. In 2010 it was 1.978.000 making it the 7th biggest province of the country. As can be seen from the table, the population of Antalya province is increasing, continuously. The highest growth was seen between 1980-1990 and 1990-2000, but over the last decade, there has been a slowing down in the rate of population increase in the province. The distribution of 2010 population across the 19 districts belonging to Antalya province is shown in Table 2.5.

Antalya metropolitan area (Antalya city) comprises five districts: Aksu, Döşemealtı, Kepez, Konyaaltı and Muratpaşa. Of these, Muratpaşa and Kepez have the highest population. Outside of the metropolitan area, Alanya, to the east of Antalya on the Mediterranean coast, is the district with the highest population of around 250.000. The development of population in Antalya city is shown in the Table 2.6, which indicates that the increase in the rate of the population of the city itself has been much greater than in the province. The population of the city has increased six-fold over last three decades. Although there has been a slowing down of population increase in the province over the last decade, the population continues to grow at an increasing rate within the city itself. The population density in the urban area is 515 persons per square kilometre.

Table 2.4. Population growth in Antalya Province (TÜİK, 2011).

Census Year	Population*	Increase rate (%)
1950	311.000	21,5
1960	416.000	33,8
1970	577.000	38,7
1980	748.000	29,6
1990	1.132.000	51,3
2000	1.720.000	51,9
2010	1.978.000	15,0

* Figures rounded up.

Table 2.5. Distribution of Population in 2010 between the Districts of Antalya Province (TÜİK, 2011).

	District	Male	Female	Total
1	Akseki	8.038	7.874	15.912
2	Alanya	127.306	120.980	248.286
3	Elmalı	18.799	18.957	37.756
4	Finike	23.101	23.037	46.138
5	Gazipaşa	24.484	24.041	48.525
6	Gündoğmuş	4.507	4.656	9.163
7	Kaş	27.294	25.851	53.145
8	Korkuteli	25.023	25.407	50.430
9	Kumluca	33.320	32.332	65.652
10	Manavgat	96.001	89.133	185.134
11	Serik	54.449	52.431	106.880
12	Demre	12.701	12.377	25.078
13	İbradı	1.648	1.698	3.346
14	Kemer	19.574	16.436	36.010
15	Aksu	32.202	30.849	63.051
16	Döşemealtı	21.341	21.092	42.433
17	Kepez	206.686	200.133	406.819
18	Konyaaltı	58.822	59.177	117.999
19	Muratpaşa	206.612	209.964	416.576
	Total	**1.001.908**	**976.425**	**1.978.333**

Table 2.6. Population Growth in Antalya City (TÜİK, 2011).

Census Year	Population	Increase rate (%)
1950	27.515	---
1960	50.908	85.02
1970	95.616	87.82
1980	173.501	81.40
1990	378.208	117.99
2000	604.000	159.70
2010	1.046.878	173.32

Distribution of the population of Antalya city by gender and age is given in table 2.7. From this, it can be said that the population of the metropolitan area is young to middle-aged. Those younger than 30 years old constitute 48 per cent of the total population, while those younger than 45 years old form the 74 % of the total population.

Table 2.7. Distribution of Metropolitan Population according to age and gender (TÜİK, 2011).

Age Group	Male	Female	Total
0-4	41.293	39.144	80.437
5-9	39.774	37.578	77.352
10-14	43.383	40.807	84.190
15-19	41.862	39.395	81.257
20-24	37.912	42.043	79.995
25-29	48.093	48.447	96.540
30-34	51.482	50.557	102.039
35-39	46.289	45.931	92.220
40-44	39.035	38.439	77.474
45-49	37.990	37.047	75.037
50-54	29.679	29.369	59.048
55-59	25.256	24.534	49.790
60-64	17.295	17.210	34.505
65-69	11.241	11.237	22.478
70-74	7.153	7.955	15.108
75-79	4.805	5.865	10.670
80-84	2.247	3.817	6.064
85-89	708	1.373	2.081
90+	166	467	633
Total	525.663	521.215	1.046.878

Antalya is a city receiving migration from the other parts of the country. Table 2.8 shows the incoming and outgoing migration over the last three years. According to this there has been a net migration to Antalya of almost 80.000 people in the last three years, with an average of about 26.000 people each year. The average annual net population increase over the same period was about 45.000. When total net population increase in the same period is taken into account, it can be calculated that almost 60 % of the population increase has come from migration.

Table 2.8. Migration received and given in Antalya City between 2008 and 2010 (TÜİK, 2011).

Years	Migration Incoming	Migration Outgoing	Net Migration	Net Population increase
2010	86.907	61.662	25.245	46.797
2009	75.696	58.632	17.064	44.485
2008	92.031	55.806	36.225	42.028
Total	254.634	176.100	78.534	133.310

People living in Antalya use the public open and green spaces very often as the climate of the region permits outdoor activities during most of the year. A questionnaire survey by Ortaçeşme et al. (2001) of 500 park users in the second largest urban park of Antalya, the Atatürk Park, revealed the following characteristics of the users of urban green spaces:

Table 2.9. User profile for green spaces in the case of Atatürk Park in Antalya.

Question	Rates
Sex	Male: 57.3%, Female: 42.7%
Marital status	Married: 59.7%, Single: 35.3%, Widow: 4.8%, Others: 0.2%
Age	18-30 years old: 33.3%, 31-45 years old: 6.7%, 46-60 years old: 24.6%, older than 60 years old: 9.2%, younger than18 years old: 6.2%,
Education	High school: 35.2%, University: 26.8%, Primary school: 22.2%, Secondary school: 14.2%, Illiterate: 1.2%, Literate: 0.4%
Job	Merchant: 24%, Housewife: 20%, Retired: 16.4%, Student: 13.8%, White collar: 12.4%, Blue collar: 6.4%, Others: 3.4%, Unemployed: 3%, Farmer: 0.6%
Family size	4 persons: 38.5%, 3 persons: 18.8%, 5 persons: 15.7%, 2 persons: 12.1%, 6 persons: 7.1%, more than 8 persons: 4.8%, 7 persons: 3.7%
Household income in 2004	100-200 Euro: 49.6%, less than 100 Euro: 19.7%, 200-300 Euro: 17.7%, 300-400 Euro: 7.4%, more than 400 Euro: 5.6 %

Table 2.9 indicates that the profile of the users of parks and open spaces in Antalya are similar to that of any other region or country: there are users from all age groups, educational levels, occupations, etc. The only significant insight is the fact that parks are mainly used by low income city dwellers.

2.7 Portraits of the Main Regional and City Parks and Open Spaces

2.7.1 Portraits of the Main Regional Parks

There are no parks with the status of "regional parks" in Antalya, however, there are several protected areas such as national parks and nature parks in addition to many forest recreation sites in and near the city, and in other parts of the province, which serve as regional parks. Termessos National Park, Antalya Zoo and Kurşunlu Waterfall Nature Park are examples of such areas in the near vicinity of Antalya city.

Termessos National Park

Termessos was a Pisidian city built at an altitude of more than 1000 meters on the south-west side of the mountain Solymos (known today as Güllük Mountain) in the Taurus Mountains. It lies 30 kilometres to the north-west of Antalya city on the way to Korkuteli district. It was founded on a natural platform on top of Güllük Mountain, soaring to a height of 1.665 metres from among the surrounding travertine mountains of Antalya.

Termessos is one of the best preserved of the ancient cities of Turkey. It constitutes an unusual synthesis of ancient culture and a large number of protected rare plants and animal species as part of the Güllük Mountain (Termessos) National Park (Figure 2.26). Concealed by a multitude of wild plants and bounded by dense pine forests, the site, with its peaceful and untouched appearance, has a more distinct and impressive atmosphere than other ancient cities. Because of its important natural and historical heritage, the city has been included in a national park bearing its name.

Figure 2.25. Locations of main regional parks.

Termessos National Park is mostly frequented by foreign tourists. The highest number of visits occurs during the spring and autumn months because of the lower and more comfortable daytime temperatures. Recreation in the park is experienced primarily along a number of linear segments. The theatre, being the most dominant feature, is the major gathering, resting and viewing point, located on the edge of a cliff facing outwards over the landscape (Sayan and Atik, 2011).

Figure 2.26. Amphitheatre in Güllük Mountain (Termessos) National Park.

Antalya Zoo

Antalya Zoo (Figure 2.27) is located to the north of the city, close to the final station of the cities new light rail system. The Zoo was established in 1989 on 40 hectares of red pine forest in Kepez district of the city, and has around 800 animals.

Antalya zoo, with its viewing road running between the shelters and enclosures, with waterfalls, fountains and infrastructure suitable for picnicking and acting as a suitable visiting and recreation area, is welcomes more visitors every year. In May 2011, a "Childrens'--Zoo" where the children may touch the animals freely was opened.

Figure 2.27. Red Deer (*Cervus elaphus elaphus*), a local species, in Antalya Zoo.

Kurşunlu Waterfall Nature Park

Kurşunlu Waterfall Nature Park (Figure 2.28) is located some 25 km from the city centre, on the new road to the neighbouring Isparta province. An area of 30 hectares around Kurşunlu Waterfall was declared a Forest Recreation Area for the first time in 1979. Later, in 1991, the area was given the status of a Nature Park due to its rich flora and fauna and interesting geological outcrops, by enlarging its size to approximately 400 hectares (Anonymous, 1999). Today, Kurşunlu Waterfall Nature Park is a very popular recreation site in Antalya province. It offers opportunities for a variety of recreation activities, and receives some 400.000 domestic and foreign visitors each year (Ortaçeşme *et al.* 2002b).

Figure 2.28. Kurşunlu Waterfall Nature Park.

2.7.2 Portraits of the Main City Parks and Open Spaces

The parks and open spaces examined in this section are Atatürk Culture Park, Atatürk Park, Karaalioğlu Park and Falez Park together with Cumhuriyet and Konyaaltı squares. The location of these parks and squares is indicated in Figure 2.30 below.

Atatürk Culture Park

Atatürk Culture Park (Figure 2.29) is located in the west central area of the city between the Beach Park of Konyaaltı Beach and Yüzüncü Yıl and Dumlupınar Avenues. It is separated from the Beach Park by 40-50 m Of rocky cliffs, with Atatürk Culture Park located on the cliffs. Opened in 1997, it is the largest public green space of Antalya with an area of 80 hectares.

Antalya Atatürk Culture Centre and the Sabancı Glass Pyramid Congress and Expo Centre are located within the park. The Antalya International Golden Orange Film Festival, International Piano and Jazz Festival as well as National Labour Film Festival, Landscape Expo and Jewellery Expo are important events that are held regularly in Atatürk Culture Park. Other activities organised by professional chambers, such as International Architecture Biennial, Machine Engineers Chambers and Civil Engineers Chambers Fair also take place here.

Facilities within the park include an indoor exhibition area, meeting rooms, and outdoor and indoor cafeterias. One of the most important landscape features in the park is a pond with an area of 12.000 m². Two open-air theatres with seating for 3.500 and 1.000 people, two playgrounds, and two big parking areas are among the other facilities in the park (Saatcı, 2009).

Figure 2.29. Atatürk Culture Park, main entrance (left), main open air activity area (right).

Figure 2.30. Locations of main parks and open spaces.

The timing, purpose and level of the use of the Atatürk Culture Park vary during the day and between the seasons. Inhabitants of neighbouring quarters come jogging in the morning, in the late afternoon and at weekends. Cafes and green spaces in the park are used by inhabitants from all around the city. Occasional festivals and exhibitions attract more people from the administrative districts of Antalya province and even from other provinces.

A unique combination of both native vegetation and ornamental plants make Atatürk Culture Park a living laboratory in terms of species diversity and the natural structure of the landscape. The most typical Mediterranean plants which can be found in the park include *Pinus brutia, Quercus coccifera, Olea europea, Phillyrea latifolia, Pistacia lentiscus, Pistacia terebinthus, Ruscus aculeatus, Euphorbia paralias, Daphne seriacea, Daphne oleoides, Myrtus communis, Ceratonia siliqua, Smilax aspera*.

As Atatürk Culture Park is home to many events, a great number of ornamental plants with their colourful flowers, foliage, barks, fruits and forms were widely used in its design. Among the common trees to be found here are *Phoenix canariensis, Washingtonia filifera, Ficus refusa-nitida, Eucalyptus camaldulensis, Cupressus arizonica var glauca, Erythrina crista-galli* and *Jacaranda mimosifolia*.

Some of the bird species observed in the park include *Corvus corax, Streptopelia turtur, Pycnonotus barbatus, Fringilla coelebs, Erithacus rubecula, Passer domesticus, Passer moabiticus, Petronia petronia, Motacilla cinerea, Motacilla alba, Pycnonotus barbatus.* An artificial pond in the park is home for many species of domestic ducks *Anas platyrhynchos, Cairina moschata* and presumably some migratory birds during migration seasons.

Typical paving materials in the park are concrete paving, slate, concrete slabs and asphalt. Travertine was also used in the construction.

Atatürk Park

Located on the high coastal rocky cliffs at the centre of the city, Atatürk Park covers an area of 19 hectares (Ortaçeşme *et al.*, 2001). As Atatürk Park was established over natural vegetation during the 1980's, it is home to many native species.

The park has an undulating topography, but overall it slopes from north to south and from east to west. In some parts there are deep ditches, depressions and sudden changes of level. The vegetation cover of the park consists of both natural and ornamental species. Ornamental species are seen in the designed parts, while maquis species are dominant in the natural areas. The park is rich in woody species, which number up to 100, while there are also many herbaceous and bulbous-rhizomatous species. Since it has partly conserved its natural character, it has a rich fauna. Some 50 bird species have been observed in the autumn and winter seasons (Sayan *et al.* 2003, Ortaçeşme *et al.* 2004).

The coastal cliffs on which the park was established were taken under protection in 1979 by the Higher Council for the Protection of Monuments and Antiquities. Later, in 1998, the whole park area was given the status of a Natural Heritage Site.

Figure 2.31. Pond (left) and an example from avifauna, *Pycnonotus barbatus* **(right).**

As a result of a recent revision on the design project more commercial facilities, such as restaurants, cafes, clubs as well as more trails and viewpoints, have been introduced to the park. Today, it is characterized by restaurants and cafes, while residents of neighbouring districts use the park for walking and jogging.

Karaalioğlu Park

Karaalioğlu Park is located in the heart of the city next to the Old Town. It stretches between the most fashionable street of Antalya, Işıklar Street, and the Mediterranean Sea, and covers an area of 4.8. hectares on the 35-40 m high rocky cliffs above the sea. Antalya Metropolitan Municipality offices are situated within the park and Antalya City Stadium lies adjacent to it.

Established as the very first public space in Antalya City in the 1940's, Karaalioğlu Park symbolises the Republic Period. Due to its historical, cultural and natural values, it was given the status of Natural Heritage Site in 1991 and is one of the symbols of Antalya. Situated almost in the heart of city centre, Karaalioğlu Park provides an organic relationship between the city and the regional environment, which it overlooks and adds to the city's identity, being a popular destination for all visitors to the city. Every year an International Sculpture Festival as well as local activities, such as Ramadan Feasts are held in this park.

Figure 2.33. Location of Karaalioğlu Park.

Karaalioğlu Park (Figure 2.33) is significant for a number of reasons: it is a large urban park which is the site of various activities; it is a coastal park with picturesque views to the Taurus mountains and the Mediterranean Sea; it is a historic park which is 70 years old; and it is a diverse park with over 120 ornamental plants and many native plant species (Sayan *et al.*, 2000).

Figure 2.32. Winding paths and a cafe in Atatürk Park.

Figure 2.34. A panoramic viewpoint (left) and a domesticated parrot (right) in Atatürk Park.

Falez Park

Falez Park (Figure 2.35) is located on the rocky cliffs on the coast to the east of Antalya City centre. It has an area of more than 5.000 m^2 and despite being divided by urban land uses, it is important on account of its picturesque sea views and coastal scenery.

Figure 2.35. Location of Falez Park.

Figure 2.36. National Rising Monument in Cumhuriyet Square.

Common ways in which the public uses the park include morning walks, sightseeing from view points and picnics especially at weekends. There are playgrounds, cycling and walking trails, an artificial lake, an ornamental pool, sport grounds, and a number of cafes and restaurants in the park. The plant cover is characterised by rocky vegetation on the cliffs, as well as macchia, reed beds and a great number of exotic species within the designed parts of the park.

Cumhuriyet Square

Cumhuriyet Square is oldest public square in Antalya City. It is a focal meeting point in the city centre and one of the strong symbols of the city. Almost all national ceremonies and public activities take place in this square. The National Rising Monument was placed in Cumhuriyet Square in 1965 (Figure 2.36). With the extension and re-design of the square in 2006, its total size increased to 1.500 m^2 and during the course of the re-design a two-storey car park for tourist buses and automobiles was constructed underneath it and new water features were also added.

Due to its location and easy accessibility, it is used by local inhabitants as well as by foreign and domestic tourists at all times of the day and all year round. Special lighting design and water features facilitate public use of the square at night. Situated at 35-40 meters high from the sea level, Cumhuriyet Square provides a perfect view of the Old Town (Kaleiçi) and surroundings.

Paving materials used include different coloured andesite, travertine and granite (Aykurt, 2010). As a reflection of its formal use, many ornamental plants, particularly ones with interesting habits were used in the design of Cumhuriyet Square.

Konyaaltı Square

Konyaaltı Square was established on an area of 2.75 hectares on the Konyaaltı coast in 2006. It is a combination of a public park and a square, with the size of the square itself being around 10.000 m^2. There are many cafes, restaurants and clubs around the square and apart from some individual public ceremonies and festivals which are held there, its use is mainly commercial. Public use in the square is concentrated mainly in the evening.

Paving materials used include sandstone, mosaic, slate, granite and different colours of concrete.

Plant species are mainly newly introduced ornamental species, but some mature plane trees (*Platanus orientalis*) dominate the park and square. Among other ornamental species used are *Photonia fraseri, Pittosporum tobira, Ligustrum vulgare, Prunus cerasifera, Malvaviscus pendula, Pyracantha coccinea, Phoenix dactylifera, Nerium oleander, Eucalyptus camaldulensis, Acacia cynaphylla, Hibiscus rosa-sinensis, Jacaranda mimosifolia* and *Thuja orientalis*.

Bird species observed in the park include *Corvus corax, Pycnonotus barbatus, Erithacus rubecula, Passer domesticus, Passer moabiticus, Streptopelia decaocto, Petronia petronia, Motacilla cinerea* and *Motacilla alba*.

Figure 2.37. Views of some landmarks and the Old Town area from Cumhuriyet Square.

Figure 2.38. Konyaaltı Square.

2.8 Characteristic Uses and Significant Activities in Public Spaces

Parks and public spaces in Antalya have a range of functions depending on their size and location. Neighbourhood parks, which are relatively smaller in size and which allow for limited activities serve the inhabitants of the respective city quarters. Among the characteristic uses of these parks are sitting, providing for childrens' play and for sport. On the other hand, urban parks which are much larger in size serve to the general public of Antalya. They also provide facilities for holding different cultural activities in addition to the recreation opportunities they offer.

Research by Ortaçeşme *et al*. (2001) in Atatürk Park, one of the most frequented urban parks in Antalya, showed that among the characteristic uses are walking, viewing the sea, picnicking, showing around the children, playing sport, cycling, and walking the dog. Examples of characteristic uses and significant activities in some parks and public spaces in Antalya are explained below.

Atatürk Culture Park

The Antalya Golden Orange Film Festival, has been held annually since 1964 in Antalya, and is the most important national film festival in Turkey. The event, organized by the Antalya Foundation for Culture and Arts (AKSAV), takes place in the autumn months at

Figure 2.39. Antalya Cultural Centre in Atatürk Culture Park announcing the 48th International Golden Orange Film Festival.

Figure 2.40. Antalya Cultural Centre in Atatürk Culture Park announcing the 12th International Piano Festival.

the Antalya Cultural Centre in Atatürk Culture Park. The International Antalya Piano Festival, where the world's most prestigious musicians, classical music players and talented young artists from all over the world perform, also takes place in the cultural centre in the park.

Konyaaltı Open Air Theatre is one of the two open-air amphitheatres in Atatürk Culture Park. Because of its location and capacity, the theatre is home to many open air concerts and activities all year round (Figure 2.41). Among other activities held in Atatürk Culture Park are fairs, exhibitions, ceremonies, concerts, theatres and conferences which take place in the Glass Pyramid and Semi-open Exhibition Area next to the glass pyramid. The semi-open exhibition was partly modified by being covered over, and it is now serving as a public library (Figure 2.42). The Antalya version of the world famous Oktoberfest, Oktoberfest Antalya, was held in Atatürk Culture Park in 2011.

Figure 2.41. Konyaaltı Open Air Theatre.

Figure 2.42. Glass Pyramid (top left), semi-open exhibition area (top right), symbol of Golden Orange Film Festival (bottom left), a sculpture in the park (bottom middle) and new public library (bottom right).

Figure 2.43. Scenes from formal ceremonies, daily use, and lighting at night in Cumhuriyet Square.

Cumhuriyet (Republic) Square

Almost all formal ceremonies on national days as well as other public activities are held in this square. Among these are ceremonies and celebrations of the Republic Day (October, 29th), National Sovereignty and Children's Day (April, 23rd), Commemoration of Atatürk, Youth and Sports Day (May, 19th), National Victory Day (August, 30th) and New Year celebrations. Also, public institutions and NGOs start their own formal celebrations by placing wreaths in front of the National Rising Sculpture in the middle of the square.

After its enlargement in 2006, the square is now more than just a square where formal activities take place. Water features and more sitting elements were also added in the square nf it is now a resting place for people throughout the day as well as after dark due to the special lighting design. The square is also a very good vantage point providing views across the Old City area.

Karaalioğlu Park

The number of activities held in Karalioğlu Park is fewer than in the other parks and squares. Antalya Metropolitan Municipality holds the religious Ramadan Festival in the park, during which a festival bazaar is established and remains open during the whole Ramadan month. Fast-breaking meals are offered to people by the municipality every night during Ramadan. The festival area and bazaar are very crowded and busy during the night after the end of daily fasting. Different shows and concerts are performed by artists and groups at night during the festival.

Figure 2.44. Ramadan Festival bazaar (left) and fast-breaking meal (right) in Karaalioğlu Park.

2.9 Planning, Design and Management of Protected Landscapes, Public Open and Green Spaces

Legislation in Turkey to guide spatial development and planning started with the "Law of Buildings and Roads" (1933). The rapid urbanization process of the 1950's necessitated new legislation and the establishment of an institutional governing body responsible for urban development. In this context, the "Planning Act" (1957/6785) was passed, and the Ministry of Reconstruction and Settlement was established (1958). In line with the provisions of the first Planning Law, the planning authorities were assembled at the Central Government level. The passing of the 1957 Planning Act and the establishment of the Ministry coincided with the setting up of the State Planning Office and the coming into force of the First Development Plan (1963-1967)..More recently, the 1985 "Planning Law" (1985/3194), which is currently in force, has been the starting point of an important change in the planning field through the transferring of planning responsibility to the local government.

Planning Law in Turkey controls land use and provides for two planning levels and corresponding plan types. At the first level, "Regional Plans" and "Environmental Plans" are defined, generating strategic decisions relating to urban and regional developments. At the second level, "Development Plans" and "Implementation Plans" are defined in order to manage development consents.

Regional Plans are development plans formulating development strategies and tools for particular regions, while Environmental Plans are spatial plans making decisions on major land uses. Authority to prepare Regional Plans lies with the State Planning Office, which is a central government institution. Since 2003, the authoritative power on Environmental Plans now mainly belongs to the Ministry of Environment and Urbanism. In addition, the "Law of Special Authorities for Provinces" (2005/5302) gives planning responsibility for the Environmental Plans of the provinces to the "Special Authority for the Province", which is a local council.

Local government (at the municipality level) prepares the second level plans, namely the "Development Plans" and the "Implementation Plans". However, some articles of the Law define exceptional cases which devolve the planning responsibility back to the central government. These exceptions are tourism areas, conservation zones and special environmental protection zones.

2. 9.1 Planning, Design and Management of Public Open Spaces and Green Spaces

The planning of public green and open spaces is an issue covered by the development plans and the responsibility for making development plans is in the hands of municipalities. Since Antalya has metropolitan municipality status, the metropolitan municipality has the competency of planning in metropolitan area. The metropolitan municipality also has the design and management responsibility for urban green and open spaces with an area of more than 3 hectares. This responsibility also applies to main avenues and streets of the city. The sub-municipalities, of which there are five in Antalya, retain the right for design and management for the rest of the public green and open spaces.

Turkish Planning Law and its regulations include foresights for urban land uses including green and open spaces. Within the historical development of the legislation, the common approach towards urban green space planning has been to provide a certain area (m^2) of green space per capita of the projected population. The first standard was brought in by the former Planning Law (6785), adopted in 1956. An article concerning the provision of at least 7 m^2 green spaces per capita in urban areas was added to the regulation of the law in 1972. However, no other specification was made concerning the character of green spaces to be planned and thus it was not clear whether they would be parks and gardens open to public use or they would include forest and agricultural fields with a passive green character.

The 7 m² standard was retained in the current Planning Law No. 3194, which was adopted in 1985. The associated regulations also included a definition of the type of green spaces to be considered when fulfilling 7 m² standards, which stipulated that they should take the form of "active green space" such as parks, children playgrounds and sport fields with the necessary facilities and be open to public use. However, there were still no provisions for urban green space planning such as formation of a green structure, delimitation of urban growth by green belts, provision of an even distribution of the green spaces within the urban fabric, etc. After the heavy earthquake in the Marmara Region of Turkey in July 1999 in which some 17 thousand persons lost their lives, the regulation was revised and per capita green space to be provided by development plans was increased to 10 m² in September 1999. The reason for that increase can be traced back to the sad experience gained during and after the earthquake. There was not sufficient open spaces for people to take refuge in during the earthquake and to set up tents afterwards in the devastated towns and cities.

The design of public green and open spaces is undertaken in different ways. The municipalities may either have them designed by their own staff (landscape architects and architects), or by private offices. Another possibility is to hold a national design competition. This last method is used when the area is of high significance for the city (e.g. Konyaaltı Square). All municipalities have their own maintenance and ornamental plants production units for open and green spaces. In case the existing capacity is not enough to maintain these places, they can apply for maintenance service procurement.

2.9.2 Planning, Design and Management of Protected Landscapes

The planning, design and management of protected landscapes in Turkey are regulated by separate laws and regulations, governed by the by responsible ministries and carried out by the provincial directorates of these ministries.

The first attempts concerning the protection of natural areas in Turkey started in 1937 with the Terrestrial Hunting Law (THL) No. 3167 (modified in 2003), which created Wildlife Conservation Areas. No further developments were seen until after the World War II. In 1954, the first national park of the country was established under the Forestry Act. A number of Wildlife Conservation Areas and National Parks were established in the following years. In 1983, three pieces of legislation concerning protected areas were adopted:

- The Law for the Protection of Natural and Cultural Assets No. 2863 (LPNCA)
- The Environment Law No. 2872 (EL)
- The National Parks Law No. 2873 (NPL)

Various protection categories were created by these laws. The THL was first to create "Wildlife Conservation Areas". The LPNCA created "Natural, Archaeological and Urban Heritage Areas" status. The EL included former "Specially Protected Area" status. The NPL brought four categories such as "National Parks", "Nature Parks", "Nature Reserves" and "Natural Monuments". So there are actually 9 different protection categories in Turkey.

Different procedures are applied in the designation of protected landscapes in Turkey. However, in general, they are designated:

- Upon the suggestion of the corresponding ministries, NGOs and citizens;
- After careful assessment of the characteristics of the candidate area, and deciding suitable category;
- By the approval of the corresponding minister, except national parks;
- With favourable opinions of the ministries of National Defence, Reconstruction and Housing, Culture and Tourism, and others concerned;
- National Parks are designated by the decision of the Council of Ministers.

Antalya is the province with the highest number of protected landscapes in Turkey. As of 2010, there were 4 national parks, 4 nature parks, 3 nature reserves, 9 nature monuments, 8 wildlife conservation areas, 3 specially protected areas and 531 natural and cultural heritage sites within the provincial boundaries. Two national parks, two nature parks and many natural and cultural heritage sites remain partly or entirely within the Antalya metropolitan area.

2.10 Planning and Design Offices in the City/Region

Planning and design offices are established by architects, landscape architects and urban planners. All offices should be members of the respective chambers in order to be able to undertake professional practice. Chambers of Architects, Landscape Architects and Urban Planners are organised under an umbrella organisation called the Union of Chambers of Turkish Engineers and Architects (UCTEA). The headquarters of all chambers are in Ankara, the capital city. In Antalya, all three chambers have regional branches. The numbers of registered members and offices in respective regional branches are given in table 2.10.

Table 2.10. Information about the planning and design offices in Antalya.

Name of the chamber	Year of Foundation	Number of members	Number of offices
Chamber of Architects	1986	1625	600
Chamber of Urban Planners	1997	161	32
Chamber of Landscape Architects	1995	268	20

2.11 Tourism Developments in Antalya Region

Home to many civilisations, the Mediterranean region has become one of the world's main tourist attractions. Tourism in the Mediterranean is a dynamic sector of the economy: in 2007, Mediterranean countries received 275 million international tourists (UNEP, 2009) representing approximately 30 % of global international tourism. By 2025, national and international tourism visits are projected to be about 637 million in Mediterranean countries, of which 312 million in the Mediterranean coastal zones alone. Projections for 2025 of international tourist entries show that the Southern and Eastern Mediterranean Countries and the Eastern Adriatic Countries are likely to report the highest growth rates (UNEP, 2008). The top five countries in the Mediterranean tourism are given in table 2.11.

Table 2.11. Top five countries in terms of tourist arrivals in the Mediterranean Basin in 2010.

	Country	Tourist number*	Share in the Mediterranean (%)**
1	France	76,800,000	27,9
2	Spain	52,700,000	19,2
3	Italy	43,600,000	15,9
4	Turkey	28,600,000	10,4
5	Greece	15,000,000	5,5
Total		**216,700,000**	**78,9**

* Figures rounded up.

** Shares according to total arrivals in 2007

Tourism is one of the largest industries and employers in Turkey. Travel & Tourism is also a major generator of government revenue. The forecast annual growth between 2001 and 2010 was for 5.7 percent real growth per annum (WTTC, 2001).

According to the Turkish Tourism Strategy 2023, the vision of Turkey is to bring tourism and the travel industry to a leading position for leveraging rates of employment and regional development, with the adoption of a sustainable tourism approach. It is also a target to ensure that Turkey becomes a world brand

in tourism and a major destination in the list of the top five countries receiving the highest number of tourist and highest tourism revenues by 2023 (Ministry of Culture and Tourism, 2007).

The Antalya region was dependent on agriculture until the 1980s. Due to the Tourism Incentives Law in 1982, Antalya started to become a favourite place for investors owing to its rich natural and cultural assets, clean and beautiful coasts, historical ruins and mild climate. Many large hotels and holiday villages were constructed along Antalya's coastline and increasing employment opportunities gave rise to immigration from rural regions of the country to Antalya. As the infrastructure improved in conjunction with tourism investments, Antalya has also become a favourite place to live for Turkish citizens. Antalya has also become a popular destination for foreign tourists (Table 2.12).

Table 2.12 shows that there has been a 2.7 times increase in tourist arrivals to Turkey. The rate of increase for Antalya over the same period has been more or less the same (2.6 times). Table 2.12 also shows that Antalya's share of tourist numbers is 33.3 % on average, in other words: one third of the tourists arriving to Turkey.

The income from tourism has gradually increased during the same period and it reached to 25 billion USD in 2011 with a 2.5 times increase compared to the income in 2001. However, similar increase is not seen at the share of tourism in gross national product (GNP). There has been a 60 % decrease, as a result of other sectors having undergone a higher rate of development during the same period.

There have been similar increases in the number of accommodation facilities and their bed capacities over the same period. Antalya has approximately a 40% share of the total accommodation capacity of Turkey (ATS, 2006). Turkey's total bed capacity in 2001 was 595.027 in 3220 accommodation facilities. This figure rose to 1.205.000 beds in 6.459 accommodation facilities in 2011. The growth of Antalya's accommodation capacity over the last decade amounts to an increase of 327 %., from 160,344 in 2001 hotel beds to 525,140 in 2011. The total number of accommodation facilities in Antalya was 629 in 2001 and this figure rose to 2201 in 2011 - a rate of increase of 350 %. So, there has been a tremendous increase in the number of accommodation facilities and bed capacity over the last decade. All these figures legitimize Antalya being known as "the capital city of tourism in Turkey".

Table 2.12. Tourist numbers and income from tourism in the last ten years (AIKTM, 2012).

Year	Number of tourists arriving to		Share of Antalya (%)	Tourism income (billion USD)	Share in GNP (%)
	Turkey	Antalya			
2001	11 619 909	4 211 901	36.2	10.1	6.9
2002	13 248 176	4 747 581	35.8	11.9	6.5
2003	13 956 405	4 682 170	33.5	13.2	5.5
2004	17 548 384	6 047 297	34.5	15.9	5.2
2005	21 124 886	6 884 636	32.6	18.2	5.0
2006	19 819 833	6 011 183	30,3	16.9	4.3
2007	23 340 911	7 696 970	33,0	18.5	4.5
2008	26 336 677	8 564 513	32.5	22.0	4.2
2009	27 077 114	8 350 869	30.8	21.2	4.3
2010	28 632 204	9 334 171	32.6	20.8	4.2
2011	31 456 076	10 900 914	34.7	25.0	n/a

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Chapter 3

Rural change: landscape and lifestyles

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3.1 Introduction

3.1.1 Landscape change in Antalya: context

In a single generation the region of Antalya has undergone dramatic development driven by tourism, promoted by the Ministry of Infrastructure and Tourism and funded at least partly by the World Bank (South Antalya Tourism Infrastructure Project).

Changes in farming practices also led to landscape change in Antalya. Over the past half-century the traditional nomadic lifestyle virtually disappeared as families converted to arable farming. Agricultural growth was driven by national and local increases in population, by technical developments that led to the adoption of more intensive, more profitable methods and by improvements in infrastructure. The population of more remote villages has dwindled sharply; family farms have been abandoned in favour of better paid work in tourism, construction and agriculture on the coast. Close to the coast, rapid urbanization has occurred and, close to the expanding limits of Antalya city in particular, intensive farming increasingly dominates large tracts of land.

The foreign team's expectations concerning landscape change in Antalya were based on knowledge of European practices of the past half-century and particularly in areas of coastal development associated with tourism in the western Mediterranean. Vastly improved standards of living for the once rural population of the Mediterranean coastline of Spain and France and (to a lesser extent) Italy were brought about by tourism. Today, an urban population is concentrated in settlements that sprawl virtually the entire length of the littoral between Malaga and Livorno. Apart from the obvious urban sprawl along the coast, the move to the coast itself resulted in the depopulation of inland villages (often dating from mediaeval times) and abandonment of traditional farming practices inland, with loss of farmland, cultural and built heritage and landscape diversity in favour of woodland regeneration. The depopulation of inland villages was associated with the enlargement and gentrification of towns and villages closer to the coast and the building of secondary homes in (and around) them. We were aware that the same phenomena might be occurring in rural Antalya and hoped to learn more about them and others during our trip.

Figure 3.1. Intensive polytunnels, view north across the Kumluca plain.

3.1.2 Kumluca: aims of the study

Local experts, partly because of its booming agricultural sector, and partly because of the diversity of its landscapes, identified the rural district of Kumluca as being of particular interest. This chapter describes the changes in landscapes and lifestyles that we met in Kumluca, it tries to understand how change came about, weigh up positive and negative effects, imagine change that is yet to come and how landscape architecture might inform and influence it.

By focusing on the district of Kumluca, on the concept of change and on the "case study" (as a tool that can link teaching, research and innovative practice), the intention was to shed new light on all three aspects of the discipline of landscape architecture.

3.1.3 Rural change (terms and concepts)

From the perspective of landscape architecture rural change embraces all aspects of social and spatial transformation that occur, over time, in areas that are or have been characterized by traditional agricultural practices.

Traditional agricultural practice is often marked by subsistence farming, a form of farming that persists today on a relatively wide scale in various areas of the world, in which nearly all of the crops or livestock raised are used to maintain the farmer and the farmer's family, leaving little, if any, surplus for sale or trade. The typical subsistence farm produces a range of crops and animals that feed and clothe a family during the year. Decisions are primarily made in regard of what the family will need in the coming year, and secondarily in regard of market prices. Tony Waters writes: „Subsistence peasants are people who grow what they eat, build their own houses, and live without regularly making purchases in the marketplace." (Wikipedia: subsistence agriculture, 11 March 2013).

Despite the rule of self-sufficiency in subsistence farming, most subsistence farmers participate in trade to some degree. Although their trade is markedly less than that of complex consumers, many subsistence farmers trade items produced because of special skills or access to resources valued in the marketplace. The sale of hand-woven rugs (kilim) once produced by nomadic tribesmen in Anatolia is an example of one such special product.

Subsistence agriculture largely disappeared in Europe by the beginning of World War I. Nevertheless, in the 1950s, it was still common for family farms in Europe to grow much of their own food and make their own clothes. Sales of some of the farms' production earned enough to buy staples such as sugar, coffee and tea, petrol, fuel oil, textiles, medicines, hardware and luxuries such as sweets, exotic fruits and vegetables and books, as well as occasional services from physicians, veterinarians, blacksmiths, and others.

Subsistence farming continues today in large parts of rural Africa, Asia and Latin America.

Some forms of subsistence farming include nomadic practices. Families migrate along with their animals from one place to another, in search of fodder for their animals, or in response to seasonal variations in climatic conditions. Generally they rear cattle, sheep, goats, camels and/or yaks for milk, skin, meat and wool. This way of life is still common in parts of central and western Asia, India, east and south-west Africa and northern Eurasia. This was the traditional way of life in much of Antalya and in the Kumluca district until the 1950's after which time it gradually died out as farmers started to settle and concentrate on fruit and vegetable production.

In the district of Kumluca, improvements in communications, transport and other technologies that enhanced yield (irrigation, plastics, fertilization) and facilitated distribution (packaging, refridgeration), combined with increased demand, led to the modernization of farming practices rather than the abandonment of farming. Traditional agricultural production was rationalized and intensified with an associated increase in goods and services concerned with increased production: seeding, piping, plastics, picking, packing, marketing, sales, transport etcetera.

The availability of new agricultural employment led to significant migration towards the town of Kumluca, not only from the more remote villages of the district, but also from large cities elsewhere, resulting in growth of a new urban centre in response to demand for in-situ services (housing, schools, hospitals, etc.).

In other parts of the district and across Turkey, out-migration from rural areas has led to their depopulation as the young have moved to expanding towns and cities where more profitable work was available.

Changes in agricultural practice strongly impact on the visual, functional and economic value of the land and the agricultural and/or ecosystem services it offers.

Mankind benefits from a multitude of resources and processes that are supplied by ecosystems. Collectively, these benefits are known as ecosystem services and include products like clean drinking water and processes such as the decomposition of wastes. While scientists and environmentalists have discussed ecosystem services for decades, these services were popularized and their definitions formalized by the United Nations 2005 Millennium Ecosystem Assessment (MA) that grouped ecosystem services into four broad categories: provisioning, such as the production of food and water; regulating, such as the control of climate and disease; supporting, such as nutrient cycles and crop pollination; and cultural, such as spiritual and recreational benefits. (Wikipedia: ecosystem services, 11 March 2013).

3.1.4 Variations in rurality

In most disciplines a specific set of terms and definitions is used to describe the knowledge base. However, as far as rural change and development is concerned, the ambiguity of terms used by the various disciplines interested in it makes all but abstract discussion relatively difficult. Terms and definitions vary according to profession, nationality, language, context and experience. Local experts Veli Ortescemi and Ahmet Benliay (Arkdeniz University, Antalya) brought this fact to our attention in their choice of site.

The foreign team's expectations were based largely on patterns typical of rural change in western Europe over the past century: the abandonment of small scale farming practices and associated loss of farmland, cultural heritage and landscape diversity combined with growth of urban settlements. All along the western Mediterranean coastline (Spain, France, Italy), for example, such change has been connected with tourism.

We did not expect to find a "boom town", such as Kumluca, in a wealthy rural district that deliberately turned its back on tourism. The inhabitants of the district of Kumluca, famous for its fruit and vegetable production, are almost entirely employed, either directly or indirectly, by agriculture.

Kumluca is an exception to the rule of exodus that typifies rural change. The success of its agricultural industry has created a thriving, modern, urban centre and supports a growing local population.

Figure 3.2.
View south across Kumluca plain, towards the town of Kumluca.

Rural or urban?

Understanding a settlement as urban, or rural, depends largely on context. Identifying a place as urban usually depends on land-use type and population size, perhaps with limits on density, built contiguity and in less developed countries agricultural activity, but identification of a rural population is less straightforward. Criteria might include a threshold population and /or density and/or commuting distance to the nearest town, or journey time. Less clear again is the difference between a rural community that is not dispersed, and an urban one, that is…

Change is hard to measure

The very general terms used in public, political and even professional discussion about development and change are confusing and can result in misleading comparisons. Furthermore, the disciplines that work in development (planners, designers, economists, geographers…) define these terms differently and use multiple approaches when it comes to measurements. There is not one way of quantifying sprawl. Or compactness. Or rurality. Or wealth. It seems that discussion about rural development, the town and its sprawl often takes place in the abstract. Readers should refer to the detailed descriptions in the paper "Urban sprawl. How useful is this concept?" (Franz *et al.*, 2006)

Rural change in Europe

European history differentiates between the compact city shaped by the agrarian revolution and the later city that the industrial revolution impelled beyond its former boundaries. Europe's agricultural landscapes were shaped and reshaped over millennia by hands concerned more about productivity than beauty. "Felling, terracing, crop rotation and irrigation were all part of everyday life… and the clearance of woodland, drainage of marshland and reclamation of wasteland and heath for agriculture... created the countryside" (Waldheim, 2006).

Nevertheless, the ideals of 'urbs and 'rus' already evidenced 19th Century misunderstanding of the symbiotic relationship between the English town and its countryside. Abandonment of traditional rural practices, coupled with urban development and the introduction of a global marketplace for cheap foodstuffs, has led to an increasingly great disconnect between town and countryside in the West. Today, in much of Western Europe, urban youngsters don't know where their food comes from (Meeres, forthcoming).

Figure 3.3. Tomato production, Kumluca.

3.1.5 Overview of rural change in Turkey

Turkey has always been divided geographically: the poorer, more traditional, remote and rugged East struggles to compare with the Europe-oriented West. The coastal and interior division is equally valid however and regional inequality is another problem in Turkey. Whilst the central heartlands are dry and dotted with small, backward, agricultural settlements, the generally more developed coastal area benefitted from international trade and culture since time immemorial. Today this is augmented by (or takes the form of) tourism (Ozturk, 2012).

As far as landscape change goes, more is written about the transformation of land in and near fast-growing urban settlements and less about the effects of depopulation on the rural hinterland itself. There is more academic research on current economic and social trends and comparatively little on modern rural landscape change in Turkey. Nevertheless, various sources (Turkish Statistical Institute, European Commission, UN International Fund Agricultural Development) reveal information that allow us to draw some conclusions on the situation.

The population of Turkey has more than doubled over the past half-century; it was recorded at 75.6 million people in 2012, with 77% living in provincial or district centres (Turkish Statistical Institute, 2012) and as 28.2 million in 1960, when two thirds lived in rural areas. Both the urban and rural population has grown, but the urban population has grown much faster. Whilst the agricultural sector has grown in pace with the population, industrial and services sectors have grown more rapidly, as has the wealth of urban centres. Rural farmers, particularly in the heartlands of the country, have been slow to adopt modern techniques. There is an increasing divide between rural and urban areas.

Nevertheless, Turkey's basic agricultural resources are vast and offer considerable potential for expansion. Around 40 percent of Turkey's land area is arable, the agriculture sector remains one of Turkey's largest employers and a major contributor to the country's GDP. In 2010, however, agriculture accounted for only 10% of GDP and half the labour force (IFAD, 2010) whilst employing up to 90% of rural women employed outside the home.

Great economic disparity between urban and rural areas has created social tension, and contributed to damaging levels of migration from the countryside to the cities, especially in the southeast. This situation poses a potential threat to future agricultural development and to the general economic health of the country.

3.1.6 Agriculture: a pillar of the Turkish economy

Turkey is one of the few countries in the world that is self-sufficient in terms of food.
Turkey's vast agricultural workforce, land area and variety of climatic and soil conditions allow for the production of a great range of products: grains, pulses, oil seeds, fruits and vegetables, cut flowers, meats, poultry, milk and dairy products, fishery, honey and tobacco. Crop production, livestock and fishery/forestry account for 67 percent, 26 percent and 7 percent of Turkey's agricultural production respectively. Thus Turkey is one of the top 10 producers of fruit, wheat, and cotton in the world (according to The Economist world rankings) and one of the top 5 producers of vegetables, tea, and raw wool.

Internationally, Turkey is dominant in provision of exotic agricultural products such as hazelnuts, dried apricots, sultanas and dried figs. In addition, Turkey's food industry is better developed than that of neighbouring countries and given these factors, the country is one of the largest exporters of agricultural products in the Eastern Europe, Middle East and North Africa region. The country's main export markets are the EU and the United States, to which Turkey exports in particular dried fruit and nuts, cotton, and tobacco; another is the Middle East, which buys fresh fruit, vegetables, and meats.

Arable production is primarily cereals, pulses, industrial crops (cotton, tobacco, sugar beet), fruit and vegetables. Of these, cereals occupy more than half of the cultivated land and include wheat, barley, oats, rye, maize, millet, and rice. These crops are produced in most parts of the country, with a heavier concentration in the central regions. Turkey is both a world top 10 producer and consumer of wheat. It is an essential food element in the Turkish diet, generally eaten in the form of bread. Turkey is also the main pulse producer (primarily chickpeas and lentils) in the Middle East and a world-leading producer.

Major industrial crops are cotton, tobacco, and sugar beet. Cotton is crucial in textiles, the leading category of Turkish exports. Cotton is primarily grown on the coastal plains of the Mediterranean and Aegean seas, in the south and southwest. 10% of cotton is exported in raw form, while the rest feeds the domestic textile industry.

The tobacco industry is ancient. Turkey is the fifth largest tobacco-producing country in the world and the fourth largest tobacco exporter. Crops are primarily concentrated on the Aegean coast and Black Sea regions.

Perishable fruit and vegetables are also vital to the Turkish economy. The country produces an enormous variety of fruits and vegetables for consumption by at home and for export. These include grapes, citrus fruit, melons, olives, potatoes, onions, tomatoes, aubergines, courgettes and cucumbers…

Turkey supplies lamb and mutton to the Middle East and is self-sufficient in milk products. Sheep constitute 59% of the animal total in Turkey, cattle 22% and goats 16%. Most livestock is grazed in the central and eastern Anatolian plains, as well as in the western Anatolian region.

Figure 3.4 Honey production, Adrasan.

3.2 Introduction to rural change in Antalya

3.2.1 Tourism: a driving force for change

A study on land use changes in relation to coastal tourism in the Turkish Mediterranean, in the South Antalya region, west of Antalya focused on areas neighbouring the Kumluca district. The towns of Beldibi, Göynük, Kemer and Tekirova, next to Olimpos-Beydağları National Park were the main focus of the study. The following overview is a short summary of the paper by Meryem Atik *et al.* (2010).

Natural vegetation in the South Antalya region is characterized by evergreen Mediterranean forest and macchia. The region is characterized by xerophilous vegetation, with red pine (*Pinus brutia*) dominating the forests. Semi natural areas and natural forests are distinguished by very high species richness.

Tourism is the major driving force behind land use and landscape changes in the coastal areas of the South Antalya region. Between 1974 and 1996 (and later on) significant areas of agricultural land and also natural coastal forest were converted to touristic establishments.

While fast growing urban and rural settlements have affected both agricultural land and forest, entertainment centres and golf courses mainly threaten agricultural land. This type of development often favours environmentally sensitive areas of high landscape quality, causing significant impact on ecological, visual, and socio-cultural values.

Recent changes in planning laws allowed urban expansion in the whole region and further privatization of land. High demand for tourism-based land--use led to speculation in land prices along the coast and exploitation of privately owned land in particular.

Agriculture used to be the main generator of income in the region, with citrus fruit being the most important agricultural product. Pressure from tourism led to increasing land prices and the decline of citrus groves as great numbers of small scale and low-income famers sold land.

Figure 3.5. Species rich semi natural wooded grassland.

In the 1960s, sixty percent of the Antalya region/s population lived off agriculture; today the proportion has reduced to 22%. Increased employment in tourism has been reflected by a decrease, not only in the agricultural population, but also in the quantity of agricultural land.

Figure 3.6. Agricultural small holding, Adrasan.

Degradation of coastal forests was common at the start of the tourism boom. However, greater public awareness, particularly about the value of the national park, has resulted in laws that favour nature conservation.

Higher pressure on and greater loss of agricultural land is to be expected in the future.

Figure 3.7. Pine forest, Adrasan coastal road.

Figure 3.8. Citrus orchard and polytunnels.

3.2.2 Agriculture: changes in technique

Training and advisory services are the responsibility of the Ministry of Agriculture and Rural Affairs (MARA) and are organized at the level of administrative districts by the Provincial Agricultural Directorates. Agricultural education in Turkey started in 1848. The first application of the Training and Visit System (T and V) approach recommended by the World Bank was applied in 1963, but agricultural change occurred in Antalya from the 1930's onwards as nomadic farmers settled and adopted new lifestyles.

Figure 3.9. Commercial seeding facility, Kumluca.

New systems and approaches in agricultural development suggested by the World Bank, International Rural Development Bank (IBRD) and other international donor institutions were implemented. Major changes occurred from 1984 onwards, when a new programme, the "Agricultural Extension and Applied Research Project (AEARP)", was implemented, and the T and V system of the project was implemented in Antalya (Özçatalbaş 2005).

Figure 3.10. Tomato crop, polytunnel, Kumluca.

Antalya's natural and cultural assets are due in part to its geographic location and climate. In addition, its fertile soils were important to the province's economic development. A combination of agriculture and tourism in Antalya led to an above average rate of urbanization and growth in population (Sönmez and Onur, 2012). Greenhouse production began in the 1940's and Antalya dominated development of the sector. In 2000, almost 80% of Turkey's greenhouse production and 50% of plastic polytunnels were located in Antalya (Özçatalbaş 2005).

Figure 3.11. Field patterns and land ownership visible.

Subsistence farming started to die out in Antalya once farmers settled in the lowlands and began producing annual crops. Thus a first change took place from the 1930's onwards as marshland and uncultivated land was converted to farmland and traditional citrus and other orchards were extended. Families simply settled on patches of land, built small houses and set up boundaries. In some ways, agriculture is practiced today in Antalya as it always was: on small family owned farms. Advances in technology have simply enabled farmers to intensify production and the introduction of greenhouses has had great visual impact on the landscape. As coastal centres expanded, demand increased and permanent crops (citrus, olive) were somewhat replaced by more profitable crops (tomato, aubergine, peppers…) in greenhouses, or more recently still, polytunnels.

Many "traditional" (or makeshift) habitations remain, both in the highlands and on the plains. Houses are "lost" amongst greenhouses, or polytunnels, but original field patterns can still be identified.

The standard of housing is variable

The population of highland villages dwindled as workers moved to the coast. Nevertheless, the practice of "yayla" persists and in the summer these settlements grow as the coastal population escapes from the heat. Wherever possible, on flatter land, greenhouses have been installed. On steeper lands, where annual crop production is inefficient, the more traditional practices of orcharding and pastoral farming remain. Pomegranate has become popular and olive fields have been removed. Higher still, pastoral farming prevails. Houses have been built and rebuilt using more modern materials.

Figure 3.12. A new construction amongst the polytunnels. A wealthy worker.

Figure 3.13. Poorer housing amongst the polytunnels.

Figure 3.14. A typical street on the plain of Kumluca amongst the polytunnels.

Figure 3.15. Altinyaka village, mainly summer housing.

3.2.3 Antalya: a changing population

In Turkey, agriculture has grown at an average rate of 1.45%, whereas in Antalya the rate is 3.5% (although annual variations exist). Antalya has the highest in--migration rate in Turkey. People, who migrate to Antalya, (mainly from Istanbul, Konya, Ankara, Isparta and Van) choose the province for its opportunities for seasonal work in agriculture and tourism. Both the rural and urban populations of Antalya have grown significantly since 1965, although the urban population has grown at a much faster rate (TUIK, 2012) as can be seen in table 3.1.

Several studies have been carried out to determine elements of Landscape change in Antalya province, although these studies tend to concentrate on areas close to Antalya city which have been the most dramatically affected. Less research has been done on changing land-use in the hinterland of the province.

Sönmez and Onur's study, carried out in Antalya city central district observed important changes and transformations in the period from 1987 to 2006. Supervised classification analysis results of three different years are presented in Figure 3.16 and land areas are presented in Table 3.2.

Table 3.1. Population change in Antalya.

Year	Total	Change	Rank	Percent	Rural			Urban
1965	486.910	—	23	%1.55	357.253	%73	%27	129.657
1970	577.334	%19 ▲	21	%1.62	401.326	%70	%30	176.008
1975	669.357	%16 ▲	19	%1.66	446.268	%67	%33	223.089
1980	748.706	%12 ▲	18	%1.67	467.869	%62	%38	280.837
1985	891.149	%19 ▲	15	%1.76	493.437	%55	%45	397.712
1990	1.132.211	%27 ▲	11	%2	530.017	%47	%53	602.194
2000	1.719.751	%52 ▲	7	%2.54	783.511	%46	%54	936.240
2007	1.789.295	%4 ▲	7	%2.53	661.661	%37	%63	1.127.634
2008	1.859.275	%4 ▲	7	%2.6	585.335	%31	%69	1.273.940
2009	1.919.729	%3 ▲	7	%2.65	587.986	%31	%69	1.331.743
2010	1.978.333	%3 ▲	7	%2.68	585.359	%30	%70	1.392.974
2011	2.043.482	%3 ▲	6	%2.73	593.273	%29	%71	1.450.209

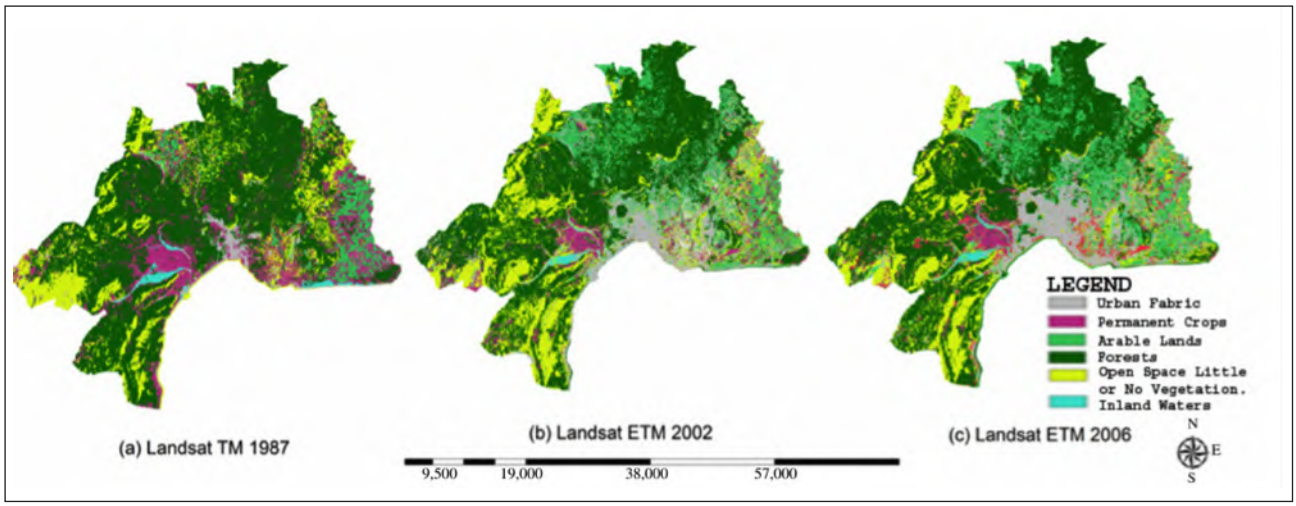


Figure 3.16. Antalya city central district. Land use classes years 1987, 2002 & 2006 (Sönmez & Onur, 2012).

Table 3.2. Antalya city central district. Land use results and areal extents (Sönmez and Onur 2012).

	1987		2002		2006	
	(ha)	(%)	(ha)	(%)	(ha)	(%)
Forests	77930	56	62456	45	58384	42
Open spaces little/no vegetation	24456	17	29527	21	25417	18
Arable land	7650	6	19839	14	25893	19
Permanent Crops	22386	16	9591	7	10451	7
Inland waters	1617	1	2347	2	2469	2
Urban fabric	5620	4	15900	11	17070	12
TOTAL	**139660**	**100**	**139660**	**100**	**139660**	**100**

In the area around Antalya city, urban land-use vastly increased in the period 1987 to 2002 and growth continued over the past decade. During the same period, the area of land dedicated to permanent crops (citrus plantations, pomegranate orchards and olive groves) drastically reduced. Such permanent crops were often located in prime coastal zones that suffered particular pressure from touristic and urban development from the mid-80's onwards (Sönmez & Onur 2012).

In the past 30 years, demand for touristic development and residential expansion along the coast and on the city edge has led to dramatic changes in land use in those locations (Sönmez & Onur 2012) with negative effect on agricultural land and natural forest.

Agricultural lands were lost to fast-growing construction between 1963 and 1995, with a 10% decrease in forest area in Kemer, and a thirty-fold increase in the built area of holiday villages and hotels (Atik *et. al.* 2010).

