

A PROPOSAL FOR A METHOD OF CULTURAL LANDSCAPE CHARACTER  
ASSESSMENT: A RESEARCH ON THE CONTEXT, METHOD AND RESULTS  
FOR THE CAPPADOCIA LANDSCAPE, TURKEY

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TURKEY**

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## **ABSTRACT**

### **A PROPOSAL FOR A METHOD OF CULTURAL LANDSCAPE CHARACTER ASSESSMENT: A RESEARCH ON THE CONTEXT, METHOD AND RESULTS FOR THE CAPPADOCIA LANDSCAPE, TURKEY**

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As a case-based study, the research aims to propose a method to characterise the distinctive, historic dimension of today's urban and rural environment in Cappadocia (Turkey). Its methodology is based on the current practice and the approaches to landscape assessment, protection and management. The method also draws on well-established principles of the Historic Landscape Character Assessment (HLC) methodology first developed and used in Cornwall (UK) – but the characterisation approach have been tested and further developed at different scales but within the same broad objectives of improving understanding, protection and the management of the historic environment substantially for the Turkish context.

The research includes the following 5 main parts. It begins with a description of the need and context for the assessment, from the perspective of local authorities who require the assessment to inform and underpin landscape strategies at the local level, and more generally as a critique of existing SMI systems. The following Chapter 2 focuses on national approaches to identify/describe and assess cultural landscapes through separate case studies in UK (England, Scotland, Wales and Northern Ireland)

and US to form a baseline for the development of a method to assess cultural landscapes in Turkey in the following Chapter.

Chapter 3, describes and evaluates the background, methodology and application of Cultural Landscape Character Assessment (Cul.LCA) undertaken between 2011 and 2015 in Cappadocia (Turkey).

Finally, in Chapters 4 & 5, the research concludes with reflections on the use of Cul.LCA in planning, conservation and management policy on landscape (i.e. informing work on distinct character areas; including identification of areas for designation, mapping of boundaries, justifications for special application of policies, justification for special treatment by designation, and input to management plans and other management initiatives, etc.).

**Keywords:** Landscape, Landscape Characterisation, time-depth, Cappadocia (Turkey).

## ÖZ

### KÜLTÜREL PEYZAJ ALANLARININ ÖZELLİKLERİNİN DEĞERLENDİRİLMESİ İÇİN BİR YÖNTEM ÖNERİSİ: KAPADOKYA ÖRNEĞİ ÜZERİNDEN BAĞLAM, YÖNTEM VE SONUÇLARI ÜZERİNE BİR ARAŞTIRMA

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Bu araştırmanın amacı günümüz kentsel ve kırsal çevrenin tarihsel (ve arkeolojik) boyutunun değerlendirilmesi için bir yöntem önermektir. Örneklemeyi temel alan araştırma önerdiği yöntemi Kapadokya (Türkiye) örneği üzerinden geliştirmiştir. Önerilen yöntem, mevcut uygulamalara ve kültürel peyzaj alanlarının değerlendirilmesi, korunması ve yönetimine ilişkin yaklaşımlara dayanmaktadır. Yöntem aynı zamanda ilk olarak Cornwall, İngiltere’de geliştirilen ve uygulanan *Historic Landscape Character Assessment (HLC)* yönteminin ana ilkelerini de esas alır. Fakat, kültürel peyzaj alanlarının niteliklerinin değerlendirilmesi yaklaşımı farklı ölçeklerde, Türkiye’deki mevcut yasal ve yönetsel çerçeveye göz önünde bulundurularak geliştirilmiş ve uygulanmıştır.

Bu araştırma takip eden 5 ana bölümden oluşmaktadır. Kültürel peyzaj alanlarının niteliklerinin değerlendirilmesi için önerilen yöntemin gerekliliği ve hangi yöntem ve yaklaşımlara dayandığı ile başlar. Bunu yerel ölçekteki peyzaj stratejilerini böyle bir değerlendirme ile dayanak oluşturma gereği duyan yerel otoriteler üzerinden kurgular. Daha genel olarak da 2863 sayılı Kültür ve Tabiat Varlıklarını Koruma

Kanunu çerçevesinde oluşturulmuş mevcut kültür envanterinin kritiği üzerinden tartışır. Bu ilk bölümü takiben, 2. Bölümde, Birleşik Krallık (İngiltere, İskoçya, Galler ve Kuzey İrlanda) ve ABD vb. ülkelerde kültürel peyzaj alanlarının sınıflandırılması, tanımlanması ve niteliklerinin değerlendirilmesi için geliştirilen yaklaşımlara odaklanır. Bu aynı zamanda bir sonraki bölümde (3. Bölüm) Türkiye'deki kültürel peyzaj alanlarının değerlendirilmesi için önerilen yöntemin de dayanağını oluşturmaktadır.

3. Bölüm, 2011-2015 yılları arasında Kapadokya (Türkiye) örneği üzerinden geliştirilen Kültürel Peyzaj Alanlarının Niteliklerinin Değerlendirilmesi (Kül.PAND) yönteminin temeli, ana ilkeleri, aşamaları ve uygulamasının tanımlanması ve değerlendirmesini içermektedir.

Son olarak 4. ve 5. Bölümlerde, araştırma, önerilen Kül.PAND yönteminin planlama, koruma ve bu alanların yönetimi için üretilen politikalar (örn. Kül.PAND yönteminin oluşturduğu bilginin, tanımlanan karakter alanlarında yapılacak çalışmalar için temel oluşturması. Buna 2863 sayılı Kültür ve Tabiat Varlıklarını Koruma Kanunu veya benzer koruma statüsünde tescil edilecek alanların tanımlanması, sınırlarının belirlenmesi, bu statü ile beraber gelen koruma politikalarının vb. imar sınırlandırmalarının gerekçelendirilmesi, yönetim planları veya daha üst ölçekte yapılacak planlara bilgi sağlaması) vb. kullanım alanları üzerinden bir değerlendirme ile sonuçlanmaktadır.

Anahtar Kelimeler: Peyzaj, Peyzaj Alanlarının Özelliklerinin Belirlenmesi veya Tanımlanması, tarihsel-derinlik, Kapadokya (Türkiye).

*To Onur & Ayşe*

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## ABBREVIATIONS

CNPPA	The Commission on National Parks and Protected Areas of IUCN
CoE	Council of Europe
Cul.LCA	Cultural Landscape Character Assessment
EIA	Environmental Impact Assessment
ELC	European Landscape Convention
EUROPARC	The EUROPARC Federation, also known as the “Federation of Nature and National Parks of Europe”
ICCROM	International Centre for the Study of the Preservation and Restoration of Cultural Property
ICOMOS	International Council on Monuments and Sites
IFLA	International Federation of Landscape Architects
IUCN	The World Conservation Union
LBs	‘Listed Buildings’ registered to the SMI through the Act No.2863
MoCT	Ministry of Culture and Tourism
MoEP	Ministry of Environment and Planning
MoFWa	Ministry of Forestry and Water Works
PEBLDS	The Pan-European Biological and Landscape Diversity Strategy
SMI	‘Sites and Monuments Inventory’ held by the Regional Conservation Councils in Turkey, and by the Department of Conservation Councils within the General Directorate of Cultural Resources and Museums, MoCT.
UN	United Nations
UNCED	United Nations Conference on Environment and Development, Rio de Janeiro, 14 June 1992 (the Rio “Earth Summit”)

UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP- WCMC	United Nations Environment Programme World Conservation Monitoring Centre
UNESCO	United Nations Educational, Scientific and Cultural Organization
WCPA	World Commission on Protected Areas (of IUCN)
WHC	Convention concerning the Protection of the World Cultural and Natural Heritage



## **CHAPTER 1**

### **INTRODUCTION: METHODOLOGY AND THE BASIC STRUCTURE OF THE PhD RESEARCH**

#### **1.1 Preamble: the Concept of ‘Cultural Landscape’**

Over the last twenty years, rapidly changing political and socio-economic systems have led to a new interest in the management of landscape of all types. As properties, ‘cultural landscapes’ have themselves come to be recognized as a separate category of sites, requiring different and innovative protection, conservation and management processes.

The definition of ‘cultural landscape’ by the UNESCO World Heritage Centre has created an increasing awareness of such areas and led to a greater demand for recognition and protection of these landscapes. This has become a priority at the international as well as national levels. Developing and implementing methodologies to identify properties to be considered as ‘landscape’ and/or ‘cultural landscape’ - as defined in international documents such as the Convention concerning the Protection of Cultural and Natural Heritage, European Landscape Convention, etc. - is a complicated task. What factors are to be taken into account to define such an entity: should they be economic, political, legal, biological, geographic, geological, anthropological, religious, artistic, cultural or purely aesthetic?

However, a legal definition, thus recognition is also essential at the national level in order to ensure protection at a higher, international level. Some countries are already quite advanced in their legal recognition and protection of ‘cultural landscapes’. Methodologies for identifying ‘cultural landscapes’ (which have much in common)

has been used for these purposes for many years now, especially in countries such as: UK (England, Scotland, Wales and Northern Ireland), United States and Canada – and these offer an excellent starting point for the development of a method of cultural landscape character assessment for Turkey.

Therefore, this research consolidates latest thinking on the subject and sets out the steps of a consistent method of characterization for landscape resources in Turkey. This research, and the method proposed, aims to inform those decisions, underpin planning policies (i.e. informing work on distinct character areas; including identification of areas for designation, mapping of boundaries, justifications for special application of policies, justification for special treatment by designation, and input to management plans and other management initiatives, etc.), and guide change in the landscape.

## **1.2 Problem Definition**

The diversity of landscape types throughout Turkey, the portions of Central Anatolia addressed in this research, is of vast size, and varied geography. Cultural landscapes of many categories and scales can be found within Central Anatolia to include urban, and rural landscapes that may be categorised as: residential properties or communities; gardens; public building sites; public squares, commons, public monument grounds; streetscapes; parks, parkways; burial grounds and cemeteries; battlefields, fortifications; farms and agricultural areas; cities; towns; ceremonial places, commemorative locations; and large scale linear landscapes such as settlement trails, river valleys, mountain ranges and the like. This diversity of type and scale presents considerable challenges for the identification, protection and management of cultural landscapes in Turkey.

Turkey already has a system of legal tools to address significant cultural and/or natural resources at the local, provincial and national levels.<sup>1</sup> Our cultural landscapes

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<sup>1</sup> See N.Şahin Güçhan & E. Kurul (2009). A History of the Development of Conservation Measures in Turkey: From the Mid. 19th Century Until 2004. *METU Journal of the Faculty of Architecture*, 26(2), pp.19-44. , and

are valuable at the local, regional, national and potentially international levels, but the lack of understanding of cultural landscapes and the processes of change in their environment as a whole in Turkey, is hindering our ability to put forward methods to identify/describe, assess and protect landscapes.

The following addresses cultural landscape conservation issues - and the problem arising - through systems of the existing legal tools concerning: culture, environment, urbanism, national/regional development, and agriculture in Turkey which have an effect in the protection processes of ‘cultural landscapes’ and/or ‘landscapes’, either directly or indirectly.

**Protection of Cultural and Natural Resources Act No: 2863, 1983 (as amended by the Act No: 3386, 1987 and Act No: 5226, 2004)** aims to: “... *define movable and immovable cultural and natural properties to be conserved, regulate relevant procedures and activities, and institute and assign responsibilities for the organisation that will be in charge of setting essential principles and taking operational decisions.*”<sup>2</sup>

In its article 3 defines terms such as: “*cultural property*”, “*natural property*”, “*sites*”, “*conservation*”, “*conservation areas*”, and “*conservation plans*”.

‘Cultural properties’ are: “... *all movable and immovable scientific and cultural authentic properties above, underground or underwater that belong to the pre-historic and historic periods related to science, culture, religion and fine arts or have been subject to social life*” and ‘natural properties’ are “... *properties above, underground or underwater that belong to geological, pre-historic or historic periods and should be conserved for their uniqueness, characteristics or beauties.*”.

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N.Naycı (2010). *Integrated Management Policies for Coastal Archaeological Environments of Turkey: Erdemli-Silifke Coastal Region, Mersin* (unpub). Dissertation, PhD in Restoration: Dept. of Architecture, Middle East Technical University.  
for the history of the development of the existing national laws in Turkey.

<sup>2</sup> MoCT (2004). *Protection of Cultural and Natural Resources Act No: 2863, 1983 (as amended by the Act No: 3386, 1987 and Act No: 5226, 2004)*. Ankara: Ministry of Culture and Tourism. Article 1.

The Act No. 2863 defines ‘sites’ as: “... areas that reflect civilizations from the pre-historic period to the present and that involve towns or remains of towns reflecting the social, economic, architectural or other qualities of their era or places that have been subject to social life where intensive cultural properties are present, or places where significant historic events have taken place and their designated territories to be conserved for their natural characteristics ”<sup>3</sup> and types/categories of ‘sites’ in its supplementary regulations<sup>4</sup> (*KTVKYK İlke Kararları*) as: urban, archaeological, natural and historical ‘sites’.

When the definitions within the Act No. 2863 are evaluated it is seen that the definition of ‘cultural landscape’ does not exist in the current legislative framework or in its supplementary regulations. These areas are usually registered to the Sites and Monuments Inventory as ‘monuments’ and/or two or more types/categories of ‘sites’ - according to their size and characteristics (i.e. cultural, natural, wildlife, etc.) - and as a consequence approached within the existing ‘site’ definition and norms.

These inventories are held by the Regional Conservation Councils in Turkey, and by the Department of Conservation Councils within the General Directorate of Cultural Resources and Museums (*Kurullar Dairesi Başkanlığı, Kültür Varlıkları ve Müzeler Genel Müdürlüğü*), MoCT.<sup>5</sup> The importance of this inventory is that they effect any

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<sup>3</sup> MoCT (2004), Article 3.a

<sup>4</sup> Act No. 2863’s supplementary regulations (*Kültür ve Tabiat Varlıklarını Koruma Yüksek Kurul İlke Kararları*):

Supplementary Regulation No. 421 - Historic ‘Sites’, Protection and Use Principles (*421 nolu İlke Kararı - Tarihi Sitler, Koruma ve Kullanma Koşulları*)

Supplementary Regulation No. 658 - Archaeological ‘Sites’, Protection and Use Principles (*658 nolu İlke Kararı - Arkeolojik Sitler, Koruma ve Kullanma Koşulları*)

Supplementary Regulation No. 720 - Urban ‘Sites’, Protection and Use Principles (*720 nolu İlke Kararı - Kentsel Sitler, Koruma ve Kullanma Koşulları*)

Supplementary Regulation No. 728 - Natural ‘Sites’, Protection and Use Principles (*728 nolu İlke Kararı - Doğal (Tabii) Sitler, Koruma ve Kullanma Koşulları*).

<sup>5</sup> With the **Decree Law (Kanun Hükmünde Kararname) No.648, 08.2011** - an amendment to the **Decree Law No.644, 06.2011 concerning the Organization and Duties of the Ministry of Environment and Planning** the natural ‘sites’ inventory held within the MoCT has been transferred to the MoEP in 2011. See pp.9-10 for detailed explanation of the Decree Law No.648 and its possible effects on the existing areas under protection by different laws i.e. Act No(s). 2863, 2872, and 2873.

plan that will be developed at the regional and/or local level. There are two major problems when the Inventory held by the Regional Conservation Councils are to be used in any assessment concerning landscapes: inconsistency (or incompleteness) and the form in which data is held. While the Nevşehir Inventory is very extensive – it is by no means complete. For example, the Nevşehir Sites and Monuments Inventory contains information on the area’s 252 Monuments, 668 Listed Buildings (LBs), and 148 ‘sites’ – which includes 27 natural and 3 listed under two or more types/categories of ‘sites’.<sup>6</sup> The record includes over 100 sites of archaeological interest, comprising a range of site types from pre-historic (EBA) burial mounds to 2<sup>nd</sup> mill. BC (MBA, LBA), Hittite level settlements, and from documentary references of the Roman Period to the upstanding remains of Ürgüp’s ecclesiastic heritage. Above all, such an inventory can never be complete: to possess a register of all archaeological, natural, etc. sites within an area is a physical, if not a theoretical impossibility.

A second problem of the Sites and the Monuments Inventory (and many others in other EU countries) is that the information it contains is largely point based: a rock-hewn church found in Göreme or a pre-historic mound and/or level settlement located in Avanos (Nevşehir). Even the area-based information held as part of the inventory, such as ‘sites’ or the extent of Monuments, become point-specific, particularly so when viewed at a sub-regional or broad strategic context. Given that no Anatolian landscape can lay claim to being untouched by human influence, it follows that all the areas between the sites held on the *Inventory*, the field boundaries, field patterns, tracks, pathways and roads, woodland, settlements, buildings, and semi-natural resources, are individually historic and collectively also merit treatment as ‘archaeology’, as it is all part of the historic landscape.

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<sup>6</sup> Updates on the information on the Sites and Monuments Inventory was a part of the study undertaken in Feb.2011. This included the field survey and the systematic scanning of the archival docs (i.e. ‘sites’ designations and inventory of monuments and LBs within the study area) in the Nevşehir Regional Conservation Council.

In this sense, although the protection of individual historic and/or archaeological sites through the Act No. 2863 and its supplementary regulations is well defined and understood, that for the conserving the broader historic and/or cultural landscape is not. The Act No. 2863 fails to encourage efforts to define heritage values present in cultural landscapes and to develop planning, management principles which would ensure their protection throughout the development processes.

**National Parks Act (*Milli Parklar Kanunu*) No. 2873, 1983** in its Article 1 defines its objectives as: “... *to establish principles for the identification, protection, development and management of national parks, natural parks, natural monuments and natural conservation areas that have national and/or international importance.*”<sup>7</sup> Defines terms such as; ‘*national park*’, ‘*natural park*’, ‘*natural monument*’ and ‘*natural conservation area*’ in its Article 2.

The Act No:2873 with its supplementary regulation no.190309 - Principles for National Parks (12.12.1986) defines the general principles in its Article 5 and the criteria for a site to be designated as a ‘national park’, ‘natural park’, ‘natural monument’ and ‘natural conservation area’ in its Articles 6 and 7.

When the definitions within the National Park Act No. 2873 and its supplementary regulation, are evaluated it is seen that the major problem is the definitions of ‘natural park’ and ‘natural conservation area’ brought in addition to the definition of ‘national park’ in Article 2. The definitions are insufficient in describing the differentiation of the ‘national park’ and ‘natural park’. When considered together with other related laws (i.e. natural ‘*site*’ designated with the Act No.2863, ‘Special Environment Protection Regions’ designated with the Environment Act No. 2872), this ambiguity in the National Park Act No. 2873 creates a problematic situation for the authorities who are responsible for the identification, protection and management of these areas.

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<sup>7</sup> MoEF (1983b). *The National Parks Act No: 2873*. Ankara: MoEF. Article 1.

**Environment Act (Çevre Kanunu) No. 2872, 1983** in its Article 1 defines its objectives as: “*to protect and rehabilitate the environment which is the common [shared] property of all citizens; ...*”<sup>8</sup> but again neglects the concept of ‘landscape’ in Article 2 where terms such as ‘environmental protection’, ‘ecological balance’, ‘environmental pollution’, ‘disposal’, etc. are defined.

According to Act No. 2872, areas “*... including ecological features significant at national /international level, and has become vulnerable under the impact of environmental pollution and degradation ...*”<sup>9</sup> are identified and designated as ‘Special Environment Protection Regions’ (Özel Çevre Koruma Bölgesi). Apart from the general principles in Article 9, the specific principles guiding the use-protection processes are defined through its supplementary regulations.

When the definitions and general/specific principles within the Environment Act No. 2872 is examined it is seen that although there is a major emphasis on the importance of ‘environmental protection’, it fails to give a specific definition of the terms ‘environment’ and ‘Special Environment Protection Regions’ in its Article 2, nor gives criteria for identifying/assessing the specific qualities and characteristics of these areas. This series of protection measures implied by the Environment Act No. 2872 cannot be accepted as it describes measure(s) for the protection, management and development of the ‘environment’ independently from its value.

When the definitions within the Protection of Cultural and Natural Resources Act No: 2863, Environment Act No. 2872 and National Parks Act No.2873 are considered; it can be seen that the common emphasis of these definitions are on: ‘rarity’, and protection of these areas for their characteristics and ‘aesthetic’ values. The differences – if there is any? - between these areas defined by similar definitions in three different laws are not clearly put forward. Consequently, these areas with similar characteristics can be defined under different laws, thus different terms.

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<sup>8</sup> MoEF (1983a). *The Environment Act No:2872*. Ankara: MoEF. Article 1.

<sup>9</sup> MoEF (1983a). Article 9

This problem with ‘definitions’ and ‘criteria’ also continue when the ‘protection measures’ to be taken in such sites according to the Protection of Cultural and Natural Resources Act No: 2863, Environment Act No. 2872 and National Parks Act No.2873 are considered together.

As similar approaches to intervention under different laws can be seen, differentiations and ambiguity also occur depending on to how the area is defined and registered. And the problem even increases in areas where two or more different designated area boundaries by different laws (‘national park’ vs. ‘*site*’) overlap.

While the areas that are designated as natural, archaeological, and/or historical ‘*sites*’ are evaluated and thus protected and managed under the status of the Protection of Cultural and Natural Resources Act No. 2863, a ‘national park’ or ‘special environment protection region’ which overlaps and/or encompasses the same boundaries implements its own planning and protection processes through their own regulation. For example, while all the activities that will damage the natural fabric is prohibited within an area designated as a ‘national park’ with the Act No. 2873, a similar character area overlapping and/or neighbouring designated according to the Act No. 2863 – depending to the degree of the ‘*site*’ – can allow activities which are incompatible with the national park status – i.e. mass tourism, recreational uses etc. - thus diminishing the values for which it was designated at the first place.

Apart from the problems of ‘definition’, ‘criteria’, and differentiating ‘protection measures’ by different laws to similar character areas the interfering bureaucratic processes may also become critical in the protection and implementation processes.

The designation of urban, archaeological and historical ‘*sites*’ are carried out by the MoCT through its Regional Conservation Councils and since 2011 (with the **Decree Law No.648, 08.2011** – a recent amendment to the **Decree Law No.644, 06.2011 concerning the Organization and Duties of the Ministry of Environment and Planning** ) natural ‘*sites*’ by the MoEP. Designation of ‘special environment protection region’ and ‘national parks’ are executed by the Ministers’ Decree, while

other nature protection areas are registered by MoEF (according to **Decree Law No.645, 06.2011 concerning the Organisation and Duties of the Ministry of Forestry and Water Works** - now Ministry of Forestry and Water Works). This variability and lack of a mutual working ground results in institutions having conflicts over their functions, authorities and responsibilities. The situation even accelerated with the introduction of the **Decree Law (*Kanun Hükmünde Kararname*) No.648, 08.2011** - an amendment to the **Decree Law No.644, 06.2011 concerning the Organization and Duties of the Ministry of Environment and Planning**.

The purpose of the Decree Law No.648, 2011 was to overcome the shortcomings of the Decree Law No.644, 2011 concerning the Organization and Duties of the MoEP. But apart from amendments to the organization and duties to the MoEP it also included certain amendments effecting the Protection of Cultural and Natural Resources Act No.2863, Environment Act No.2872 and the National Parks Act No.2873. According to Article 10 of the Decree Law No.648, the MoEP through the General Directorate of Protection of Natural Resources (*Tabiat Varlıklarını Koruma Genel Müdürlüğü*) is responsible for the identification designation and approval of the monuments and/or sites previously designated as ‘national parks’, ‘natural parks’, ‘natural monuments’ and ‘natural conservation areas’ of national and international importance under the Act No.2873, ‘special Environment Protection Regions’ under Environment Act No.2872, natural ‘sites’ under the Protection of Cultural and Natural Resources Act No.2863 and similar areas with protection status under other laws.

This new amendment apart from accelerating the already existing problems concerning the administrative division between institutions dealing with development and protection issues – also brings the possibility of major changes to the boundaries, degree of protection (i.e. 1<sup>st</sup> degree archaeological ‘site’ to be re-designated as a 3<sup>rd</sup> degree archaeological ‘site’) etc. to the existing areas under protection by different laws. The natural ‘sites’ designated through the Act No.2863 is especially vulnerable under these new Decree Law(s). For example, Article 17 of

the same amendment requires that all the documents (i.e information/documentation, inventory, regional conservation councils' decisions, etc.) concerning the natural 'sites' identified and designated through the Act No.2863 to be transferred to the MoEP to be re-evaluated by the new commissions to be formed within the Ministry. Until they are re-evaluated the decisions of the Regional Conservation Councils are to be valid. And again under the same article it is stated that these re-evaluations (before being re-designated by the Ministry) will be subject to approval of the Minister of Environment and Planning and 'sites' which have development limitations and/or restriction – for example 1st degree natural 'sites' – will be approved by the Ministers' Decree. According to this, the future of natural 'sites' previously designated by the comparatively self-governing Conservation Councils will be left completely to the Minister of the MoEP. 'Objectivity' – concerning the processes of identification, designation of these areas by the experts directly appointed by the Minister and approvals subject to the same Minister will be questionable.

Other national laws and regulations concerning urbanism and national/regional development such as the **Planning Act (*İmar Kanunu*) No. 3194, 1985** and **Land Protection and Land-Use Act (*Toprak Koruma ve Arazi Kullanımı Kanunu*) No. 5403** are also having problems in overcoming the administrative division between institutions dealing with development and protection issues. The Planning Act No. 3194 has no linkages between the Protection of Cultural and Natural Properties Act No. 2863 or other protection mechanism related to the concept of cultural landscape apart from Article 4 of the Act No. 3194 where it defines the exceptional areas subject to other national law such as the Protection of Cultural and Natural Properties Act No. 2863 and Tourism Act (*Turizm Teşvik Yasası*) No. 2634. These protected areas - defined under different laws, thus different terms - and their interaction with the surrounding environment and/or land-use patterns are not considered in the current protection, management and landscape policies contained within the regional development plans and/or local plans, etc. prepared outside the conservation system.

As a result although there are many different legal provisions<sup>10</sup> in Turkey - with a few exceptions<sup>11</sup> - no specific reference for the protection of cultural landscapes have been developed. And the existing legal tools and methods for the protection of cultural and natural heritage have shortcomings in the processes of ‘cultural landscape’ identification/assessment, protection, and management.

Therefore, an established methodology for identification/description and assessment is needed, which will describe the character of the landscape in terms of its natural resources, current land-use, aesthetic contribution, geology, topography and historic dimension, and then to create a framework for landscape change based upon a number of discrete landscape character areas. This landscape strategy could lead directly into identification, designation and/or protection processes as an input to policies within the conservation plans prepared for archaeological, natural and/or urban ‘sites’ and/or sites with similar designation status under the Act No.2863, Act

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<sup>10</sup> The Protection of Cultural and Natural Properties Act No. 2863, National Parks Act No.2873, Environment Act No. 2872, Planning Act No. 3194 and the Land Protection and Land-Use Act No. 5403 have been discussed in this section but the following legislative documents are also concerned with the subject of *cultural landscapes*, either directly or indirectly. Due to the scope of this research they have not been included in this stage. See E. Madran (2009). *Yasal Düzenlemelerde Taşınmaz Kültür Varlıklarının Korunması ve Yerel Yönetimler* (unpub.) 2nd ed. Ankara: Mimarlar Odası Ankara Şubesi for context of the following national laws existing in Turkey.

National Park of Gelibolu Historic Peninsula Act (*Gelibolu Yarımadası Tarihi Milli Parkı Kanunu*) No. 4533, 2000

Mining Act (*Maden Kanunu*) No. 3213, 1985

Water Products Act (*Su Ürünleri Kanunu*) No. 1380, 1971

Istanbul Bosphorus Act (*İstanbul Boğaziçi Kanunu*) No.2960 , 1983

Underground Water Resources Act (*Yeraltı Suları Hakkında Kanun*) No. 167, 1960

Agriculture Reform Act (*Sulama Alanlarında Arazi Düzenlenmesine Dair Tarım Reformu Kanunu*) No. 3083, 1984

Olive Production Reform Act (*Zeytinciliğin Islahı ve Yabanilerinin Aşılattırılması Hakkında Kanun*) No. 3573, 1939

Protection of Graveyards Act (*Mezarlıkların Korunması Hakkındaki Kanun*) No.3998, 1994

Pasturage Act (*Mera Kanunu*) No. 4342, 1998

Forestry Act (*Orman Kanunu*) No. 6831, 1956

Coast Act (*Kıyı Kanunu*) No. 3621, 1990

<sup>11</sup> Turkey has ratified the following two international documents: the Convention concerning the Protection of the World Cultural and Natural Heritage (see *Dünya Kültürel ve Doğal Mirasın Korunması Sözleşmesinin Onaylanmasının Uygun Bulduğuna Dair Kanun, No: 2658, 1982*) and the European Landscape Convention (see *Avrupa Peyzaj Sözleşmesinin Onaylanmasının Uygun Bulduğuna Dair Kanun, No. 4881, 2003*), but both found no legal grounds in the existing legislative framework.

No.2873 and Act No.2872 and hence into the land-use planning decision-making process. The strategy could also to be used for strategic management guidance outside of the conservation system. The local authorities, need a complementary historic landscape characterisation to use alongside the more conventional, broader approach of regional/local development plans, as well (as discussed above) to supplement the information held within the Sites and Monuments Inventory by the Regional Conservation Councils.

### **1.3 Research Objectives**

Having reviewed the approaches to the concept of ‘cultural landscape’ at the national level, discussed the existing protection mechanisms regarding cultural and natural heritage in Turkey, and defined the research problems arising from the current situation in the legal framework - the proposed PhD research **A Proposal for a Method of Cultural Landscape Character Assessment: Research on the Context, Method and Results for the Cappadocia Landscape, Turkey** has the following main objectives:

- Objective 1: develop a method to classify and describe cultural landscapes, identify the landscape character types - in other words characterise the distinctive historic dimension of today’s natural and built environment within a given area - through a case study - Cappadocia, Turkey;

Analysis will be conducted in three different levels: regional analysis on general landscape characters located in the Cappadocia region; and a specific case study area within the Cappadocia region which will be selected in the further phases of the PhD research. Cappadocia was chosen as a case study as: (a) its historical setting, the rock-hewn churches, and the unusual eroded landforms combine to produce a well presented example of mixed cultural/natural landscape of unusual appearance. With its diversity, it will aid to discuss all the different aspects /values of cultural landscapes have. (b) accessibility/proximity of the study area; and (c) the existence of previous research - see *Bibliography* for detailed list of the existing research.

- Objective 2: explore how this information and understanding - characterization - can be used to inform a range of applications - i.e. spatial planning, conservation and management in Turkey.

Overall this research aims to bring a method for large-scale characterisation into the heritage management field which will shift the objectives from protecting separate sites to managing the processes of change in the historic environment as a whole.

#### **1.4 Methodology and the Basic Structure<sup>12</sup> of the PhD Research**

The research methodology includes the five main stages illustrated in Figure 1.1. The first stage, which also corresponds to Chapter 1, involves the problem definition through an examination of the current legal tools/provisions (i.e. legal definition; legal basis and designation systems; methods to classify, describe and assess landscapes) concerning: culture, nature, environment, urbanism, national/regional development and agriculture in Turkey which have an effect in the protection processes of ‘landscapes’ and/or ‘cultural landscapes’, either directly or indirectly.

The second stage (Chapter 2) involves an investigation of the evolution of the concept of ‘cultural landscape’ through history - and other concepts that are signified by the keywords and terms that are involved in the subject area such as: ‘natural/cultural heritage’, ‘the inter-relationship between the cultural and natural heritage’ and ‘the holistic integrated and sustainable approaches to protection, development and management’. For the latter, the focus has been on approaches to methods to classify, describe and assess ‘cultural landscapes’ through separate programmes in Europe and the Americas, and their roles in the process, and the need for such methods, as a first step towards the more effective management of ‘cultural landscapes’. National approaches to the concept of ‘cultural landscape’ will be

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<sup>12</sup> Following this initial chapter, the structure of the PhD research broadly parallels the stages of the research methodology outlined below. For the organisation and content of the basic sections (i.e. chapter divisions, etc.) of the research in more detail see pp. xii-xv.

analysed through two main case studies: UK (England, Scotland, Wales and Northern Ireland) and the United States.

The third stage (Chapter 3) involves the development of a method for the classification, description and assessment of ‘cultural landscapes’ for Turkey. This stage describes the steps involved in initiating a study, identifying areas of distinctive character, classifying and mapping them and describing their character. The steps of: defining the scope; pre-field study; field survey; classification and description involves review of relevant background reports, other data and mapped information<sup>13</sup>, and use of this information to develop a series of map overlays - through use of Geographic Information Systems (GIS) as a tool in the process<sup>14</sup> - to assist in the identification of areas of common character which eventually, will lead to the draft landscape character types/areas. As a follow-up to the pre-field study, a field survey - including recording information in the field, photographic survey, interviews and questionnaires on site - is held to test and refine the draft landscape character types/areas, to inform written descriptions of their character, to identify aesthetic and perceptual qualities which are unlikely to be evident from pre-field information, and to identify the current condition of landscape elements. These stages will involve different landscape attributes such as: geology, landform, river

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<sup>13</sup> It should be noted that this information/data (i.e. reports, mapped information, etc.) gathered from various sources (see Table 3.2) was used at this initial stage – and additional field survey and/or other forms of research to verify the information taken was not undertaken due to constraints of time, complexity and the desire to provide a rapid snapshot, rather than a detailed analysis.

As a result the figures and/or boundaries of the Cul.LCA types and/or areas are likely to slightly change when detailed survey of the area are to be completed.

<sup>14</sup> The use of computer technology will largely depend on the scale at which the work is being carried out, the skills and resources available, and how much of the baseline data is already available in digital form. It will particularly be helpful in handling different layers of mapped information (i.e. land-use, settlement patterns, geology, river and drainage systems, soils, etc.) which may be at different scales and interrogating these for inter-relationships. GIS will also have the advantages of: allowing high quality presentation of mapped information; linking to databases and therefore providing a system for data storage, retrieval and analysis; providing a flexible output that can be updated and refined as more information becomes available.

Use of GIS and methods of computer analysis will not, however, be at the expense of proper consideration of the perceptual and aesthetic factors which influence character. Nor it will distract from the need to engage stakeholders in meaningful ways. Use of computer technology, including GIS, will be reviewed in more detail in the following stages of the PhD research.

and drainage systems, vegetation, land-use, settlement patterns/types, and the historic dimension of the landscape (i.e. monuments, archaeological features, etc.). The interaction between information gathering process (pre-field study) and field survey will be iterative. While the field survey will highlight questions that need to be informed by further information gathering, the pre-field study stage will focus and inform the field survey and provide a crucial information base. The final step (classification and description) then refines and finalises the output of the characterisation process by classifying the landscape into landscape character types and/or areas and mapping their extent, based on all the information collected, followed by preparation of clear descriptions of their character. Following the steps of identification, classification and description, the research proceeds with the development of general guidelines for planning and management that are broadly applicable to each character type and/or area defined - which will either directly inform particular decisions, which may be specifically related on decision-making based on landscape character; or be designed to contribute to wider environmental decision-making tools where landscape is only one of several topics to be addressed.

These stages of the proposed methodology for the classification, description and assessment of 'cultural landscapes' is developed through the chosen case study: A Landscape Character Assessment for Cappadocia to illustrate how this method can be undertaken and applied at each level in the hierarchy, from regional to local, all with particular emphasis on the existing legislative framework in Turkey.

The fourth stage (Chapter 4) involves an examination of how this method - and the concept of 'cultural landscape' - as in context and framework can be used to inform a range of applications in areas such as: regional and town planning policies/applications, cultural, environmental, agricultural, social and economic policies with possible direct and indirect impact on the landscape in Turkey. For the purposes of this research, the emphasis will be on how this information and understanding can be applied in work relating to the spatial planning, protection, and management (i.e. informing work on special areas; including identification of areas for designation, mapping of boundaries, justifications for special application of

policies, justification for special treatment by designation, and input to management plans and other management initiatives).

The last stage (Chapter 5) will synthesise the findings from the various outcomes of the method tested and further developed including: the re-evaluation of the proposed Cul.LCA methodology by summarising its principles, general approach and results. Suggestions are also made regarding further research to developing new approaches to managing change in 'cultural landscapes'.

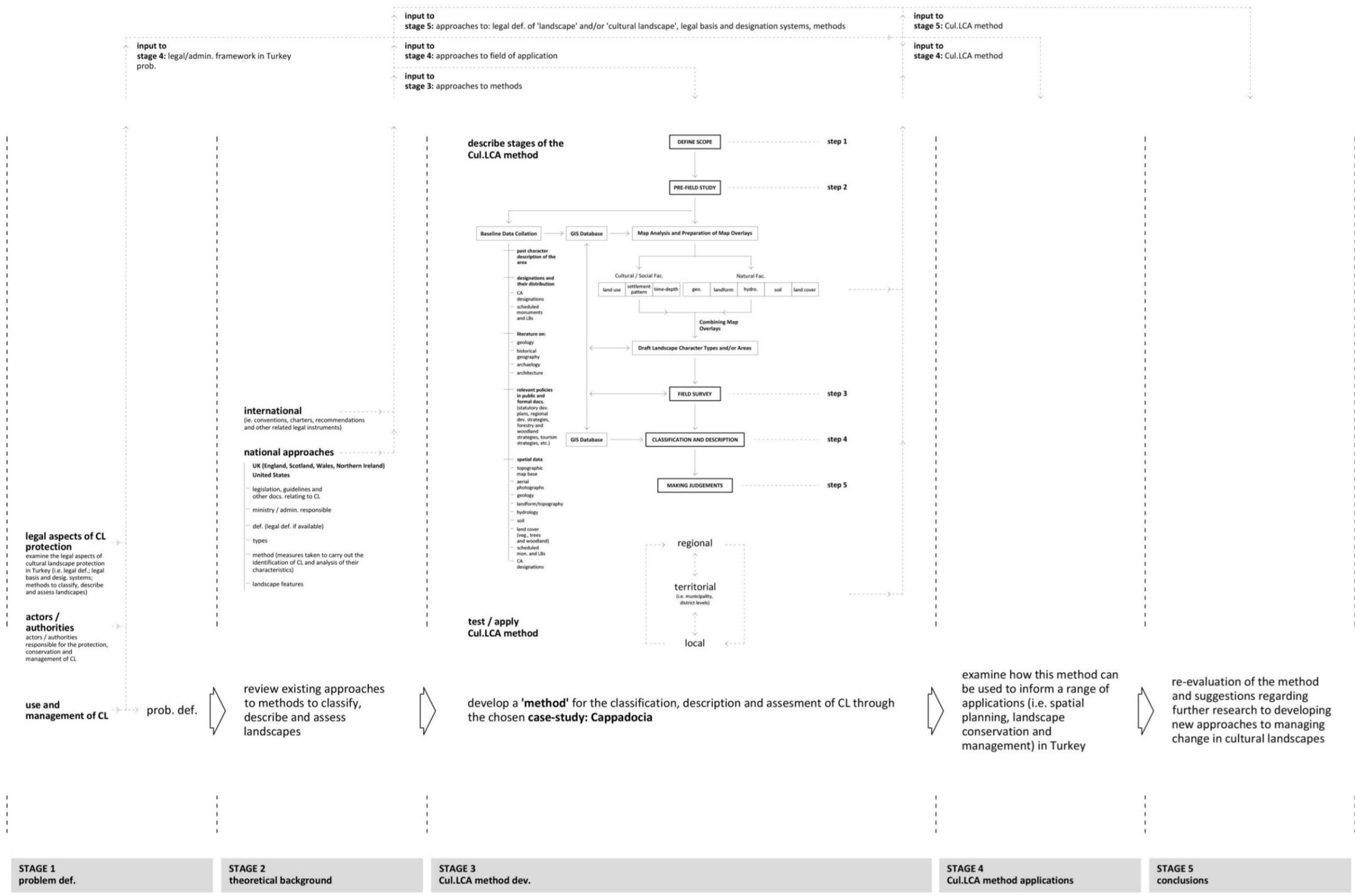


Figure 1.1 Stages of the research methodology



## CHAPTER 2

### EVOLUTION OF THE CONCEPT OF ‘CULTURAL LANDSCAPE’ AND THE RECENT PRACTICE

Cultural Landscape - a concrete and characteristic product of the complicated interplay between a given human community, embodying certain cultural preferences and potentials, and a particular set of natural circumstances. It is a heritage of many eras of natural evolution and of many generations of human effort.<sup>15</sup>

Since the early 1990s, with the UNESCO Expert Meeting on Cultural Landscapes held in La Petite, France (October, 1992), there has been an increasing interest in and recognition of cultural landscapes both at international and national levels. Various frameworks have been developed to identify and classify cultural landscapes, and progress is being made in developing tools and approaches for their management. This recognition of cultural landscapes is an important development and has focused attention on significant historic, cultural, and archaeological resources. However, cultural landscapes present a number of management challenges. For example: their complexity (as products of social-economic systems now changing through rural depopulation, urban expansion and new technologies), variability, dynamic nature, scale and trans-boundary issues, continuity of use, multiple ownership and/or jurisdictions.

These complex aspects of cultural landscapes challenges the traditional approach to resource management (used to protection of single monuments and/or ecosystems) –

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<sup>15</sup> Wagner, P.L. & Mikesell, M.W. (Eds.) (1962). *Readings in Cultural Geography*. University of Chicago Press. p.11.

which has been discipline-oriented and has created a problem in the perception of landscape and the relationship of humans and the environment. This understanding has proved to be a barrier to developing an integrated approach to landscape management.

Recognizing the need to develop a more consisted approach for identification/description and assessment - as a tool to manage change in cultural landscapes - the primary focus of this chapter is to analyse:

- (a) The definitions, categories and values of cultural landscape as related to existing international culture and nature conservation initiatives and mechanisms. This section of the research does not aim to choose one notion and/or definition, but to analyse the evolution of different approaches through history as a tool for understanding the values to develop methods to assess landscapes in the later phases of the PhD research. The full analyses of the existing mechanisms are listed in Appendix A.
- (b) For the latter, the focus has been on national approaches to identify/describe and assess ‘cultural landscapes’ through separate programmes in Europe and the Americas.
- (c) The final section will synthesize the findings from this preliminary research and evaluate the methods and applications at the national level to form a baseline for the development of a method to identify/describe and assess cultural landscapes in Turkey in the following Chapter 3 - a Method of Cultural Landscape Character Assessment: the Case of Cappadocia (Turkey).

The research for this chapter also included a literature review. The results are included in the *Bibliography*.

## **2.1 The Concept of ‘Cultural Landscape’**

The aim of this section of the research has been to argue the approaches emphasized by early geographers in their evaluation and appreciation of cultural landscapes, and

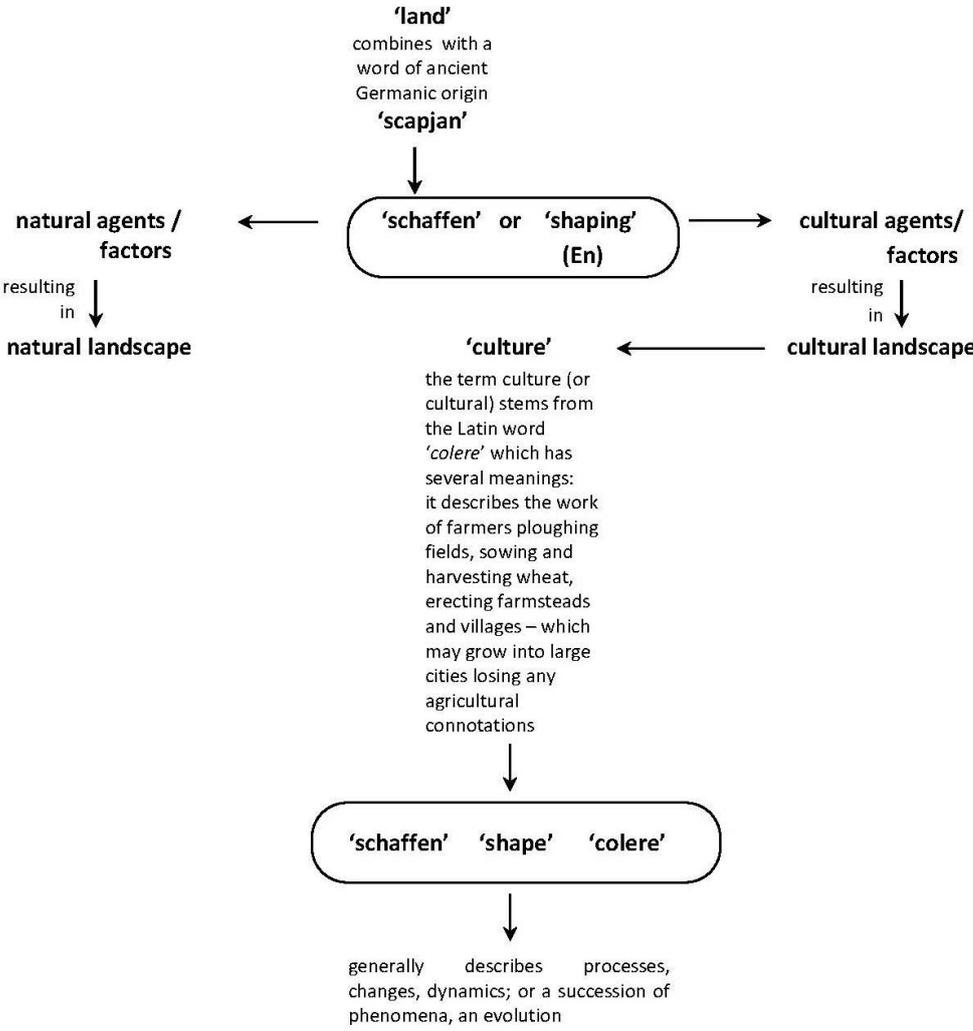
then to give a general overview of the evolution of the concept of ‘cultural landscape’ and/or ‘landscape’ through the international conventions, charters, recommendations and other related legal instruments and its processes in Europe and the Americas.

### **2.1.1 Historical Background: the Conceptual Origins of the Term ‘Cultural Landscape’ and its Semantics**

‘Landscape’, in its broader meaning as defined in the Webster’s International Dictionary is: (i) “*a portion of land or territory that the eye can comprehend in a single view including all the objects so seen*” or (ii) “*the landforms of a region in the aggregate especially as produced or modified by geologic forces (but not limited to them)*”. As a verb, ‘landscape’ means “*to arrange and modify the effects of natural scenery over a tract of land as to produce the best aesthetic effect with regard to the use to which the tract is to be put*”. The Merriam Webster’s Collegiate Dictionary, 10<sup>th</sup> edition, simplifies all this and defines ‘landscape’ as “*a particular area of activity*”. From these definitions we can see that ‘landscape’ includes the notion of ‘*shaping*’ something. But, in order to fully understand the meaning of ‘landscape’ as a concept, it is useful to go back to the origin of the term and look into its semantics.

The term ‘*landscape*’ combines ‘*land*’ with a verb of Germanic origin, ‘*scapjan*’ which literally mean: to work, to be busy, to do something creative - mostly with a plan or design in mind. During the evolution of the Germanic languages, ‘*scapjan*’ became ‘*schaffen*’, thus more or less retaining the original meaning, and ‘*shape*’ in English, shifting the emphasis to the form, the creative design, and to the aesthetic appearance of the land. According to W. Haber, ‘*schaffen*’ or ‘*shaping*’ in or on the land can be done both by natural agents and/or forces resulting in a ‘*natural landscape*’ and by humans who create - not always intentionally - a ‘*cultural landscape*’. And the term ‘*culture*’ or ‘*cultural*’ stems from the Latin word ‘*colere*’ which describes the work of farmers ploughing fields, sowing and harvesting wheat,

erecting farmsteads and villages - which may grow into large cities losing any agricultural connotations.<sup>16</sup>



**Figure 2.1 The origin of the term 'cultural landscape' and its semantics.**

<sup>16</sup> Haber, W. (1995). Concept, Origin and Meaning of "Landscape". In B. Von Droste et al. (Ed.), *Cultural Landscapes of Universal Value: Components of a Global Strategy* (pp.38-41). New York. G. Fischer in cooperation with UNESCO.

The conceptual origins of the term ‘*cultural landscape*’ however, - expressing a relationship between nature and humans - as now accepted for the purposes of this research, but not the actual phrase, lie mainly in the works of German geographers in the early 1900s.

The work of Alfred Hettner<sup>17</sup> was highly influential in this regard, as it provided a basis for the future research on the close relationship that binds humankind to their surrounding environment. He emphasized the centrality of ‘*Länderkunde*’ - regional synthesis - to geographical study, however, by doing so he tended to look more towards the natural environment for explanation of regional patterns than he did to human factors.

It was a reaction to this approach that Otto Schlüter sought to redress the balance by emphasizing the formative influence of human activity in shaping the use of natural resources. For Schlüter, “*the essential object of geographical inquiry was landscape morphology as a cultural product*”<sup>18</sup> - ‘*Landschaftskunde*’ - landscape morphology. ‘*Kulturlandschaft*’ (*transl.* cultural landscape) was distinguished from ‘*Naturlandschaft*’ (*transl.* natural landscape). But he focused on cultural aspects which was visible in the landscape thus omitting the non-material – ‘*intangible*’ - components of culture such as language, tradition, religion and other associated values.

Although Schlüter’s emphasis on cultural aspects which was visible in the landscape was criticized by many, the term, and the particular idea it embraced, was further developed by Carl Sauer through his *Morphology of Landscape* in the 1920s and 1930s. Sauer in his study makes an elementary distinction between the natural and cultural landscape. The natural landscape existed only “*before the introduction of man’s activities*” in a particular area and/or region. A natural landscape, as Sauer

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<sup>17</sup>cited in Livingstone, D.N. (1993). *The Geographical Tradition: episodes in the history of a contested enterprise*. Oxford, UK; Cambridge, Mass.: Blackwell Publishers.

<sup>18</sup> cited in Livingstone, D.N. (1993).

continues, begins as a set of factors: the underlying geology, climate, vegetation, and so on. Over time these factors interact with each other to create the specific landscape forms, (i.e. climate, geomorphic features, soil, special associations of vegetation, etc.) that comprise the morphology - the shape and structure - of the natural landscape itself.<sup>19</sup>

Such description of natural landscapes - including the description of the processes that give shape and structure to them - was, according to Sauer, merely preliminary: the real task was to see how this natural landscape was both the stage for, and the primary ingredient in, human geographic activity. "*The natural landscape is being subject to transformation at the hands of man, the last and for us the most important morphological factor. By his culture he makes use of the natural forms, in many cases alters them, in some destroys them.*"<sup>20</sup>

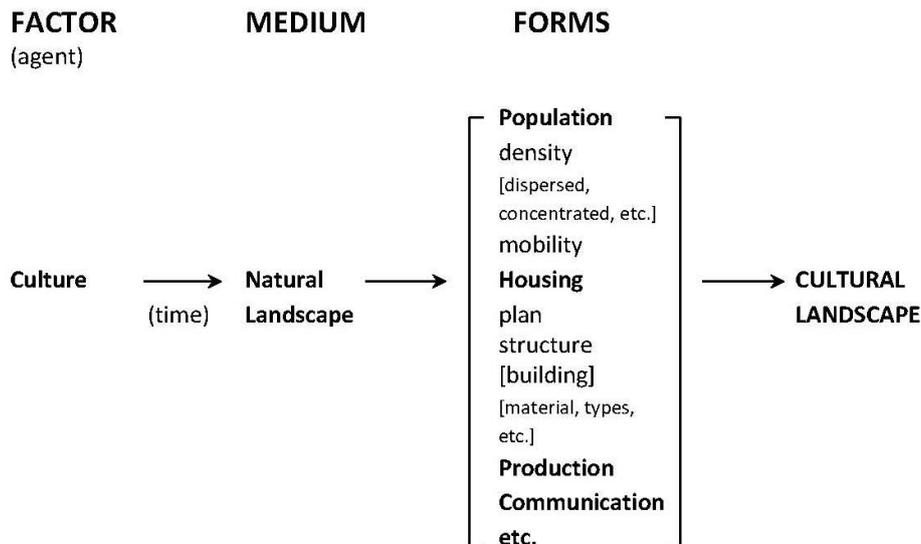
Sauer is clear on the importance of the agency of man on earth: "*The cultural landscape is fashioned from a natural landscape by a culture group. Culture is the agent, the natural area the medium, the cultural landscape the result .... The natural landscape is of course of fundamental importance, for it supplies the materials out of which the cultural landscape is formed. The shaping force, however, lies in the culture itself.*"<sup>21</sup> From this approach, Sauer developed a powerful definition for understanding the processes through which landscapes developed.

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<sup>19</sup> Sauer, C.O. (1925). The Morphology of Landscape. *University of California Publications in Geography*, Vol.2(2), pp.19-53, reprinted in J. Leighley (ed.) (1963). *Land and Life: a selection from the writings of Carl Ortwin Sauer*. Berkeley: University of California Press.

<sup>20</sup> J. Leighley (ed.) (1963).p.341

<sup>21</sup> J. Leighley (ed.) (1963).p.343



**Figure 2.2 Carl Sauer’s schematic representation of the morphology of landscape.** It should be noted that in contrast to environmental determinism - which was strongly advocated by Alfred Hettner - ‘culture’ becomes the primary agent (factor) of change, and the ‘cultural landscape’ is what is to be the outcome. (Source: J. Leighley, 1963)

Schlüter’s first formal use of the term, and Sauer’s efforts on the development of the idea, broadened the notion of landscape, and made it able to integrate man-nature interactions that were not described so far in terms of landscape.<sup>22</sup> The term ‘cultural landscape’ and/or ‘landscape’ and the idea behind it has been variously used, debated, developed and refined within academia as well as within international culture and nature conservation initiatives and mechanisms. Thus, the following section of the research will analyse the definitions, categories and values of ‘cultural landscape’ through the existing international conventions, charters, recommendations and other related legal instruments under three key subjects: cultural heritage; natural heritage and biodiversity; and cultural landscape.

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<sup>22</sup> Critical to the development of the 1900s movement (see next section) were the 1960s-70s scholarly writings of geographers like J.B. Jackson, P.L. Wagner, M.W. Mikesell, and others. A further detailed analysis on the origins of the term and the idea of landscape as developed through the discipline of geography can be discussed thoroughly as a subject for further research. For the purposes of this section of the PhD research, the most influential works to the emergence of the concept of ‘cultural landscape’ - A. Hettner, O. Schlüter, and O. Sauer is included in this preliminary research.

### **2.1.2 The Evolution of the Concept of ‘Cultural Landscape’ through the International Conventions, Charters, Recommendations and other Related Legal Instruments**

#### **The Beginnings: a dichotomous tradition in the perception of ‘cultural landscape’ and the relationship of humans and the environment**

The study of landscape has been largely influenced by two main streams of scientific thinking: the first one dominated by art history, mostly concentrating on single cultural objects, but with a reduced interest in the cultural context and the landscape environment in which they developed; the second focusing on nature conservation, interested in protection of threatened species and of ‘untouched’ natural areas from human influence.

At least since the beginning of the Industrial Revolution, nature was seen not as a counterpart of culture, but above all as an ‘enemy’ to be controlled and dominated, with the assistance of technology. Technological achievements were seen in the industrial nations as a way protecting and insulating people from nature. The structure of nature was regarded as if it were similar to that of a machine: to be analyzed, used and altered as far as possible and controllable. This approach is still reflected in many scientific disciplines. This thinking, the confidence in technological developments and modern science and a cultural identification with it, reached a peak in the early 1970s. This was also the time of a major environmental movement, demonstrated at the **United Nations Conference on the Human Environment held in Stockholm, Sweden from 5-16 June, 1972**. This was the first major conference on international environment issues, and marked a turning point in the development of international environment policies. The meeting agreed upon a Declaration (the *Stockholm Declaration*) including principles concerning the environment and development, an Action Plan, and a Resolution<sup>23</sup>. This Conference,

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<sup>23</sup> UN (1972). *Report of the United Nations Conference on the Human Environment, 5-26 June 1972 Stockholm*. New York: United Nations Publication.

and more importantly the scientific conferences following it<sup>24</sup>, had a major impact on the development of environmental policies at the international level.

At the same time UNESCO adopted the **Convention concerning the Protection of the World Cultural and Natural Heritage in 1972**,<sup>25</sup> establishing a profoundly unique document recognising and protecting both the cultural and natural heritage - traditionally considered as separate. To cover this by a single document was quite innovating and encouraging. However, a substantive connection between culture and nature was not automatically implied by the World Heritage Convention.

### **International recognition of the concept of ‘cultural landscape’ through the World Heritage Convention - the ‘WHC’**

The concept of ‘cultural landscape’ have only recently been introduced in to the World Heritage Convention (1992), initially the word ‘cultural landscape’ could not be found in the WHC, - or in its supplementary documents.<sup>26</sup> An **expert meeting held in La Petite Pierre, France in October 1992**<sup>27</sup> marked a turning point in the debate. The expert group acknowledged that cultural landscapes are the: “*combined works of nature and of man*” designated in Article 1 of the Convention. “*They are illustrative of the evolution of human society and settlement over time, under the*

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<sup>24</sup> The United Nations Conference on Environment and Development, (also known as the Earth Summit 1992) held in Rio de Janeiro from 3-14 June 1992 and the World Summit on Sustainable Development in Johannesburg, South Africa from 26 August - 4 September 2002.

<sup>25</sup> UNESCO (1972a). *Convention concerning the Protection of the World Cultural and Natural Heritage, 16 November 1972, Paris*. Paris: UNESCO. Also referred to as the ‘World Heritage Convention’ - the ‘WHC’.

<sup>26</sup> UNESCO (2013). *Operational Guidelines for the Implementation of the World Heritage Convention*. Paris: UNESCO World Heritage Centre. - aim to facilitate the implementation of the 1972 Convention concerning the Protection of Cultural and Natural Heritage. The guidelines are periodically revised to reflect the new concepts, knowledge and experiences - with the latest version being document WHC. 13/01 July 2013. Para 77 lists the ten criteria with the note that “These criteria were formerly presented as two separate sets of criteria—(i) - (vi) for cultural heritage and (i)-(iv) for natural criteria. The 6th extraordinary session of the World Heritage Committee decided to merge the ten criteria (Decision 6 EXT.COM 5.1)”, <http://www.unesco.org/archiove/opguide08-en.pdf> (see also 2005 version of the Operational Guidelines).

<sup>27</sup> UNESCO (1992). *Revision of the Operational Guidelines for the Implementation of the World Heritage Convention: Report of the Expert Group on Cultural Landscapes, 24-26 October 1992 La Petite Pierre, France (Doc.No. WHC-92/CONF.202/10)*. Paris: UNESCO World Heritage Centre.

*influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal*<sup>28</sup> In this context, cultural landscapes of universal value were characterized according to the following three categories:<sup>29</sup>

**Category (i)      Designed**

The most easily identifiable is the **clearly defined** landscape designed and created intentionally by man. This embraces garden and parkland landscapes constructed for aesthetic reasons which are often associated with monumental buildings and ensembles.

**Category (ii)     Organically Evolved**

The second category is the **organically evolved landscape**. This results from an initial social, economic, administrative, and/or religious imperative and has developed its present form by association with and in response to its natural environment. Such landscapes reflect that process of evolution in their form and component features. They fall into two sub-categories:

- a **relict (or fossil) landscape** is one in which an evolutionary process came to an end at some time in the past, either abruptly or over a period. Its significant distinguishing features are, however, still visible in material form.
- a **continuing landscape** is one which retains an active social role in contemporary society closely associated with the traditional way of life, and in which the evolutionary process is still in progress. At the same time it exhibits significant material evidence of its evolution over time.

**Category (iii)    Associative**

The final category is the **associative cultural landscape**. This category symbolizes the acceptance and integration of communities and their relationship to the environment, even if such landscapes are linked to powerful religious,

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<sup>28</sup> UNESCO (2013), Para. 47.

<sup>29</sup> This section of *categories* is an extract from the Annex 3 (Guidelines on the inscription of specific types of property on the World Heritage List) of the UNESCO (2013). *Operational Guidelines for the Implementation of World Heritage Convention*. Paris: UNESCO World Heritage Centre.

artistic or cultural associations of the natural elements rather than material cultural evidence, which may be insignificant or even absent.

A second **expert meeting held at Schorfheide/Templin, Germany, in October 1993** reviewed the revised criteria in detail and analysed their application for different parts of the world.<sup>30</sup> The meeting presented an *Action Plan for the Future*, recommending that regional expert meetings be held to assist with comparative studies of cultural landscapes and that thematic frameworks be assisted for the evaluation of cultural landscapes and to assist the World Heritage Committee in the decision making concerning cultural landscapes. It gave suggestions towards the classification and evaluation of cultural landscapes based on the La Petite Pierre recommendations and addressed specific legal, management, socio-economic and conservation issues related to cultural landscapes.

In June 1994, the World Heritage Centre and ICOMOS organized an **Expert Meeting on the Global Study** to examine the representative nature of the World Heritage List and the methodologies for its definition and implementation. The outcome of this meeting was presented as a *Global Strategy and Thematic Studies for a Representative World Heritage List*. A linkage between the work to include cultural landscapes in the World Heritage List and the Global Strategy can be seen in the field of ‘living cultures’ - in particular traditional cultures/settlements:

... all living cultures - and especially the ‘traditional’ ones -, with their depth, their wealth, their complexity, and their diverse relationships with their environment, figured very little on the List. Even traditional settlements were only included on the List in terms of their ‘architectural’ value, taking no account of their many economic, social, symbolic, and philosophical dimensions or of their many continuing interactions with their natural environment in all its diversity.

This impoverishment of the cultural expression of human societies was also due to an over-simplified division between cultural and natural

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<sup>30</sup> UNESCO (1993). *Report of the International Expert Meeting on Cultural Landscapes of Outstanding Universal Value. Templin, Germany 12-17 October 1993 (Doc.No. WHC-93/INF.3)* Paris: UNESCO World Heritage Centre.

properties which took no account of the fact that in most human societies the landscape, which was created or at all events inhabited by human beings, was representative and an expression of the lives of the people who live in it and so was in this sense equally culturally meaningful.<sup>31</sup>

Furthermore, among the recommendations of the Global Strategy report there were specific references to human co-existence with the land (i.e. movement of people, settlement, modes of subsistence, and the technological evolution) which relates directly to the outcome work of the cultural landscape groups, as discussed earlier in this section.<sup>32</sup>

The World Heritage Committee followed the recommendations made by these expert meetings and encouraged different State Parties for their invitations to host regional and thematic expert meetings. In 1994 two State Parties hosted meetings: the **Expert Meeting on Heritage Canals held in Canada in September 1994** and a thematic study **Expert Meeting on Routes as Part of the Cultural Heritage in Spain**.

Between 1992 and 2007, twenty-two expert meetings<sup>33</sup> were organized by the World Heritage Centre in cooperation with State Parties, to develop methodologies for the identification, classification, and evaluation of cultural landscapes. Specific legal, management, socio-economic and conservation issues related to cultural landscapes were also addressed and examples of outstanding cultural landscapes were discussed to illustrate the above mentioned categories in their specific thematic and regional context.

However, although the discussions held in the framework of the WHC provided an important step towards the international recognition of this type of heritage -

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<sup>31</sup> UNESCO (1994a). *Report of the Expert Meeting on the Global Strategy and Thematic Studies for a Representative World Heritage List. UNESCO Headquarters, Paris 20-22 June 1994 (Doc. No. WHC-94/CONF.003/INF.6)*. Paris: UNESCO. pp.3-4.

<sup>32</sup> UNESCO (1994a). p.6

<sup>33</sup> See UNESCO website, <http://whc.unesco.org/en/culturallandscape>, for the complete list of the regional and thematic expert meetings on 'cultural landscapes' held between 1992 and 2007.

encouraging scientific debate at the international level and authorities to enhance conservation and protection measures at the national and regional level - cultural landscapes recognized as such and inscribed on the World Heritage List can only be landscapes having an ‘outstanding universal value’. This limits the legal field of application of the UNESCO Convention with regard to landscapes.

Parallel to the discussions related to the concept of ‘cultural heritage’ held in the framework of the Convention concerning the Protection of Cultural and Natural Heritage endorsed by UNESCO, policies towards ‘natural heritage’ and ‘biodiversity’ protection have also gained importance.<sup>34</sup>

Following the United Nations Conference on the Human Environment in 1972 the **United Nations Environment Programme (UNEP)** was launched - in order to encourage UN agencies to integrate environmental measures into their programmes. Little, however, was done in the succeeding years to integrate environmental concerns into national economic planning and decision-making processes.

By 1983, when the UN set up the World Commission on Environment and Development, environmental degradation - which had been seen as a side effect of industrial development with only a limited impact - was understood to be a matter of survival for developing countries. The Commission put forward the concept of ‘*sustainable development*’ as an alternative approach to one simply based on economic growth - one as defined in the **1987 Brundtland Report**: “... *which meets the needs of the present without compromising the ability of future generations to meet their own needs*”.<sup>35</sup>

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<sup>34</sup> See **Appendix A – Chronological Review of the Existing Agreements and Initiatives on Protection of Cultural and Natural Heritage** for the detailed analyses of the scope, aim/objectives of the existing agreements and initiatives on protection of cultural and natural heritage.

<sup>35</sup> Report of the World Commission on Environment and Development: Our Common Future - also known as the ‘Brundtland Report’ by the name of the Commission’s Chair Gro Harlem Brundtland. It was transmitted to the UN General Assembly as an Annex to document A/42/427 - Development and International Economic Co-operation: Environment. See - UN (1987).Development and International Economic Co-operation: Environment, 4 August 1987 New York, USA (Doc. No.A/42/427).

After considering the Brundtland Report, the UN General Assembly called for the **United Nations Conference on Environment and Development which was held in Rio de Janeiro from 3-14 June 1992** (the Rio “Earth Summit”). The primary goal of the Conference was to come to an understanding of ‘development’ that would support socio-economic development and prevent the continued deterioration of the environment, and to lay a foundation for a global partnership between the developing and the more industrialized countries, based on mutual needs and common interests.<sup>36</sup>

The Rio “Earth Summit” resulted in governments adopting three major agreements aimed at changing the traditional approach to development: the **Rio Declaration on Environment and Development** - a series of principles defining the rights and responsibilities of governments; **Agenda 21** - a comprehensive programme of action in all areas of sustainable development; and **The Statement of Forest Principles** - a set of principles to underlie the sustainable management of forests worldwide.

In addition, two legally binding Conventions aimed at preventing global climate change and the conservation of the biological diversity were open to signature at the Conference: the **United Nations Framework Convention on Climate Change** - which in turn led to the **Kyoto Protocol in 1997**; and the **Convention on Biological Diversity**.

Although the Convention on Biological Diversity did not fully link biodiversity to cultural landscape diversity, it has become a fundamental framework for the **Pan-European Biological and Landscape Diversity Strategies which was adopted by the European Environment Ministers in October 1995**. The principle aim of the Strategy was to find a consistent response to the decline of biological and landscape diversity values in Europe and to ensure the sustainability of the natural

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<sup>36</sup> UN (1992). *Report of the United Nations Conference on Environment and Development, 3-4 June 1992 Rio de Janeiro*. New York: United Nations Publication.

environment.<sup>37</sup> It comprises eleven Action Themes<sup>38</sup>, theme number 4 deals with the conservation of landscapes. Within Action Theme 4, action is targeted towards an integrated approach to landscape conservation and management in order to prevent deterioration of the landscapes and their associated cultural and geological values of European importance.