The coastline of Antalya's southern boundary is where tourism and urban developments compete most with agriculture and where permanent crops and traditional farming practices have lost the most ground. Nevertheless, across the district, arable land gained in area between 1987 and 2002 and again between 2002 and 2006. This might seem to indicate a positive trend but in fact these lands are increasingly occupied by forests or maquis (Sönmez & Onur 2012).

Figure 3.17. Citrus orchard on the edge of Antalya city.

3.2.4 Introduction to the district of Kumluca

Today, three-quarters of the Antalya population is urban and half lives in Antalya city. In a single generation, as the city and coastal settlements of Antalya have undergone dramatic development its ancient rural hinterland has undergone changes driven by emigration. Whilst pockets of traditional agricultural landscapes are scattered throughout the province, the patterns and rhythms of agriculture within the province have changed fundamentally. Close to Antalya city, intensive farming dominates large tracts of land, but generally, rural Antalya has aged as its youth migrated towards urban centres.

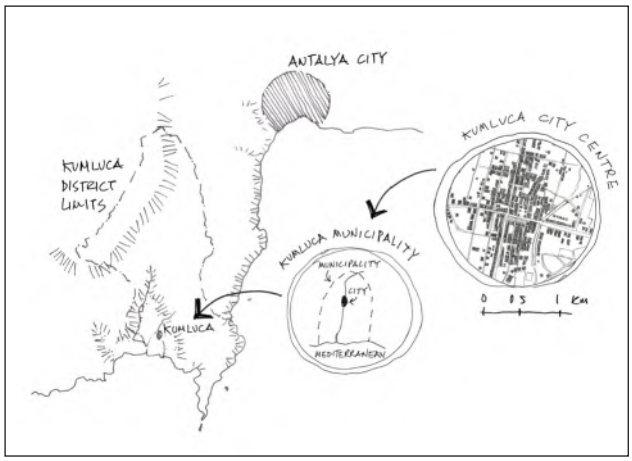
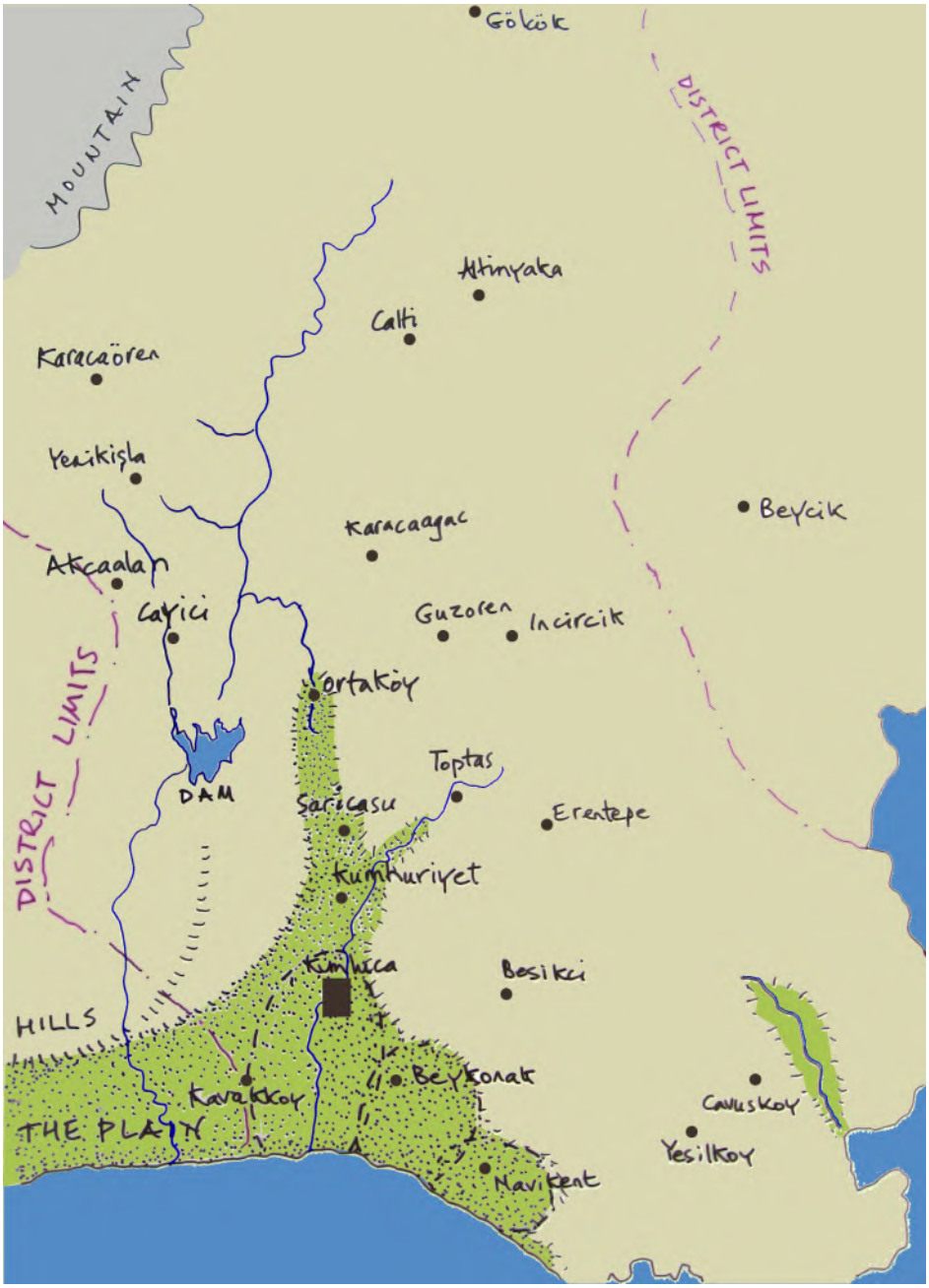


Figure 3.18. Kumluca district 1.



The agricultural district of Kumluca is no exception to the above rule, but the success of the industry has resulted in the creation of an urban centre where, fifty years ago there was none.

90 km to the west of Antalya, connected by the World Bank funded coastal road, the district's population of 66,000 (2010) is spread between 4 small towns, including Kumluca itself (20,000) and 24 villages. The one hundred and twenty-five thousand hectares of Kumluca (approx 84 km N-S, 34 km W-E) are comprised of a southern flat coastal plain of once marshy land, sheltered on three sides by steeply sloping wooded hills arising to the high plateaux further in the north that assure Kumluca's particularly mild micro-climate.

Figure 3.19. Kumluca district map.

3.2.5 Impression of the area by workshop participants

Within its borders the district of Kumluca provides examples of several different types of rural land-use and change. Before visiting the site we located several physical locations (with the help of Google Earth and local experts) that typified such examples.

The different sites that we identified in advance of our visit were:

1. Beycik, a small village located inland, comprised mainly of second homes belonging to the inhabitants of Kemer and used traditionally to escape from coastal heat over the summer.

This is not a touristic site, yet several new housing developments were identified and we assumed this to be an example of gentrification with the building of secondary homes (weekend or holiday houses). Significantly, the settlement is easily accessible because of its location close to the main coastal road connecting Antalya to Kemer and Kumluca.

2. Any one of the small villages (*Karacaagac, Golcuk, Altinyakar…*) in the hills of Kumluca could serve as an example of rural depopulation and we hoped to be able to access at least one of them. However, as it turned out, the roads were impossible and so we were left to imagine them and the more or less traditional lifestyles of their winter occupants.

*3. The town of Kumluca i*tself, with a population of almost 20,000 is hardly a typical rural settlement, although it is an agricultural town. Its compact form results in a rapid transition from dense urban centre to agricultural plain. Kumluca is an unusual example of rural change, caused by the extraordinary success of the local fruit and vegetable growing industry, that allowed locals to abandon transhumance and subsistence farming.

4. The plain of Kumluca is given over to intensive "greenhouse" productions and orchards. The field structure seemed to indicate that farming is still organized locally and by family rather than by any larger commercial structure. The plain houses a significant, but relatively scattered population although some of the settlement appears to be concentrated in what might become future urban centres.

5. The highland plateau to the north-west of the district served as summer refuge and pastureland for the animal herders of old. In the summer, the nomadic inhabitants of Kumluca plain trekked with their animals up to the highland plateau where they spent the cooler summer months in temporary encampments.

We had insufficient time to visit all the district, or even all the sites that we hoped to see. Much of what we saw was from the window of the bus, or tools such as Google Earth and the local experts provided vital information.

3.2.6 Reactions to the site

1. Kumluca

This is not a rural backwater, but a wealthy agricultural district increasingly concentrated on the activities of the plain.

More than three quarters of Kumluca's agricultural income is generated from greenhouse production (approximately 10,000 families depend on it (about 50,000 people)) and the remainder from livestock and fruit producing orchards.

The greenhouses dominate the flat landscape of the southern plain.

Dissected by a network of roads allowing access to land further subdivided into individual plots, the plain is intensively farmed and yields 30% of Turkey's greenhouse production.

Barely visible, several thousand individual houses are clustered or dotted into the dense grids of green-housing that increasingly cover the land close to the sea.

Orchards of oranges and olives increase in size and number further inland.

Figure 3.20. Aerial photo: view south, Kumluca.

Figure 3.21. Aerial photo: view east, Kumluca.

Figure 3.22
Aerial photo: the plain.

Figure 3.23. Field patterns 1.

Figure 3.24 Field patterns 2.

Figure 3.25.
Street view, between the poly-tunels.

2. The northern highlands Looking north, the snowy peaks of the Toros mountains are visible in the far distance, presenting the summer pasturelands of their high plateaux. Woodland covers the steep slopes that form the sides of the valley.

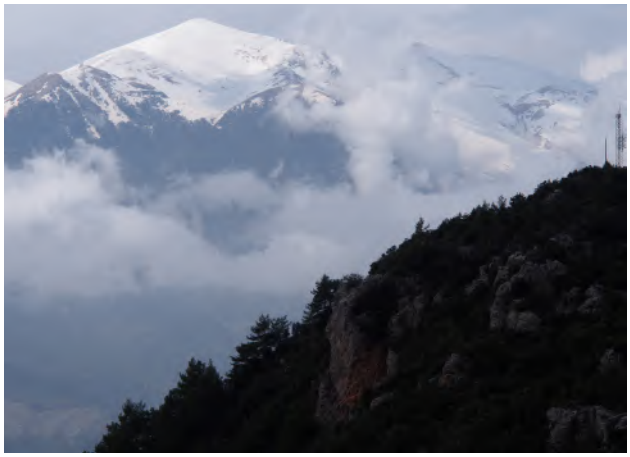


Figure 3.26.
View towards the Toros mountains from Altinyaka.

3. The settlements in the middle hills, some of which have a tiny population (for example Derekoy, altitude 1400m, winter population 88 or Altinyaka, altitude 950m, winter population 496) are scarcely visible from the plain.

Figure 3.27.
Pastures near Altinyaka.

These traditional villages in the uplands still serve as summer escapes for the Kumluca population who traditionally spent the summer months on the cooler higher plateaux with their livestock and families. Some houses are renovated, there are new constructions, but the villages are simple. There remains a small permanent population who practice mixed farming.

Figure 3.28.
Orchards near Altinyaka.

Figure 3.29. Altinyaka village 1.

Figure 3.30. Altinyaka village 2.

4. The town of Kumluca itself occupies a compact area of approximately 1km2 and houses an estimated population of 20,000. This is a remarkably high density, typical of an urban centre. Based around a single major intersection, the high-density mixed-use town is built on an orthogonal grid of 7-storey residential blocks (commercial ground floor) that have replaced most of the older, smaller houses and apartment blocks that pre-dated them. The centre sits beside the river, approximately six km inland from the coast, to the north of the alluvial plain responsible for its current affluence.

Figure 3.31
Kumluca town – aerial view.

Figure 3.32 Kumluca town centre 1; Figure 3.33 Kumluca town centre 2; Figure 3.34 Kumluca town centre 3; Figure 3.35 Kumluca town centre 4.

Figure 3.36. (More) traditional dispersed village settlement.

Figure 3.37. (New) luxurious speculative development.

5. Beycik

This is a village of the district of Kemer rather than Kumluca. Located above the coastal road, at 65km from Antalya, 22 km from Kemer, the village (winter population of about 350) traditionally served as the summer home of Kemer inhabitants who still retreat here for the hottest months. The village population rises to two thousand in the summer months.

Sitting in the foothills of Olympos, in the Olympos National Park, at between 450 m and 1000 m altitude, Beycik is a steep hillside settlement surrounded by woodland. The older settlement structure is dispersed, agricultural land is terraced- see Figure 3.36. The mountains inland are of high scenic value as are the sea views and the village benefits from cool breezes.

Before completion of the World Bank road in 1990, Kemer could only be reached by boat and villagers divided their time between the seaside and the hillside village of Beycik, farming, fishing and moving livestock between the two. The explosion of tourism at Kemer enormously enriched its inhabitants and fundamentally changed village life. Apart from a few elderly folk who continue to practice a type of subsistence farming, agriculture has been abandoned. The summer population is enormously wealthy.

Figure 3.38. Speculative development of luxury homes "Toros Country Houses".

Figure 3.39. Luxury development of holiday homes and lets: Beyci.k

Residents of Kemer and also Tekirova have built new, comfortable second homes in Beycik where they spend the summer. In some cases, larger, improved constructions have replaced older buildings on original sites but speculative building has also taken place outside the village and continues today. The first of these new sites were executed before any local development plan came into existence and are located as gated communities outside the village, lower on the hillside.

The permanent population of Beycik is three hundred and fifty people, this tiny winter population seems to have welcomed changes brought about by the new wealth of its summer inhabitants. This is not a dormitory town, it is too distant from Antalya, it is a village of second homes for wealthy locals who otherwise live in nearby coastal towns and a few foreigners, some of whom come and go and some of whom have settled.

3.2.7 Analysis of change to date

Three generations ago, in 1940, the total population of the entire Kumluca district was only 12,000 and the town of Kumluca did not exist. The plain of Kumluca was marshy and mosquito infested. Altinyaka, in the hills, was a major settlement on the (then) only route to Antalya and housed nearly 4,000 thousand people who practiced semi-subsistence farming based on transhumance and orcharding. At that time, houses were somewhat more rudimentary, built from timber, mud and stone. Animals were kept close to the families, who spent summers with them on the pastures of the higher mountain plateau, returning to their village base in the winter.

The town of Kumluca was "founded" in 1958, by which time its population had grown to 3,500 as farmers began to convert to crop production.

Figure 3.40 a,b,c,d,e: glimpses of past practices.

Altinyaka was almost 5,000 at that date. At the time of establishment however, the local economy was still mainly based on stockbreeding. Citrus and olive orchards were extensive, melons were also being planted in the plain but much of the population continued to move between the highlands and villages,

The development of plastic greenhouse sector from the 1960's onwards influenced local farmers who had already started to switch to vegetable production, gradually abandoning livestock and even orchards in favour of more profitable crops. Completion of the coastal road in the 1990 facilitated transport, production techniques improved, the issue of irrigation was solved by the dam completed in the same year and in a single generation the greenhouse industry grew exponentially.

The change in lifestyle for those now living in Kumluca town has been dramatic. The standard of living has

Figure 3.41 a, b, c, d, e.
Glimpses of present practices







Figure 3.42 a,b,c,d,e,f,g,h.
Glimpses of the present practices

significantly improved, transhumance has become a rare practice, public services are sufficient and access to them is well developed. The municipality has become rich and it is hard to regret such change.

Throughout the district, the "traditional" nomadic lifestyle has almost completely disappeared. The highland villages are relatively empty (Altinyaka is now less than 500 strong) in the winter. For the vast majority of Kumluca's inhabitants the hard days of subsistence farming are over, the forests are no longer a source of essential supplies, few livestock graze the summer pastures of the high plateau.

Although the fields are often covered with plastic and if not, pomegranates replace citrus and olive groves, the agricultural sector here is still family run. In some ways the past and present seem to co- exist in Kumluca. Plots are small and almost certainly reflect the filed patterns that were established as families started to settle; they simply occupied a strip of land. Almost every plot contains a small house and if the land owner no longer lives there, his farm workers family does. It is notable however, that the farm houses are often very run down and poor. Some of them are little more than timber and plastic shacks, whilst others have been completely rebuilt using modern construction materials Rich and poor live side by side amongst the greenhouses. The same observation may be also be made in the surrounding villages: there seems to be a disparity in wealth.

It is notable that that the hill villages (such as Altinyaka) still serve as summer homes for Kumluca's urban population. Thus, the summer population of a village can be many more than that of the "permanent" residents (measured in winter). Hundreds (perhaps thousands) of new second "homes" have been rebuilt over the past decade. Other houses appear as ramshackle as they must have done two generations ago, but sometimes display solar panels and satellite dishes nevertheless.

An interesting form of summer accommodation exists along the sea front. Small timber houses provide locals with a cooler alternative to the heat of the town.

In stark contrast to the choices made by neighbouring towns, to this date, tourism has not been an issue for Kumluca. These are hard-working farming people, that enjoy a relatively traditional life. Sea breezes blowing inland help create a micro-climate which is more favourable for crop production and the coastline to the south of Kumluca remains undeveloped. Nevertheless, parts of the eastern coastline are particularly spectacular and on the eastern headland, where the hills meet the sea, there is less potential for intensive agriculture. Here, at Kavuscoy (also known as Adrasan) the first touristic developments have appeared. At Mavikent and also Finike, greater coastal development has taken place.

Figure 3.43. Seaside summer house on stilts.

3.2.8 Analysis of change to come: main issues

Currently both settlements (Kumluca and Beycik) seem to be enjoying relative prosperity, but the future development planned for Kumluca, and possible in Beycik could have negative consequences. Is the current situation sustainable? What are the dangers? What needs to change to ensure future prosperity?

3.2.8.1 Kumluca: Strengths and weaknesses

Is the current situation sustainable? What needs to change to ensure future prosperity?

Jane Jacobs wrote that a „settlement that becomes import-replacing becomes a city" (Jacobs, 1961). Jacobs argued that sustained wealth is created by cities that manage to replace imports by their own local production, that this is the only long term, reliable source of wealth and that such cities need other like-minded cities to trade with in order to prosper. Jane Jacobs' expectation is of growth or decline, but not of equilibrium.

Table 3.3. SWOT Kumluca.

STRENGTHS	WEAKNESSES
topography (varied) climate (sunny) landscape (between sea and mountain) prosperity (booming economy) rural hinterland (cool, remote) location (close to Antalya) water supply (has a dam) soil (is productive) local market	land tenure summer heat energy consumption (housing/ agriculture) irrigation requirement climate (hot) single economy (monoculture) homogenisation(greenhouses) soil (needs fertilising) pollution (chemicals, plant care products)
OPPORTUNITIES	**THREATS**
increase profit through new technology diversification of production hydroelectric power freshwater supply coastal & rural tourism local market new industries growth in population seawater technology	land tenure (division) social change pollution (impact on environment/ health) transport costs gobal market coastal & rural tourism energy demands climate change growth in population rising sea level

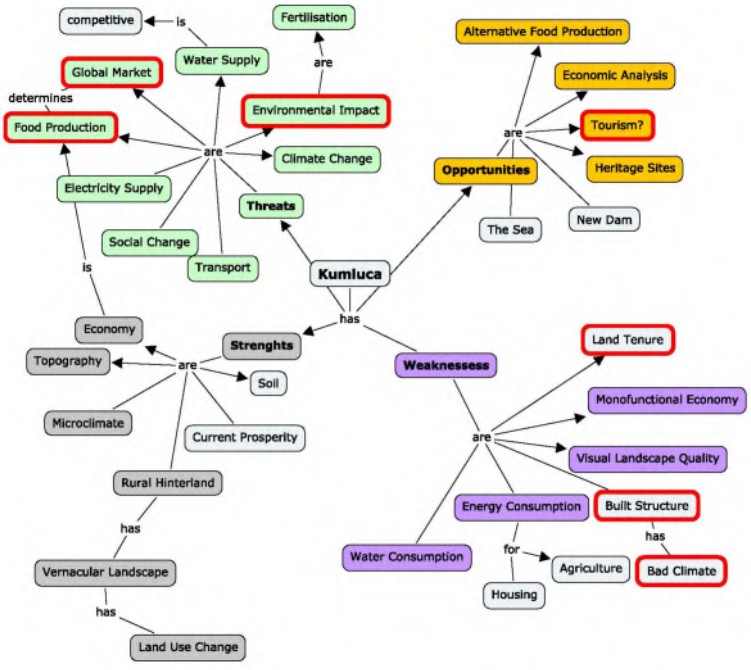


Figure 3.44. SWOT diagram KUMULCA.

In the case of Kumluca, the pace of growth seems to have slowed in the past decade. It seems that the greatest change took place in the 1990's – a decade in which both the village and town populations grew significantly. Since 2000, the district's population has stabilised somewhat and statistics show that whilst the town continued to grow, the village population declined a little. It could be argued that Kumluca is enjoying a moment of balance. The town is small, the community is local, it controls its own production and is relatively self-sufficient. Most of the farms are family affairs, the town has not had to resort to tourism and its export-based wealth has improved local living standards and stimulated diversification (creation of service sector, construction industry, etc.).

Nevertheless, as Table 3.4 shows, significant further growth is predicted to occur between 2010 and 2025.

Table 3.4. Population size and distribution between Kumluca town and villages (Figureures provided by the Municipality).

Population	1940	1975	1990	2000	2010	2025
District	12,000	30,000	45,000	61,500	65,500	200,000
Municipality	3,000	8,000	17,000	25,000	31,500	140,000
Village	9,000	22,000	28,000	36,000	33,500	60,000

Would a less rapid pace of growth be more sustainable in the long run? How could such rapid development be managed? Would diversification (and growth) be at the cost of local agriculture, or could technology (hydroponics?) lead to further increases in production? Will agricultural land simply be swallowed up by the city or is there a clever way to merge the two? Could the city make more use of its natural assets (mountain water, sun, seawater) to produce alternative power? Could a fuel crisis ruin the economy, or is European demand for exotic fruit and vegetables unassailable? These are some of the questions that the Kumluca case study raises.

Kumluca: development scenarios

SCENARIO 1a= FAST GROWTH (managed way forward, visualise the result)

SCENARIO 1b= FAST GROWTH (unmanaged, forecast it, visualise the result)

This scenario assumes that the population grows as per predictions see Table 3.4 ie that the town itself increases in size sevenfold and that the village population doubles. New technologies might help keep agricultural production profitable, but other activities and industries would be required to satisfy the demands of an increased population. What would everyone do for a living? If villages on the plain increase in size and density, would this be at the cost of agricultural land? Where would building occur? How would land be divided? A real threat to future prosperity might be the inevitable reduction of plot size and need to reorganise business structure (need expert advice). Is it possible to imagine that the next landowning generation sells up? Is a single mega-farm, or a co-operative a likely outcome?

Opportunities include investing in the use of clean energy eg seawater cooling, seawater greenhouses, freshwater production, HED (need expert advice). This option requires support.

The town must be bearable in the summer. Not everyone will have a second home in the hills, or on the seashore, or if they do the hill villages will be enormous. What could the impact of expansion of the hill villages be on the landscape and on the environment? How is the forest managed these days? Who owns it?

The visualization of various expansion scenarios (at a master-plan and local scale) to assist in decision-making would require a long participatory process and input from a team of specialists.

SCENARIO 2 = FIND "SUSTAINABLE POTENTIAL" OF THE DISTRICT

Population grows at slower rate than predicted ie 2025 town =60,000, villages =30,000. Is this a more reasonable/ likely scenario?

Could implementation of the opportunities listed in (1) above help in diversifying land use and improving environmental conditions/ quality of life? If the objective is to diversify in terms of land use and economy, should the possibilities of reasonable coastal development and rural tourism be included? Should growth slow to find a stable sustainable level?

How to estimate the "sustainable potential" of the city and its plain? What expertise is required on the team?

3.2.8.2 Beycik: Strengths and weaknesses

The village of Beycik is an example of how rapid gentrification and its resultant change in demographics can fundamentally alter spatial, social and landscape structure.

Apart from the consumption of land and a marked change in built typology and form, the abandonment of traditional farming practices has led to an increase in woodland and "garden". All in all, the village area is becoming increasingly banal. The establishment of strict planning documents and guidelines controlling future construction could be useful.

Again, scenario building could help in the decision making process that should be participatory and require input from a specialist team.

Table 3.5. SWOT Beycik.

STRENGTHS	WEAKNESSES
topography (varied) climate (sunny) landscape (between sea and mountain) rural hinterland (cool, remote) forest & hiking trails trong community	condition of houses relatively remote changing land use (loss of pasture) forest management (risk of fire) loss of cultural landscape water management
OPPORTUNITIES	THREATS
strong local identity new inhabitants summer cool cultural landscape tourism public participation forest management	and tenure (division of wealth) risk of fire tourism gentrification social division real estate prices

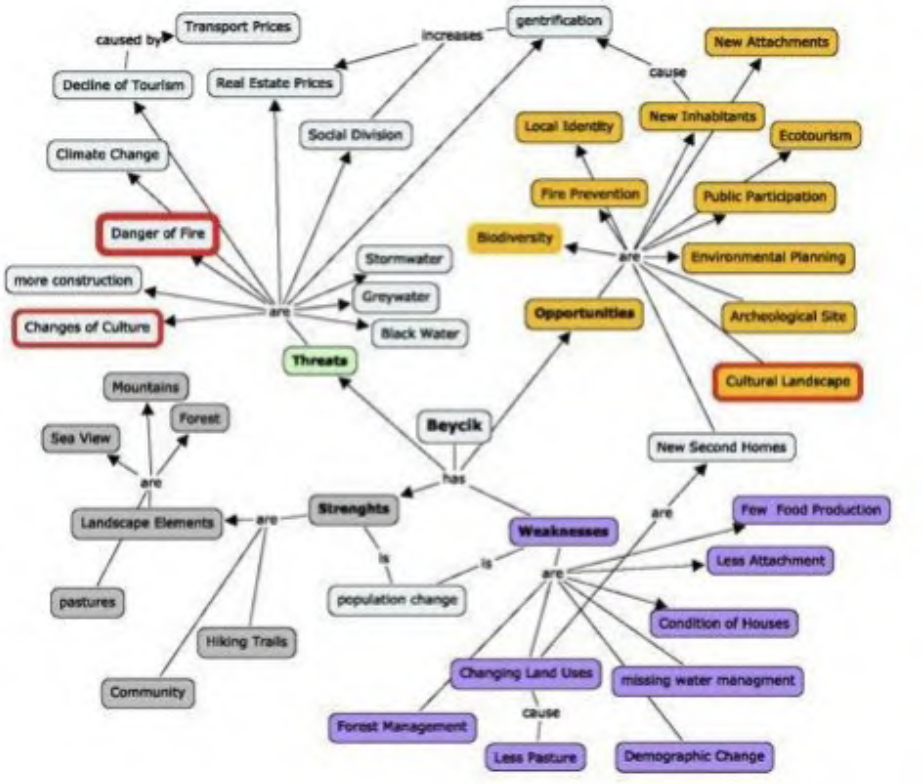


Figure 3.45. SWOT Beycik.

3.3 State of the subject from research: literature review

3.3.1 A wide scope of related research

An overview of relevant research into rural landscape change may acknowledge the general Mediterranean perspective as well as that of the Antalya region in particular. The theme for this overview is (i) the impact of change on various functions and values of the landscape, from a sustainability perspective that includes social, cultural, economic and environmental aspects, and (ii) how impacts can be predicted, encouraged, avoided and/or palliated within design, planning and management.

This approach embraces a wide field of different disciplines neighboring that of landscape architecture. For example, urbanization processes and urban rural interaction are highly relevant for this study (Li, 2012; Tacoli, 1998) as are questions related to second home development (Müller, 2011), as well as ecological and social consequences of landscape changes and how to deal with them. Although tourism is the major focus of another chapter within this project, the impact of tourism on economy and environment is also of interest to the Kumluca area (Akis, 2011). Many ongoing urban-rural land-use changes in the Antalya region are global phenomena that are also occurring in rapidly developing countries such as China (see, for example, Hualou *et al*. 2008). The sustainable use of water resources is a major challenge that requires the design of comprehensive water policies integrating planning, development of technologies for water treatment and re-use, always in consideration of local problems and socio-economic aspects (Laraus, 2004). Such challenges will be no less critical as the various effects of climate change become increasingly noticeable.

3.3.2 Perceptions and cultural values, participation and governance

In working towards cultural and social sustainability, in a way that involves people's perceptions and cultural values, studies on rural landscape change would gain from conceptual studies on meaning, landscape identity, and different stakeholder groups' views on landscape change. The shifting ideas and ideals about landscape among rural versus urban citizens is an interesting topic when the physical landscape is also changing. In a study on the island of Lesbos, Greece, for example, farmers were keen to maintain cultivation of terraced fields and traditional landscape management practices no matter if these contributed to farm income, while „hobby" farm households seemed to be more likely to abandon fields and to neglect landscape elements (Kizos *et al*. 2010). Research approaches from the perspective of political science (dealing with public participation, governance, etc.) would also be highly valuable for this study. A list of potential research issues and the various neighboring disciplines connected to this theme could be infinite, but here follows a brief overview of relevant topics.

3.3.3 A historical perspective on landscape change in Turkey

Historically long-term human impact on Mediterranean landscapes has been well documented (Shreeve, 1983; Bottema, 1989; Bowden *et al.* 2004). Palaeoecological studies, based on pollen and charcoal data from lake sediments from Cappadocia in central Turkey, suggest that human impact has been the main driver of landscape ecological changes over the last two millennia (England *et al.*, 2008). The same study documented changes in land-use phases: from early Byzantine agrarian landscapes characterized by cereals and tree crops, through periods of landscape abandonment leading to the establishment of secondary woodland, to the re-establishment of cereal-based agriculture and pastoralism, followed by agricultural intensification from about 1830 to the present day (England *et al.*, 2008).

3.3.4 Major landscape changes of today

Consequences of land abandonment of rural Mediterranean landscapes are dealt with in a number of studies, mainly described as environmental, cultural (social) or/and economic ones (Corbelle-Rico *et al.* 2012). Afforestation, agricultural abandonment and/

or intensification are causing the major rural landscape changes in the Mediterranean region today. An understanding of these changes and their drivers is important in order to adapt and mitigate to environmental and socioeconomic pressures that may occur in the future (Nainggolan *et al*., 2012). More recent transformations of rural Mediterranean landscapes have been mapped and quantified by the use of remote sensing data; such as the use of series of air-photographs from about 1945 and onwards (Zomeni *et al*., 2008).

Similar studies, based on remote sensing data, have also been used to discuss the broader context of agricultural changes in Europe. In a study in the north of Galicia (NW Spain), Calvo-Iglesias *et al*. (2006) focused on the spatial distribution of changes in land cover and landscape patterns between 1957 and 2000. In Galicia, the major processes of land use changes were afforestation as a result of agricultural abandonment and forestry specialization, except for some specialized grassland areas used for livestock production.

Analysis of land cover change by the use of satellite images in North East Spain shows how major land cover changes have been taking place there, caused by urban expansion, industrial activities, establishment of land irrigation, land extensification, forest fires and changes in vegetation (Lasanta and Vicente-Serrano, 2012). Moreira *et al.* (2001) demonstrate, using aerial photographs, how landscape changes such as agricultural abandonment and afforestation in a region of Northern Portugal (Minho) in the last 40 years is clearly linked to the socioeconomic and political history of the area.

3.3.5 Abandonment. Negative socio-economic impacts versus wilderness

Two major viewpoints on abandonment of agricultural are distinguished in recent literature. The negative (socio-economical and cultural) consequences of land abandonment can be compared with the positive consequences (mainly ecological ones) of so called "re-wilding" that has been demonstrated by a shift in the dominating habitat types from open ones (grassland and farmland) to a dynamic mosaic of habitat patches (Zozaya *et al.,* 2012). A study by Navarro Pereira *et al.* (2012) argues that traditional agriculture practices are not always environmentally friendly and do not always contribute to good living standards. Instead, Navarro Pereira, *et al.* argue that land abandonment and forest regeneration could contribute to species preservation and ecosystem services such as carbon sequestration and recreation. Seen from a different viewpoint, however, the establishment of protected areas, based on wilderness ideals, can have negative socioeconomic impact on local populations (Schmitz *et al.,* 2012).

A related study of land use changes between 1964 and 1992 in Southern Tenerife (Canary Islands) by Otto, *et al.* (2007) has been presented and discussed in relation to socio-economic processes and nature conservation policy. In the study, based on GIS analysis of main land use types, the dramatic transformation of coastal landscape during these years was revealed. Changes were due to an increase in mass tourism and the intensification of agriculture that resulted in the loss of natural vegetation, a change towards crops that required greater irrigation and the gradual abandonment of farmland. Results showed that the current practice of protecting small natural areas has not been sufficient to stop the destruction of natural vegetation. The authors suggest that that a significant part of these losses could have been avoided by more ambitious environmental planning.

3.3.6 Studies of urbanization, rural hinterlands, and peri-urban interaction

The district studied in the greatest detail, the district of Kumluca can be described (Antrop, 2004) as a rural hinterland to a city (in this case Antalya) with complex spheres of influence: the international market for summer fruit and vegetables, potential for second home housing and tourism. Antrop advocates that "local landscape change can only be comprehended when situated in its general geographical context and with all its related dynamics" and "therefore, detailed inventories of landscape conditions and monitoring of change are urgently needed in order to obtain reliable data for good decision-making" (Antrop, 2004).

Peri-urbanistaion is today a substantial research field within landscape research, often utilizing multi-source satellite imagery combined with geographical and demographic data (Brinkman *et al.,* 2012; Tavares, 2012), or scrutinizing the planning processes leading to for example urban sprawl (Qviström, 2012).

Remote sensing and Geographic Information Systems are useful tools for analysis of ongoing urbanization processes. A study of landscape change and urban sprawl in the coastal landscape of Izmir, Turkey, showed how the built-up area increased from about 8 to 29 %, whilst agricultural land declined (between 1963–2005) from about 14 % to 5 % of the total area (Hepcan *et al*., 2012). The urban fabric hence changed from a linear path in 1963, via a rural, low-density settlement, to a high-density urban development. In 2005, the compact city with its transportation network started to transform into urban sprawl. Hepcan (2013) has also been using satellite images and maps to quantify landscape metrics of coastal suburbanization in the Izmir area. More detailed landscape composition and configuration metrics were chosen to explore the landscape characteristics of the study area and how they changed during the process of urbanization. The findings were used as an argument for supporting green infrastructure, as well as to promote the need for ecological network planning for conservation and rehabilitation of natural resources (Hepcan, 2013). In another study in Adana Turkey, (Alphan, 2003) the built-up area increased significantly, over a period of 16 years, expanding onto agricultural land as well as onto previously semi-natural land. Evidence on the loss of agricultural fields and semi-natural areas to urbanization is used to increase awareness of the problem from a planning perspective. This is particularly useful to the discussion on how cities can grow in a more sustainable way, and sprawl can be minimized (Alphan, 2003).

3.4 Key aspects relating landscape architecture to rural change (general)

The input of landscape architects can be important in the planning change in rural areas. Too often, however, the landscape is seen as being composed of its constitutive elements and, although some of those elements (or parts of them at least eg forest, farm, water) are often be protected by law, the landscape itself may not be recognized either legally or otherwise.

A more integrated, holistic approach to management (in terms of conservation, planning, development and design) of the landscape is desirable, and a greater appreciation of the value of the landscape, its "services", and the finite nature of the resource, on the part of both the public and policy makers would also be helpful.

The dynamic nature of the rural landscape is well known and has been observed for centuries. Attitudes towards agricultural, or working landscapes can differ and it could be helpful to foster better understanding of the processes of change based on the interaction between natural and cultural forces (Antrop, 2005). It is crucial that citizens in general, stakeholders and governments apprehend their landscape as an evolving system. And because the language of landscape architecture is inclusive, as are its ways of communication, the profession can help translate the way people understand and perceive their landscapes.

Landscape architects, as professionals who value integrative interdisciplinary/trans-disciplinary knowledge, can assist stakeholders and decision-makers in planning rural change by applying holistic approaches that allow the achievement of long term real benefits for the society, whether we are talking of small steps that private landowners can take when changing the territory (or their property), or broader decisions that includes public development.

3.5 Teaching landscape architecture

3.5.1 Reflection on case studies in general

The exercise in Kumluca raises issues that are relevant to both the organization and student experience of almost any field trip. Furthermore, the case study approach is strongly linked to landscape architectural practice and can help make the connection between teaching and practice. The testing of real or hypothetical theories and strategies that lead to new solutions and/or scenarios, or the development of new processes, or technological applications provides a further obvious link between site specific studies, research into, through and about both the education and practice of landscape architecture.

3.5.2 Reflection on the Kumluca case study in particular

Whilst any student field trip must have its specific learning objectives, any site can be viewed through many different lenses. This site raised discussion about when students could be introduced to complex issues ie earlier or later in their studies? There was no clear consensus of opinion. The complexity of the Kumluca site also raised discussion about the limitations of landscape architecture and the need for multi-disciplinary teams. Furthermore, the advantages and disadvantages of increasingly specialized professions (and disciplines) involved in the design and planning of the built environment were discussed.

The complexity of the Kumluca site was such that it necessitated understanding not only of the site, in landscape terms, but also of local socio-economic and environmental issues that influenced the way people lived on the land. Past, present and future changes occurring in the landscape are inextricably linked to changes in lifestyle that accompany them.

Questions of how to recognize, or measure "indicators of sustainability" were also discussed and may landscape architects present were unfamiliar with scientific methods that could be used to test theories of "best practice", by measuring outputs.

It was very interesting to note that together, individuals participating in the meeting presented a very wide range of "interest" but little "expertise". As fields become increasingly specialized, it is importance to train landscape architects to better understand, analyse and summarise increasingly complex information, to recognize the significance of more and less important material, to imagine spatial and other solutions suggested by analysis of a matrix of wide-ranging information and to communicate them along with their advantages and disadvantages to a non-specialist audience.

This is a skill specific (and particularly suited) to landscape architecture and some other design professions.

Implications for teaching

The following is a list of topics that our work on Kumluca brought to mind as the learning objectives of students working on "real" case studies

- Preparatory research & methodology. What should I look for? Who, where and how to collect types of information describing a particular site.
- On-site methodologies for collecting, recording and sorting information graphically and otherwise. What do I see? What do I know?
- Introduction to public participation theory and methodology
- Methodologies for analysis - how to edit and use gathered information. What do I know? How to (re)define a problem. Be succinct.
- Research methods. What don't I know? How can I find out?
- Methodologies for simple scenario building. Teamwork.
- Public presentations. Questions and answers.
- Report writing. Graphics. Diagrams. Annotations. Modeling of scenarios.
- Visualization of the scenarios and how to communicate scenarios with stakeholders
- Summer project: Kumluca, a site for international collaboration between schools.
- Multi-disciplinarity. An approach to complexity. Limitations of the profession.
- How to measure "sustainability"? What are the indicators in a place like Kumluca?

3.6 Research into/through and about landscape architecture

3.6.1 Reflection on landscape architectural research in general

Landscape architecture, as defined by ECLAS (European Council of Landscape Architecture Schools),"involves planning, design and management of the landscape to create, maintain, protect and enhance places so as to be both functional, beautiful and sustainable (in every sense of the word), and appropriate to diverse human and ecological needs" (Bruns *et al*., 2010). Landscape architecture research has, at its best, the ability to work beyond the divides between the arts and sciences, embracing social sciences, humanities, natural sciences and/or technology. Research within landscape architecture deals with "finding solutions to a broad range of spatial issues at a broad range of scales" (Van den Brink & Bruns, 2012). According to Deming and Swaffield (2011) research within landscape architecture can offer "a framework for advancing better design thinking solutions by supplying readers with a system of inquiry tactics that open up a wider range of research possibilities". Some of the most current urgent issues for landscape architecture research today are "human health and well-being, with special attention to climate, water, and energy" as well as 'the spatial quality issues arising from the disappearance of the boundaries between cities and countryside, and resolving spatial problems associated with the mixing of different cultures, the fight against hunger and poverty, and the promotion of social equality' (Van den Brink & Bruns, 2012). Landscape architecture research as well as practice involves a synthesizing and cross-boundary thinking, and an ability to switch between different perspectives (Sarlöv-Herlin, 2006). The need to bridge between human and natural sciences in landscape research has been recognized for over a decade (Tress *et al.,* 2001), but one can claim that a holistic and cross-sectorial approach has been recognized in landscape architecture for a much longer time (Sarlöv-Herlin, 2006). Nevertheless, how can landscape architecture research contribute to the questions raised and being studied by the wide field of disciplines that are looking at the management of rural landscape changes in areas such as Kumluca?

3.6.2 Reflection on research into and about rural change

The following list presents themes within landscape architectural research that may be useful for studies of rural change in particular with reference to, or brought to mind by, this project.

1) The role of the case study

Case study analysis is a commonly applied methodology applied in landscape architectural research and the body of literature on such studies is large. The suitability of the method was discussed by Mark Francis, for example, in summarizing a project for development of case studies in landscape architecture, by the Landscape Architecture Foundation (LAF) in 1999. Francis concludes that the "body of research and practice in landscape architecture is already based to some degree on a case study method. Many past designed projects, research studies, and educational curricula have utilized a case study approach, as well as work by some of the most important landscape architects working today" (Francis, 1999).

2) Connections between visual character & landscape complexity; cultural influences

As mentioned already, studies on rural landscape change would gain greater insight from better understanding of different cultural perspectives on landscape perceptions, including perception of the visual character, meaning and landscape identity. It is important to trace how ideas and ideals about the landscape differ among different stakeholder groups; such as rural versus urban citizens, long-term residents versus newcomers, locals versus tourists, etc, and also how these ideas also change over time.

3) Landscape change and computer modeling. Contribution to decision-making

With a great part of present research on landscape changes based on remote sensing data; such as of air--photograph and satellite images for analysis by GIS (Geographic Information Systems) a landscape architecture perspective can be to work with computer modeling not only for quantifying changes, but also to help see and understand the implications of alternative spatial outcomes. As public participation becomes increasingly important, it is increasingly necessary to communicate the potential consequences of planned (or unplanned) actions, in order to assist actors and stakeholders in informed decision-making.

4) Future modes of communication: visualization & representation of scenarios

The development of more sophisticated tools for communication, visualisation and representation of landscape scenarios and narratives is necessary. The development of computer games (such as SIM CITY) have been shown to engage non-professionals with the intricacies of city planning. Let us imagine a programme that playfully reveals the consequences of ceasing to manage the forest, or of polluting the water table, or of exhausting the soil, or simply building all over the plain of Kumluca! How could the recognition of the various ecosystem and other services that land provides - and the interesting consequences of ignoring (some) of them - help facilitate the making of difficult decisions, particularly when there is conflict between long-term and short-term interests?

5) Research in practice. Towards a practice based research model

The research contribution of the landscape practitioner, as part of the team of experts often called in to advise on planning and other issues concerning rural development and change, could be considerable. However, there is little incentive for the practitioner to freely disseminate knowledge – rather the opposite, specialist knowledge is sold, not shared. Thus, a great body of knowledge and the potential for linking practicing experts (and expertise) is lost to the public good. Research into the extent and value of this type of knowledge and ways of extracting it so that it can be shared is urgently needed. It is particularly ironic in a world where vast amounts of information could be shared online. Where are the descriptions and comparative databases of similar projects? And if they exist, how does the practitioner (or academic) find them? This particularly affects many of the design disciplines (architects, landscape architects, planners, urbanists, urban designers…)

6) Research in practice. Towards a case study based interdisciplinary model

The need for an ever-more integrated approach to the environment and understanding of the complexity of human society and its impact on the world has lead to increasingly large teams of experts for every project. No longer can a landscape architect practice single-handedly if s/he works at a scale larger than the garden.

There are difficulties inherent in multi-disciplinary team-work, to do with different disciplinary approaches, methods of communication, common understanding, attitudes, frameworks and competences; yet working in a team on a common problem is at once extremely challenging and enriching. As a non-specialist, skilled in summarizing and practiced in the drawing together of various strands into a project, the landscape architect could have an important role to play. Reflection on the benefits of preparing landscape architecture students, as well as the students of other disciplines involved in the rapidly changing built and natural environment, to work in multi-disciplinary teams, on projects of increasingly complex nature and scale, seems urgent.

3.7 Implications for practice

3.7.1 Improved decision-making. Public participation. Talking about the landscape

Issues of rural landscape change can be acknowledged by a participatory, co-operative planning approach, with professionals acting as facilitators, or by a "Landscape Approach Framework", with professionals involved in discussion and negotiation between stakeholders. Both Kumluca and Beycik, are small communities with some degree of auto-governance, that seem to be appropriate settings for public participation in a cooperative planning and design process. To promote engagement, active involvement and confidence in the planning process different participatory opportunities within a long-term strategy could be set out (Höppner *et al*., 2007).

Participants in a cooperative planning process may assist in an innovative phase of initial exploration and definition of the problem(s). In this approach, questions are answered by both the professional (acting as facilitators) and the public (providing local knowledge), for example: is the landscape changing? how is it changing? why is it changing? are those changes desirable? what can we do about them? what would be the demands on and interests in the future landscape of Beycik, or Kumluca? This generative planning or design process (as defined by Christopher Alexander's pattern theory) leads to a not (fully) known result, because it defines its own problems to solve.

Another way to address rural landscape change in the area is via the Landscape Approach Framework that links local site level action with the broader landscape level. This framework integrates top-down planning with participatory approaches providing opportunities for negotiation, participatory monitoring and adaptation. The recognition of ecosystems services that the land provides to multiple stakeholders (that pursue different land use objectives) facilitates the negotiations and land-use trades off. Multiple issues (such as land development, changing land-use or water management) might be addressed during the process by recognizing the multifunctional character of the landscape.

The development of a landscape biography (Roymans *et al*., 2009) of the area may help planners, citizens and stakeholders to realize that the decisions made today can influence processes in the future (Palang *et al*., 2011)

3.7.2 Modes of communication, visualisation and representation of landscape scenarios

Freehand sketching and GIS may be used in the first phases of the cooperative planning process to facilitate problem identification and brainstorming whereas photo-manipulation, a tool to communicate proposed landscape changes (Tress and Tress, 2003) may help explore possible futures (Al-Kodmany, 1999). Visualizations should be accurate and credible; to guide their development the code of ethics for landscape visualization proposed by Sheppard (2001) may be used as a guide.

3.7.3 Elements of methodology: Beycik

The site of Beycik is still characteristic of a traditional rural landscape. As Antalya city and the region grows, this area might also come under increasing pressure to undergo further change. Assuming the need to control change and to conserve the cultural landscape, the following list contains suggestions for elements that may assist in taking the landscape into account.

- Survey domestic and overseas visitors to Beycik, to establish what rural landscape characteristics are important to them, and why and which they wish to see conserved in consideration of promoting tourism (Ahn *et al.,* 2005)
- Create an educational document "Guidelines for the Landscape of Beycik – A Guide to Rural Conservation" (Stokes *et al.,* 1997)
- Organize a local planning review board to review new and existing development plans in Beycik. Include in it landscape professional(s), local farmers and residents, and a process to evaluate landscape impacts of the plan
- Consider subsidy programs for encouraging traditional agricultural practices
- Consider subsidy programs for the protection and maintenance of traditional buildings and landscapes in Beycik area (Chae *et al.*, 2008)

3.8 Reflections on the area and the relationship of rural change to landscape architecture

In the case of Kumluca, landscape architecture could help in assisting both policy makers and population to imagine various scenarios of further development and future change, and their consequences, on both the urban and agricultural landscape. Thus, in the best possible case, professional input could help influence decision-making and, at the very least, help mitigate against the worst effects of unplanned development.

In Kumuluca, transformation of the landscape seems to have been driven by many small stakeholders (landowners) taking similar individual decisions over a relatively short period of time. The result is a patchwork of small farms, each one seeking profit. The overall spatial organization is efficient and presumably profitable, but it was not designed as either a beautiful landscape or an environmentally responsible one.

Such intensive production can be problematic if ecosystem services are to be safeguarded. In the case of Kumluca, the small size of plots and many landowners could be seen as an opportunity to imagine creative spatial solutions. Incentives/subsidies to the landowners could be considered to encourage better management of open spaces within the productive land to improve ecosystem services, quality of life etc.

Long term planning strategies could seek ways to combine planned population growth, agricultural production using less space/land and the preservation of ecosystem services.

Successful development will also depend on education. Antalya University and the landscape architecture course could play a very important role by working with the administrators, farmers, landowners and agricultural organizations/ cooperatives to foster greater understanding of the value and vulnerability of their landscapes and of local public participation processes.

In the face of global concern about the environment, natural resources and sustainable development, and considering the real possibility of an energy crisis, Kumluca may have to reconsider any plans for further exponential growth. It may also have to diversify its activities. Nevertheless, conflicts in interest between economic, social and environmental issues will doubtless continue to occur. For example, the safeguard (or return) of ecosystem services will require specific steps to protect water flows and biodiversity, possibly at a cost of agricultural profitability per sq meter of land; green tourism assumes a certain landscape aesthetic and quality that does not include fields of plastic greenhouses!

How can respect of today's priorities ensure that the future demands and needs of society be met?

The European Landscape Convention (Council of Europe, 2000) describes an approach that can help discern values and connect past with future landscapes, but it does not specify how to progress in practical terms (Antrop, 2005). If it is not realistic to expect the ELC to do so (because landscapes are very different in context, character, identity...), how can landscape stakeholders better interpret the ideals of the Landscape Convention? In the same line of thought, as stated by Tress *et al.* (2005), it is not clear how rural landscape research and researchers can link theoretical insights to more operational outputs. So it seems that one missing aspect is how to interpret theoretical documents and landscape research in order to reflect them on practical implementations, for instance, for the use of landscape architects and planners.

As Telles (1996) pointed out, the future will not be rural or urban, but both at the same time without confusing them. Therefore, the contemporary concept of landscape is moving away from the separation between rural and urban. Instead the notion of global/holistic landscape (paisagem global), where landscape is understood as a system, multifunctional and continuous, integrates both urban and rural landscapes as well as the relationship between the two, which supports people's lifestyles (Telles, 1994, 1996).

3.9 Summary and conclusions

The need for an ever more integrated approach to the environment and to understanding of the complexity of human society and its impact on the world has led to increasingly large teams of experts for every project. Difficulties are inherent in multi-disciplinary team-work, to do with different disciplinary approaches, methods of communication, common understanding, attitudes, frameworks and competences; yet working in a team on a common problem is at once extremely challenging and enriching. As a non-specialist, skilled in summarizing information, practiced in the drawing together of various strands, into a "master-plan" or project, the landscape architect could have an important role to play. Reflection on how to prepare landscape architecture students, as well as the students of other disciplines involved in the rapidly changing built and natural environment, to work in multi-disciplinary teams, on projects of increasingly complex nature and scale, seems urgent.

This exercise in Kumluca raises issues that are relevant to both the organization and experience of almost any field trip. Furthermore, the case study approach is strongly linked to landscape architectural practice and helps make the connection between teaching and practice. The testing of real or hypothetical theories and strategies that lead to new solutions and/or scenarios, or the development of new processes, or technological applications provides a further obvious link between site specific studies, research into, through and about both the education and practice of landscape architecture.

Links between education of, research into, about and through landscape architecture need to be strengthened. Better connections between the disciplines that work together on the built and natural environment need to be made. This exercise would have benefitted from the presence of experts from the neighbouring disciplines (architecture, urbanism, planning, environmental engineers, civil engineers, agriculturalists, agronomists etcetera).

As a reflection on the exercise itself, the site of Kumluca could have served as a study for the entire Le-Notre forum. It might be useful, in the future, to try concentrating efforts on a single site – perhaps viewing a single site from four perspectives, rather than viewing four sites and dividing up the energies of a much larger group. A more concentrated, multi-disciplinary approach could lead to greater understanding of a place and reflection on relevant issues.

Although this site was large and there was discussion about whether or not Kumluca was an example of rural settlement, it was without doubt an example of rural change. Whilst this site reflects cultural differences between the slowly shrinking "old world" of Europe and the fast growing "new world", at the same time, Kumluca reflects the fact of the global marketplace and the role of technology in agribusiness. It is a stark reminder that agriculture is not a natural industry, that agricultural landscapes are not always beautiful ones, and of the importance of scale.

Technology, access to online information and services and the facility of transport logistics have transformed rural lifestyles. Life in Kumluca has been transformed by its unlikely connections to the global city. The global meta-society already exists, it is urbanized (if not always urban) and the idea of the meta-city as described by McGrath and Shane (Chrysler *et al.*, 2012) can help describe the level of intricacy with which individual cities should be considered.

A small rural town that reflects the success of its agricultural exports, Kumluca is an example of neither 'rus in urbe' nor 'urbs in rure'. Its form is "at once urban and rural…", it has aspects of both, indeed, its agricultural industry is inseparable from the town if not always located on its streets.

As the agricultural landscape of Kumluca, literally wrapped in plastic poly-tunnels, illustrates, intensive farming can be more of a dirty, messy business than a beautiful one. Agriculture requires space and a specialised infrastructure and for these reasons the authors suspect that its practice "intra-muros" will remain anecdotal. The contribution of 'urban' agriculture to food security may require the acceptance of agriculture as a sophisticated technological (and un-natural) activity – as is the case in Kumluca.

It is unclear whether Kumluca is an example of sustainable growth, or what it should to do to maintain its current success. As Kumluca illustrates, contemporary urban development is not so easy to define, "one size" does not fit all and each case needs to be examined in detail and in its specific context if the complexities of its actor networks are to be understood (Meeres, forthcoming).

Further study required.

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Chapter 4

Heritage and Identities

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4.1 Introduction

4.1.1 Heritage in landscape, landscape as heritage

When we thought about "heritage" as one of the four themes for the Le:Notre Landscape Forum, it raised several problems of definition and scope, not least that the four themes - Urban growth and sprawl, Tourism along the Mediterranean coast, Heritage and identities and Changing rural life –in any case all overlapped and shared common areas. Heritage is of course a strand of each of the four: it is one of the key aspects of the tourism "offer", especially somewhere like Turkey; it is a basis, especially when defined as landscape, of rural life, it is naturally a part of the urban fabric, and it is a key cornerstone of identity.

One thing we recognised at the outset was that we should find ways to avoid simply looking at only at "heritage sites" that is "small", discrete sites or monuments. We needed in some way to keep in mind heritage as landscape, not heritage as monument or building – heritage at landscape scale, as some might put it, heritage seen as landscapes, framed by the idea of landscape. At the same time, however, hence the complexity, we needed to keep a grasp on the idea that "landscape" itself is heritage, something inherited, and shared by society, and something which is open to our generation to manage or modify, and to valorise and add to, in the process of passing it to the future.

This approach more or less excluded well-known, excavated, "displayed" touristic-ally managed sites. Such places, perhaps paradoxically, or perhaps all too obviously, are in some ways removed from the landscape by the process of preserving and protecting them, and presenting them to the tourist gaze or to public consumption. More accurately, they are removed from the long continuous chain of landscape's history, and made separate, fixed, as museum, pieces. At the simplest level they are fenced-off, but at a deeper level they are moved out of the continuum of landscape; they are fixed at a single period in the past (a "somewhen" not far removed from the time of the grand Tour, when ruination was itself an aesthetic virtue). Instead, when choosing our study-site, we were looking for a place where time and space, history and landscape still flow onwards, where the past is intrinsically still present, where the ordinary is part of heritage as well as part of landscape, somewhere with dynamism and decay, somewhere with ever changing relationships, where both landscape and heritage are being produced as well as consumed. Somewhere that is landscape, an area perceived by people that results from human nature interfaces.

In fact, ideally we would have chosen a 3 or 4 sq km block of land quite randomly, and then sought out whatever its heritage was, and constructed our mental landscapes on the basis of its character. As the ELC says, any area of land, however ordinary it may see, or however degraded it might be, or however everyday it is, becomes "landscape" when perceived by people. We would have brought to our block of land the particular perspectives of (mainly) landscape architects, but we would also have looked at the landscape through the frame of heritage. As outsiders with limited time and resources for the exercise, however, this was not too feasible; we therefore sought out a major archaeological site that had largely been overlooked by official, conventional and notably touristic-led heritage approaches, but which was none the less heritage for all that. We chose somewhere sufficiently large to prevent us from looking in too much detail at individual components, forcing us to "see the woods not the trees", so that it retained its larger, more extensive dimension that link it most easily to the idea of landscape. By choosing somewhere that has not been "developed" by the heritage industry, indeed somewhere that is very largely unexplored scientifically, we also gave ourselves a chance to see even a place such as Sillyon as an everyday and ordinary place (as it might be to local communities who have grown up with it as simply grazing land or land beyond the home for teenagers to ramble across), even though in most parts of the Mediterranean, let alone in western Europe, Sillyon would be seen as outstanding heritage.

We chose as well a place that was high, a hilltop towering over a large hinterland, so that visits to its summit threw up tensions between first, looking outwards at "the" landscape (which was superficially a modern landscape) and second, looking inwards at the heritage landscape (superficially only an ancient one). We chose a hilltop largely unknown, unsurveyed and heavily overgrown, this setting up other landscape tensions – we climbed first to the relatively open South--western part of the hilltop, with its largest buildings easily visible, but beyond we were drawn to more ru-

inated buildings concealed in vegetation and bushes, and beyond again, looked onwards to the more or less inaccessible two thirds of the hilltop further away: even the hilltop landscape was too large for us to understand fully. In a third perspective, our gaze was drawn neither inwards nor outwards, but downwards too, to the ground and to what might lie beneath, and to (illicit?) excavation trenches, to deep rock-cut water cisterns, to the precipitous craggy remains of the Roman theatre falling into space, victim to earthquakes and rock falls. Within out "site" there are thus at least three landscape visions or mentalities: "here", "over there" and below our feet)

Normally of course, or at least often, we climb hills to look back down, to see the view. On Sillyon, it was difficult to train our gaze outwards into the surrounding landscape, because so much awaited us on the hilltop, and there was a feeling that because "we" were the "heritage group", we should not be looking at the view, particularly as it is a modern view, full of glasshouse and poly-cultivation. But those who did look outwards saw those recent agri-artefacts as just that – the (so far) latest development in landscape evolution. The next stage to come was visible distantly in the haze to the SW, the rapidly moving outer fringe of Antalya; in another decade, perhaps two, perhaps less, Sillyon – like Perge – will be in the outer suburbs of the mega-city. Already the land around the hill has a dense scatter of small farmsteads, themselves a layer of the landscape's history. After only a few minutes gazing from the hilltop, however, and the greater time depth and complexity of the landscape begins to unravel, albeit hazily: we started to see older abandoned cultivation terraces, complexes of water-management leats and other irrigation structures, and further back in time, apparent earthwork remains of other archaeological sites on adjacent smaller hilltops and on the lower slopes of Sillyon.