Although mainly focusing on biodiversity of landscapes, this Strategy based on ‘natural’ aspects, nevertheless does not ignore the cultural aspect. Indeed, in Action Theme 4 of the Strategy, it is clearly stated that landscapes have associative cultural and geological values and that they constitute a “*unique mosaic of cultural, natural and geological features*”.<sup>39</sup>

In addition to above ‘nature’ and ‘biodiversity’ related protection agreements and initiatives, the **IUCN Management Categories of Protected Areas - Category V** - now formally known as Protected Landscapes/Seascapes is specifically relevant to the development of the concept of ‘cultural landscape’ discussed in the framework of this research.

IUCN (the International Union for Conservation of Nature) has defined protected areas as: “... *areas of land and/or sea especially dedicated to the protection and*

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<sup>37</sup> Council of Europe, UNEP & European Centre for Nature Conservation (1996). *Pan-European Biological and Landscape Diversity Strategy*. Strasbourg: Council of Europe Press. p.17.

<sup>38</sup> Action Themes:

1. Establishing the Pan-European Ecological Network
2. Integration of Biological and Landscape Diversity Considerations into Sectors
3. Raising Awareness and Support with Policy Makers and the Public
4. Conservation of Landscapes
5. Coastal and Marine Ecosystems
6. River Ecosystems and Related Wetlands
7. Inland Wetland Ecosystems
8. Grassland Ecosystems
9. Forest Ecosystems
10. Mountains Ecosystems
11. Action for Threatened Species

- as defined in the Council of Europe, UNEP & European Centre for Nature Conservation (1996). *Pan-European Biological and Landscape Diversity Strategy*. Strasbourg: Council of Europe Press. pp.30-48.

<sup>39</sup> Council of Europe, UNEP & European Centre for Nature Conservation (1996). p.40.

*maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.*”<sup>40</sup>

Within this broad definition, the CNPPA/IUCN has developed a system of categorizing protected areas by their primary management objectives. It identifies six distinct categories as listed below: <sup>41</sup>

- Category Ia**     **Strict Nature Reserve:** protected area managed mainly for science
- Category Ib**     **Wilderness Area:** protected area managed mainly for wilderness protection
- Category II**     **National Park:** protected area managed mainly for ecosystem protection and recreation
- Category III**    **Natural Monument:** protected area managed mainly for conservation of specific natural features
- Category IV**    **Habitat/Species Management Area:** protected area managed mainly for conservation through management intervention
- Category V**     **Protected Landscape/Seascape:** protected area managed mainly for landscape/seascape conservation and recreation
- Category VI**    **Managed Resource Protected Area:** protected area managed mainly for the sustainable use of natural ecosystems

Among the six major categories for IUCN’S protected areas, Category V covers protected ‘landscapes’. They are defined as follows:

Area of land, with coast and sea appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional

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<sup>40</sup> IUCN (1994). *Guidelines for Protected Area Management Categories*. Gland, Switzerland & Cambridge, UK: IUCN. p.7

<sup>41</sup> This section of *categories* is an extract from the IUCN (1994). pp.17-23.

interaction is vital to the protection, maintenance and evolution of such an area.<sup>42</sup>

This emphasis on “*interaction between people and nature*” in Category V is what makes it unique among the other six categories. It may be seen from the above definition that the focus of Category V areas is on nature conservation, but it is in fact about guiding human processes so that the area and its resources are protected, managed and capable of evolving in a sustainable way – and natural and cultural values are thereby maintained and enhanced.

The idea behind Category V protected areas bears some similarities with those of World Heritage cultural landscapes: the emphasis on human-nature interaction, most notably in the continuing category of organically evolved cultural landscape - type (ii), which acknowledge the value of landscape related cultural traditions that continue to this day; and in the importance placed upon associative values - type (iii). But there are also important differences. In Category V protected areas, the natural environment, biodiversity conservation and ecosystem integrity have been the primary emphases. In contrast, the emphasis in cultural landscape has been on human history, continuity of cultural traditions, and social values and aspirations. The World Heritage cultural landscapes include a category of designed landscapes - type (i), that is not reflected in the IUCN notion of the Category V protected area - though a Category V protected area might include important designed features. Moreover, the fundamental criterion for recognition of a World Heritage cultural landscape is that of ‘outstanding universal value’. There is less stress placed on outstanding qualities in the case of Category V protected areas, although the areas should certainly be nationally significant to merit protection.

**The Rise of the Concept of ‘Cultural Landscape’: from that of providing background to a monument to whole areas through the European Landscape Convention**

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<sup>42</sup> IUCN (1994).p.22

As has been argued above, over the last decades - especially after 1970s - international bodies have promoted methods that asked for a more balanced approach to the cultural heritage and to the landscape itself. Terms such as “ecosystem integrity”, “sustainability”, “landscape”, “landscape policy”, and “landscape management” were increasingly circulated. The debates intensified especially after the adoption of the **European Landscape Convention in 2000 by the Council of Europe**.

The European Landscape Convention (the ‘Florence Convention’ - the ‘ELC’) provides a more general and abstract definition of landscape: “... *an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors;*”<sup>43</sup> whose specific features call for various types of action, ranging from strict conservation through protection, management and planning.

To define more completely the Convention’s field of territorial application, Article 2 indicates that it applies to the “*entire territory of the Parties and covers natural, rural, urban and peri-urban areas*”, whether on land, or water. The originality of the Convention lies in its field of application as it does not only concentrate on areas that would merit recognition for their ‘outstanding universal value’ but also ordinary landscapes and even degraded areas.

The Convention proposes legal measures at the national and international levels, aimed at shaping landscape policies and promoting co-operation between local and central authorities as well as trans-frontier cooperation in protecting landscapes.<sup>44</sup> It sets out a range of specific measures on matters such as awareness-raising, training and education, identification and assessment of landscapes, the development of

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<sup>43</sup>CoE (2000). *European Landscape Convention, 20 October 2000 Florence, Italy*. Strasbourg: Council of Europe. Article 1.a.

<sup>44</sup> CoE (2000), Article 5.

landscape quality objectives and the implementation of policies for landscape protection, management and planning.<sup>45</sup>

Although in both cases landscape is regarded as the result of the relationship between man and nature and the evidence of its historical evolution, the ELC approaches the concept of landscape differently from the UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage (1972). The two Conventions have different purposes, as do the organizations under whose auspices they were drawn up. One is regional in scope, the other worldwide. As regards to their field of application, the CoE Convention covers all landscapes, even those that are not of outstanding universal value, but does not deal with historic monuments, unlike the UNESCO Convention. Similarly, its main objective is not to draw up a list of assets of exceptional universal value, but to introduce protection, management and planning rules for all landscape based on a set of general and specific principles.<sup>46</sup>

The European Landscape Convention was opened for signature in Florence, Italy, on 20 October 2000 in the framework of the Council of Europe Campaign “*Europe, a common heritage*” at a ministerial conference held especially for the occasion. As of July 2015, thirty-eight of the member states have approved or ratified the Convention.

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<sup>45</sup> CoE (2000), Article 6.

<sup>46</sup> See Table 2.1 for the summary of the approaches to the concept of ‘landscape’ by the World Heritage Convention Cultural Landscapes, IUCN Category V Protected Areas (Protected Landscapes/Seascapes) and the European Landscape Convention.

**Table 2.1 Approaches to the Concept of ‘Landscape’ by the UNESCO World Heritage Convention Cultural Landscapes, IUCN Category V Protected Areas (Protected Landscapes/Seascapes) and the European Landscape Convention.**

	<b>cultural landscapes</b>	<b>Cat. V protected areas: protected landscapes</b>	<b>landscapes</b>
<b>Status</b>	Operational Guidelines under World Heritage Convention, UNESCO (1992)	Int. Framework for Protected Area Management Categories, endorsed by the IUCN General Assembly (1994)	European Landscape Convention, Council of Europe (2000)
<b>Definition</b>	“ <b>cultural landscapes</b> ” are cultural properties and represent the “combined works of nature and of man” designated in Article 1 of the <i>Convention</i> . They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal.	‘ <b>protected landscapes/seascapes</b> ’ are “... area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity.”	“ <b>landscape</b> ” means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors
<b>Scope (Geo. Scope of App.)</b>	Global	National (or sub-national)	Regional - Europe
<b>Charac. of landscape</b>	Cultural landscapes having ‘outstanding universal value’	Landscapes/ seascapes of national or sub-national importance	All landscapes; urban, rural, industrial, etc.

**Table 2.1 (continued)**

<b>Key principles</b>	People and nature; cultural values; cultural integrity; authenticity	People and nature; biodiversity; sustainability; ecosystem integrity	People and nature; a balance and harmonious relationship between social needs, economic activity and the environment; sustainability
<b>Aims</b>	Protection of cultural and natural heritage values	Protection of the nature-culture balance and associated values and ecosystems	Protect, manage and plan/develop landscapes

### **Reflections of the ELC**

European nations such as Germany, UK, France, Italy, Spain, Ireland, Norway, Sweden, Ukraine - but also United States, Canada and Japan - played a significant role in the development, adoption and early implementation of the ELC, both at the national and international levels. They continue to work to strengthen the understanding and enhancement of landscapes, notably through national programmes to develop: typologies, methods of evaluating landscapes and finding ways to manage landscapes.

For example United Kingdom (UK), signed the ELC in 21 February 2006 and ratified it in 21 November 2006. Since then, UK has been taking general and specific measures for the identification of landscapes and analysis of their characteristics through national research programmes/projects such as: the Countryside Quality Counts (CQC) Project; Condition and Quality of England's Landscapes Project (CQuEL); England's Character Map - a landscape character across England at a 1:250.000 scale, which also gives the context for the more detailed local authority studies at county and district level (1:50.000 – 1:25.000 scale); and the Landscape

Character Assessment (LCA) Project - carried out by local authorities to inform regional policy and practice.<sup>47</sup>

Other countries such as United States beside UK will be analysed in the following sections in more detail to illustrate examples of general and specific measures for the identification of landscapes and the analysis of their characteristics developed at national level.

## **2.2 National Approaches to Methods to Identify/Describe and Assess ‘Cultural Landscapes’**

As the internationally defined notions and definitions of ‘cultural landscape’- implying different approaches to determining what is important to protect, conserve, and also important to manage - in international level provide models of stewardship for landscapes as a whole, an official definition that will delimit the field of application of the concept and identify the public authorities with the competence to carry out the necessary actions is required at the national level. As stated previously, some countries are already quite advanced in their legal recognition and protection of ‘cultural landscape’ such as: UK, United States and Canada – and these offer an excellent baseline for the development of a method to identify, describe and assess cultural landscapes in Turkey.

For these purposes, this section of the PhD research analysed examples of cultural landscape preservation that illustrate best practices for managing cultural and natural resources in an integrated approach.

The research followed two stages:

A review of literature in cultural landscape management and related fields, as well as in natural resource management. This literature review appears in the *Bibliography* for this thesis.

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<sup>47</sup>CoE (2009). *Report of the 5th Conference of the Council of Europe on the European Landscape Convention: Presentation of the Landscape Policies in the Member States of the Council of Europe, 30-31 March 2009 Strasbourg*. Strasbourg: Council of Europe. pp.85-102.

In order to identify general and specific measures for the identification/description and assessment of landscapes, the research then evaluated a series of case studies.

Case studies were analysed based on several criteria:

- ministry/administration responsible;
- legal basis - legislation, guidelines and other documents relating to cultural landscapes;
- designation systems;
- definition (legal definition if available);
- types;
- method (measures taken to carry out the identification of cultural landscapes and analysis of their characteristics);
- scale; and
- landscape features.

Countries such as UK, for its pioneering role in the field and United States due to its differentiating geographic context have been chosen as case studies. Accessibility to the public and/or formal documents (i.e. acts, regulations, plans, policies, guidelines and reports) and language (Turkish/English) were other important factors that limited the extent of the research examples. Countries such as Canada, Sweden, Netherlands, Germany and Denmark were also analysed briefly but – not included in this section due to limited information on public and/or formal documents.

Finally, these two sources of information were synthesised to form a baseline to develop a method to identify/describe and assess cultural landscapes in Turkey.

### **2.2.1 UK (England, Scotland, Wales and Northern Ireland)**

The Department of Environment, Food and Rural Affairs (DEFRA) is responsible for the overall landscape issues for the whole of the UK. It is also responsible for detailed implementation in England but in Wales, Scotland and Northern Ireland responsibility for landscape issues, is passed to the Welsh Assembly Government,

the Scottish Executive and Department of Environment for the Northern Ireland respectively.

UK has a system of varied government agencies to which many areas of landscape policy development and implementation is delegated. In England the most important agencies in this respect are Natural England and English Heritage. Natural England, is the Government's statutory advisor on landscape, with specific responsibilities for the designation and management of National Parks and Areas of Outstanding Natural Beauty. In Scotland, it is the Scottish Government Rural Directorate. Other government agencies with landscape interests and responsibilities include Historic Scotland, Forestry Commission Scotland and Scottish Natural Heritage – the Scottish Government's natural heritage advisor.

Landscape protection and management is addressed in a wide range of UK legislation and policy documents but most comprehensively within the spheres of spatial planning, environmental protection and designated landscape. However, there is no legal definition nor a single overarching government strategy and/or national level policy statement for the protection, management or planning of landscapes. Instead, landscape is mainly dealt with as a component in a range of policies, where the delivery of those policies is likely to affect landscape.

In England, the Government has published a series of National Planning Statements and Guidance (Planning Policy Statements, PPSs – and their precursors Planning Policy Guidance Notes, PPGs) which sets out statutory provisions and provide guidance on planning policy and the operation of the planning system. These consider and, as appropriate, integrate landscape issues into their policies and proposals. There are specific statements and guidance relating to areas such as the countryside (PPS7 Sustainable Development in Rural Areas – replacing the PPG7 The Countryside – Environmental Quality and Economic and Social Development, published in Feb. 1997), natural heritage (PPS2 Green Belt and PPS9 Biodiversity and Geological Conservation) and built heritage. Regional and Local Planning Authorities are required under planning law to have regard to these statements and

guidance when preparing regional and local development plans, and they may also be material considerations when local planning authorities take decisions on whether planning permission should be granted for individual developments.

In addition, the Planning (Listed Buildings and Conservation Areas) Act 1990 provides specific protection for buildings and areas of special architectural or historic interest. The Ancient Monuments and Archaeological Areas Act 1979 provides for nationally important archaeological sites to be statutorily protected as Scheduled Monuments (SMs). National Guidance relating to the historic environment and landscape is also contained within the National Planning Policy Framework. The main Planning Policy Statement (PPS) relating to the historic environment in England is PPS5 Planning for the Historic Environment which was published on March 2010 replacing the old Planning Policy Guidance(s) PPG15 Planning and the Historic Environment and PPG16 Archaeology and Planning.

The Scottish Government has published planning policy and guidance (Scottish Planning Policy, SPP) which sets out national policy on a wide range of issues including landscape. Local authorities have regard to this guidance in preparation of their development plans. The National Planning Framework provides an overview for spatial planning purposes and there is also the Planning etc. (Scotland) Act 2006, which includes provisions in relation to National Scenic Areas (NSAs), which are Scotland's national level landscape designation.

In Northern Ireland, land use planning is within the direction and control of the Department of the Environment which issues planning policy in the form of Planning Policy Statements (PPS) and also prepares local development plans for different parts of the region. These consider and, as appropriate, integrate landscape issues into their policies and proposals. There are specific statements and guidance relating to areas such as the countryside (PPS21, Sustainable Development in the Countryside), natural heritage (PPS2, Natural Heritage) and built heritage (PPS6, Planning, Archaeology and the Built Heritage).

Landscape is also incorporated in specific protected areas legislation establishing National Parks and Areas of Outstanding Natural Beauty. Principally, the National Parks & Access to the Countryside Act 1949, the Environment Act 1995, the Countryside and Rights of Way Act 2000, the Natural Environment and Rural Communities Act 2006, and in the legislation establishing the various statutory agencies as government advisors on landscape.

In Scotland, the Countryside (Scotland) Act 1967 places a general duty on government and public bodies to conserve the natural beauty and amenity of the countryside. Other legislation provides for the protection and/or management of particular parts of the landscape. For example, the National Parks (Scotland) Act 2000, the Land Reform (Scotland) Act 2003, the Nature Conservation (Scotland) Act 2004 and the Planning etc. (Scotland) Act 2006.

In Northern Ireland, there are policies for promoting and managing areas designated under the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985. There are also policies developed from the Environment (Northern Ireland) Order 2002 for specific areas of nature conservation interest including landscape features.

Landscape aspects are included in the Welsh Assembly's Environment Strategy and policy documents.

Contrary to this extensive reference to protection, management and/or planning of landscapes in the UK legislation and policy documents, there is no legal definition of the term 'landscape' – but are a number of definitions for 'landscape' and/or 'historic landscape' in use by different agencies. While definitions originally and traditionally focussed on the visual aspect of landscape. For example, landscape as scenery, depicted in art or designed. Definitions have widened considerably in the mid-1980s, particularly in terms of recognising landscape as a cognitive, perceived thing, in terms of 'historic landscape' and in terms of scale and functionality.

Landscape was described in the '*Landscape Character Assessment: Guidance for England and Scotland*' by the then Countryside Agency in England (now part of Natural England) and the Scottish Natural Heritage as being:

... about the relationship between people and place . It provides the setting for our day-to-day lives. The term does not mean just special or designated landscapes, and it does not only apply to the countryside. Landscape can mean a small patch of urban wasteland as much as a mountain range, and an urban park as much as an expanse of lowland plain. It results from the way that different components of our environment – both natural (the influences of geology, soils, climate, flora and fauna) and cultural (the historic and current impact of land use, settlement, enclosure and other human interventions) – interact together and are perceived by us.<sup>48</sup>

This definition of landscape (recognized by Natural England and Scottish Natural Heritage) reflects - to a high degree - with the European Landscape Convention (ELC) definition of landscape. The field of application is directly comparable to the Convention's field of territorial application defined in Article 2 - as it does not only concentrate on "*special or designated landscapes*" but also ordinary or even degraded areas/landscapes such as: "*a small patch of urban wasteland, a mountain range, an urban park*" or "*an expanse of lowland plain*".

UK has also already put many of the principles of the ELC into practice. For example, measures to carry out the identification of landscapes and the analysis of their characteristics (i.e. catalogues, atlases, registers of landscapes) both at national and the regional level.<sup>49</sup>

In England, - at the national level - the most systematic development in monitoring landscape change has been **Countryside Quality Counts (CQC) Project** which is continued through its successor, the **Character and Quality of England's Landscapes Project (CQuEL)**. The CQC project captured the changes taking place

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<sup>48</sup> Countryside Agency & Scottish Natural Heritage (2002). *Landscape Character Assessment: Guidance for England and Scotland*. Countryside Agency, Cheltenham and Scottish Natural Heritage, Edinburgh. p.2.

<sup>49</sup> See CoE (2010), Article 6

from 1990, and their significance on the landscape. It reported for the periods 1990-1998 and 1999-2003. Monitoring focused on measurable landscape elements such as woodland and trees, semi-natural habitats, river and coastal features, boundary features, historic features and settlement and development pattern. The second assessment (CQuEL) - which builds on the CQC project aimed to improve the national scale assessment of landscape change (by extending the analyses down to a much finer geographical scale). It reported in 2012 for the period 2004-2009, informing a range of national and regional agencies and programmes. **The Character of England - Landscape, Wildlife and Natural Features Map**<sup>50</sup> was produced jointly by the Countryside Agency and English Nature with support from English Heritage in 1996. The Map was accompanied by descriptions of the character of each of the 159 character areas, the influences determining that character and the pressures for change, described in eight regional volumes.<sup>51</sup> Following identification and mapping of the character of England, the Countryside Agency went on to describe in eight volumes each of the 159 character areas. The Map was re-issued in 2006 with additional information from the Countryside Quality Counts (CQC) project.

At the regional level, a national picture of landscape character across the whole of England at a 1:250.000 scale, is provided by **The Character of England: Landscape, Wildlife and Natural Features Map** which gives the context for the more detailed local authority studies at county and district level (1:50.000 – 1:25.000 scale).

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<sup>50</sup> Countryside Commission and English Nature (1996). *The Character of England – Landscape, Wildlife and Natural Features* (Map/Leaflet). CCX 41. Cheltenham: Countryside Commission.

<sup>51</sup> See *Bibliography* for the accompanying series of Countryside Commission Regional Countryside Character volumes (1-8) published between 1998 and 1999.

vol.1: North East;  
vol.2: North West;  
vol.3: Yorkshire & the Humber;  
vol.4: East Midlands;  
vol.5: West Midlands;  
vol.6: East of England;  
vol.7: South East and London;  
vol.8: South West

Local Authorities carry out regional **Landscape Character Assessments (LCA)**, which are informed by the character areas defined at the national level. These documents have become important tools for understanding the landscape and has guided landscape change. They inform regional policy and practice.

The Department of the Environment for Northern Ireland published the **Northern Ireland Landscape Character Assessment 2000**<sup>52</sup> which identifies and describes 130 distinct landscape areas which comprise the land mass of Northern Ireland.

In Wales, there is **LANDMAP**<sup>53</sup> and the Countryside Council for Wales (CCW) **Register of Landscapes of Historic Interest**<sup>54</sup>.

As LCA emerged, it has been accompanied by a growing emphasis on historic landscape (or land-use) characterization as a parallel freestanding tool for exploring the historic dimension of the landscape. In England, the method of **Historic Landscape Characterization (HLC)** has been developed by English Heritage - with the purpose of informing and managing change to the historic environment, primarily at landscape scale.

It was pioneered in Cornwall.<sup>55</sup> The following illustrate the HLC methodology used during the 1993-4 to develop a Landscape Character Assessment for the whole of

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<sup>52</sup> Northern Ireland Environment Agency (2014). *Landscape Character Areas*. Retrieved March 21, 2014, from [http://www.ni-environment.gov.uk/landscape/country\\_landscape.htm](http://www.ni-environment.gov.uk/landscape/country_landscape.htm).

<sup>53</sup> LANDMAP is a GIS (Geographical Information System) based landscape resource where landscape characteristics, qualities and influences on the landscape are recorded and evaluated into a nationally consistent data set.  
Countryside Council for Wales (2014). *LANDMAP: the Landscape Atlas*. Retrieved March 27, 2014, from <http://www.ccg.gov.uk/landscape--wildlife/protecting-our-landscape/landmap.aspx>

<sup>54</sup> In partnership with Cadw and the International Council of Monuments and Sites (ICOMOS UK) CCW has compiled a Register of Landscapes of Historic Interest in Wales. The Register describes 58 landscapes in Wales that are of outstanding or special historic interest.  
Cadw, CCW & ICOMOS-UK (1998). *Register of Landscapes of Outstanding Historic Interest in Wales*.  
Cadw, CCW & ICOMOS-UK (2001). *Register of Landscapes of Special Historic Interest in Wales*.

<sup>55</sup> Herring, P. (1998). *Cornwall's Historic Landscape: presenting a method of historic landscape character assessment*. Cornwall Archaeological Unit, Cornwall County Council, in association with English Heritage.

Cornwall. It was supported and funded by the Countryside Commission (now the Countryside Agency which is part of the Natural England), English Heritage and Cornwall Council.

The HLC framework operated at different spatial levels, ranging from the national/regional (1:250.000), through the county/district (1:50.000), down to the individual site (1:10.000).

The HLC generally involved the following steps:

**Data Gathering, Field Survey** (provides the opportunity to: incorporate the visual, aesthetic, perceptual dimension – recording the condition of the landscape, including both the ecological and cultural aspects; verify Landscape Description Units (LDUs) and identify any refinements to LDU and Character Area/Type boundaries and associated descriptions), **Characterization** (to define Landscape Character Types and/or Character Areas), and **Evaluation**.

These four steps can generally be divided into two stages: the first in which the landscape is identified, mapped, described and interpreted, and a second in which evaluations/judgements, whether about value or more practical priorities are applied to this initial assessments and objectives are agreed. The second stage lends itself directly to a variety of land management and conservation applications.

The **Data Gathering** begins with the systematic identification and description of many of the historic attributes of the contemporary rural and urban landscape, using a number of common sources. These attributes include aspects of the natural and built environment that have been shaped by human activity in the past. In summary, landscape character assessment considers the main landscape components of:

- landform  
(valley, plateau, plain, and other natural features present i.e. rock outcrops, river, stream, cliff, etc. and their characteristics like flat, gently rolling, strongly undulating, etc.)

These defining features are adapted in other cases to reflect the scale of work, level of detail and local names of features. For example the term ‘narrow valley’ is replaced by ‘glen’ and ‘lake’ by ‘loch’. The groupings also vary between cases.

- geology (i.e. rock type)
- water  
(river and drainage systems and other water features i.e. river, stream, reservoir, dry valley, etc.)
- soil
- land cover (trees, woodland, including semi-natural vegetation)
- land use (this includes current and past enclosure/field patterns – i.e. shape, size and groups)
- settlement pattern
- buildings (types – i.e. style, material, condition and their distribution)
- time-depth  
(archaeological and historic sites recorded on the Scheduled Monuments Records SMR Common Sources)

Data gathering is followed by the grouping of attributes into Landscape Character Types and/or Character Areas. The latter refer to geographically discrete areas, while the former is a generic term and usually a particular type of landscape that can occur in many different places. The Cornwall HLC pilot study report, when explaining the methodology that has been used justifies the reason for making a distinction between Landscape Character Types and Character Areas as – largely to practical reasons:

Landscape Character Types are very much a management tool and this is the level at which most countryside planning and land management activity takes place. For most people, however, landscape is strongly associated with place. Hence, although Character Areas often comprise several different types of landscapes, they are more appropriate vehicle for presenting countryside information to a public audience.<sup>56</sup>

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<sup>56</sup> Cornwall County Council & Countryside Agency (2007). *Cornwall and Isles of Scilly Landscape Character Study: Overview and Technical Report*. May, 2007. p.10.

ERM LANDSCAPE TEAM: FIELD SURVEY FORM - Salisbury Plain Army Training Estate.

Viewpoint No: 5 (EAST) Location: SIBBURY HILL Date: 14 Feb/01  
 (LOOKING SOUTH EAST)

Sketch: VIEW SOUTH EAST TO TIDWORTH

Panoramic Photo No: FILM2-19+16

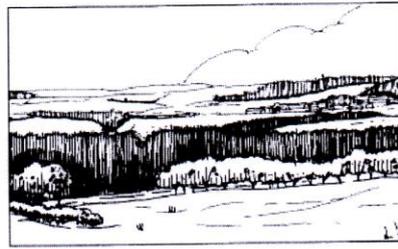
Landscape Character Type: WOODED CHALK DOWNLAND (A)

Landscape Character Area: PERHAM - MILSTON DOWN

Geology: UPPER CHALK FORMATION

Topography:

flat	plain	dry valley
<u>undulating</u>	<u>rolling lowland</u>	deep gorge
<u>rolling</u>	plateau	<u>broad valley</u>
steep	scarp/ cliffs	narrow valley
vertical	hills	



Dominant landcover and landscape elements:

<b>BUILDINGS:</b> farm buildings masts/ poles pylons industry <u>Settlement</u> urban follies <u>military</u>	<b>HERITAGE:</b> vernacular buildings country house field systems <u>prehistoric ritual</u> hill top enclosure/ fort ecclesiastic monuments of war coppice	<b>FARMING:</b> walls <u>fences</u> <u>hedges</u> <u>fields</u> <u>stable</u> <u>improved pasture</u> rough grazing hedge banks orchard	<b>LANDCOVER:</b> designed parkland scrub marsh peat bog moor/ heath rough grassland water meadows <u>grassland</u> species rich grassland	<b>WOODLAND/ TREES:</b> <u>deciduous woodland</u> <u>coniferous plantation</u> <u>mixed woodland</u> shelterbelt <u>hedge trees</u> orchard clumps isolated trees	<b>Hydrology</b> <u>river</u> stream reservoir dry valley winterbourne pond lake drainage ditch	<b>COMMUNICATIONS:</b> road <u>track</u> <u>footpath</u> lane railway <u>military</u> pylons communication masts
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**Brief description:** (including main elements, features, attractors and detractors) GENTE DOWNLAND TOPOGRAPHY DISSECTED BY NINE MILE RIVER CONTAINING SETTLEMENT. EXTENSIVE WOODLAND + SCRUB INTERSPERSED WITH OPEN AREAS OF PASTURE + ARABLE FARMING. HILTOP VIEWS. CONCENTRATION OF PREHISTORIC BARROWS ESP ON NINE MILE RIVER. MILITARY INFRASTRUCTURE LESS CONSPICUOUS THAN ON RAIN. KEY LONG/ MIDDLE DISTANCE VIEWS TO TIDWORTH/ BEACON HILL. SENSE OF ENCLOSURE IN VALLEY.

**Key Characteristics/ Distinctive Features and why they are important:** UNDULATING LANDFORM + BALANCE OF OPEN AND WOODED AREAS IMPORTANT TO CONTRASTING EXPERIENCE. LOCATION OF BARROWS INDICATE IMPORTANCE OF NINE MILE RIVER TO PREHISTORIC COMMUNITIES.

**Rarity:** NOT RARE. BARROWS + SETTING IMPORTANT FEATURE.

**Condition:** GOOD. EXISTING BALANCE OF WOODLAND TO OPEN AREAS MAINTAINED BY WOODLAND MANAGEMENT + FARMING.

Visual Assessment Criteria:

<b>PATTERN</b> (2 Dimensional):	dominant	<u>strong</u>	broken	weak
<b>SCALE:</b>	intimate	<u>small</u>	<u>medium</u>	large
<b>TEXTURE:</b>	smooth	<u>textured</u>	rough	very rough
<b>COLOUR:</b>	monochrome	<u>muted</u>	<u>colourful</u>	garish
<b>COMPLEXITY:</b>	uniform	<u>simple</u>	<u>diverse</u>	complex
<b>REMOVEDNESS:</b>	wild	<u>remote</u>	<u>vacant</u>	active
<b>UNITY:</b>	unified	<u>interrupted</u>	<u>fragmented</u>	chaotic
<b>FORM</b> (3 Dimensional):	straight	<u>angular</u>	<u>curved</u>	situous
<b>ENCLOSURE:</b>	expansive	<u>open</u>	<u>enclosed</u>	constrained
<b>VISUAL DYNAMIC:</b>	<u>sweeping</u>	<u>spreading</u>	<u>dispersed</u>	channelled

Perception:

<b>SECURITY:</b>	intimate	comfortable	<u>safe</u>	unsettling	threatening
<b>STIMULUS:</b>	monotonous	bland	<u>interesting</u>	challenging	inspiring
<b>TRANQUILITY:</b>	inaccessible	remote	<u>vacant</u>	<u>peaceful</u>	busy
<b>PLEASURE:</b>	unpleasant	pleasant	<u>attractive</u>	beautiful	

**Architecture:** (Note condition/ quality) NOTES APPLY TO TIDWORTH

Local Materials - (stone type, colour, texture etc, brick (colour/ size/ render) /

Combinations - (stone and brick patterns etc) /

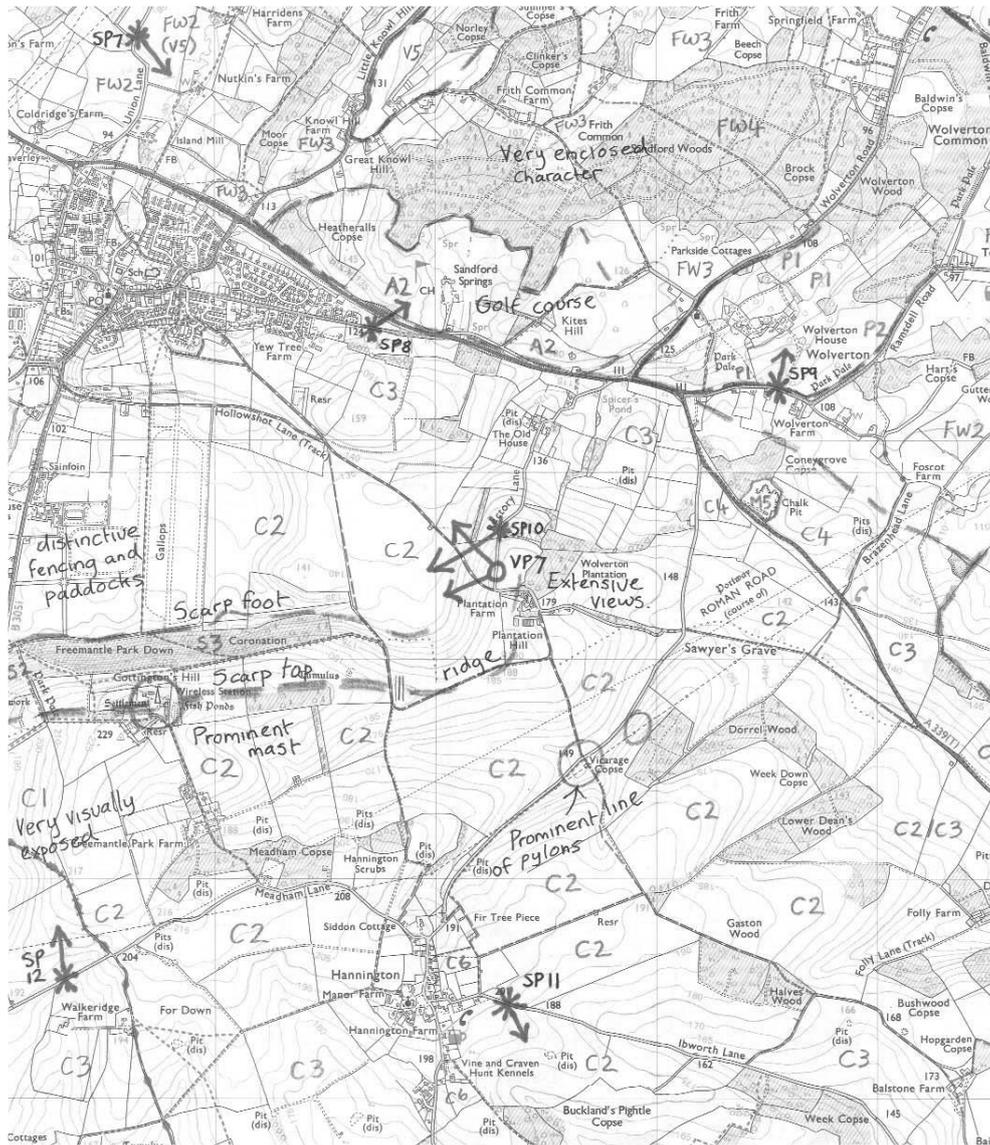
Vernacular Style (window style/ roof pitch) /

Settlement Form (village greens, clustered, military, scattered) MODERN MILITARY DEVELOPMENT ON GRID PATTERN SURROUNDING HISTORIC (MEDIEVAL) CORE OF WINDING STREETS

**Additional Comments:** (Note evidence of pollution, erosion, bare or disturbed ground, condition of historic features, new planting, restoration work.

NO

Figure 2.3 Form used to survey the Salisbury study area – designed to ensure that a structured, consistent recording of information is possible. Character and condition information is collected in distinct sections, in a mixture of guided responses (i.e. selection form a list of alternatives) with associated descriptive sections. This provides the consistency of responses in the guided responses which allows these responses to be mapped (i.e. field size). (Source: Countryside Agency & Scottish Natural Heritage, 2002.p.31)



**Figure 2.4 Annotated Field Survey Map** - used to show the location of the field survey points, key viewpoints and views, prominent features and landmarks, and other notes relating to the condition and management needs of the landscape. Codes (i.e. P1 – parkland, V5 – enclosed minor valley) identify draft landscape types. (Source: Countryside Agency & Scottish Natural Heritage, 2002.p.33)

Following this initial project, since 1994, the Cornwall method has been adopted and adapted for many county councils and similar areas, and about half of England has been mapped.<sup>57</sup> Assessment which was undertaken by Lancashire County Council in Lancashire and the two unitary authority areas of Blackburn with Darwen Borough

<sup>57</sup> Aldred, O. & Fairclough, G. (2003). *The National HLC Method Review 2002*. London: English Heritage.

Council and Blackpool Borough Council, and other studies by Hampshire and Surrey County Councils also provided extensive information which made it possible to examine the detail of the background to LCA and the varying approaches adopted.<sup>58</sup> A full list of HLC reports can be found in the *Bibliography*.

A similar method the **Historic Land-use Assessment (HLA)** has also been adopted for Scotland<sup>59</sup>, and the approach has been tested in Wales<sup>60</sup>.

### 2.2.2 United States

The legal basis for ‘cultural landscape’ recognition and protection in the United States stems from the Antiquities Act 1906, the Historic Sites Act 1935 and the National Historic Preservation Act 1966. These legislation (with associated policies

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<sup>58</sup> A review of all these methods can be found in Aldred, O. & Fairclough, G.J. (2003). *Historic Landscape Characterisation: Taking stock of the Method – The National HLC Method Review 2002*. London: English Heritage.  
See *Bibliography* for the detailed list of the individual reports.

<sup>59</sup> For basic methodology see Dixon, P. et al (1999). *Historic Landuse Assessment (HLA): Development and Potential of a Technique for Assessing Historic Landuse Patterns*. Edinburgh: Historic Scotland.; for more recent summary see Dixon, P. & Hingley, R. (2002). *Historic Land-Use Assessment in Scotland*. In G. Fairclough & S. Rippon (Ed.), *Europe’s Cultural Landscape: archaeologists and the management of change*. Europae Archaeologiae Consilium Occasional Paper 2, Brussels, pp.85-88.  
HLA Reports have also been produced for specific landscape areas such as the parks of Loch Lomond and the Trocassachs and the Cairngorms.  
Boyle, S. & Macinnes, S. (2000). *The Historic Landscape of Loch Lomond and the Trossachs*. Edinburgh: Historic Scotland and RCAHMS.  
Cowley, D. & Govan, S. (2000). *The Historic Landscape of Cairngorms*. Edinburgh: Historic Scotland and RCAHMS.  
See *Bibliography* for the full list of the reports.

<sup>60</sup> This included the examination of the historic character of areas defined by the Register of Historic Landscapes in Wales. See Cadw, CCW & ICOMOS-UK (1998) and (2001). Detailed characterisation studies for the sites on the Register undertaken by the Welsh Archaeological Trusts are available from:  
Dyfed Archaeological Trust (2014). *Historic Landscape Characterisation*. Retrieved March 31, 2014, from <http://www.dyfedarchaeology.org.uk/>  
Clwyd-Powys Archaeological Trust (2014). *Historic Landscapes in Wales*. Retrieved March 31, 2014, from <http://www.cpat.org.uk/projects/longer/histland/histland.htm>  
Glamorgan-Gwent Archaeological Trust (2014). *Historic Landscape Characterisation*. Retrieved 31 March, 2014, from [http://www.ggat.org.uk/cadw/historic\\_landscape/main/english/historical.htm](http://www.ggat.org.uk/cadw/historic_landscape/main/english/historical.htm)  
Gwynedd Archaeological Trust (2014). *Historic Landscape Characterisation*. Retrieved 31 March, 2014, from <http://www.heneb.co.uk/hlc/hlcmappgeneral.html>

and guidelines) also form the legal and governmental framework for the protection of buildings and areas of special architectural and/or historic interest. The National Park Service (NPS), within the United States Department of the Interior, establishes national policy and sets standards for all aspects of historic preservation. Through the National Register<sup>61</sup> and the National Historic Landmarks Programs, the NPS (in cooperation with the State Historic Preservation Offices and local governments) administers the inventory, evaluation, and listing of historically significant cultural properties in the United States.

A large number of properties have been identified, researched and listed on the National Register of Historic Places, generally focusing on cultural resources that are fifty years of age or more to give a perspective on their value, but including some more contemporary properties. In the past decades recognition of historic value has focused predominantly on historic architecture – first as buildings associated with important historic events, such as the Independence Hall in Philadelphia, then as important examples of high style architecture, moving to groups of buildings in historic districts and more recently to thematic and multiple resource nominations that include landscape components and finally to landscapes as primary cultural resources.

Although the NPS had recognized the significance of landscape characteristics and associated features in ‘national parks’ and/or ‘parks’ (designated through the 1916 National Park Service Organic Act – ‘the Organic Act’) since the 1930s, there were no formal policies, guidelines, or standards for preserving and managing cultural landscapes until relatively recently.

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<sup>61</sup> the National Register of Historic Places is the official list of nationally recognised properties which (as defined in the National Register Bulletin 16A) are significant in American history, architecture (interpreted in the broadest sense to include landscape architecture and planning), engineering and culture.

US Department of the Interior (1991). *National Register Bulletin 16A: How to Complete the National Register Registration Form*. Washington DC: US Department of the Interior, National Park Service. pp.1, 35-37.

In the 1980s, the NPS began revising policies and guidelines for managing cultural landscapes included in the legal and governmental framework for historic preservation.

In 1988, landscapes were formally identified as a type of cultural resource in NPS Management Policies. With this a policy was established to recognize and protect landscapes with significant historic, design, archaeological, and ethnographic values. This policy also recognized the importance of considering both built and natural features, and the dynamics inherent in natural processes and continued use. In 1994, the National Park Service expanded the Cultural Resource Management Guidelines, NPS-28 to include procedural guidance for managing cultural landscapes within the national park system.

In the mid-1990s, the National Park Service developed two tools for research, planning, and stewardship activities for cultural landscapes: the Cultural Landscapes Inventory (CLI) and the Cultural Landscape Report (CLR). The CLI is a database that provides baseline information on the location, historic development, landscape characteristics and associated features, and management of cultural landscapes. The CLR is a guide for management (frequently termed "treatment" in historic preservation reports) and use of the landscape. In 1998, the National Park Service also published a manual for writing cultural landscape reports<sup>62</sup>.

Also, in order to support the recognition of cultural resources and to provide guidance for listing landscapes on the National Register, the NPS began to issue bulletins describing how to identify, understand, and manage cultural landscapes. Beginning in 1987, there have been a number of National Register Bulletins that provide guidance on how to nominate various cultural landscapes:

- designed landscapes (*How to Evaluate and Nominate Designed Historic Landscapes, Bulletin no.18*);

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<sup>62</sup> Page, R.R., Cathy A. Gilbert, C.A. & Dolan, S.A. (1998). *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*. Washington, DC: U.S. Department of the Interior, National Park Service.

- rural landscapes (*Guidelines for Evaluating and Documenting Rural Historic Landscapes, Bulletin no.30*);
- battlefields (*Guidelines for Identifying, Evaluating and Registering America's Historic Battlefields, Bulletin no.40*);
- cemeteries (*How to Evaluate and Nominate Cemeteries and Burial Places, Bulletin no.41*); and
- historic mining properties (*Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties, Bulletin no.42*).

In addition, in 1994, the NPS prepared *Preservation Brief #36, Protecting Cultural Landscapes: Planning, Treatment, and Management of Historic Landscapes*, which provided guidance in analysing, documenting and protecting cultural landscapes.

These NPS publications<sup>63</sup> have inspired a number of landscape inventory efforts by state historic preservation programmes and, most recently, by NPS itself.

As would be expected from this widespread recognition and interest, there are a number of definitions for 'cultural landscape' in use by different agencies and organizations. The National Park Service defines cultural landscape very broadly as:

A geographic area, including both cultural and natural resources, and the wildlife and domestic animals therein, associated with a historic event, activity or person, or exhibiting other cultural or aesthetic values.<sup>64</sup>

Four types of cultural landscapes are described in National Park Service '*Cultural Resource Management Guideline, NPS-28*' which are relevant to the cultural properties within the national park system and also apply to the range of cultural landscape in public and private ownership nationwide. These are: historic sites,

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<sup>63</sup> See *Bibliography* for listing of relevant National Register Bulletins and other NPS publications.

<sup>64</sup> National Park Service (1998). *Cultural Resource Management Guideline, NPS-28*. Washington, D.C.: U.S. Department of the Interior, National Park Service. p.177.

historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.

**Historic Site**

the location of a significant event or activity, or a building or structure, whether standing, ruined or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure.

**Historic Designed Landscape**

a landscape having historic significance as a design or work of art because it was consciously designed and laid out by a landscape architect, master gardener, architect or horticulturist according to design principles, or by an owner or amateur using a recognized style or tradition in response or reaction to a recognized style or tradition; has a historic association with a significant person or persons, trend or event in landscape gardening or landscape architecture; or a significant relationship to the theory and practice of landscape architecture.

**Historic Vernacular Landscape**

a landscape whose use, construction, or physical layout reflects endemic traditions, customs, beliefs or values; in which the expression of cultural values, social behaviour, and individual actions over time is manifested in the physical features and materials and their interrelationships, including patterns of spatial organization, land use, circulation, vegetation, structures and objects; in which the physical, biological, and cultural features reflect the customs and everyday lives of people.

**Ethnographic Landscape**

a landscape traditionally associated with a contemporary ethnic group, typically used for such activities as subsistence hunting and gathering, religious or sacred ceremonies, and traditional meetings.<sup>65</sup>

These four landscape types (recognized by the U.S. National Park Service) also achieve some parallels with the categories of cultural landscapes defined in the UNESCO Operational Guidelines for the Implementation of the World Heritage Convention<sup>66</sup>. The historic designed landscape is directly comparable to the type (i) - designed category; the historic vernacular landscape and the ethnographic landscape parallel the type (ii) - continuing evolved landscape but do not explicitly imply the

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<sup>65</sup> National Park Service (1998). p.88

<sup>66</sup> UNESCO (2013). p.87-88

relict landscape; the historic site and the ethnographic landscape are both encompassed in the type (iii) - associative landscape category, although some aspect of cultural features (i.e. poetry and painting, etc.) which are included in the UNESCO World Heritage Convention, are missing from both these definitions.

The bulletins issued by the NPS introduces methodologies that can be used for evaluating all of the above types, but the research – due to its similarity to the type of case study chosen in the following chapter(s) - focused primarily on rural/historic vernacular landscapes<sup>67</sup>.

A system of three steps has been defined for reading rural/historic vernacular landscapes and to understand the natural and cultural forces that have shaped it.

It generally involves the following steps:

**Identification, Evaluation** (involves three major activities: define significance – evaluation of the significance of the historic landscape using National Register criteria; evaluate integrity - evaluation of the integrity of each landscape characteristic and list the features that the landscape should retain to possess integrity; and define the boundary and/or boundaries.), and **Registration**. The steps in this process are not independent of each other, nor are they always sequential. In fact, information gathered in one step may lead to a re-examination or refinement of previous steps. For example, field inventory and historical research are likely to occur simultaneously, and may reveal unnoticed cultural resources that should be protected. It may confirm or contradict previous findings and may encourage the researcher to re-evaluate both primary and secondary sources with a fresh outlook.

The **Identification** step focuses on:

The history of the area targeted for study - as related to local or State contexts; examination of archival sources; and the survey of the existing landscape characteristics. The purpose of the study is to gather the information needed to make

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<sup>67</sup> McClelland, Flint, L., Keller, J.T., Keller, G.P. & Melnick, R.Z. (1989, revised 1999). *Guidelines for Evaluating and Documenting Rural Historic Landscapes*. *National Register Bulletin 30*. Washington, D.C.: U.S. Department of the Interior, National Park Service.

decisions about the eligibility for the National Register of the entire area or smaller properties within it. The proposed approach includes an analysis of the parts of the landscape so that there is an understanding as to what makes up the cultural landscape.

There are a variety of methods to collect information on cultural landscapes: primary and/or secondary archival sources (i.e. historic maps, plats and land records, etc. - see Bulletin no.30, Guidelines for Evaluating and Documenting Rural Historic Landscapes, pp.8-10; Bulletin no.18, How to Evaluate and Nominate Designed Historic Landscapes), field surveys, interviews and questionnaires. Information about cultural landscape is derived from two main sources: the historical record and the existing landscape.

The identification process is based on a classification system of characteristics (that has been) developed for reading a rural landscape and for understanding the natural and cultural forces that have shaped it.

These include – but not necessarily be limited to – the following character-defining features and processes (See chart on Bulletin no: 30, Guidelines for Evaluating and Documenting Rural Historic Landscapes, pp.15-18 – for the detailed relationships between these characteristics and the features represented by them):

- existing topography and grading
- natural features
- climate
- land uses
- circulation system/network (features of roads, paths, trails, steps etc.)
- patterns of spatial organization (overall pattern of the circulation networks, areas of land use, natural features, clusters of structures, and division of property)
- views and vistas into and out of the landscape
- vegetation by botanical name and common name with calliper for trees and heights for shrubs

Within cultural landscapes, plants may have historical or botanical significance. A plant may have been associated with a historic figure or event or be part of a notable landscape design. A plant may be an uncommon cultivar, exceptional in size, age, rare and commercially unavailable. If such plants are lost, there would be a loss of historic integrity and biological diversity of the cultural landscape. To ensure that significant plants are preserved, an inventory of historic plants is being conducted at the North Atlantic Region of the National Park Service. Historical landscape architects work with landscape managers and historians to gather oral and documented history on the plant's origin and potential significance. Each plant is then examined in the field by an expert horticulturist who records its name, condition, age, size, distribution, and any notable botanic characteristics.

- boundary demarcations (such as fences, walls, land use, vegetation, roadways, bodies of water, and irrigation or drainage ditches)
- drainage and engineering structures
- small scale elements (such as foot bridges, cow paths, road markers, gravestones, isolated vegetation, fence posts, curbstones, trail ruts, culverts, foundations, and minor ruins.)

The level of detail to be recorded in reading landscapes is often determined by the size, complexity and type of the landscape. Some landscapes may even require documentation at more than one scale. For example, a large designed historic landscape may be documented at a small scale to depict its spatial and visual relationships, while the discrete area around the designed landscape may require a larger scale to illustrate individual plant materials, pavement patterns and other details. The same may apply to an entire hist. vernacular/rural historic district and a fenced vineyard contained within.

The above small scale elements have been identified in the Bulletin no. 30 for rural/hist. vernacular landscapes – but these can vary according to the size, type and complexity of the landscape. For example in Bulletin No. 18 How to

Evaluate and Nominate Designed Historic Landscapes the small scale elements are defined even in more detail – such as:

- lighting including actual fixtures such as street lights and lanterns as well as the use of both natural and artificial lighting as design elements (i.e., intensity, colour)
- signs delineating entrances, street names, and other features
- sculpture and other works of art

These individual features - even though some may be movable - are considered to contribute to the overall identity and character of the landscape and should be considered, in most instances, not individually but in terms of their relationship to the totality of the landscape.

- bodies of water/water features such as pools, fountains, lakes, streams, and canals
- buildings, structures and objects
  - buildings:** residences, schools, churches, outbuildings, barns, stores, community halls, and train depots.
  - structures:** dams, canals, tunnels, mining shafts, grain elevators, silos, bridges, earthworks, and highways.
  - objects:** monuments, threshers, and cider mills.

This section for **buildings, structures, objects** and **sites** (archaeological sites mainly – but can also include road traces, fields, quarries, etc.) require the most detail. It should generally:

- Describe the kinds of buildings, structures, and major objects present.

- Relate the function, form, materials, and construction of buildings, structures, and objects to land uses and activities, cultural adaptations, and response to the natural environment.
- Identify patterns and distinctive examples of workmanship, methods of construction, materials, stylistic influences, and vernacular forms.
- Describe the condition of historic buildings and structures, and nature of additions and alterations.
- Describe the principal and most important buildings, structures, and objects, by name, type, location, date, function, condition, methods of construction, materials, stylistic influence, and, if known, builder.
- Discuss the impact of non-historic construction and alterations on historic integrity.
- Identify all buildings and structures and principal objects, by location, name or number, and type, and classify as contributing or non-contributing.  
(these should also be noted on sketch maps accompanying the National Register forms.)

- archaeological sites

This work of L.F. McClelland, J.T. Keller and R.Z. Melnick for the National Park Service (Guidelines for Evaluating and Documenting Rural Historic Landscapes) – which identifies characteristics providing a list of elements to be considered in research and inventorying landscapes – have become a practical method for understanding and mapping cultural landscapes in the United States. It provides an overview of the historic vernacular/rural landscapes and include a sufficient range of factors/character defining features for an initial investigation. The NPS and others (i.e. State Historic Preservation Offices, Local Governments, preservation professionals and other interested individuals) have used this inventory approach in a number studies, from that of 17,000 acres Ebey’s Landing National Historical Reserve<sup>68</sup> in Washington and other smaller farm communities of Lancaster County, Pennsylvania and the southern Wisconsin.

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<sup>68</sup> Gilbert, C., Luxenburg, G. & Comp, T.A. (1990). *The Land, the People, the Place: An Introduction to the Inventory, Ebey's Landing National Historical Reserve*. Seattle: Pacific Northwest Region, National Park Service.

## EBEY'S LANDING

### NATIONAL HISTORICAL RESERVE

# PNRO INVENTORY

National Park Service  
Pacific Northwest Region  
Cultural Resources Division

Westin Building, Room 1920  
2001 Sixth Avenue  
Seattle, Washington 98121

SITE ID: N. 66C 9. T. 31N. R. 1E      QUAD NAME: COUPEVILLE

SOURCES:  USGS     FIELD OBSERVATION    DATE: SEPT. 1983    INVENTORIED BY: GILBERT/SCENA    FILM UNITS: LA 15-26, 31 LA 91-24, 23, 24, 27

AIR PHOTOS     OTHER

**DESCRIPTION** This half section in the northern portion of Ebey's Prairie and includes the commercial part of Coupeville known as Prairie Center. Primary access is along Engle and Terry roads which intersect in Prairie Center and along Cook Road which runs northwest across the prairie. Pasture lands and croplands surround the commercial district with higher residential densities clustered within the Coupeville city limits.

LANDUSE CATEGORY	< 10	10-35	35-50	50-75	75-100	LANDUSE ACTIVITY	BOUNDARY DEMARCATION
% AGRICULTURE						CROPLAND: <input checked="" type="checkbox"/> ROTATING <input type="checkbox"/> PERMANENT	TOPOGRAPHIC: EDGE OF RIDGE IN NW DIVIDES UPLANDS FROM PRAIRIE VEGETATIVE: SMALL WETLAND EAST OF CITY LIMITS ROAD: TERRY ROAD, ENGLE ROAD, COOK RD. FENCE: WOOD POST AND WIRE IN PASTURE AND ALONG PROPERTY LINES WATER: OTHER: COUPEVILLE CITY LIMITS
% RANCHING						PASTURE: <input type="checkbox"/> GRAZING <input type="checkbox"/> HOLDING	
% NATURAL VEGETATION						<input type="checkbox"/> FOREST <input type="checkbox"/> GRASSLAND <input type="checkbox"/> WETLAND	
% RESIDENTIAL						DWELLINGS: <input type="checkbox"/> MULTIPLE <input type="checkbox"/> SINGLE	
% COMMERCIAL						<input type="checkbox"/> TOWN <input type="checkbox"/> SINGLE BUILDING <input type="checkbox"/> GROUP	
% PARK						RECREATION:	

NOTES: PRAIRIE CENTER COMMERCIAL DISTRICT

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

SITE MAP    NORTH    SCALE 1:8000    1/4mi.    1/2mi.

LOCATION MAP

**LEGEND**

**CIRCULATION NETWORK**

- HIGHWAY
- MAJOR ROAD
- SECONDARY RD.
- GRAVEL RD
- FOOTPATH

**BOUNDARIES**

- FENCE
- HEDGEROW
- MILITARY RES.
- HISTORICAL RES.
- WATER
- WOODLANDS

**STRUCTURES**

- BUILDING
- HIST. BUILDING

**CROSS REFERENCE**

A3-4-74-85, 120  
A7-4-201-205, 207, 208, 210

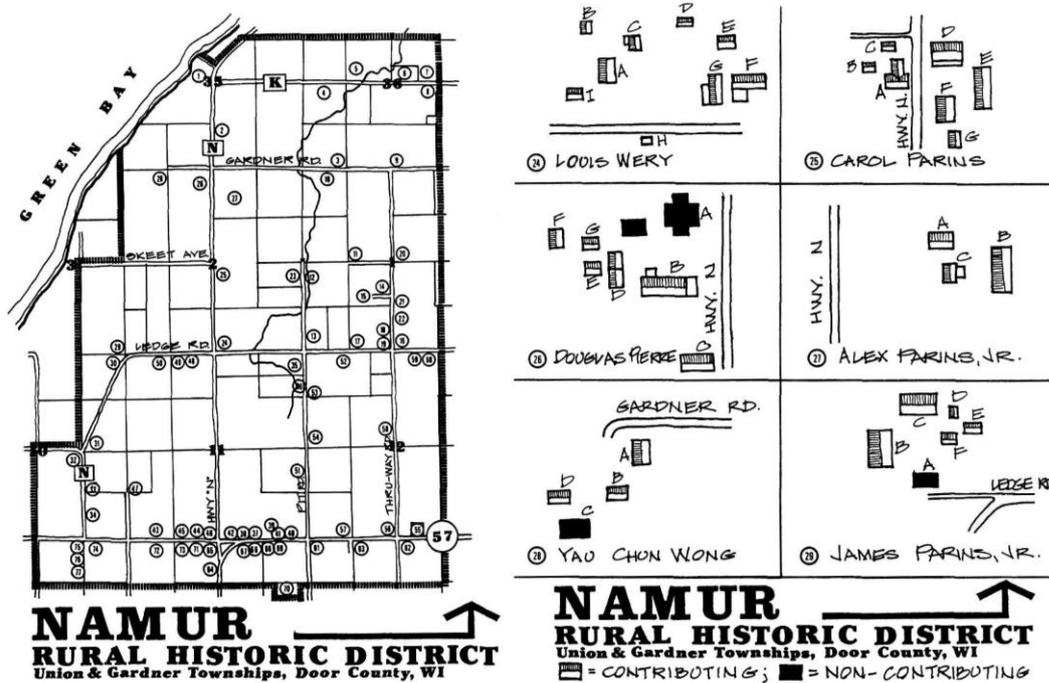
**SECTION**    HORIZONTAL 1:660'    VERTICAL 1:160'

PANORAMA

**Figure 2.5** Form used to survey the 17,000-acre Ebey's Landing National Historical Reserve in Washington – recorded landscape characteristics, percentage of land uses, types of land use activities, topography, types of vegetation, roadways, waterways/water features, fences (boundary demarcations) and buildings and structures. To facilitate recording landscape characteristics, the survey area is divided into geographical units, based on half sections of United States Geological Survey (USGS) topographical maps. Each form covered a half-section (320-acres) of the USGS topographic grid and was supplemented by a panoramic photograph, representative photographic views, a site map, and a sectional diagram. (Source: U.S. Department of the Interior, NPS, 1983)



**Figure 2.6** The Carol Parins Farmstead (no.25 in the sketch map) represents the traditional Belgian-American farm in the U-shaped configuration of the barnyard, numerous log outbuildings, and outlying fields. (Source: McClelland et al., 1999)



**Figure 2.7** Sketch maps accompanying the National Register forms used to record the Namur Belgian-American District in Door County, Wisconsin. A large map drawn to a small scale covers the entire district and locates district boundaries, roads, and farm clusters. Small maps drawn to a larger scale and keyed by number to the district map then identifying the contributing and non-contributing buildings and structures in each farm cluster. (Source: McClelland et al., 1999)

### **2.3 Classification/Typology and Cultural Landscape Character Assessment: an Evaluation of the Methods and Applications**

Despite numerous important contributions to the study of the ‘cultural landscape and/or ‘landscape’ since the publication of C.O. Sauer’s *Morphology of Landscape* (1925), it could be argued that there is still some confusion as to what a ‘cultural landscape’ and/or ‘landscape’ actually is.

To some scholars (Otto Shlüter, 1921; Michotte, 1921; and Febvre, 1922 – trans. by Montford, 1925) ‘cultural landscapes’ and/or ‘landscapes’ are discrete units of land – separated from the rest of the landscape by obvious and well preserved remains of human activity and achievement. Others define cultural landscapes in terms of ancient boundaries and/or land units such as: estates, commons, ornamental gardens and/or parks, etc. The cultural landscape have also been defined in broad ‘scenic’ terms, not necessarily focused on archaeological or historical features but perhaps on the presence of culturally manipulated flora across areas of land (Birks et al. 1988; Aitchison, 1995; Fowler 2000, 2001; Wagner and Mikesell; Melnick 1984).

These definitions of the ‘cultural landscape’ and/or ‘landscape’ all seem to share an implicit separation of what is considered ‘cultural’ from that of ‘natural’. There is a need to move beyond this separation and accept that the whole landscape, the fabric of the land as well as archaeological components, is cultural. This alternative and more holistic definition has been strongly advocated in recent years by those involved in archaeological conservation and management (English Heritage 1991; Fairclough 1991; 1994a; Countryside Commission 1987; 1993; 1996). It is also reflected in recent collaborations between international agencies responsible for the conservation of cultural and natural heritage (IUCN 1994; 2000; UNESCO 1992; 1993; 1994a; 2013), and is enshrined in international policy through documents like *Revision of the Operational Guidelines for the Implementation of the World Heritage Convention: Report of the Expert Group on Cultural Landscapes, 24-26 October 1992* (UNESCO 1992), *Pan-European Biological and Landscape Diversity Strategy* (CoE, UNEP & European Centre for Nature Conservation 1996), *Guidelines for*

*Protected Area Management Categories* (IUCN 1994) and the *European Landscape Convention* (CoE 2000).

The present strategy for conservation of the historic environment also depends on a conception of the historic environment as a series of discrete units – separate from the rest of the landscape. In majority of the examples examined in the previous section(s) - it involves designation of ‘sites’ and/or ‘areas’ without consideration of their relationship with each other and/or their surroundings. For example in the UK, three designations are statutory: Scheduled Monuments, Listed Buildings and Conservation Areas. The first two designations tend to separate ‘sites’ from their landscape context allowing the quality of the whole to be eroded to the point where it has little or no value. Conservation Areas protect areas of “... *special architectural or historical interest the character or appearance it is desirable to preserve or enhance*”<sup>69</sup>. Although they could be applied to any part of the historic landscape, in practice, they are usually ‘urban’ or ‘archaeological’ designations. Large areas of the historic environment have no direct statutory protection and non-statutory designations (i.e. EH’s Register of Parks and Gardens of Special Historic Interest; local authorities through the Local and/or Structure Plan frameworks) rely on application of planning controls.

Landscape conservation via the designation of separate units has been questioned in recent years (EH 1996; 1997; Fairclough 1996a; Wainwright 1996), partly in response to the growing awareness that the whole landscape is historic/cultural, and partly because it “... *does not reflect the full range of values ascribed to the historic environment by those who live and work there*”<sup>70</sup>. It is these typical – commonplace – features such as the local styles of vernacular architecture, the settlement patterns and field boundaries which contribute to our sense of place and are often missed by the present designation systems. Also there is a growing awareness that the designation of only nationally important monuments and/or sites will not protect typical or

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<sup>69</sup> English Heritage (1995). p.2.

<sup>70</sup> Fairclough (1996b).

commonplace aspects of the historic environment which are critical for the local character of the area and, perhaps, most valued by those who live and/or work in the area. Focusing only on the 'finest' assets as to be designated and thus protected would therefore pass on an incomplete picture of the overall character of the locality.

In response to these objections, many countries in Europe and the Americas have introduced new methodologies to identify/describe and assess landscapes.

In the United States, the National Park Service (NPS) revised policies and guidelines for managing cultural landscape included in the legal and governmental framework for historic preservation. This included methodologies to read landscape and to understand the natural and cultural forces that have shaped it (McClelland, Flint, L., Keller, J.T., Keller, G.P. & Melnick, R.Z. 1999; NPS, 1998; US Dep. of the Int. 1991). Although the methodologies introduced was intended for the 'sites' and/or 'properties' at the national level - to be included in the National Register of Historic Places – the comprehensive list of 'character defining features' (for Rural Historic Landscapes see pp.58-61 of this chapter. For other types of landscape see Andrus, P.W, 1992; Keller et al 1987; NPS, 1990; Noble et al. 1987) to be considered in research and inventorying landscapes – provides a practical list of elements for understanding and mapping landscapes.

The NPS also introduced the Guidelines for Evaluating and Documenting Traditional Properties (Bulletin no. 38) which gives practical guidelines how to record cultural practices and beliefs of living communities.

In UK, there was a more comprehensive approach to methodologies to identify/describe and assess landscapes through the Historic Landscape Characterisation (HLC) – a term and concept developed through the early 1990s. It is based on the approach that characterises 'all' areas within the landscape with reference to agreed criteria, and unlike the US National Register of Historic Places significant at the national level – does not concentrate on the identification of key landscapes. Further grading, in terms of relative importance of different parts of the landscape, was only undertaken to meet the needs of specific planning or conservation-led enquiries.

The general purpose of the approach, as has been defined by the Countryside Agency (Countryside Commission, 1993; 1998; Countryside Agency, 1999) was rather to assist local authorities, government departments and other related agencies (i.e. informing work on special/distinct character areas – including identification of areas of designation, mapping of boundaries, justification for special application of policies, etc.) and to guide and/or direct landscape change.

Since 1994, following the initial project in Cornwall, the term and the concept of Historic Landscape Characterisation (HLC) has been increasingly used by the local authorities – which proved to be an efficient tool for understanding the historic and archaeological dimension of the present landscape.

But – there still remains many aspects of the method(s) to be further developed such as:

- *local attributes*  
the HLC can be extended by identifying more local attributes and scales.
- *intangible attributes*  
HLC can be tested as a tool for identifying and expressing intangible cultural landscape attributes (such as local perceptions, folklore, attitudes and associations).
- *community participation*  
the HLC methodology can be tested and extended to incorporate community participation and use.
- *use*  
Identification of further research uses for the HLC, such as time depth, settlement pattern and site prediction.
- *other data-sets*  
Identification and development of a dialog between the HLC information and that held within other data-sets, in particular the Sites and Monuments Inventory (SMI).

## CHAPTER 3

### A METHOD OF CULTURAL LANDSCAPE CHARACTER ASSESSMENT: THE CASE OF CAPPADOCIA (TURKEY)

The proposed method for the classification, description and assessment of cultural landscapes is a spatial, map-based technique using a Geographic Information System (GIS) for assessing the historic and archaeological dimension of the present-day landscape. Its methodology is based on the current practice and the approaches to landscape assessment, protection and management. This was a conscious and deliberate borrowing as to create a common language, to find ways to remold our restoration information and understanding into words, concepts and above all images that would be readily understandable to non-restoration disciplines, and in particular to architects, planners, and archaeologists. The method also draws on well-established principles of the Historic Landscape Character Assessment (HLC) methodology first developed and used in Cornwall, (UK)<sup>71</sup> – but the characterisation approach have been tested and further developed at different scales but within the same broad objectives of improving understanding, protection and the management of the historic environment substantially for the Turkish context.

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<sup>71</sup> The HLC methodology was first developed and used in Cornwall (Cornwall County Council 1996; Herring, 1995; 1998). Since then, historic landscape characterisation has been carried out for many county councils and similar areas. A list of historic landscape characterisation reports can be found in the *Bibliography*. A similar method has been adopted for Scotland (Dixon, P. et al. 1999), and the approach has been tested in Ireland (Environment Resource Management & ERA – Maptec Ltd. 2000). In methodological terms, main areas of progress have been: the increased use of GIS, more advanced interpretative approaches and more complex classifications.

Each project has drawn on its predecessors' experience and the methodology has therefore evolved through practice, as well as continuing to be informed by theory. Therefore, the more recent projects (e.g. Hampshire and more recently Lancashire, and others listed in the *Bibliography*) have also been reviewed to help codify best practices and options. See the development, modifications and the 'proving' of the techniques used in Cornwall in Aldred, O. & Fairclough, G. (2003). *The National HLC Method Review 2002*. London: English Heritage.