Like the rest of the Antalya city-region, and in common with much of the Turkish Mediterranean coast, Sillyon and its surroundings showed us to an unusual degree both continuity and survival on the one hand and decay, change and innovation of the other. It showed us a very rich, diverse and time-deep landscape, with two thousand years and more of visible human occupation on an almost urban scale. At the same time, it showed us the rapidly evolving modern and contemporary landscapes of a distinctive 21st kind, fusing extreme urbanisation with the impacts of tourism. Somewhere in between, we saw too the continuing dynamism of nature – or more accurately of underlying natural or ecological and environmental processes which also continuously shape this landscape – from the ruined Roman buildings barely fighting their way into visibility through rampant under-grazed vegetation, to the ever present feeling that the edges of the site are all about to fall into the abyss, relocating heritage from top to bottom of the hilltop.

Both sides of this coin – the "past within the present" and the "future in the present" (the seeds of our future landscape creation – tomorrow's heritage) are about the role of heritage in society (and in economic and environmental terms). This role of heritage is explored for example in the Faro Convention ("The Value of Cultural Heritage for Society") just as the European Landscape Convention explicates the place of landscape in society. Landscape is both the physical form and the conceptual frame in which the heritage operates, and to which heritage, or more correctly the remains of the past and the actions of our predecessors, makes such a large contribution.

Heritage and landscape are thus interleaved; one flows into another as you stand on the hill. Landscape cannot be constructed without taking account of its long history and the visible – and sometimes invisible (but remembered or even imagined) remains of the past – and as a result, the thing that is thus constructed in our perception, in our hearts and minds, is heritage as much as it is landscape.

4.2 Workshop design and aims

4.2.1 Situation

The ancient province of Pamphylia, today's Antalya city-region, combines very rich, diverse and time--deep landscapes with rapidly evolving modern and contemporary landscapes of a distinctive 21st century kind that fuse extreme urbanisation with the impacts of tourism. Both identities– the "past within the present" and the "future in the present" – speak to us about the role of heritage (very broadly defined, see below) in society, and in economic and environmental terms. Notably heritage, tightly entwined with memory as it is, contributes to the formation (and modification) of identities. This role of heritage is explored in the Faro Convention ("The Value of Cultural Heritage for Society"), which was one of the touchstones of the workshop, as was the ELC and the ESF/COST Landscape Policy Briefing).

For the workshop, heritage meant not only monumental heritage "sites", nor only the most ancient, but also everyday heritage even if relatively "modern", "small" heritage, working heritage, and taking into account heritage as associations, activity, custom etc. Locations were visited centred on Sillyon, an urban centre dating from probably the later Bronze age to the 13th century, and whose surrounding landscape provides a chance to consider a wide range of time--depth, multi-temporal layering, presumed local and regional identity, and landscape as well as building/ site heritage. One aim was to raise awareness about the relationship between individual ("public", "tourist") monuments and sites on the one hand and on the other hand the wider functional, historical, perceptual and symbolic landscape, which underlies present day identities.

Questions, challenges and themes provided to the participants were:

- How is heritage regarded by different groups such as local town-dwellers, rural populations, incomers, tourists, professionals and practitioners, politicians?
- What meaning can we afford to read into heritage as landscape in regions with long visible histories as they undergo rapid change; to what extent is the local population aware of cultural / historical values in the landscape?
- How far and in what ways is/can be/ should be heritage and inherited character (e.g. building styles, layout, and values) used to influence development and design? Are local or national registers of monuments useful?
- Is professional practice currently involved in heritage / identity? What are the interdisciplinary relations between University Departments (archaeology, landscape architecture, social science or tourism etc)?

The Heritage and Identities Workshop aimed to analyze and evaluate the relationship between the cultural heritage and identity concepts in the case of Sillyon ancient city area in Antalya. Today Antalya is one the largest urban areas on the Mediterranean coast of Turkey.

Over the last 10 000 years, human activity within Antalya's rough natural landscape has created diverse cultural landscapes. Our knowledge of the history of settlement in Antalya starts with Karain Cave, where the most extensive and best-studied Middle Paleolithic sequence (16,250 Before Present) in Turkey has been studied, 27 km northwest of downtown Antalya; Karain is also notable as the only site in Turkey to have yielded remains of archaic hominids (Kuhn, 2002; Kartal, 2003). The Taurus mountain range of southern Anatolia runs parallel to the Mediterranean coastline, forming a barrier between the coastal plains and upper Anatolian plateau. Therefore besides its blue waters, Antalya landscape is characterized also by Taurus Mountains. A wide range of man-made landscapes from traditional rural settlements to modern urbanized areas has been spread out between the lowland terrain and mountain summits to demonstrate a settlement typology and working landscapes.

The study site, Sillyon ancient city is located 35 km east of the city of Antalya. Sillyon is situated on a 223 m high flat-topped and round shaped hill, which is located in the middle of Antalya plain. Therefore it is quite visible from very long distance. The site was registered as the first-degree archaeological site. However, except the surface surveys little excavation works have been carried out so far. The archaeological sites in Turkey have to be preserved and therefore any kinds of trails or other infrastructure are allowed. Sillyon is also primitive and visitors have to pay attention because of the site's rough character, steep slopes, cliffs and open cisterns without any signage.

4.3 Introduction to Antalya and the focus area

Figure 4.1. Districts of Southern Asia Minor (Bean, 1968 p.23).

4.3.1 A general history

The ancient Pamphylia is an extensive about fifty miles long plain situated east of the city of Antalya and west of Manavgat (Figure 4.1). According to the description of Bean, the plain well watered by three rivers and several streams, produces cotton as its main crop (Bean, 1968). In Greek and Roman times it supported five large cities, Attaleia, Perge, Sillyum, Aspendus and Side (Figure 4.2). The three rivers are the Aksu, the Kopru and the Maravgat river.

Sillyon was one of the towns of ancient Pamphylia, situated on a high and inaccessible table mountain, founded - according to legend - during the migrations that followed on the fall of Troy. Some confirmation is offered by the fact that a statue of Mopsus has been found at Sillyum (Bryce, 2009), a man who is mentioned as founder of several Pamphylian towns, and known to have been a historical person. (A Luwian--Phoenician bilingual from Karatepe mentions one Mopš/Mukšušas ancestor of an eighth-century king, and he is also mentioned in a thirteenth-century tablet from the Hittite capital Hattusa.) Like Termessus, Sillyum refused to surrender when Alexander the Great was in the neighbourhood.

The town, which must essentially have been a place for refuge until then, became more important in the third century, when Sillyon started to mint its own coins (Figure 4.3).

The oldest tombs in the necropolis date back to the third century as well. According to the Peutinger Map (Figure 4.4), travellers from Perge to Aspendus had to pass along Sillyum, which proves that it was an important town in the age of Augustus (when his right-hand man Agrippa created the map that is the source of the Peutinger Map).

Most tombs date to the early Roman period. Because the site is inaccessible, the ancient town was preserved pretty well. An ancient water-canal may be the oldest surviving monument. From the Hellenistic age is the Lower Gate, a hall that may have belonged to a gymnasium, the upper tiers of a theatre, a temple, and a building with a remarkable inscription in the Pamphylian language. The hippodrome may be younger. The most recent burials at the necropolis are from the sixth century CE, suggesting that by then, Sillyon had become a place of refuge again, not being inhabited under normal circumstances. A Byzantine building is the youngest ruin on the table mountain.

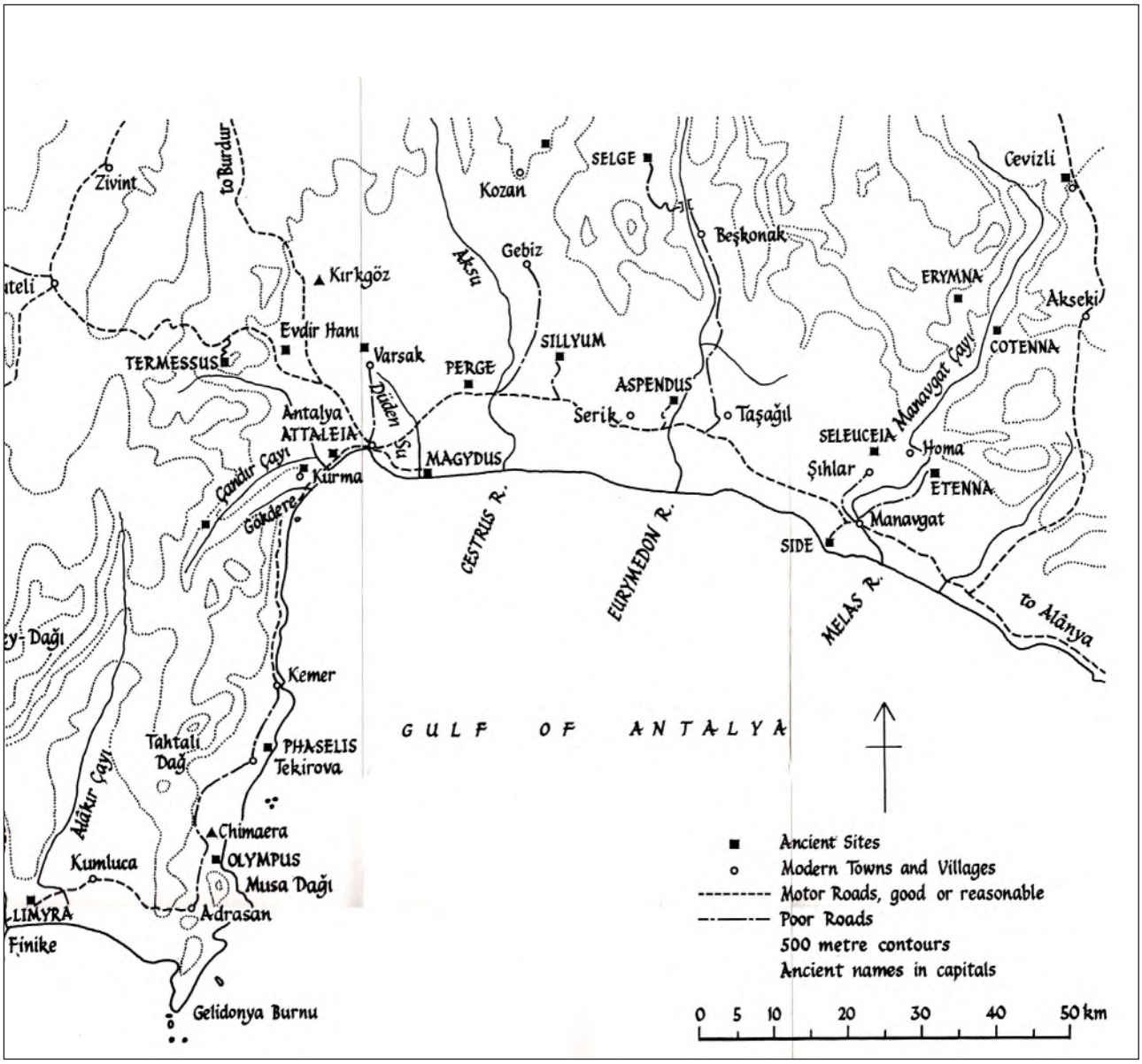


Figure 4.2. Turkey's southern shore, general map (Bean, 1968, p.174-176).

Figure 4.3. Pamphylia, Sillyon. Ca 3rd Century BC. AE 19mm. Laureate head of Apollo right / Zeus seated left, holding eagle & sceptre. SNG France 956.

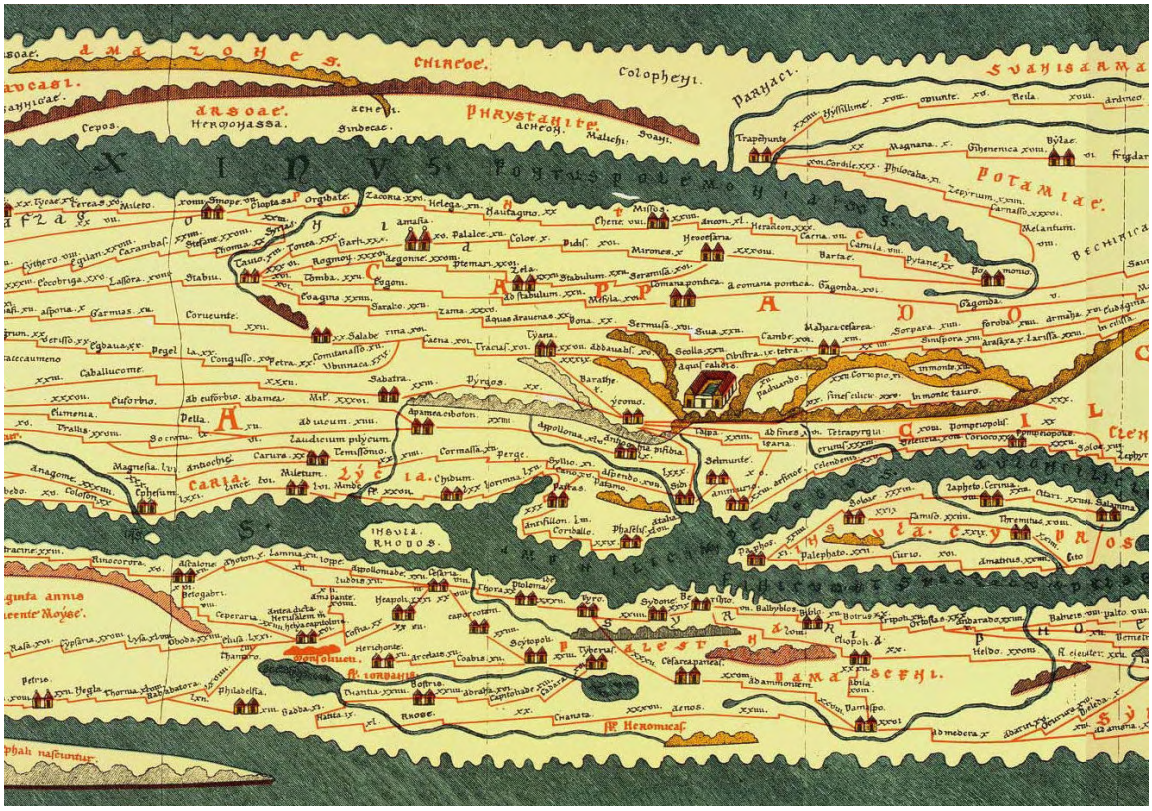


Figure 4.4. Peutinger map, Syllio, Perge and Aspendo (Sillyon, Aspendos) are mentioned.

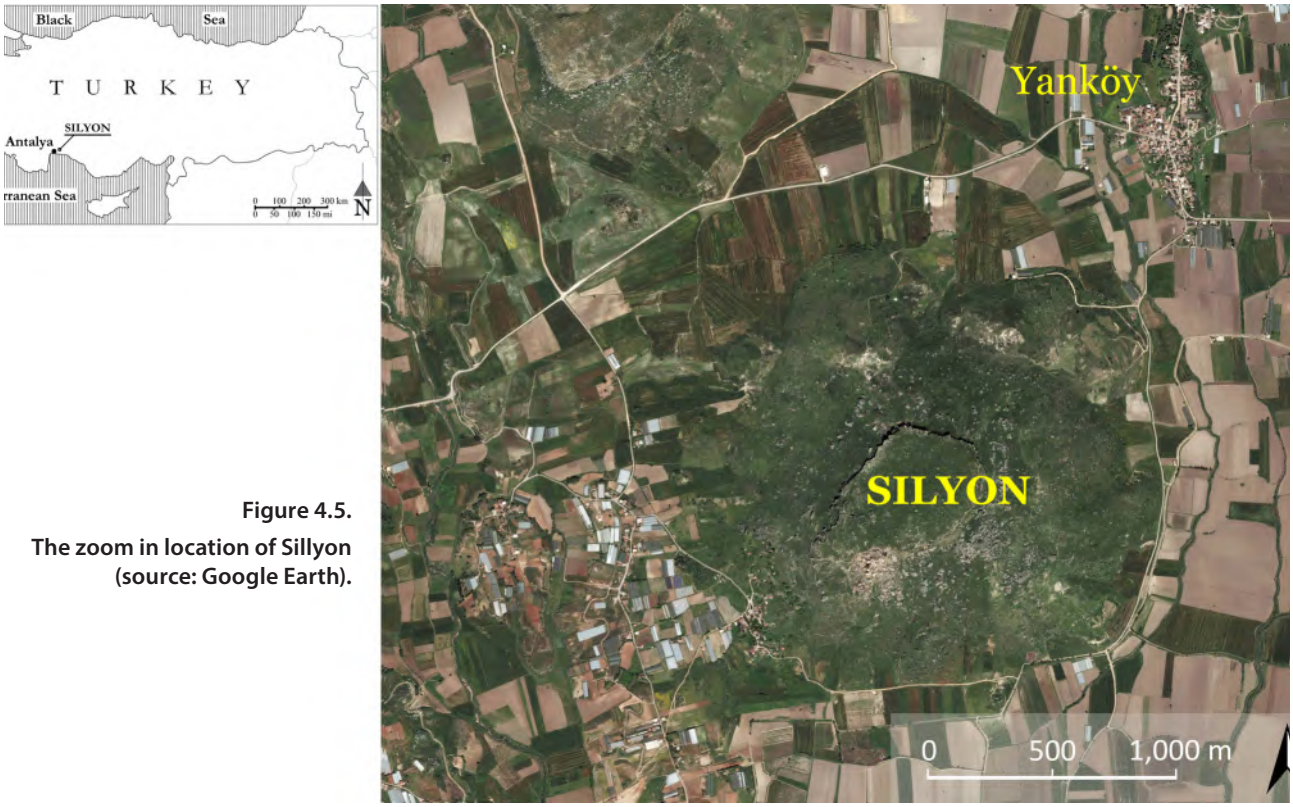


Figure 4.5.
The zoom in location of Sillyon (source: Google Earth).

4.3.2 The Site

History and Ruins

Travellers such as Texier and Spratt and Forbes first mention Sillyon; then Lanckoroński drew the city's map. After Bean's mention of the city in the 1960's, Küpper conducted the first systematic survey from 1995 to 1997 (Özer and Taşkıran, 2010), and Özer and Taşkıran completed last survey. It was one of the ancient cities in the Pamphylian region, and was occupied from the Hellenistic Period (323-330 BCE), through successive periods including Roman, Byzantine and Seljuk until abandoned in probably the xxtth century AD.

The identified ruins on site show this layered built environment. Figure 4.7 demonstrates a schematic plan of the ruins on site (Bean, 1968).

The ruins can be explained as follows:

A (Lower gate): The lower gate comprises a horseshoe-shaped courtyard with a tower on either side. This gate belongs to the later fortification of the city.

B^1, B^2: Both B^1 and B^2 are ramps between lower and upper entrances of the city. The B^1 shows southern whereas B^2 shows the northern segment of the ramp. This elaborate structure is among the more impressive monuments of Pamphylia.

C^1, C^2: The bastions placed close to the ramp (Figure 4.8).

D: Two-storey tower standing in the line of the later fortification. Its northern door has a horizontal lintel; the inner door is arched (Figure 4.9).

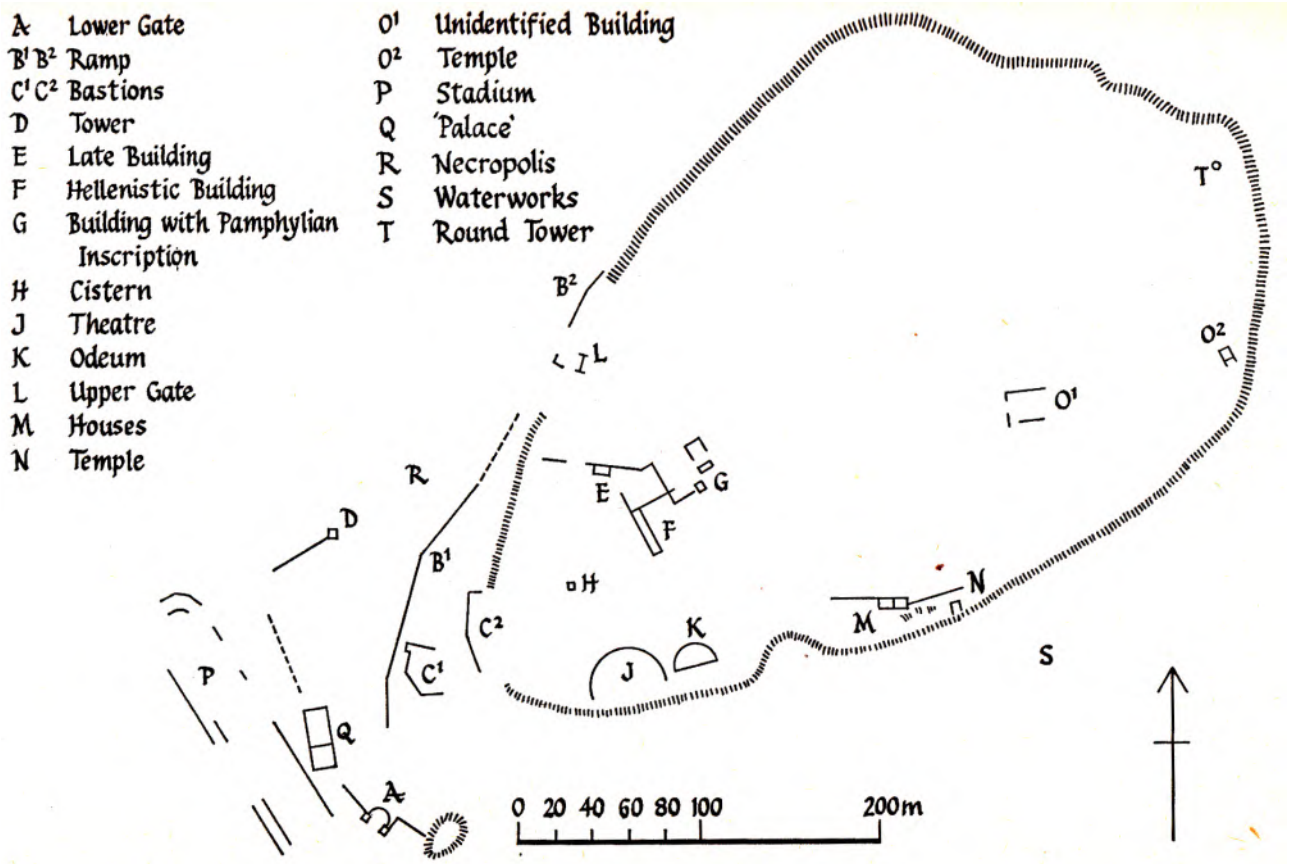


Figure 4.7. Plan of Sillyon (Bean, 1968, p. 61).

Figure 4.6. A clear view of Sillyon ancient city over the plain (photo: Selçuk Sayan)

Figure 4.8. The bastion C^1 (photo: Selçuk Sayan).

Figure 4.9. The square shaped tower (photo: Selçuk Sayan).

E: A large structure of Byzantine dates, standing almost its full height; its purpose is not known.

F: This is a smaller Hellenistic building. It is some kind of public hall (Figure 4.10).

G: This is a much smaller building, with and elegantly decorated door.

H: Cistern

J: The theatre with fifteen rows of seats, with a stairway down the middle.

K: The odeum, with the standing south wall, supported by eight buttresses.

L: Upper gate of the city that is accessed by B^1 and B^2 ramps.

M: Private houses whose walls are of partly masonry, partly of the natural rock at the cliff edge.

N: A small temple, which had originally four columns on the east front.

O^1: Unidentified building

O^2: A repaired temple

P: The stadium, which is about 178 m long and well designed seating.

Q: The „Palace" (Figure 4.11).

R: Necropolis

S: The waterworks made of a narrow tunnel that is 27 m long.

T: The round tower.

The nearest settlement to the Sillyon is a neighbourhood of the village, Yanköy (Figure 4.5). The area has a rural character and major activity is agriculture. Basically farms, orchards and greenhouses are the main land use in the fertile plain. The landscape character of the area can easily be observed from Sillyon, the highest point in the plain (Figure 4.12).

Figure 4.10.
Hellenistic building at the top of the hill (photo: Selçuk Sayan).

Figure 4.11.
The Palace (photo: Selçuk Sayan).

Figure 4.12. Agricultural landscape around Sillyon (photo: Selçuk Sayan).

Figure 4.13.
Crop fields
(photo: Selçuk Sayan).

Figure 4.15.
Goats in Sillyon
(photo: Selçuk Sayan).

Figure 4.16.
Cows in Sillyon
(photo: Selçuk Sayan).

Figure 4.14.
Fruit orchards
(photo: Selçuk Sayan).

The cultural landscape character is based on an extensive farming, including non-commercial animal breeding. The majority of plain areas were used to be areas for field crops, and still crop production seems to be a conventional agricultural activity (Figure 4.13). There are also young Citrus orchards and some plastic greenhouses in the plain. Citrus, pomegranate and other fruit tree orchard farming is a trendy activity because of the demand from tourism sector (Figure 4.14).

There may be animal farms in the wider Sillyon area. However we saw only low-commercial type animal breeding in the neighbourhood of Yanköy next to Sillyon. As a part of rural life around the archaeological sites in Turkey, grazing in the lush green of the archaeological sites has been an ordinary practice that can be observed in Sillyon (Figure 4.15, Figure 4.16).

The buildings in the neighbourhood seem to be ordinary village houses and structures. There are old and new houses. In general old houses are made of stone and new ones of concrete. In the past, before the concrete technology became widespread, stone was the major available structural material (Figure 4.17). The settlements in the countryside look like small towns without a significant architectural character and quality except the ones that are protected through sites or natural settings. This could be a result of the socio-economic change and cultural degeneration that started in the 50's and accelerated after 1980. The neighbourhood of Yanköy around Sillyon demonstrates a typical example of this kind of rural landscape (Figure 4.18).

The use of greenhouse agriculture, and the evidence of important water management measures, with canalizations in the surrounding areas, seems to point to an attempt to increase the resources of the local population to avoid emigration. This, however, seems to be the last – though not final – phase of a long history of strong landscape transformation brought about by Humans.

Figure 4.17. (above) An old and ruined stone house (photo: Selçuk Sayan).

Figure 4.18. Old and new buildings side by side (photo: Selçuk Sayan).

4.3.3 Literature review (location and topic specific)

Ancient sources on Syllion include:

- polis Sylleion (Ps.-Scylax, 101) entails the existence of this city in the early 4th century BC.
- Then, about forty stadia above the sea, one comes to [Sillyon], a lofty city that is visible from Perge (Strab., Geog. 14.4.2), is the largest description, from the 2nd century AD.
- Having left a garrison in Side, Alexander advanced to Syllium, a strong place, containing a garrison of Grecian mercenaries as well as of native barbarians themselves. But he was unable to take Syllium offhand by a sudden assault, for he was informed on his march that the Aspendians refused to perform any of their agreements (Arrian, Anab. I.26) recounts the story of the late 4th century BC, though it was written in the 2nd century AD.
- It minted coins from the 3rd century BC to the 3rd century AD, attesting a variety of name variants (Sillyion, Sileion, Silion, Syllion, Syllaion, Sylleum, Selyon…).
- Sillyon is also listed, briefly, as a tributary city to the Delian League in the 5th century BC.

Of its later history, it is known that it enjoyed increasing importance during the Heraclian and Isaurian periods (7-8th centuries), becoming an administrative centre. This rise explains why it became an Episcopal see —in substitution of the traditional main metropolis, Perge— in Late Antiquity (8-9th centuries). The fall of the region to the Seljuq Empire in 1207 brought about rapid decline, with barely a small mosque bearing witness to that presence. Around the 13-14th centuries the city was definitively abandoned.

In spite of this prevalent role towards the end, the density of Ancient cities such as these in coastal Turkey is the reason why Sillyon has not garnered nearly as much attention from historians of the 19th and 20th centuries as neighbouring Perge. That situation can be summarised by Bean's far-reaching dissemination work (Bean, 1968: 59-66).

In recent years, archaeological activity has advanced; beginning with the first systematic survey of the site and environs, initial phase of what would be some years of German research. This took place from 1995 to 1997 (Küpper, 1995, 1996a, 1996b and 1997). Further studies have included defensive structures (in McNicoll, 1997) and architectural considerations of the standing buildings (Varkıvanç, 2007).

Recent Turkish archaeological studies, led by Pamukkale University, have an on-going project with a web-site (http://pau.edu.tr/sillyon/), taking place since 2009. In 2009 activity was centred on the necropolis around the city, as well as ceramics, inscriptions and re-used building stones (Özer & Taşkiran, 2010). In 2010 (Özer, Deveci & Taşkıran, 2011), surveys continued in the burial grounds, and a detailed study of the mosque was carried out, revealing, not without uncertainty, a 13-14th century date. Also, some of the structures were subjected to photogrammetric analysis, such as the lower tower, to the west, the remains of the theatre, which was dated to the Hellenistic period, though used also in Roman times. Finally, inscriptions, ceramics and coins were collected and catalogued. In 2010, however, some elements in the immediate vicinity were surveyed, including the fortification at Kepez, only 3-4km north of Sillyon, which proved to be a fortified settlement, with cemetery and all. These Turkish campaigns have no published conclusions yet.

Research in and around Sillyon has been too site-centred. A landscape archaeology approach is desirable, so both the evolution of the site and its relation with the landscape can be understood. Some of the aspects, which require further research, are:

- The different phases of the city are pieced together in an intricate puzzle, but little attempt has been carried out to understand how these phases relate to each other, and what the city looked like in the 20 centuries we know it existed. Sondages in certain phases could reveal stratigraphically these phases, not just architecturally, as has been the case until now.
- The slopes to the city are extensively used, particularly to the west. There, amid the monumental structures, there is apparently good archaeological potential, due to the deeper deposits. Also, the post-abandonment deposition on certain buildings such as the stadium could well reveal how the city changed in the medieval period, how it was abandoned, and how the immediate village of Kocagözler came to be there.
- Field surveys should be carried out in a 5 km radius to detect the various secondary and rural structures associated to the settlement (farms, tool sheds, per urban sanctuaries, etc.) in the different phases.

- Some of the slopes around Sillyon seem to have been abandoned for some time now (0.7 km to the NW). They should be sondaged and samples extracted, which will surely reveal rich stratigraphies with all sorts of paleoenvironmental data, as well as information regarding agricultural exploitation during the different phases.

4.4 The Workshop

4.4.1 Field visit

Assistant Mayor: it's there (Sillyon), it's there for all my life and it's there for the animals. A draw for interesting people - the governor visited and made promises that he didn't fulfill. If tourists come they come, but we live without them.

Impression of the area by the workshop participants

It has been observed that local people have attachment to the area mostly in economic aspects. The locals see the area as an economic material and it is important for them because of having a potential positive effect in their economy. However, today, a small market near the entrance of Silliyum is the only mean of positive effect of tourism to the local economy, especially in spring and summer. Agriculture is the main economic activity in the area. During the interviews with locals, it's observed that if there were better opportunities in economic and social aspects in the different places of the country, Inhabitants of the village located on the terraces of Sillyon would have moved from the area.

One of the main issues facing "heritage and identities" in the case of Sillyon is the missing connection between past and today, especially in cultural aspects. Although the settlement with its ruins is one of main tangible elements of cultural heritage in the Sillyon and the near surrounding, the settlement is not a part of locals" life and of inhabitants of Antalya. The Sillyon seems not to have an important role in their life and doesn't form their identity. People living around the area do not feel a part of the culture and history, which Sillyon represents. It may be a similar case for the other cultural heritage areas in Antalya and maybe also all over Turkey. However being one of the main tangible elements of cultural heritage of the near surroundings, the site is very hard to reach. Information about the area is very little, even in Turkish. Also, there is not any attempt for the conservation or for the restoration of Sillyon. There are no signs of a conserved or restored historical area in Sillyon. These may be some of the reasons the site is not being a part of life in the near surroundings nor in the city of Antalya.

So, it can be regarded that place identity which is more related with emotional attachment to the place, among the locals is low. This means, although the area is a part of the heritage of Antalya and Mediterranean history and identity, there is a lack of connection with today's community and the past. For this reason, the heritage of the area does not have a positive role in the identities of locals. In other words, today's local community living on the terraces of Sillyon are living the present time without emotionally touching Sillyon. While Sillyon is a witness of both past and present, inhabitants in the near surrounding of Sillyon are the witnesses of only today. Sillyon is living in the past without inhabitants where nature took over the former city. Locals are telling Sillyon's story without becoming a part of this story while sharing the same land. The city has its own time giving the feeling to visitors that time has stopped at a point in the past. There are valuable samples of Mediterranean history with cultural and natural components in landscape. However, today is full of problems related with inadequate means of social, cultural and economic life for the surrounding inhabitants.

The relationship of heritage and identities to landscape architecture may hold a functional role by supporting the enhancement and improvement of the identities. This functional role may be in building bonds with Sillyon and its stakeholders by the help of participatory landscape planning and design. During the planning and design phases and then by the outputs of these phases, locals, visitors and other stakeholders may be involved to the conservation, restoration and management of Sillyon. In this process, stakeholders of the area should have active roles and should be aware of their personal and group effect on the future of Sillyon. In such a process, involved individuals and groups will live and experience different feelings in the landscape and in this way, they will live an emotional bonding process to landscape. While people building bonds with Sillyon and its components of the surrounding landscape, the landscape and its components will have a place in their personal and common memory and history.

Visualisation of experiences

One of the exercises executed during the site visit was recollecting the ideas the excursion had brought to the visitors. These memories can be put together in a mind map (Figure 4.19), memories can be found in objects, elements, structures, experiences you notice in the field and you want to collect in a kind of map, not the traditional map, but a very personal map (Macfarlane, 2007).

The use of the method is described by Loes Leentjes and Jos Ulijn (Larenstein). The capturing of the landscape by sketching is a frequently used technique in their education method. Every participant (student, stakeholder) in a project designs his/her own mindscape. From the different viewpoints and registered issues, a synthesis is made. It is already a kind of general interpretation taking into account the different ideas of the participants. It takes into account a multi-sensory way of interpretation: the smell of jasmine, people might have been thirsty as the Pepsi Café, and the drinking water are explicitly mentioned. The wind that was extremely hard the day of the visit is taken into account. People were warned about the possible dangers on the site. Many cisterns are present, and are quite dangerous features, the whole area is covered with stones, and some of them are loose. In the explanation during the visit, reference was made to other better-known sites such as Aspendos, Side, and Perge…

Some interpretations are made, thoughts are starting to evolve, goats, milk, cheese, etc. local brand are coming up as a basic idea for the development of the site and surroundings.

Figure 4.19.
Mind map
(Loes Leentjes and Jos Ulijn).

PHOTOSYNTH: Generating a point cloud from a crowd sourced photographic survey

Figure 4.20. Print screen of the overview with a view angle and marked picture http://photosynth.net/view.aspx?cid=188b2b00-eebc-4e01-86b1-1842cecd17bd **achieved: 2/2013**

The workshop and field excursion to the archeological site of Sillyon aimed to collect as much data as possible during our visit to the site. Besides sketching and interviewing locals, the participants took a lot of pictures. This short paper describes how we brought together all of the pictures been taken, arrange them, and show what can be done with large collections of photos. A few simple guidelines need to be taken into account when photographing in order for this to work.

The central application we were using for this is called Photosynth, developed and made freely available by Microsoft Labs (Microsoft, 2012). It allows for photos to be mapped relative to each other, resulting in a very user friendly and intuitive way of photo browsing, as well as sharing with people unfamiliar with a certain site or environment. In addition, it allows for further ways of use. For instance, a "point cloud" can be derived quite easily from this data for use in programs such as AutoCAD.

Figure 4.21. Photo collage on photosynth
http://photosynth.net/view.aspx?cid=188b2b00-eebc-4e01-86b1-1842cecd17bd **achieved: 2/2013**

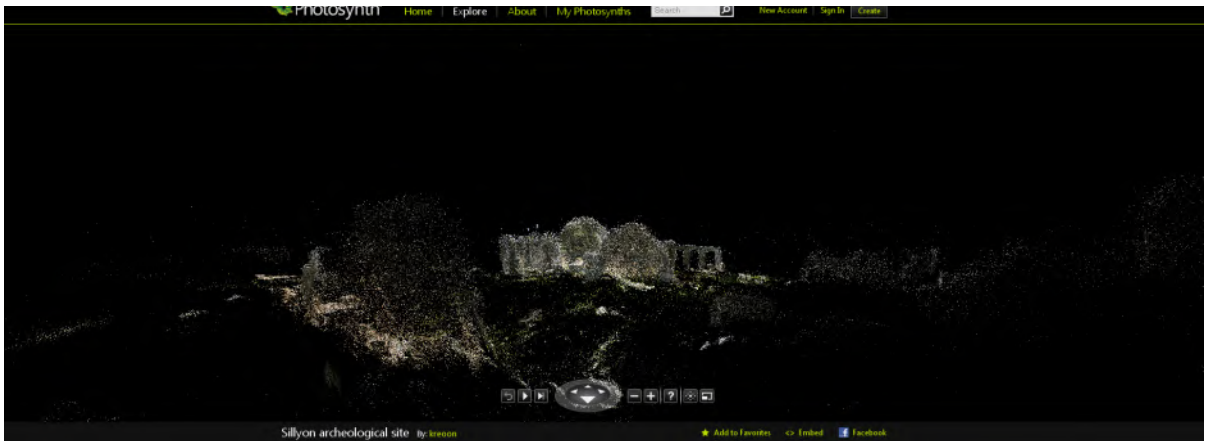


Figure 4.22. Point cloud from the same view on photosynth
http://photosynth.net/view.aspx?cid=188b2b00-eebc-4e01-86b1-1842cecd17bd **achieved: 2/2013**

Capturing the photos

For Photosynth to allow to recognize the relative position of each photo, the following guidelines are important (Photosynth Team, 2008). You start by taking a panorama of your scene, and then move around and take more photos from different angles and positions. If you just do a panorama you won't end up with a good 3-D experience. Be aware of having enough overlap when shooting the panoramas; try for at least 50% overlap between the photos. Wide-angle shots (photos taken from farther away, or with your camera's lens zoomed all the way out) reconstruct more reliably than closer shots. It's good to have close-ups, too, but you'll want to have good coverage of your subject with lots of nice overlapping wide shots. Move around the object capturing the object from all possible sides.

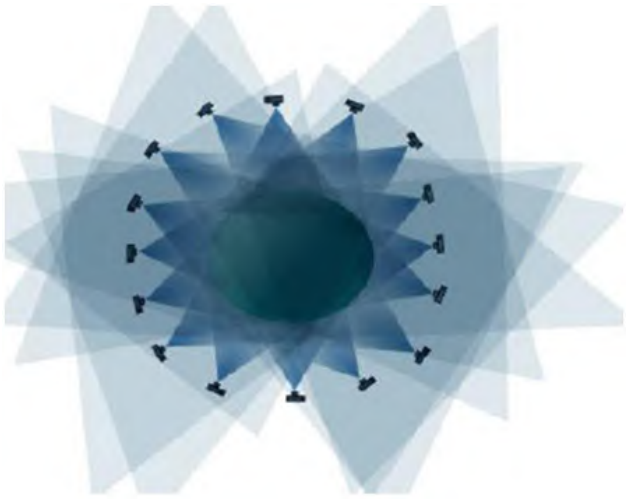


Figure 4.23. Shooting a 3-D object.

Creating the Photosynth

The Photosynth application needs to be downloaded from http://photosynth.net/, and a free Microsoft Live account needs to be created if you don't have one already. It is strongly advised to close all programs other then Photosynth while processing the photos, as the creation of a Photosynth is a RAM-intensive process that might fail if the application runs out of memory.

The program is pretty straightforward and needs little explaining as it only consists of pointing the application to the photos that need to be used. Once the Photosynth has been calculated, the final step is an automatic upload of the photos that are part of the generated synth. A fast broadband Internet connection is needed for this final step as a folder with +400 photos can quickly be more than one gigabyte in size. To make this uploading process more bearable, it is advised to reduce the number of pixels of each photo prior to feeding them in Photosynth. This may on the other hand result in Photosynth having more difficulty in matching all of the photos. So keep in mind not to reduce the file size too much. Somewhere between 2 - 4 megapixels seems most appropriate. This can be done prior to taking the photos by adjusting the resolution setting in the camera, or be done afterwards in a wide range of programs (i.e. Adobe Lightroom, Adobe Photoshop, Picasa…)

If all went well, you end up with a successful Photosynth tying all of your pictures together accessible on the Photosynth website (Microsoft, 2012) pressing the "my Photosynths" button. Please note that this requires an up to date browser and the SilverLight plug-in (Microsoft, 2012). A variable called "synthy" displays how successful the program was at this. The photos can be explored in many ways; the point cloud can also be visualized and navigated.

What is point cloud data?

Point cloud data is not much more than an immense amount of points all defined by an X Y Z coordinate along with basic attribute (e.g. RGB-color). It's a way of quickly measuring and surveying a site, most frequently and most precise by use of a laser-system. Well know LIDAR-data is an example of such point cloud with which many of us already worked or at least have heard from. Generating a point cloud based solely on photos is far less precise, but requiring less an investment by using a large collection of photos.

Importing point cloud data into AutoCAD

Most AutoCAD-products can import point cloud data starting from version 2011. AutoCAD uses *.pcg as the default point cloud format, however a few other extensions can be opened.

For importing a Photosynth point cloud we'll be using the "BrowsePhotosynth for AutoCAD" plug-in which is downloadable for free (Walmsley, 2010). Note that this requires having "NET Framework 3.5 SP1" installed (Microsoft, 2008). Entering the com-

mand "browseps" in the AutoCAD command line; this opens a web browser interface of the Photosynth website. Upon navigating to a specific Photosynth, this opens a thumbnail of the photos on the right hand side. Clicking this thumbnails opens the Point Cloud in AutoCAD and stores a local *.PCG file in the My documents/Photosynth Point Clouds folder on the local computer.

Using commands like "scale" or "align" using a given reference length, this point cloud can be put to scale for further analysis and measuring. Using the 3D--orbit tool, the point cloud can be viewed in 3D. In the recently released AutoCAD 2013 there are further tools to clip the point cloud in order to specify which points to display. The REVIT version of AutoCAD 2012 has a downloadable plug-in called "point clouds feature extraction" downloadable for free at http://labs.autodesk.com/utilities/scan_to_bim/. Using the release 2011, it's most easy to store the point cloud as a *.DWG file and insert it in a new AutoCAD file as a XREF. Using the command xclip, the xref can be clipped to only show a specific part of the point cloud (i.e. front, back, side, section…). This allows for easier measuring or tracing of the features.

If you prefer to use the point cloud in programs other then AutoCAD, a standalone exporter called "synthexport" is also available for download (Hausner, 2010) and allows you to export to formats like *.obj, *.ply, *vrml, and *.x3d. Just like the "BrowsePhotosynth for AutoCAD" plug-in, this requires the "NET Framework 3.5 SP1".

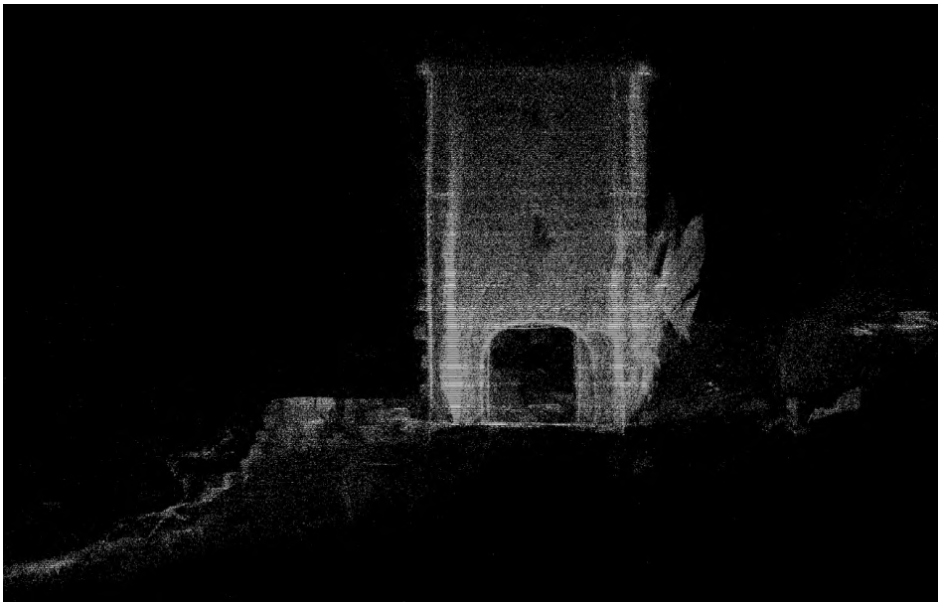


Figure 4.24.
Orthogonal view of the tower & topography (Ruben Joye).

Figure 4.25
Orthogonal view of both sides of the tower (Ruben Joye).

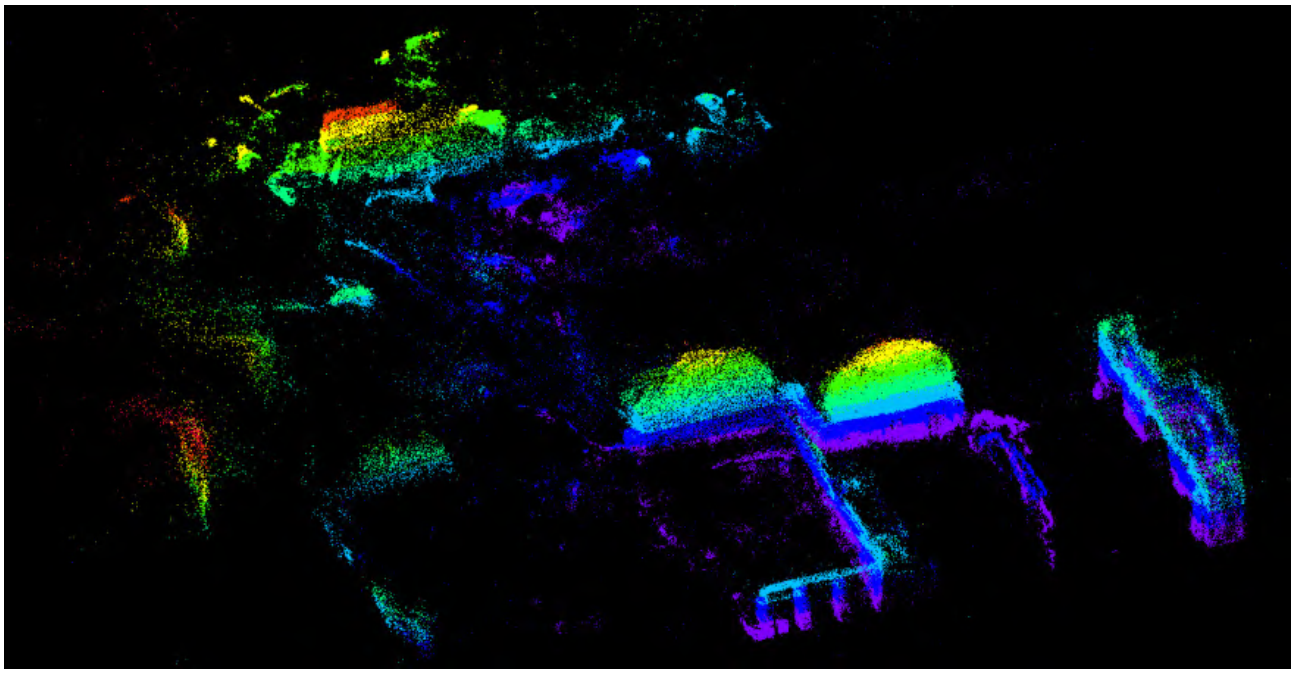


Figure 4.26. Point cloud of the palace classified by height (Ruben Joye).

Figure 4.27. Two sections derived from the point cloud (Ruben Joye).

Conclusions

Making use of the Photosynth program has some pros and cons. Advantages are that it doesn't require expensive or heavy equipment, it's easy to use, and it has fast results. There are however some disadvantages to the technique as well. Using Photosynth is far less accurate and detailed than working with a 3D laser scanner. The program has difficulties with repetitive patterns and complex occlusions for obvious reasons. Current versions of the program do not support Linux or Mac OS.

4.4.2 Round table

Research group

The fieldwork had an obvious influence in formulating the research questions. The group members asked different questions, and the attitude of the members could be classified in three different categories.

Three attitudes

A first group of the participants started off with a clear structure of questions whereas a second group attempted to go to the site without any questions, and let the site be the inspiration for questions to be formulated. A third group had an unstructured questioning perspective.

What kinds of questions were formulated?

A first set of questions occurred from the physical aspects of the site, i.e. morphology, geology, landform, vegetation and animals. Also questions of the archaeological site and setting of the buildings, uses and reuses of stones were posed.

A second set was formulated concerning the visual aspects, about the relation between the site of Sillyon (Asar: high location in Turkish) and the surrounding landscape.

A last set was about the perception and the identity of the place. The identity was explicitly formulated as identity for the local people, what the site means for the locals. This was made possible because of the interviews we were able to execute thanks to our Turkish interprets. People do have an idea what to do with the site, however they have an expecting attitude, they need some support to get into the action (this was explored further during the IMLA project where more time could be spend in interviewing local people).

Impact of the site visit

The field visit has an important impact on the research questions, at first; questions stayed at the level of the case study and were related to the characteristics of the site itself. The site however influenced the formulation of general research questions i.e. what is the place of (landscape) heritage in people's life, is opening up a heritage site for a large number of tourists of help for the local people. Making the site more accessible will have an effect on the adventurous feeling, on the "solitudeness" the place has now, and the experience you have now while visiting the place. The feeling you have now to explore and "get lost" in the site was for many participants very apparent.

Professional practice Group

Four items were discussed within the professional practice group.

The role of the landscape architect within the planning process

Planning plays a central role and the landscape architect is involved in the process. However planning can and is performed by other disciplines than landscape architects as well. In Turkey, the Urban Planners take the lead and hold a central position.

Protection of the site

By identifying values, threats, interests, driving forces after which we prioritise, we have to decide we cannot protect everything. The site will continue to live no matter what. The ways in how we interfere as landscape architects might change the use of the site in different levels. Architecture as a statement (I was here), or architecture in a serving role (managing the site in a proper way) might make the difference in good or bad quality.

Participation

A mixture of one-on-one and one-on-group interviews and open meetings should be organised to find out what the viewpoint of the local people are, what the concern of the locals is. This can be organised with the help of the educational faculties. Students conduct one-to-one interviews. This could be organised in a summer school with landscape architect students, or even the possibility might occur to work with a student group consisting of students of different disciplines. Involving local people in reading the landscape, in bringing them closer to the archaeological research process, might open up the eyes of the locals. After all the place is still used as it has been for centuries.

Sensitive approach

All agrees the sensitive approach. But what is sensitive versus not sensitive? The focus should be put on the nearby villages, so that the locals can benefit from all measures. If opened to the tourist, it should not take the form of mass tourism. Little infrastructure can steer into the direction of different target groups e.g. independent travellers, hikers, professionals or all interested tourists. The site has been identified as valuable; it will be useful to have a proactive strategy to be able to respond before any damage is done. The landscape architect can assist in visualising locals aspirations for the site. To set up different scenarios that visualise different outcomes and to facilitate public participation, professionals/experts are needed for a satisfactory result.

Conclusions

The role of the landscape architect is/ needs:

- In line with the European Landscape Convention, article 5c: "Facilitate public participation".
- To Identify values-threats and driving forces.
- To facilitate expert participation of everyone that needs to be involved.

Teaching group

Collecting data

Different ways of starting a project were discussed. The mind mapping and sketching on site were seen by the participants as important tools to identify a site. It is all about how we look at our object of study. The observation process is better executed while drawing/thinking than while making a lot of photos. It is observed that students often look at a place in detail when they are back at home by exploring their photos. Some of the participants would like to spend more time sketching when researching a site.

When the process is executed in a participatory way, all stakeholders make their mind map, in order to collect data. Afterwards interviewing the people can complete this information.

Working with reference projects

Working with reference projects is agreed to be a tried and tested method. However students should be warned not to copy projects, but always make an interpretation of the own site, and then use in a subtle way the right examples. The searching attitude of the student should be awakened by making students think about landscape theory and the different concepts of landscape.

Heritage in teaching landscape architecture

It is obvious to all participants that heritage (landscape as heritage) should be involved in concepts of planning and design. The landscape heritage is inherent to the quality and to the identity of the landscape. The history of a place and the traditional landscape management often define how the landscape is experienced today. Sillyon gives us a good example. Within the teaching in landscape architecture it should be a natural reflex to include landscape heritage in our projects.

Proposal from the group for upcoming Le Nôtre Landscape Forums

It might be a good idea to work on the site with a group of students and professors to execute an actual project. It would be interesting for all to get into the site for a longer period, taking the advantage of working together with the different disciplines involved in the Landscape Forum.

Fortunately we had the opportunity to develop a student workshop within the IMLA-program. Many of the proposed methods and techniques were used during the project (see Post workshop).

4.5 Post workshop follow up and Teaching the subject

We, being landscape architects, are not archaeologists, neither are we historic geographers nor heritage people. We as landscape architects however are interested in the history of the landscape, in the archaeology of the landscape, in the time-depth within the landscape. There are some other names we could add i.e. the landscape biography, as the recent Dutch way of describing the history in the landscape is called. The Landscape biography (Bosma, 2010) refers to a "personality", the collection of singularities of a landscape that is developed under influence of natural processes, events, human impact (land-use), interventions, policy, legislation, norms and values, mentality. In the United Kingdom we find the Historic Landscape Characterisation (HLC) as a strategic concept for the interpretation of the landscape as a whole. The term HLC might put us on the wrong leg, because it is as much about managing the future as it is strictly about history, about the past.
How can we, as teachers bring into account the landscape heritage, without focussing only on the historic landscape elements and structures? With the students of the IMLA-program we were able to find out in a concrete way what the site of Sillyon (Silyon in Turkish) could mean in the design process during a semester lasting international project.

4.5.1 The project

The project was developed as a spin-off of the Le:Nôtre Landscape Forum in the month of April 2012. The concrete working period started in October 2012. There were some introductory lectures from experts in different fields, to inspire the students for the upcoming fieldwork and following realisation of the project. Professor Veli Ortaçeşme provided us with local knowledge about the project area. German archaeologist Peter Becker, who collaborated in archaeological research on the Sillyon-site, provided us with the reports of the excavations. There was additional information about tourism, and how archaeological sites could be seen as a touristic product, provided by Werner Taurer from the international company Kohl and partner.

The project participants were Professors Dr. Veli Ortaçeşme, Dr. Ahmet Benliay from Akdeniz University, Antalya, Turkey, Professor Fritz Auweck, Dipl. Ing. Steffi Gruber from Weihenstephan University of Applied Sciences, Germany and Professor Harlind Libbrecht from the University College Ghent, Belgium. The student group were twenty-one students from different countries, being the core group of the IMLA-students, assisted by seven students from Akdeniz University.
After the general introductory lectures students started to work in group to become familiar with other archaeological sites as examples of good practise, to be prepared for the fieldwork in Sillyon during the first week of November.

4.5.2 The fieldwork

During a first excursion, the group visited the Perge--site, as a reference project, and afterwards visited the Sillyon-site. In the Perge-site, students became aware of the way the local people use the touristic offer as a way to earn some money, selling local products to the visiting tourist. Aspects we as design professors should be aware of while visiting a site.

The visit of the Sillyon site had a similar effect on students as the visit with the audience of the L:N Forum, the visitors were astonished, or as archaeologist Dr. Sarah May formulated it so colourful during the Forum visit, we were blown away by the site (that day it was literally as well). Apparently a feeling archaeologists are familiar with. The adventurous circumstances of the visit were unseen. In contrast with the Perge-site, where you find the super-organised location with the typical "metro" entrance that we noticed on several sites in the neighbourhood of Antalya.

The tour on top of the Sillyon hill gave us, in perfect weather circumstances, the fabulous views, typical from this table mountain site. The archaeological features were seen as inspirational for the further design process. The adventurous character of the site was for all group members a positive aspect (figure: route of the site visit). By the end of the day we visited the village of Yanköy, where a first set of interviews, thanks to the collaboration of the Turkish students was executed (if we think that with the knowledge of the English language we can do some talking in the Turkish countryside, we have to reconsider). The observation of the village gave us some ideas and opened up some opportunities for local development.

In the time we were in the village, the shepherds with their herds came back to the village. We actually realised that the site of the Sillyon hill and surroundings is actually until today a living cultural landscape managed by the local people. We noticed at the visit of Yanköy that stones from the archaeological site were reused in the village.

4.5.3 Teaching method

From the project description we started with an analysis of the regional identity, the formulation of a vision and strategy based on a target system defined by the different student groups. Interviews were used to make students aware of the idea local people have about the historical site. By interviewing people we became aware of the fact that simple ideas like for example bed and breakfast do not fit in the regional culture. Local people have a problem with the gender mix of foreigners in their own house. Therefore we needed to be creative in finding solutions if we wanted to develop this idea further. By the look at the regional architecture, often falling apart at the moment, we found the inspiration for the bed and breakfast in separate buildings (to be renovated) on the farm properties. The knowhow of the people working the rough materials of i.e. cotton produced on their fields is common knowledge; however, the cotton is sold to the manufactory. Possibilities where searched in the idea of local brands, so the locals would get an income from the visitors of the Sillyon- site. Transport of tourists might be developed in what a student-group called the "camyonetwork", based on the way the local people transport their family on a Sunday trip.

4.5.4 Case study BE SILYON by one of the student groups, provided by Marlis Staubitzer – Sarah Härtl – Natalia Vergara – Sermin Durdu[1]

Imagine to be at a place where history becomes alive with the help of high-tech augmented reality instruments and the involvement of local people that will not only show you their way of living but will share with you their food and culture in an environment that is rich in adventure, biodiversity, creativity and experience.

Silyon as an archaeological site rich in history, culture, biodiversity, welcoming people and agri¬culture that inspired us to develop a reference point for a new experiential way of tourism. The key aspect of our concept is to preserve the uniqueness of the site itself, in order to protect what is already there: the breathtaking landscape, the historical ruins and the people that live there in bal¬ance with the environment. This for us means to BE PART of the project, to BE ENLIGHTENED by new ways of accessing information, to BE IMPRESSED of the site, to BE BEYOND all conventional planning, to BE CONNECTED with the world, to BE AWARE of the uniqueness of Silyon – to BE SILYON.

Therefore we set ourselves the target of giving initial triggers with low impact and to implement a new technological approach – augmented reality; four different levels with a diverse concentration on what happens there.

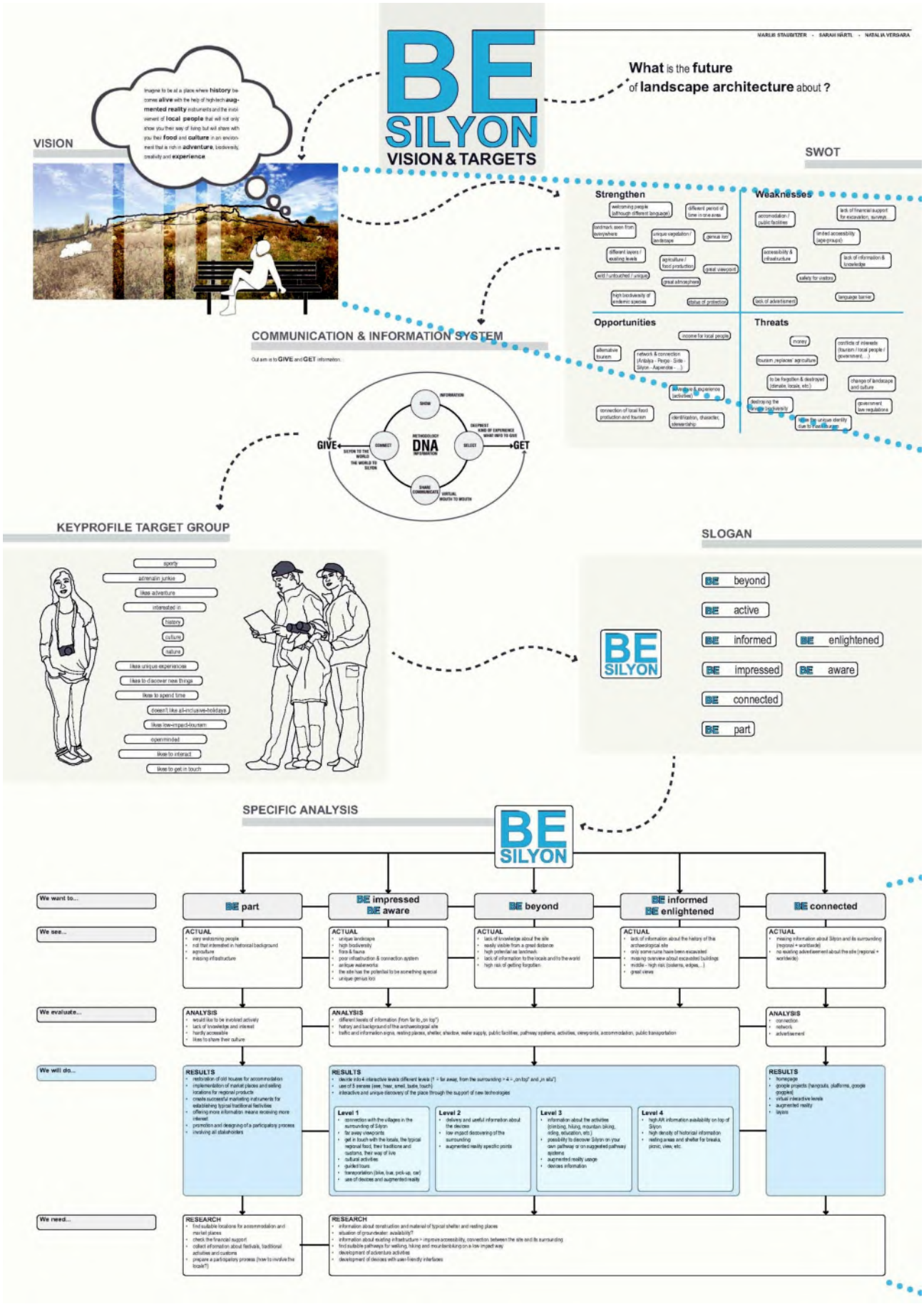
Level 1 – "BE PART"- Get in touch with the locals
Level 2 – "DISCOVER"- Low impact paths
Level 3 – "GET ACTIVE"- Extreme adventure paths
Level 4 – "EXPERIENCE AUGMENTED REALITY"
- Virtual reconstructions of the ruins

Our project is rather a growing management process than a final product. By giving initial triggers and small but elementary changes in the different levels we want to initiate our project. One example for the first steps is the improvements of infra -structural connections, the restoration of old tumbled down houses for accommodation, the involvement of the local people and the setting of first specific points for information, augmented reality and resting places. Throughout time, our project will grow by developing the activities within the levels; for example the establishment of further activities on the hill and in the surrounding of Silyon, with the help of our network. In the final phase of our pro¬cess we will hand over the stewardship to the local people and we as a planning team will undertake the monitoring process.

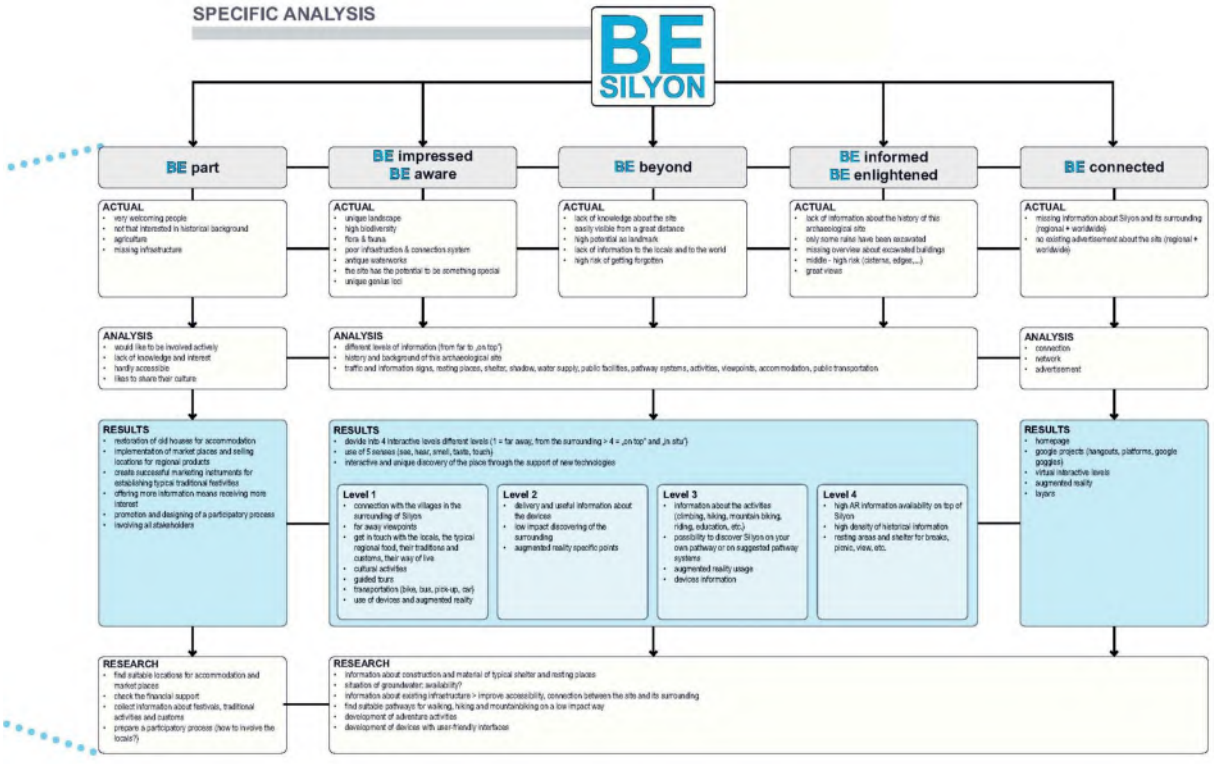
The aim of our concept of information and communication is to give and get information and to have the possibility to share the information on our home page. With our devices and interactive glasses the user will experience Silyon in a new way. The use of augmented reality will give information on specific points about history, flora and fauna, and it will show the "reconstructed" history, interviews of locals and experts, pictures and the possibility to listen to an audio guide while walking around. Possibilities that can be chosen by the user in order to experience Silyon by their own terms.

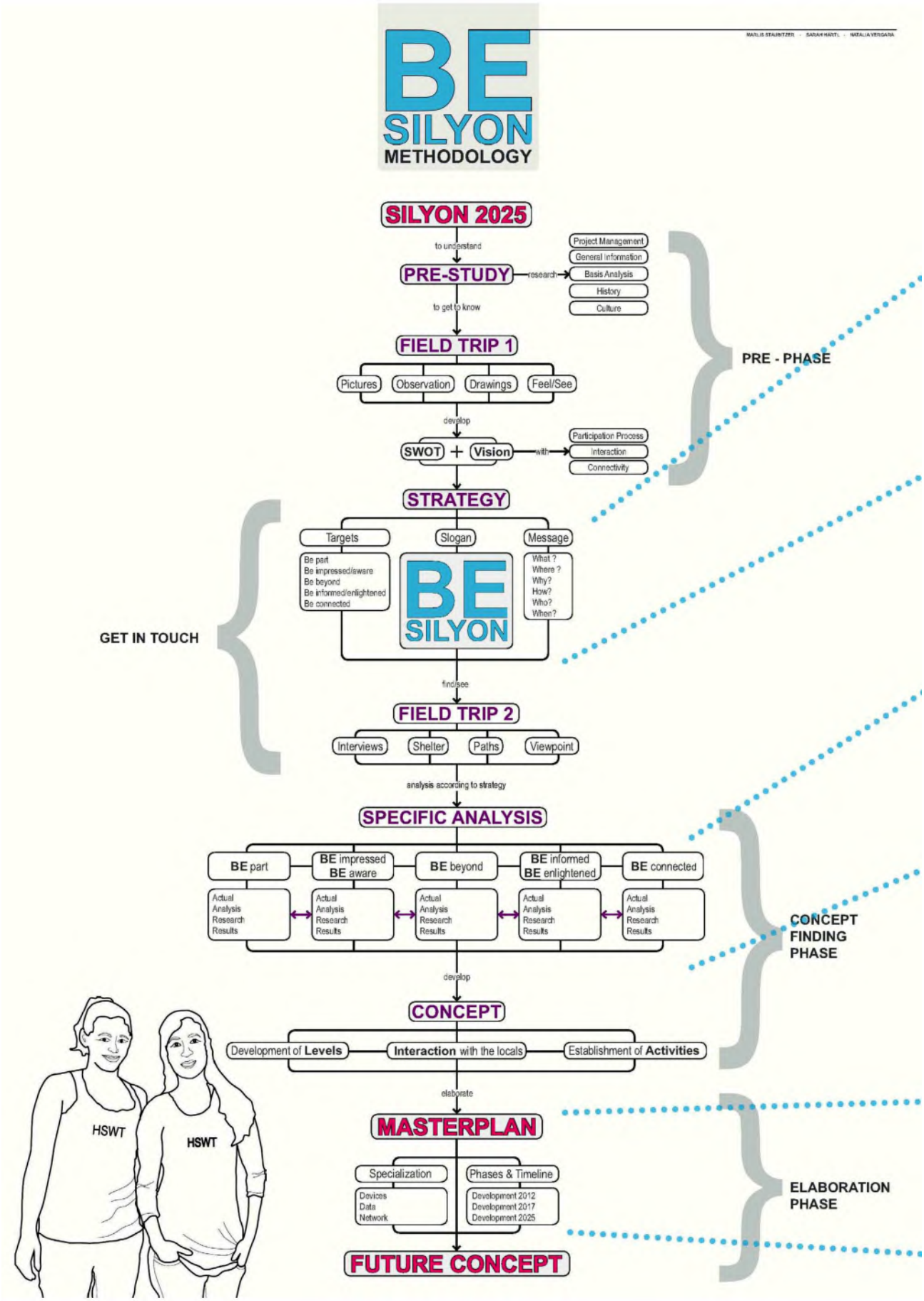
In the end the user will be able to share and communicate their experience to a big network and this communication process will be the advertisement for the whole project at the same time.

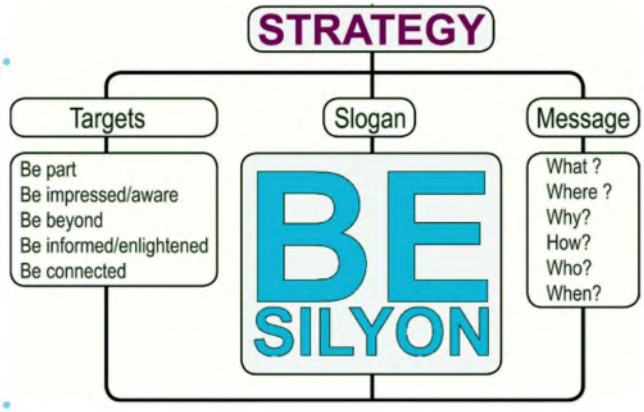
1 International Master of Landscape Architecture, www.imla-campus.eu 2012 , Gruber, S., Knorr R., Läser A., Tada K.,Sillyon brochure p.72-83 (http://www.imla-campus.eu/imla/news/discovering-heritage-landscapes-in-turkey.html)

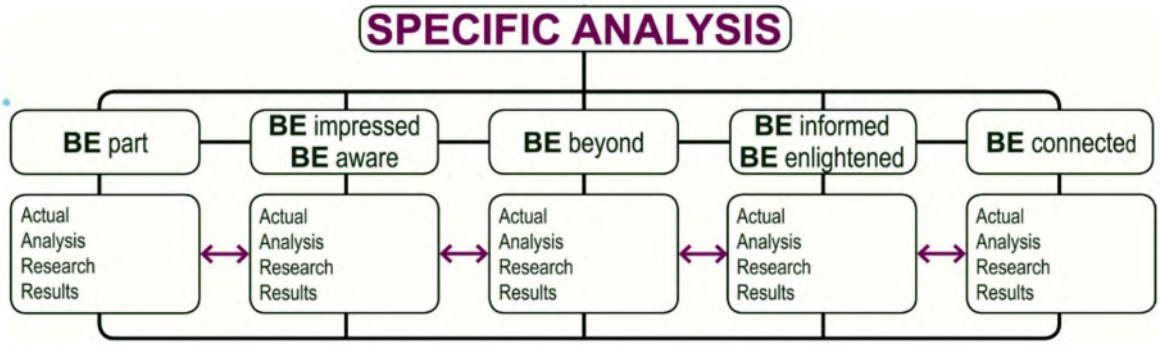

BE
SILYON
VISION & TARGETS
What is the future of landscape architecture about ?
VISION
SWOT
Strengthen
Weaknesses
Opportunities
Threats
COMMUNICATION & INFORMATION SYSTEM
GIVE
GET
DNA
KEYPROFILE TARGET GROUP
SLOGAN
BE beyond
BE active
BE informed
BE enlightened
BE impressed
BE aware
BE connected
BE part
SPECIFIC ANALYSIS
We want to...
We see...
We evaluate...
We will do...
We need...
BE part
BE impressed
BE aware
BE beyond
BE informed
BE enlightened
BE connected
ACTUAL
ANALYSIS
RESULTS
RESEARCH
Level 1
Level 2
Level 3
Level 4


VISION
Imagine to be at a place where history becomes alive with the help of high-tech augmented reality instruments and the involvement of local people that will not only show you their way of living but will share with you their food and culture in an environment that is rich in adventure, biodiversity, creativity and experience.

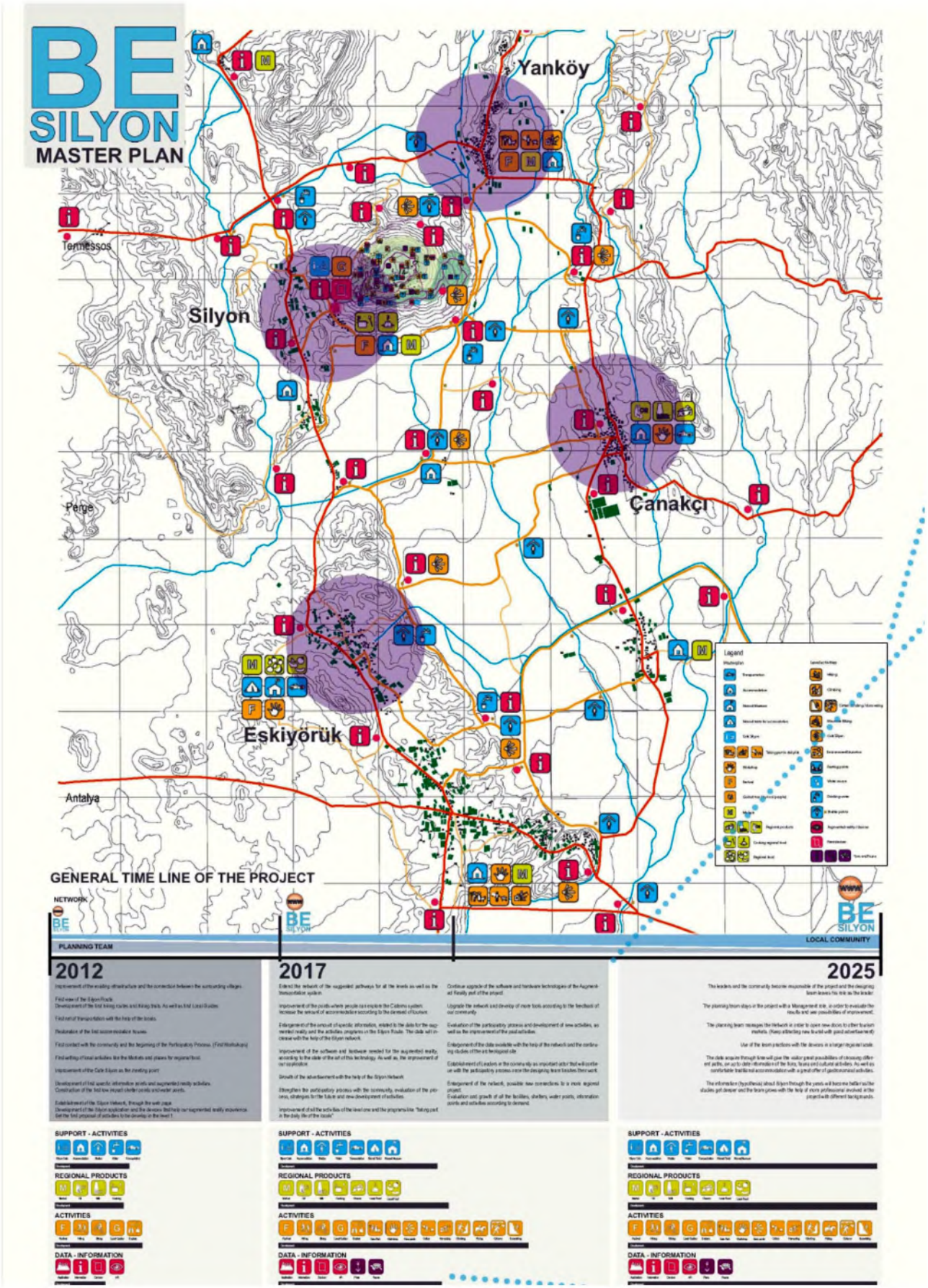

SPECIFIC ANALYSIS
BE SILYON
BE part
BE impressed BE aware
BE beyond
BE informed BE enlightened
BE connected
ACTUAL
very welcoming people
not that interested in historical background
agriculture
missing infrastructure
ACTUAL
unique landscape
high biodiversity
flora & fauna
poor infrastruction & connection system
antique waterworks
the site has the potential to be something special
unique genius loci
ACTUAL
lack of knowledge about the site
easily visible from a great distance
high potential as landmark
lack of information to the locals and to the world
high risk of getting forgotten
ACTUAL
lack of information about the history of this archaeological site
only some ruins have been excavated
missing overview about excavated buildings
middle - high risk (cisterns, edges,...)
great views
ACTUAL
missing information about Silyon and its surrounding (regional + worldwide)
no existing advertisement about the site (regional + worldwide)
ANALYSIS
would like to be involved actively
lack of knowledge and interest
hardly accessible
likes to share their culture
ANALYSIS
different levels of information (from far to „on top")
history and background of this archaeological site
traffic and information signs, resting places, shelter, shadow, water supply, public facilities, pathway systems, activities, viewpoints, accommodation, public transportation
ANALYSIS
connection
network
advertisement
RESULTS
restoration of old houses for accommodation
implementation of market places and selling locations for regional products
create successful marketing instruments for establishing typical traditional festivities
offering more information means receiving more interest
promotion and designing of a participatory process
involving all stakeholders
RESULTS
divide into 4 interactive levels different levels (1 = far away, from the surrounding > 4 = „on top" and „in situ")
use of 5 senses (see, hear, smell, taste, touch)
interactive and unique discovery of the place through the support of new technologies
Level 1
connection with the villages in the surrounding of Silyon
far away viewpoints
get in touch with the locals, the typical regional food, their traditions and customs, their way of live
cultural activities
guided tours
transportation (bike, bus, pick-up, car)
use of devices and augmented reality
Level 2
delivery and useful information about the devices
low impact discovering of the surrounding
augmented reality specific points
Level 3
information about the activities (climbing, hiking, mountain biking, riding, education, etc.)
possibility to discover Silyon on your own pathway or on suggested pathway systems
augmented reality usage
devices information
Level 4
high AR information availability on top of Silyon
high density of historical information
resting areas and shelter for breaks, picnic, view, etc.
RESULTS
homepage
google projects (hangouts, platforms, google goggles)
virtual interactive levels
augmented reality
layers
RESEARCH
find suitable locations for accommodation and market places
check the financial support
collect information about festivals, traditional activities and customs
prepare a participatory process (how to involve the locals?)
RESEARCH
information about construction and material of typical shelter and resting places
situation of groundwater, availability?
information about existing infrastructure > improve accessibility, connection between the site and its surrounding
find suitable pathways for walking, hiking and mountainbiking on a low impact way
development of adventure activities
development of devices with user-friendly interfaces


BE
SILYON
METHODOLOGY
MARLIS STAUBITZER · SARAH HARTL · NATALIA VERGARA
SILYON 2025
to understand
PRE-STUDY
research
Project Management
General information
Basis Analysis
History
Culture
to get to know
FIELD TRIP 1
Pictures
Observation
Drawings
Feel/See
develop
SWOT + Vision
with
Participation Process
Interaction
Connectivity
PRE - PHASE
STRATEGY
Targets
Be part
Be impressed/aware
Be beyond
Be informed/enlightened
Be connected
Slogan
BE
SILYON
Message
What ?
Where ?
Why?
How?
Who?
When?
GET IN TOUCH
find/see
FIELD TRIP 2
Interviews
Shelter
Paths
Viewpoint
analysis according to strategy
SPECIFIC ANALYSIS
BE part
BE impressed
BE aware
BE beyond
BE informed
BE enlightened
BE connected
Actual
Analysis
Research
Results
develop
CONCEPT
Development of Levels
Interaction with the locals
Establishment of Activities
CONCEPT
FINDING
PHASE
elaborate
MASTERPLAN
Specialization
Devices
Data
Network
Phases & Timeline
Development 2012
Development 2017
Development 2025
ELABORATION
PHASE
FUTURE CONCEPT
HSWT
HSWT


STRATEGY
Targets
Slogan
Message
Be part
Be impressed/aware
Be beyond
Be informed/enlightened
Be connected
BE
SILYON
What ?
Where ?
Why?
How?
Who?
When?


SPECIFIC ANALYSIS
BE part
BE impressed
BE aware
BE beyond
BE informed
BE enlightened
BE connected
Actual
Analysis
Research
Results
Actual
Analysis
Research
Results
Actual
Analysis
Research
Results
Actual
Analysis
Research
Results
Actual
Analysis
Research
Results


MASTERPLAN
Specialization
Phases & Timeline
Devices
Data
Network
Development 2012
Development 2017
Development 2025


BE
SILYON
MASTER PLAN
Yanköy
Termessos
Silyon
Perge
Çanakçı
Eskiyörük
Antalya
Legend
GENERAL TIME LINE OF THE PROJECT
NETWORK
PLANNING TEAM
LOCAL COMMUNITY
2012
2017
2025
SUPPORT - ACTIVITIES
REGIONAL PRODUCTS
ACTIVITIES
DATA - INFORMATION

2017

Extend the network of the suggested pathways for all the levels as well as the transportation system.

Improvement of the points where people can explore the Cisterns system.
Increase the amount of accommodation according to the demand of tourism.

Enlargement of the amount of specific information, related to the data for the augmented reality and the activities programs in the Silyon Route. The data will increase with the help of the Silyon network.

Improvement of the software and hardware needed for the augmented reality; according to the state of the art of this technology. As well as, the improvement of our application.

Growth of the advertisement with the help of the Silyon Network

Strengthen the participatory process with the community, evaluation of the process, strategies for the future and new development of activities.

Improvement of all the activities of the level one and the programs like: "taking part in the daily life of the locals"

Continue upgrade of the software and hardware technologies of the Augmented Reality part of the project.

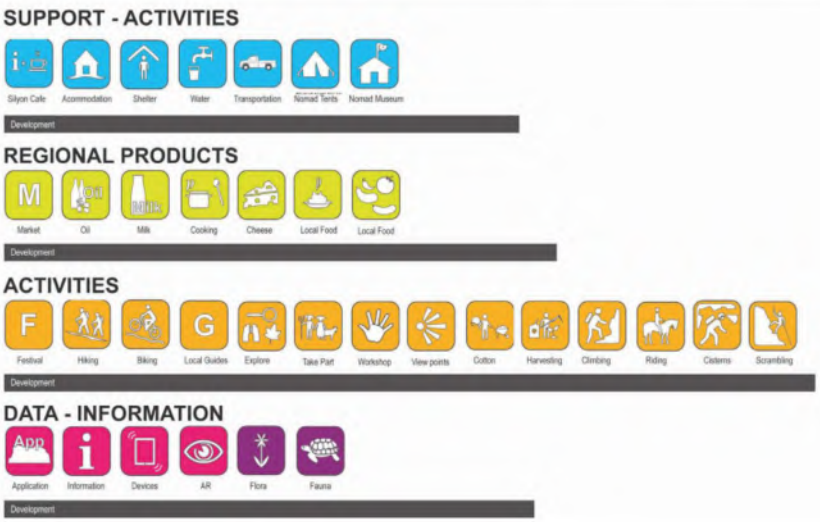
Upgrade the network and develop of more tools according to the feedback of our community

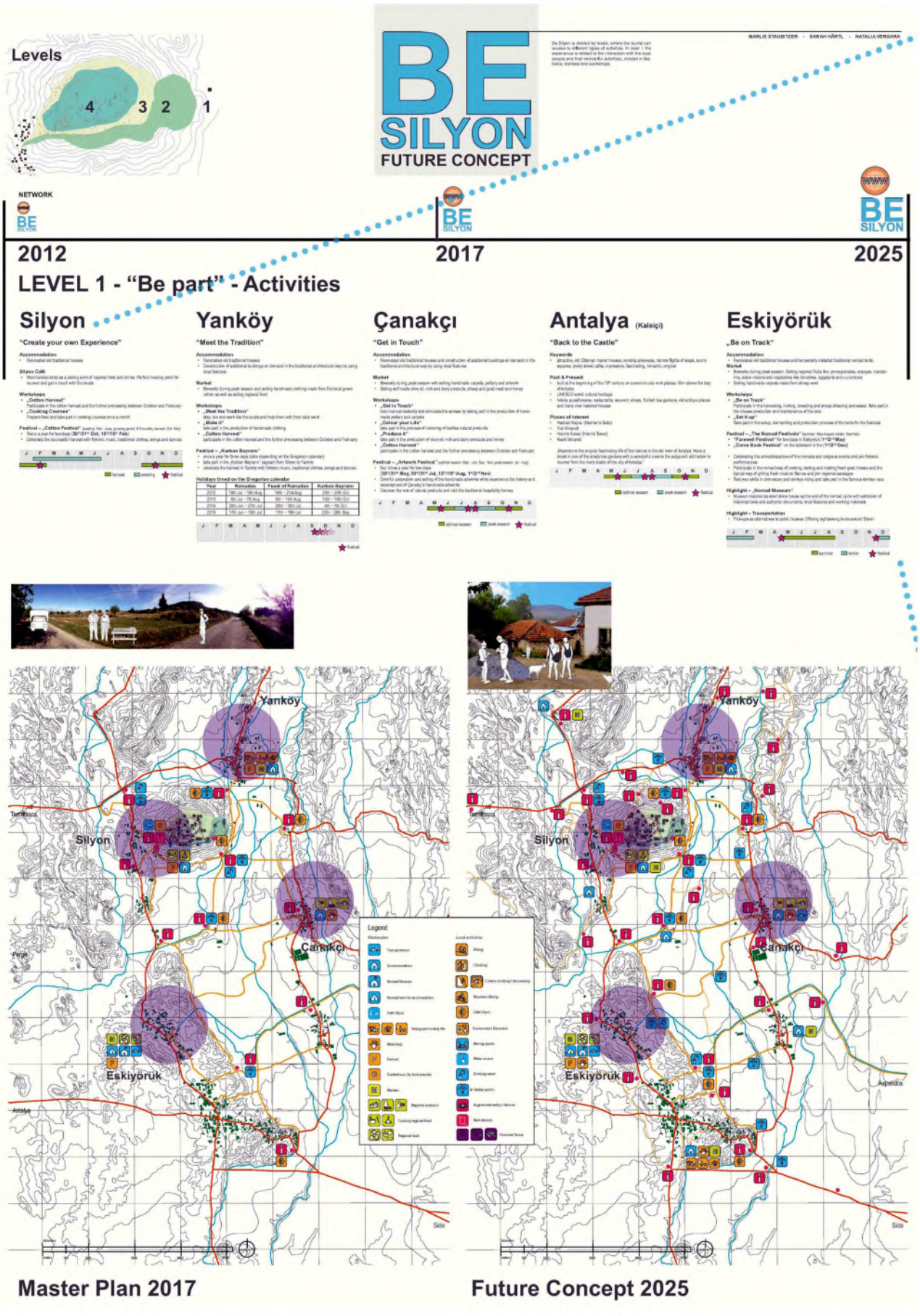
Evaluation of the participatory process and development of new activities, as well as the improvement of the past activities

Enlargement of the data available with the help of the network and the continuing studies of the archeological site.

Establishment of Leaders in the community as important actor that will continue with the participatory process once the designing team finishes their work.

Enlargement of the network, possible new connections to a more regional project.
Evaluation and growth of all the facilities, shelters, water points, information points and activities according to demand.




Levels
4
3
2
1
BE
SILYON
FUTURE CONCEPT
MARLIS STAUBITZER - SARAH HÄRTL - NATALIA VERGARA
NETWORK
2012
2017
2025
LEVEL 1 - "Be part" - Activities
Silyon
"Create your own Experience"
Yanköy
"Meet the Tradition"
Çanakçı
"Get in Touch"
Antalya (Kaleiçi)
"Back to the Castle"
Eskiyörük
„Be on Track"
Yanköy
Silyon
Çanakçı
Eskiyörük
Legend
Master Plan 2017
Future Concept 2025

Silyon

"Create your own Experience"

Accommodation
- Renovated old traditional houses

Silyon Café
- Merchandise shop as a selling point of regional food and drinks. Perfect meeting point for recover and get in touch with the locals

Workshops
- **„Cotton Harvest"**
  Participate in the cotton harvest and the further processing between October and February
- **„Cooking Courses"**
  Prepare food and take part in cooking courses once a month

Festival – „Cotton Festival" (seeding: Feb - June, growing period: 8-9 months, harvest: Oct -Feb)
- Twice a year for two days (**30th/31st Oct, 15th/16th Feb**)
- Celebrate the successful harvest with folkloric music, traditional clothes, songs and dances

Çanakçı

"Get in Touch"

Accommodation
- Renovated old traditional houses and construction of additional buildings on demand in the traditional architectural way by using local features

Market
- Biweekly during peak season with selling handmade carpets, pottery and artwork
- Selling self made olive oil, milk and dairy products, sheep and goat meat and honey

Workshops
- **„Get in Touch"**
  train manual dexterity and stimulate the senses by taking part in the production of hand-made pottery and carpets
- **„Colour your Life"**
  take part in the process of colouring of textiles natural products
- **„Produce it"**
  take part in the production of olive oil, milk and dairy products and honey
- **„Cotton Harvest"**
  participate in the cotton harvest and the further processing between October and February

Festival – „Artwork Festival" (optimal season: May - Jun, Sep - Nov, peak season: Jul - Aug)
- four times a year for two days
  (**30th/31st May, 30th/31st Jul, 15th/16th Aug, 1st/2nd Nov**)
- Colorful celebration and selling of the handmade artworks while experience the history and development of Çanakçı's handmade artworks
- Discover the role of natural products and visit the traditional hospitality homes.

Eskiyörük

„Be on Track"

Accommodation
- Renovated old traditional houses and temporarily installed traditional nomad tents.

Market
- Biweekly during peak season. Selling regional fruits like: pomegranates, oranges, mandarins, water melons and vegetables like tomatoes, eggplants and cucumbers
- Selling handmade carpets made from sheep wool

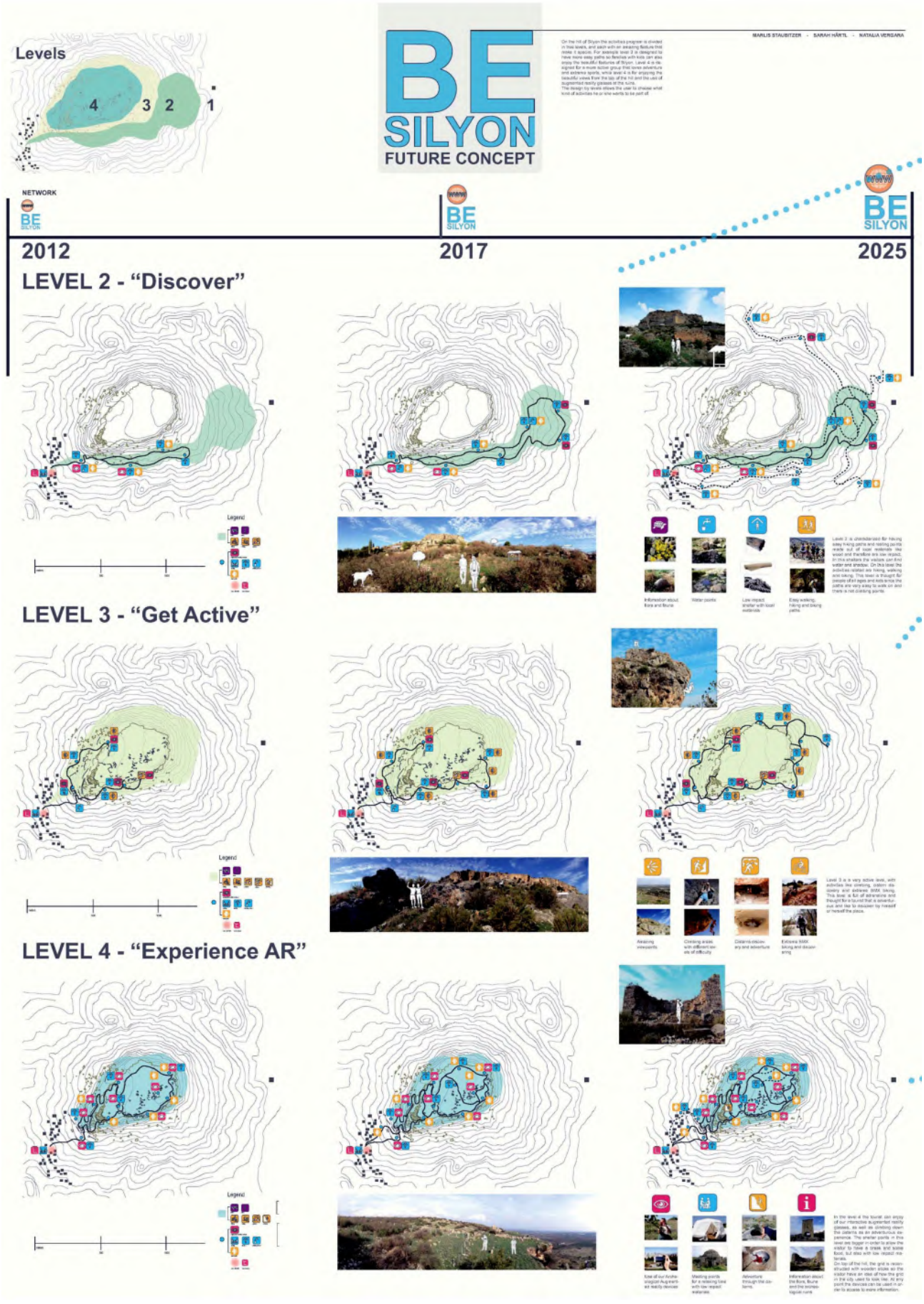
Workshops
- **„Be on Track"**
  Participate in the harvesting, milking, breeding and sheep shearing processes. Take part in the cheese production and maintenance of the land
- **„Set it up"**
  Take part in the setup, dismantling and production process of the tents for the festivals

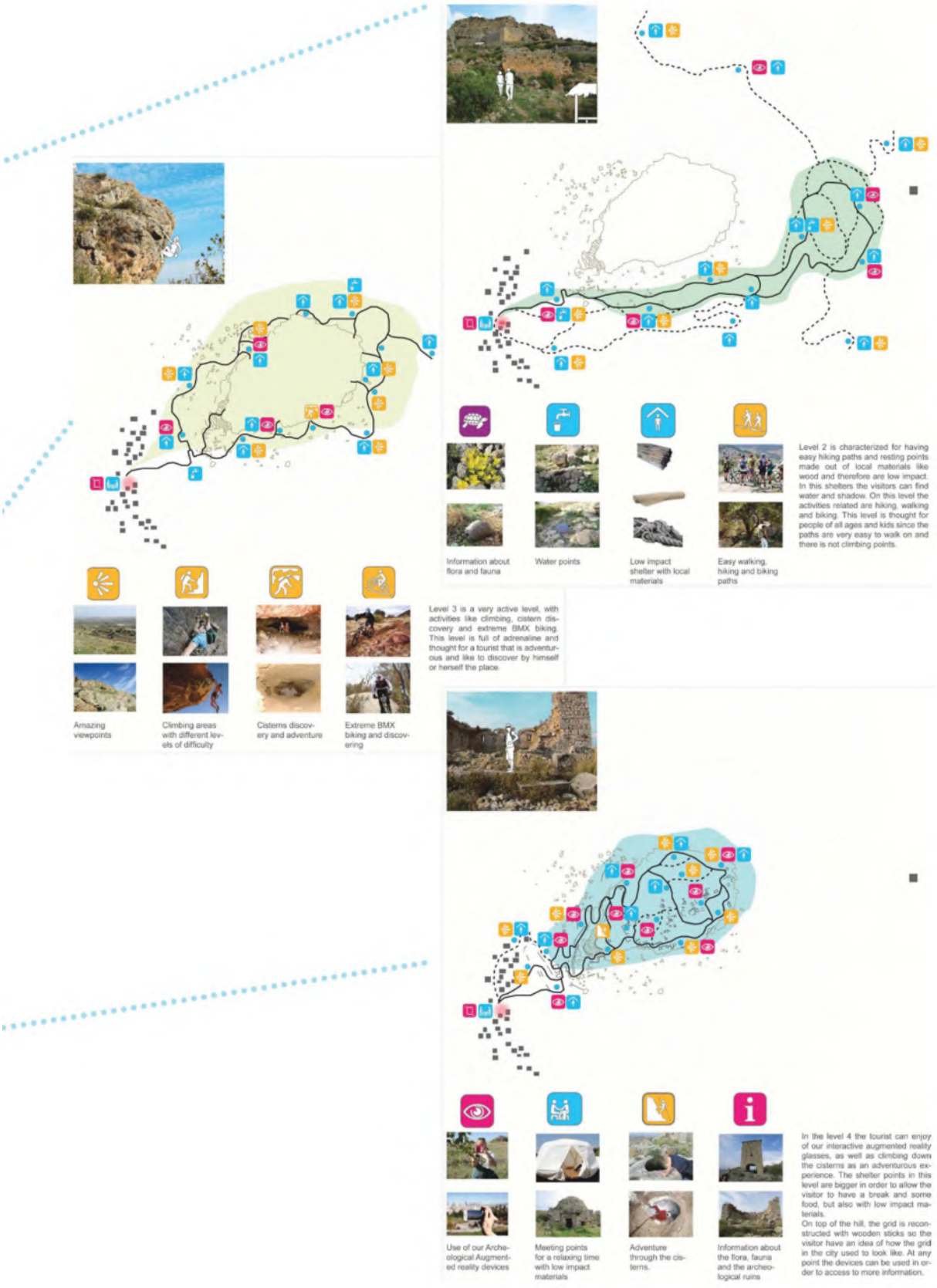
Festival – „The Nomad Festivals" (summer: May-August, winter: Dez-Feb)
- **"Farewell Festival"** for two days in Eskiyörük (**1st/2nd May**)
- **„Come Back Festival"** on the tableland in the (**1st/2nd Dec)**

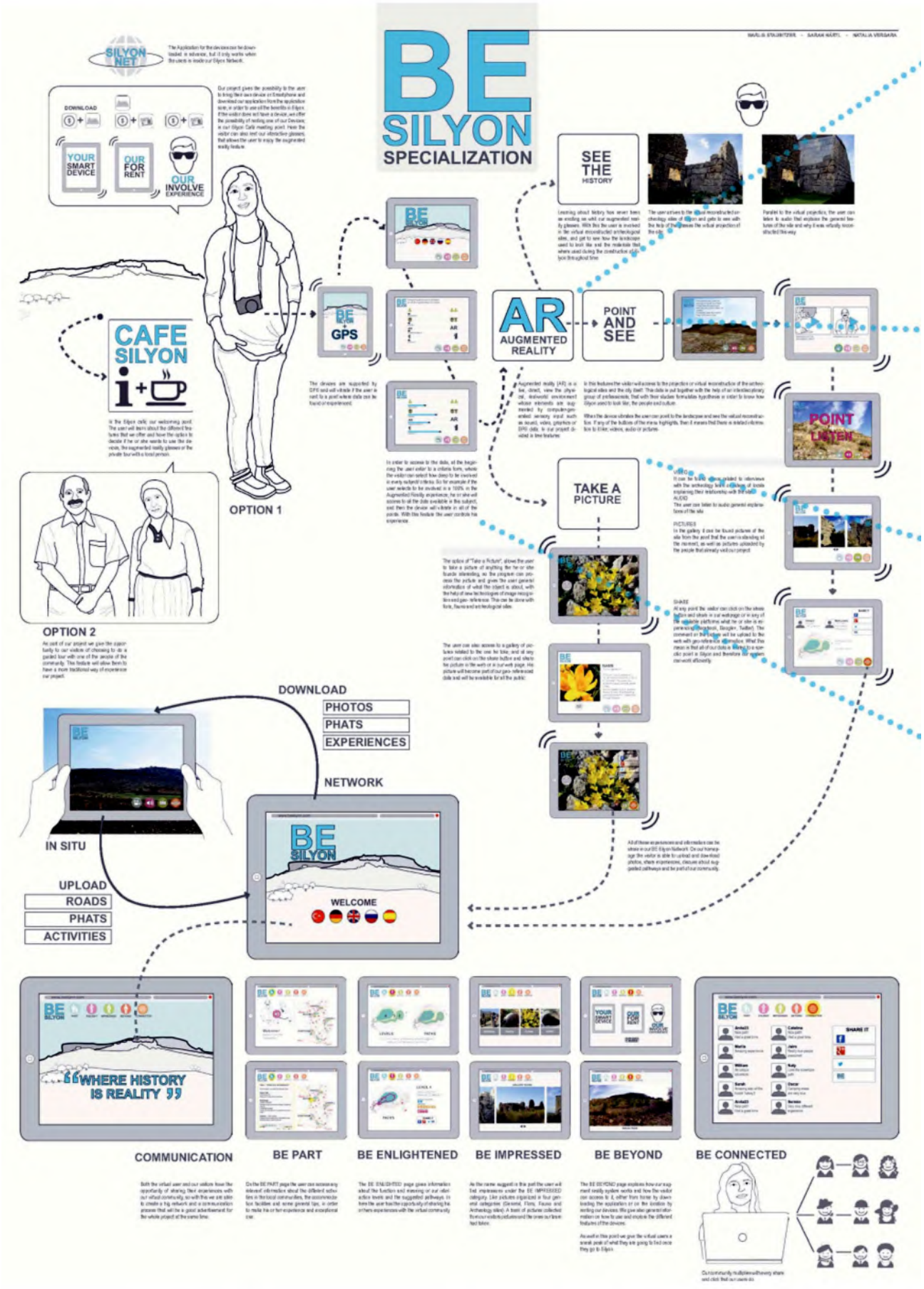
- Celebrating the arrival/departure of the nomads and religious events and join folkloric performances
- Participate in the nomad way of cooking, baking and making fresh goat cheese and the typical way of grilling fresh meat on flames and join regional sausages
- Test your skills in dromedary and donkey riding and take part in the famous donkey race

Highlight – „Nomad Museum"
- Museum realized as solid stone house as the end of the nomad cycle with exhibition of historical tools and authentic documents, local features and working materials

Highlight – Transportation
- Pick-ups as alternatives to public busses. Offering sightseeing tours around Silyon


Levels
4
3
2
1
BE
SILYON
FUTURE CONCEPT
MARLIS STAUBITZER - SARAH HÄRTL - NATALIA VERGARA
NETWORK
BE
SILYON
2012
2017
2025
LEVEL 2 - "Discover"
LEVEL 3 - "Get Active"
LEVEL 4 - "Experience AR"
Legend


Information about flora and fauna
Water points
Low impact shelter with local materials
Easy walking, hiking and biking paths
Level 2 is characterized for having easy hiking paths and resting points made out of local materials like wood and therefore are low impact. In this shelters the visitors can find water and shadow. On this level the activities related are hiking, walking and biking. This level is thought for people of all ages and kids since the paths are very easy to walk on and there is not climbing points.
Amazing viewpoints
Climbing areas with different levels of difficulty
Cisterns discovery and adventure
Extreme BMX biking and discovering
Level 3 is a very active level, with activities like climbing, cistern discovery and extreme BMX biking. This level is full of adrenaline and thought for a tourist that is adventurous and like to discover by himself or herself the place.
Use of our Archeological Augmented reality devices
Meeting points for a relaxing time with low impact materials
Adventure through the cisterns.
Information about the flora, fauna and the archeological ruins
In the level 4 the tourist can enjoy of our interactive augmented reality glasses, as well as climbing down the cisterns as an adventurous experience. The shelter points in this level are bigger in order to allow the visitor to have a break and some food, but also with low impact materials.
On top of the hill, the grid is reconstructed with wooden sticks so the visitor have an idea of how the grid in the city used to look like. At any point the devices can be used in order to access to more information.


BE
SILYON
SPECIALIZATION
SILYON NET
DOWNLOAD
YOUR SMART DEVICE
OUR FOR RENT
OUR INVOLVE EXPERIENCE
CAFE SILYON
OPTION 1
OPTION 2
GPS
AR
AUGMENTED REALITY
POINT AND SEE
SEE THE HISTORY
TAKE A PICTURE
POINT LISTEN
DOWNLOAD
PHOTOS
PHATS
EXPERIENCES
NETWORK
IN SITU
UPLOAD
ROADS
PHATS
ACTIVITIES
WELCOME
"WHERE HISTORY IS REALITY"
COMMUNICATION
BE PART
BE ENLIGHTENED
BE IMPRESSED
BE BEYOND
BE CONNECTED

AR
AUGMENTED REALITY

Augmented reality (AR) is a live, direct, view the physical, real-world environment whose elements are augmented by computer-generated sensory input such as sound, video, graphics or GPS data. In our project divided in tree features

SEE THE HISTORY

Learning about history has never been as exciting as whit our augmented reality glasses. With this the user is involved in the virtual reconstructed archeological sites, and get to see how the landscape used to look like and the materials that where used during the construction of Silyon throughout time.

The user arrives to the virtual reconstructed archeology sites of Silyon and gets to see with the help of the glasses the virtual projection of the site.

Parallel to the virtual projection, the user can listen to audio that explains the general features of the site and why it was virtually reconstructed this way.

POINT AND SEE

In this features the visitor will access to the projection or virtual reconstruction of the archeological sites and the city itself. This data is put together with the help of an interdisciplinary group of professionals; that with their studies formulates hypothesis in order to know how Silyon used to look like, the people and culture.

When the device vibrates the user can point to the landscpae and see the vistual reconstruction. If any of the buttons of the menu highlights, then it means that there is related information to it like; videos, audio or pictures.

The devices are supported by GPS and will vibrate if the user is next to a point where data can be found or experienced.

In order to access to the data, at the beginning the user enter to a criteria form, where the visitor can select how deep to be involved in every subject/ criteria. So for example if the user selects to be involved in a 100% in the Augmented Reality experience; he or she will access to all the data available in this subject, and then the device will vibrate in all of the points. With this feature the user controls his experience.

TAKE A PICTURE

The option of "Take a Picture", allows the user to take a picture of anything the he or she founds interesting, so the program can process the picture and gives the user general information of what the object is about, with the help of new technologies of image recognition and geo- reference. This can be done with flora, fauna and archeological sites.

The user can also access to a gallery of pictures related to the one he toke; and at any point can click on the share button and share his picture in the web or in our web page. His picture will become part of our geo- referenced data and will be available for all the public.

4.6 Researching the subject: gaps in research and potential areas to focus on in the future

A landscape approach inherently involves a multi--dimensional perspective, which necessarily includes time as a principal component. Why? Time enables the transformation of landscapes (both physically and mentally) and their deposition in layers that tend to feed into the present landscape. In other words, today's landscape is the result of current and past interaction processes between Humans and Nature.

Cultural heritage is, as defined by the Faro Convention, a group of resources inherited from the past which people identify, independently of ownership, as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. It includes all aspects of the environment resulting from the interaction between people and places through time (Faro Convention, I.2). It thus overcame the natural vs. cultural heritage dichotomy established by the European Landscape Convention (ELC, II.5).

The understanding and recording of the heritage aspect of a landscape, when it stems from the past, is carried out by Archaeology, which uses multiple disciplines to pick through the sedimented layers left through time. These disciplines can extract all the information stored away in archaeological deposits:

- Pollen, which tells us of prevailing vegetation: palynology.
- Alien elements that indicate contamination.
- Different depositional processes of the strata, which offer as much information regarding soil erosion as event occurrence: geomorphology, sedimentology, and edaphology.
- Seeds, which open a window to diet and agricultural production: carpology.
- Bones, which also open a window
  - Human bones, which contain information relating to both to health and demography: palaeoanthropology.
  - Animal bones, which indicate the use of animals for food, work and/or ritual: zoo archaeology.
- Charcoal, which enables us to understand the Human use of wood: anthracology.
- Microorganisms and insects, which can be telltale signs of herding, and other human-nature interactions: malacology.
- Organic matter, which can be dated using the Carbon 14 technique.
- Craftwork, including the crafting of stone and metal into tools and objects of significance, which may be datable using technological or iconographical criteria: archaeometry, archaeometallurgy.
- Ceramics, the creation of clay-based cooked ware, which can readily be used to date and understand the functional role of a given context: ceramology.
- Structural remains, which can shed light on the nature of the deposit, including the chronology: archaeology of architecture.
- Significant monuments, stones with writing or other outstanding decoration which marks the importance they played, and tells us about the underlying social and political structure of the period: epigraphy, iconography, numismatics.

Archaeologists, who are not only diggers, but also historians of the unspeaking past, can use this data to draw a complete picture of what landscapes were like at different periods of the past.

But heritage is also something of the present. Tradition, insofar as it is a present phenomenon with roots in the past, lies more in the realm of Ethnology. This anthropological approach enables the recording of lifestyle within living memory. It is up to archaeology to determine its place within the history of the landscape, and of the society that inhabits it.

Today, the most comprehensive attempts to articulate the role of heritage within landscape are the Historic Landscape Characterisation of the UK, and landscape biography of The Netherlands. HLC is based on Landscape Character, a concept designed to contribute to spatial planning in the 1980s. With it, English Heritage collaborates with the counties in order to catalogue landscapes according to their cultural assets, and is progressively covering all of England. Landscape biography, more than a planning tool, is a theoretical foundation for planners, which enables them to understand territory as a historically complex reality.

The landscape of Syllion includes all these layers in a particularly intricate way. Further research could bring a lot of new information on features (i.e. the cisterns and the use (some hundreds are present on the site), on the time depth of the landscape as a whole. The for centuries untouched landscape actually could offer to the interested landscape reader, no matter from which discipline, a treasure on undiscovered information.

4.7 Reflections: The Horizons of Sillyon

Figure 4.28. The Horizons of Sillyon. Photo: Fernando Martinez Agostoni.

4.7.1 Landscape is a notion that links the individual to the territory

A series of theoretical reflections arises from the perception of the landscape of Sillyon. These reflections, which we approach from a heritage and cultural identity perspective in relation to the concept of landscape, inevitably lead us to evaluate, if not to question the inherent concepts that currently pose controversial questions related to the development of landscape architecture or landscape design as disciplines.

Likewise, from these reflections we will extract general conclusions, emerging from the observation of the specific landscape of Sillyon; and, on the other hand, specific conclusions.

Among these general aspects, it should be highlighted that there is an epistemological perspective, which makes us reconsider what determines the specificity of disciplines such as landscape architecture or landscape design. What is particularly relevant in this regard, is that the specificity of these disciplines is linked to the cultural dimension, to subjective aspects, i.e. to those aspects related to the construction of subjectivity and, ultimately, of a cultural identity.

Habitat is undoubtedly a source of subjectivity and this construction is reflected in this notion that we call landscape. This is a fundamental question in the study of the interaction of human beings with the territory, since it is in this subjective dimension that it emerges. *Landscape is a notion that links the individual to the territory.*

On this hypothesis we base some interpretative viewpoints of the landscaping events perceived in the surroundings of Sillyon.

4.7.2 Diverse Horizons

Among the specific questions inherent to this site, the presence of what we will call *diverse horizons should be pointed out*. These horizons are related to the processes of subjectivization, both of the local population and the visitors or other users or recipients that have somehow interacted with the site. These diverse horizons are determined by several factors ranging from the very perception of the horizon based on the topography of the territory (Figure 4.28) to more complex forms of the notion of horizon that could be related, for example, to the existence of photovoltaic conversion panels that produce energy for dwellings located in the site, and of satellite dishes that introduce the local population to a form of production of subjectivity strongly related to the globalization process (Figure 4.29).

It is in the tension between these vectors, related to the diverse horizons, that lies the key for interpreting the process of interaction of different actors with this particular site and its meaning, either from a heritage or an identity construction perspective.

4.7.3 Landscape and Subjectivity General Concepts

The notion of "inhabiting" is specifically inherent to the habitat. Landscape is the cultural dimension in which the notion of "inhabiting" is constructed, preserved and inherited. Therefore, landscape is the human sense of habitat. This act of inhabiting is singled out by the characteristics and natural elements of the habitat. Among these features, the horizon is, in our view, the most important in shaping the human condition.

It is in its being a producer of subjectivity that lies the power of landscape. Its fundamental power is rooted in the function of determination of human identity.

This is the specific power of landscape, due to the fact that it includes the subjective dimension. Thus, the landscape category acquires a specific connotation that distinguishes it from other conceptual categories that are inherent to the habitat, e.g. environment, ecosystem, territory. Then, its specific power is related to

Figure 4.29. Photovoltaic conversion panels. Photo: Fernando Martinez Agostoni.

this condition of including the subject. This subject of landscape is of utmost important as it provides an interface through which human beings relate to and interact with the territory.

As a consequence, preservation, intervention and landscape design all involve an impact on the human dimension in the order of subjectivity, of identity. The power of landscape lies in the fact that landscape is the subjective dimension of territory, and this becomes more relevant in a globalized world where the territory becomes the last line of resistance of cultural identity. This means that the territory – or landscape, its subjective dimension- has a key role in each individual's "being in the world", which in the words of Martin Heidegger would be the dasein (Heidegger, 2001). Landscape is the last discernible human skin, as follows from the idea of the various skins of human beings in the conception of Hundertwasser described by Pierre Restany (Restany, 1998).