Cappadocia (Turkey) is presented as a case study. Its methods, techniques and results are described and evaluated in the following sections in three parts:

It begins with a description of the characterisation methodology followed for the identification and mapping of landscape character types (including sources of information on a range of different factors that make a particular contribution to creating distinctive character). The following section (Part II) provides an introduction to Cappadocia (Turkey) – including background information on the formation and shaping of the Cappadocia landscape and its characteristic features. Part III describes and assesses the landscape character of the Cappadocia region. It classifies the landscape by character type, and provides character area descriptions for separate cultural landscape types/areas that are supported by maps, at an appropriate scale showing the extent of the draft landscape character types and/or areas identified. From this assessment, it develops general guidelines - indicating how landscape character may be conserved, enhanced and/or re-structured as appropriate - that are broadly applicable to each character type and/or area defined.

A glossary is also included so as to be clear what is meant by the key ‘descriptive words’ used in the written descriptions of the landscape character.

And the chapter concludes with a summary presentation of the results.

Appendices B, C & D include details of the assessment and results of the Cultural Landscape Character Assessment (Cul.LCA) undertaken between 2011-2014 in Cappadocia (Turkey). Appendix D includes copies of the different layers of map overlays and the Landscape Character Types and/or Areas of Cappadocia (Turkey), the level of mapping to which most of the textual information is attached.

### **3.1. The Stages of the Proposed Methodology for the Classification, Description and Assessment of Cultural Landscapes**

The proposed methodology for the classification, description and assessment of landscapes carried out as a process of building on existing research and practice. It sought to further develop the traditional approaches by emphasising time-depth and

historic process, and showing how different stages in history have contributed to the current landscape character.

The research sought an approach based on the method applied in Cornwall, Avon, Derbyshire, Cotswolds, and more recently the Lancashire Historic Landscape Characterisation Project which includes the county of Lancashire and the unitary authority areas of Blackburn with Darwen Borough Council and Blackpool Borough Council.<sup>72</sup> The main objective of the research was to produce a digital interactive map of the historic dimension of the landscape in Cappadocia – that would be a framework for future assessment within the area and that could be used as a context and framework for all other types of historic environment resources and that would inform and manage change to the historic environment, primarily at landscape scale. For the purposes of this research it will be referred to as Cul.LCA.

In order to achieve the objectives the following five key principles were established at the outset:

These are also closely related with the CoE European Landscape Convention definition of landscape as “... *an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.*”<sup>73</sup>

- **A concentration on present day landscape character, not on the past landscape:** the main object of the assessment is the present-day landscape, as created by the long-term interaction between human activity and natural processes.
- **A focus on history not physiography:** Cul.LCA takes less account of geology, soils and/or topography except as a background to human activity, looking instead at ways in which people have interacted with nature, from geology to vegetation, etc.

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<sup>72</sup> Ede, J. & Darlington, J. (2001).

<sup>73</sup>CoE (2000). *European Landscape Convention, 20 October 2000 Florence, Italy*. Strasbourg: Council of Europe. Article 1.a.

- **Area not point data:** Cul.LCA-based research and understanding is concerned with landscape not individual sites; it is not simply a process of mapping monument distributions, or pointing out listed buildings in the landscape.
  
- **All areas and aspects of the landscape, no matter how ordinary, are treated as part of landscape character. Not just ‘special’ areas:** Cul.LCA is concerned primarily with landscape character, rather than with landscape quality or value. These latter factors are nevertheless still relevant when a Cul.LCA is used to inform decisions, when judgements must be made about the implications of an assessment. An understanding of the concept of character is therefore vital. Landscape ‘character’ (see *Glossary* for relationships to other terms i.e. ‘characteristics’; ‘elements’; ‘features’; ‘characterisation’) is defined as: “*a distinct and recognisable pattern of elements that occur constantly in a particular type of landscape. Particular combinations of geology, landform, soils, vegetation, land-use, field patterns and human settlement create character.*”<sup>74</sup> Character makes each part of the landscape distinct, and gives its particular sense of place. Whether we value certain landscapes for their distinctiveness, or for other reasons, is a separate question.

Exploring and understanding the landscape character of any area requires systematic investigation of the many different factors that have helped to create and influence that location. They include geology and landform, the natural attributes of soils and the vegetation associated with them, and both the historical and current influences of human land-use and settlement. The interactions between all these factors create the character of the landscape.

- **All the Central Anatolian landscape is influenced by human activity:** natural and semi-natural features (i.e. woodland, land cover, hedges etc.) are as much a part of historic landscape character as archaeological features.

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<sup>74</sup> CA & Scottish Natural Heritage (2002). p.9.

Every aspect of the landscape, even those which are commonly perceived as ‘*natural*’ and/or ‘*untouched*’ are similarly influenced and, in many aspects, physically shaped by human activities.

The Cul.LCA method is most of all concerned to trace the imprint of the past on landscape. Known as ‘time-depth’ (see Section 3.2 The Evolution of the Cappadocia Landscape, pp. 112-134), this is one of the landscape’s most important characteristics. It can be defined as: “*the long-term interaction between human activity and natural processes*”.<sup>75</sup> It recognises that the long sequence of events and actions that have produced the present environment, and which is visible within the landscape, is the result of human activity as well as natural processes. A proper understanding of time-depth needs to recognise the various, and often complex, ways in which the landscape has been influenced by past human actions. Cul.LCA focuses on this human perspective and adds a fuller historical dimension to the basic processes. Time-depth is reflected within Cul.LCA through readily identifiable components like field boundaries, and through less obvious remains of settlement or communications and transport networks. It is also reflected through human influence on vegetation patterns, and in the ‘*below-ground*’ evidence of past environments which survives across the landscape in the form of deposits, for instance, or as cropmarks in ploughed land. An important aspect of understanding time-depth is recognising that human influence has occurred, and can be traced, even where the landscape appears ‘*natural*’ and/or ‘*untouched*’. It enhances our appreciation of how landscape components have changed through time, or survived through continuity.

The proposed method for historic landscape characterisation follows the main steps illustrated in Figure 3.1. The method draws a clear distinction between two stages: the stage of characterisation (which is relatively value-free and is concerned with identifying, classifying and describing areas of distinctive character) and the stage of making judgements.

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<sup>75</sup> Macinnes, L. and Wickham-Jones, C.R. (1992) Time-depth in the countryside: archaeology and the environment, In Macinnes, L. and Wickham-Jones, C.R. (Ed.) *All Natural Things: Archaeology and the Green Debate*. Oxbow Monograph 21, Oxford, pp.1-13.

There are five main steps in the process, each of which is described in detail in the sections that follow. The steps are also summarised in Table 3.1.

It should be noted that in reality the steps relating to **pre-field study** and **field survey** should be iterative. The pre-field study must not be overly deterministic, recognising that there may be real landscape differences that are not obvious from mapped information. Equally field survey may highlight questions that need to be checked through pre-field study and therefore possibly require more than one stage of fieldwork to conclude the character areas identification.

Some assessments may stop after completion of Stage 1, the characterisation of the landscape, with the map and accompanying descriptions of character types and/or areas as the final product. This then stands as a neutral statement of the current character of the landscape. This can be used to raise awareness of the distinctiveness of the landscape and encourage appreciation of the differences between individual areas. Where the assessment has been undertaken to inform a particular decision or policy, however, the assessment will move on to make judgements about landscape character (Stage 2). Ultimately the decisions themselves lie beyond the Cul.LCA process and will be made by politicians, land managers and, ideally, a wide range of other stakeholders, on the basis of the information presented and the strength of the supporting argument.

For the purposes of this research Step 5 is only included in the form of a brief description in Table 3.1. Only an assessment of general management requirements was made for each landscape type. This was included in the descriptions in Landscape Character (Types and/or Areas) of Cappadocia, pp. 143-184.

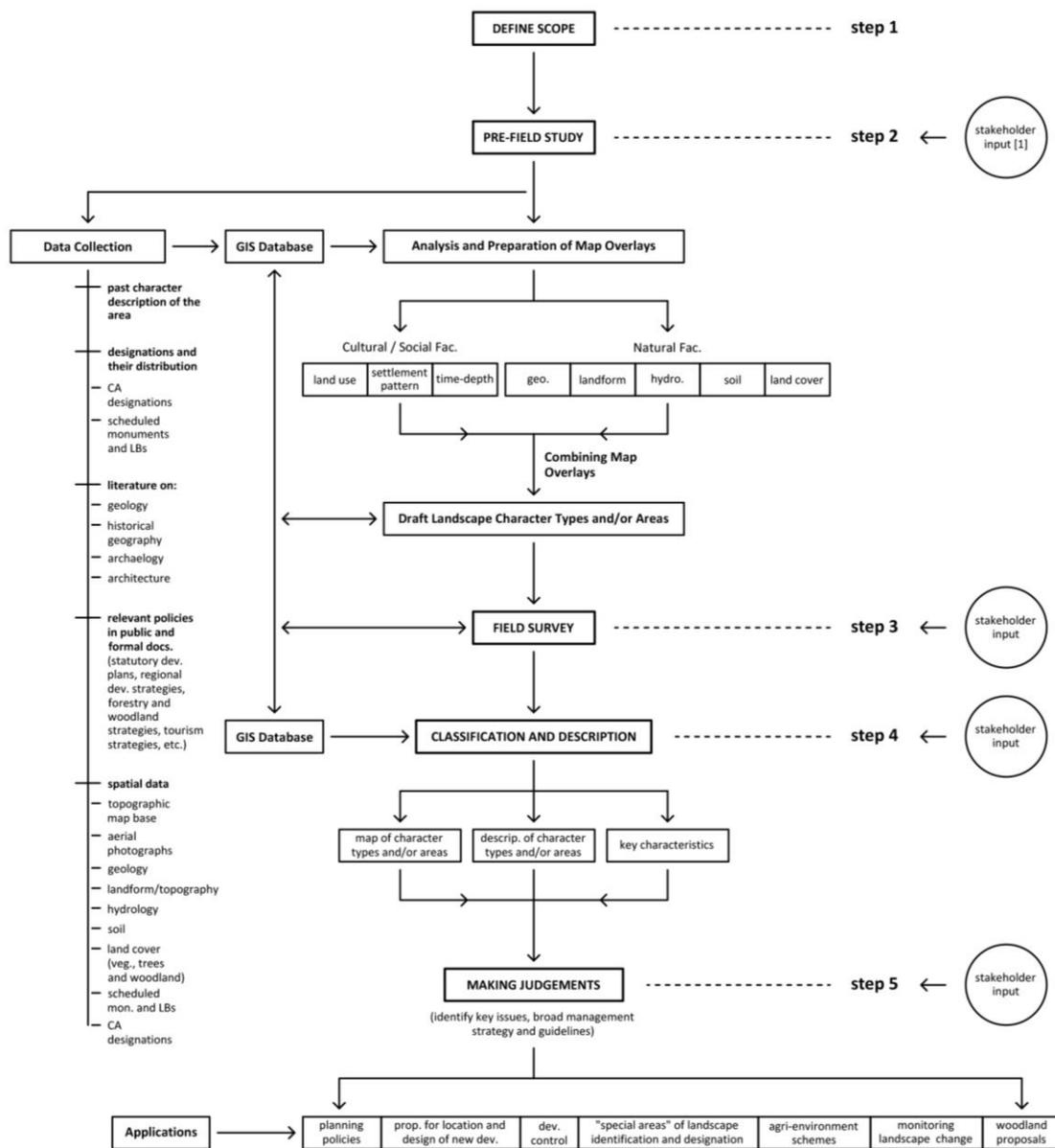
These guidelines makes recommendations for the appropriate emphasis for the planning and management of the landscape in the following terms:

- conservation of existing character and of particular features which contribute to this character;
- enhancement by restoration of character where the changes identified meant that the character was being lost;

- enhancement by creation of new landscapes where character and quality had either declined so far, or other circumstances where such; that there was scope for major change.

The guidelines described relates to a range of pertinent issues including: aspects of agricultural management; development control including housing, farmland diversification, and infrastructure proposals; abandonment and landscape derelection; tourism and visitor pressure; and the monitoring and management of archaeological and natural heritage.

The development of strategies and guidelines for planning and management drew on the findings of the field survey sheets, site observations and judgements, in-depth interviews undertaken during the field survey (step 3), and on the stated views of officers within the Nevşehir and Kayseri Regional Conservation Council(s), Kayseri Archaeology Museum, and Mevlüt Coşkun, Director of the Nevşehir Regional Conservation Council.



**Figure 3.1 The proposed Cul.LCA methodology for the classification, description and assessment of cultural landscapes.**

**Table 3.1 A summary of the main steps in Cultural Landscape Character Assessment (Cul.LCA).**

### **STAGE 1: CHARACTERISATION**

The first stage includes the steps involved in identifying areas of distinctive character, classifying and mapping them, and describing their character. It concentrates on making clear what makes one area different and/or distinctive from another.

The end product of the characterisation stage will be a map of landscape types and/or areas, together with relatively value-free descriptions of their character and identification of the key characteristics which are most important in creating this character.

The character area descriptions for separate cultural landscape types and/or areas and the map associated with it –showing the extent of the cultural landscape character types and/or areas identified are included in **Section 3.3**.

#### **Step 1: Defining the Scope**

The first step involves the definition of the purpose and aim of the assessment. The purpose of the assessment will determine the scale and level of detail of the assessment and the resources required.

#### **Step 2: Pre-Field Study**

This involves review of relevant background reports, other data and mapped information, and use of this information to develop a series of map overlays to assist in the identification of areas of common character (usually draft landscape character types and/or areas).

#### **Step 3: Field Survey**

Field data is collected to test and refine the draft landscape character types/areas, to inform written descriptions of their character, to identify aesthetic and perceptual qualities which are unlikely to be evident from desk information, and to identify the current condition of landscape elements.

#### **Step 4: Classification and Description**

This step then refines and finalises the output of the characterisation process by classifying the landscape into landscape character types and/or areas and mapping their extent, based on all the information collected, followed by preparation of clear descriptions of their character.

### **STAGE 2: MAKING JUDGEMENTS**

#### **Step 5: Making the Judgements**

The nature of the judgements and the outputs that may result from the process will vary according to the purpose of the assessment.

The main approaches to making judgements within the landscape assessment process are:

- landscape strategies;

**Table 3.1 (continued)**

- landscape guidelines; and
- attaching status to landscapes.

This stage may result in a range of different outputs, involving different types of judgement, each aimed at a particular need. These outputs may either: directly inform decisions about landscape through, for example - the preparation of planning policies, and strategies for the conservation and enhancement of landscape character; or feed into broader decision making tools (such as conservation plans or regional/local development plans) and strategies where landscape is only one of a broad range of environmental issues under consideration.

### **3.1.1 Scope (Step 1)**

The first step - *defining the scope* - involves the definition of the purpose and aims of the assessment. The purpose of assessment will determine; the scale and level of detail of the assessment and the resources required.

The Cultural Landscape Character Assessment (Cul.LCA) case-study method is applied at different scales and level of detail from a broad to a detailed level that ideally fit together as nested series or a hierarchy of landscape character types and/or areas so as assessment at each level adds more detail than is present in to the one above (see Fig. 3.2). The three main levels at which Cul.LCA will be carried out are:

- **Regional level:** Analysis at this level covered a large region at 1:500.000 scale – defined by the volcanic area bounded on the south and east by a line of volcanic structures with Mt.Erciyes at one end and Mt.Hasan at the other, extending north in a series of deeply indented valleys of the Kızılırmak and eastward to the depression of the Tuz Gölü covering the provinces of Kayseri, Nevşehir, Aksaray and Niğde in Central Anatolia (see Map 2: Topographic Map of Cappadocia, Central Anatolia included in Appendix D). The broad patterns identified at this level resulted from the underlying landform and

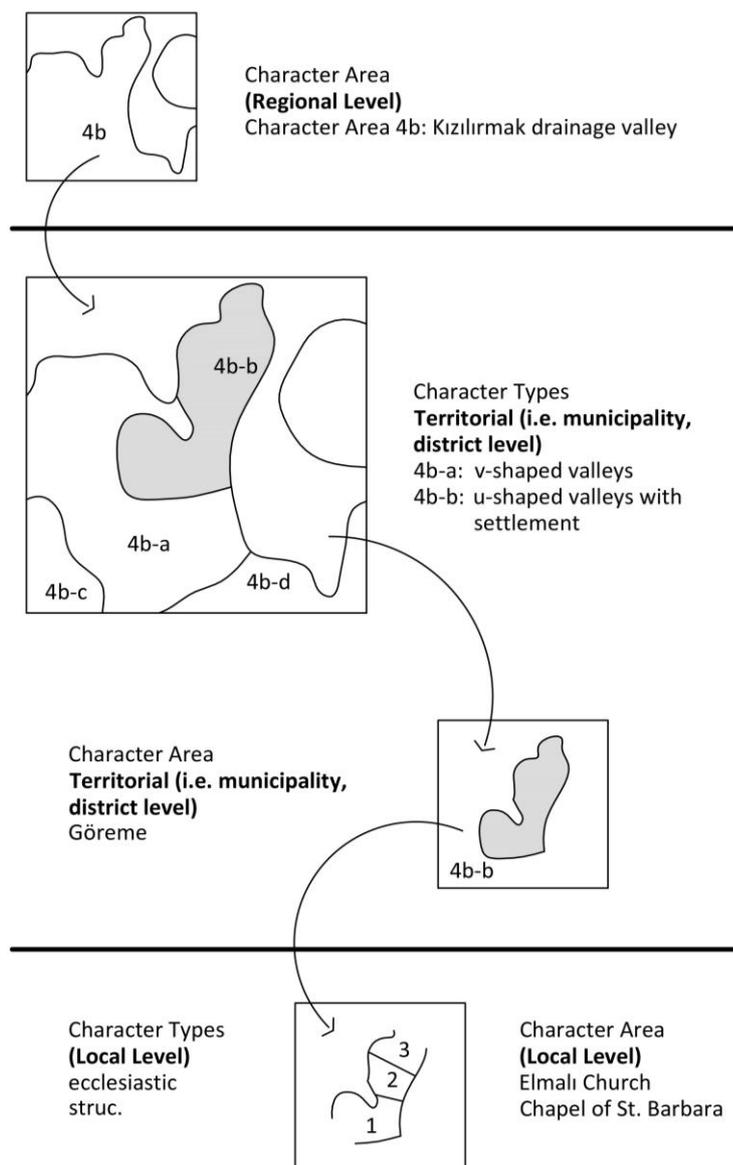
hydrographic structure of the region overlaid with the influence of geological associations and key aspects of the historic character of the landscape - 'time-depth'. These overlays between different factors allowed the identification of distinct landscape types and areas at this broad scale, for example 'valleys' or 'water and associated areas', as well as the character areas where they occur, which are distinct geographical areas such as the 'Kızılırmak drainage valley' or the 'Tuz Gölü plain'.

- **Territorial (i.e. municipality, district) level:** Within these broad patterns of landscape character it was then possible to identify a finer grain which can be mapped and described through Cul.LCA applied at the territorial level. Analysis at this level was carried out at 1:25.000 scale - defined by the two narrow valleys (of the Mavrucan and the Soğanlı Dere and their tributaries) within the Soğanlı District, including the settlements of Soğanlı, Güzelöz, Başköy and Derbentbaşı.

This will result in the definition of landscape types, which have unity of character due to particular combinations of landform, hydrology, geology, land cover (e.g. vegetation, trees/woodland), soil and a distinct pattern of cultural elements. They might include, for example, deep narrow valleys, broad open graded valleys with the characteristic isolated pinnacles known as 'fairy chimneys' or the rock settlements. Once again, character areas defined at this scale are the discrete geographical areas where each type occurs, conveying a sense of place.

- **Site level:** Having defined the area within the context of a wider character assessment, to show which landscape type/area it falls within, a detailed assessment will then either map landscape types and/or areas at an even finer scale, or add detail by mapping and describing the individual elements which contribute to the character of the area. The necessary or appropriate scale of assessment will be a smaller area at 1:5.000 or even larger scales, such as an individual settlement of Soğanlı, or a castle settlement of Uçhisar or Ortahisar. For the purposes of this research the assessments at the local level

were carried out at 1:5.000 scale – covering the area defined by Yukarı Soğanlı settlement and the lower part of Büyükkol Dere, one of the many tributaries of the Soğanlı Dere. The assessment carried out were in the form of adding detail to the territorial level maps by mapping and describing the individual elements which contribute to the character of the area, such as monuments, buildings and other architectural elements.



**Figure 3.2 Cultural Landscape Character Assessment (Cul.LCA) spatial hierarchy – an example of the relationship between the different levels.**

As part of defining the scope, a familiarisation visit was undertaken to allow the researcher to learn more about the character of the locations' landscape. The study area visit between 07-11 Feb. 2011 covered the systematic scanning of the archival docs (i.e. these included the examination of the statutory development plans, regional development strategies, forestry and woodland strategies, tourism strategies, Conservation Area designations and inventory of monuments and LBs within the study area) in the Nevşehir Regional Conservation Council. Informal interview with Mevlüt Coşkun - the director of the Council is also incorporated in the analyses. The second study area visit between 16-18 Sep. 2011 included a field survey covering basically most of the volcanic area defined at the regional level. This process also helped to plan the more detailed field surveys at the territorial and site levels.

### **3.1.2 Pre-Field Study – draft landscape character types and/or areas (Step 2)**

The second step focuses on data gathering to provide the context for the assessment. It involves the collation of a range of background information including: Topographic and/or base map data produced by the Harita Genel Komutanlığı (HGK), geology, soil and land cover maps; aerial photographs; and information from relevant agencies such as General Directorate of Cultural Heritage and Museums, MoCT, General Directorate of Natural Heritage Conservation, MoEP, Ministry of Food, Agriculture and Animal Breeding, Ministry of Forestry and Water Works, and the General Directory of Mineral Research and Exploration. Nevşehir and Kayseri Regional Conservation Council(s) were also consulted on a broad range of conservation and planning issues including development pressures, landscape change, structure plan and potential conservation area plan policies. These and other interested groups were consulted (see section on stakeholder involvement at different stages of the Cul.LCA pp. 103-111) about the nature of change in the area.

Other reference sources included relevant excavation reports, articles in various periodicals on the results of these excavations, short information provided from the accounts of ancient writers and travellers, and other publications that are directly

related, wholly or in part, to the subject of this research. The on site in-depth interviews with targeted stakeholders (i.e farmers, landowners, etc.) provided an extensive amount of information on local history and detailed historical changes in land-use. The considerable archaeological and nature conservation resources of Cappadocia were reviewed at a very broad level with assistance from Nevşehir and Kayseri Regional Conservation Council staff, Mevlüt Coşkun, Director of the Nevşehir Regional Conservation Council and Mehmet Yıldız, Director of the Kayseri Regional Conservation Council.

This process generally sought to acquire an understanding of how these resources contributed to the character of today's landscape.

This data gathering process was followed by the preparation of base maps and overlays which defined the basis for field survey. The map overlay process was aimed at helping to understand the relationship between land-use, land cover, physiography (i.e. landform, geology and soils) and other visible evidence of human history in the landscape (which were considered the key determinants of landscape type). The maps and overlays were prepared prior to the field survey (step 3), and involved:

- preparing base map information including simple overlays of geology, landform, hydrology, soils and land cover etc. (see Appendix D for the complete list of map overlays and related information) using existing mapped information at 1:25.000 scales;
- combining map overlays, the use of aerial photographs and of 1:25.000 maps to produce a first draft of landscape types and/or areas. This provided the basis for the field survey step.

The interaction between information gathering process and field survey was iterative. While the field survey highlighted questions that needed to be informed by further research, the pre-field study step focused and informed the field survey and provided a crucial information base.

The following Table 3.2 provides a summary of the range of typical sources of data<sup>76</sup> for Cul.LCA.<sup>77</sup>

**Table 3.2 Sources of information used for pre-field study (Regional, Territorial and Site Levels).**

<b>Map Overlays</b>	<b>Source(s)</b>
<b>Geology</b> (geological characteristics, formations)	Geological Survey Data (1:250.000 and/or 1:25.000) General Directorate of Mineral Research and Exploration (MTA), and accompanying reports Personal archive of Prof.Dr. Vedat Toprak, Department of Geology, METU [1]
<b>Landform [2]</b>	Topographic and/or Base Map Data [4], and Aerial Photographs [3] Harita Genel Komutanlığı (HGK) and other data suppliers
<b>Hydrology</b>	Topographic and/or Base Map Data Harita Genel Komutanlığı (HGK) and other data suppliers [5]
<b>Soils</b>	Soil Survey Data (1:25.000), and accompanying reports Ministry of Food, Agriculture and Animal Breeding ( <i>Gıda, Tarım ve Hayvancılık Bakanlığı</i> ) General Directorate of Agricultural Reform ( <i>Tarım Reformu Genel Müdürlüğü</i> ) [6]
<b>Vegetation</b>	Land Cover Map (LANDMAP) Ministry of Forestry and Water Works ( <i>Orman ve Su İşleri Bakanlığı</i> ) [7]
<b>Trees/Woodland</b> (natural forests, plantations: trees, shrubs, hedges, etc., species specifications)	Topographic and/or Base Map Data (1:25.000) Aerial Photographs [8]

<sup>76</sup> The word data is used in this table, and in the text to refer to both the published and digital data that was available from different sources.

<sup>77</sup> This list of data sources (attributes) will change between the different scales of the assessment. The scale will also determine the level of detail and the resources required. Regional level applications only require a general description of character at the level of landscape character types, allowing generic strategies or guidelines to be developed. Others (territorial, site levels) may require more specific detail, dealing with individual landscape character areas, or even with the extent, nature and distribution of individual elements.

These are also influenced by the timetable, budget, project scope, and the purpose of the assessment and, depending on the physical qualities of the site, its scale, detail, and the inter-relationship between cultural and natural resources.

**Table 3.2 (continued)**

<b>Land Use</b> (and enclosure/field patterns)	Land Cover Map (LANDMAP) Topographic and/or Base Map Data (1:25.000) Aerial Photographs [9]
<b>Settlement</b>	Topographic and/or Base Map Data (1:25.000) Aerial Photographs [10]
<b>‘time-depth’</b> – the historic dimension of the landscape [11]	Conservation Area Designations Monuments and LBs , and accompanying reports, research.  General Directorate of Cultural Heritage and Museums, Ministry of Culture and Tourism ( <i>Kültür ve Turizm Bakanlığı</i> ) General Directorate of Natural Heritage Conservation, Ministry of Environment and Planning ( <i>Çevre ve Şehircilik Bakanlığı</i> ) Nevşehir and Kayseri Regional Conservation Council(s) Local Authorities [12], [13]

**Notes (on method of prep. map overlays and source of data):**

[1] Geological information (i.e. geological characteristics, formations, etc. that have contributed to the creation of the landscape character) is derived from data produced by the General Directorate of Mineral Research and Exploration (MTA) and mainly from the personal archive of Prof.Dr. Vedat Toprak, Dep. of Geological, METU. The raster data at 1:500.000 scale and accompanying reports/research were used for working at the regional level. For more detailed assessments, data were also available for most of the region at 1:100.000 and 1:25.000 scale.

Prof.Dr. V. Toprak from the Dep. of Geological Engineering, METU, also made their draft simplified geological classes (including detailed descriptions of the classes) and associated data available for the use of the research. Discussions towards clarifying the various aspects of Cappadocia’s complex geological formation that influenced the landscape --- also assisted greatly in deriving the simplified map overlay of geology.

[2] Landform is often one of the main influences on landscape character. The basic source of information is the topographic and/or base map data produced by the Harita Genel Komutanlığı at 1:100.000 and 25.000 scale(s), which provided contour information. There are several ways of analysing landform. The most common is to produce a coloured map of contour intervals, which helps to isolate the contour information from the other material on the maps, or in the digital data, and to bring out clearly the topographical variation in the region. Slope and aspect analysis can also assist with this type of analysis. If digital topographic data is available then some form of computer analysis, for example, using a digital terrain model/3D

**Table 3.2 (continued)**

Analyst, can achieve the same results. If time permits stereoscopic study of aerial photographs can also be helpful in understanding landform.

[3] Complete coverage available for Turkey. Full central Anatolia coverage available by 2005.

[4] Raster data at 1:100.000 and 25.0000 and TIN data at 1:100.000 and 1:25.000 This raster/TIN data combined with the geological data will give a general description of the physical environment of the region.

Existing topography and grading

Topographical (i.e. mountain, valley, plateau, plain, etc.) and other natural features and their characteristics (like flat, gently rolling, strongly undulating, etc.) that are integral, or at least significant part of the landscape.

These defining features are adapted in each level to reflect the scale of work, level of detail and local names of features. The groupings also vary between levels.

[5] River and drainage systems and other water features i.e. river catchment boundaries, rivers, streams, reservoirs, dry valleys, etc.

Hydrology/Rivers and Drainage Systems also have an important part in shaping the landscape. The extent of original river floodplains /main catchment areas is determined from the areas of alluvium shown on geological maps produced by the General Directorate of Mineral Research and Exploration (MTA), although more complex matters, such as the definition of main rivers or watercourses, which may be relevant in detailed work, information is obtained from the topographic and/or base maps produced by the Harita Genel Komutanlığı.

Landform and drainage information can usefully be combined to reveal distinct topographical areas, such as rolling hills, plateaus, broad valleys, narrow valleys, or scarp slopes, which can then be mapped as landform units. They are often closely related to the underlying geology and so these map overlays can sometimes be combined.

[6] Soil classification and/or types was derived from Soil Survey data (1:25.000) and reports prepared by the Ministry of Food, Agriculture and Animal Breeding (*Gıda, Tarım ve Hayvancılık Bakanlığı*).

[7] Land cover relies on a variety of information sources including:

- Land cover (i.e. vegetation, trees/woodland) inventory data (LANDMAP prepared for the region in 1996 at 1:50.000 scale – derived from Aerial Photographic Interpretation – providing detailed information on land cover types). Available in digital form from the Ministry of Forestry and Water Works;

- Topographic and/or Base Map Data (1:25.000) – prepared by HGK, which contain some mapped information on the distribution of principle, pre-dominant and significant vegetation by shape, type and general/specific location.

This data provide basic information on types, areas and distribution of vegetation/woodland and allow vegetation/woodland cover categories (which in lowland areas may be combined with patterns of enclosure) to be interpreted and mapped. These might, for example, include categories such as ‘woodland with significant areas of scrub/herbaceous vegetation’, ‘woodland (deciduous)’ or ‘woodland (mixed)’.

**Table 3.2 (continued)**

[8] Woodland and tree cover information was also available from the Ministry of Forestry and Water Works. These maps at 1:25.000 scale (available in digital format) include the extent and type of all woodlands in Turkey – based on interpretation of Base Map data and aerial photographs and ground truthing with random sample squares.

Aerial Photographs. – when more detailed information on treecover is required, for example on field and hedgerow trees, aerial photographic interpretation was used. However, this is time-consuming, and only likely to be useful where a very detailed level of assessment is required.

[9] Map information on land use was obtained from a variety of sources including those listed under vegetation cover.

Aerial photographs also provide contemporary information but are time-consuming to interpret (although the Land Cover Map of the region provides information about land use which is already in map form, even though it is based on interpretation of aerial photographs)

[10] Settlement and enclosure/field patterns can be interpreted from 1:25.000 topographic and/or base map data and from aerial photographs, again using land cover analysis. Map analysis, however, only provides an understanding of the contemporary patterns of settlement and enclosure without the important ‘time-depth’ dimension and their historical origins.

[11] Structures, archaeological components, cultural traditions

**structures** (i.e. monuments, buildings, and other architectural elements)

- original/current use, materials and construction techniques of structures present;
- relationship of the original/current use, materials, and construction techniques of structures to land-use, cultural adaptations, and response to the natural environment;
- description of the impact of new additions and alterations

**archaeological components** (i.e. road traces/networks, ancient agricultural production traces, and ruins of monasteries, churches, etc.)

- description of the types of archaeological sites, their cultural affiliations, and the period of history or pre-history represented;
- the extent of archaeological sites within the landscape, their distribution, environmental setting, and general location;
- identification of principal sites, by number or name and location, and description of surface and sub-surface features, condition, and disturbances.

**cultural traditions** (i.e. land-use practices, ethnic, religious or mythical significance, traditional craftsmanship, etc.)

- the associations arising from the interaction and perception of the landscape (i.e. beliefs closely linked to the landscape);

**Table 3.2 (continued)**

<ul style="list-style-type: none"><li>- landscape features that relate to important dimension of historical, religious, mythical and social significance;</li><li>- knowledge and practice concerning nature.</li><li>- place-names</li></ul> <p>[12] Designation data (formal documents and maps) and relevant policies</p> <p>[13] Inventory of monuments and LBs within the study area, research on local architecture, archaeology, history.</p>
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Geographic Information System (GIS) has been used for the collation and analysis of information gathered as part of the pre-field study stage of the Cul.LCA. An information base was build up by collating existing layers of digital data or digitising new layers.<sup>78</sup> The value of GIS at this stage was that it allowed complex layers of data to be overlaid and viewed on a topographic map base. The spatial relationships between datasets could then be analysed. It is important to note that there was assumptions, errors and inconsistency in some of the base datasets used for Cul.LCA. Limitations in datasets was acknowledged and accounted for and any assumptions made during the pre-field study were recorded.

GIS was used at a range of different levels to aid the characterisation:

- GIS was used to view datasets and visually assess spatial distribution and correlations, which form the basis for defining areas of common character. This process has traditionally been achieved by overlaying a number of acetate sheets. Undertaking the same process on GIS not only overcome the problems associated with enlarging/reducing source maps at different scales, but it also allowed for greater scope in the analysis of the data. However, difficulties associated with availability of digital data and access to it were

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<sup>78</sup> Input on the GIS database design process was provided by Dr. Çağıl Kolat, Department of Geological Engineering, METU - to ensure that data was stored correctly and efficiently.

encountered. Several of the key baseline datasets were too costly to purchase or simply not available in a digital format (i.e. LBs).

- GIS was used to interpret and analyse datasets, for example by setting parameters such as “re-classify elevation by z-value field in 6 classes”.