Humans incorporate the world – we make it part of us. Incorporating the world is making the world a part of our body, but not only in regard to the elements that materially constitute our corporeality. According to Felix Guattari (Guattari, 1997), we might consider landscape as a subjectivity producing medium as well as -in the conception of Edgar Morin (Morin, 1995) -a key element related to what Morin calls "self-eco--construction of the subject." We refer to that other corpus that is constructed from landscape, that is a part of us and thus affects us if it is affected.

The topology and dynamics of human thought, of humans" inner world, of this microcosm, is marked by landscape in its being a producer of subjectivity.

Landscape is an extension of the body and it is on this concept that the exploration of the human right to landscape should be primarily based.

The definition of the human condition is the most ambitious achievement that human beings can aim to. The condition of being in the world is determined by the configuration of this condition.

This is the leit motiv of human beings, and it is in the physical world given to human life where it is expressed on the planetary landscape, whose meaning is evidently a part of an absolute sense.

Thus, the keys to this human condition arise from a hermeneutics of the planetary landscape. It is reasonable to assume that the possibility of meaning is based on the existence of an absolute sense, a concept taken from Jean Baudrillard (Baudrillard, 1996), which then comprises all that is understood by consciousness - the fragmented senses.

4.7.4 The Horizon Condition for an hermeneutics of landscape

The scope of the meaning of landscape in the configuration of the world we inhabit is implicit in the roots of our Jewish-Christian culture, even when it is not explicitly mentioned. A Biblical passage (Genesis 1:7) reads "... God made the expanse, and separated the waters which were below the expanse from the waters which were above the expanse". Here, the concept of horizon as a configuring element is already implicit.

In this creative act, the horizon is revealed indirectly as the element that configures the reality to be inhabited by human beings throughout history. Our hypothesis is an approximation to the consideration of the horizon as one of the keys given to human intelligence for the understanding of the human condition. The horizon marks the finitude of our existence and our immediate perception, and at the same time announces the possibility of the infinite and triggers the intuition of the transcendent, of what is beyond.

The horizon defines the limits of and the way in which human cognition of reality is possible. While humans can intuit or rationalize the whole, our perception of the delimited part is fragmental.

Landscape is the portion of the whole assigned to inhabiting. The horizon is its limit, its support, and its configuring element. When defining the purposes, conditions or criteria for landscape intervention, this condition of landscape should have a privileged position in the hierarchy. At the same time, this feature that constitutes the power of landscape and the relevance of the scope of landscape interventions is the aspect that determines the specificity of landscaping or landscape design as a discipline.

Landscape is the place where the finite condition of our perception and our life in this world, as well as our intuition and consciousness of the infinite, are projected and materialized. Landscape serves as the foundations of our metaphors. In the intersection of the expression of nature and the expression of human beings as a part of it, the subtle and veiled desire to

achieve certainty in an existence marked by mystery has a graspable meaning which defines the human condition in its landscape. We have come to call this meaning the horizon condition.

4.7.5 Sillyon's geographic horizon

The line of the horizon is not common to all landscapes. This characteristic is featured by seacoasts and of geographic locations whose topography make the perception of the horizon possible. In many cases, either due to the characteristics of the dominant orography, the vegetation, or the different levels of anthropization; it is impossible to see the horizon, or, in extreme cases, the sky is barely perceptible.

In the specific case of Sillyon, the perception of the horizon from this site constitutes landscape uniqueness. This possibility of seeing the horizon has an actual heritage value and is a key element in the construction of a local identity. Thus, any intervention at this level has an impact, not only on the landscape, but also in the local cultural matrix.

Having said that, which are these possible forms of impact on the landscape? Are we merely talking about a material and specific intervention on the physical and biological environment? We will review some elements that may answer these questions.

4.7.6 Subjectivity and Cultural Identity: The subject of landscape

The fact that landscape is not a tangible object, its being an interface between subject and object, means that we are studying an object of cognition that includes features that are beyond the physical and biological environment (geomorphology, flora, fauna, etc.) that is perceptible to us.

There are other horizons to be considered -those inherent to the subject.
The notion of horizon implies "what" is being looked and, at the same time, "where" the subject is looking from.
Therefore, the horizon condition implies an appreciation of subjectivity, which depends on and is expressed by the perceptible dimension of landscape. Beyond the controversial man-nature dichotomy, landscape is simply the expression of the intersection between nature and human action.

For this purpose, we could take into consideration other horizons, beyond the objectual dimension, which are inherent to different types of subjectivity. We dare say that, in the first place, there is subjectivity inherent to the landscape: a subject of landscape or landscape subject that has been created in the history of our culture. It is the matrix of the historical and current notion of landscape.

Figure 4.30. The matrix of historical and current landscape. Photo: Fernando Martinez Agostoni.

Then, depending on different factors related to the expression of subjectivity, different vectors that compose this subject of landscape arise.

In the specific case of Sillyon, we can read the manifestation of some variants of those subjective forms of landscape, which, on the other hand, become evident in their objectual dimension. On this basis, we illustrate some of these aspects through images of this site, which represent the materialization of some of these various levels of subjectivity.

In general, we could recognize:

a. ***A trans historical subject*** in which the subjectivity of a past merges with a contemporary subjectivity through anthropic elements
b. ***A geographic subject*** whose character is marked by the natural ecosystem and its biotic and abiotic elements.
   In the case of the trans historical subject, as it occurs in the case of the geographic subject, their subjectivity is centered in the object, i.e. the fundamental components of the physical and biological environment.
c. ***The urban subject*** is a form of subjectivity that transcends the interaction with the physical and biological environment and is linked to the expression of subjectivity generated by life in the metropolis. Its character is centered in the subject, as well as in the media subjectivity.
d. ***the media subject*** that is inherent to subjectivity generated by a media emission. Different phenomena, such as telepresence or the influence of the NICTs, support a subjectivity that is independent from the biological and physical environment, and which generally implies a globalizing tension.

We could say that the tension of globalization is related to the forms of urban and media subjectivity and that geographic and trans historical subjectivities are linked to location. The latter are a strong matrix of cultural identity. Preserving anthropic and natural elements, which form this matrix, is of paramount importance for the preservation of those aspects of landscape that shape cultural identity.
Finally, this discussion leads us to think about the notion of heritage, which involves constructions that go beyond the anthropic product, but also includes natural resources, especially from an environmental perception perspective that includes the inhabitant and, therefore, its subjectivity.

The value of the heritage resources lies in its symbolizing a specific way of inhabiting that is inherent to a certain culture. This value becomes relevant when, with a sense of ethics, individual freedom, dignity, quality of life and possibility of fulfillment become our horizon.

Figure 4.31 & 4.32. Photo: Fernando Martinez Agostoni

Figure 4.33 & 4.34. Photo: Fernando Martinez Agostoni

Figure 4.35 & 4.36. Photo: Fernando Martinez Agostoni

Figure 4.37. Photo: Fernando Martinez Agostoni

4.7.7 Conclusions

This perspective has a particular influence on how we should understand every action of landscape intervention through landscape design.

Both interpretation and intervention are influenced by the place from where we look, i.e. the paradigm under which we interpret and intervene. Likewise, interpretation and intervention are marked by the fact that we project ourselves to a certain place where we are ultimately headed.

If we approach these acts of interpreting and intervening from a design perspective -enriching an updated concept of landscape design- there will be some aspects that are usually analyzed in the process of a landscape project, and whose revision is the main contribution this paper. We will carry out a review that will include the concepts inherent to what we call the "horizon condition" and an updated concept of the act of designing.

Understanding design as the updating of solutions to problems emerging from the interaction of human beings with the habitat, the core issue is the meaning of the concept of "updating".

This update goes beyond the idea of keeping abreast of technological progress, within the framework of the modern paradigm marked by the condition of progress in close connection to technological development and economic growth. The update can possibly be related to the adaptation to the cultural reality of the inhabitants of a territory and their inherent right to preserve cultural and identity values.

On the other hand, the perspective provided by the concept of design offers three dimensions that need to be considered both when analyzing and intervening in the landscape.

These dimensions are: the aesthetic or formal, the symbolic or communicative, and the functional. By accurately balancing the importance of these three dimensions, we would arrive to an ideal conception of landscape design.

Aesthetic or formal dimension

It relates to the study and definition of the visual basin of a given territory, by giving a hierarchical structure to those points of view that provide visual access to the scenic beauties of the place.

At this point the enhancement of the horizon, the character of the natural geographic environment and the historic heritage resources should be highlighted.

Identifying singular character and features in the local landscape is important when defining the identity inherent to the territory.

Symbolic or communicative dimension

An aspect that also has strong influence on the functional dimension is the need to provide a solution for information and signposting for tourists and visitors. For this purpose, resources of low landscape visual impact can be used. An example of this would be those resources that use smartphones, which can be very useful in this case.

This communication task has different scope levels: informative and/or educational (both for internal and external tourism); diffusion of local history and culture; natural and geographic resources, flora and fauna.

Functional dimension

It is important to build roads and access infrastructure by taking into account that they must be inclusive. According to the perspective of the concept of design, the inclusion of ergonomic criteria and the so-called user-centered design is recommendable.

The preservation of the cultural, historical and natural heritage of the territory involved is a functional aspect. Therefore, it is necessary to appraise and zone the space, according to the wealth associated to the tangible heritage. This heritage basically includes the old buildings and ruins of Syllion, as well as the unique fauna and flora resources, which deserve to be protected by preservation and conservation measures. These zoning criteria are of utmost importance for road design, for the mapping of user routes, and for the creation of the support infrastructure for regular activities planned for this area.

The two main activities related to landscape - interpretation and intervention - involve aspects that take on a special meaning in the light of what we have exposed in this paper.

An approach to landscape design, in these particular territories, should be based on a concept of design that includes concepts such as a user-centered design, collaborative design and participatory design.

4.8 Summary and conclusions

The Heritage and Identities, Antalya, 2012 started with the selection of an according to George Bean unknown site of Sillyon (Sillyum). "[…], Sillyum stands comparatively aloof, accessible only by indifferent roads, and is rarely visited. Yet the ruins are impressive and, to the present writer at least, no whit less interesting and in some ways more attractive than those of the better-known places." (Bean, 1968) It was this sentence that made us choose for the location for the excursion. During the preparatory meeting we were however unable to visit all sites. The Turkish colleagues of the Akdeniz University went on an excursion before bringing the group of the Le Nôtre Landscape Forum to the site. They were amazed and gave us green light to continue our search for information on what was said to be an unknown site. The searcher than finds information anyhow. The archaeologists had been undertaken excavation campaigns on the site and the reports were discovered. George Bean apparently copied much of his information from older sources like Spratt and Forbes (1847), Lankoronski (1890), 19th century researchers who gave us some amazing very detailed information.

Experiencing the past

In some way, if one realises that he is walking in the footsteps of well-known researchers from the 19th century, having actually experienced the exact same path searching the waterworks (château d'eau), and finally discovering them, it gives a strange, satisfying feeling. "Elle se trouve à l'ouest du monument M (118° environ), à peu près au niveau de V1 c'est-à-dire à mi-côte. C'est seulement dans notre second voyage et avec l'aide d'un guide que nous découvrîmes ce curieux endroit, que j ,avais cherché inutilement seul la première fois, tout en passant à côté.[2]

Figure 4.38.

Recording the different routes by mobile GPS, searching for the waterworks. (Garmin on Google Earth) achieved 3/2013, the most eastern point on the blue circuit are the waterworks found on the third visit, the southern part of the green circuit is the search on the second visit.

2 Lanckoronski, p.79: They (the waterworks) are found in the west (should be the east: my remark) of the monument M (118° more or less), almost at the V1 level, so to say halfway. It is only on our second voyage and with the help of a guide, we found this strange spot, that I tried to find by myself without result, almost passing next to it. (translation: Harlind Libbrecht)

Heritage?

All time periods are still readable on the Sillyon-site. Inter- or trans- disciplinary research could bring new perspectives to the reading of the landscape as heritage. Writing a biography of the landscape (Bloemers, 2010) of Sillyon would bring a holistic image of the site. Heritage "in large measure our own marvellously malleable creation" (Lowenthal, 1995), is still prominently apparent in Sillyon, one could wonder if the landscape as a whole is actually heritage. The vision of the currently still living cultural landscape might be another approach. We can talk about the different heritage features on the site (ruins), but still working and used water features, however old, are maybe other elements. Often we need to be sad about the loss of features in the landscape while studying cultural landscapes but here in Sillyon we can study and profit of the still evolving real landscape. Therefore it might be questioned if this landscape as such is heritage?

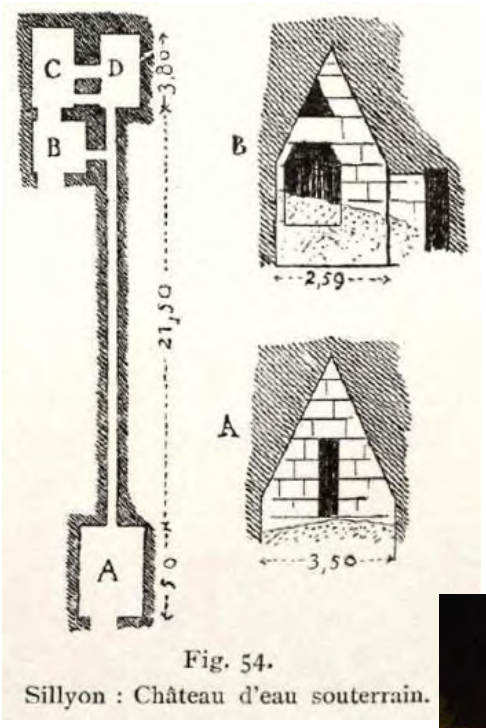


Figure 4.40. Lanckoronski, p.79.

Final thoughts

Studying the landscape is mostly about discovering and being interested, whether it is about new landscapes or new, old landscapes it doesn't really matter. In the case of Sillyon, it was all about being amazed, and actually I believe I fell somehow a little in love with the site, and I hope some others with me. If we, with the whole heritage participants group, whom I thank here in these final words, succeeded in bringing the site back to a larger group of interested people, or opened up a possibility to bring the interest for the site back to the local people, I believe we succeeded in the goals of the first Le Nôtre Landscape Forum.

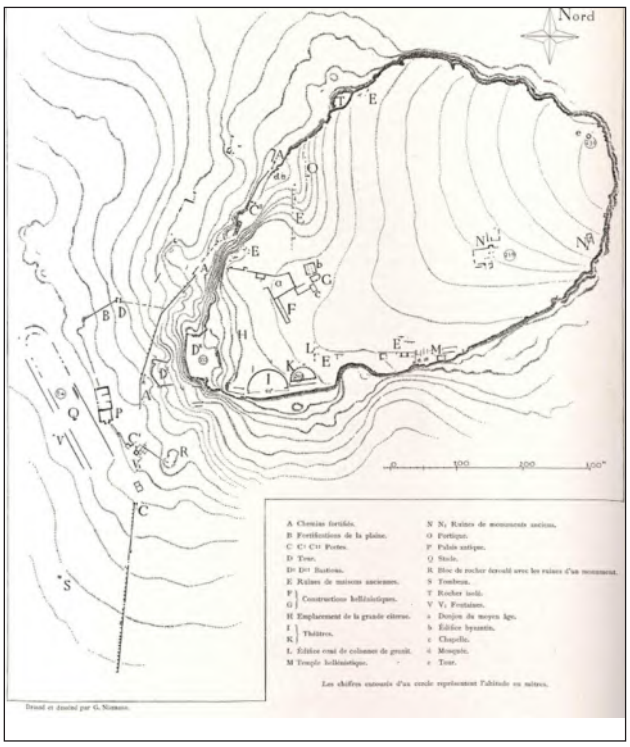


Figure 4.43. Lanckoronski, p.68.

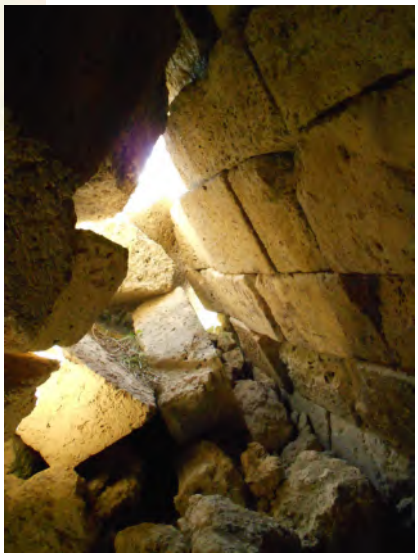


Figure 4.41, 4.42.
Waterworks on the inside
(photos: Harlind Libbrecht)

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Annexes Regulations, examples and studies

Definition of the main terms should be reviewed to students in order that reconstruction could be analyzed in accordance with the global examples.

Preservation, Conservation, Adaptation, Restoration, Reconstruction

International Regulations and Laws for Maintaining Physical Ruins:

1. Venice Act, 1964:

This act deals with ruins not as scattered buildings but integrated with each other in certain context, connected by a unified texture and framed by the historical events of the area.

Historical–social values and customs will be utilized through reviving and not changing the layout while reconstructing the building in order to maintain the connective texture of the archaeological location.

The act also deals with preservation as including the existing buildings in and ruins that comprise the following strategies:

- The new construction should not change the scale of the archaeological location and nature of masses, colours and form. This entails the use of similar constructional materials or modern materials not affecting the texture of the archaeological location.
- Location of ruins are not to be changed or moved as views of these scattered parts will be abandoned within the archaeological location as a whole.
- It is possible to remove or move sculptures, drawings and decorations added to the original archaeological location if the purpose is to be spotlighted. The deconstructed parts of the archaeological building could be removed and reconstructed with removable materials.

2. Washington Act, 1987, for Maintaining Archaeological Cities and Historical Urban Locations:

This act deals with the open archaeological location and those existing within the traditional areas that are affected by natural disasters like erosion and obliteration or manmade damages resulting from the modern societies in particular the industrial ones.

These purposes are achieved through certain principles adopted by this function to deal with the previous problems including:

- Redesigning the previous urban texture in location through the previous studies and allows for views and make the old texture in accordance with modern texture and planning that allows cars access in a way that is not affecting archaeological cities and locations.
- Enhancing the role of green areas and water surfaces to make those elements of these used in sustainable preservation (minimizing climatic effects).
- Viewing the buildings is not restricted to the external environment but includes the internal design and showing features in a way suitable to scale, size, construction and decorations.
- Surrounding archaeological sites with elements that are either natural, like trees, or manmade, like buildings designed to complete the archaeological location and creating mechanisms for preventing robbery.
- Using and reconstructing buildings to be adaptable with the historical and location frame with significant function of the historical site.

3. Amsterdam Agreement, 1975:

This agreement basically deals with the European archaeological sites, being unique and part of the global culture. The main focus was on maintaining the basic features of the buildings as each one has an aesthetic value and significant and historical reference. Thus, dealing with unique and individual buildings or unique elements and maintaining the humanitarian dimension of the global heritage will be through the following:

- Outlining protected areas that surround the archaeological building to defend it against the various external factors.
- Identifying the important parts within the historical site to be focused more than other elements.
- Focusing on of movement path and transport means inside the site.
- Focusing on each of the building elements in addition to the defining signs made.

4. New Zealand Local Act, 1993, for Maintaining Archaeological Sites and Historical Values:

This act has dealt with the open historical sites, in particular the landscape, in addition to caves and archaeological topographies and furniture in the archaeological sites as New Zealand have such sites. Such issues are dealt with in accordance with:

- Showing the hidden sites because of weather elements and extinction in particular those related to archaeological movement paths and foundations.
- Integrating the archaeological site with its surroundings through archaeological signs and providing elements with historical attraction that will encourage people to get inside such sites (such sites are generally horizontal and take the place topography).
- Reconstructing and using ruins in establishing entraining or cultural activities to attract tourists and provide service base integrated with the site where the new building will not affect the old buildings.
- Showing all the available documents, drawings and physical samples in the archaeological sites for the tourists and maintaining the existing drawings through roofing or covering with transparent glass materials and making explanatory notes.
- Repairing the site plans through adopting conservation principles.

5. Nara Act in Japan, 1994, related to Originality of Archaeological Sites:

This act deals with the historical identity issue of the area under globalization and cultural variations as each archaeological area has unique properties different from other sites. This will neglect the related historical and aesthetic values and assessment will be based on the social, inherited, objective and significant values and maintained through the international strategies of UNISECO in particular Venice Act.

6. Mediterranean–European Workshop in Morocco, 2009:

Issues related conservation of archaeological sites on the Mediterranean were discussed in this workshop and encouraged the utilization of archaeological sites through mixed–use that could be implemented through adopting the following:

- All the historical areas are touristic areas, self–sustained and provided by all the general services including those that could be constructed in accordance with restoration and conversation principles. Reflective glasses are preferred for use to increase the surrounding view.
- Utilizing the surrounding weather factors in the processes of sustaining the site like the use of solar energy and wind effects to sustain archaeological sites.
- Using the modern techniques in showing and maintaining the archaeological sites in addition to documenting the historical buildings.

Examples about Conservation of Archaeological Sites

Getty Organization for Conservation of Archaeological Buildings, The Conservation of Archaeological Site in the Mediterranean Region:

This study tackled with the conservation of historical sites of Mediterranean architecture, in particular Roman Civilization through various aspects (Getty, pp. 10–13):

1. Examining the Site Values: The site will provide the area history and culture in addition to the architectural identity and the social development of the area that will have a role in enhancing tourism through identifying traditions and customs. It is also important to know the neighbouring contexts of the site in particular the architectural ones.

2. Examining the potential economic fortunes of the historical site: Nature will not be understandable through the archaeological site by the visitors because of the difference in people cultures and perceptions of such historical values. However, all the visitors and tourists, despite their cultural differences, will be interested in open spaces, water and sands. Tourists are more interested with such elements than the historical site. An example is given in the study when comparing between sites west of Turkey and Epessus, visited by thousands of tourists because of its abundant sources. Lakes have a role in communication between the tourist and archaeological sites. It is useful also to have recycle bins to keep the archaeological site clean. Thus, it is possible to maintain a good relation among the historical sites and the visitor through the available natural elements in the site.

3. Adopting steps and mechanisms for managing and conserving archaeological sites: This will in-

clude gathering information and documents on the area and laws important for maintenance and then determining goals and problems to be solved within the archaeological site. Then conservation strategies will be adopted to attract tourists.

This organization is adopting the following in conservation, basically depending on what is required by the project and how tourists are attracted:

1. Using modern physical mechanisms in reconstruction like laser technique known as non-destructive techniques (NDT).

2. The qualified design of the archaeological site to prevent the tourist form leaving the site quickly through creating visual excitement elements like urban sculptures, decorations, mosaics and putting signs for the stones under erosion by climate and moved to valueless stones.

3. The site should not be distorted when reconstructing the historical building through additions. Such distortions will include the visual ones because of materials differences or distortions because of temporary structures loads.

John Ashurst *et al.*, 2007, Conservation of Ruins:

This book consists of valuable studies in the field of conserving and reconstructing ruins, the important of which is Joka Johklet's Concepts of Conversing Archaeological Buildings.

Reviewing this book show that attracting tourists to the archaeological sites entail the determination of messages through viewing historical incidents in the site.

1. Searching for the important events in the archaeological site.

2. Providing the site with the cultural and traditional forms like furniture and means of living.

3. Constructing theatres to incorporate the culture through drama.

Examples of Conserving Archaeological Sites, Classified as International Sites,

Conservation of archaeological sites cases, adopted by the states, is discussed in accordance with the international conservation policies and documents.

1. Hasankeyf, a Site Threatened by the Ilisu Dam Project:

This example concerns a Roman site of a Roman city near Tigris where a dam will be constructed and this is why means and strategies were suggested to maintain the site (strategies of moving archaeological buildings) (Heritage at Risk, 2007). This strategy could be summarized as follows:

- Identifying the value of each site as related to other sites, documented, photographed and measuring previous plans to be compared with the current situation.
- Partitioning and numbering the archaeological signs and finding the proper way for moving.
- Moving the architectural elements and decorations until constructing the buildings in the new location.
- In case some of the parts are deconstructed, similar materials are added and should be distinguished from the old ones.
- Using modern materials in constructing and fixing the parts in a way that these parts will not be changed.

2. Eppesus:

This site is located in the north of Mediterranean, in Europe, near Croatia (Getty, pp. 121–140). This example will provide information on how to deal with large archaeological sites (similar to our project) where the focus is on important issues. The strategy adopted could be summarized as follows:

Examining the historical and social values will show some issues related to the protection of archaeological sites and this will entail the bordering of the site to be moved into sectors that are historically and visually controlled. General buildings are to be constructed in a way that is not affecting the historical marks.

Studying the social values of the ancient people lead to tackling the social– cultural dimensions of arches that, in this example, has a role in dealing with theatre through classical music and Cilnus Library that has become a place for cultural festivals. Examining the natural and aesthetic values also lead to dealing with the topographical aspects of the archaeological site.

The abundant historical remains in the site, related with various periods, lead to tourist confusion in addition to the large area of the site and the difficulty of movement for long distances and robbery are of the main problems faced. The tourism development administration decided to focus on the important parts of the city to be for tourism and to close all the roads leading to the sides that will be opened for visits and missions. More attention is paid for gardens and external landscapes to be integrated with this part. The library and the theatre are located within one part and are thus selected.

3. The Roman Villa at Piazza Armerina, Sicily:

This site is located in the north of Mediterranean, in Europe, in the Roman city of Armenia (Getty, pp. 84–00). The strategy adopted could be summarized as follows:

- The resulting distortions in the external landscapes within the site, that waste the contextual importance of the site, are used as gardens, parks and cafeteria.
- The existing drawings are maintained and presented.
- The destroyed constructional structure of the archaeological site is reconstructed through using removable constructional frames.
- The cultural path of the tourists, how to get inside the site and how this is related with other important historical sites is also being dealt with.

The deconstructed parts are renovated with modern transparent materials with removable structures. Additions to the ancient parts also included transparent and metal structures that will be easily distinguished from the old ones.

Cross- cutting themes

Participation: interviews with local residents, local politicians

People:

1. Involved in their place of residence, their environment
2. Are interested in the local history (stories)
3. When participation is used in the landscape process we get:
4. A rich image of the past
5. Supported development vision

Antalya Forum: Perception & Participation Cross Cutting Theme Group

Data collected by the groups: Heritage

Stakeholders and their interests			
Which stakeholders are/were or might be involved in past/future planning, design and management decisions?		What are (or might be) these stockholder's interest/topics, pertaining to which areas?	
Local	Regional	Local/regional	Use oriented
Residents (villager from Yanköy and Tekkeköy, settlement next to silyon 15 families, people living in the view shed to silyon)	(Residents of Antalya region)	Financial support for residential community, infrastructure development (also threat),	Conservations of values, characteristics
Administration (Municipal/ village level, Muhtar)	Administration/politics (Mayor of municipality, ministries, divisions, Cultural & tourist management, museum)	Decisions making, Heritage management, tourist management	Government (agency)
Small holding Farmers, herders	Commercial agriculture	Farming community, land ownership	Food production; water source
Investors	Investors	Financial gain	Archaeological thieves (threat)
Land owners (not residents)		Development, sustainable local development,	Conservations of values, characteristics
People interested in environmental issues	Environmental organisations	Flora and fauna, ecology heritage protection	Nature conservation
People interested in local heritage and traditions?	NGO: s in heritage and traditions	Local culture and heritage, traditions, folklore	Preservation and sustainable use
	Professionals (scientist, research)	Researching of the area	Data and knowledge
Café / restaurant Tenting sites	Organised tourism (Tour operators, tourist guides etc.)	Camping rental; Room rental	Tourism Eco-tourism;
Students and teachers	Researchers; higher educations	Education	Archaeology, History; L. Architecture, others
2005 solar eclipse: more than 500 people camped on the side of the mountain waiting for the very good view and experience people expected to be have from this special spot.			

Perception

Landscape Preference / Identity Analysis	
Which parts of their surroundings value different stakeholders most? What are most preferred/liked places?	Which are the reasons/motivations for high values / place preferences?
House, garden and land owned (residents)	Ownership, earning one's living
Green areas on the mountainside (residents, herders)	Grazing, easily accessible
	Good and healthy air of the countryside
Remains of the amphitheatre (residents)	Silence/quietude; hearing the wind; contemplate historic people and their activities (performances, everyday living)
Sillyon Skyline and panorama	Point of orientation, landmark
Topographic features	
Water sources	Important for vegetation
Ancient remnants	Silence/quietude; hearing the wind; contemplate historic people and their activities (performances, everyday living) And has a function as landmark and orientation.
Diversity of vegetation	Providing aesthetic views/scenes (part of the pasture scene with goats...)
Contrast between vertical morphological and horizontal vegetation features	Inherent striking visual character
Sense of place / genius loci	Time depth, Feeling of connection with the former the ancient society, city and events that took place (earthquake, destruction of the city...)
Many viewpoints changing on position	Human need to have a prospect and be able to orientate himself in space
Well defined space edges	Distinct areas with their own characters
Holes	Aspect of danger and excitement, reference to historic use.
Framed views on the landscape (e.g. palace)	Adds to the aesthetic quality
Architectural details	Evidence of the importance of the ancient city, and that a well developed society once inhabited the site (inscriptions...). Makes site more interesting, attractive and unique.
Art feeling in the landscape	Importance for the aesthetic quality of the site and originality.
Coloured natural stones	Gives the feeling of naturalness, locality and uniqueness.
Preference Biography	
Which stakeholders change their preference / values over time? What were their reasons / motivations?	Which part of their surroundings did stakeholders suggest to alter, and how?
Improve roads/pathways (café owner)	
Leave the mountain to natural succession (residents)	
Current inhabitants settled originally for the rich resources in the area (water, fresh air, soil...). They start seeing economic potential (e.g. tourism).	More physical basic facilities and amenities for tourist's comfort (toilets, parking, eating...) (café owner).

Chapter 5

Sustainable Tourism

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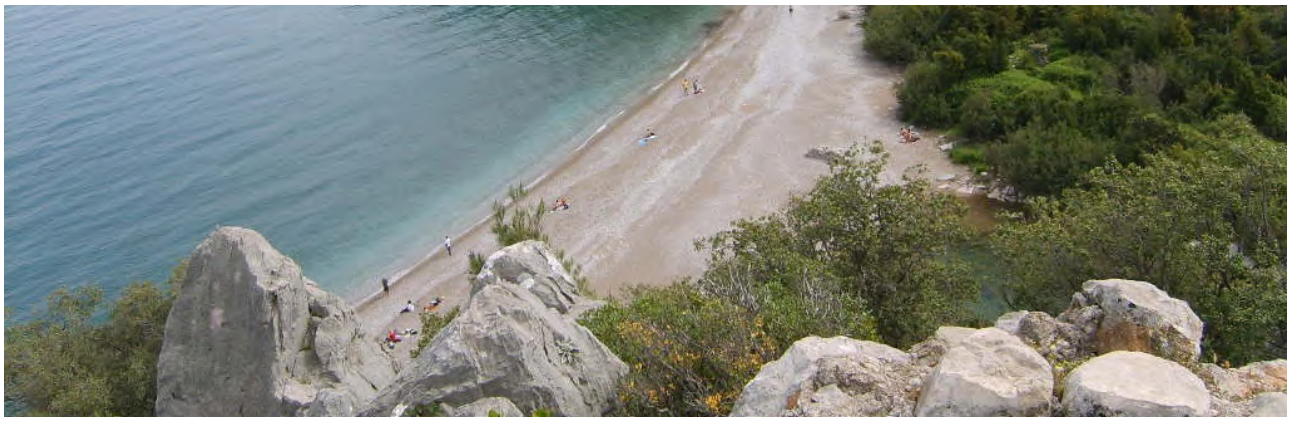

5.1 Introduction: coastal tourism

5.1.1 Background

This chapter examines the landscape and sustainability issues surrounding coastal tourism in the Antalya region. Tourism has seen a huge increase in development in recent decades following the first national plan put forward in the 1970s. Tourism in the region has, until recently, tended to mean mass tourism, where large hotels close to the beach offer all-inclusive packages for one or two weeks" duration of sun, sea and sand. There are some areas along the coast where major clusters of hotels occur, together with associated facilities such as shopping centres and where whole new urban areas have arisen. Many people assume that this kind of development is now out-dated and should be discontinued as a model as being inherently unsustainable due to its impact on the environment, on communities and its economic underpinning.

More recently, different forms of tourism have arisen, more locally developed, smaller in scale and aimed at different markets. They may involve small pensions or apartments, use of locally grown produce in food, small businesses providing tourism services and ownership of the plans and projects by the local communities rather than government agencies or large companies. Superficially it may seem that these are more sustainable – for the environment, for local communities and for the local or regional economy.

Both assumptions - mass tourism being inherently unsustainable and locally developed, small-scale tourism being more sustainable – need to be tested.

According to UNEP and WTO (2005) "Sustainable tourism is not a discrete or special form of tourism. Rather, all forms of tourism should strive to be more sustainable". They state: "making tourism more sustainable is not just about controlling and managing the negative impacts of the industry. Tourism is in a very special position to benefit local communities, economically and socially, and to raise awareness and support for conservation of the environment. Within the tourism sector, economic development and environmental protection should not be seen as opposing forces—they should be pursued hand in hand as aspirations that can and should be mutually reinforcing. Policies and actions must aim to strengthen the benefits and reduce the costs of tourism" (Carbone and Yunis, 2005: 2).

The aim of this chapter is to try to uncover the different issues associated with achieving more sustainable tourism landscapes in the context of the Antalya region as a typical area that could also have common features with other Mediterranean countries. Firstly we will define different tourism concepts and terms, so that anyone reading the chapter or using it as a resource will be able to establish a common understanding between teachers, researchers, students or practitioners without misunderstandings arising. After this we will present the background and context to tourism in the Mediterranean region in more detail. Some examples of recent research will help to show where we are at present and also, since we are looking at the subject from the perspective of landscape architecture, what specific aspects relate to the discipline and what areas linked to it with which we should be familiar when dealing with tourism planning, design or management in any way. After the introductory section we will turn to the three key aspects, which we as landscape architects need to engage with – teaching, research and innovative practice. We will suggest themes and modules for teaching, identify gaps and propose future research and also evaluate some examples of innovative practice which can help inform other practitioners working in the area.

5.1.2 Definition of terms

There are specific sets of terms which are used to describe tourism and which need to be understood by readers of the chapter.

Tourism is the act of traveling to and visiting places, independent from the purpose. It includes private travel for holiday and recreation purposes but also business travel.

A **tourist** is classified as a visitor (domestic, inbound or outbound) to a destination, if his/her trip includes an overnight stay for private or business purposes.

UWTO defines **sustainable tourism** simply as "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities". Sustainable tourism refers to the environmental, economic and socio-cultural aspects of development (people, planet, profit),

and a suitable balance between the three to guarantee long-term sustainability. "Sustainable tourism:

- makes optimal use of environmental resources that constitute a key element on tourism development, maintaining essential ecological processes and helping to conserve natural resources and biodiversity;
- respects the socio-cultural authenticity of host communities, conserves their built and living cultural heritage and traditional values, and contributes to inter-cultural understanding and tolerance;
- ensures viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation" (UNEP and UNWTO, 2005: 2).

The aim of sustainable tourism is to ensure that development brings a positive experience for local people, tourism companies and the tourists themselves. Sustainable tourism is not the same as eco-tourism or agro-tourism. Many terms have been used to describe tourism activity in rural areas: agri-tourism/ agro-tourism, farm tourism, soft tourism, alternative tourism, nature tourism or ecotourism and many others, which have different meanings from one country to another and from one user to another (Roberts and Hall, 2001: 15).

The term **agro-tourism** is used to describe all tourism activities in rural areas mainly in relationship to tourism products which are connected directly with the agrarian environment, products or stays: staying on a farm, in rooms or camps, educational visits, meals, recreational activities, and the sale of farm produce or handicrafts (Jansen-Verbeke and Nijmegen, 1990).

Farm tourism means farm-related tourism and staying in farm accommodation and seeking experiences from farm operations and surrounding attractions (e.g. Gladstone and Morris, 1998; 1999).

Wilderness and forest tourism is a part of rural tourism (Meier-Gresshoff, 1995), but directed to forest recreation in a state-owned, privately-owned or community-owned forest. Most community forest plans devote some space for recreational usage, nonetheless, economic and sustainability concerns underpin most of the proposals (Bull, 1996; 1999).

Green tourism: For some countries, the term "green tourism" refers specifically to tourism in the countryside- the so called "green areas', but it is more commonly used to describe forms of tourism that are viewed to be more environmentally friendly than traditional, mass tourism, or can be used as a market ploy to label eco-friendliness, even though it may not exist. Other synonymously used terms include "alternative" (Butler, 1990; Wheeler, 1993), "responsible" (Wood and House, 1991), or "soft" (Slee, 1998) tourism.

Eco-tourism: This term is used to relate nature tourism (tourism to natural and unspoilt areas) to the promotion of environmental conservation and direct benefits for local communities and cultures, as well as providing tourists with a positive, educational experience. Introduced to the tourist industry in the early 1980s, it has been considered as offering opportunities for the integration of rural development, tourism, resource management and protected area management (Hvenegaard, 1994) and is regarded as a subset of rural tourism (Roberts and Hall, 2001).

In the literature, **rural tourism** is mostly presented as a form of tourism that showcases the life, art, culture, nature and heritage of and at rural locations. It is furthermore characterized by creating economic and social benefits for the local community. Under the umbrella of tourism, special niche types have emerged such as agricultural tourism, nature tourism, adventure tourism, and eco-tourism. In contrast to conventional tourism, rural tourism is based on the preservation of culture, heritage and traditions (Roberts and Hall, 2001; www.tourism.gov.in/policy/schrural.htm).

5.1.3 History, drivers, trends in tourism in the Mediterranean region

5.1.3.1 Introduction toMediterranean coastal areas

The Mediterranean region has long been popular for tourism and for over 500 years it has attracted the attention of visitors (Terkenli, 2012). The first visitors from overseas were from Northern and Western European countries attracted by the combined attributes of beautiful landscape, the attractions of the climate and the cultural interest. During the 1800s it was mainly wealthy people who could afford to travel and stay in villas or high class hotels, although the start of tours by Thomas Cook in 1841 meant that middle class people could also travel and sample the history, landscape and culture of different countries. The heyday of high class Mediterranean tourism was perhaps the inter-war years with the South of France being a particularly attractive destination for wealthy holidaymakers who might travel down from Paris on Le Train Bleu, for example, and drive along the corniche in their open tourers, staying in Nice or Cannes, for example.

The post-war period saw slower development until economies had recovered, but it was not until the advent of cheap charter flights in the 1960s that large numbers of tourists could afford to go for a week's package holiday to a beach hotel. Increased leisure time and higher incomes led to more people in Northern Europe wishing to take holidays abroad, while charter flights and the bargaining powers of large tour companies reduced the costs of travel and accommodation (Williams, 1986). These were the days of the developments along the Costa del Sol or Costa Brava in Spain, the Balearics, Crete, the Italian Riviera and other islands. Affordable package holidays and charter airlines enabled people from the northern European countries to travel more easily than by taking days to get there on buses and trains. Later places to develop were the former Yugoslavia and Turkey.

Although the initial attraction was the coast and the wonderful beaches for the mass-tourist market, and while the tourism sector is still seen to polarise the landscape between the coast and inland areas, there is now a considerable tourist industry that has "moved inland" and many Mediterranean countries now also rely heavily on the inland cultural assets of the landscape for sustaining their tourist economy. In addition, it is important to consider the significant contribution of home tourists to the tourist economy. Even by 1986 it was identified that 2 million second homes in the Spanish coastal area belonged to Spanish nationals (Williams, 1986).

5.1.3.2 The example of Greece – Crete

As an example of the first wave of mass-market tourism development in the Mediterranean, the example of the Greek island of Crete is worth studying. Since the late1960s Greece gradually emerged as a popular tourist destination in the Mediterranean. Upper-income tourists were at first attracted to places renowned for their natural and cultural beauty. Tourism development in Crete, Rhodes, Corfu and many other Greek islands of the Aegean and the Ionian Sea was initially based on local capital that took advantage of state-provided economic incentives (Papadaki-Tzedaki, 1999), invested in large, luxury hotels, thereby forming the nuclei of future, mostly mass tourism, development that would later attract mainly middle-income tourists. (Briassoulis, 2004: 55).

During the first decades of tourism development in the most popular destinations in Greece, such as Crete, social and environmental conditions were satisfactory and below their critical thresholds. The development was low, highly concentrated spatially, and, as long as supply met demand, it followed a sustainable trajectory as economic, social and environmental conditions were in relative balance (Briassoulis, 2004: 56).

As tourism inflow grew, between1980 and 1990 mass tourism prevailed. The lack of enforcement and implementation of land-use planning and environmental legislation combined with the development planning laws resulted in a series of negative environmental impacts: land fragmentation; ecosystem disturbance; depletion of natural resources; uncontrolled solid waste disposal; water pollution and soil contamination; water shortages during peak seasons; congestion; noise; invasion and degradation of ecologically sensitive areas caused by infrastructure works (e.g. road construction); dramatic alterations to the coastal front and sea shore; landscape degradation etc. The reduction of the aesthetic, cultural, economic and ecological value of the landscape was evident, leading to the degradation of the quality of life for both the inhabitants and visitors. In addition, this model of tourism development intensified regional inequali-

Figure 5.1 An example of a mass tourism destination in Crete (Photo: Maria Tratsela).

ties, cultural alteration and loss of authenticity, while important changes in traditional values and attitudes made their way into local society, such as the unquestioning acceptance of tourism as panacea for economic ills (Briassoulis, 2004: 58-61).

The mounting problems of environmental degradation caused by haphazard tourism and tourism-induced development have led to the reorientation of national tourism policy towards discouraging or even barring further development in "congested" tourist destinations (Kalokardou-Krantonelli, 1995). Since 1990 the implementation of various environmental policies has strengthened environmental protection and management but its success is mainly limited to biological sewage treatment and solid waste disposal.

Within the context of a sustainable approach, it is widely accepted that the period of extensive mass tourism development is approaching its end. Furthermore, there is a growing recognition that the natural and cultural environment is an important economic resource worth preserving (Loukissas, 2001). New forms of tourism development are being discussed, focusing at both the economy and the protection and enhancement of natural and cultural resources. New poles of tourist attraction (e.g. mountain areas) and alternative forms of tourism such as agro-tourism and eco-tourism are being promoted all over the country, either in coastal areas or the islands with rich forests and mountainous landscape, or in the hinterland.

5.1.3.3 Mediterranean tourism potential

According to several studies of tourism development in the Mediterranean region, tourism still holds immense potential for further growth and development. This potential is found in the protection and enhancement of natural, cultural and historical resources through alternative forms of tourism, which may take advantage of regional peculiarities, avoid monoculture (Apostolopoulos *et al.*, 2001) and respect local identity, including landscape character. As part of the second wave of tourism development Turkey has been going through similar phases but with increased awareness of the problems experienced by Crete and other locations in Greece, hopefully many improvements in tourism practice will be possible. The countries of the former Yugoslavia are now at the point of strategic choices in tourism development after falling far behind following the civil war of the 1990s. Both marketing studies and local and regional initiatives point towards a more sustainable tourism development based on existing landscape and cultural qualities.

5.2 Introduction to tourism development in the Antalya Region

5.2.1 Tourism in the Antalya region

Doganer (2012) describes the development of tourism in Antalya as follows: "Tourism in Antalya began to develop rapidly by the beginning of the1980s. The newly elected Liberal Government took action to make tourism a potential new industry by using its legislative power to pass less stringent environmental regulations, offer low-interest loans, and encourage both domestic and foreign investors. With the help of the post-Cold War Era and the convenient geographical location of Turkey, a new strategy evolved, and the notion of investing in the tourism industry became a trend in Turkey. By the late 1990s and early 2000s, this trend made an additional leap forward. Rapid developments in communication, transportation and technology changed global supply and demand".

Nowadays, Antalya is Turkey's most popular tourist destination. Antalya has been a very important maritime city throughout its history because of its geography and climate. Both natural and historical patterns work together to form the traditional character of the city of Antalya, as outlined in Chapter 2.

The population of Antalya began to increase in the1950s due to an increase in immigration. Soon after the first phase of urbanization, the city's economic structure became inadequate. It was 1953 when the world "tourism" began to be used in earnest. In that same year, a law promoting the tourism industry was passed by Parliament. Since the 1960s, tourism in the Antalya region has been a priority for Turkey, motivated by Antalya's significant natural and historical values. In 1969, the Turkish government defined a three-kilometre band inland of the Aegean and Mediterranean coasts as a dedicated tourism region.

Antalya has been the tourism capital of Turkey since the 1970s. Tourism developments have taken place in various tourism sub-regions in and around Antalya such as Alanya, Manavgat, Side, Belek and Kemer. In 1973, the Ministry of Culture and Tourism prepared the Master Plan of Antalya. The plan projected a 174,000-bed capacity by the year 2000. The number of beds exceeded the target number and reached 230,000 in the year 2000; today Antalya region has a 385,000-bed capacity.

The "South Antalya Tourism Development Project" was set up in the 1970s with the legal basis aiming at the protection of forests and preserving agricultural lands in the region for the benefit of local people and the local economy, and this was regarded as one of the first integrated tourism development projects in Turkey (Atik and Danacı, 2008). Kemer became the centre of South Antalya Region playing an important role in local tourism (see below).

In 1980, tourism was further encouraged as a new sector, with economic and political objectives. The support given to tourism entrepreneurs as a result of the government's decisions concerning tourism planning has accelerated the demand for resort accommodation. From the 1980s onwards, through the support of foreign investment aimed at benefiting from this growing industry, a different process began. This process was later improved upon through the franchise chain system.

Tourism is now the second-largest industry in Turkey, attracting a total of 28.6 million visitors per year. Today the number of tourists visiting Antalya alone has reached 9.6 million visitors annually. Antalya attracts visitors from Germany, Russia, Austria, Sweden, the UK, Netherlands, France, Denmark, Belgium, Norway, Poland and the Ukraine. Germany (27%) and Russia (26% - after the collapse of the Soviet Union) - make up 53% of the market share in tourism (Ministry of Culture and Tourism).

Doganer (2012) highlights that throughout this rapid acceleration in the city's tourist profile, Antalya's demographics, demands and expectations, management systems and marketing strategies have also evolved.

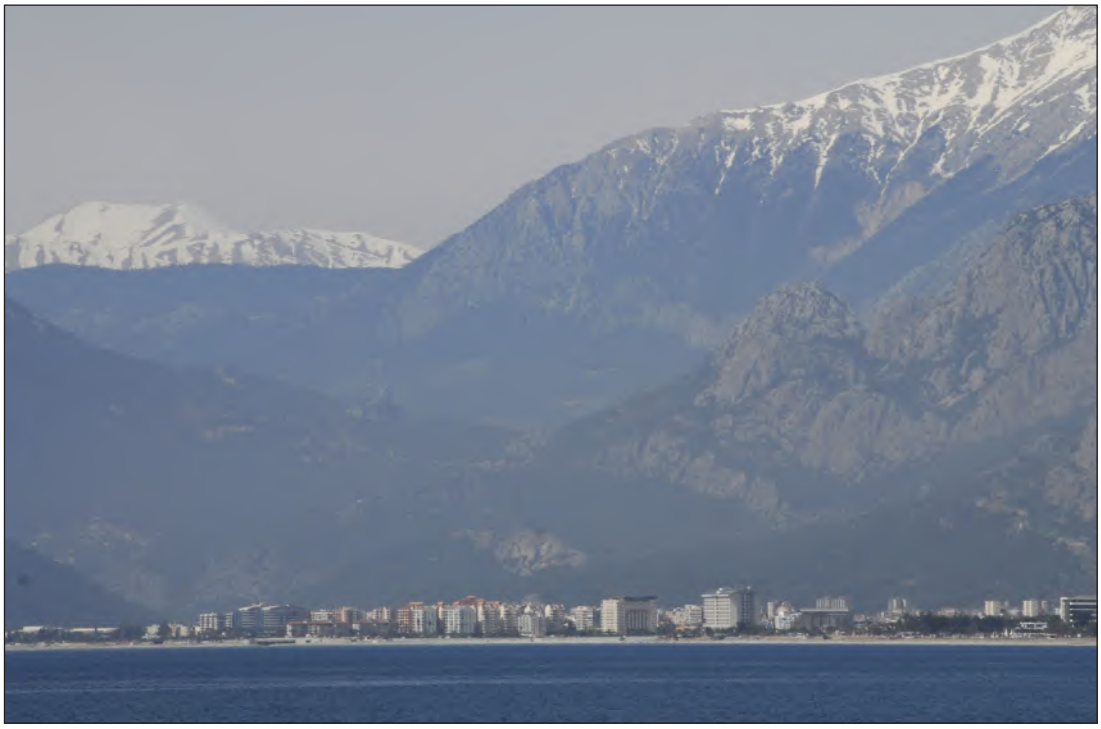

Figure 5.2. Antalya's coastal strip has developed into a continuous chain of hotels and resorts (Photo: Marlies Brinkhuijsen).

The increasing number of chain hotels has increased Antalya's institutionalization and standardized spatial organization. Tourists expecting an inexpensive vacation and families travelling together have begun to flock to Antalya, especially after tour operators began to take a more active role in marketing and the local resorts expanded to incorporate an all-inclusive accommodation system. Changes in the expectations of tourists will also have an impact on their perception of landscape and the demand of landscape and nature related tourism products.

Baraner (2004) suggests that tourists' demands for variety and innovation will increasingly be polarized, and switch from the "3S" (Sea, Sand, and Sun) to the "3E" (Education, Entertainment and the Environment) in the coming years. He also identifies the primary long-term tourism trends as: sustainability, inexpensive but high-quality resorts, multiple destination vacations, exotic and authentic locations, unique experiences, adventure and excitement focused vacations, cultural tours and activities, recreation and sports, health and wellness, and individual tours. Finally, Baraner (2004) argues that investors should focus on consumer-based sustainable tourism alternatives in order to have balanced tourism development.

This development should increase the relevance of landscape planning and landscape design in the future if the profession is able to find answers to helping to meet this new demand in ways that protect the environment and enhance the visitor's experience. Already, resort hotels have changed to meet the demand of tourists of various nationalities. German tourists tend to prefer vacationing in nature, and middle-aged tourists are more likely to return to locations they have already visited. Russians visiting areas for the first time are more likely to seek out unique experiences and locations as they have recently switched to a liberal economic system and have a desire to see new places.

It is no longer enough for resort hotels simply to be comfortable. Furthermore, international standards such as ISO 9000 (quality management) and ISO 14000 (environmental management) must be achieved (Kars, 2004). As European consumers are increasingly seeking resorts that achieve these standards, hotels in the coastal zone of Antalya that achieve them, will be able to earn more of the market share. These standards also require changes in the services offered, infrastructure, materials, systems and spatial organizations which overall contributes to a more sustainable management (Pröbstl and Müller, 2012).

Mass tourism focuses on huge hotels which provide many facilities and which offer tourists all-inclusive packages. This means that once booked into the hotel the tourists can eat and drink their fill (within reason) and use all the facilities onsite. Some may stay at the hotel the entire time they are there, while others will avail themselves of locally booked tours to see some famous archaeological sites or go to shopping centres. Many people see the concentration of resources and the apparently massive "ecological footprint" of such hotels or hotel complexes and conclude that they are not sustainable. However, as will be seen below, this is not so simple and scale economies and concentration of impacts may help in the management of negative consequences.

Atik (2003) summarised environmental impacts in the region as being the loss of natural landscapes and habitats, exploitation of coastal habitats, degradation of traditional land use patterns, second house developments, urban expansion, visual degradation, pressures on water resources, noise and air pollution. However waste treatment has been in a relatively good condition. A local infrastructure association GATAB (South Antalya Touristic Infrastructure Association) was set up in 1989 in cooperation with local municipality, tourism union and hotel organisations in order to deal with solid waste, waste and drinking water supply and treatment. This was regarded as a model for other tourism development centres and areas both in Antalya and other tourism regions in Turkey and similar infrastructure initiatives was inaugurated in order to control and decrease impacts of tourism developments.

According to the national tourism strategy, opening new tourism development regions, tourism cities, tourism corridors, looking for sustainable tourism alternatives such as rural tourism, ecotourism and agro-tourism, diversifying from mass tourism to other types and extending tourism activities to all the year round are the main priorities for the future (Kültürve Turizm Bakanlığı, 2007).

Mass tourism has been evident in Antalya as in many other regions in Turkey. Table 5.1 illustrates the gradual change in the amount of accommodation and bed capacity since 1985. Due to the high tourist capacity as well as its natural and cultural features, Antalya receives more than 10 million visitors per year and almost 1/3 of these visit Kemer, one of the subjects of this study. The visitor profile for Antalya includes German, Russian, Dutch and British as well as other nationalities with a similar situation also to be found in Kemer. However recently, almost half of the visitors, accounting for the largest growth, are made up of Germans and Russians, the latter being the big growth area over the last few years.

Table 5.1. Number of accommodation units and bed capacities in Antalya Region (Atik, 2003; Turizm İl Müdürlüğü, 2005; Turizm İl Müdürlüğü, 2011).

Years	Antalya	
	Number of Accommodation units	Bed Capacity
1985	170	26.650
1990	456	99.805
2000	518	149.603
2005	943	303.614
2011	2.246	489 173

Today, local day-trippers tend to move from the beaches near Antalya to more remote coasts such as Çıralı, since resort developments caused tendencies to – illegally – privatise the beach areas.

5.2.2 Kemer: mass package tourism

Kemer is an example of a tourism development of the original model, which started in the 1970s. South Antalya region was selected as a case area for the South Antalya Tourism Development Project, which is regarded as the first integrated tourism scheme in Turkey. The idea was to protect forests, to preserve agricultural lands and to maintain tourism developments in dedicated sites. From being a small village with a population of 1500 people in the 1950s Kemer became a central resort providing services and social facilities for South Antalya region. However, revisions took place in the project in 1988, 1990 and 1996, which brought a major increase in the tourism capacity from that originally envisaged. Today there are 357 hotels with a bed capacity of 78,000 in Kemer (Figure 5.3).

The growing tourism capacities in Kemer have caused significant impacts on the natural environment. Exploitation of coastal areas as well as natural wetlands, agricultural areas and forests resulted in the conversion of these areas into tourism-based urbanisation. The estuary of Ağva River and the coastal plain, now occupied by town and hotel buildings, were originally used by nomadic people to graze their animals and grow crops during the winter months. These people were travelling around the Taurus Mountains inland of the area during the summer and using coastal plans and locations

Figure 5.3a

Figure 5.3a and b: Tourism development in Kemer and Kiris (Photos: Kristine Vugule and Marlies Brinkhuijsen).

for their wintering ground. However, these nomadic people, the "Yörüks" started to settle on the coast by the 1960s. Their main income was from agriculture based on growing citrus plantations and wheat, while greenhouse culture started in the 1980s due to subsidies for construction and support from the Forestry Service providing timber for fuel for heating the greenhouses.

Tourism developments in Kemer started with 8 hotels and 5538 beds (Atik, 2003). The first hotels were constructed along the beachfront. The revision of the strategy after 1988, with rising demands, led to more tourism buildings and capacity (Table 5.2) and enlarged the areas of tourism development from coastal sites inland towards forest and agricultural lands. The area behind the coastline became developed with service facilities, shops and so on, displacing the agriculture bit by bit.

Changes in forest areas led the loss of ecologically important areas particularly along the coastline while changes in agricultural areas reduced the amount of traditional land use and opened agricultural areas for tourism development (Atik and Danacı, 2008).

Table 5.2. Number of accommodation units and bed capacities in Kemer (Atik, 2003; Turizm İl Müdürlüğü, 2005; Turizm İl Müdürlüğü, 2011).

Years	South Antalya and Kemer	
	Number of Accommodation units	Number of Beds
1985	16	4583
1990	94	26708
2000	150	36150
2005	252	57557
2011	357	78000

There are ongoing efforts and initiatives in the Antalya Region focusing on lower-impact tourism and encouraging environmental management schemes in hotel buildings. The Ministry of Tourism and Culture conducts a programme to encourage hotels to be more sustainable. Regarding the beach and coastal quality, the Blue Flag scheme is now available for nearly 200 hotels in Antalya Region.

5.2.3 Çıralı: small-scale local tourism

When compared to Kemer,Çıralı is a very small player in tourism terms. It is also a flat area at the mouth of two rivers and has a similar history to Kemer in its initial development from a nomad grazing area to an agricultural settlement. However, in part due to difficulties of road access down from the coastal highway, it was bypassed by the larger-scale tourism development. In the absence of large investors tourism became an activity gradually developed by local people – essentially the farmers – by opening pensions and smaller-scale accommodation, which attracted smaller numbers of tourists who wanted to avoid the mass-market experience. By the late 1980s tourism had become one of the most important income-generating activities and the biggest source of income for the local people. The very first pension-like accommodation was set up in 1982. Çıralı is a unique example of an entire resort comprising family-run pension-based ecotourism, organic agriculture and nature conservation all organised by the local people. The amount of home-pension accommodation has risen quite steadily since the end of the 1980s (Table 5.3).

Table 5.3. Number of pensions in Çıralı (KARE, 2000 and local statistics).

Years	1989	1992	1995	2000	2012
Number of Pensions	11	16	50	55	70

Çıralı has been seen as a model for sustainable tourism for many other protected areas and regions. Family-run pensions, organic agriculture and the natural and historical settings are the key features of tourism in Çıralı. The number of certified eco-farmers increased from 33 in 2003 to 50 in 2006. The number of visitors is expected to be between 20-30,000 people per year. Ecological farming in an area of 26 ha free from commercial agro-chemicals has been a useful tool in preventing building construction on fertile arable agricultural land. The natural environment, the interesting landscape features of mountains, coast, dunes, rivers, traditional settings and land use patterns, historical sites of Chimera (Yanartaş) and Olimpos ancient city and the coastal habitat of the turtle (Caretta caretta) maintain important unique values for the region.

Figure 5.4a

Figure 5.4a and b. The village of Çıralı (Photos Marlies Brinkhuijsen).

The tourism potential of Çıralı is based not only on the sea and the beach – although these are of course important – but it has a wealth of landscape assets which enables it to attract tourists interested in immersing themselves in the region and its culture and who want to do other things than sun tanning on the beach – especially in the off-season. The next section describes some of the key attributes of the landscape, which make Çıralı such an attractive place.

Olimpos-Beydağları National Park and Çıralı Region

Çıralı is located to the southwest of Antalya and is set within the Olimpos-Beydağları National Park established in 1972 with a total area of 69,800 ha along an 80 km long coastal strip and was designated for its outstanding beauty, diverse landscapes and rich cultural and natural features on topography ranging from sea level up to 2366m. In 1988 the area of the national park was reduced to 34,425 ha to exclude the tourist areas of Beldibi, Göynük, Kemer, Çamyuva and Tekirova.

History

The name Olimpos refers to Mount Olimpos, from which the national park derived its name. The names Olimpos and Çıralı have been synonymously used for the same location – the former is the old Greek name from the Hellenistic period and the latter is its modern Turkish name. Both are related to ancient history. Olimpos was an ancient Lycian city founded in the Hellenistic era. Akşit (2008) noted that during the Roman period, Olimpos became famous for its Hephaistos cult –the Blacksmith God - who was worshipped at the site of natural gas that vents out of the ground at Chimera, and which naturally burns – also known as Yanartaş in modern Turkish. According to Bean (1997) Olimpos was also well known for its saffron and its bishop Methodius as well as its natural flame. The unique cultural history of Chimera (Yanartaş) in Çıralı goes back to ancient times. According to mythology, Bellerophon fought the immortal beast of Chimera; an animal made up of the head and front paws of a lion, the body of a goat and the tail of a dragon, which breathed fire from its mouth (Strabon, 2005) and terrorised the local inhabitants. Bellerophon defeated the Chimera with the help of the divine winged horse Pegasus. Since then the Chimera lies angrily in the underworld and still breathes

Figure 5.5. The coastal plain of Çıralı (Photo: Veli Ortaçeşme).

out flame, which is the burning natural gas. The location has been sacred for centuries and celebrated as the unquenchable fire of Lycia. Homer also mentioned in the Iliad that the monster Chimera which breathed fire from his mouth lived here (Atik, 2003). Çıralı has a great diversity of landscape elements: interesting topography, coastal plain, sand dunes, beaches, backshore forests, and a rich flora and fauna. Çıralı village was established in the 1950s as one of five neighbourhoods of Ulupınar associated with the town of Kemer. Ulupınar was the location to which nomadic Yoruks migrated from nearby Fethiye and Manavgat in 1600 and 1650. In the early years of the Turkish Republic Çıralı was their wintering ground. Characterised by wetlands, reed beds and coastal forest, Çıralı was opened for permanent settlement in the 1950s (KARE, 2000).

Natural Landscape Characteristics

Alluvial deposits of material brought down the rivers from the mountains made possible the creation of Çıralı village itself, its agricultural areas and the beach. Çıralı is a kind of small pocket-shaped coastal plain made from the gravels and other alluvial deposits brought by Ulupınar, Yanar and Akçay streams. Although the topography is almost flat on the plain floor, the land soon rises a short way inland. Musa Mountain in the south west of Çıralı reaches up to 568 metres, while Chimera (Yanartaş) is at 282 metres. Such sudden changes in the topography and elevation bring great diversity to the local landscape.

Climate

The region is under the influence of the wider Mediterranean climate. This is typically characterized by hot and dry summers and mild and rainy winters. However, there are local characteristics depending on the location of the region and sea conditions. As there are no climate records specifically for Çıralı the climatic characteristics of nearby Kumluca can be used as a proxy. The average temperature in Kumluca is around 18.5°C, the highest temperature is recorded as 27.7°C in July and lowest temperature is recorded as 10.4°C in January.

Geology and geomorphology

The geology of the region is characterised by limestone rock formations and serpentine blocks. The karst geomorphology is based on limestone and the associated coastal geomorphology which come together

Figure 5.6. Coastal caves (Photo: Veli Ortaçeşme).

here. There are chromium and manganese deposits in some places. The natural methane gas vents in Chimera (Yanartaş) are in limestone and serpentine. An old chromium mine is located on the coast at the northern end of the area. The shoreline consists of alluvium, gravel and sand dunes.

Soils

Soils are characterised by typical "terra rossa" Mediterranean soils. Created by the dissolved carbon from calcium carbonate parent materials, terra rossa soils are also called red rendzina. The soil has often been lost to erosion, overgrazing and fire to reveal the bare rock beneath. Rich brown soils based on a variation of limestone with some material of volcanic origin in the alluvial sediments generate a kind of transition zone between the settlement and agricultural areas in the coastal part of Çıralı.

Vegetation

Çıralı and environs are characterised by typical Mediterranean vegetation. Bare rocks and cliffs do not allow much vegetation growth. However, most of Çıralı is covered by Turkish pine (*Pinus brutia*) forest and maquis. Earlier forest fires in different parts of the area lead to different regeneration stages of the vegetation. On the bare serpentine rocks *Pinus brutia* comprises the tree canopy while *Genista acanthoclada, Acantholimon acerosum, Calycotome villos, Inula heterolepis, Phlomis bourgaei, Cistus creticus* are in the lower canopy. The Çıralı sand dunes are one of the few sites where 150 year old stone pine (*Pinus pinea*), which is quite sensitive to human impacts, can be found in Antalya region. Known as Chimeranean sage Phlomis chimerae (Peşmen, 1980) is a local endemic species growing only in Çıralı, which derived its name from Chimera (Yanartaş). Some other localized plants are *Centaurea dichroa, Verbascum spodiotrichum, Echinops onopordum, Ononis serrata and Pancratium maritimem*. The area of Çıralı village is characterised by cultivated vegetation of economic value as well as trees and bushes having attractive flowers and seeds. Citrus is quite common there. Vegetation corridors are commonly found along the main streams in Çıralı, with native species such as *Platanu sorientalis, Laurus nobilis, Tamarix tetrandra, Myrtus communis, Vitex agnus-castus, Phragmites australis* and *Nerium oleander*. Even though tourism activities are not intense in Çıralı and are mainly based on small scale local initiatives there has been some habitat loss in the area. Due to land use change 3.7 ha of sand dunes, 45.3 ha coastal forests, 100 ha of forest and 122.8 ha of reed beds disappeared between 1975 and 2002 (Atik, 2003).

Figure 5.7. Coastal forest (Photo: Meryem Atik).

Wildlife

A number of important wildlife species including bear, wild boar, wild goat, badger, lynx and monk seal have been recorded in Olimpos-Beydağları National Park, where Çıralı is situated. Throughout history, the presence of a rich wildlife in the region has been noted. Spratt recorded in 1842 that there were leopards in the region. In ancient records, one of the Roman governors ordered that leopards were to be collected in the region for a wild animal stage fight (Atik, 2003). There are very diverse wildlife and plant habitats starting from sea level. The Mediterranean monk seal (*Monachus monachus*) a critically endangered species is living around the coastal rock caves and karstic holes and is an indicator of the biodiversity. The Çıralı sand dunes and Çıralı beach are important nesting sites of the loggerhead sea turtle (*Caretta caretta*), which is endangered in Turkey and also in the Mediterranean as a whole. In 2008 79 nests were recorded there. There has been a growing public awareness for the need for conservation and for respecting nesting periods. Turtles nesting activity can be observed between 06:00– 08:00 daily in the season and each nest is specially protected with a mobile nest cage. The local organisation of Ulupınar Environment Protection and Development (Ulupınar Çevre Koruma Geliştirmeve İşletme Kooperatifi) takes an active role in monitoring the turtles. Another species unique to Çıralı Region is the chameleon (*Chamaeleo chamaeleon*), which is protected under the Berne Convention. The natural corridors formed by the Ulupınar, Yanar and Akçay Streams in Çıralı provide habitats for fish, birds, reptiles and many other species.

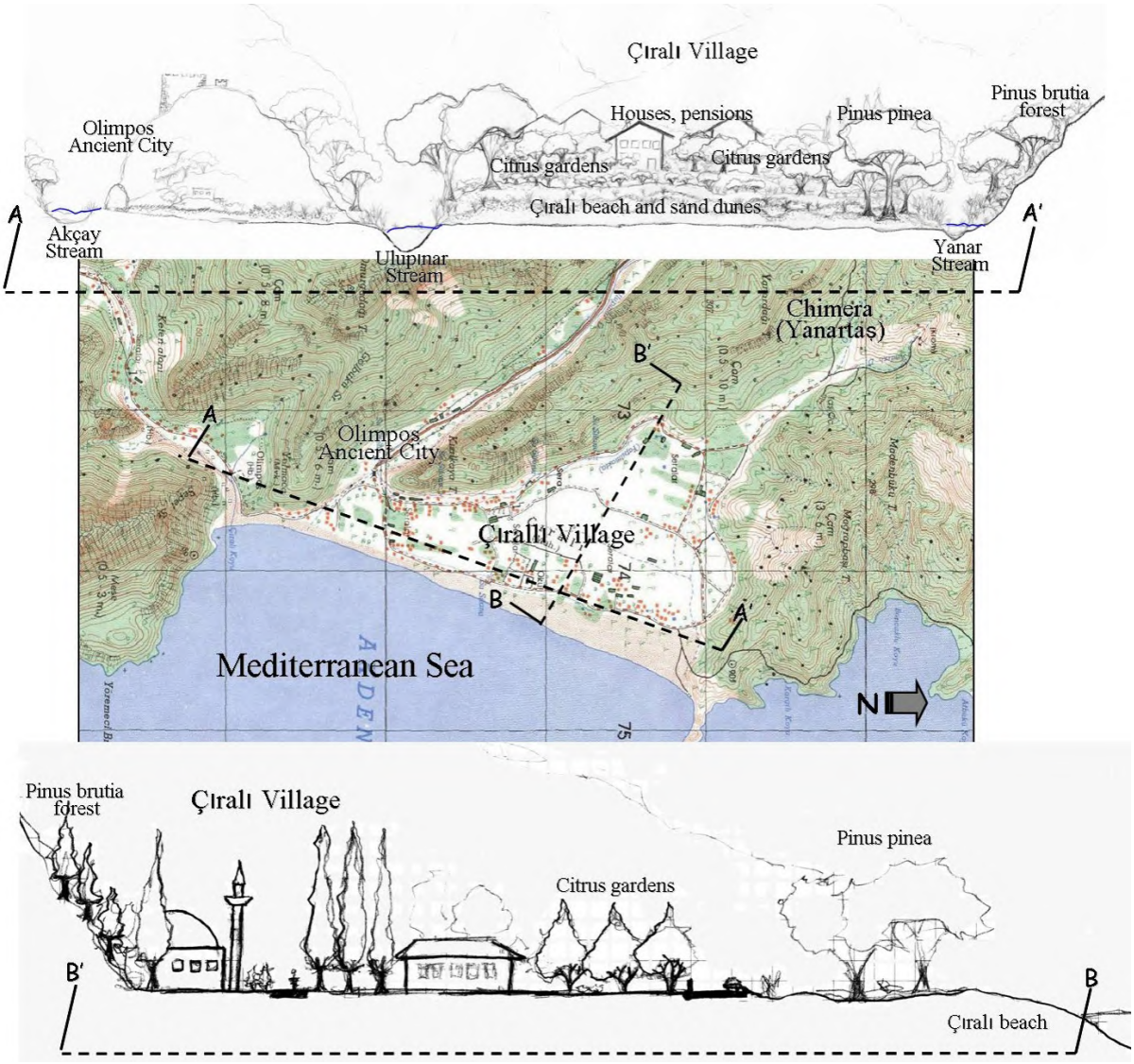

Figure 5.8. Longitudinal (A-A') and Crosscut (B-B') Sections Çıralı Region (Source: Meryem Atik).

Nature Conservation

Çıralı Region includes areas with different conservation statuses. Different areas are covered by nature reserves and archaeological designations respectively, or by natural and archaeological sites together. The eastern and western coastal sites of Çıralı fall into Olimpos-Beydağları National Park established in 1972. Olympos-Çıralı Archaeological and Natural Site: Olimpos ancient city was designated as an Archaeological and Natural Site in 1990 by the Decision of the Antalya Protection Council. In 2000, conservation statuses were revised as Level I. and II. Archaeological Site, Level I. Natural Site on the coastline and Level III. Natural Site on the backshore. Çıralı-Yanartaş Archaeological and Natural Site: Chimera (Yanartaş) was inscribed as Çıralı-Yanartaş Level I. and II. Archaeological Site and Level I. Natural Site in 1991 by the Decision of the Antalya Protection Council.

Land Use

Established on the alluvial coastal plain, the economy in Çıralı is mainly based on tourism and agriculture. It is a typical rural settlement with a population of 939 people. The main activity in the region was stock rearing before 1960. Agriculture was introduced to Çıralı in the form of cotton cultivation in the 1960s, with greenhouses in the 1970s and tourism came during the1980s.

5.2.4 Impression of the area by the workshop participants

The group visited Kemer and Çıralı and spoke to representatives of the community of Çıralı about their experiences and future plans. In order to summarize the impressions of the participants in a transparent manner, a set of criteriawas defined. These criteria are based on those developed in a research project on tourism development and have been tested on various regions in central Europe (see Jiricka *et al.*, 2011). The differences observed by the workshop participants between the two sites are described according to these criteria (Table 5.4).

Çıralı village is a good example of sustainable tourist development, which seems to function as paradigm for future tourist development for the whole region of the Mediterranean. All tourist activity has been developed with great respect of the natural environment, and the local community's way of life. Tourist development and tourists themselves seem to be absorbed or completely adjusted to the spatial and cultural conditions of the local community. However, there is no way that the capacity for tourists available in Kemer could be reached in Çıralı, which suggests that this kind of small-scale sustainable tourism cannot be the answer everywhere. It can be argued that in terms of sustainability in a modest way it works well, but cannot be up-scaled very far before the qualities start to be lost.

Figure 5.9. Workshop participants in discussion with representatives of the community of Çıralı (Photo: Marlies Brinkhuijsen).

Figure 5.10. Advertisements for local tourism accommodation (Photo: Frederico Meireles Rodrigues).

Table 5.4. Evaluation of Kemer and Çıralı by the workshop participants.

Criteria and target conditions	Description for Çıralı	Description for Kemer
Protection of natural resources	High percentage of protected area	High amount of developed area
Efficiency of resource consumption	Efficient use of land resources Buildings are kept small No environmental standards	Inefficient land consumption by buildings The majority of tourism operators have implemented environmental standards
Improvement of local income	Small, family-run businesses Integration and selling of regional and local products	Foreign investors and staff or staff from outside the area Products served which use ingredients or are sourced from outside of the area
Quality of working conditions	Strong local employment rate Further qualification opportunities for locals	Seasonal fluctuations in the employment rates Small proportion of local full-time employees
Improving the stability of the regional economy	High share of regular guests (returning each year)	Significant seasonal fluctuation Incentives for visitors in low season (spring)
Strengthening small and medium local and regional enterprises	Share of local suppliers in the tourism sector Strong network	Not known
Conservingof traditional housing and landscape structures	Beds offered by locals in traditional houses Concepts for local development and building style – foreign investors excluded	Little integration of typical structures in hotel buildings Architectural abandonment of traditional housing apart from the old town centre
Improving cost efficiency and sustainable cooperation in marketing	Local food is used and no transport costs.	Food is brought in but bulk purchases and large quantities make transport efficient
Enhancing visibility	Recommendation-based and via internet, aimed at specialist markets	Marketed through main media and franchise chains of hotels
Raising the quality of experience	Authenticity and nature experience	Diverse quality standards and minor experience of nature and cultural identity
Empowering communities - keeping community life intact and active	Collaboration and exchange of information and experience among the villagers	
Ensuring and enhancing the quality of life for residents	Infrastructure and opening times independent from tourism seasons Frequency of infrastructure from locals	
Keeping life affordable	Price structure?	Price structure?

The poor relationship to the sea – except with regard to local fishing – is still a question. Despite that, there seem to be plenty of opportunities for developing this relationship. Landscape planning and design could improve the situation, as well the entire coastal environment, for both the tourists and the locals.

Kemer, conversely, while not sustainable at present in terms of supporting local communities (social sustainability), and having been built on large parts of the flat land thereby fragmenting habitats, nevertheless offers potential to reduce the overall impact of tourism when considering the large scale of areas needed to provide the relevant bed-capacity if the Çıralı model became the norm. Each hotel occupies a relatively small land area, it is easier to control waste and to collect and recycle materials, and the volume of building materials used in a single hotel compared with that required for many smaller pensions is also likely to be less. Thus it is possible that by concentrating impacts in smaller areas it is possible to protect and conserve more territory.

5.2.5 Observations and suggestions for the future of Çıralı

The village of Çıralı is a great model of sustainable tourism development. As concerns environmental protection and the local economy, according to the locals, up until now it seems to be working as an excellent example of sustainable tourism. At the same time, it shows the limits of this small-scale model. Can tourism be developed much further without having too much impact on the local community? What is more, it is in question whether certain parts of the local society, such as the younger generations and especially the teenagers, have enough opportunities to develop their interests, or find means of expression in the small community of Çıralı. It seems indispensable that they have a say before planning for future development, such as tourism. A meeting with experts to discuss their aspirations, dreams and plans for the future, could possibly generate interesting and useful ideas. The exploitation of local produce (e.g. fruit production) and their cultivation by traditional methods to be promoted through tourism could strengthen the economic benefits for the local market.

5.3 Critical reflections on sustainable tourism development

5.3.1 Tourism strategies as an integral part of rural landscape planning and development

The visits to Kemer and Çıralı raised several issues related to tourism sustainable development. It was clear that sustainability in a mass-package tourist area such as Kemer is different from small-scale local tourism like Çıralı. The example of Çıralı appealed to many people and stimulated discussions on the role of tourism in rural development.

Small-scale local tourism developments are happening in many rural areas where regional economies and local incomes are dependent on additional financial means to agricultural produce. Ulrike Pröbstl stated in her keynote presentation to the Landscape Forum, that a strategic approach to rural development that includes tourism development is needed. Such an approach can transcend the local scale and individual tourism developments, and introduce the concept of a tourism product at a regional scale. Her research produced different concepts for strategic planning of tourism development in rural areas.

In order to foster sustainable tourism development a number of different approaches have been developed by regional administrations, tourism organizations and managers. Landscape planning tries to enhance the strategic thinking in communal planning processes in order to stimulate the strategic discussion and the decision making process.

Pröbstl (2010a) suggests focusing on four main concepts for tourism development in rural areas:

- the "lighthouse model"
- the "small-scale land use model"
- the "zoning model"
- the "linear" model.

All these models have been generalized from case studies and it is important to emphasise that tourism in rural areas does not emerge by itself, but each model requires conscious decisions to be taken by the community early in the planning process. The main goal of landscape planning is to clarify for community-based decision-makers the fact that that they should not simply focus on one single building code or master plan decision, but instead perceive and treat the development model and concept that is inevitably associated with a decision in its entirety, including its possible consequences. Furthermore, these models could be seen as development options, which could be the bases of community planning and embedded tourism strategies.

Model 1: The Lighthouse Model

According to Pröbstl (2010a) in the "lighthouse model" the majority of the rural landscape with its farms, traditions and culture remains unspoiled by tourism. The positive effect for new job opportunities and services in the rural countryside is created by one single large tourism project. Its positive spinoffs are widely spread over the rural landscape even though the project is located at one single location. The positive economic and social multiplier effects might also compensate for possible negative effects on scenic beauty and natural integrity. New developments in the field of spa and wellness tourism in Austria show that the "lighthouse-effect is not necessarily limited to economic and service improvements for local people, but might add new architectural attraction to the region, associated with another opportunity for an aesthetic experience.

In the Mediterranean, with the focus to date on the coast and beach tourism and only recent shift away to the hinterland with all its, as yet, undeveloped villages, there is much scope for testing and developing, through applied research, this model as a completely new approach.

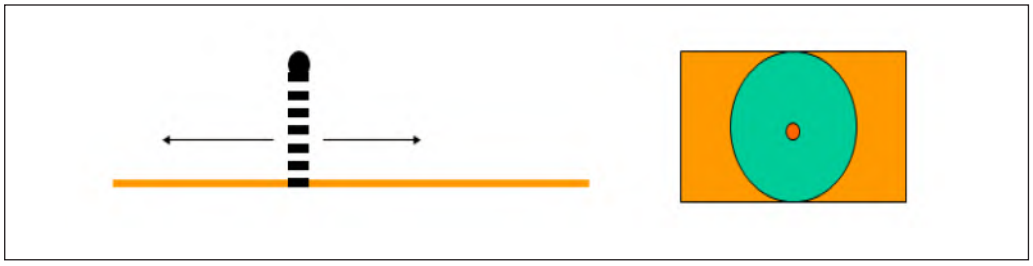

Figure 5.11. The lighthouse model (Source: Ulrike Pröbstl).

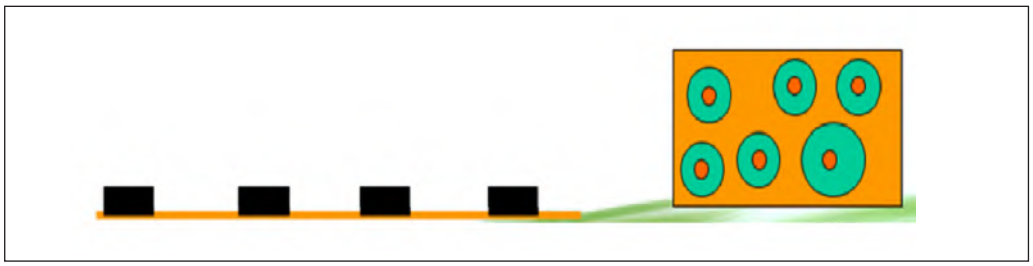

Figure 5.12. The land use related model is typically based on and integrated with agricultural land use. (Source: Ulrike Pröbstl).

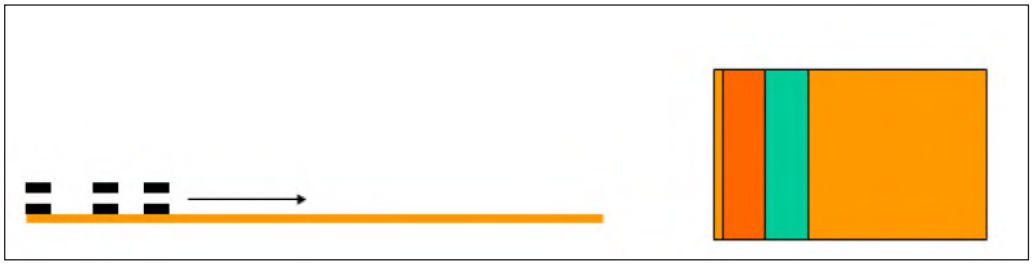

Figure 5.13. Schematic illustration of the zoning model (Source: Ulrike Pröbstl).

Model 2: The Small-scale Land use-related Model

Typical for this model is the integration of tourism into the existing agricultural land use (Pröbstl 2010a). Many farmers are increasingly realising the additional economic benefits that can be gained from diversifying into providing farm stays on their land. Although the tourism infrastructure is mainly integrated in the existing operational farm structure, this model requires adaptation and life-style modification by the provider.

In the Turkish context with its focus in places like Çıralı on small pensions this model could already be said to exist. However, in the rural villages where traditional houses are being abandoned there is scope for research into how to develop this model for the benefit of the farmers and their village community. Çıralı aims at preserving this model – the influence of investment-dominated approaches threatens this objective.

Model 3: The Zoning Model

This model requires a landscape, which is rich in biodiversity and valuable biotopes and habitats. Model 3 is based on the concept of marketing the outstanding natural integrity of the region in question to tourists. One major precondition to sell this concept to tourists is to get a certification for these valuable landscapes, and thereafter for rural communities engaged with this type model, to promote the protected areas in their region (Pröbstl, 2010a).

Common to all approaches of this type is a zoning concept, which allows the marketing special areas of diversity of the habitat of endangered species or even the idea of remaining "wilderness". The concept is also often used in association with the European conservation system Natura 2000.

Rural tourism destinations with zoning concepts can be found not only in National Parks but also in nature parks or Biosphere reserves. This model fits within the field of ecotourism or nature-based tourism. Regardless of the status of protection of the areas concerned, as long as they have a conservation focus they can serve as a model for sustainability, because they balance ecological values of biodiversity with the economic values of natural resources and community values. Many of these European examples manage to maintain traditional structures and forms of land use by integrating them into a unique tourism proposition (Pröbstl, 2010b).

In Turkey, while there are numerous protected areas – and Çıralı lies within one such – the tendency has been to use them as restrictions on tourism development as opposed to seeing them as the key asset. It is clear that much more research is needed as to how tourism activities can be accommodated into potentially fragile Mediterranean ecosystems, especially with attendant high fire risks in the summer season.

Model 4: The Linear Model

The "linear model" mostly uses existing structures, buildings, cultural assets, religion, traditions or infrastructure (Roberts and Hall 2001:162). The tourism concept connects this infrastructure to an entire product. Typical examples are a "Castle Route, a Cheese Route, a Wine Trailin Cyprus, for example, or the Iron Road in the alpine area (Meyer-Cech, 2003).

Following these linear concepts an already well-known rural region can be presented under new and diverse themes and aspects such as the rich historical, cultural past or the insight in the history of land use traditions (alpine meadows-mountain huts-and-cheese making, cellars-winery-and-vineyards). The Lycian Way, Turkey's first long-distance trekking route, is an example of such a linear model in the Antalya

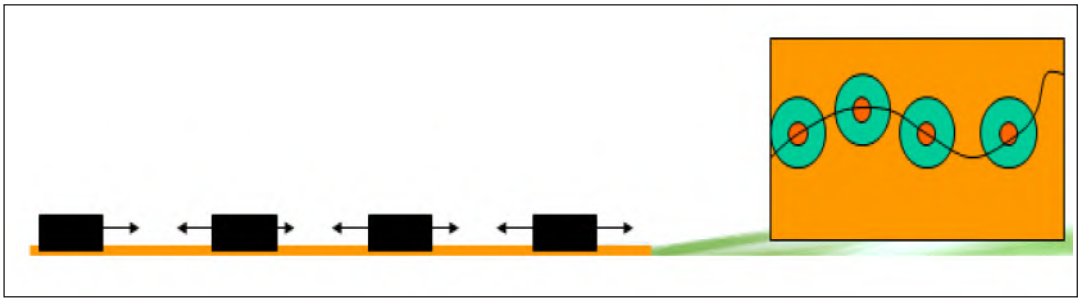

Figure 5.14. Schematic illustration of the linear model (Source: Ulrike Pröbstl).

region. The trail is presented as a walk throughthe natural and cultural history of the area. Local communities like Çıralıprofit from the trail by exploiting pensions and restaurants along its course.

This concept is based on the positive effect of branding and theming. This linear model guides the communities to focus on a clear concept and a niche addressed to the tourists, instead of presenting themselves as a region where you can experience everything culture, land use tradition and local events in a rural setting (Pröbstl, 2010a).

In Turkey, with a wealth of archaeology and more recent Turkish heritage there must be much more potential for this, but once again the primary focus to date on the mass-market singe hotel destination has obscured the possibility of developing such models.

5.3.2 Inventing and creating new niches and tourism products

It is true that the four models described in the previous paragraph can strategically inform spatial planning including tourism development. Before selecting the most suitable model however, the tourism product must be defined.

A clear differentiation between tourism markets is becoming increasingly difficult to maintain. Long-standing markets, especially, are characterized by similar and interchangeable products with a lack of unique profiles (Bieger, 2005). Trend-related research in Central Europe shows a shift from consumption and luxury-orientated tourism to an experience orientation. Today's tourist wants innovation and unexpected events. Successful tourism offers significant and unique experiences instead of merely fulfilling needs (Müller and Scheurer, 2004).

Product innovation ideally reflects the societal trends of the age. Landscape planners and designers are able to identify new issues with a potential to become a new niche with relation to nature and natural resources. Their professional skills give them the ability to see fascinating relationships between the tourist and nature and/or cultural highlights. Their point of view differs from the economic perspective of traditional tourism planning. Recent student projects in Croatia (Van den Berg and Koens, 2011; Borsje and Tak, 2013) show that landscape planning and design can contribute to an increased awareness of landscape qualities in local communities and open new windows of opportunity in sustainable tourism development.

By contrast with mass tourism, niche tourism aims at establishing a different tourism operator-customer relationship. Niche-tourism clients are defined as being more aware of their role and influence as consumers in the world. They perceive sustainable tourism products as a meaningful set of activities (Novelli, 2005). Both the body and the brain should profit from the vacation, but a further very important component is the emotional experience (Robinson and Novelli, 2005), which fits to the individual and more intimate experience they wish to have. Getting in contact with diverse forms of nature and natural resources can contribute to this target. There are further steps to be considered in order to create a strong new tourism niche product:

Framing conditions – regional structure and stakeholders

There are certain pre-conditions which facilitate the origination and implementation of a new niche product and allow the concept to be transferred to other tourist destinations. Primarily they relate to the regional embedding and stakeholder involvement:

- Existing infrastructure and facilities or initiatives supporting the topic (visibility in the area)
- A commitment of the community and region to support the topic (e.g. the so-called "energy regions" in case of "energy tourism")
- A network between producers, suppliers, public authorities and tourism officials to cooperate during the marketing process

Landscape planners are able to introduce and stabilize these structures due to their inter-disciplinary education and background in regional development planning.

5.3.3 Empowerment of local communities

The strategic perspective on tourism-related rural development that was introduced in the first part of this chapter takes communal planning processes as a given. However, reality is often different: many tourism developments are either state-driven or initiated by tourist industries, and local communities don't have a voice, whether this is deliberate or not.

The key issue of power, control and public involvement in landscape decisions is of growing research interest in Mediterranean countries (Akbulut and Soylu, 2012) and elsewhere, particularly as a result of the implementation of the European Landscape Convention (Roe, 2012). Boissevain (2012) shows how farmers in Malta were excluded from the decision--making process in relation to hotel and golf course development through the simple issue of language. Thus there is a growing understanding through research that it is not just what is communicated, but the way that it is communicated and who communicates in participatory working that is important. A "culture economy" approach based on more integrated thinking, sustainable aims and building empowerment within local communities with more sophisticated thinking that sees extra-local forces as enablers of more sustainable tourism activities is now emerging (Oliver and Jenkins, 2003).

Çıralı seems to be in a quite unique position. The community has local control and successfully opposed external interferences that were not in harmony with their perspective of Çıralı's future.

5.3.4 Commodification

All landscapes that include tourism developments exhibit similar processes of "commodification'. Tourism developments take place in a globalized market where regions and sites find themselves in competition with other regions and sites (Brinkhuijsen, 2008). In order to make areas as attractive as possible for visitors, attention is paid to activities, to environmental, social and managerial settings and to leisure and tourist experiences (Beeho and Prentice, 1997). It is not only the tourist accommodation or the tourist attraction that turns into a commodity; it is the landscape as a whole that gets commodified. The landscape of Çıralı is in many ways no more authentic than that of Kemer and has become a tourism landscape.

Many authors have discussed the problematic sides of the commodification of space. Landscapes are being assessed "on their distinctive value in terms of being decorative, attractive or experience-rich environments. In one sense it is a matter of "aesthetisation" or "culturalisation" of space" (Mommaas, 2000: 13). Images and themes are exploited to represent the characteristics of spaces, destroying those unique qualities through the use of stereotype formulas, programmes and images (Urry, 1995; Meethan, 2001). "Environments are transformed into experience products to be consumed according to standard formats that have already proved successful elsewhere" (Brinkhuijsen 2008: 257).

This process of commodification is particularly problematic when it affects daily life in local communities. In highly tourist regions, for example in Mykonos Island in Cyclades complex in Greece, locals and tourists rarely meet. An important part of local population, e.g. the elderly, during peak touristic periods, are voluntarily "excluded" from the use of space in many areas, unless they have a specific activity to carry out, usually related to commerce. Such places include most of the beaches, as well a large part of the urban space in villages and towns. The tourist character of the landscape clearly prevails all over the island, especially during summer.

In areas with small-scale tourism developments everyday living environments and tourist environments get subtly intertwined. New hybrids may develop but also similar frictions to those in highly touristic regions may arise. Idealised images referring to Arcadian landscapes, where time seems to have stood still, are presented for marketing purposes. Television series about national parks in different countries show images of traditional landscapes and people in national costume, wildlife, scenery, old ruins and craftwork or music (Brinkhuijsen, 2008). Protected areas such as the Olimpos ancient city and Chimera are valuable for their scenery wildlife and cultural heritage, and attractive for tourists. At the same time they are "living landscapes".

5.3.5 Collective consciousness and place

The issue of cultural differences and insider-outsider experiences of place deserve attention. Primary demands of tourists are comfort, safety and experiential value. Local people usually also develop a strong sense of belonging to their living environment. Their personal history is related to that environment and to space identity (Relph, 1976). The better people know an area, the more meanings they attribute to it, both personally and collectively (Pronk *et al.*, 1997).

Moreover, different kinds of experience create different memories of the landscape. Personal memory (usually the case for tourists) is strengthened by the collective memory being formed by frequent and collective use of space (the case for locals). The collective memory is stronger and usually more determinant as concerns the final use of space and the way of acting in it, as personal experience at a specific moment is enriched by the history of a place (memory of outstanding historic events of the past, out of experience or narrations) or by less dramatic, but equally important events which occur in local society's daily routine. For example, a space around a large tree in a central place in a community, where local bazaars or other events related to local customs and tradition take place occasionally, develops a special significance and meaning in the collective consciousness of the local society. Especially for Mediterranean societies, where the mild weather conditions favor for the frequent use of open space and, thus, a major part of the everyday life is spent outdoors, the degree of familiarization of space by its users is higher. As a result, open space often becomes more important than indoor space. This of course depends on the degree of extroversion a society might have. In other words, a specific space or landscape can easily become a "place" in the consciousness of the local population, as it is charged with strong memories and multiple sentiments coming out of the everyday interaction among the members of a community. This process of familiarization with a specific landscape strongly influences the overall experience of the landscape.

Conflicts may arise when the different perceptions of local people and tourists clash, for example in particular places informally established as sites of a certain local activity, and therefore inscribed in the collective memory of the local society, while other layers of meaning are smoothed out. Where tourist expectations are not fulfilled they will tend to downgrade the experience without understanding that they are projecting their images onto a landscape rather than on meeting it in their own terms.

5.3.6 Aims of sustainable tourism

Sustainable tourism is not as simple as it first appears. The problem tourism poses is, in fact, one of its positioning among the factors of development (Loukissas *et al.*, 2001: 239). As long as development is understood as sustainable, it should be equally targeting the areas of economic growth, socio-cultural development as well as environmental development or protection. In this context, since the 1980s sustainable tourism development adopted as the goals of modern tourism has focussed equally on the conservation of environmental, social, cultural and economic resources (Inskeep, 1991; UN, 1992; Papayannis, 1994; Van den Berg and Nijkamp, 1994; Lorch and Bausch, 1995).

Despite the fact that in the past the protection of the environment seemed to conflict with the policies of tourist development, it has been gradually recognized that there is a strong interrelationship between the economic benefits from tourism and the tourist development itself, and the preservation of environmental quality (Briassoulis, 2000: 21-37). Although the preservation of the natural environment covers a large part of the operational cost of tourism industry, the long-term economic benefits justify such an investment. As far as landscape in particular is concerned, it is very often one of the most important tourism assets that a place has to offer, because of its cultural, aesthetic and ecological values, and thus its preservation and enhancement is vital for the development of tourism itself.

As concerns sustainable planning for tourism development, apart from the sociological and economic aspects, responsible planning must take into account the capacity of the existing natural environment to absorb tourist activity (Loukissas *et al.*, 2001: 240). There should be a long-term monitoring of the effects of tourism on the landscape, based on landscape assessment with ecological as well as aesthetic and perceptual criteria. Issues such as scale (for space, numbers of visitors, etc.), the capacity of natural resources to meet tourist demands especially without impacting on local demands, seasonality of tourist activity through the year are major factors in sustainable tourism planning and management.

It is therefore necessary that an integrated analysis from a spatial, perceptual, cultural, sociological, economic and ecological point of view is undertaken, with a future perspective, in order to achieve the maximum outcome out of planning for tourist development in a specific region.

The United Nations Environment Programme and World Tourism Organisation (2005) in their publication "Making tourism more sustainable: a guide for policy makers" highlighted twelve aims for an agenda for sustainable tourism, which are of equal importance and are of major interest to this study:

- Economic viability: ensuring the viability and competitiveness of tourism destinations and enterprises, for them to be able to continue to prosper and deliver benefits in the long term.
- Local Prosperity: maximising the impact of tourism to the economic prosperity of the host destination, including the percentage of visitor spending that is retained locally.
- Employment Quality: strengthening the number and quality of local jobs created and supported by tourism, including the level of pay, conditions of service and availability to all without discrimination by gender, race, disability or in other ways.
- Social Equity: seeking a widespread and fair distribution of economic and social benefits from tourism throughout the recipient community, including improving opportunities, income and services available to the poor.
- Visitor Fulfilment: providing a safe, satisfying and fulfilling experience for visitors, available to all without discrimination by gender, race, disability or in other ways.
- Local Control: engaging and empowering local communities in planning and decision making about the management and future development of tourism in their area, in consultation with other stakeholders.
- Community Wellbeing: maintaining and strengthening the quality of life in local communities, including social structures and access to resources, amenities and life support systems, avoiding any form of social degradation or exploitation.
- Cultural Richness: respecting and enhancing the historical heritage, authentic cultures, traditions and distinctiveness of host communities.
- Physical Integrity: maintaining and enhancing the quality of landscapes, both urban and rural, and avoiding the physical and visual degradation of the environment.
- Biological Diversity: supporting the conservation of natural areas, habitats and wildlife, and minimising damage to them.
- Resource Efficiency: minimising the use of scarce and non-renewable resources in the development and operation of tourism facilities and services.
- Environmental Purity: minimising the pollution of air, water and land and the generation of waste by tourism enterprises and visitors.

It is natural that the interest of the UWTO is broader than the landscape perspective on tourism, which is the theme of this chapter. Landscape architects and planners can contribute to sustainable tourism development, but they don't have a solution for all questions that arise with sustainable tourism development, nor are they the only agents. Nevertheless these aims are helpful for describing and characterising the possible contributions of landscape architecture (including landscape planning, design and management) to sustainable tourism. Significant contributions can be made to the issues below.

Visitor Fulfilment

Landscape architects and planners are able to improve the local experience by designing the outdoor spaces around the infrastructure (hotel, spa facilities, gardens), but also by helping to maintain the natural environment and enhancing visitor experience by interpretation material (sign posts) and infrastructure, such as bridges, wooden benches, camp sites etc. (Pröbstl *et al*., 2010). Furthermore, the contribution may also include well-integrated facilities such as ski slopes or golf courses. Design, sophisticated planning and management guidelines prepared by landscape architects and planners are likely to increase the visitor satisfaction and the overall experience. Design and planning may also ensure to reduce negative impacts when separating user groups with different expectations and needs, e.g. Muslim groups interested in swimming and guests from European countries.

Research is needed into what these kinds of aspects mean for visitors to Mediterranean coastal areas and their rural hinterland. Landscape architecture research, being so broad in nature can be used to understand the needs of visitors and then to match these needs to the potential offered by the landscape.

Local Control

Landscape architects and planners are well aware that participatory processes are the key to involving local people in planning and decision-making. They can be used to illustrate possible scenarios in drawings and sketches. These tools are helpful for engaging and empowering local communities so they can decide what they like and which development they may dislike. Landscape architects and planners are trained in moderating local planning processes and integrating various groups of stakeholders. However, while models used in mainland Europe are mature and fit the governance systems frequently encountered there, in Turkey such approaches need to be developed and refined by action research. Çıralı seems to have a well-functioning local system of participation, but as noted earlier, how deeply this reaches into the community is not clear – do the teenagers have a voice, for example?

Communal Wellbeing

Gentrification is often mentioned as one very critical aspect of tourism development. Landscape planning considering this possible effect in its concepts may help to hinder negative impacts by zoning, by defining of protected areas avoiding any form of degradation, aesthetically, socially, economically, ecologically. The maintenance of green structures such as parks and gardens, forests and nature contribute also significantly to community wellbeing. In Çıralı there has been some degradation of the environment but in general the local communal environment is in good condition. Research could be used to learn from this and other experiences.

Cultural Richness

Cultural richness is first of all often understood as maintenance of cultural, historic heritage, mainly buildings. Landscape architecture and planning contribute to maintain to the attractiveness of these sites. Many castles, manor houses or old cities were designed in combination with the surrounding environment or with a related garden architecture. Garden tourism is one form of tourism products which relies totally on this cultural richness which includes e.g. farmers' gardens, castle gardens, gardens in monasteries, city gardens, historic parks, arboretum and many more. The cultural richness also includes cultural landscapes, landscapes which have been shaped over centuries by a certain form of land use, such as olive fields, vineyards, open forests with cork oaks and many more.

Figure 5.15. Oranges growing in the Antalya region (Photo: Marlies Brinkhuijsen).

Landscape planning and design are the instruments to discover these unique structures and their elements and to define, in cooperation with local stakeholders, the preconditions for their maintenance or protection from further development. Many of these traditional cultural landscapes are characterised by a high biodiversity and outstanding beauty. They are important for the local identity and the authenticity of the region.

Orange groves are part of the cultural landscapes in Antalya and a significant, but endangered landscape element with a high value for an authentic experience, especially in springtime. Land use can also be promoted as a part of the local tradition and distinctiveness of the host communities. In some parts of Austria, the orchards and the local products such as cakes, schnapps or dried fruits contribute to a unique experience.

Physical Integrity

The improvement of the natural integrity of the landscape is a traditional field of landscape planners from very the beginning of their scientific and professional education and training. The tasks are manifold, ranging from large-scale projects to small improvements resulting in a reduction in visual degradation. The revitalisation of moorland, the reconstruction of coastal zones after the harbour has gone, the restoration of grassland on ski slopes are typical examples. Landscape planning often needs to develop management options to avoid future degradation by tourism or by the overlap of tourism and agriculture.

In areas such as Kemer where the physical integrity has already been compromised by thoughtless development, research might fruitfully be carried out so as to consider how retrofitting and restoring such integrity might also help in improving the tourism experience and image.

Biological Diversity

Landscape planners and designers are trained to develop and implement concepts and plans to protect the biological diversity and to minimize impacts on habitats and species. They are able to develop tailor-made solutions to ensure that tourism development will not harm the environment. In addition, planning and design may help to increase the attractiveness of the local environment if endangered species such as the turtle in Turkey or the eagle in the Austrian mountains can be experienced. The maintenance of biodiversity in the Antalya region might be the basis for new tourism products such as sea life watching, snorkelling or bird watching.

Resource Efficiency

In contrast to the protection of biodiversity and the physical environment this area is a rather new field for landscape architects and planners. Design and outdoor planning is able to save or reuse water (grey water), e.g. when storing it in a designed pond, to integrate wind turbines in the overall aesthetic concept or even develop a new design for photovoltaic panels to enhance the use of renewable energy. In Mediterranean areas where there is pressure on water supplies and demand for irrigation of golf courses and so on then the need for resource efficiency research is clear.

Environmental Quality

Green structures are able to minimize the negative impacts of noise and pollution. Landscape architects may be in a position to help to integrate facilities and infrastructure to maintain environmental quality in a tourism resort. Many of these aspects are strongly interlinked and also connected with the economic performance of the destination.

The UNEP and WTO (2005) highlight that the economic viability of tourism depends strongly on maintaining the quality of the local environment. Visitor fulfilment is about meeting visitor needs and offering unique and unforgettable experiences, but is also important for overall economic sustainability, because happy guests are likely to come back again. Furthermore, UNEP and WTO (2005) highlight that cultural richness – which is often considered to be in the sphere of social sustainability – has a strong bearing on environmental aspects in terms of the built environment and cultural dimensions of society's interaction with nature.

5.4 Teaching the subject: possible areas to focus on and potential programme courses or modules

Tourism and Sustainable Tourism Landscapes is not normally a major subject taught within landscape architecture but outdoor recreation planning and design tends to be more common, if not as a subject in its own right then embedded within other courses such as landscape planning and management. However, given the importance of tourism as an economic driver and the role of landscape as a major attractor as well as the extensive opportunities for landscape architects to work in hotel and other tourism resort complexes, where good design taking the site into account is necessary, for some landscape architecture schools there are plenty of opportunities to introduce the subject – if not as a stand-alone course then perhaps as an integrated project.

There are 250 Study Programmes and 2148 course units listed in the Le:Notre website database. A search for tourism related course units, reveals 26 items as result. These vary from very specific courses on tourism (7 items) (see Table 5.5 below), to other more general course units, which mention tourism in their programmes: Landscape Planning (8 items); Landscape Policy (2 items); Landscape Management (2 items) Landscape Design (2 items); and Others (5 items).

Table 5.5. The specific courses on tourism, found in Le:Notre course units database. From this seven course units, 4 were found in Turkish Universities. (searched on 26.11.2012).

Course Units (Le:Notre database)	Country
Landscape Design in Tourist Resorts	Turkey
Tourism	Spain
Tourism and Recreational Planning	Turkey
NatureTourism	Turkey
NatureConservationandTourism	Turkey
Planning of Recreation and Tourism Infrastructure	Germany
Project on Spatial Development (Nature Conservation and Tourism, Landscape Planning, Spatial Planning and Aquatic Ecosystem Management)	Austria

It might be considered that there is not a need of specialization in Sustainable Tourism Landscape in Landscape Architecture Programmes. These can benefit from its holistic strength that permits to approach the theme on planning and design or other universal course-units. Therefore teaching this field is likely to happen because of local specificity or students needs (doing a specific project or dissertation on the subject).

Despite that, landscape design and planning projects in tourist areas may often be of high complexity, since the tourist phenomenon touches upon a wide range of landscape aspects. The combination of the local element with tourist activity generates multiple contradictions related to economic growth, short and long term environmental impacts, cultural issues, the use of space, landscape character, heritage etc. Therefore, such projects offer a unique opportunity to landscape architecture students to get experience of and speculate on crucial planning and design issues, which involve both theory and practice, within one single project.

Planning and designing a new tourism landscape and managing an existing tourism landscape can be seen as obvious focus to teaching in the field. More specific topics, that require a more specialized or technical planning could be the design of specific tourism facilities or the strategy and policy discussions, which relate with tourism landscapes.

There are traditional areas of education in Landscape Architecture programmes, already being taught, which generates a very significant background to landscape architecture students and allows them to approach a problem in the field of sustainable tourism landscape, for example: land surveying techniques, landscape analysis and interpretations, hydrology and water management, geology and geomorphology, ecology and biodiversity, physical geography, landscape history and evolution, landscape character and heritage (nature/cultural) conservation, general planning and design system and laws, green infrastructure, landscape management, general landscape design, general landscape planning.

On the other hand, there are fields of specific importance, which might vary, depending on local conditions, objectives, levels and scales of interventions, such as tourism general principles, tourism management, marketing, applied policy and legislation, EIA (social impacts, cultural impacts, landscape and visual impacts, local economic impacts, etc.), regional and local resources, social sciences (psychology of tourism; human geography; social sciences methods for inquiry, etc.), public participation, infrastructure, coastal ecosystems.

A potential area of focus is on the psychological effects of tourism. It is important to understand the "traveller" or "tourist" in a psychological way. Thus, the principles of environmental psychology – its theories, concepts, and research methods - can be used to teaching and research in tourism. Given the fact that "tourism trades on the character of places" (Williams & McIntyre, 2012), the notion of "place experience" serves as an anchoring term to specify the person-environment relationship in terms of mobility. Two links can be made:

1) In terms of teaching in relation to the mental processes involving travelling

- Research on environmental psychology has shown that place experience has an impact on people's quality of life. Thus, the understanding of the positive benefits of travelling is essential for a good quality of life. By understanding the cognitive and affective processes involving visiting a place can yield important information for the design and maintenance of the particular destination.
- Amenity-seeking mobility is rooted in one's perception and expectations for a place. Being an outsider in a different culture, for example, can be considered a stressful situation from one side and a rewarding experience from another side. Positive travel benefits for well-being can be studied in light of the psychological theories of stress reduction and emotional capacity

2) In terms of the "marketing" aspects involving travelling

- Some topics linking environmental psychology to tourism studies would include the significance of the "cognitive consumer" in the sense that consumer choice behaviour involves the stages of pre-travel, travel, and post-travel. These three phases involve diverse activities and affect one's sense of satisfaction.
- Since the image of the place has an important influence on the selection of vacation destination, it is important to understand and teach how people construct images of places and how they affect their experience. Also, environmental psychology can aid the understanding of what place attributes are relevant for a particular group of people. This understanding is relevant for place branding and implementing marketing programmes for creating and enhancing tourism destination images.

Studio courses, workshops and intensive programmes, lectures by experts on key-subjects, seminars, case-study reviews, policy reviews, and also theses and dissertations are possible to be used as types of course-units within the field. It also seems to be possible to teach tourism in landscape architecture programmes at different levels of complexity. That could be achieved at bachelor level by addressing a shallower dimension of the problems ending with broader results. At master level it is possible to develop more reflective results, maybe focusing in complex problems and also in challenges that require another specialized level of research. The field of sustainable tourism landscapes might also be very interesting to explore as a specific post-graduate focus, with more applied and practice oriented approach, responding to professional practice needs. There might be a market with landscape architects, already in professional practice (designers and planners, employers in tourism and planning authorities, etc.), who want to know something more about the subject

In places where the field of sustainable tourism landscapes is of local significance, students might have to take required courses, in several areas of knowledge, relating to basic education in landscape architecture. This is possibly a good reason to develop collaboration with other subject areas within the Universities, local authorities and professional practitioners. In other places there is the possibility for optional courses and applied post-graduate programmes.

In all cases, the teaching content should be very specific as it deals with a field of specialization in landscape architecture, and the teaching material is likely to be provided from research (theory, literature, essays, etc.) and also from practice as case-study analysis, reviews and field-trips.

5.5 Research gaps and potential areas to focus on in the future

The discussions in the workshop discovered three main fields of research and possible contributions by landscape planning and landscape architecture: environmental impacts, product development, and livelihood and quality of life. In the following these main fields are described and illustrated with examples.

5.5.1 Environmental Impacts

Environmental impact assessment, recreation ecology and landscape restoration are significant and traditional working and research fields of landscape architects and planners, often carried out in an interdisciplinary way with foresters, ecologists and others. The challenge to enhance sustainable tourism and to reduce possible impacts increases the relevance and necessity of this field. Furthermore we are facing an ongoing trend to invent new activities for tourism and outdoor recreation, which needs to be investigated.

In addition we need to strengthen existing planning instruments such as EIA, SEA, health impact assessments (HIA) or Environmental Management Systems (EMS), in order to meet the future demand and to adapt these instruments to the special requirements of tourism and recreation. New instruments and management tools are needed to steer tourism development in a sustainable manner (Jiricka *et al.*, 2010a).

Some of these crucial research fields are listed below:

- Impact of various forms of tourism
- Recreation ecology, landscape restoration
- Carrying capacity and other management frameworks
- Consideration of biodiversity and ecological characteristics
- Landscape Quality Assessment
- Auditing systems and labels
- Environmental education
- EIA, SEA
- Management options including various forms of land use.

Figure 5.1 shows a typical auditing process applied to a winter sport resort in Bulgaria in order to contribute to environmental friendly management and landscape restoration.

5.5.2 Product development

The tourism demand is not a given nor is it stable. Tourism is a mirror of the overall societal development and trends. Tourism is strongly influenced by changes in lifestyle trends and also the overall financial situation in the respective countries. The research dealing with supply and demand related to natural goods and landscape is an ongoing challenge for tourism. The adaptation to climate change with new wind turbines or photovoltaic fields might have an impact on the overall suitability of certain landscapes for tourism (e.g. Pröbstl et al, 2011). Research is also needed to develop new tourism products, new design patterns and to study their marketing and overall acceptance. In the workshop the following fields were mentioned:

- Studies focusing on supply and demand
- Research about potential new products
- Influence of design patterns
- New meanings of traditional landscape elements
- Diversification of products in response to new demands
- Marketing relatedtolandscape
- Role of landscape setting and design
- Trends.

5.5.3 Livelihood and quality of life

Tourism is the basis for the quality of life in many regions. Regional development depends on the regional tourism products. However, tourism also influences the quality of life for the local population, e.g. by landscape degradation, gentrification, food prices or impacts on recreation opportunities. Against this background the participants listed the following research fields:

- Perception of landscape and landscape change
- Place attachment
- Social framing conditions
- Influence of tourism products and design on local livelihood
- Scenarios about future landscapes incl. visualization
- Role of tourism on landscape development
- Interaction of traditional land use and tourism.

5.6 Innovative practice: examples from other areas with Mediterranean climate

Innovative practice can take place on different scales within the context of landscape; within an individual business such as a hotel or holiday resort, on the scale of a village or town, or on the scale of a region. The following section presents some examples of what the workshop participants identified as examples of best practice, partly independently assessed as such by adherence to externally evaluated standards such as ISO 14001.

5.6.1 Best Practice: The Iberotel Sarigerme Park Resort (Turkey)

This was the first hotel in Turkey to meet ISO 14001 and it is an example of environmental best practice as it fulfils a number of the baseline indicators and sustainability issues. The Iberotel Sarigerme Park Resort is a 4 star hotel in Sarigerme, Turkey. The hotel was established in 1989, located in an area of 35 hectares with 373 rooms. The design of the hotel is typically Turkish consisting of one main building and several villas. The hotel was awarded the Three Pine Trees environmental award by the Turkish government and has achieved the gold medal in the TUI-Holly (Environment) Championship every year since 1997 competing against 22,000 hotels worldwide. The hotel's environmental management programme was initiated in 1991, focusing on the issue of waste separation. Their primary aims were the following:

- Reduce water waste
- Reduce water use
- Reduce energy use
- Reduce waste
- Purchase environmentally preferable products
- Lower emissions
- Improve indoor air quality
- Reduce noise
- Monitor and document environmental performance.

In Turkey, hospitality firms outside municipality borders have to pay for waste disposal. To reduce payments, The Iberotel Sarigerme Park Resort separated the recyclable waste at its source, sold the recyclables to earn money and as a result reduced the amount needed to be collected, thus reducing costs. To reduce food wastage, the hotel sends some to farms and some to compost areas.

Wastewater discharge is minimised by reducing water use. For example, bed linens are changed weekly and waste cooking oil and grease are sold to a company where they are used in cosmetics and construction. All detergents used are biodegradable and rainwater is collected and used in gardens.

In 2007, the hotel began using natural gas, which radically decreased its LPG consumption. Energy consumption is regularly monitored which helps to identify abnormal consumption and to measure where savings have been made using efficient equipment. Guests are encouraged to follow energy-saving practices such as switching off lights or air conditioning and reusing towels and linen more than once. Products are used which require less energy than a 6.9 Volt lamp and sensors are also used to turn off unnecessary lights.

All new employees at The Iberotel Sarigerme Park Resort receive an environmental information pack which includes the hotel environment policy and guidelines on how to be environmentally friendly at work as well as at home. This is key to ensuring successful environmental management, as employees are more likely to be environmentally friendly if they know why the practices they are engaged in are important. The human resources department reviews staff annually with staff seen as the best resource questioned about their environmental practice ideas. Staff are also encouraged to identify energy-saving practises such as lowering heating when cleaning rooms and only filling dishwashers will full loads.

All goods purchased by the hotel are sourced locally, if possible, and returnable containers are preferable. Suppliers are checked by site visits to evaluate if they behave in an environmentally responsible manner and if not, a decision is made regarding continuing business. Resistance occurred when the hotel first changed its purchasing policy however, as the hotel purchases a high amount of goods, suppliers were ob-

liged to act in a more responsible way to keep their business (Ozgen *et al.*, 2008).

Critical note: This example focuses on the use of energy, waste and other resources and is good for that. However, no information is forthcoming on how it was planned, located and constructed, what impact it had on the local vegetation or cultural landscape. Nor is there information on the employment of local people.

5.6.2 Best Practice Destination Għarb (Malta)

In 2011 Għarb was awarded the European Destinations of Excellence for "Tourism and Regeneration of physical sites". Għarb is a tranquil small village situated in the west of Gozo Island, one of the Maltese island group. It is one of the oldest settlements on the island, best known for its local crafts, deep-rooted culture, ancient architecture and pristine landscapes. The local Council has always championed conservation projects. A great success story and a key achievement of the island's regeneration efforts is the revival of Wiedil-Mielaħ, from wasteland to a magnificent rural destination.

Wiedil-Mielaħ is a project that has earned success in the quest towards sustainability and eco-tourism. Wiedil- Mielaħ, which means "salty valley', now forms one of the most important landscapes in Għarb. This location combines rubble walls and valley basins with rich flora and fauna. For a very long time, Wiedil-Mielaħ was abandoned and was merely treatedas wasteland. The misuse of the site motivated the local Council to take action and revive the area. The main aim of the regeneration project was to make it an outstanding rural destination. The project included restoration of the location to its natural state and reconstruction of the rubble walls, while also making it a sought after tourist destination. The regeneration activities also included:

- Building of bridges where the road intersects the rainwater course
- Building six new dams along the valley
- Reconstruction of the stairs leading to the sea
- Landscape design of the area, including planting of trees, installation of rustic furniture and safety railing, solar energy powered security cameras, directional signs
- Publication of promotional material on what you can see and learn by following a heritage trail in Għarb and installation of visitors" audio-visual equipment and big observation binoculars

Now that the project has been completed, the Għarb Local Council is offering a new product for walking tourism in Gozo. A cultural aspect was also considered during the restoration works the valley is now included in some of Gozo's most important festivities.