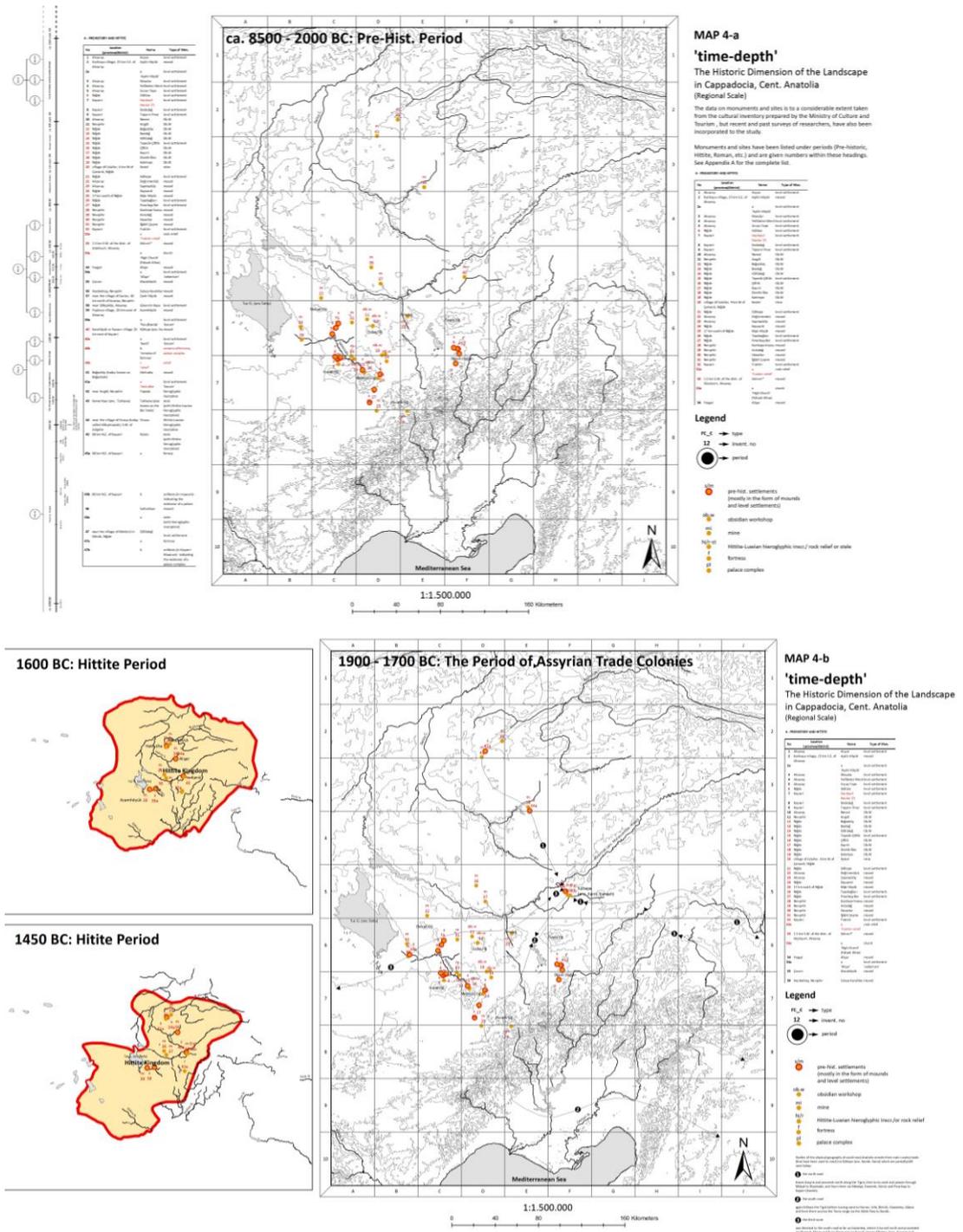
At a more sophisticated level GIS can be used as a tool to carry out spatial analysis. Such analysis can be used to combine datasets and define areas with similar characteristics. This technique has great potential to aid determination of areas of common character, but will require considerable technical expertise.<sup>79</sup>

Such techniques can either be used alone, or in combination with manual approaches. It is important to recognise, however, that work relying wholly on computer classification is rarely entirely satisfactory as it omits the critical contributions of both field work and stakeholder involvement.

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<sup>79</sup> Examples of the types of techniques that can be used and of their practical application can be found in Countryside Agency & Scottish Natural Heritage (2002). *Use of Geographical Information Systems and Other Computer Methods – Topic Paper 4*. Countryside Agency, Cheltenham and Scottish Natural Heritage, Edinburgh.

Also see – Bishop et al. (2004).



**Figure 3.3 Map overlays. Map 4a-f ‘time-depth’: the Historic Dimension of the Landscape in Cappadocia, Central Anatolia.** The different map overlays (Maps 1-4a-f - see Appendix D for the complete list of map overlays and related information) were combined to begin the process of identifying areas of common character to be tested and validated in the field. These overlays with correlations between different factors (i.e. geology, landform, hydrology and ‘time-depth’) allowed areas of potentially similar character to be identified.

### **3.1.3 Field Survey (Step 3)**

As a follow-up to the pre-field study, a field survey – including recording information in the field (by means of written descriptions of the character observed at particular points or in certain areas, annotated sketches and maps, and checklists of landscape elements and their significance) and photographic survey, etc. – was held to:

- update and expand the database of pre-field study information;
- verify and amend the draft landscape character types and/or areas;
- provide information on characteristics that are not apparent from the pre-field study and on the aesthetic and perceptual aspects of the landscape; and
- inform the process of making judgements.

For ‘regional’ level assessments, there was more reliance on pre-field study, combined with limited survey, largely for verification purposes. This included preliminary site visits to parts of Cappadocia – as a familiarisation process and to obtain an introduction from Nevşehir Regional Conservation Council and staff to typical management and planning issues.

The study area visit between 07-11 Feb. 2011 covered the systematic scanning of the archival docs (i.e. these included the examination of the statutory development plans, regional development strategies, forestry and woodland strategies, tourism strategies, Conservation Area designations and inventory of monuments and LBs within the study area) in the Nevşehir Regional Conservation Council. Informal interview with Mevlüt Coşkun - the director of the Council is also incorporated in the analyses. The second study area visit between 16-18 Sep. 2011 included a field survey covering basically most of the volcanic area defined at the regional level.

This process also helped to plan the more detailed field surveys at the territorial and site levels.

In the ‘territorial’ and ‘site’ level(s), more comprehensive field survey was required. Following these initial familiarisation visits a (third) field survey (covering the areas defined in the territorial and site levels) in 13-16 Aug. 2014 was completed. While the analysis at the territorial level covered the area defined by the two narrow valleys (of the Mavrucan and Soğanlı Dere and their tributaries) of the Soğanlı District, including the settlements of Soğanlı, Güzelöz, Başköy and Derbentbaşı, the later field survey included a more detailed survey of a chosen part of one of the character areas defined at the territorial level. The analyses at the site level included the area defined by Yukarı Soğanlı settlement and the lower part of Büyükkol Dere, one of the many tributaries of the Soğanlı Dere.

The field survey was planned to ensure that all the draft landscape character types and/or areas identified in the pre-field study were recorded (comprehensively) within the time and budgetary resources. Routes were planned to achieve this, and in each area an average of three (survey) points were selected to give a representative view of the landscape. In total, 47 survey points were selected. These were generally from high points and/or panoramic viewpoints which allowed clear views over the surrounding landscape. Each point was publicly accessible and was firmly within the area in question. Such points were also useful for orientation and provided a general overview, and for verification and refinement of landscape character type and/or area boundaries.

Information was recorded on a field record sheet designed specifically for the study area (Figure 3.4 and 3.5). The contents of the **field survey sheet** included:

- a written description of the character observed at particular points or in certain areas;
- a checklist of landscape elements and their significance;
- observations about the condition, sensitivity and management needs of the landscape<sup>80</sup>;

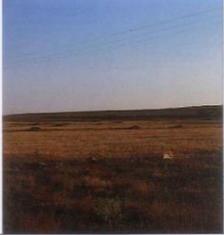
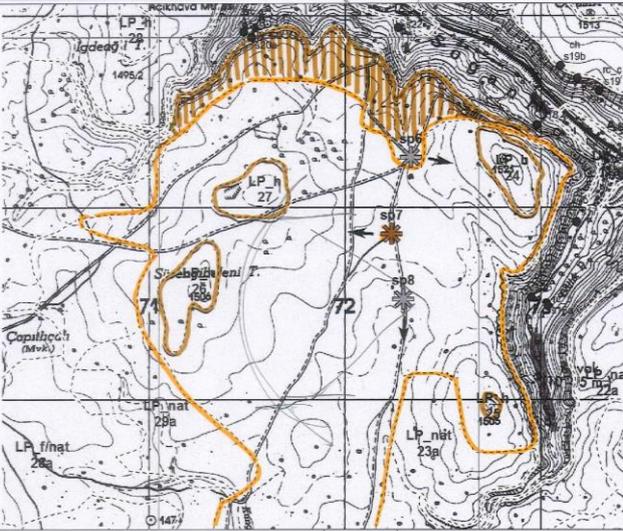
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<sup>80</sup> The fieldwork also allowed the collection of information which informed subsequent decisions (see pp. 185-221). At a general level this includes information on: the condition of features and elements within the landscape; evidence of change and the causes of change; and judgements about sensitivity, for example, in relation to land use change or new development.

- a space for a panoramic photograph;
- representative photographic views;
- a site map; and
- a sectional diagram.

The (brief) **written descriptions** - describing the overall impression of the landscape character - recorded in the field were the most important part of the survey. They contained information about the elements that make up the landscape and the way that they interact together, and about the aesthetic and perceptual characteristics of the landscape. These descriptions have become a valuable source when preparing generalised descriptions for separate cultural landscape types and/or areas (step 4).

*relatively low plain farmland*

LANDSCAPE CHARACTER TYPE/AREA: LP_f		ID NO: 33a	DATE: 13/08/2014
SOURCES:		x raster data at 1:25.000 x air photos	x field observations other
PHOTOGRAPH NOS: 66-73			
GEN. DESCRIPTION: It is located on (relatively) lower lands (typical regosol soils) in the area between Aşağı and Yukarı Soğanlı settlements and Karadağ. It is characterised by a regular enclosure pattern with straight-sided field boundaries and roads, road tracks connecting these (fields) with the settlements. Fields are regularly shaped, with the majority between 4-16 hectares. Boundaries are varied and include: hedges, ditches or drystone walls or combinations thereof, dependent on the location.			
DESCRIPTION ① → view attached detailed forms	DESCRIPTION ②	DESCRIPTION ③	DESCRIPTION ④
	photo	photo	photo
<i>route</i>			
<i>this area flows - low plain farmland and outcrop to the characteristic include within the boundaries of LP-f (no. 33a)</i>			
		<i>settlement (A. Soğanlı)</i>	
SITE MAP		LOCATION MAP	
NORTH ↑		SCALE: 1:25.000	
LEGEND codes identify draft: landscape types i.e. LP_f – low plain farmland, LP_f/nat – low plain farmland with sig. areas of nat. veg., LP_h – low plain hill, Wa – water obvious boundaries between draft landscape types boundary demarcations (also note the specific landscape feature(s) such as dovecotes etc.) topographic vegetation (hedges, fields, arable, hedge-banks, orchard, etc.) water circulation system/network (road traces/networks, etc.) structures (walls, ruins of monasteries, churches, etc.) land-use other (specify): sp1 field survey form locations viewpoints			
SECTION			
			
PANORAMA			

**Figure 3.4 Form used to survey the 11.962 -hectare (ha) study area** - recorded landscape characteristics, topography, hydrology (river and drainage systems), types of land-cover (vegetation), types of land use activities, circulations systems and networks (boundary demarcations) and buildings and structures. To ensure that a structured, consistent recording of information and to give a representative view of the landscape, three survey points were selected from each cultural landscape character type and/or area. Each form covered one survey point and was supplemented by a panoramic photograph, representative photographic views, a site map, and a sectional diagram.

SURVEY POINT NO: sp 7		DATE: 13/08/2014
DESCRIPTION ①		PHOTOGRAPH NOS: 66-73
<p>Key Characteristics:          Relatively low (approx., below 1500 m.) and flat topography. Open and extensive. Large-scale larger than 6 ha.) field enclosures of regular pattern with a significant percentage of medium enclosures ( to 6 hectares). Grazing. Network of roads and tracks connecting the farmlands with the nearby settlements.</p>		
Condition:		
<p>sketch</p>		
<p>SECTION</p> <p>66-67-68</p> <p>panoramic photo</p>		
PANORAMA		
<p>GEOLOGY:</p> <p><input type="checkbox"/> fluvial dep.   <input type="checkbox"/> volcaniclastic deposits   <input type="checkbox"/> groups of cones   <input type="checkbox"/> isolated cones   <input type="checkbox"/> other</p> <p><input checked="" type="checkbox"/> other (specify): <i>igimbrite</i></p> <p>additional info. (note any geological features that have contributed to the creation of the landscape character):</p>		
<p>TOPOGRAPHY:</p> <p><i>relatively low</i></p> <p><input type="checkbox"/> valley   <input type="checkbox"/> plateau   <input checked="" type="checkbox"/> plain   <input type="checkbox"/> cliff   <input type="checkbox"/> hill   <input type="checkbox"/> rock outcrops   <input type="checkbox"/> other (specify):</p> <p><input type="checkbox"/> dry valley   <input type="checkbox"/> mountain   <input type="checkbox"/> lowland   <input type="checkbox"/> footslope</p> <p><input type="checkbox"/> narrow valley</p> <p>Characteristics:</p> <p><input type="checkbox"/> flat   <input type="checkbox"/> rolling   <input type="checkbox"/> undulating   <input type="checkbox"/> steep   <input type="checkbox"/> vertical   <input type="checkbox"/> escarpment   <input type="checkbox"/> broad other (specify):</p> <p><input checked="" type="checkbox"/> low   <input type="checkbox"/> flat-topped   <input type="checkbox"/> high   <input type="checkbox"/> dry   <input type="checkbox"/> narrow   <input type="checkbox"/> deep   <input type="checkbox"/> other (specify):</p>		
<p>HYDROLOGY (River and Drainage Syst.):</p> <p><input type="checkbox"/> river   <input type="checkbox"/> stream   <input type="checkbox"/> reservoir   <input type="checkbox"/> dry valley   <input type="checkbox"/> lake</p>		
<p>LAND COVER:</p> <p><input checked="" type="checkbox"/> natural vegetation   <input type="checkbox"/> semi-natural veg.   <input type="checkbox"/> wetland   <input type="checkbox"/> other</p> <p><input type="checkbox"/> trees   <input type="checkbox"/> shrubs   <input type="checkbox"/> hedges   <input type="checkbox"/> woodland   <input type="checkbox"/> grassland   <input type="checkbox"/> other</p> <p>note any pre-dominant and/or significant veg. by: type, condition, use and general/specific location</p>		
<p>LAND-USE:</p> <p><i>Mix-dominant</i></p> <p>(also note current, past field patterns/systems - i.e. shape, size and groups)</p> <p><i>wheat, barley, oat, bean, potato</i></p> <p><input checked="" type="checkbox"/> agriculture   <input type="checkbox"/> ranching   <input type="checkbox"/> natural veg. (trees, woodland, etc)   <input type="checkbox"/> residential single/group buildings   <input type="checkbox"/> commercial   <input type="checkbox"/> park/parkland (natural, designed, hist., archaeo. etc.)   <input type="checkbox"/> other</p> <p><input type="checkbox"/> semi-natural veg.</p>		
<p>SETTLEMENT</p> <p>Pattern: <input type="checkbox"/> clustered   <input type="checkbox"/> scattered</p> <p>Type: <input type="checkbox"/> castle   <input type="checkbox"/> rock-hewn   <input type="checkbox"/> underground   <input type="checkbox"/> other</p>		
<p>ARCHAEOLOGICAL COMPONENTS</p> <p><input type="checkbox"/> ruins   <input type="checkbox"/> road traces/networks   <input type="checkbox"/> field systems (i.e. agricultural production traces)</p> <p><i>Now: the area may incl. traces and/or other features as well as below - ground undisturbed archaeological deposits belonging to the pre-war period.</i></p>		
<p>NOTES:</p> <p>Limited water sources for farming activities (Interview nos.2, no.3). Also see soil map - for soil type and classification. Not suitable for farming. Type V-VI-VII.</p>		

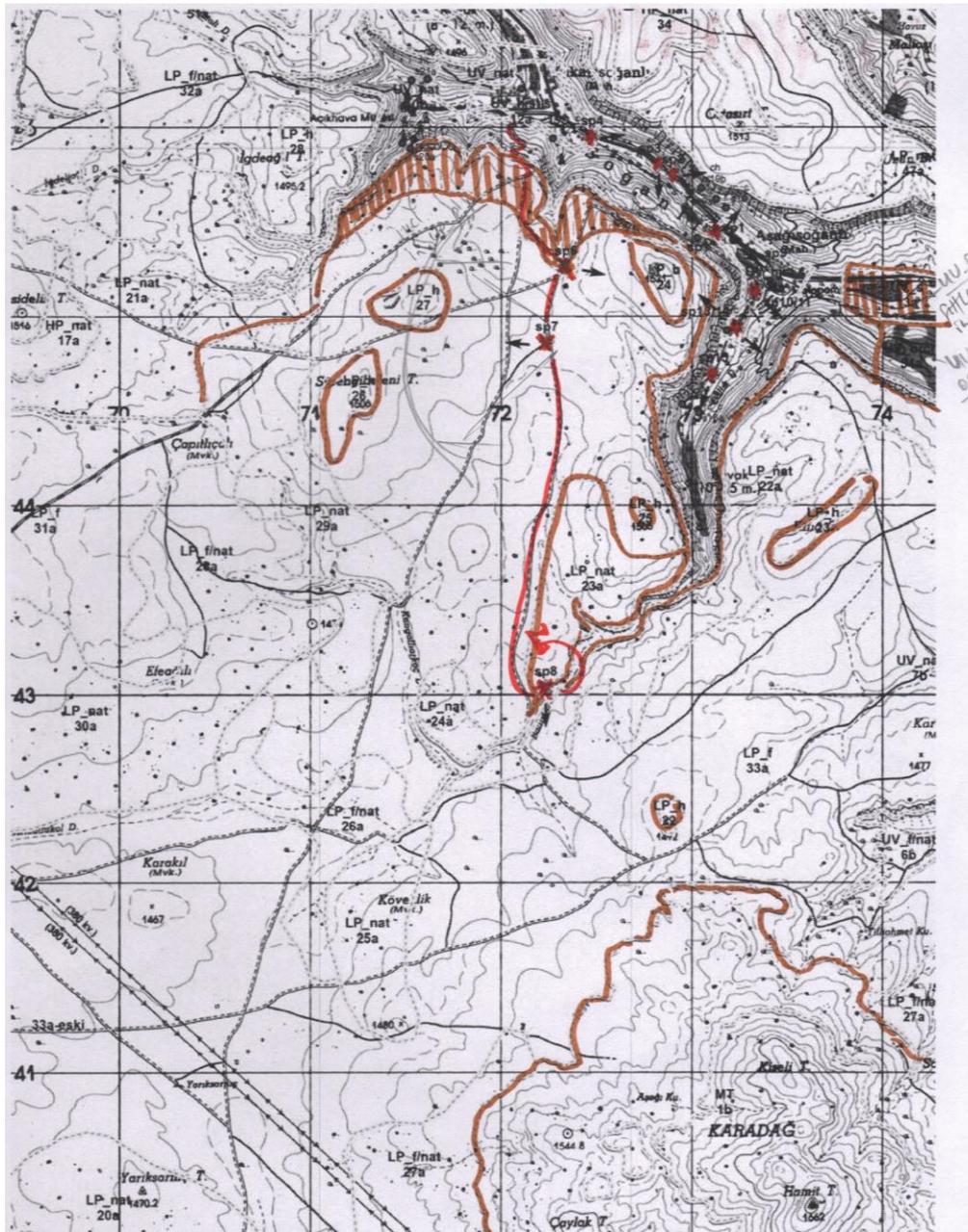
Figure 3.5 Form used to survey the 11.962 -hectare (ha) study area. Additional pages for key view points.

**Checklists** have been used for landscape elements. They are certainly not a method of assessment in themselves – but simply used as a tool to encourage the surveyor to look carefully at the landscape that is dealt with.

**Photographs** were taken at each survey point and provided an important supplementary record and point of reference once the survey was completed. They are numbered, annotated and referenced to maps of the routes taken and the points surveyed. The aim was to record the variations in character, not just the most scenic views, and to create a record of typical aspects of landscape character in an area. Detailed photographs of particular elements, such as dovecotes or fairy chimneys or details of vernacular building styles, were also recorded.

To supplement the formal field survey record an **annotated map** of the area was also produced. This is particularly important for detailed surveys (i.e. site level), where records of key features, views, boundary features, edges and other specific elements may be required. However, it can also help with larger scale surveys, for example at the regional and/or territorial level, where it is useful to record more detailed or subtle variations in landscape character that may not be evident from the pre-field study information and cannot easily be conveyed by the use of selected field survey forms alone.

An example of an annotated field survey map used in territorial level assessment is shown in Figure 3.6.



**Figure 3.6 Annotated Field Survey Map** – from the territorial level assessment – shows the type of map-based information that can be recorded in the field. Codes were used to map the distribution of draft landscape types devised during the familiarisation and pre-field study stages, and any obvious landscape boundaries (i.e. escarpment foot-top; top of valley sides, etc.). The map also show the location of the field survey points (with the direction in which the survey was taken), key viewpoints and views, prominent features and landmarks, and other notes relating to the condition and management needs of the landscape. This information was then combined with the pre-field study findings to produce the final landscape characterisation and to inform judgements and decisions.

### 3.1.4 Classification and Description (Step4)

After data gathering (based on all the information/data collected - this includes map overlays, field assessment sheets and associated field maps and/or notes, and stakeholder input), the study area was systematically subdivided into areas sharing similar attributes and the information entered into the research database (both as a digital GIS layer and Access database – Excel formats were also produced).

The primary attributes that dictated the extent and scale of subdivision were geology, topography, land cover and (historic and/or current) settlement and enclosure patterns, with further subdivision made on the basis of more specific land-uses (for example farmland or farmland with significant areas of grassland and scrub/herbaceous vegetation within enclosed land), or on the basis of enclosure size and/or shape. In areas of moderate and/or high relief they were subdivided mainly on variations in landform, for example high plains, or steep v-shaped valleys or scarp slopes. In areas of low relief they are more likely to be determined by patterns of drainage (of river corridors), land-use and settlement and enclosure patterns.<sup>81</sup>

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<sup>81</sup> The precision of boundaries/lines dividing these areas will vary with the scale and level of detail of the assessment. In reality, landscape is a continuum and character does not, in general, change abruptly. There are exceptions to this, for example, where a steep escarpment marks the division between a high plain and a u-shaped valley (as in the scarp between the u-shape valley with significant areas of natural vegetation – no.9a and the high plain farmland with significant areas of natural vegetation –no.9b, or between the u-shaped valley – no.10b and the u-shaped valley with settlement – no.12a, see Map 12 Landscape Character Types/Areas of Soğanlı District, Cappadocia, Territorial Level in Appendix D).

In these cases it may be relatively easy to draw the boundary, although a decision will still be needed about whether to include the scarp in the high plain above or the valley below.

More commonly however, the character of the landscape will change gradually rather than suddenly. While landscape character may be clearly defined and distinctive in the centre of a character type or area, there may be transitions at the edges where the influences of land cover, land use, settlement and field pattern may be less consistent. The character of the landscape in these transition areas is no less important, but may be more difficult to tie down precisely and in these cases, drawing a firm line as a boundary on a map may suggest a much more obvious change than is really apparent on the ground.

In such circumstances some form of indicative boundary to depict the change from one area to another can be used. *The Character of England – Landscape, Wildlife and Natural Features* (Countryside Commission and English Nature, 1996) project, for example, shows broad belts of transition in the more detailed reports (Countryside Commission, 1998; 1999) rather than precise lines. This can be technically quite difficult to achieve and in more detailed assessments it is usually better simply to incorporate a statement in maps and reports to indicate the status and meaning of boundary lines, and their limitations.

ID no	Code 1	Code 2	Topog 1	Topog 2	Geo	Wa	time depth 1	time depth 2	time dept
55a	sig.areas of nat. veg.	LU-2	high_pl	fl	gabbro	<Null>	<Null>	<Null>	<Null>
14a	farmland with sig. areas of nat.v	LU-3	high_pl	fl	ignimbrite-granit	<Null>	<Null>	t	roman
16b	farmland	LU-2	high_pl	fl	ignimbrite-limest	<Null>	<Null>	<Null>	<Null>
53a	farmland with sig.areas of nat.ve	LU-5	u-shaped	escarp.	alluvial-tuff	stream	na	rc c	early christ
9b	farmland with sig areas of nat.ve	LU-3	high_pl	undl.	ignimbrite-limest	<Null>	<Null>	<Null>	<Null>
33a	farmland	LU-2	low_pl	fl	ignimbrite-gabbr	<Null>	<Null>	<Null>	<Null>
15a	farmland with sig areas of nat.ve	LU-3	high_pl	fl	ignimbrite-bazalt	<Null>	<Null>	<Null>	<Null>
16a	sig.areas of nat.veg	LU-1	high_pl	undl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
17a	sig.areas of nat.veg	LU-1	high_pl	undl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
18a	farmland	LU-2	high_pl	undl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
19a	sig.areas of nat.veg	LU-1	low_pl	fl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
20a	sig.areas of nat.veg	LU-1	low_pl	fl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
21a	sig.areas of nat.veg	LU-1	low_pl	fl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
24a	sig.areas of nat.veg	LU-1	low_pl	fl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
25a	sig.areas of nat.veg	LU-1	low_pl	fl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
26a	farmland with sig areas of nat.ve	LU-3	low_pl	fl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
27a	farmland with sig areas of nat.ve	LU-3	low_pl	fl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
28a	farmland with sig areas of nat.ve	LU-3	low_pl	fl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
29a	sig.areas of nat.veg	LU-1	low_pl	undl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
30a	sig.areas of nat.veg	LU-1	low_pl	fl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
31a	farmland	LU-2	low_pl	fl.	ignimbrite	<Null>	<Null>	<Null>	<Null>
32a	farmland with sig areas of nat.ve	LU-3	low_pl	fl.	ignimbrite	<Null>	<Null>	<Null>	<Null>

Figure 3.7 Structure of information entered into the research database

The database structure (sample shown above) comprised the following:

- **ID no** - a unique identifier for each of the 100 + polygons
- **Code 1** – a code identifying current land-use of the polygon, including:
  - enclosed land
  - open (unenclosed) land
  - woodland
  - industrial land
  - communications
  - settlement
  - military
  - water, etc.
- **Code 2** - a second code for identifying further subdivision made on the basis of more specific landuses (for example; cropland and olive grove or cropland and olive grove and vineyards within arable land), or on the basis of enclosure size or shape.

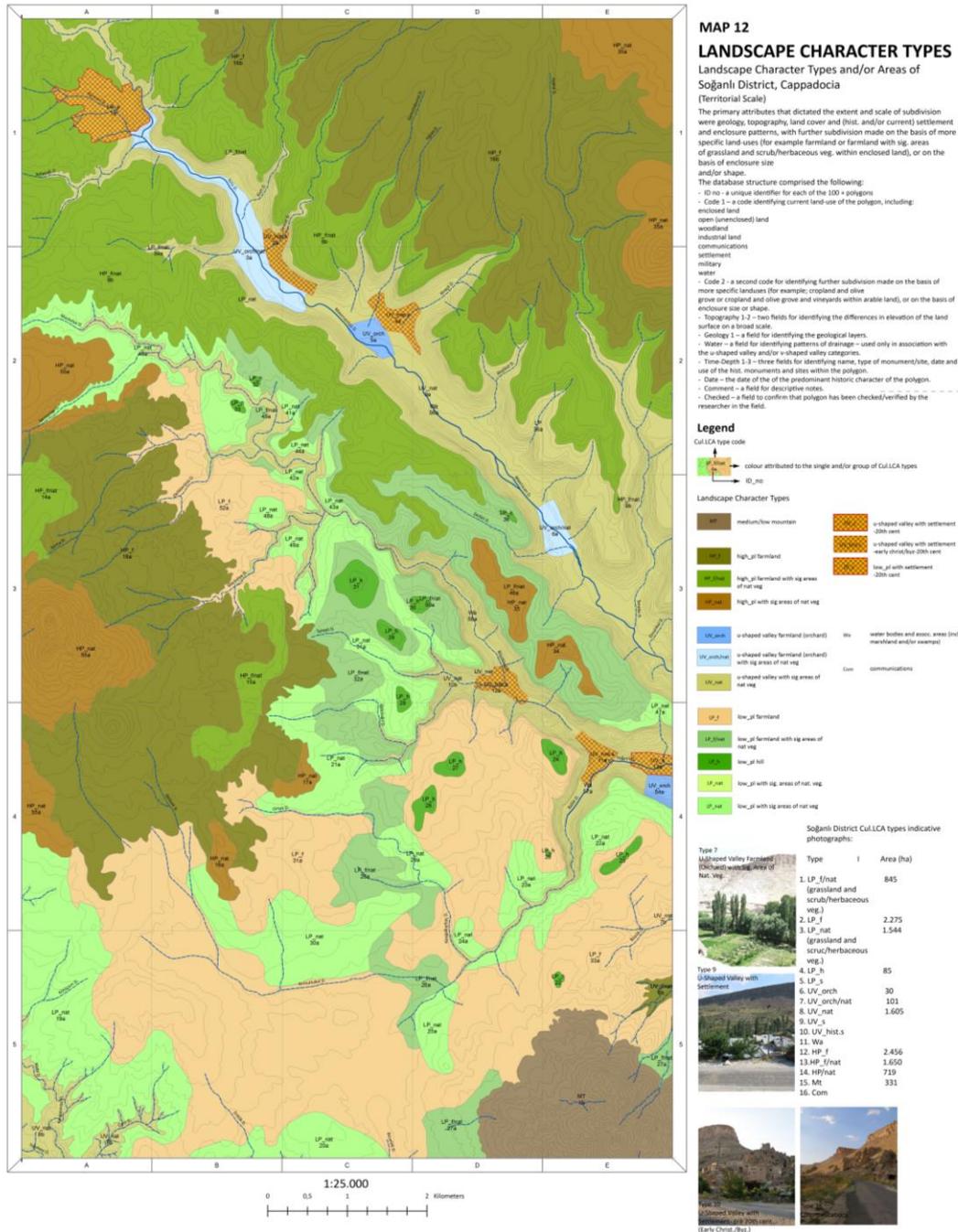
- **Topography 1-2** – two fields for identifying the differences in elevation of the land surface on a broad scale.
- **Geology 1** – a field for identifying the geological layers.
- **Water** – a field for identifying patterns of drainage – used only in association with the u-shaped valley and/or v-shaped valley categories.
- **Time-Depth 1-3** – three fields for identifying name, type of monument/site, date and use of the historic monuments and sites within the polygon.
- **Date** – the date of the predominant historic character of the polygon.
- **Comment** – a field for descriptive notes.
- **Checked** – a field to confirm that polygon has been checked/verified by the researcher in the field.

Once each polygon had been described and digitised they were analysed and grouped under generic cultural landscape character *types* that shared distinct attributes. For example, an area possessing a pattern of small, irregular fields, associated with known Early Christian and Byzantine monuments and/or sites, place names, and shown to be in existence prior to the earliest comprehensive map evidence may have been allocated to the *pre- 20<sup>th</sup> cent. Settlement (Early Christian/Byzantine)* Cul.LCA type. Alternatively, an extensive area of natural vegetation marked on the topographic and/or base mapping would be placed in the *Low Plain with Significant Areas of Natural Vegetation* or *High Plain with Significant Areas of Natural Vegetation* and/or *Low Plain Farmland with Significant Areas of Natural Vegetation* Cul.LCA type - depending on the dominating landform and other data coming from the land cover map layer.

The resulting mapping is hierarchical and includes the following territorial level Cul.LCA types (see Figure 3.8):

- Low Plain Farmland
- Low Plain Farmland with Significant Areas of Natural Vegetation

- Low Plain with Significant Areas of Natural Vegetation
- Low Plain Hill
- Low Plain with Settlement
- U-Shaped Valley Farmland (Orchard)
- U-Shaped Valley Farmland (Orchard) with Significant Areas of Natural Vegetation
- U-Shaped Valley with Significant Areas of Natural Vegetation
- U-Shaped Valley with Settlement
- U-Shaped Valley with Settlement – pre 20<sup>th</sup> cent. (Early Christian/Byzantine)
- Water Bodies and Associated Areas (including marshland and/or swamps)
- High Plain Farmland
- High Plain Farmland with Significant Areas of Natural Vegetation
- High Plain with Significant Areas of Natural Vegetation
- Low/Medium Mountain
- Communications



**Figure 3.8 Territorial level Cul.LCA types.** The Cul.LCA types of Soğanlı (Yeşilhisar) – defined at the territorial level. On the basis of the characteristics of the region we can identify 16 broad Cul.LCA types, each of which can in turn be characterised in more detail at the next level in the hierarchy. lp\_f: low plain farmland; lp\_f/nat: low plain farmland with significant areas of natural vegetation; hp\_f: high plain farmland; etc.

The hierarchy of mapping is illustrated in Table 3.3 below.