The Council now expects that 0.8% of the tourists who visit Gozo to experience country walks will be attracted and actually visit the Wiedil-Mielaħ area. This project is integral to the Government's vision to transform Gozo into an eco-friendly island, that is, ,a model for sustainable living, development and environment protection'. Eco-Gozo, amongst the proposals for "Eco-Gozo':,the Government has formulated and launched an integrated plan for the management of water, including rain-water and other natural resources. The Għarb project now forms part of this initiative as after the building of the 6 new dams, these have increased the new rainwater retention and storage capacity in catchment areas by circa 7,200m^3.

5.6.3 Best Practice Destination Lanzarote (Canary Islands)

Part of Spain but geographically closest to Africa, the Canary Islands are a popular vacation destination for Europeans. Lanzarote is the easternmost of the Canaries, known for its biological wealth (nearly 100 species found nowhere else but this single island), quaint fishing villages, volcanic landscape, year-round sun and lovely beaches. In 1993 the island was named a UNESCO Biosphere Reserve, with almost half its area protected. With an economy dependent on tourism, the Lanzarote government has been careful about its development.

Lanzarote has a long history of involvement in environmental and sustainability issues. The inhabitants of Lanzarote live in harsh volcanic environment where survival has been dependent on conserving every drop of water. There is no surface water and little rain. Most of the land was covered in lava flows during the eruptions of the 1730s. Lanzarote farmers developed a unique system of agriculture by digging deep holes in volcanic ash fields and using nigh-time condensation to irrigate their crops (La Geria).

Lanzarote was the first place in the world to develop a scalable commercialized water desalination plant in the 1960s.

The local artist Cesar Manrique is widely credited with starting the sustainability movement in Lanzarote the 1960s. He worked with the Government of Lanzarote to develop seven centres of art and culture and inspired building restrictions (you'll find no high-rise hotels or advertising hoardings on Lanzarote). In 1991, the Lanzarote Zoning Plan went so far as to reverse the approval of a quarter of a million planned tourist beds. Two years later, the island was named a UNESCO Biosphere Reserve, with almost half its area protected.

Development, design and architecture are strictly controlled in Lanzarote to blend in with the landscape and cultural identity. Sustainable good practice includes:

- The large amount of protected land and marine resources in Lanzarote
- The existence of innovative and strict zoning and land use regulations to protect the coastline, traditional architecture, and sensitive environments
- Aggressive programme to reduce the number of beds in Lanzarote to a sustainable level
- The management, protection, conservation, and promotion of the Biosphere Reserve
- Pedestrianisation of coast and development of accessible paths, and cycle routes
- The voluntary standards system (SICTED) and system of Biosphere hotels
- ISO 14001 certified tourism attraction sites
- The commitment of the private sector associations and Chamber of Commerce to alternative energy and sustainability
- The high level of stakeholder collaboration and consultation in planning

Today, Lanzarote's identity is entirely connected with its position as a sustainable destination; local businesses help educate visitors on issues such as energy conservation and water consumption. The destination has made a considerable investment in cultural heritage protection, environmental conservation, land-use planning, and has a solid legal framework in place to ensure the long-term sustainability of the island.

5.7 Reflections on the Antalya area and the relationship of sustainable tourism to landscape architecture

5.7.1 Antalya region

Although tourism development in the Region of Çıralı takes advantage of its natural resources, it seems that the relation, perceptually and physically, to the sea and to the coastal front, is rather poor. Instead it has a great potential to open up towards the seashore and the sea. Enhancing its unique perceptual, spatial and aesthetic attributes the economic profit from tourism would be strengthened, through the improvement of the landscape quality, as well as by offering new facilities, such as water sports, fishing, or organized walking pathways and seating areas, in accordance to the scale and the character of the village. The latter could also extend into the mountain area with organized walking and/or climbing trails. On the other hand this could initiate or enhance a process of aesthetisation and commodification.

The cultural character of the local community is very strong. As a Muslim society, the local community is highly introverted, albeit the tendency to open up to tourism; This introversion should be highly considered and respected in any kind of tourist development, as well as in future landscape design and planning.

5.7.2 Towards a landscape approach to sustainable tourism

Landscape planning, design and management can contribute to many of the aims of sustainable tourism. Planning and research is active in tourism developments through integral rural planning, product development and more sophisticated decision-making. Nevertheless the specific added value of landscape architecture to sustainable tourism development could be much more explicitly articulated by disseminating a landscape approach to sustainable tourism. A landscape approach defines landscape as a core concept in tourism development. It includes economic, environmental and socio-cultural aspects and addresses the following issues:

- the way environmental and landscape qualities and local and regional identities provide the potential for site-specific tourism developments;
- impacts of tourism on environment, landscape and local or regional identities;
- spatial strategies and concepts as part of sustainable tourist destination development and management, based on respectful and sensible treatment of landscape, environment and identity.

The challenge is to go beyond mere restoration and prevention of negative impacts and have an eye for landscape's potential to create site-specific tourism products and destinations. A landscape approach operates on multiple scale levels and through all stages of landscape planning, design and management.

5.8 Conclusions

Tourism has become a major sector in the Mediterranean. Many coastal areas have been expansively built with hotels and resorts for mass-package tourism focused on sea, sand and sun; a development that is still going on. The impact of such developments on the environment, economies and socio-cultural identities is drastic. More recently, different forms of tourism have arisen, more locally developed, smaller in scale and aimed at different markets. The sustainable tourism workshop in Antalya scrutinized both types of tourism.

Mass-package tourism is generally considered as inherently unsustainable due to its impact on the environment, its impact on communities and its economic underpinning, whereas locally developed, small-scale tourism aimed at different markets is considered sustainable – for the environment, for local communities and for the local or regional economy.

Field visits to Kemer, a tourist village with hotel resorts, and Çıralı, an example of family-run pension-based ecotourism, organic agriculture and nature conservation all organised by local people, revealed that reality is more nuanced. There is no way that the capacity for mass-package tourism of Kemer could be reached in the small-scale local model. By concentrating impacts on smaller areas is it possible to protect and conserve more territory, and economies of scale occur when dealing with solid waste, drinking water supply and wastewater treatment. Local, small-scale developments like Çıralı on the other hand enable tourist activities to be developed with great respect of the natural environment, and the local community's way of living.

Çıralı seems to work up to now as an excellent example of sustainable tourism. But can tourism be developed much further without having too much impact on the local community? Besides this, the group was of opinion that Çıralı is yet to make optimal use of its unique perceptual, spatial and aesthetic attributes. The economic profit from tourism could be strengthened, through the improvement of the landscape quality. "Improvements" need to be made with great care and strongly supported by local community.

Critical reflections on sustainable tourism development in general put forward some issues that need attention in planning and design:

- strategic integrated planning models for tourism development in rural areas
- development of new tourism niche products taking regional structure and stakeholders into account
- empowerment of local communities
- the impacts of commodification on local communities and landscapes
- collective consciousness of local communities and their experience of place

Sustainable tourism is not normally a major subject taught within landscape architecture, but there are plenty of opportunities to introduce the subject – if not as a stand-alone course then perhaps as an integrated project over several complexity levels. Teaching material is likely to be provided from both research and practice. Best practices like the ones illustrated in this chapter may provide innovative approaches on the scale of a hotel or holiday resort, on the scale of a village or town, and on the scale of a region. The group put forward three fields of further research for sustainable tourism development in landscape planning, design and management: environmental impacts, product development, and livelihood and quality of life for local communities.

Landscape planning, design and management can contribute to many aims of sustainable tourism as defined by UNEP/WTO. Landscape planners and designers can contribute in integrated planning and decision-making processes, but their specific added value to sustainable tourism development could be much more articulated by disseminating a landscape approach to sustainable tourism. A landscape approach defines landscape as a core concept in tourism development and addresses the following issues:

- the way environmental and landscape qualities and local and regional identities provide the potential for site-specific tourism developments;
- impacts of tourism on environment, landscape and local or regional identities;
- spatial strategies and concepts as part of sustainable tourist destination development and management, based on respectful and sensible treatment of landscape, environment and identity.

It operates on multiple scale levels and through all stages of landscape planning, design and management. The challenge is to go beyond mere restoration and prevention of negative impacts and have an eye for landscape's potential to create site-specific tourism products and destinations.

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Chapter 6

Urban Landscapes and Peri-urban Sprawl

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6.1 Introduction

6.1.1 Urban growth

The proportion of the world's population living in urban areas is thought to have passed 50% in 2010 and is predicted to rise to 70% by 2050. In Europe the urban population is already much larger and it is estimated that some three quarters of the citizens of the Council of Europe member countries are already urban dwellers. Small wonder, that in global terms, the urbanisation of rural landscapes represents the most rapid type of land use change.

One way of looking at this might be so say, this is evidence of the fact that urban areas are now the human habitat of choice; but is this really the case? The trend towards people moving to urban areas in the developing world can broadly be compared to the migrations of rural population to the growing industrial cities in Europe during the mid-19th century. The reasons for this were as much the poverty and lack of opportunity provided by rural lifestyles as the lure of city streets "paved with gold'.

But whatever the balance between "push" and "pull" factors, this new demographic fact certainly provides food for thought from a landscape perspective. This is something that has been reflected in the wording of the European Landscape Convention; which is not only the first international treaty to make the landscape the centre of its concern, but is also the first to give urban and peri-urban landscapes "equal billing" with rural and natural landscapes. This calls for a new way of thinking on the part of the landscape disciplines and professions, as well as by politicians and the general public, although it has so far appeared to have had little real impact on how we think about urban landscapes.

The focus on dialogue and discussion which characterised the first LE:NOTRE Landscape Forum provided an ideal opportunity to address these issues, and the thematic group on "Urban growth and peri-urban sprawl" was the natural arena in which to consider the challenges represented by the need to reflect on landscapes of urban growth and peri-urban sprawl. To what extent can a group of landscape architecture academics find a common operational understanding of the city as landscape, above all on the basis of a relatively short encounter with the urban area in question? Reaching out for such a common understanding and developing an agreed approach can be seen as one of the key goals of the Landscape Forum.

The changing nature the city through history was memorably captured by the British architect Cedric Price in his "City as an Egg" diagram (1982). According to this analogy, the early city could be likened to a boiled egg, encapsulated in its hard shell, walled in to keep the threats of the surrounding landscape at bay. Later, when these threats subsided and the city walls had been pulled down, its suburbs spread out across the landscape in much the same way as the white of an egg spreads out when being fried in a pan. Finally, in modern times, the distinction between city centre and suburbs becomes altogether blurred, the result being an indeterminate sprawl, likened by Price to a pan of scrambled eggs.

Figure 6.1. LE:NOTRE landscape forum presentation (photo J. de Vries).

Figure 6.2. LE:NOTRE landscape forum presentation urban (photo Akdeniz University).

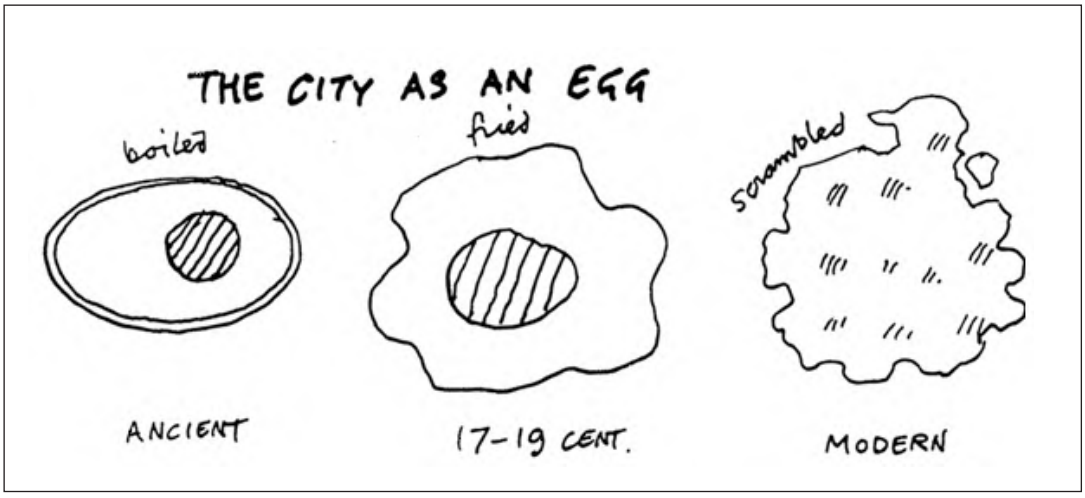

Fig. 6.3. The British architect's Cedric Price's "City as an egg" diagram – but where does the urban landscape start and end in each case?

This (1982) model, which considerably pre-dated concepts such as the "*Zwischenstadt*" (1997), is also much quoted in the writings on landscape urbanism, and indeed from a landscape perspective, there is a need to investigate how and where the landscape fits into the urban models of which Price's diagram is composed, if only in order to respond to the requirements of the European Landscape Convention, which calls upon all signatory states to "identify" their (urban and peri-urban) landscapes.

6.1.2 Urban landscapes terms and concepts

Urban landscape may be a term which has come to prominence through the European Landscape Convention, but it is not one of the terms which the Convention bothers to define. It can, perhaps, be seen as the broadest of generic terms which is used to describe an area of landscape which has been "overrun" by urban development. In this case it can be interpreted as including all of the built elements which have become part of this new landscape. Or does it just refer to the non-built parts of the landscape? Yet if *green roofs* and *facade planting* on building and other structures are also considered as being part of the urban landscape, then this suggests that the urban landscape must indeed include the buildings and structures within towns and cities too.

If we wish to refer just to the non-built parts of the urban landscape, these can be more usefully collectively described as *urban open space*. This term is to again to be understood as referring to a broad generic concept which encompasses *streets* and *urban squares* as well as all other *transport corridors*, but also the *external spaces* associated with other land uses, be these residential areas, schools and hospitals or office buildings. If urban open space refers collectively to all outdoor spaces in towns and cities, then it is often useful to distinguish public open space from that which might be in other ownerships. The term *public open space* is also usually used to refer to open spaces which are freely publicly accessible. These may or may not be synonymous with the concept of the *public realm*, however this tends to be used more frequently to the totality of urban squares pedestrian streets which are characterised by paved surfaces, and is a term which has its origins in the fields of architecture and urban design. If our attention is directed only to those open spaces which are broadly characterised by their high proportion of vegetation, then we can collectively refer to these as *urban greenspace* (or *urban green space*).

As is the case with urban open space, urban green space also covers a multitude of landscape types, the simplest division of which may be between *natural greenspace* and designed parks and gardens. Natural, or *semi-natural green space* may be have various possible origins: they may be relics of the former *rural landscape* – either agricultural landscapes or areas of natural vegetation, such as forest or marshland, which have somehow become enclosed within the urban fabric and have remain un-developed, possibly due to their poor accessibility and which in the urban context acquire a new importance for recreation and/or nature conservation. Alternatively, they may be sites which were previously built on, but

which now are no longer in use, their buildings and structures having been demolished and spontaneous vegetation having become established on them again. Such areas of *derelict land*, which can possibly be *contaminated*, may also be known as brown *field sites*, in order to distinguish them from sites which have previously never been built upon. Such *green field sites* are more likely to be found as part of the peri-urban landscape rather than within established *urban areas*. Natural or semi-natural green spaces and their spontaneous vegetation are often seen as the province of *urban ecology*. This considers not just *urban wildlife*, but also takes a strategic view of *urban habitats*, which may be more technically referred to as *urban biotopes* and the first stage in this strategic approach may well involve urban biotope mapping. Further natural sciences approaches to the urban landscape focus on urban climate and phenomena such as the *urban heat island* effect and *urban hydrology*, considering *river corridors* and their associated *flood plains*.

But a descriptive approach to *urban green space* is just the necessary starting point for *open space planning* and management, which in turn needs to be based on an over-arching *open space policy* – a set of goals and guiding principles according to which open spaces are provided, organised and managed within any administrative jurisdiction. Two basic approaches to the development of a holistic *urban open space structure* can be identified: *demand-led planning* starts from the consideration of the needs of different *user groups*, while a *supply-led* approach to planning starts by considering the existing provision of parks and other *public open spaces*. Open space policy can also try to influence the provision of private open space, by using *planning conditions*, and/or *grants* or other incentives to influence the behaviour of private landowners

One specific approach to demand-led planning is based upon defining widely applicable *open space standards*. These attempts to set out a quantitative level for the minimum provision of different types of open space by relating a certain area of open space to a certain number of people. Such *quantitative standards* may be expressed, for example, in terms of hectares per 1000 of the population or as m^2 per person. One of the dangers of such *minimum standards* is that in practice they frequently tend to get interpreted and applied as maximum standards!

Because they start from assumed *user needs*, demand-led approaches are also concerned with the accessibility of open spaces to particular *user groups* in terms of the distance of different open space types from peoples" front doors, either expressed in terms of physical distance or in terms of time taken to reach the open space concerned. Reversing this approach they can be seen to include ideas of *catchment areas* for different types of open space.

Supply-led approaches often use the level of *open space provision* in relation to a recognised *open space typology* as their starting point. This encompasses the idea of *open space hierarchies*, based on a range of types and sizes of parks and open spaces, defined on the basis of the geographic areas which they serve and by their size and sometimes by the level and types of *sports and recreational facilities* which they offer. According to such hierarchies, at the top level a town or city may have one

Figure 6.4. Local park in Antalya (J. de Vries).

Figure 6.5. Atatürk Park, a typical Mediterranean city park in Antalya (V. Ortaçeşme).

large *metropolitan park* or *town park* (or *city park* depending on the size of the urban settlement in question). On the next level down there may be a number of smaller *district parks*, followed by a still larger number of yet smaller *local parks*, down to the lowest level which is usually seen as the *neighbourhood park*, which as their name suggests are expected to be found within every neighbourhood, at only a short distance from home for all urban residents. Two other important types of parks and green space do not entirely fit into this hierarchical concept. These are *pocket parks* and *linear parks*. Pocket parks are usually very small and tend to be located in more central areas, where land values are high and where small open spaces are nevertheless of importance for the short-term recreation for people working in or visiting these areas, rather than for residents. While linear open spaces are important in that they provide connections between other spaces, whereas their overall area and usability is itself not such an important consideration.

Parks and individual green spaces can usefully also be seen as integral components of an inter-connected green space system or green network. A *green space strategy* can be a mechanism for implementing a system of green spaces. Such a green space system is usually composed of a series of inter-linked linear and or circular green spaces within which individual parks and green spaces are embedded. They may correspond broadly to either *concentric or radial models*, or they may form a *green grid*. The most familiar component of these is embodied in the *greenbelt* concept, in which a wide swath of green space surrounds an urban area with the aim of enclosing it and limiting its encroachment into the surrounding countryside. From here, linear *green corridors* can radiate towards the centre of the town or city. Circular green space structures may be of different scales, with a *green ring* often being retained as a public open space around a former mediaeval town centre following the demolition of the city walls. Other intermediate green rings may reflect the state of development of an urban area at a particular time when new parks and green spaces were created on the periphery of the town, which then later went on to expand beyond them. Smaller linear and/or radial elements of urban *green structure* may be termed, *green wedges*, green axes or in cases where they are more symbolic than substantive may be referred to as *green links*.

These terms are used to describe what is often a largely schematic, physical green space structure or network running though the *built fabric* of a town or city. But many functions are also associated with these structures. When considered from an ecological point of view the concept of *urban green infrastructure* is often used to describe a system which is able to deliver a range or *ecosystem services* to the urban area in question. An even more holistic functional view of the *urban environment* involves an *urban metabolism* approach which focuses on the flows of all types of materials and energy through the urban system. Connected to this concept is the idea of the *ecological footprint* of an urban area which spreads out, not just across the immediate rural hinterland, but across the whole of the globe, or at least those areas from which materials and energy are imported and exported to and from the city. Other important functions of urban green space include *social* and *societal functions (leisure and recreation, contact and communication)* as well as structural and symbolic functions, especially in relation to the *meanings and values* which open spaces can signify as well as their ability to enhance *legibility and orientation* for people moving though the urban area.

Cities develop strategies for *sustainable urban planning* and *design* that focus on people and the environment; one that can be used for a long time, continuing to meet requirements that occur throughout that time. Actual factors to take into account are climate change, flooding, sea level rising, extremes in rainfall resulting in droughts and peaks in run-off water. The way the *green infrastructure* is organised can contribute to a healthy urban ecosystem, enhancing biodiversity, energy saving and good living conditions for inhabitants of cities. One of the aims is to contribute to diminish the emission of CO^2. Sustainability revolves around principles and values, giving people an appropriate role in the earth's natural cycles and a fair distribution of welfare. People are becoming aware that that a sustainable approach can cut costs and can even be profitable.

A final issue which needs to be addressed here is that of the definition of the urban and peri-urban area itself. This is especially important when the aim is to undertake some kind of comparative study. This is a particular issue in relation to considering the urban and peri-urban landscape, as deciding where these

begin and end is critical in being able to make useful statements about them. The obvious way to define the urban landscape would seem to be to consider everything that lies within the *administrative boundaries* of the town or city concerned. However, there are at least three reasons why this usually does not work: firstly the location of the administrative boundary in relation to the physical extent of the urban area is usually largely a matter of historical accident and consequently differs significantly from city to city and town to town. Secondly even within one city the boundary of urban development is in a constant state of flux, with the direction of change depending on whether we are dealing with a growing or a *shrinking city*. Lastly, the urban area is likely to have a significant sphere of influence outside of its administrative boundaries, a fact which will shape and define the extent and nature of the peri-urban landscape. One common alternative to looking at the extent of the urban area/landscape from an administrative point of view is to attempt to define the *functional urban area*. This usually focuses on an economic definition of the town or city in terms of the catchment area for commuters who travel into the city to work, and which forms a single property market. At the other end of the spectrum, it is also possible to look at the urban area in terms of its de facto extent, irrespective of where the administrative boundaries lie. Such an approach defines what is known as the *urban morphological zone*.

To address this problem, within the context of the European Union funded PLUREL Project (part of the 6th Framework Programme) an attempt was made to develop a consistent and objective method of defining the structure of what are described *as rural--urban-regions*, which encompass six different zones from the *city centre* at the heart of the *urban core* to the outermost *rural hinterland*.

While this latter zone is not to be considered part of the peri-urban area, the peri-urban area, which corresponds to the peri-urban landscape, is defined as being made up of two zones combining the *urban fringe* and the *urban periphery*. This approach is a more differentiated one than the simple description of this

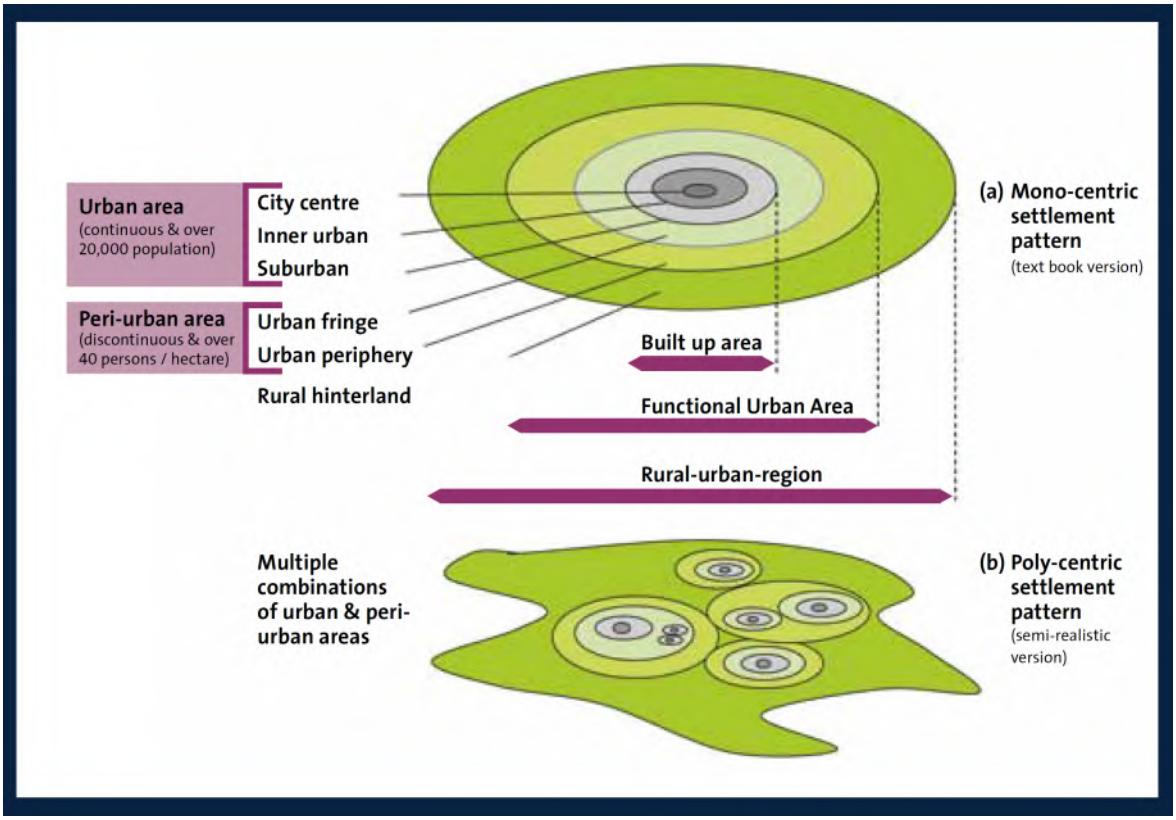

Figure 6.6. Peri-urban areas & the rural-urban-region, Geographic concepts & definitions as used in the PLUREL project (source: Piorr, Ravetz,& Tosics, 2011).

zone as being characterised by the emotive but imprecise term: urban sprawl. Clearly neither the fried egg nor the scrambled egg are sufficient to describe the contemporary complexity of the urban and peri--urban landscapes!

In the PLUREL model, the *urban area*, and thereby by implication also the urban landscape comprises the inner three zones: the *city centre*, the *inner urban* and the *suburban zone*. Each of these are likely to be characterised by a number of specific *urban morphology* types, which will in turn be made up of a typical combination of *built fabric* and *open space types*.

Armed with this conceptual and terminological toolbox, based on a broadly conventional approach to urban open space, we can now look at how well these ideas can be translated to the urban and peri-urban landscapes of Antalya, how they can be used to understand and interpret it, and how they might be used to develop possible scenarios for its further development.

6.2 Introduction to the urban landscape in Antalya

6.2.1 Background and context

Understanding the urban landscape from a holistic point of view requires us to consider the interaction between the dynamics of the growth of the urban area over time, and the existing landscape structure in which it develops.

As we have learnt previously, much of the growth of Antalya has been rapid and recent. The figures quoted in Chapter 2 indicate that the population has, on average, almost doubled every ten years since 1950, when the city had a population of 27,515 and an area of only 2.7 km² and was presumably largely concentrated around the old town. In 2010 at the last population census 1,046,878 people lived in Antalya city. Whatever form this urban development took, it would have had a massive impact on the urban landscape. Given the period and speed of the urban growth, one might expect that, according to Cedric Price's, only slight "tongue in cheek" model, there would have been a jump directly from the boiled egg model of the old town to the scrambled egg model of the current city, but largely missing out the suburban expansion of the "fried egg" stage.

So exactly how did the region surrounding the old town become transformed into the urban landscape of Antalya we see today? What were the main drivers of growth; where did this growth take place first and according to what "laws" – natural or human - did it occur? Above all: what were the implications for the development of the urban landscape?

To summarise the process described previously, the first phase of development during the 1950s and 1960s involved investments in the agricultural sector with the establishment of cooperatives for marketing cotton and citrus fruits. Here it could be expected that these developments would take place largely in the urban periphery, maybe concentrated around existing rural settlements, while investment in other industrial centres also generated new development and attracted new population from other parts of the country closer to the core of the old town. The role of the landscape within these considerations is not likely to have been very significant, with little attention being given to green or open space planning considerations, especially as this was not yet formally an issue as far as land use planning in Turkey way concerned, but it is also rarely a concern in what is perceived as a rural area.

The growth of Antalya originates from a very attractive climate and rapid economic development of tourism. The major change in the scale and speed of urban development took place with the decision taken at the national level to designate Antalya as a priority zone for tourism, which happened as late as 1982, initiating a boom in construction activity. As well as focussing development in an extended linear strip along the coastline, an important landscape impact in itself, this had the additional effect of significantly increasing the number of people spending time in the city above and beyond the resident population.

So successful has been the promotion of tourism in Antalya that the city was the fourth largest tourist designation after Paris, London and New York, with a total of 9.3 million visitors in 2010.

Even if a significant proportion of these guests do not venture out much from their all-inclusive hotel complexes, the overall environmental quality of the city and its region and in particular the "image" of the urban and peri-urban landscape must have gained in significance. The rapid tourism-fuelled growth of the city, and the associated expansion of the necessary infrastructure: the airport, harbour and highways, meant that the provision of green spaces and the natural landscape resources on which this could be based may not have been given a very high level of priority. Indeed it is true for most cities that the areas which remain as open spaces during periods of rapid urban expansion are usually those which for some reason or another cannot be built upon, and Antalya is not likely to have been an exception in this respect.

The study of the European Environmental Agency on urban sprawl defines the drivers of urban sprawl (EEA, 2006). Global socio-economic forces are interacting with more localised environmental and spatial constraints to generate the common characteristics of urban sprawl evident throughout Europe today. At the same time, sprawl has accelerated in response to improved transportation links and enhanced personal mobility. This has made it possible either to live increasingly farther away from city centres, while retaining all the advantages of a city location, or enabled people to live in one city and work in another.

The mix of forces include both micro and macro socio-economic trends such as the means of transportation, the price of land, individual housing preferences, demographic trends, cultural traditions and constraints, the attractiveness of existing urban areas, and, not least, the application of land use planning policies at both local and regional scales.

Overall, evidence suggests that where unplanned, decentralised development dominates, sprawl will occur in a mechanistic way. Conversely, where growth around the periphery of the city is coordinated by strong urban policy, more compact forms of urban development can be secured.

In Antalya city we can see a combination of more compact planned urban development areas and squatter areas or less regulated peri-urban sprawl. The last especially in areas where there is a mixed use of agriculture and on locations with low density, suburban housing. Even within the planned city areas there are several non-used allotments.

According to the PLUREL report (Piorr, Ravetz & Tosics, 2011) the sprawl of chaotic and uncoordinated urban land use is the largest single threat to sustainable peri-urban development. It can be characterised by a conflict between private interests and common goods (values). This involves the striving of individuals for improved environmental quality and for low rise residential housing that can only be satisfied at the expense of public goods, such as high quality green areas and clean air. This situation, well known in game theory as the "Tragedy of the Commons", is one type of market problem that can only be handled by public interventions. To ensure sustainability in the rural-urban regions – especially in the peri-urban areas – land use changes and new developments have to be controlled, managed, or in some way coordinated by the public sector. An urban landscape structure of high quality that is valued and well-used by inhabitants contributes to a sustainable framework for cities, at least in part because it does not provide residents with grounds to move out of the city in search of higher environmental quality.

6.2.2 Main Biotopes of the City of Antalya

Landscape is an area as perceived by people whose character is the result of the action and interaction of natural and/or human factors (Council of Europe, 2000). Hereby the term action and interaction between natural and human factors allows us to understand the variations within landscape. Landscape diversity may refer to variations in landforms and vegetation in the case of natural landscapes and to the variety of cultures in time, or land use density in space in the case of cultural landscapes.

Soil types

One important determinant of urban pattern is the distribution of soil types in the area. Usually there is some protection of soils that are well suited for agriculture: the alluvial soils are the most productive and there one finds the original agricultural settlements.

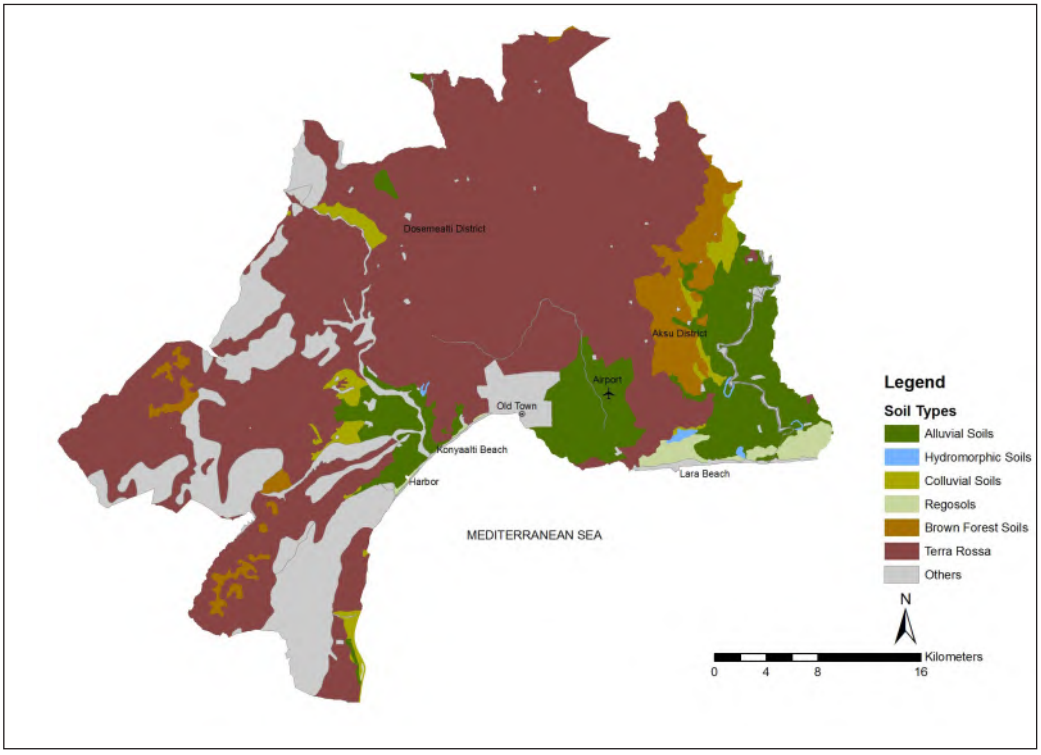

Figure 6.7.
Map of soil types in Antalya (source Anonymous, 1993).

The interaction of soil, development of the vegetation and land-use results in the presence of different biotopes in the urban area. The biotopes of ecological importance in urban environments are usually under pressure from factors such as urbanisation, air pollution, human disturbance, etc. For this reason the mapping of biotopes can provide an important tool for urban planning and management and is of importance for the protection of these biotopes for future generations. The biotopes in Antalya city were investigated in a study by Mansuroglu, Ortaçeşme and Karagüzel.

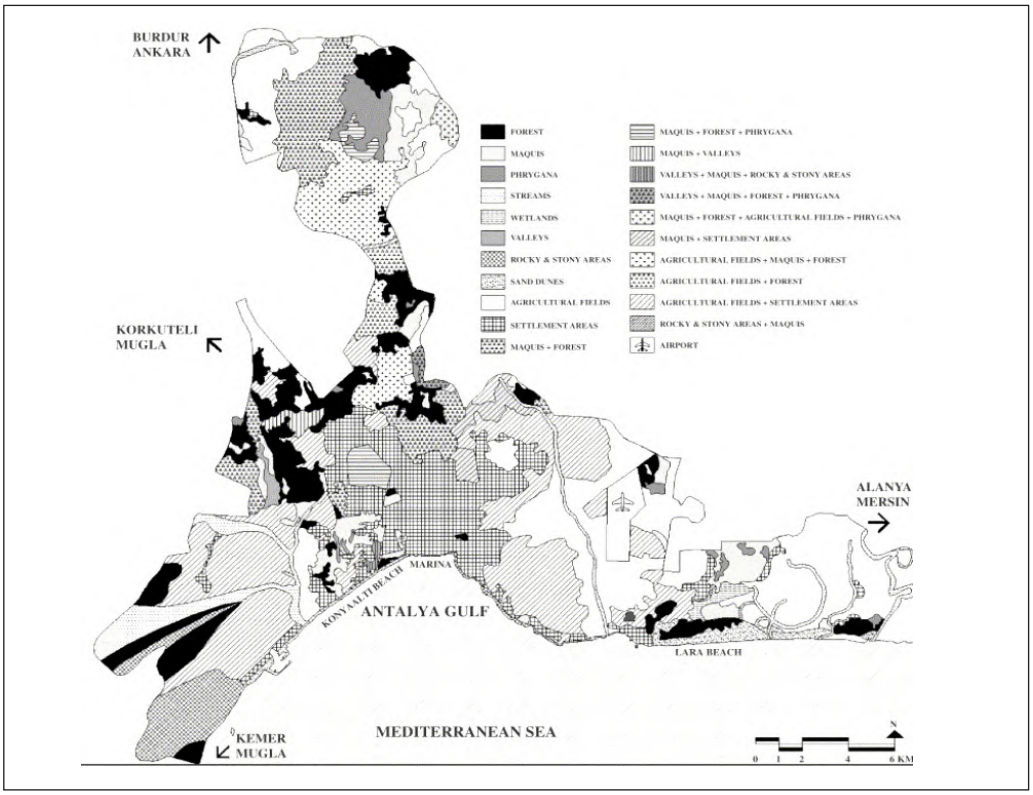

Figure 6.8.
Biotope mapping of Antalya (Sibel Mansuroglu, Veli Ortaçeşme, Osman Karagüzel, 2006).

The selective biotope mapping method was used and major biotope sites were determined by the interpretation of panchromatic aerial photographs, with the data being verified by field mapping. A sensitivity assessment based on two parameters, the rarity and the re-establishment potential of biotopes, was made as this was considered to be important information for urban planning and management. According to the results of the assessment, the majority of biotopes in Antalya city were found to be sensitive or very sensitive. It was concluded that insufficient legislation, the lack of an ecological urban planning approach and poor urban management are the most important reasons for today's pressures on urban biotopes.

Although the pace of urban development and the construction of built up areas is speeding up, there are still many ecologically important biotopes to be found within the city. There is a complex of ecosystems of coast, rivers and estuaries, dunes and cliffs which contain valuable biotopes. These have now been given a formal conservation status in the recent development plan for the city.

Nevertheless, these biotopes are still threatened by waterfront development and plans for housing, tourism, second homes. The maquis and phrygana (garrigue) biotopes are rapidly disappearing and protection and reconstruction of these biotopes is needed. The river system is influenced by the spread of built up areas (resulting in the faster run-off of rainwater) and quarrying. In some places the bed of rivers and streams has become too narrow. Peri--urban sprawl is taking place in particular in areas of high agricultural valuable to the west and east of the central city. Further planning and regulation of urban development should ideally be based on the existing ecological structure on order to preserve the ecologically important biotopes.

6.2.3 Impression of the area by the workshop participants

Part of the analysis of the city of Antalya took place as a result of a field trip in order to experience directly the landscape structure of Antalya city and to discuss with local experts the main challenges for urban development.

Four sites that represent characteristic areas in the city were visited (see Figure 6.9):

- The Ataturk Culture Park that is part of the main green structure of the city.
- The Kepez Santral quarter, which is a typical example of squatter settlements that are now being redeveloped. In this quarter there is a new urban improvement initiative and the metropolitan municipality has opened an office for public participation. There is a strong tradition of public participation based on the Local agenda 21.

Figure 6.9. Sites of the field trip of the LE:NOTRE Landscape Forum (Google Earth, 2012).

- Dosemealti – Yeniköy, a new satellite town with a newly planned industrial area nearby. Dosemealti is a characteristic example of a mass housing area in Antalya.
  Dosemealti is the biggest district and has still the smallest population of 42.433 in 2010. The plan was to develop houses for 450.000 inhabitants, but with the new integrated planning for the whole metropolitan area of Antalya the expectation is set at 250.000 inhabitants. In the new master plan of 2008 there is more space allocated for business areas.
- The old town (Kaleiçi area) with its historic harbour walls.

During the field visit, presentations were given by local experts (see box) and during the workshop the actual metropolitan master plan was explained. The master plan takes into account the protected sites and ecologically valuable areas. No building and development is allowed in these areas. There is a zoning plan which also defines agricultural functions, on the fertile soil classes. For the new built up area a waste water treatment is planned.

The visiting landscape architects taking part in the Forum had the following first impressions on the basis of the field trip.

Figure 6.10.
Explanation at the Kepez coordination centre (photo J. de Vries).

Figure 6.11.
Field visit near main ecological zone in Antalya.

Local experts who accompanied the group during the field study are:

Ms. ***Özlem ALPASLAN****, urban planner, department chief of the Earthquake and Urban Renewal Directorate of Antalya Metropolitan Municipality, Ph.D. student at the Department of Landscape Architecture*

Ms. ***Ebru MANAVOGLU****, urban planner, private planning office owner, head of the planning commission in Local Agenda 21, part-time lecturer at Akdeniz University, Ph.D. student at the Department of Landscape Architecture*

Main landscape features

Antalya has a series of strong landscape features: the mountains, the coastal cliffs, the beaches and dunes, the system of rivers and streams with estuaries and the agricultural landscape. The coast, the range of mountains and the ridge between the two levels of the coastal plain form an attractive and structuring framework for the city.

In the urban landscape there are valuable cultural sites: the historic city and archaeological sites as well as the traditional agricultural landscape. Due to Antalya's rich history there are many different layers of cultural heritage.
Parts of these landscape features are threatened by urban development.
The unique landscape features, especially the seascape, are attracting tourists and should be valued during the development of the city.

Ecological infrastructure and nature areas

The ecological corridor that crosses the city from east to west in the north is an advantage for the green system and natural landscape protection.

Forests are quite well protected, but the infrastructure of forest, maquis and phrygana could be strengthened. The main infrastructure of motorways forms barriers within the ecological infrastructure. Quarrying and construction of houses also threatens the integrity of the existing ecological infrastructure.

The borders of natural areas such as riverbeds, marshlands, dunes, maquis and phrygana are not very clearly defined in the urban landscape, and therefore not always respected by constructors and users of public space. The borders are in many cases in backyard situations.

Figure 6.12. Almost everywhere in the city the mountains and hills form visible landmarks for orientation (photo J. de Vries).

Figure 6.13. Quarrying in the river areas (here Sarisu) effects the natural processes and may increase flooding and temporary pollution (photo J. de Vries).

Figure 6.14 Main ecological zone near Kepez (photo J. de Vries)

Figure 6.15 Borders of (semi)natural areas not well defined in the landscape (photo J. de Vries).

Rivers and coast

The visibility of the elements comprising the system of watercourses is not very strong. Rivers and streams are often bordered by left-over spaces or the back yards of houses.

The busy traffic along the Konyaalti beach acts as a strong barrier to access. Due to growing use and demand of water, the natural waterfalls are becoming smaller and less visible in the landscape. In places where the residential areas expand, the size of the river bed is narrowed, which diminishes its water carrying capacity and ecological function as well as its visual significance; for example in the southern part of the Aksu stream.

Green infrastructure

The parks and forests represent strong components in the green infrastructure, but the connectivity between sites and patches is weak. In new developments there is a need for adding new green areas on different scales: green zones, parks, pocket parks. The small parks are important to enhance social cohesion. The layout, vegetation and planting of the existing parks could be better adapted to the local climate.

Road infrastructure and transport

The city is dominated by motor traffic and its related infrastructure. For a city of over one million people (and in the holiday season many more additional tourists) an extension of the public transport system by tram, free bus lanes can help to reduce traffic jams, the barrier effect caused by roads, as well as noise and pollution. The development of new roads offers opportunities to improve the adjacent green areas and the quality of landscape features.

Figure 6.16. Extension of the tram system is important to reduce growth of motor traffic, e.g along Konyaalti beach (photo J. de Vries).

Figure 6.17. Character of the lay-out of junctions helps orientation in the city (photo J. de Vries).

Figure 6.18. Unplanned development has a stronger identity and sense of place (photo J. de Vries) .

Figure 6.19. Empty allotments might have a temporary use in order to improve micro climate, recreational value, quality of life in the city (photo J. de Vries).

There is not very much difference between the main roads in terms of their visual identity, however the difference in form of the main junctions does help with orientation.

Built up areas and empty allotments

Apart from the historic city and the areas of squatter housing, which both benefit from clear sense of identity and a human scale, the building types of the new developments are very monotonous. There is a need for strengthening the identity and characteristics of the different neighbourhoods. Within the new city areas there are still empty allotments and these might be used for permanent or temporary green amenities or urban agriculture.

Figure 6.20. Recreational route alongside road dominated by traffic and not connected to landscape features (photo J. de Vries).

Walking, cycling and recreation routes

The main infrastructure forms strong barriers for walking and cycling paths and other recreational routes, although parts of the recreational routes are very attractive. However in some sections the routes are combined with roads with intensive motor traffic, e.g. the route along Akdeniz Boulevard. Overall there is a lack of a continuous network of recreation routes connecting different parts of the city with the coast and the coastal route is discontinuous, especially in places where there are changes in the urban landscape pattern.

Cultural landscapes: historical centre, sites of archaeological value

The cultural landscapes in the city are important for giving a sense of identity and are attractive for both residents and tourists. The orange plantation in the Çakırlar area is well protected, but in other areas the agricultural landscapes are under threat from urban development.

Participation and concertation

There is a solid tradition of public participation, building upon local traditions and the Local Agenda 21. However residents could be more closely involved in the design and development of the quality of public open space, recreation routes and parks.

Figure 6.21 Attractive esplanade at the east side of historic city of Kaleici: strengthening continuity of the recreational coastal zone route adds to the quality of the city (photo J. de Vries).

Figure 6.22 Agricultural area with development of housing (J. de Vries).

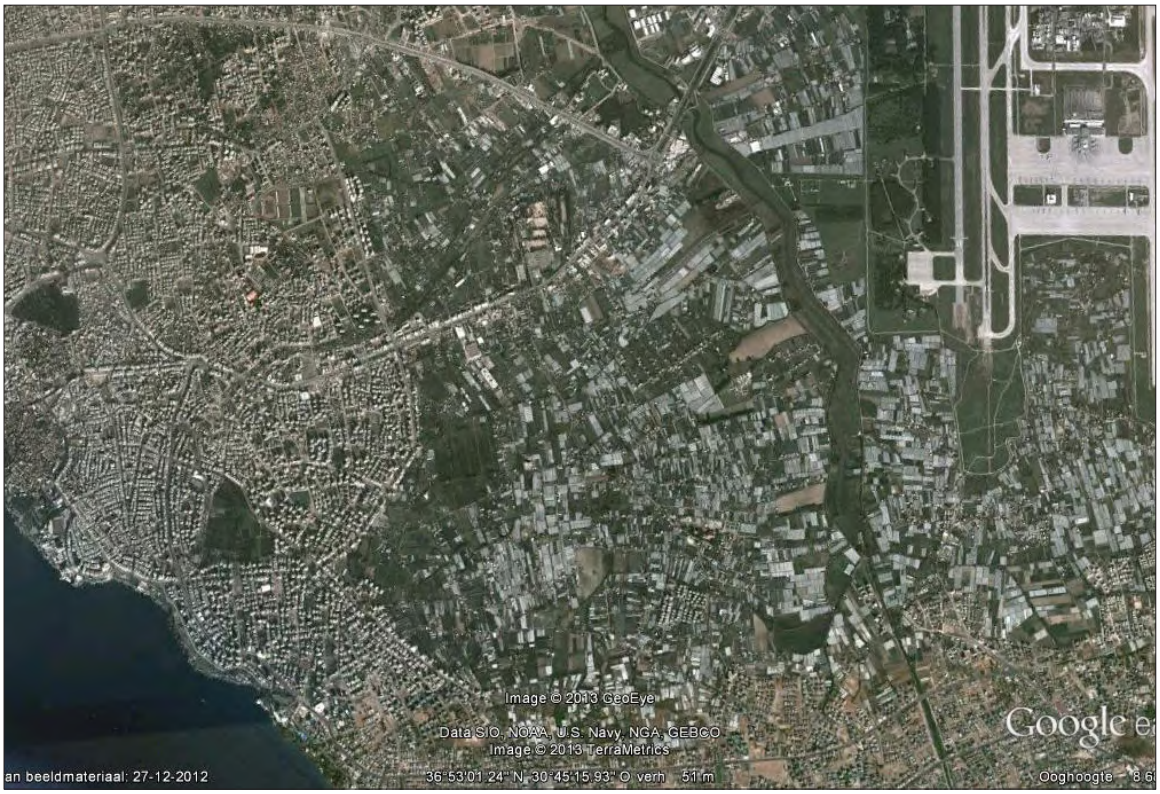

Figure 6.23. Aerial view of agricultural area with unplanned densification of housing and greenhouses (Google Earth, 2012).

6.2.4 Main issues facing the urban growth in Antalya

Local experts provided further information during the workshop sessions. A huge step in the planning process is the new metropolitan master plan that improves the fragmented planning of the municipalities. Still there is discussion between the different planning authorities because some issues fall directly under the responsibility of the national government: e.g. the tourism zones, the national road and railway infrastructure and some aspects of coastal management. The Antalya master plan and strategic plan was discussed. The most important drivers are the planned development of new residential areas, industrial sites, business areas and the infrastructure of roads and railways. Besides this there is still uncontrolled development in the remaining maquis, phrygana and agricultural areas.

The main issues concerning urban growth and peri--urban sprawl are:

- Protecting and building on existing landscape qualities and landscape features
- Controlling peri-urban sprawl in order to make sure that the ecological and green infrastructure is protected.
- The need to increase the density of development in order to be able to allocate sufficient space for green amenities and recreation areas.
- Strengthening and protecting the ecological infrastructure and the quality of existing biotopes.
- Reducing landscape fragmentation and minimising barriers caused by road infrastructure.
- Improving the continuity and quality of recreational routes for walking, cycling, jogging, skating and other activities.
- Limit the domination of urban open space by motor traffic.
- Make sure that the green areas are better adapted to the Antalya climate: warm, dry in summer, in order to minimise the need for irrigation.

6.3 State of the subject from research

Urban sprawl is defined as "the spreading of urban developments (as houses and shopping centres) on undeveloped land near city" (Merriam-Webster, on--line dictionary, 2013).

Urban sprawl and the generalised dispersed model of the development is defined by several characteristics: lower urban densities, high losses in non-urban land covers, depopulation of the city centres or metropolitan cores and increasing importance of single family housing followed by expansion of transportation infrastructure. The areas formed as a consequence of the **urban sprawl** are seen as being in contrast to the **compact city**, which is characterised by a high density of development and its multifunctionality (Ewing, 1994, 1997). The urban sprawl phenomena was firstly observed and described in the twenties of the twentieth century in United States of America, and later on in the seventies of the twentieth century in Europe (Litwińska, 2001, Gutry-Korycka, 2005, Torrens, 2006).

The debates on the structure of cities have become strongly polarized between advocates and opponents of the compact and of the dispersed or "sprawled" city. Catalán, Sauri and Serra (2008) argue in their paper that such situation may be the result of excessive concentration on the study of the American experience and the neglect of other urban context.

The process of urban sprawl is complex and multidimensional. It is affected by transformation of transportation (mass motorisation and increase in range of contacts), modification of housing needs standards, relocation of industry towards the outskirts of the city, but also by the modernisation of agriculture (resulting on a lower demand for agricultural land together with the achievement of higher crops yields at the same time). Some authors treat the urban sprawl phenomena as urbanization process that modifies existing development model of metropolitan areas into new standard reflecting modern conditions (Litwińska, 2010 after Zipser, Sławski 1988).

The results of urban sprawl are very extensive and they relate to many branches of human life (Batty, Xie, Sun, 1999; Ewing, 1994; Galster *et al*., 2001). Amongst most common effects, authors refer to:

- ecological character (the consumption of agrarian and forest land and open spaces, higher level of energy expenditure and increased car pollution);
- economic character (higher transport cost and cost of roads construction, addiction to individual transportation, lower investments in city centres, land speculations);
- social character (loss of social bonds between city dwellers, social segregation, conflicts between "new" and "old" dwellers);
- aesthetic character (devastation of the landscape, chaotic or monotonous architectural development).

Moreover, the urban sprawl can also result in lower city incomes from taxes, as wealthy citizens move out to the peripheries (Nelson, Sanchez, 2005).

In the majority of studies and papers on urban sprawl, the described phenomenon is negatively assessed, however it should be mentioned that amongst those negative evaluations, there are also opinions stressing the positive consequence for individuals, such as the improvement in housing standards (which are seen as even being worth paying for with longer daily commuting times) (Litwińska, 2010).

Urban growth and peri-urban sprawl is a topical theme for research. This focuses on the planning and design process, the participation of the public, the abiotic and ecological aspects, landscape and ecological fragmentation, sustainable urban development, the perception of the urban landscape and quality of urban open space. Current political considerations are also clearly influencing the research subjects, resulting in a growing number of studies relating to climate change, water management, flood prevention, biodiversity and low energy development.

Relevant overall studies include the report of the European Environment Agency on urban sprawl (EEA, 2006) and the final report of the EU 6th Framework project PLUREL (Piorr, Ravetz & Tosics, 2011). The European Council of Town Planners developed a guide for sustainable spatial planning and laid down the principles in the New Charter of Athens. Landscape studies concerning urban areas are performed by many universities. From the discipline of urban planning approaches are developed to integrate landscape aspects into urban planning, e.g. the papers collected

in the Landscape Urbanism reader (Waldheim, 2006) and Landscape Urbanism – large scale architecture, ecological urban planning or a design based research policy (Lindholm, n.d.). The landscape architecture approach to urban planning goes much further and includes ecological processes, social aspects and perception. This is discussed in the Ten Tenets and Six Questions for Landscape Urbanism (Thompson, 2012). The basis of the landscape approach in urban as well as rural areas was laid out by McHarg's Design with Nature (McHarg, 1969).

For the ecological aspect of urban planning studies have been carried that relate to landscape fragmentation (Lindenmayr & Fischer, 2006), biotopes (Mansuroglu, Ortaçeşme, Karagüzel, 2006). For infrastructural projects there are many Environmental Impact Studies and methodologies for Environmental Scenario Planning.

In the Turkish context, research on urban open space and parks relates to environmental aspects, for example in Landscape Design Approach in the Revision of an Environmental Sensitive Urban Park (Ortaçeşme et al, 2004). The participation process of the Antalya Atatürk Park is studied in Revision of Urban Parks and Public participation (Sayan *et al.*, 2003).

The planning process of Antalya has been investigated in Critical Barriers to Rational Planning Processes for Coastal Zone Management (Kaya, 2006).

Currently at Akdeniz University two Ph.D. studies are about to be published. First a multi-criteria evaluation of green spaces of Antalya city and the development of green space planning strategies and the second refers to the development of an energy efficient urban planning model for Antalya.

Methods

Landscape architects have a rich toolbox for researching, planning and designing urban landscapes. For planning, designing and managing urban growth the following methods are the most relevant: the layer method, landscape classification and visual landscape analysis.

Layer method (Vroom, 2006)

The natural stratification of a landscape is caused by geological forces which, over time, have added layers of rock, soil and water bodies, on top of which natural vegetation and wildlife have developed and man's settlement patterns have been established.

Put simply, a landscape may thus be described as constituting three layers: the physical, the biotic and the human. These can themselves be divided into a number of specific layers (McHarg, 1969). The top, anthropogenic layers, can in turn be divided into older and younger settlement patterns. Still visible, often just below the surface of the land, are traces of the past, such as old land parcels, fossil roads, ruins and other relics. These are connected by memories, legends and stories. Urban centres can also be built up in a series of layers, underground as well as on the surface – that are made to form an interactive ensemble, thereby prompting multiple land use.

Each layer influences the spatial considerations and choices with respect to the other layers. For too long, we have considered urbanisation, tourism, agriculture and other forms of occupation as separate, unrelated elements, without sufficient consideration to the demands created by the other layers.

Water also sets intrusive constraints on long-term sustainable spatial planning. Slowly developing trends such as rising sea levels, changes in precipitation and temperature force us to change the way we think about water. We need to give much more consideration to the properties and functions of the surface layer and the network layer, as well as the structural significance of both layers. In the planning stage, the processes in the different layers need to be considered more in relation to each other. This can prevent conflicts between different users of the same land, as well as creating greater coherence in the measures to be taken. After all, intervention can serve more than one landscape quality objective at the same time.

By analysing all layers and the underlying landscape processes and integrating these in a design or planning proposal, landscape architects make sure that new developments are based on a holistic approach that takes into account all landscape values.

Landscape classification

There are a number of different approaches to landscape typology and systems for landscape classification (Lipský, & Romportl, 2007). As a result, landscape can be categorised according to a wide number of classification variables ranging from climatic, cultural or land use, although few of these are directly applicable to urban areas. Otherwise, these elements play a fundamental role in site assessment and modification, because they each highlight an aspect of the sites limitations and potential.

The type of classification and the criteria that are applied depend on the aims of the landscape analysis. In most cases the classification is based on the different landscape layers: abiotics, ecology, settlement structure. Other aspects that can be used for the classification are land use patterns, visual and spatial aspects, cultural historical values and in urban areas the typology of buildings and parcelling. An urban landscape can be subdivided depending on the functions, parcelling and building typology (detached houses, multi storey blocks, multi storey apartment buildings, high rise).

Defining the different types of landscapes with their attributes and values provides a basis for an analysis of strengths and weaknesses, opportunities and threats from which planning objectives can be developed. To each landscape type a set of characteristics can be attributed, which are important for protection, development and change.

For the Antalya case study a distinction was made between urban landscapes, rural landscapes, tourism landscapes, historical landscapes, mountain landscapes, forest rocky cliffs, river landscapes, plain landscapes and coastal and island landscapes. In section 3.1 the classification of landscapes that is applied for Antalya is described. An example of a more detailed classification is the study of biotopes in Antalya (Mansuroglu, Ortaçeşme & Karagüzel, 2006). This study explains which biotopes are sensitive to development.

Visual landscape analysis

The image of the city

The first steps of visual analysis of urban landscape at the city scale were made in Lynch's Image of the City. Lynch (1960) developed a method of analysis of urban areas that has been fine tuned by other landscape architects. Within an urban area, the urban fabric is resolved into a pattern of paths, edges, districts, nodes and landmarks. By using these structures the strength and weaknesses in the visual image of the urban area can be defined. Is there continuity in the paths, is the identity clear for people who use these, how can one strengthen the image of important edges, can one adapt vistas in order to make use of the main landmarks? Which barriers fragment the functioning of the city? From this conclusions can be drawn to define the needs and possibilities to improve legibility and ease of orientation in urban areas, and in this context the elements of the urban landscape can play a significant, if not critical role. In section 3.1 there is a description of the existing city-image of Antalya.

Metropolitan landscapes

A methodological approach to the visual analysis of urban landscape architecture is presented in Metropolitan Landscape Architecture (Steenbergen & Reh, 2011). This publication presents a compilation of studies of the spatial development of several European Metropolises in relation to the landscape structure, patterns, mass and open space and visual relations. It ranges from the regional scale to spatial structures on a local level.

Mass and open space analysis

The publication Exploring the Visual Landscape (Nijhuis, 2012) gives an overview of the development of GIS-based research ranging from landscape perception to analysis of patterns and structures. For analysing space and mass and the effect these have on visual quality of the landscape there is a wide range of GIS-methods, in addition to hand drawn maps with vistas, open space and mass,. Examples include grid cell analysis, landscape metrics, viewsheds, isovists and virtual 3D-landscapes.

- **Grid cell analysis**: the landscape is subdivided into spatial features that are represented by raster cells or grid-shaped polygons. Each feature is described by one of more variables and can be integrated in each cell as integrated indicators, such density or complexity. The origins and background of this "raster analysis" go back to the work of Tomlinson, Bishop and Hulse and Dramstadt. Raster analysis is also used for landscape characterisation at different scale levels. The research showcases an application in the vertical plane. GIS-methods are used to research change patterns in land use, for example in Change detection in Southern Turkey (Alphan, 2011).
- **Landscape metrics**: were originally developed for spatial analysis of land use patches in landscape ecology. Landscapes are modelled in terms of patches, corridors, matrix and mosaics. Landscape metrics are also used to describe the composition and spatial configuration of these elements. The software FRAGSTATS had an important impact on the broad introduction of landscape metrics in landscape research. Landscape metrics are two-dimensional and can be applied both on raster and vector data.

- **Viewsheds**: these are visually contained areas that can be seen from a given position. Viewshed-analysis is basically a three-dimensional visibility calculation based on raster data (surface analysis). Tandy introduced the term viewshed by analogy to the watershed. The computer program VIEWIT was an important stimulant in viewshed-analysis, in particular as promulgated by the US Forest Service in the 1970s and used by many natural resource planners, landscape architects and engineers. The application of this type of analysis in urban areas is a matter for discussion.
- **Isovists**: sight field polygons or limit-of-vision plottings are the vector-based counterpart of viewsheds and address only the horizontal plane. Tandy suggested the application of isovists to "convey the spatial composition from an observer's point of view". Later there was a connection made between the concept of the ambient optic array to isovists and isovist fields for means of architectonic research. Recently the so-called 3D-isovists became of interest. A "3D-isovist" defines the three-dimensional field of view, which can be seen from a vantage point with a circular rotation of 360 degrees and from the ground to the sky. In comparison to the definition of a 2D-isovist, which considers a plan parallel to the ground, this new definition refers to the real perceived volumes in a stereometric reference. Adding the vertical dimension helps to better simulate the physical environment observed from the vantage point.
- **Virtual 3D-landscapes**: current GIS are generally limited to the horizontal two dimensions but utilise three-dimensional visualisation and analysis. GIS support 3D-display of terrain models (DEMs), interactive navigation, 3D-symbols/geometries (including: custom 3D modelling, importing GIS data, importing 3D-data, 3D laser scanning), surface analysis (i.e. viewsheds and isovists) and viewpoint and path creation (i.e. fl y-through animations). However, the embedding of 3D topology and, consequently, 3D analysis tools to be become true 3D-GIS is still under development. Three-dimensional visualisation (GIS-based) offers a wide range of possibilities for means of visual landscape research. The degree of reality is an important topic that has to be addressed.

Technical background and sources of research on visual landscape analysis can be found in Nijhuis (2012).

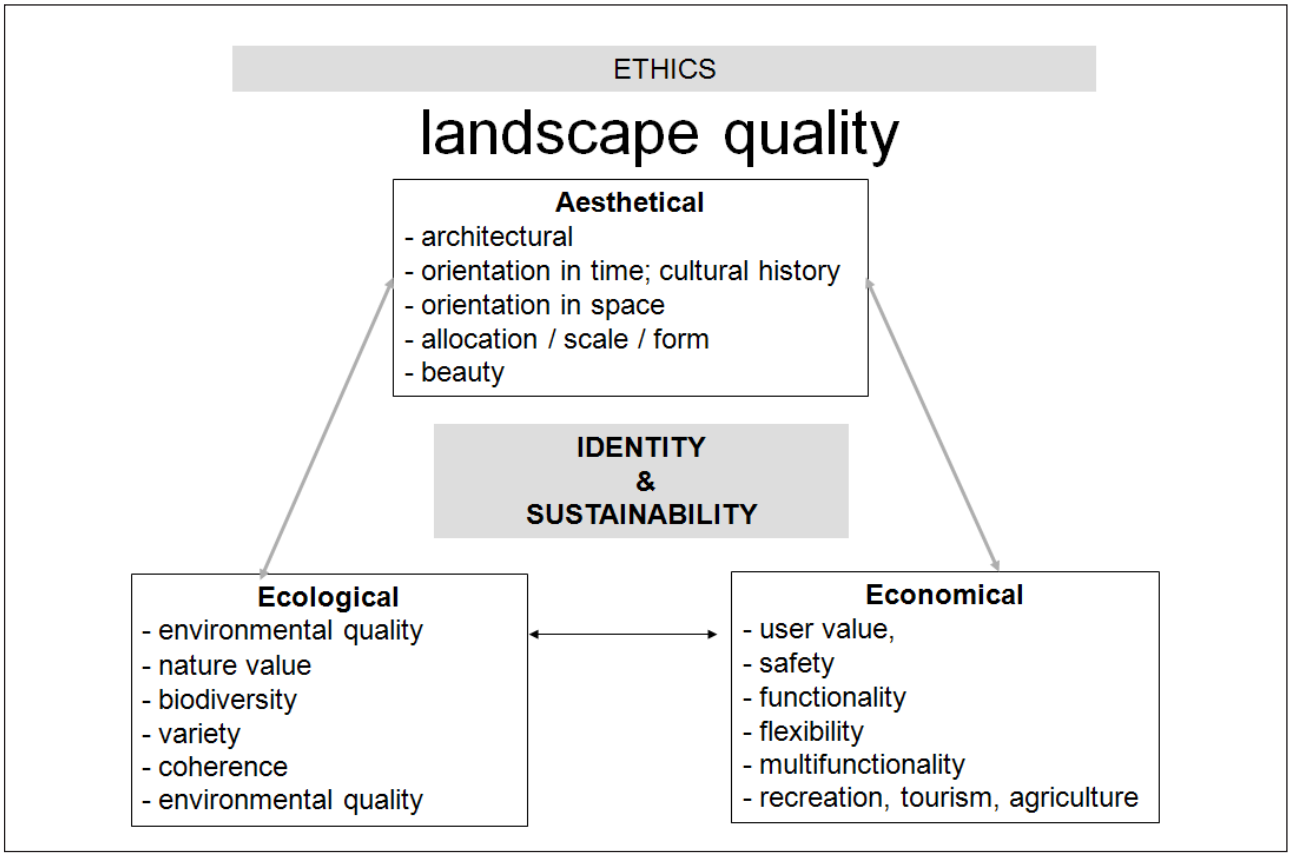

Figure 6.24. Aspects of landscape quality.

6.4 Key aspects of urban planning and peri-urban sprawl that relate to landscape architecture

When cities are slowly growing in accordance with the local circumstances and without having too much effect on the existing landscape values, there is an organically development of high quality of urban environments. But now with huge growth and intensive land use, we have to change our approach. For too long, we have considered urbanisation, tourism, agriculture and other forms of occupation as separate, unrelated elements, without sufficient consideration to the demands that originate from landscape processes and landscape structure.

In the development and planning process we did not make enough use of the opportunities for quality that landscape characteristics, landscape structures and main landscape features offer to enhance identity, character, spatial and ecological quality to urban areas.

Slowly developing trends such as rising sea levels, flooding, changes in precipitation and temperature force us to change the way we think about water and landscape.

We need to give much more consideration to the properties and functions of the ecological, functional, economical and settlement layers of the landscape. In the planning stage the processes in the different layers need to be considered more in relation to each other. This can prevent conflicts between different users of the same land, as well as creating greater coherence in the measures to be taken. After all, intervention can serve more than one landscape quality objective or economic goal at the same time.

A landscape approach allows plans that consider all three layers and the constraints they put on land use to be future-oriented, sustainable and well functioning. This approach works with the different aspects of spatial quality standards for aesthetics, ecology and economy that result in identity and sustainability. Landscape architects aim to improve spatial quality by preserving the basic quality standards and improving them where possible. The actual form that such spatial quality will take will be decided on a situation--by situation basis.

Urban growth and peri-urban sprawl can be understood from different perspectives. The landscape approach, sometimes mistakenly called landscape urbanism (see Thompson, 2012), takes into account the landscape processes and patterns that form the basis of a sustainable and beautiful city. A city and the underlying and surrounding landscape form an integral ecological system. The landscape architecture approach comprises:

- Making use of the water system to develop the quality of urban landscapes
- Developing a green infrastructure for ecological quality, recreation, regulation and purification of water, temperating differences in temperature, mitigating air pollution, reduces wind speed.
- Protecting and developing areas of cultural historical value and use these for enhancing the identity of different urban areas.
- Improving the network of recreational routes for walking and cycling and at the same time enhancing the network of public transport in order to reduce traffic and its negative effect on the quality of open space.
- Making use of planting and laying out of green areas that are attuned to the local ecosystem to make sure that interventions to maintain the green areas, such as watering gardens and parks, are minimised.

6.5 Teaching the subject: possible areas to focus on and potential programme courses or modules

Teaching for the landscape approach to planning and managing urban growth and peri-urban sprawl calls for a multi-disciplinary approach. Teaching this subject is done within design studios and planning projects. A studio is a form of teaching in which students are involved in the development of design or planning proposals working to a given brief or one which they develop themselves, either individually or in small groups.

Around the studio a set of other teaching modes are arranged to support specific learning processes. These consist of lectures, seminars, and field trips. During field trips (excursions) landscape architecture students develop a set of references for their own work. Time in the field is also needed to enable students to personally collect data and information. Landscape architecture students must be able to perform their own landscape analysis and, ideally, landscape assessment is based on immediate exposure to the landscape. Lectures and seminars are important for instruction on the use and selection of methods.

Supervision, involving consultations and intermediate presentations, takes place on a regular but flexible basis by one or more staff. For an urban planning project the teachers who draw up the design brief and act as tutors and assessors preferable represent the disciplines of landscape architecture, urban planning and ecology. Additional support can be given by experts in water management and transportation.

In order to be able to work in the studio for urban growth the students already have mastered basic knowledge in planning and design methods, site analysis, landscape character analysis and visual landscape analysis. In order to work with GIS-data and maps students need skills and understanding of IT- technology. For including stakeholders in the studio students should be able to make a social analysis, have some skills in interviewing. In the previous years of their study they have obtained theoretical knowledge on geology, soil science, vegetation science and ecology, water management and settlement patterns.

The planning and design process is carried out in different levels of scale. So there is an interaction between developing concepts and strategies for planning and exemplary site design.

There are different approaches to the studio work. One approach is to define a very strict framework for the student work. All students use the same legend for the maps they use for survey, analysis, concept and spatial plan and work in a pre-described way on each design stage. In some phases they will work in groups (e.g. during the survey and analysis) and later on they make individual master plans and detailed designs. The structured process ensures that there is not much time wasted during the first stage of the studio and the standard legend makes it easy to understand and to compare the different plans. Other approaches are more open, allowing the students to define their own planning stages and insert their personal handwriting in the plan.

The use of maps and spatial models is essential for the studio work. A written proposal can lead to many different alternatives in space and time, but when placed on a map one has to make choices in allocating space and using a specific form and architecture. A spatial model, either a 3D-computer model or a model in wood, plaster or synthetic materials, can demonstrate the spatial effects and clarify the connections of the design with the surrounding area. Visual representation is essential to the understanding and construction of landscape and facilitates the dialogue between conceived and realised space (Nijhuis & Stellingwerff, 2011).

A combination of team work on the part of all students, working individually or in small groups helps students to practice with the professional situation. Professionals have to work in multidisciplinary teams,

need to be able to elaborate proposals of decisions makers that might be different from their own choice.

In many schools studios are carried out with local authorities or stakeholders as commissioners. For the commissioners student work is a good way to explore possible solutions for actual planning problems without the constraints of a formal and more restrictive assignment. For students it provides an excellent context to experience communicating with stakeholders, differences of viewpoints and developing political sensitivity in planning. Essential competences in arguing and negotiating are practiced. A further valuable dimension is added when students and teachers of different universities and countries work together in an intensive project.

6.6 *Researching the subject: gaps in research and potential areas to focus on in the future*

For the Antalya case study and the future development of the city many research issues are relevant. A research agenda is provided that is based on the possible strategy for urban growth and peri-urban sprawl. Main themes are perception and design, the planning process, environmental aspects, social aspects and research by design.

Table 6.1. Reaserch agenda based on a possible strategy for urban growth and peri-urban sprawl.

Perception and design	How do residents and tourists perceive and value the aesthetic quality of the urban landscape? How can the visual quality of city fringes and temporally landscapes be improved? Which spatial interventions can help to improve orientation in the main infrastructure by strengthening the identity and characteristics roads? What is an appropriate aesthetic for parks and public spaces in Mediterranean cities in relation to sustainable planting? What are the connecting and structuring landscape elements and features in dispersed metropolises? What kind of spatial interventions can enhance the identity of neighbourhoods and areas? How can landscape characterisation contribute to the quality of urban development?
Governmental process and project implementation	How to coordinate the different levels of administration (national, regional, metropolitan, municipality) in order to improve the quality of the urban landscape? In which way can design principles for open space and landscape be formulated so that these can part of the planning process and policies in order to strengthen and develop the existing green infrastructure? How can design and spatial transformation help to control unplanned urban development in agricultural and semi-natural areas? What are the relevant indicators of urban development and how can these be monitored and evaluated in order to support the governmental process? How can we integrate spatial developments for tourism, agriculture, ecology and urban functions like housing and business areas even if these are under different jurisdiction and regulation? What planning measures and regulations are needed to promote more variety in density and types of buildings?

Environmental aspects	Which measures can be taken in order to protect the sensitive soils and biotopes in the metropolitan area? Which interventions can be made in the traffic system and the spatial layout in order to reduce the domination of motor traffic in urban open space? n which places is overcoming the barriers of the main infrastructure the most important in order to diminish landscape and biotope fragmentation and improve ecological zones? What are the ecosystem services of the green infrastructure and how these improve quality of life and economic value? How can the lay out, materials and planting of green areas become better adapted to the Antalya climate?
Social aspects and participation	In which way do coastal zones affect exclusion and inclusion of people? What are strong and weak points in the participation processes of different municipalities for spatial development and urban open space? What can municipalities learn from each other? What social services can the green infrastructure provide? How can local communities make use of temporary open spaces like unused building plots? How can community gardening and urban agriculture contribute to social cohesion?
Research by design	Which spatial solutions and alternatives can be found with regard to the regional, local and site level for elements of the landscape strategy of Antalya, e.g.: • Design for the edges and border of natural areas for recreation • Designing for a series of parks along the coastal route as part of a recreational system making use of main landscape features like rivers, marshes, waterfalls, rocky areas; • Design for an urban open space system of squares, linear parks and footpaths to connect the coast with the hinterland • Design for temporary green areas on unused plots • Integral landscape design for new infrastructure in order to improve quality of landscape and urban open space.

6.7 *Innovative practice and reference projects: Barcelona case study*

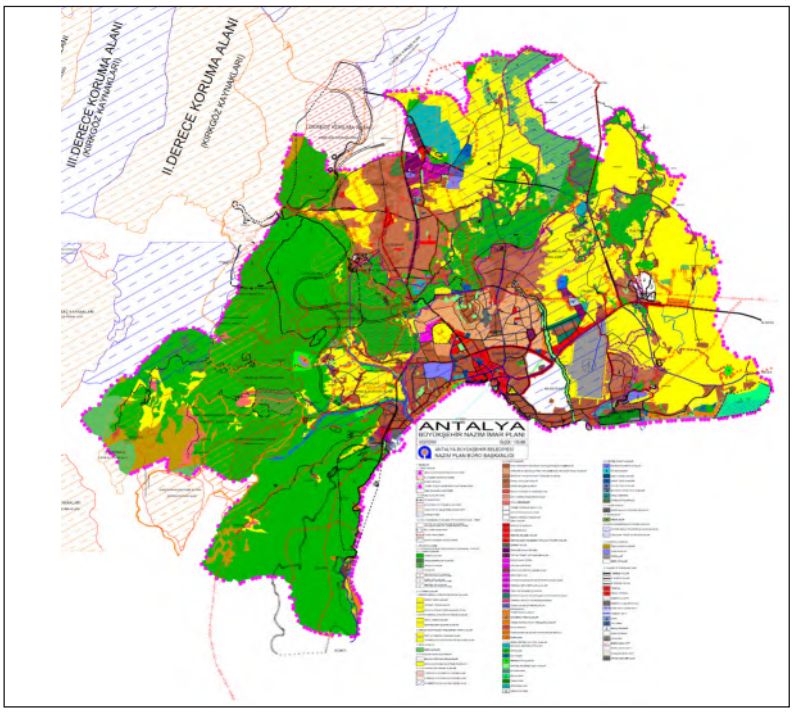

Figure 6.25. Antalya metropolitan master plan (city of Antalya).

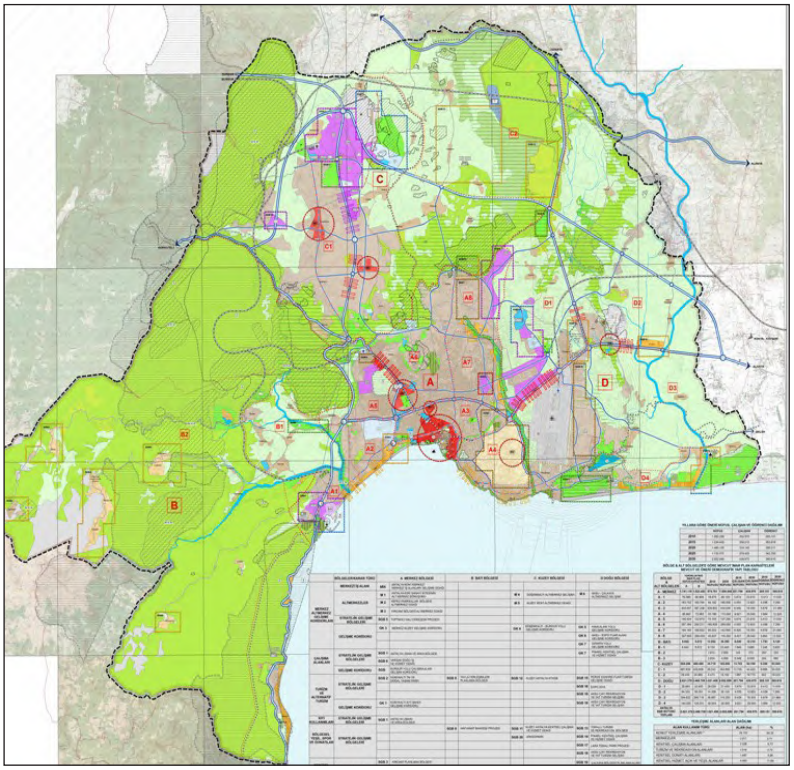

Figure 6.26. Antalya metropolitan strategic plan 2030 (city of Antalya).

Innovative of planning and design for urban growth and peri-urban sprawl can be found in some examples of metropolitan master plans, the landscape approach, new techniques in design and the planning process. Cities develop strategies for sustainable urban planning and design (Adriaens & Dubbeling *et al.*, 2005). The landscape approach will increase the quality of the city if new developments are not simply solved in a technical way, but also in a way that makes use of landscape value, the underlying processes in the landscape and enhances beauty.

Many cities in Europe have master plans that comprise ecological networks, park systems and recreational networks. The Antalya metropolitan master plan and strategic plan 2030 provide a good basis for future urban growth and for managing peri-urban sprawl.

Further inspiration can be found in the master plans of:

- Belgrade (Serbia) with mapping and protection of valuable biotopes,
- Amsterdam (The Netherlands) with green wedges and development of an ecological infrastructure with corridors and key stone habitats.
- Warsaw (Poland) with green belt and ecological infrastructure.
- Sofia (Bulgaria) with scenario planning and development of green wedges.

The Barcelona case study

The city of Barcelona can in several ways be compared with Antalya. It is a historic city on the Mediterranean coast, situated on a coastal plain with mountainous topography limiting their growth inland. Both have their seafront as one of their major landscape features. Both cities are visited by great numbers of tourists every year.

Barcelona developed a strategy to use public space as a way to rethink the city. The aim was to adapt the city better to the needs of people: to encourage them to meet each other, to allow them to walk, to relax without the being hindered by noise or the danger of motor traffic.

The strategy consisted of step by step improvement of urban squares, of redesigning old parks and the development of new parks. A policy originally conceived by Bohigas in 1978 aimed to gradually eliminate the dichotomy between the centre and the outskirts by multiplying centre functions. One of the strong points is that by locally filling in the new designs for parks, streets and squares, these could be attuned to the area and strengthen the identity and characteristics of each neighbourhood or community. The approach of the design of urban open space, with a combination of visual arts, architecture and landscape architecture set a standard for many cities in the world.

The development process was assisted by the integration of the urban highways into the city and the

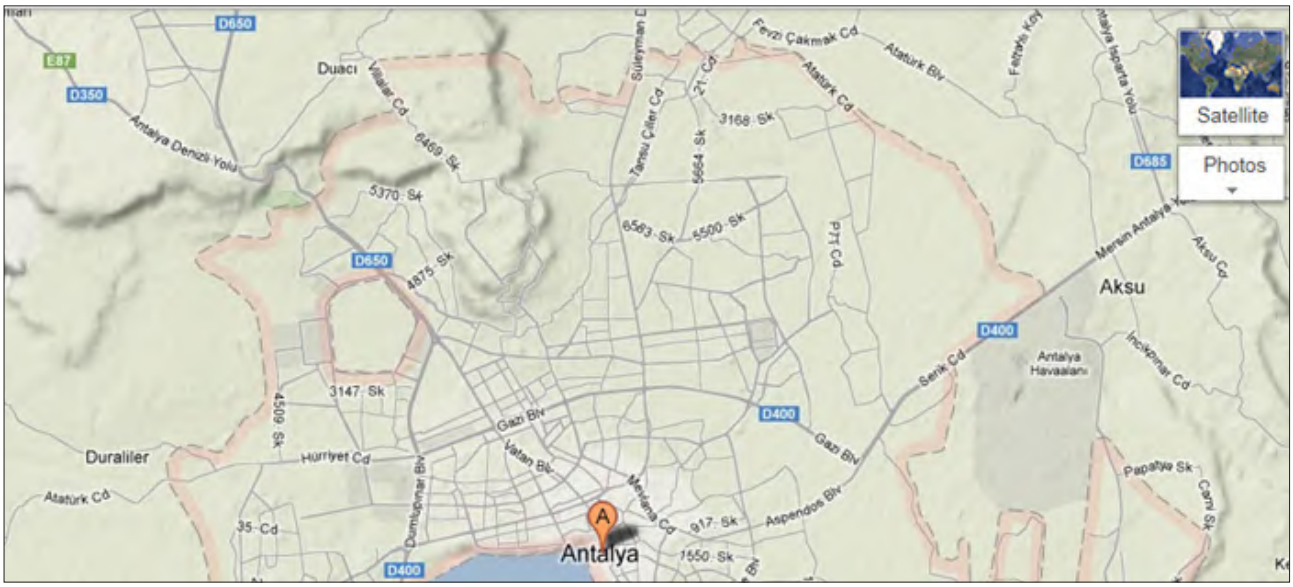

Figure 6.27. Location of Antalya at the coast of the Mediterranean Sea (Google Maps, 2013).

Figure 6.28. Location of Barcelona at the coast of the Mediterranean Sea (Google Maps, 2013).

transformation of old industrial and harbour areas. One important project in the 1980's was the reclamation of the waterfront for public use – the Moll de la Fusta (Manuel de Sola-Morales).
A second step needed in order to reconnect the seafront with the city was to overcome the traffic barrier caused by the road between the old historic centre and the harbour.

In the wake of the Olympic Games in 1992, the esplanade along the Barcelona beaches was redesigned and made more attractive for walking, jogging, cycling and other forms of recreation. The esplanade is connected to several new parks.

Figure 6.29. Moll de la Fusta after reconstruction (photo N. De Maesschalck).

Figure 6.30. Harbour area as a place for recreation at night (photo J. de Vries).

Figure 6.31. Connection of the historic city to the harbour area (photo N. De Maesschalck).

6.32. Redesign of the esplanade along the beach (photo J. de Vries).

6.33. Raised esplanade to diminish traffic noise near Forum (photo H. Libbrecht).

Figure 6.34. Public space near the Forum (photo H. Libbrecht).

Figure 6.35. Public space near the Forum (photo J. de Vries).

Parc del Litoral

The Parc del Litoral is located on the left bank of the River Besòs, and is bounded by the mouth of the river, the Mataró railway line, Carrer de la Platja de Sant Adrià and the Mediterranean sea.

The Besòs delta was once an area of great natural riches, with its marsh landscape, coastal dunes, dense alder and willow groves which followed the course of the water. This space was transformed in an industrial site in the 1920's that gradually completely blocked access to the beach. The programme was based on the 1976 General Metropolitan Plan, and set to recover the entire riverside area, creating a linear urban park on the front of Sant Adrià, which would eventually link up with the Parc del Litoral. The aim of the redevelopment was to increase the number of areas with amenities and to link them to residential areas. In 1985 the city expropriated the land for the site of the park, which opened in 1990. Its concept is based on the idea of making the maximum use of its prime location by the sea in order to foster its use as a container of beach-related recreational and leisure activities.

The park consists of areas of walkways, swimming pools and groves and is located next to the Marina-Besòs sports complex. A broad walkway runs from the parking area to the esplanade and the beach. The esplanade is a transitional space between the park and the beach and the main area for walking and socialisation. The sports and service facilities are located along it. Its final stretch widens out on to a viewing point-square which overlooks the confluence of the river and the sea. The swimming pool has a series of shallow recreational pools in fun geometrical shapes, with little fountains and a total surface area of water of 1,000 m2. The project is also part of a wide range of interventions which have as their common aim, the recovery of the seafront and the banks of the Besòs for public use.

Parc Diagonal Mar

This park is located in the district of Sant Martí on Avenida Diagonal Mar and Carrer Josep Pla in the area Besòs near the Diagonal Mar shopping centre, as its name suggests. It opened in 2002 and is part of the reclamation works in this industrial area of the city that were initiated on the occasion of the Forum 2004. This park was the stimulus for to the great urban transformation of the coastline north of Barcelona and the last stretch of the avenue diagonal by the sea.

The park was designed by the architect Enric Miralles based on sustainability criteria, and functions as a self-sufficient park. The design optimizes the use of natural resources for maintenance and applies the latest developments in renewable energy and energy conservation.

Water is the backbone of the park and defines the vegetation conditions within it: groundwater is used for irrigation, which means that rainwater is stored in underground wells, and then made available to the plants and flowers through the tubular structures (similar to the ends of arachnids).

Figure 6.36. Parc del Diagonal Mar with water purification function (photo J. de Vries).

6.37. Parc del Diagonal Mar view in the direction of the sea (photo H. Libbrecht),

These pipes run around the park, and like the pots are decorated with ceramics.

It should be noted that an ecosystem is created on the shores of waterways and small lakes. The ecosystem fosters the local flora and fauna, and also the sustainable development of the site as well as a better quality of life for residents.

The park consists of different areas for walking, children's playgrounds, water ponds with twisting steel sculptures and a meeting place. The furniture and gates of the park have sinuous, winding and irregular forms.

Sagrera Linear Park

The Sagrera Linear parc (2011) or El Cami Comtal connects the sea and the mountains of Barcelona. It forms a new green diagonal axis with shaded routes for pedestrians, bicycles, joggers and skaters and is well related to the Sant Andreu and Sant Marti neighbourhoods, El Clot park and the historical gardens of the Ciutadella. The park aims to improve biodiversity and also strengthen the urban ecosystem. It is also a milestone track, where landscapes, architecture, history and the installation of water fountains enrich its tour and make a memorial to the old Rec Comtal infrastructure that once carried the natural water resources to the city.

Figure 6-38. Sagrera Linear Park – West 8.

The Barcelona strategy resulted in the creation of a new attractive coastline, with easily accessible beaches, and an esplanade that is connected to a series of squares and parks. The parks are linked to rivers and the green urban infrastructure. The parks serve as sites for enhancing biodiversity as well as places for relaxing and improving quality of life in the city.

One of the important aspects of the project is that the construction of a new boulevard or road is not only a commission for traffic engineers, but for a multi-disciplinary team including landscape architects. In this way the design of a road can help people experience the crossing of river, and give continuity to a recreational park system, and improve the habitat of a particular species. If the construction of facilities is also understood as a landscape design issue, sites can become multifunctional and contribute to quality of life for inhabitants. An excellent example is a water purification plant in the north of France in Les Harnes. In this way the water purification area is a site for nature, wildlife, recreation and sports.

Figure 6. 39. Technical solution of water purification plant – mono-functional.

Figure 6.40. Landscape solution of water purification project – multi-functional.

6.8 Reflections on the area and the relationship of urban growth and peri-urban sprawl to landscape architecture

The landscape strategy for the urban area is based on an understanding of the landscape layers. Because the city is developing the strategy, it represents a combination of conservation and development. Important ecological values, natural areas, cultural landscapes and heritage sites need protection. At the same time, new infrastructure, residential areas and industry are used creatively to improve the quality of the urban landscape and to develop green infrastructure.

The strategy is a combination of planning and design at different scales taking place at the same time. The effects of planning proposals are tested by designs on a smaller scale. On the other hand conclusions of the designs are integrated in planning proposals.

The ecological corridor that runs east-west should be protected, its edges well designed to prevent uncontrolled use and occupation. The creation of recreational routes along the edges can help to protect the corridor. The effects of barriers created by infrastructure can be reduced when this infrastructure is reconstructed or new infrastructure is developed. People can better experience the borders of nature areas where there is a clear distinction between nature and the urban fabric.

The coastal zone is a unique feature of Antalya. The negative effect of motor traffic along Konyaalti beach can be reduced. Some of the traffic can be taken out of Akdeniz Boulevard and there is no more through road. The boulevard can be redesigned in a way that it meets the recreational needs of both tourists and local residents. A reference project for this is provided by the Barcelona seascape, where part of the road is covered, the park stretch along the coast is renewed and small parks are added to improve the quality of open space. The continuity of the coastal route is improved with special attention for the places where the landscape changes. From west to east: mountain area, harbour, Konyaalti beach, Atatürk Park, Konyaalti Street, the historic city with harbour, the cliff area, Lara Street, along the dune area to Lara Beach. Special design attention must be paid to places where rivers and streams flow into the Mediterranean. The visibility of rivers, the water's edge and waterfalls add considerably to the scenic quality. A good reference project is the metropolitan planning of Barcelona.

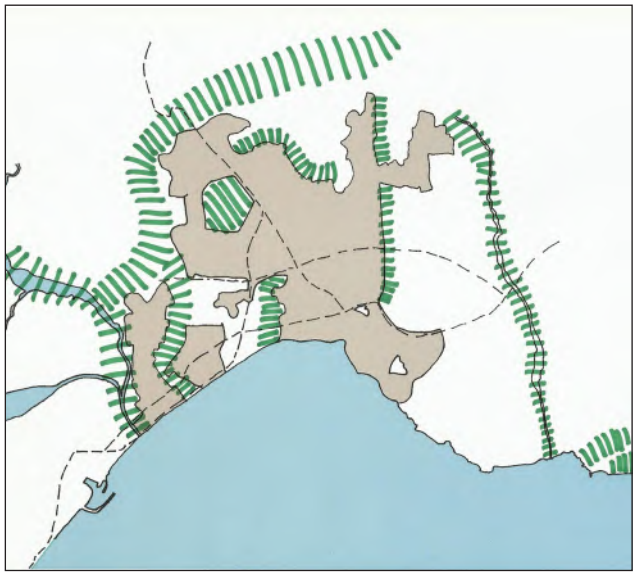

Figure 6.4. Strengthening the green structure and park system.

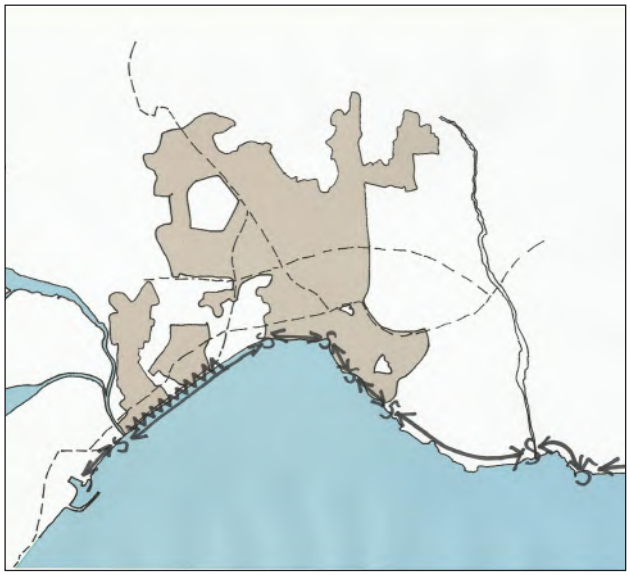

Figure 6.42. Reducing the traffic barrier at Konyaalti beach and making the coastal route continuous.

The river system is better visible and the necessary width of the riverbeds is respected. Bridges and other infrastructural features are wide enough to allow for ecological connections. Structures are not placed on essential ecological gradients and in the estuaries there are places allocated for wetlands. People who make use of roads and other infrastructure should be able to experience it when they cross a river or a stream.

The planting and vegetation of the larger parks should be adapted to the local climate. This diminishes the use of water and also supports biodiversity and the natural functions of parks. In intensively used parks and important landmarks a more decorative type of planting is appropriate. Empty allotments within new developments can be used for temporary pocket parks or urban farming. Within new development areas, spaces for parks should be allocated in combination with the main green infrastructure.

New routes for public transport should be proposed. The construction of these routes is combined with reducing the barriers to ecological corridors and recreational routes. The development of new roads, e.g. the eastern main road, will be used to upgrade the adjacent public (green) areas and to enhance the visibility of important landscape features like the system of rivers and streams.

The identity of the main roads should be strengthened by differentiating between the roads that run in north-south direction and the roads that run east--west. This might be done by planting different types of tree structures.

The identity of neighbourhoods is strengthened by making use of landscape features and green infrastructure in the area. Rivers, streams, park systems, cultural landscape elements should be directly related to public spaces. They should also not be located at the back of residential areas, industrial or business areas. The transition zone between the landscape features should be designed in such a way that future negative impacts resulting from urban development are minimized, while at the same time allowing optimal visibility and opportunities for use.

The system of routes for walking, cycling and other forms of linear activities should be completed. Besides the continuity of the main coastal route, there are many connections to be made in north-south direction. The recreational routes should be connected with streams, lanes, landscape elements and the system of parks and squares. The recreational routes should be strengthened by the design of linear parks. These can be found in Madrid (Rio Negro), New York (High Line), and Barcelona (Sagrera linear park).

The quality of urban open space in the city can be improved by developing the public transport system in the city. In order to get support for this, one should invest in a better understanding of the need for public transport and calculate the consequences of motor traffic on the quality of life. A good example can be found in the city of Bordeaux. Nodes in the network need to be redesigned in order to create attractive places for meeting people and to facilitate transfer from different modes of transport.

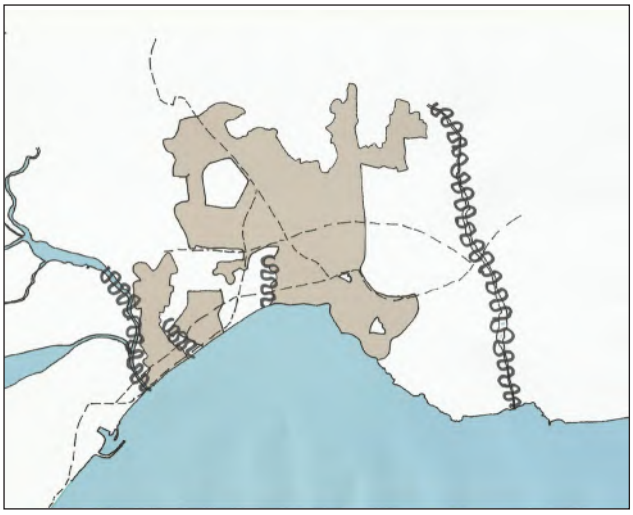

Figure 6.43. Rivers and streams: more visibility, linked to front of urban open space, combination with recreational routes.

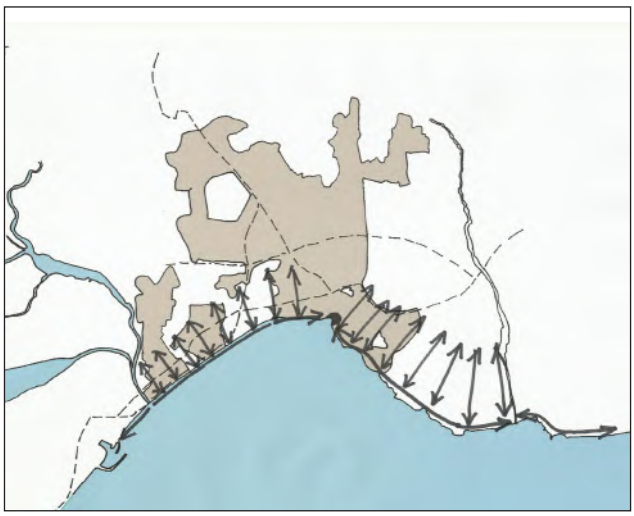

Figure 6.44. Network of walking, cycling and recreational routes. Links residential areas and city to the coast.

6.9 Conclusions

Urban growth and peri-urban sprawl have huge impact on metropolitan regions all over the world and the number of residents and buildings in the city of Antalya are growing very rapidly. This process has positive and negative effects on the quality of life for city dwellers, the experience of tourists and ecological quality. If we view the city as an urban landscape it helps to find ways to improve the aesthetic, ecological, economic quality and the functionality and sustainability of the city.

A landscape approach does not only refer to the green infrastructure, parks, public open space and natural areas, but also refers to the planning process, the combination of technique and design and developing the city in an holistic way with involvement and participation of the public.

In Antalya city we can see a combination of more compact planned urban development areas and squatter areas or less regulated peri-urban sprawl. The latter is especially visible in areas where there is a mixed use of agriculture, and on locations with low density, suburban housing. Even within the planned city areas there are several unused allotment sites.

The biotope mapping of Antalya shows that there are still many biotopes with a high ecological quality in the city. Some of these biotopes are well protected, but many are very vulnerable to urban development and less well respected. The river system is influenced by an increase of built up areas and quarrying. Maquis and phrygana (garrigue) biotopes are rapidly disappearing as a result of the development of housing and tourism. Preservation of remaining biotopes can partly be regulated by spatial planning and design solutions.

The field visit in April 2012 showed that in Antalya the local authorities have good experience with the participation of the public in planning processes, and that there are common goals for improving quality in those residential areas which developed in an unplanned way. The aims of growth of the different municipalities have been integrated in the new metropolitan plan. Still there is a task to better coordinate the planning processes on different administrative levels.

The historic city, cultural historic values and the main landscape features (mountains, rivers, coast, and dunes) greatly contribute to the identity and characteristic of the city and are important for the touristic and economic value.
The main issues concerning urban growth and peri--urban sprawl are:

- Protecting and developing existing landscape qualities and landscape features
- Controlling peri-urban sprawl in order to make sure that the ecological and green infrastructure is protected.
- Building also in higher densities and allocating space for green amenities and recreation areas.
- Strengthening and protecting the ecological infrastructure and the quality of existing biotopes.
- Minimising landscape fragmentation and barriers created by road infrastructure.
- Improving continuity and quality of recreational routes for walking, cycling, jogging, skating and other activities.
- Reducing the domination of urban open space by motor traffic.
- Making sure that green areas are better adapted to the Antalya climate: warm, dry in summer, in order to diminish the use of water.

Urban growth and peri-urban sprawl are well researched and also for the city of Antalya studies have been undertaken which have investigated ecological quality, the planning process, landscape quality, the (re)design of urban parks and the participation process. The discipline of landscape architecture employs a wide range of methods for planning, designing and managing urban landscapes, ranging from the layer approach, landscape classification, and visual landscape analysis to integrated water management. For the Antalya case study a set of research questions have been drawn up. Research by design is a method that can be used to explore possible solutions for improving the quality of the urban landscape and solving problems like barriers by main infrastructure.

The strategy of the city of Barcelona can be used as a reference point for planning and design in Antalya. Barcelona has used the development of urban open space and the park system as a key part of a wider strategy to improve quality of life, stimulate tourism and support the economic drive. The construction of infrastructure and layout of technical facilities like water purification plants can be used to develop the urban landscape.

Urban development is included as an integral part of landscape architecture education. Teaching includes multidisciplinary aspects in order to approach issues in a holistic way. Landscape architecture takes ecological aspects, aesthetics and functionality into consideration in every project. An important teaching mode is the design studio, where students work in teams on a planning or design project. The studio is supported by lectures and seminars. For the issues that are important to Antalya a multidisciplinary studio with students of e.g. urban planning, traffic planning, ecology and architecture could help to foster integration of different methods. In many schools studios are carried out with local authorities or stakeholders as clients. For the clients commissioning student work is a good way to explore possible solutions for actual planning problems without the constraints of a formal and more restrictive assignment.

As a result of the Forum general landscape strategy has been outlined that consists of strengthening the green infrastructure, reducing the barrier at Konyaalti beach caused by motor traffic, designing the coastal zone, making rivers and streams more visible and creating a network of recreational routes.

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Chapter 7

Antalya's Landscape – Concluding Reflections

Richard Stiles

7 Conclusions

It is April 2012 and some 155 'landscape parachute into what is for most of them the unfamiliar landscape of Antalya, and spend four days investigating, discussing and reflecting on it and associated issues with the help and support of a team of local landscape specialists under the guidance of the Department of Landscape Architecture of Akdeniz University. This, as explained in the introductory chapter, was the scenario for the first LE:NOTRE Landscape Forum, of which this publication is the main tangible result.

As was outlined in the introduction, the underlying motivation behind the development of the Landscape Forum was to establish and pilot a new kind of academic meeting, aimed at complementing and extending the traditional conference, an event which put the active engagement of all the Forum participants with the landscape itself at the centre of concerns. Both the landscape of Antalya, city and region, and the participants at the Forum can be said to have served as 'guinea pigs' in this experiment.

The first question to be addressed in reflecting on the meeting is perhaps whether the aim of creating a new type of meeting was indeed successful. A casual observer stumbling across the Forum might have been forgiven for mistaking it for 'just another conference'. After all, it still had many of the familiar identifying characteristics: it was an international meeting of academics hosted by a local university; it was devoted to a particular theme; it comprised both plenary and parallel sessions as well as including what appeared to be field visits, and the whole resulted in a publication.

But while these aspects were certainly familiar, there were also very clear and critical differences that that it is important to appreciate when comparing the Landscape Forum to a traditional academic conference. Had our 'casual' observer' looked a little more closely they would be noticed that the field visits were in fact the main focus of attention and not just an optional 'add-on' to the meeting. They took the form of active investigations building on the basis of previously prepared, in depth information about the sites in question. The participating academics collaborated actively in workshop sessions which followed on from the field visits, instead of passively sitting and listening to presentations. Finally, they also committed themselves to continuing this collaboration, which had commenced before the Forum, after the meeting with the aim of capturing and further developing their deliberations in the form of a publication. As a result, the publication resulting from the Forum is not merely a compilation of separate papers prepared independently by the participants in advance of the meeting, but rather a considered collaborative response to the landscape within which the meeting was held, and prepared largely following the event.

As a key outcome of the Forum, this publication certainly reflects the distinction drawn above, and does not take the form of a set of conference papers. It is primarily about the landscape of the place in which it was held rather than focussing on an abstract theme. Nevertheless there are four important thematic threads, which are discussed and elaborated in relation to the landscape of Antalya and its region.

The dramaturgy of the Forum concept can be looked upon as a kind of dialogue between the local hosts and the visiting specialists: the visitors call upon their hosts to introduce their landscape, while the hosts in turn request their thoughts and reflections on the landscape and the associated issues which they raise, in the context of teaching, research and innovative practice. Such, at least, was the intention and this structure is broadly reflected in the form of the publication. Thus the second chapter provides an in-depth overview of the landscape of city and region prepared by the host team from Akdeniz University on the basis of a broadly agreed structure, while the following four chapters embody the responses of the four specialist groups considering the four themes and which formed for the purpose of participating in the Forum.

Together, the five main chapters have been prepared by over 30 named authors from a wide range of countries and universities, while many others contributed actively to the discussions and reflections, that helped to shape the publication, during the meeting itself. As such this volume can be said to represent the tangible output of the Forum, however, Antalya's Landscape represents much more than an important physical record of the first LE:NOTRE Landscape Forum, although it is to be hoped that it will be valued as such by all who participated. It must also be seen as an authoritative and accessible introduction to both the landscape and the underlying landscape issues asso-

ciated with an important and fast developing region in its own right. The clearly structured and detailed exposition of the various aspects on the urban and regional landscape can provide both an up to date guide to the city and region, while the four thematic chapters provide in-depth insights into ways of looking at and reacting to these issues from the point of view of experts in the field.

In terms of its character, Antalya's Landscape can also be considered as a novel type of publication in that it embodies elements both of an edited and learned publication, and those of a topical record of an event. As such it aims to find an appropriate balance between the weight and gravitas of a textbook and the lightness and spontaneity of a workshop report. Whether this balance has been successfully achieved is a ultimately matter to be judged by the reader, but given that this is the first outcome of the Landscape Forum, it can certainly be seen as an at least a serious attempt to put the theory into practice.

One test of its success might be to ask whether it will be of interest only to those who took part in the event, or whether it will have a broader appeal. In fact there has already been a request to make use of part of one chapter as teaching material for masters students, suggesting that the broadly common approach taken to organising the separate chapters will help to give the overall structure of the publication a wider appeal.

The preceding chapters present the outcomes of the deliberations of the four thematic working groups which formed the main structure of the Forum: Rural Change, Heritage and Identities, Sustainable Tourism and Urban and Peri-urban Landscapes, as well as the presentation of the local and regional landscape context prepared by the colleagues of the host institution Akdeniz University. These stand for themselves and need not be further discussed in detail here, what is perhaps more appropriate to look at is the wider relevance of the themes as well as the extent to which they are related.

Antalya, perhaps more than many other cities, lives from its landscape, both directly and indirectly. As many cities on the Mediterranean coast, tourism is a major economic factor, and one which has grown massively over the last decades to put Antalya in the top five tourism destinations worldwide. Here the balance between mass use of the landscape and its protection from over-use will continue to be a key issue. Unlike many other Mediterranean cities, however, agriculture is also a vital economic factor, which rather than having declined in parallel with the growth of the tourist industry, has grown partly in response to the demand for high quality fresh food which it has generated. The result is that tourist planes come in to land amid a 'sea of polytunnels', but otherwise there is currently apparently little scope for any further meeting of the two landscapes.

Although the tourism landscape of Antalya is relatively new, the wider landscape contains important traces of a much older occupation. Remains of Ancient Greek settlements from the Classical Period still lie largely untouched in the surrounding hills and represent a further important potential for both another type of tourism, as well as a resource for further understanding the depth and richness of this landscape. All these elements sit embedded within the wider urban and peri-urban landscapes of the city and its surroundings. This provides and important structure for the further development and structuring of urban growth within the region, as well as being the local landscape of the growing local population. All aspects provide issues and material for landscape teaching, education and innovative practice, both for the local university but also an important and valuable insight for the visiting landscape academics and other specialists to the Forum. This publication touches upon all these issues in the context of the four main themes.

But what about the less tangible results of the Landscape Forum? As well as a new kind of event in the form of a 'product' the Forum should also be viewed as a new kind of 'process' too. What was supposed to be important about the process was the way in which the structure of the Forum left space for the participants to discuss the issues relating to the thematic groups into which they had chosen to go, as well as to relate these discussions to the landscape itself. Indeed, the intention was to go further than simply providing the space in which exchanges of ideas could take place. Rather the ambitious aim was to mix together the necessary components for a 'hothouse atmosphere' in which new ideas could take shape in the course of the discourse taking place – perhaps echoing what was suggested by the polytunnel landscape seen from the air! In order to broaden, to spice up and to open up this discourse, academics from a wide range of landscape-related disciplines were invited to take part. Different ways of seeing and responding to the same landscapes were placed side by side and, it was

to be hoped, the cross-fertilisation of ideas was thereby to be programmed into the very structure of the meeting.

How far this was successful, of course, remains to be seen. New ideas take time to mature and germinate and the novelty of the situation may need to wear off before the parties feel safe to approach each other, but by removing the participants from their academic 'comfort zones' the aim was at least to provide the necessary preconditions for meetings of minds to take place. Nevertheless, some significant hurdles will still need to be overcome: although much is lip service continues to be paid to the importance of interdisciplinarity and collaboration, especially in disciplines associated with landscape, in practice the reality of the world facing today's academics is one in which ranking, league tables and competition appear to be the values to which academic management really pays homage. It is to be hoped that the Landscape Forum will at least make a modest contribution to tipping the scales back in the direction of more collaboration.

The potential benefits of such an approach is certainly hinted at in Stephen Johnson's thought providing book 'Where good ideas come from' (Johnson, 2010):

> *Analysing innovation at the scale of individuals and organisations - as the standard textbooks do - distorts our view. It creates a picture of innovation that overstates the role of proprietary research and ‚survival of the fittest' competition. The long-zoom approach lets us see that openness and connectivity may, in the end, be more valuable to innovation than purely competitive mechanisms.*

It is clearly too early to ascertain whether new collaborations, projects and publications will indeed emerge over the coming months and years as a result of the meeting, but it is also to be hoped that the LE:NOTRE Landscape Forum will become an established part of the annual calendar for teachers, researchers and practitioners alike from a wide range of landscape disciplines. As a more subjective way of trying to assess the success of the Forum, a questionnaire survey of participants was carried out and this resulted in a very positive response to the new format and the content of the workshops. One result in particular can be singled out: although the Forum has grown out of landscape architecture and therefore the majority of participants in Antalya were from this discipline, they were of the overwhelming agreement that the involvement of a wide range of disciplines was a positive benefit: 85 % of those responding agreed or agreed strongly with the proposition that the focus on a broad range of disciplines was a good idea. Increasing and strengthening the links between teachers, researchers and practitioners in all these groups, in addition to furthering the dialogue between individual disciplines is another important goal which needs to be pursued.

Above all, it is hoped that the Forum was an intellectually stimulating event. One way to think about it might be as a kind of highly concentrated spell of sabbatical leave, the purpose of which is to recharge the mind with new ideas and to instigate new projects. If this goal can be achieved, and we should certainly keep it at the forefront of our minds in planning future Forums, then the establishment of the LE:NOTRE Landscape Forum and its first meeting in Antalya will have been a success.

Literature

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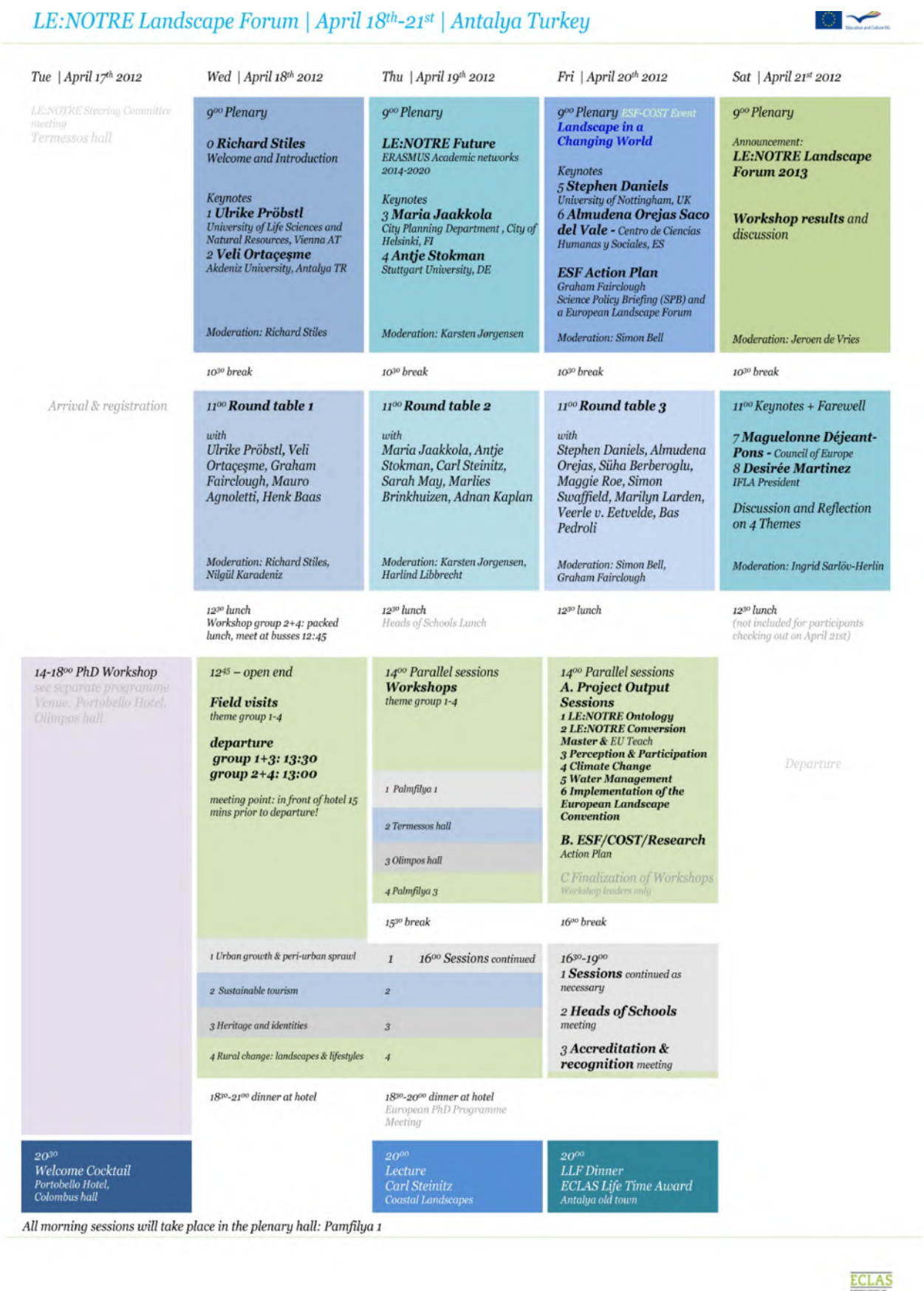
Appendix 1 LE:NOTRE Landscape Forum Programme



Appendix 2 LE:NOTRE Landscape Forum Documentation

All results and outputs of LE:NOTRE Landscape Forum2012 in Antalya can be found in the login area of www.le-notre.org in the LE:NOTRE Landscape Forum section.

Under the Project Group heading you can find results of the work for all workshop groups, cross-cutting theme and LE:NOTRE III Output Project groups that met at the Antalya meeting.

1) Workshop groups:

- Urban growth & peri-urban sprawl,
- Sustainable tourism,
- Heritage and identities,
- Rural change: landscape & lifestyles

2) Cross-cutting theme groups:

- Perception & Participation
- Climate Change
- Water Management
- Implementation of the European Landscape Convention

3) LE:NOTRE III Output Project groups:

- LE:NOTRE European Landscape Thesaurus (former Ontology)
- LE:NOTRE Conversion Master

Figure: www.le-notre.org

Appendix 3

Members of local organizing committee from Akdeniz University

	Name Surname	Title
1	Veli ORTAÇEŞME	Prof. Dr.
2	Meryem ATİK	Assoc. Prof. Dr.
3	M. Selçuk SAYAN	Assist. Prof. Dr.
4	Ahmet BENLİAY	Assist. Prof. Dr.
5	Emrah YILDIRIM	Research assisstant
6	Pınar KINIKLI	Research assisstant
7	Bihter SAATCI	Research assisstant
8	Betül TÜLEK	Research assisstant
9	H. Ekin OKTAY	Research assisstant
10	Faik ŞAVKLI	Research assisstant
11	Burcu ERTAN	Research assisstant
12	Ceren SELİM	Research assisstant
13	Ebru MANAVOĞLU	Local expert, Ph.D. student
14	A. Özlem ALPASLAN	Local expert, Ph.D. student

Photo documentations

Antalya

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