**Table 3.3 The hierarchy of mapping**

<b>Regional level Cul.LCA types</b>	<b>Territorial level Cul.LCA types</b>	<b>Detailed sub-types</b>	<b>Site level detailed data (within territorial level Cul.LCA types/areas)</b>
<b>low plain</b> (non.volc.)	low plain farmland <b>LP_f</b>	low plain farmland with discrete clusters of farm buildings	one level, mudbrick
<b>valleys</b>	u-shaped valley with settlement <b>UV_s</b>	rock-hewn settlement	multi level, rock-hewn incl. dwelling units (i.e. living rooms, storage – sometimes arranged on several levels, kitchens, olive presses, etc.)
<b>valleys</b>	u-shaped valley farmland with sig. areas of nat. veg. <b>UV_f/nat</b>	farmland with sig. areas of nat. veg. (deciduous trees)	linear tree (deciduous) groups along the valley bottom

The territorial level Cul.LCA types can be amalgamated to produce and/or cross check regional level Cul.LCA types.<sup>82</sup>

The territorial level Cul.LCA types can also be subdivided further to create detailed subtypes: for example the Low Plain Farmland with Significant Areas of Natural Vegetation Cul.LCA type can be divided according to their vegetation type/species (i.e. Farmland with Significant Areas of Natural Vegetation - deciduous trees and/or grassland; illustrated in Table 3.3), and the Settlement Cul.LCA types can be

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<sup>82</sup> This method (also called the **bottom-up method**) – used by Scotland’s National Programme of Landscape Character Assessment – is based on amalgamation of, and generalisation from, more detailed character types and/or areas identified at a lower level in the hierarchy. National Programme of Landscape Character Assessment is carried out by the Scottish Natural Heritage (SNH) in partnership with local authorities and other related agencies. Although a separate programme from that of the work of the Historic Landuse Assessment (Historic Scotland and RCAHMS, 2000a; 2000b) – discussed in the pervious chapter(s) – nests within the previous assessments at the national and/or regional level as well as combines the work of the Historic Landuse Assessment.

subdivided according to the type of settlement. Alternately, the structure of the database also allows the mapping of attributes such as change, distribution of settlements and enclosure patterns, or date (regardless of land-use). These and many other mapping outputs are described in the following chapters.

Finally, the site level Cul.LCA analysis will provide more detailed levels of characterisation both in terms of types and areas.

### **3.1.5 Stakeholder Involvement at Different Stages of the Landscape Character Assessment**

The following, explains the nature of stakeholder involvement, the method used<sup>83</sup>, and summarises the results of the work undertaken as part of the field survey(s) covering the areas defined in the territorial and site levels in 13-16 Aug. 2014.

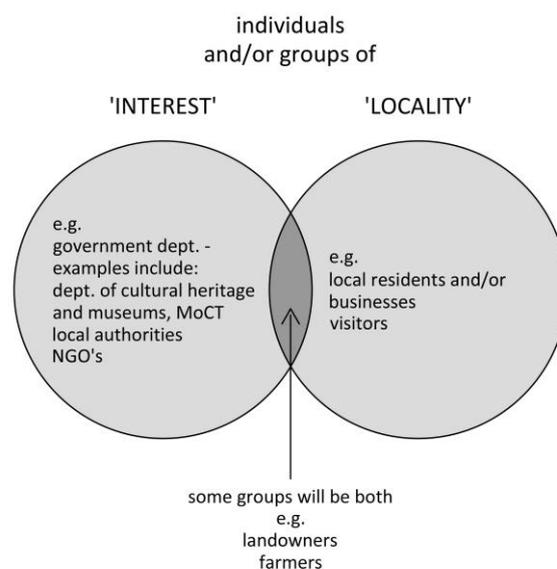
The term ‘stakeholder’ describes: “*the whole constituency of individuals and/or groups who have an interest in a subject or place*”.<sup>84</sup> For landscape character, the range of stakeholders is wide and can be divided into two broad categories. First, there are the many different groups who have an interest in the landscape, from a variety of different perspectives, and who might be thought of as individuals and/or groups of interest. They can be divided broadly into government departments, local authorities, and non-governmental organisations (see Figure 3.9). Some have environmental or other specific interests, while others are involved in the various land uses that shape the landscape. They tend to have both national and more local interests and have a contribution to make to Cul.LCA at all levels. At the very least such groups hold important base line information that will need to be drawn at the outset of the study (pre-field study).

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<sup>83</sup> Input on choosing the method and preparation of the questions for the in-depth interviews was provided by Inst. Sevin Osmay from the Dept. of City and Regional Planning, Middle East Technical University.

<sup>84</sup> Swanwick, C., Bingham, L. & Parfitt, A. (2002). *Landscape Character Assessment: how stakeholders can help – Topic Paper 3*. Countryside Agency, Cheltenham and Scottish Natural Heritage, Edinburgh. p.1.

This group of the stakeholders have most commonly been involved in the characterisation stage of the Cul.LCA. They were involved in early consultation which served both to provide information and to seek views. Consultation was in writing or by individual and/or group meetings. For example, Ministry of Food, Agriculture and Animal Breeding (*Gıda, Tarım ve Hayvancılık Bakanlığı*), General Directorate of Agricultural Reform (*Tarım Reformu Genel Müdürlüğü*) was consulted to provide information, such as statistics and review reports, and comment, for example, on the nature of agricultural change.



**Figure 3.9: Individuals and/or Groups of Interest and Locality.** In reality there may not be a strict division between the two main categories described above. Many of those who are materially concerned in the welfare of the landscape - that is, those who own, use, manage and work in the landscape, such as farmers, landowners and even the MoCT officers at the gates of the archaeological site of Soğanlı, which also reside within the area etc. - can belong to either category. Such groups have an important responsibility for, and ability to change, the landscape, and so are crucial to involve.

(Source: adapted from Swanwick, C. et.al. 2002. p.1)

**Table 3.4 Individuals and/or groups of interest**

<b>Government Departments</b> – examples include:	Gen. Direc. of Cultural Heritage and Museums, MoCT Nevşehir Regional Conservation Council Kayseri Regional Conservation Council Kayseri Archaeological Museum Gen. Direc. of Natural Heritage Conservation, MoEP ..
<b>Local Authorities</b> -	Municipality of Yeşilhisar Muhtar
<b>NGOs</b> – examples include:	Soğanlı Turizm Kalkınma Kooperatifi

Second, there are the individuals who live and/or work within the study area, or visit it.<sup>85</sup> In dealing with these stakeholders the research have focused on local communities, mainly because they are the people who have the greatest 'stake' in their surrounding environment but also because they are practically much easier to involve than the visitors. It is important to recognise, though, that within any particular place there is no homogeneous community and different groups of people may have different values associated with the landscape. It is important that these different perspectives are analysed and reflected in the assessment processes.

Local communities have been involved in the characterisation stage of the assessment generally at the territorial and site level assessments – simply because this group of stakeholders are more likely to be familiar with the landscapes around where they live and/or work. At this stage, local communities may be able to contribute to identification of areas of distinctive character and the particular elements which contribute to that character. Many local communities may also hold detailed knowledge about the history of a landscape, about events, traditions, legends

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<sup>85</sup> Swanwick, C. et.al. (2002).

and stories associated with particular areas, or about other factors like the uses of land, local importance and special associations.

A number of studies<sup>86</sup> have developed techniques for involving stakeholders when researching their perception of their surrounding environment.

The methods vary widely, particularly in terms of the degree of involvement of the stakeholders and ranges through: simply receiving information; being consulted; joint decision-making; joint action; and independent stakeholder action. Many of these methods (towards designing and managing processes of stakeholder involvement), and/or adaptations of them, may be suitable for use in Cul.LCA, or new ways may be developed to meet specific circumstances.

The method of traditional consultation - '*traditional*' meaning involvement of people generally one-way, in that professionals provide information and stakeholders respond by providing their views - was used, taking into account the aims of the research, the number of stakeholders involved, and the available time, skills and resources.

In this technique, tools such as leaflets, publications and exhibitions can be used to provide the information and proposals, while in-depth interviews are used to seek responses.

The in-depth interviews were carried out in parallel with the main assessment at the territorial and site level(s) and, depending on the size of the study area, number of

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<sup>86</sup> They include:

the Countryside Agency's review of literature on *Participatory Action in the Countryside*; Warburton, D. (1998). *Participatory Action in the Countryside: A Literature Review. August 1997*. Cheltenham: Countryside Commission.

the former Department of the Environment's research on *Community Involvement in Planning and Development Processes*; Department of the Environment (1994). *Community Involvement in Planning and Development Processes*. London: HMSO.

the *Community Planning Handbook*; Wates, N. (2000). *The Community Planning Handbook*. London: Earthscan Publications.

SNH's *Working with Communities*; Scottish Natural Heritage (1999). *Working with Communities*. Battleby: Natural Heritage in Rural Development SNH.

settlements and households within them were applied to a representative sample. In total, thirty-five (35) individuals within the study area were interviewed (Table 3.5). This included 9 individuals and/or groups of interest from the local authorities (such as Nevşehir and Kayseri Regional Conservation Council, Kayseri Museum, Yeşilhisar Municipality and Muhtar of Soğanlı village, etc.); 20 local residents (13 Soğanlı, 7 Başköy); 5 tourists and 1 tour guide.

The in-depth interviews incorporated two main questions. In one, respondents were asked to mark on a base map extract areas of landscape that they consider to be 'distinctive' (this term is broadly defined). In the other they are given an opportunity to describe these areas at some length.

The responses revealed that the concept of character at the territorial and site levels did mean something to people and they were able to identify areas of distinctive character, and to identify the similar distinguishing characteristics that were recognised by professionals. All these indicate that it is entirely feasible to involve both individuals and/or groups of interest and of locality in the process of characterising the landscape. The results of the in-depth interviews yielded a wealth of information that contributed to the study:

- Providing information, for example about wildlife, local history, events and associations;  
i.e. history of how the Soğanlı rag/cloth dolls - '*soğanlı bez bebekleri*' - were first made by a elementary grade student 50 years ago for her handcraft class. And the process how it has become well known within the region. How it is made (material, tech.). – interview no.4.
- Providing local insight to identify areas of distinctive character, and determining their key characteristics (by identifying what in particular they value in the landscape and why);  
i.e. the valleys defined by the Mavrucan Dere (UV\_nat no.9a), Soğanlı Dere, Büyükkol Dere, Ballık Dere (UV\_nat no.10b), and İğdeğül Dere (which

called ‘Çayırılık’ by the locals); Yukarı and Aşağı Soğanlı (UV\_hist.s nos.11a-12a) and Başköy (UV\_hist.s no.2a) settlements; prefabric houses east of Aşağı Soğanlı settlement (UV\_s no.11a); the farmlands south of Yukarı Soğanlı (LP\_f no.33a), Karadağ (Mt no.1b); and Soğan Tepe (LP\_h no.31) were the common perceived area boundaries described by the respondents.

- Giving views about what constitutes a key feature in the locality; i.e. rock-hewn settlements, churches, pigeon holes, etc.
- Indicating local perceptions of change in the landscape and its effects. i.e. pre-fabric houses.

Key benefits of this approach was that it is representative, yields results, and can be used at different scales. Outputs have been used both to verify, and to add to the professional judgement on characterising the landscape. Although it was not the case in this study but they may also lead to small but significant changes to the grouping of sub-areas.

The drawback of this method was that it does not allow for the dialogue and interaction between stakeholders that are a feature of more interactive methods. They are quite passive in the process and do not take an active part in developing ideas or proposals.

However, the chosen method of involving stakeholders was appropriate given the practical constraints that existed. In the long-term, the effort should be to involve stakeholders in a more active way.

A wide range of more interactive methods exist which can be adapted for use in Cul.LCA. They usually consist of some form of workshop, small group discussions, or focus group and often include some form of practical activity.<sup>87</sup>

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<sup>87</sup> see Swanwick, C. et.al. (2002).

**Table 3.5 Individuals and/or groups of interest and of locality, Soğanlı (Yeşilhisar).** In-depth interviews were carried out in parallel with the work on characterising the landscape at the territorial and site level(s). In total, thirty-five (35) individuals participated in the in-depth interviews.

no.	stakeholder cat.	date	rec. no.	num. of individuals participated	notes (info. on the participants etc.)
1	A	13/08	2	1	Mevlüt Coşkun, former direc. of the Nevşehir Regional Con. Council --07/02/2011 (first informal inter. with Mevlüt Coşkun, direc. of the Nevşehir Regional Con. Council)
2	B (local resident)	13/08	3	1	İsmail Bey, former Muhtar of Soğanlı
3	B (local business owner and resident)	13/08	4	1	Mustafa Bey, Soğanlı rest. owner at the archaeological site entrance
4	B (local resident)	13/08	5	3	Sebahat Hanım (+ 2 w), Soğanlı sells Soğanlı 'rag dolls' at the archaeo. site entr.
5	A	14/08	na	1	Azer Çetin Yiğit, staff, Gen. Directorate of Land Registry and Cadastre ( <i>Kayseri Kadastro Müdürlüğü</i> )
6	A	14/08	na	2	Mehmet Yıldız, direc. of the Kayseri Regional Conservation Council; Kemal Kurd, Kayseri Regional Con. Council (staff)
7	A	14/08	6	1	Gülnoz Savran, direc. of the Kayseri Archaeology Museum
8	B (local resident)	14/08	na	1	1 w, Soğanlı
9	A/B	14/08	8	2	Fatih Bey, (staff) at the entrance of the Soğanlı archaeo. site entrance; Osman Bey, (staff) at the entrance of the Soğanlı archaeo. site entrance since 1987
10	B (local business owner and resident)	14/08	9	1	Yüksel Bey, Soğanlı rest. owner near Yılanlı Kilise
11	B	15/08	10	7	7 m, Başköy
12	A/B	15/08	11	1	Ali Cebeci, Muhtar of Soğanlı
13	B (tourists)	15/08	12	3	French tourist group
14	B (tourists + tour guide)	15/08	13	3	Romanian tourist group
15	A	15/08	na	1	Mehmet Ekinci, Yeşilhisar Municipality

**Table 3.5 (continued)**

<b>16</b>	<b>B (local business owner and resident)</b>	16/08	14	1	Yılmaz Bey, Soğanlı rest. owner at the archaeological site entrance
<b>17</b>	<b>B (local business owner and resident)</b>	16/08	15	1	Mesude Hanım, Yukarı Soğanlı guesthouse owner
<b>18</b>	<b>B</b>	16/08	16	4	Yaşar Bey, Baki Bey (provided info. on local herbs etc.), Rabia Hn., Emine Nine, Soğanlı
	<b>total num. of ind. participated:</b>			<b>35</b>	
	<b>Gov. Dept.</b>			<b>9</b>	(3 of the respondents from this group also resides in Soğanlı)
	<b>local residents</b>				<b>Soğanlı: 13; Başköy: 7 tot:20</b>
	<b>tourists</b>				<b>5 tourists; 1 guide</b>



**Figure 3.10 Soğanlı Rag Dolls.** (a) top left. Soğanlı Rag Dolls were originally made with excess cotton flannels '*pazen*' on top of dry twigs. But- due to lack of material rag dolls are today made on top of wire/chord loops. Approx. 50% of the locals' income in Aşağı and Yukarı Soğanlı settlements is based on selling these rag dolls (interview no.4).

## 3.2 The Evolution of the Cappadocia Landscape

The present day landscape of Cappadocia is a product of the natural and human influences that have shaped its basic structure and appearance. In particular, the underlying geology and the processes of erosion and deposition have had a profound effect on the landscape, influencing not only landform, soils and vegetation, but also the human activities dependent upon or affected by them. In turn, the basic appearance of the landscape has been altered by the results of man's activities, changing natural vegetation patterns to suit human needs and introducing man-made elements into the landscape.

The following sections summarises the evolution of the Cappadocia<sup>88</sup> landscape by examining the two main influences: natural and cultural/social.

### Natural Influences

#### 3.2.1 Geology

The study area is located within the Cappadocian Volcanic Province (CVP) - a Neogene-Quaternary volcanic field situated in Central Anatolia (Turkey) that extends

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<sup>88</sup> The name 'Cappadocia' has no administrative meaning in present-day Turkey, the name goes further back than Roman government of the province, which began at A.D. 17. It is at least as old as Herodotus, who used it first (Herodotus, 1:71 ff., and 5:49). Although it has referred to different geographical regions in different times, with its constantly changing boundaries (see Maps 4-a, 4-b, 4-c, 4-d, 4-e, 4-e(1), 4-e(2) and 4-f) for the purposes of this research it is defined by the: volcanic area, bounded on the south and east by a line of volcanic structures with Erciyes Dağ (anc. *Argaeus* - the tallest mountain in central Anatolia, 3916 m.) at one end and Hasan Dağ (3253 m.) at the other, extends north in a series of deeply indented valleys which run down towards the middle valley of the Kızılırmak (anc. *Halys*) and eastward to the depression of the Tuz Gölü (anc. *Tatta*).

See Andolfato, U. & Zucchi, F. (1971) "The Physical Setting" in L. Giovannini (eds.), *Arts of Cappadocia* (pp.51-65). Geneva: Nagel Pub. [produced in collaboration with the Istituto internazionale di arte ligurgica, Rome]; Hild, F. & Restle, M. (1981). *Kappadokien (Kappadokia, Charsianon, Sebasteia und Lykandos)*. Wien: Verlag der Österreichischen Akademie der Wissenschaften. pp. 47-61 and, more recently, Sözen, M. (eds.) (2000). *Cappadocia*. Istanbul: Ayhan Şahenk Foundation. pp. 19-43.

Also see - Aydın, S. (2004). "Kapadokya Bir Bölge Tanımlama Denemesi (EK 1)" in KA-BA Eski Eserler Koruma ve Değerlendirme, Mimarlık, *Kayakapı Koruma ve Geliştirme Planı: Plan Raporu* (unpub.).

in NE–SW direction for a length of 300 km and a width of 20–50 km.<sup>89</sup> The volcanism of the CVP has also been investigated by several other researchers who mainly concentrated on the chronology, petrographical and geochemical characteristics, and ignimbrite emplacement. (See Pasquare, 1968; Keller, 1974; Innocenti et al., 1975; Besang et al., 1977; Pasquare et al., 1988; Ercan et al., 1990, 1992; et al., 1994; Le Pennec et al., 1994, Temel et al., 1998; Schumacher and Mues-Schumacher, 1996).

The rock units within the study area and its surrounding can be grouped into four categories (after Toprak, 1998): volcanoclastics, volcanic complexes, basalt and cinder cone fields, and continental clastics (See Map 1: Geological Map of Cappadocia, Central Anatolia included in Appendix D).

Volcanic complexes correspond to the major eruption centers in the study area. Nineteen eruption centers are identified within the CVP. All of these centers are characterized by repeated eruptions causing an alternation of lava flows and volcanoclastics. Mt.Erciyes (no.19, Map1) and Mt.Hasandağ (no.4, Map1) are examples of these polygenetic eruption centers.<sup>90</sup>

Around these major centers, there are basalt and cinder cone fields which are formed by monogenetic eruptions and their associated lava flows. Toprak (1998) identifies more than 800 monogenetic volcanoes within the CVP. Most of these are in the form of cinder cones although some exists as rhyolitic or andesitic domes and maars. Although the monogenetic volcanoes are scattered throughout the CVP, their distribution clusters around five distinct regions. These are from west to east: Karapınar, Karacadağ-Hasandağ, Keçiboyduran-Melendiz, Göllüdağ-Acıgöl, and Erciyes.

The rest of the area is covered by a volcano-sedimentary sequence deposited in the main depression of the CVP. According to Toprak and Göncüoğlu (1993a), the

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<sup>89</sup> Toprak, V. (1998). Vent Distribution and its Relation to Regional Tectonics, Cappadocian Volcanics, Turkey. *Journal of Volcanology and Geothermal Research*, 85, pp.55-67.

<sup>90</sup> Volcanoes of the CVP are classified as ‘polygenetic’ and ‘monogenetic’, based on their mode of eruption (Nakamura, 1977). See Glossary for detailed expl.

evolution of the CVP in relation to this main depression is the result of the two fault systems: the Tuzgözü-Ecemiş<sup>91</sup> fault system and CVP<sup>92</sup> fault system (which are of different age and nature) that have been active in the area (since pre-Miocene).

These faults are the products of N-S compression and have right-lateral and left-lateral strike slip components, respectively. During the Middle Miocene-Early Pliocene, two fault zones – the Central Kızılırmak Fault Zone (CKFZ) and Niğde Fault Zone (NFZ) - were activated forming a depression in between. This depression was filled with continental sediments and pyroclastic material erupted from the major centers.

The pyroclastics (also named as the ‘Ürgüp’ formation by Pasquare, 1968) are dominantly composed of volcanoclastic deposits (mainly ignimbrite) interbedded with fluvial to lacustrine sedimentary rocks.

The total thickness of this formation is more than 400m (Pasquare, 1968) and extends throughout the study area forming a low and flat topography with few deeply dissected valleys.<sup>93</sup>

One of the most distinct characteristics of these ignimbrites is the development of pinnacles - the so-called ‘*fairy chimneys*’ - (and cones) which are erosional landforms of ignimbrites formed due to natural processes of weathering and differential erosion.

The area within Göreme, Ürgüp and Avanos is just one of the areas, where the pinnacles were hewn to form churches, chapels, and dwellings and other living units

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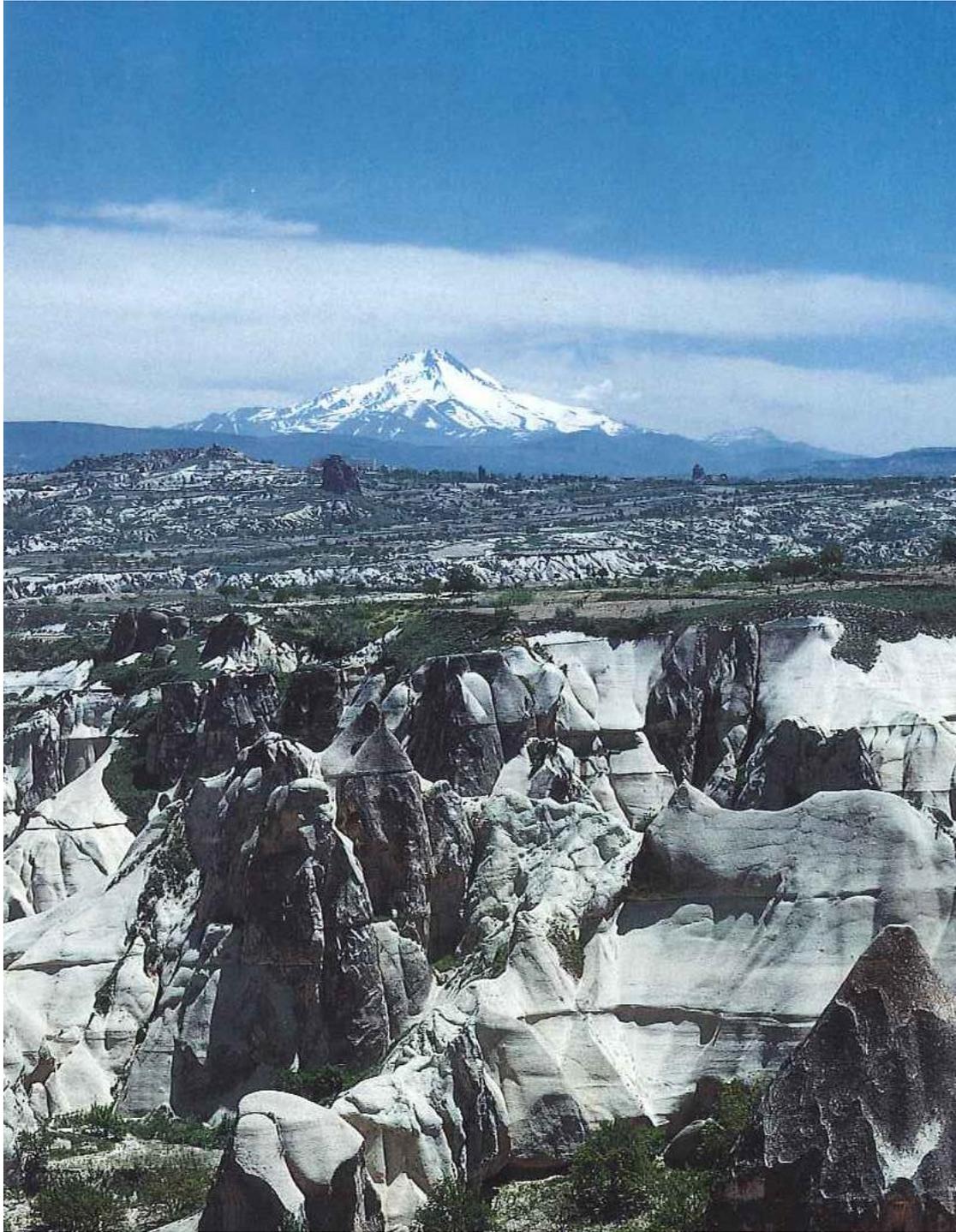
<sup>91</sup> Tuzgözü-Ecemiş system is a fault swarm located between the conjugate Tuzgözü fault in the west and the Ecemiş fault in the east (Toprak, 1998).

The Tuzgözü fault, with a length of more than 150 km and a vertical offset of more than 300 m, defines the eastern margin of the Tuzgözü basin (Uygun, 1981). Ecemiş fault with a total length of 600 km cuts across the CVP in its eastern part. Other major faults within this system are the Keçiboyduran-Melendiz (Toprak and Göncüoğlu, 1993b) and Derinkuyu (Toprak and Kaymakçı, 1995) faults.

<sup>92</sup> CVP faults strike NE-SW, parallel to the long axis of the CVP. Two major faults of this system are Central Kızılırmak (Toprak, 1994) and Niğde faults that define the northern and southern margin of the volcanic depression.

<sup>93</sup> Approx. 10 ignimbrite layers are recognised within the Ürgüp formation. For detailed description of each layer see Pasquare, 1968; Innocenti et al., 1975; Pasquare et al., 1988; Schumacher et al., 1990; Le Pennec et al., 1994.

such as as stables, storage rooms and oil-presses, etc. mainly in the Early Christian/Byzantine Period – although the use of this relatively soft rock by the inhabitants of the valleys begins as early as the Roman Period. (See Map 4a-f: ‘time-depth’ – the Historic Dimension of the Landscape in Cappadocia, Central Anatolia included in Appendix D). Weathering and erosion in the valleys, however, still continue and these natural processes, along with human activities, threaten the physical fabric of the rock-hewn structures.



**Figure 3.11 Mt. Erciyes.** Source: Tuncel, M. (2000). p.23. The eruptive activity of the volcano was one of the main factor in the creation of the landscape as we see it today. It is of polygenetic structure and has undergone a long process of geological evolution from the Miocene into historical times. Its eruptive products have been deposited over a huge area of some 10.000 sq. kilometres.



**Figure 3.12** Volcanic emission of lava and solid material buried the entire region under horizontal layers of widely diverse hardness, colour and depth. Natural processes (i.e. seasonal precipitations, etc.) eroded the rock, creating the unusual pinnacles with their caps of more durable rock (i.e. basalt). Pinnacles of this type, known as ‘*fairy chimneys*’ are particularly concentrated in the area between Göreme, Ürgüp and Avanos. **(a) & (b): top.** Half-formed pinnacles in Paşabağı. **(c): bottom.** Paşabağı.



**Figure 3.13** The diverse forms of pillars are the result of the different types of rock. They may be conical, cylindrical, isolated or in groups of two or three pillars sharing a common base. **(a): top left.** Mushroom shaped rock in Açıksaray. **(b), (c) & (d): top right and middle.** Capped pinnacles in the Devrent valley. Source: Tuncel, M. (2000).p.31 **(e): bottom.** Double and triple pinnacles at Paşabağı in the Zelve Valley.



**Figure 3.14** The 'Monk's Valley' near Zelve.

### 3.2.2 Topography

The topography of Cappadocia is generally low lying with smooth relief – except in the south-eastern part of the region which is characterized by a line of volcanic structures running from north-east to south-west for a distance of over 250 km. The highest areas reach over 3900 m., but the majority of the area is below 1250 m., with significant areas below 800 m. (see Map 2: Topographic Map of Cappadocia, Central Anatolia included in Appendix D).

On the basis of the morphological characteristics of the region the study area (at the regional level) can be divided into 5 broad categories: high mountain, low mountain, low plain, drainage valleys and the volcanic plateau.

The high mountains correspond to steep and high mountainous regions. Most of the major eruption centres (i.e Erciyes, Hasandağ, Keçiboyduran, Melendiz, Göllüdağ, etc.) are included in this category. The highest elevation of these masses is Mt.Erciyes (anc. *Argaeus*), rising to a height of 3917 m.<sup>94</sup> It has a mixed polygenic structure, with concave flanks covered with extensive lava flows. Mt.Develi, located to the south of Mt.Erciyes, is composed of pyroclastic cones some 2000 m. high covered with thick layers of basalt. Mt.Melendiz, 100 km. south-west of Mt.Erciyes, consists of a group of andesitic and pyroclastic cones, much eroded by hydrographic and climatic factors, ranging in height between 2500 - 3000 m. Mt.Keçiboyduran is the west extension of Mt.Melendiz, smaller in size but of similar structure. Mt.Hasan, at the western end of the region, rears its conical bulk to a height of 3268 m., rounding of the chain of volcanic formations with its five principal peaks and numerous subsidiary cones.<sup>95</sup>

Low mountains are represented by relatively high mountainous regions with gentle slopes. Most of this category correspond to basement rocks which have been reduced

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<sup>94</sup> Erciyes (anc. *Argaeus*) is the most important cult in Cappadocia during the Hellenistic and Roman periods. It is very often to be found depicted on Caesarea coins of the Roman period.

For information concerning the process by which this mountain was transformed into the object of a cult of the Mountain God - see Baydur, N. (1994). *Anadolu'daki Kutsal Dağlar, Dağ Tanrılar: Klasik Çağ – (en.) Sacred Mountains and Mountain Gods' of Anatolia* - for the sacred character of Erciyes.

<sup>95</sup> Ayhan, A. (2004). *Geological and Morphological Investigations of the Underground Cities of Cappadocia Using GIS* (unpub.). Dissertation, MSc in Department of Geological Engineering, Middle East Technical University.

(in height) by a long continuing process of erosion to their present rounded form, with gentle gradients and regular slopes. The average height is about 1250-1750 m. They concentrate along the north part of the region where they rise out of the volcanic plateau, running from north-west to south-east.

Low plain is represented by flat (or gently rolling) areas observed at low altitudes. These cover large areas and are exposed within isolated basins, from west to east: the Tuz Gölü, Seyfe, Derinkuyu and Sultansazlığı basins. The Tuz Gölü (anc. *Tatta*) depression, at an altitude of 900m., is the main basin within the area. The lake and surrounding plain occupy a large area extending south-east from Mt.Paşa through Aksaray to the Mt.Melendiz massif. The slopes on the east border of the lake separate it from the main volcanic plateau.

Drainage valleys refers to the wide alluvial plains formed along major rivers, which continuously re-modelled the volcanic plateau. Within the study area this type of landscape is best observed along the Kızılırmak valley. This valley is characterised by a flat surface filled by alluvium. It is exposed as a belt in almost E-W direction with a maximum width of 15 km. Its wide range of morphological features, enable us to observe the whole process of erosional activity, from its initial phases in deep narrow valleys like those of Zelve and Göreme to broad open graded valleys with the characteristics isolated pinnacles known as '*fairy chimneys*' surviving as reminders of the original rock cover.

Volcanic plateau is the transitional area between high mountains and other classes particularly the low plains. It corresponds to the areas of volcaniclastic deposits (mainly ignimbrite) located to the east of the Tuz Gölü basin at an altitude ranging between 1000 and 1500 m., extending for a distance of over 200 km. towards the Kızılırmak valley.

### **3.2.3 Hydrology**

Water is an important feature of the landscapes of Cappadocia and it has influenced, and continues to influence the physical form of the land. The hydrographic structure of the study area comprises three main drainage basins: to the north the Kızılırmak

basin, to the south-west the basin of the Melendiz Suyu, and to the south-east the Mavruca basin (See Map 3: Hydrographic Map of Cappadocia, Central Anatolia included in Appendix D).

The Kızılırmak (anc.*Halys*) basin is drained on the north bank by a small number of mountain streams, the most important of which are in the area between Kırşehir, Mucur and Hacıbektaş. The slopes on the south bank, however, have a much more elaborate drainage system, due to the lithological and structural characteristic of the rock. Among the numerous tributaries on this bank the most important are the Çirdikinözü Dere, flowing down from Kara Dağ; the Acısu Çayı, coming from the Erdas Dağ massif near Nevşehir; the Damsa Çay, which flows past Ürgüp and is fed by various streams coming down from Avla Dağ; and the Karasu, a substantial river which drains the northern slopes of Erciyes Dağ.

The Melendiz Suyu drains an area of some 2000 sq.km. on the northern slopes of the Hasan Dağ and Melendiz Dağ massifs and flows on to provide abundant irrigation for the Salt Lake plain.

The Mavruca Çay drains the southern slopes of Avla Dağ and Kara Dağ.

The tributaries of these three rivers are mainly mountain streams whose flow is regulated by seasonal variations in rainfall and other precipitations; and this factor, combined with the lithological characteristics of the rock (mainly pyroclastic deposits), has led to a high rate of erosion and transport of material, producing considerable deposits of detritus and a progressive deepening of the valleys.

## **Cultural Influences**

### **3.2.5 ‘time-depth’ - the Archaeological and Historical Dimension of the Landscape in Cappadocia**

Cappadocia (pronounced/kap-ă-doh-shă/; also Capadocia; Turkish Kapadokya, from Greek: Καππαδοκία) is extraordinary for the quantity and quality of its archaeology, and this extends to the number of monuments and sites of all periods. The

distribution of sites varies greatly across the volcanic plateau and reflects the differences in geography and cultural history.

The interaction between natural and cultural influences is clearly demonstrated in Cappadocia, where human settlement and continuous occupation can be dated back to ca.1850 BC. Natural factors such as geology, landform and hydrology influenced human activity, as did the availability of vegetation, and the early inhabitants began the process of adapting to and modifying the environment in their building, farming, domestic and ritual practices.

The following paragraphs outline briefly the influence of human cultures, the extent to which they have survived, and how different stages in history have contributed to the current landscape character within a historical framework.<sup>96</sup>

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<sup>96</sup> See Appendix B: Comparative Chronology.

This section on the historic dimension of the landscape and the Maps associative with it includes the historical geography of the area referred to as Cappadocia (as defined in the regional level assessments), and encompasses the historical ages starting from the pre-historic until the end of the Ottoman Period- 19th cent. AD. See Appendix D: Maps 4-a, 4-b, 4-c, 4-d, 4-e, 4-e(1), 4-e(2), and 4-f. The primary sources used in this research were: the excavation reports, articles in various periodicals on the results of these excavations, short information provided from the accounts of ancient writers and travelers, and other articles/publications.

The following descriptive list (of references) includes only those that are directly related, wholly or in part, to the subject of this research. It is not meant to cover Cappadocia in general. Comparative and/or supplementary material has been cited within the text and is not repeated here. The entries are grouped around topics. Under each topic, the listing is chronological – beginning with the early 18th century.

#### *History and Geography*

Though details have been revised since, [1] W.M. Ramsay's "*The Historical Geography of Asia Minor*" (London, 1890) remains the best historical atlas for Central Anatolia. Cappadocian geography is reviewed by [2] X. De Planhol, "La Cappadocia: Formations et transformations d'un concept géographique", in C.D. Fonseca (eds), *Le aree omogenee della civiltà rupestre nell'ambito dell'Impero bizantino* (Galatina, 1981), pp.25-38. This volume, the proceeding of an international conference of medievalists held in Lecce in 1979, also includes papers on Cappadocia painting and architecture.

The two historical accounts in Greek: [3] N.S. Rhizos, *Kappadokika* (Constantinople, 1856); and [4] B.A.M. Mystakides, "Kappadokika", *Parnassos*, 15 (1893), pp.368-379, 445-458, 600-615. - both deal, most specifically, with Caesarea and environs. For a general historical summary of Cappadocia, see entry "Cappadocia" by [5] E. Kristen in *Reallexikon für Antike und Christentum (RAC)*, vol.2, pp.861-891 (Stuttgart, 1954).

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### Travel Accounts

A comprehensive annotated list of travel accounts from Paul Lucas in 1712 up to mid-20<sup>th</sup> century can be found in G. de Jerphanion, “*Une nouvelle province de l’art byzantine: Les églises rupestres de Cappadoce*”, vol.1, part 1, pp. Xxxiii-xxlvii. It is unnecessary to reproduce it here. Only the most relevant entries that have direct relevance to the research are listed below:

[6] Lucas, P. (1712). *Voyage du Sieur Paul Lucas fait par ordre du Roy dans la Grèce, l’Asie Mineure, la Macedoine et l’Afrique, 2 vols.* Paris: Nicolas Simart.

[7] Hamilton, W. J. (1842). *Researches in Asia Minor, Pontus and Armenia, 2 vols.* London: J. Murray.

[8] Ainsworth, W.F. (1842). *Travels and Researches in Asia Minor, Mesopotamia, Chaldea and Armenia, 2 vols.* London: J.W. Parker.

[9] Texier, C. (1862). *Asie Mineure, description géographique, historique et archéologique des provinces et des villes de la Chersonnèse d’Asie.* Paris: Firmin Didot - - trans. to Turkish by [10] A. Suat, “*Küçük Asya: Coğrafyası, Tarihi ve Arkeolojisi*” (Istanbul, 2002);

[11] Sterret, J.R.S. (1900). Troglodyte Dwellings in Cappadocia. *the Century*, vol.38, pp.677-687.

[12] Sэфэris, G. (1953). *Trois jours dans les églises rupestres de Cappadoce.* Athens: Institut Français d’Athenes. - - trans. to Turkish by [13] S. Rıfat (1997). *Kapadokya Kaya Kiliselerinde Üç Gün.* Istanbul: Yapı Kredi Yayınları

Guidebooks for tourism purposes have also increased in number recently. I note: [14] M. and M. Güzelgöz, *A Historical guide to Cappadocia and Göreme* (Ankara, 1975); and [15] R. Sönmezdağ, *Cappadocia* (Izmir/Istanbul).

### Archaeology

The earliest attempt to record the troglodytic monuments was made by [16] A.M. Levidis, “*Rockcut Monasteries of Cappadocia and Lycaonia*”, in Greek (Constantinople, 1899). This was followed by the archaeological accounts of [17] H.G.Rott, “*Kleinasiatische Denkmaeler aus Pisidien, Pamphylien, Kappadokien un Lykien*”, *Studien über christliche Denkmäler* 5/6 (Leipzig, 1908).

In the next decades these preliminary explorations were further studied in great detail by [18] Guillaume de Jerphanion: “*Une nouvelle province de l’art byzantine: Les églises rupestres de Cappadoce*”, 2 volumes of text and 3 of plates (Paris, 1925-1942. Text: vol.1, part 1, 1925; 1:2, 1932; vol.2, part 1, 1936; 2:2, 1942. Plates: 1, 1925; 2, 1928; 3, 1934). During its lengthy publication, this work was summarized and commented on by several prominent Byzantinists, among who are: [19] C. Diehl, “*Les peintures chrétiennes de la Cappadoce*” *Journal des Savants* (1927), pp.97-109; and [20] L. Bréhier, “*Les églises rupestres de Cappadoce et leur temoignage*” *Revue archéologique* (1927), pp.1-47.

In the last decade newly discovered sites significantly contributed to the studies of the early archaeologists. The relevant publications are the following:

[21] Budde, L. (1958). *Göreme: Höhlenkirchen in Kappadokien.* Düsseldorf: L.Schwann.

[22] Lafontaine, J. (1959). Note sur un voyage en Cappadoce (été 1959). *Byzantion*, 28, pp.465-477; a brief review of the troglodytic territory, with observations of the present state of the known churches and the introduction of new ones, specially in western Cappadocia;

[23] Thierry, N. & Thierry, M. (1961). Voyage archéologique en Cappadoce, dans le massif volcanique du Hasan Dağ. *Revue des études byzantines*, 19, pp. 419-437; a preview of their book see [24].

[24] Thierry, N. & Thierry, M. (1963). *Nouvelles églises rupestres de Cappadoce: région du Hasan Dagi.* Paris: C. Klincksieck. [summary in English – New Rock-Cut Churches of Cappadocia]

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- [25] Lafontaine, J. (1963). Nouvelles notes cappadociennes. *Byzantion*, 33, pp.121-183; a more extended discussion of the material in [22], with a useful group of new photographs.
- [26] Thierry, N. (1965). Églises rupestres de Cappadoce. *Corsi*, 12, pp.579-602; an attempt at a contemporary summation of the subject.
- [27] Hild, F. (1977). Das byzantinische Strassensystem in Kappadokien. Wien.
- [28] Hild, F. & Restle, M. (1981). Kappadokien (Kappadokia, Charsianon, Sebasteia und Lykandos). Wien: Verlag der Österreichischen Akademie der Wissenschaften.
- [29] Thierry, N. (1981). Les enseignements historiques de l'archéologie Cappadocienne.
- [30] Thierry, N. (1983). *Haut Moyen-Âge en Cappadoce, Les églises de la région de Çavuşin*. Paris; is the first volume of two that survey 27 churches, many inadequately published before by Jerphanion and others.
- [31] Thierry, N. (1984). Découvertes at la nécropole de Göreme (Cappadoce). *Comptes rendus de l'Académie des inscriptions*, pp. 656-691.

An unpublished thesis by [32] V. Kalas, "Rock-Cut Architecture of the Peristrema Valley: Society and Settlement in Byzantine Cappadocia (PhD theses, New York University, 2000) contains detailed documentation and analysis on Selime – Yaprakhisar in the Peristrema Valley, Cappadocia. Later periods of survey and analyses in the same area has also been published, see: [33] Kalas, V. (2005). The 2003 Survey at Selime-Yaprakhisar in the Prestrema Valley, Cappadocia. 22. *Araştırma Sonuçları Toplantısı*, vol.2 (pp. 59-79). Ankara: Kültür ve Turizm Bakanlığı.; and [34] Kalas, V. (2006). The 2004 Survey at Selime-Yaprakhisar in the Prestrema Valley, Cappadocia. 23. *Araştırma Sonuçları Toplantısı*, vol.1 (pp. 253-266). Ankara: Kültür ve Turizm Bakanlığı.

[35] Ousterhout, R. (2005). *A Byzantine Settlement in Cappadocia*. Washington, D.C.: Dumbarton Oaks Research Lib. and Collection.

#### *Architecture*

In addition to the above archaeological publications that include architectural descriptions of the monuments, the following specifically deal with the historical review of the various changes and adaptations of the physical setting produced by the building activities of the Hellenistic, Roman, Early Christian – Byzantine and Islamic-Turkish periods.

Settlements. The key reference is [36] L. Giovannini's "the Rock Settlements" in Giovannini, L. (eds.). *Arts of Cappadocia*. (Geneva, 1971), pp. 67-80. See also [37] H. Gürçey and M. Akok, "An investigation of underground cities, and the rock monuments of the villages of Soğanlıdere in the District of Yeşilhisar" (in Turkish), *Türk Arkeoloji Dergisi*, 14 (1965), pp.35-59. The continuity of settlements between the Roman period and the Middle Byzantine is reviewed by [38] N. Thierry, "Un problème de continuité ou de rupture. La Cappadoce entre Rome, Byzance et les Arabes," *Comptes rendus de l'Académie des inscriptions*, 1977, pp.98-144.

Monasteries. The principle name here is L. Rodley: see [39] "Hallaç Monastir, A Cave Monastery in Byzantine Cappadocia," *Jahrbuch der oesterreichischen Byzantinistik*, 32 (1982), pp. 425-434; and her major work, [40] "Cave Monasteries of Cappadocia" (Cambridge, 1985), based in part on her dissertation, [41] "Architecture and Decoration of Cave Churches and Monasteries in Byzantine Cappadocia" (London University, 1980).

Churches. A survey of rock-cut as well as built churches in Cappadocia is [42] Y. Ötüken, Research on the Byzantine Architecture of Cappadocia (in Turkish; Ankara 1981). It lists 703 monuments, of which perhaps 600 are rock-cut. See also [43] Ötüken, Y. (1987). *Göreme*. Ankara: Ministry of Culture and Tourism.

## ca. 8500 - 2000 BC: Pre-Historic Period

The earliest trace (i.e. chipped stone tools and weapons) indicating the existence of human habitation in Cappadocia dates back to the Palaeolithic Period.<sup>97</sup> No excavations have so far been carried out on this period in Cappadocia, and these tools and/or weapons (thought to belong to the Palaeolithic Period) have been found in small quantities as a result of the archaeological surface surveys and purely by chance. However, intensive research<sup>98</sup> has been conducted on the Neolithic,

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A renewed interest in the built churches of the region is substantially proved in [44] M. Restle's survey, *Studien zur frühbyzantinischen Architektur Kappadokiens*, 2 vols. (Vienna, 1979).; and [45] Kostof, S. (1972). *Caves of God: The Monastic Environment of Byzantine Cappadocia*. Cambridge: MIT Press.

<sup>97</sup> Harmankaya, S. & Tanındı, O. (1996). *Türkiye Arkeolojik Yerleşmeleri I (Paleolitik – Epipaleolitik)*. Istanbul: Ege Yayınları.

<sup>98</sup>Comprehensive archaeological surface surveys concerning settlements connected with the Neolithic cultures within Cappadocia has been conducted by Ian Todd (in the course of his surface surveys in Central Anatolia) between 1964-65 (Todd, 1980). Archaeological surface surveys were later conducted by teams from the Istanbul University, Dep. of Prehistory as well as by the University of Ankara, Dep. of Archaeology – leading to the discovery of large number of mounds and level settlements belonging to both Aceramic and Ceramic Neolithic cultures.

The sites representative of the Aceramic Neolithic (= Neolithic without pottery) cultures discovered during these surveys included:

Acıyar, Aşıklı Höyük, Musular, Yelibelen Mevkii, Sırcan Tepe in Aksaray; Güllüce in Niğde; and

Hacıbeyli, Dededağ and Toparın Pınar in Kayseri.

There are also large number of obsidian workshops discovered in the region – where obsidian was used as a raw material in the manufacture of tools and weapons (M.Cauvin et al., 1996, pp.250-251; Todd, 1980, pp.30-37). See **Appendix C – Inventory of Archaeological Remains, Monuments and Sites of Cappadocia** for the complete list.

The number of Aceramic Neolithic settlements and workshops in Cappadocia where excavations have so far been conducted is quite small. The best representative of the Aceramic Neolithic culture in the region is Aşıklı Höyük, in which excavations have been conducted since 1989 (Esin, 1996; Esin et al., 1991).

The sites of the Ceramic Neolithic (= Neolithic with pottery) cultures in the region have been discovered as the result of surface investigations. The comparative few sites so far identified are:

Değirmenözü and Sapmazköy in Aksaray;

Kayaardı Tepesi, Köşk Höyük, Niğde-Tepebağları and Pınarbaşı-Bor in Niğde;

Kumtepe-İncesu in Kayseri and

Avladağ, Hasanlar and İğdeli Çeşme in Nevşehir (Todd, 1980; Harmankaya et al., 1997).

The settlements in which Ceramic Neolithic cultures are to be found are mostly in the form of mounds, but the archaeological surface finds reveal that these mounds were also inhabited after the Neolithic, in the Chalcolithic and Early Bronze Age, and, as at Niğde-Tepebağları, in the middle and late Bronze Ages, the Iron Age and even the Hellenistic and Middle/Roman Ages. Excavations were carried out for a single season only at Niğde-Tepebağları by Prof.Dr. Nimet Özgüç in 1972 and at Pınarbaşı-Bor by Uğur Silistreli in 1982 (N. Özgüç, 1973; Silistreli, 1983). However, the finds best representing the Ceramic Neolithic culture of this region were discovered at Köşk Höyük in Niğde – excavated between 1981 – 89 by Uğur Silistreli of Ankara University and since 1995 by Aliye Öztan of the same department (Silistreli, 1989a, 1989b).

Chalcolithic<sup>99</sup> and the Early Bronze Age<sup>100</sup> settlements, represented by remains of mounds and level settlements such as Aşıklı Höyük, Alişar, Acemhöyük, and Köşkhöyük. These settlements concentrated between the curve marked by the northern slopes of the Taurus Mt. range, Tuz Gölü and Mt. Erciyes yielded evidence attesting to continuous habitation during the middle and late Bronze Ages, the Iron Age and even the Hellenistic and Middle/Roman Ages.<sup>101</sup>

### **1900 - 1700 BC: The Period of Assyrian Trade Colonies**

In the earlier part of the second millennium B.C. (ca. 1900 – 1700 B.C.), according to the Assyrian cuneiform tablets<sup>102</sup> discovered during the excavations in Kültepe, Hattusha (the Hittite capital - located at Boğazköy, today known as Boğazkale) Boğazköy and Alişar, the region was a commercial centre, with its centre at Kaniş<sup>103</sup>

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<sup>99</sup> The Chalcolithic culture – is characterised by the (gradual) increase in the proportion of copper used in the manufacture of tools, weapons and various implements.

From the pottery collected during the surface surveys carried out within the region it can be seen that the majority of the mounds inhabited during the Ceramic Neolithic period – i.e. Tepecik – Çiftlik, Niğde-Tepebağları, Pınarbaşı-Bor and Köşk Höyük in Niğde; were also inhabited in the Chalcolithic (Todd, 1980; Omura, 1992,1993). On the other hand, the pottery collected from sites such as:

Sapmazköy (Yassıören) in Aksaray;

Civelek Cave, Paşalı, Küluntepe in the district of Hacıbektaş in Nevşehir;

Kabakulak in Niğde and

İkitempe and Çayır in Kayseri

indicates the possible existence of Chalcolithic cultures in the region (Omura 1992, 1993).

However the fact that no excavations have so far been carried out in the mounds and/or level settlements – apart from the excavations in Civelek Cave and short-term excavations and sondages in Fraktin, Kayseri (T. Özgüç, 1956) and Gelveri, Aksaray (Esin, 1993) – prevent any proper evaluation of the Chalcolithic cultures in the region.

<sup>100</sup> The Early Bronze Age (EBA) settlements identified during the surface surveys in Cappadocia (region) are far too many to be listed here (Todd, 1980, 39-44; Omura 1992, 1993, 1997; Gülçur 1995, 1997; Sever et al. 1992). This study (see Map 4-a) only includes level settlements and/or mounds which excavations have been carried out. See **Appendix C – Inventory** for the full list.

<sup>101</sup> See **Map 4-a**

<sup>102</sup> These tablets (also referred to as the ‘*Cappadocian Tablets*’) are the earliest use of writing in Anatolia and mark the beginning of the region’s historic period. From the names of the Assyrian kings mentioned in these tablets we can date the earliest to 1950 B.C. (Balkan, 1955). Also see T. Özgüç, 1950, 1959, 1986; T.Özgüç & N. Özgüç (1953).

<sup>103</sup> Kültepe (Kaniş) is one of the largest settlements (mound) in Central Anatolia, measuring 550x450 m. and 20 m. high. The mound has been under continuous habitation from the Early Bronze Ages to the Roman Period. The second settlement, located at a distance of 120 m. from the mound, surrounding on three sides (to the north-east, east and south-east), is the commercial quarter -the ‘*karum*’- occupied by the Assyrian and local merchants in Anatolia.

(Kaniš, Kaneš or Hittite: Neša) - present day Kültepe, near Kayseri - lying at the major crossroads<sup>104</sup> in the north-east of Kayseri plain, the road leading south-east over the Taurus mountain range.

### **1600-1200 BC: Hittite Period**

In the second half of the second millennium B.C. the region became a part of the Hittite Empire.<sup>105</sup>

### **1200-800/700 BC: Neo-Hittite Period**

After the fall of the Hittite Empire in 1200 BC, the Neo-Hittite Kingdoms ruled this same territory encircled by the curve of Kızılırmak (anc. *Halys*). This region – generally referred to as Tabal<sup>106</sup> (or “the land of Tabal”) - extended from Nevşehir and Niğde in the west to Sivas in the east. To the south-east were the kingdom of Tukhana (Tuwanuwa or Tyana, today Kemerhisar), encompassing today’s province of Niğde, the kingdom of Kaşku (or Kashku) to the north and to the east the kingdom of Melid (Melitene) in today’s province of Malatya.<sup>107</sup>

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Excavations at Kültepe have been conducted since 1893-94. No excavations were carried out between 1925 and 1948. In 1948, excavations were undertaken by a team from the Ankara University under the direction of Prof.Dr. Tahsin Özgüç on behalf of the Turkish Historical Society. See. T. Özgüç, 1950, 1964, 1986.

<sup>104</sup> See Map 4-b

<sup>105</sup> See Map 4-b

The settlements identified – most of them mounds – during the surface surveys in the region have not been sufficiently excavated. Those in which excavations have been carried out include:

Hacıbektaş-Suluca Karahöyük in the province of Nevşehir;

Zank Höyük in Sarılar in the district of Avanos in Nevşehir (Sever, 1993);

Güvercinkaya near Gökçeköy, partially located in the reservoir lake of the Mamasun Dam in Aksaray;

Acemhöyük, 18 km north-west of Aksaray in the foothills of Hasan dağı (N. Özgüç, 1966);

Kültepe, Kayseri (T. Özgüç, 1961);

Hattusha in Boğazköy (today known as Boğazkale);

Alacahöyük, Çorum; and

Alişar Höyük in Yozgat (N. Özgüç, 1968).

<sup>106</sup> Although the exact extend of the kingdom of Tabal is unknown, inscriptions from this period are mainly located near Kayseri and Nevşehir, the most important being:

Sivasa, near the village of Gökçetoprak, south-west of Gülşehir;

Topada, in Acıgöl, Nevşehir;

Kululu, 68 km north-east of Kayseri and

Sultanhanı. (Baydur, 1970: 85-86)

<sup>107</sup> See Map 4-c.

## 600-500/400 BC: Persian Period

In this period the region was continuously subject to raids. After the Cimmerian raids (700-650 BC), Tabal (the 'land of Tabal') was included in the Cilician Kingdom in 612 BC and was conquered by the Empire of the Medes in 585 BC, and subsequently included within the boundaries of the Persian Empire (350 BC).<sup>108</sup>

The changing boundaries of the region can also be traced from the accounts of the ancient writers.<sup>109</sup> Herodotus implies, for instance, that Cappadocia was east of the Kızılırmak (anc. *Halys*) and was neighbouring Paphlagonia, Phrygia and Cilicia (Herodotus, I. 72):

The boundary of the Median and Lydian empires was the river Halys; which flows from the Armenian mountains first through Cilicia and afterwards between the Matieni on the right and the Phrygians on the other hand; then passing these and flowing still northwards it separates the Cappadocian Syrians on the right from the Paphlagonians on the left. Thus the Halys river cuts off wellnigh the whole of the lower part of Asia, from the Cyprian to the Euxine sea. "Asia here refers to the western part of Asia, west of the Halys. The width from sea to sea of the ἀσίην is obviously much underestimated by Hdt., as also by later writers." (Godley 1999, p.89) (Text based on the 1920 translation by Godley).

Strabo (XII.1.1), confirming the unclear limits of Cappadocia, writes that the country comprised many parts and had undergone many changes. He also reports that Cappadocia was divided in to two satrapies<sup>110</sup> during the Persian rule<sup>111</sup>: one consisting of the central inland portion, named as Megale Cappadocia (the Greater Cappadocia or main Cappadocia - covered a large part of central Anatolia, stretching from the Tuz Gölü (anc. *Tatta*) in the west to the Euphrates in the east, and from the southern curve of the Kızılırmak in the north to the Taurus range in the south), the

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<sup>108</sup> Baydur (1970). p.87

<sup>109</sup> Herodotus I.72, V.49; Strabo XII.1.1; Pliny VI.3

<sup>110</sup> 'satrapies' plural of 'satrapy' – The Persian Empire was ruled by governors known as satraps (from the Persian *khshathrapavan*, meaning protector of the dominion). See Olmstead, A.T. (1948). *History of the Persian Empire*. Chicago: University of Chicago Press.

<sup>111</sup> See Map 4-c.

other, the northern part up to the Black Sea coast, called Cappadocia Pontica (Strabo XII.1.4).

### **ca.400/300 BC - AD 17: the Kingdom of Cappadocia During Hellenistic and Roman Periods**

Following the end of Persian rule (585-322 B.C.), the two provinces continued to be separate, and so the name Cappadocia came to be restricted to the inland province.

In the Hellenistic period, another independent kingdom, the Kingdom of Cappadocia, ruled over the region until it was included within the boundaries of the Roman Empire in 17 A.D.

During this period the region was divided into ten administrative parts – ‘*strategia*’ (see Map 4-d: ‘time-depth’ - The Historic Dimension of the Landscape in Cappadocia, Central Anatolia included in Appendix D): Tyanitis (Kemerhisar and its surrounding); Garsauritis (Aksaray); Morimene (south-west of Kızılırmak); Khamanene (north-west of Kızılırmak); Saravene (Boğazlıyan and its surrounding); Laviansene (south-east of Kızılırmak); Sargarausene (Bünyan and Uzun Yayla region); Clicia (Kayseri and its surrounding); Cataonia (Göksun, Afşin and its surrounding); and Melitene (Malatya).

In c.79, Armenia Minor was incorporated as the 12<sup>th</sup> ‘*strategia*’ after Lycaonia (once again) changing the north-western borders of the region.<sup>112</sup>

### **ca.1-4 cent.: Roman Period**

In 17 A.D. Cappadocia became a Roman province with its capital Kayseri (anc. *Caesarea*)<sup>113</sup>. In c. 285-305, the region was divided into two administrative parts: the

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<sup>112</sup> Aydın, S. (2004). p.9

<sup>113</sup> The number of surviving monuments and/or sites from the Roman Period within Cappadocia is limited. This is partially as a result of the systematic destruction of the pagan monuments and/or sites in the Byzantine Period which was to rule the region after the ca. 4<sup>th</sup> cent. (S. Aydın, 2004). But, still – the comparative few sites so far identified are:

Kemerhisar (anc. *Tyana*);  
the village of Örenşar, N.W. of İncesu;  
N.W of Develi, on Mt. Erciyes;  
Avcılar; and  
Mislihan Mevkii, 3.5 km. SE of Güzelöz.

See **Appendix C – Inventory of Archaeological Remains, Monuments and Sites of Cappadocia** for the complete list.

western section retained the name Cappadocia while the smaller part in the east was incorporated in Armenia Minor – which later, towards the end of the 4<sup>th</sup> cent. A.D., became a separate province known as Armenia Secunda. In c.371-72, Cappadocia was once again divided into two parts: Cappadocia Prima and Secunda. According to this last division Kayseri (anc. *Caesarea*) remained the capital of the first one, while Kemerhisar (anc. *Tyana*) became the capital of the latter.<sup>114</sup>

After the division of the Roman Empire in 395 A.D. Cappadocia remained within the boundaries of the eastern half – which later became to be the Byzantine Empire.

#### **ca.4-11 cent.: Early Christian and Byzantine Period**

Following the division of the Roman Empire, in this period the region remained under the domination of the Byzantine Empire – despite numerous raids of the Huns and Syrians in the 5<sup>th</sup> cent., Persians in the 6<sup>th</sup> cent., and Arabs through the 7-8<sup>th</sup> cent. Some parts of the region were occupied by the Arabs for short periods: Kayseri (anc. *Caesarea*) was besieged in 647 and 678, and Kemerhisar (anc. *Tyana*) in 709.

Under these circumstances, parts of Anatolia (which was not under siege) was divided into a (new) system of ‘*themes*’ – military zone(s) – which caused further alterations in the regions borders.<sup>115</sup> Cappadocia until the 9<sup>th</sup> cent. was included in the borders of two ‘*themes*’: Anatolicon and Armeniacon.<sup>116</sup>

In the late 8<sup>th</sup> cent., the Anatolicon ‘*theme*’ was divided into two – the western half was named Thraceseion.<sup>117</sup>

In the early 9<sup>th</sup> cent., two new ‘*themes*’, Charsianon and Cappadocia emerged within Anatolicon. The traditional name Cappadocia was kept for unofficial and

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#### **See Map 4-d**

<sup>114</sup> Baydur, N. (1970); Hilde, F & Restle, M. (1981b)

<sup>115</sup> Whittow, M. (1996). p.117

<sup>116</sup> Whittow, M. (1996) .p.120; Foss, C. (1991). p.378

#### **See Map 4-e**

<sup>117</sup> Ostrogorsky, G. (1981).pp.146-7.

ecclesiastical purposes<sup>118</sup>, while Cappadocia came to refer to a much smaller area on the south, extending from the Taurus to the Kızılırmak (anc.*Halys*) situated on the

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<sup>118</sup> The Roman province of Cappadocia converted to Christianity in the 1st cent., even before Constantinus had acknowledged Christianity as the official religion of the Empire in 313 A.D. By the end of 2<sup>nd</sup> cent. there were Christian communities in Kayseri (anc.*Caesarea*) and Malatya (anc.*Melitene*), and from the early 3<sup>rd</sup> cent. Cappadocia became a major religious centre where annual 'synods' were held. Roman persecutions of the Christians gave rise to the concept of 'martyrdom', which was to play a major role in the development of Christianity. Early Christians killed by the Romans in Cappadocia, such as Hyacinthus, Cyrillus and Marcurius, Eustratius, Auxentius, the nuns Chreste and Calliste, and the Forty Martyrs of Sebasteia were figured widely in theology and Byzantine art.

The 'Cappadocian Fathers': Basileios (Basil) the great, Gregorios (Gregory) of Nazianzos and Gregorios (Gregory) of Nyssa were also influential figures for the development of the Orthodox monasticism. They participated in the political and ecclesiastical life serving as theologians and administrators at the same time. Their accounts provide rich information on fourth century Cappadocia and its considerable wealth.

A brief survey of ecclesiastical history is provided by Neri, U. (1971) "The Early Christians in Cappadocia (1st – 6th Centures)" in L. Giovannini (eds), *Arts of Cappadocia* (pp. 29-34); Hild, F. & Restle, M. (1981); Kostof, S. (1972). *Caves of God: the Monastic Environment of Byzantine Cappadocia*. Massachusetts: MIT Press.; and also Akyürek, E. (2000) "Forth to Eleventh Centuries: Byzantine Cappadocia" in M. Sözen (eds.), *Cappadocia* (pp.229-298).

During this period numerous rock-hewn dwellings, churches, monasteries, hermit cells and other ecclesiastical structures along the hillsides and (tufa ) rock faces of the valleys, within isolated pinnacles of rock and/or sometimes underground have been hollowed out within the region in accordance with the monastic thought established by the Cappadocian Fathers and the insecure circumstances of the region – although some of which have either destroyed or not been able to be located today.

And for the ones (monuments and/or sites) which have survived we have very limited knowledge as there has not been a thorough study towards a full inventory of the region --- Although attempts to inventory the rock-hewn monuments and/or sites have been made by scholars such as A.M. Levidis (1899) ; H. Rott (1908); W.M.Ramsay and G.L. Bell (1909); G. de Jerphanion (1925-42); N. Thierry (1963, 1983, 1984); Y.Ötüken (1981); and V.Kalas (2005, 2004).

This is partially due to the nature of the settlements which are hewn-out along the vertical rock faces, containing different levels connected by a complex pattern of passages, steps, tunnels, living quarters, chapels and pigeon-houses.

The process of erosion have caused large block of stone to break off and fall into the valley bottom. It is thus extremely difficult –especially within the settlements - to establish a full inventorying of the settlements. Many settlements have been completely deserted due to this problem of rock fall including the Aşağı and Yukarı Soğanlı settlements which have been included within the territorial level assessments. And to this must be added the a further difficulty of dating the different stages of construction of a settlement which was extended and developed over a long period of years.

There are 794 (or more than 800) listed monuments and/or sites within the region (belonging to this period), the principle being located at:

Göreme; 45 ecclesiastical structures G. de Jerphanion (1925-42) N. Thierry (1984) and Y. Ötüken, 1981; 1987) incl. 38 churches; 1 chapel and the monastic complexes of Aynalı Church and Kızılar Monastery.

Avclar; 5 churches and 1 chapel (G. de Jerphanion (1925-42).

Soğanlı; 16 rock-hewn churches (G. de Jerphanion (1925-42); H.Gürçey and M. Akok (1965), incl. the St Barbara church and its complex (L.Rodley, 1982), 1 chapel, 2 hermits cell and a 6th cent. masonry-built church (Ak Kilise) east of Yukarı Soğanlı which is not visible today. There are also

major routes (See Map 4e: ‘time-depth’ - The Historic Dimension of the Landscape in Cappadocia, Central Anatolia included in Appendix D).

Arab raids continued until 934 and Cappadocia retained its strategic importance as a buffer zone between the Byzantine Empire and its neighbours throughout this period.<sup>119</sup>

### **ca.11-15 cent.: the Seljuk and Beylik Periods**

In the second half of the 11<sup>th</sup> cent. Seljuk Turks became dominant in the region with its capital Konya –which also was the beginning of a period of raids which lasted over 400 years until the Ottoman Period (c.1483).

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numerous rock-cut dwelling units and/or other structures (i.e. numerous dovecotes along the valley between the settlements Yukarı Soğanlı and Aşağı Soğanlı) which have not been inventoried.

Güzelöz; 9 churches

Başköy; 3 churches

Belısırma (Peristrema); 21 churches (Rott, 1908; G. de Jerphanion (1925-42); N. Thierry and M. Thierry, 1963) , incl. the 8 churches and 1 chapel in Selime-Yaprakhisar (V.Kalas, 2005, 2006).  
Gülşehir;

Ürgüp; 1 chapel, 24 churches (G. de Jerphanion (1925-42) incl. the Hallaç Monastery in Ortahisar (L.Rodley, 1982).

Çavuşin; (G. de Jerphanion (1925-42); N. Thierry (1983)

Zelve; 16 ecclesiastical structures (G. de Jerphanion (1925-42) incl. 14 rock-hewn churches, 1 chapel and a hermits’ cell hermitage of the monk Symeon (Simeon) (L.Rodley, 1982).

There are also other settlements and churches, monastic complexes associated with these settlements apart from the above (areas of high concentration) listed structures such as:

the Çanlı Kilise (‘Church with a Bell’ or ‘Bell Church’) and its settlement located between the villages of Çeltek and Akhisar in the district of Aksaray (R. Ousterhout, 2005).

Apart from the listed above, there are approx.. 127 underground settlements of various sizes in the region (A. Ayhan, 2004, p.39).

The principle underground settlements are:

Kaymaklı, Derinkuyu, Özkonak, Mazı and Gökçetoprak (Sivasa) in Nevşehir;

Güzelyurt in Aksaray;

Pınarbaşı (Geyral), and Ağırnas in Kayseri; and

Doğanlı 20 km from Yeşilhisar.

Also see: Gülyaz, M. (2000). “Subterranean Worlds” in Sözen, M. (eds.), *Cappadocia* (pp. 512-525);

Guneo, P. (1982). “Les Architectes des villes souterraines”, *Historie et Archaéologie*, no. 63, pp.38-47

See **Appendix C – Inventory of Archaeological Remains, Monuments and Sites of Cappadocia** for the complete list. And **Map 4e** for their distribution and location within the region.

<sup>119</sup> Foss, C. (1991) p.378

Within this period the region and its important settlements have been continuously changed between the Seljuks, Byzantine Empire, various Beyliks (Karamanoğulları between 1308-1466) and the Mongols until it was included within the boundaries of the Ottoman Empire.<sup>120</sup>

### **ca. 15 cent. - 1923: Ottoman Period**

The region remained within the boundaries of the Ottoman Empire (see Map 4f: ‘time-depth’ - The Historic Dimension of the Landscape in Cappadocia, Central Anatolia included in Appendix D) until the foundation of the Turkish Republic in 1923.

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<sup>120</sup> In this period the most important monuments and/or sites are left by the Seljuks and Ottomans which include mosques, medreses, türbe, hamams of masonry built differentiating from the traditional rock-hewn tech. in the previous periods (Byzantine Period) and a comprehensive network of caravanserais linking Konya, the capital, with Kayseri and Sivas, running through the region along the left bank of Kızılırmak.

#### **See Map 4-f**

*Hans* and *caravanserais* representative of the Seljuk, Beylik and Ottoman cultures (within Cappadocia) discovered during surveys includes:

Alay Han on the Aksaray-Kayseri road;

Öresin Han, a caravanserai on a smaller scale on the Aksaray-Nevşehir road;

Ağzıkara Han on the Kayseri-Aksaray road;

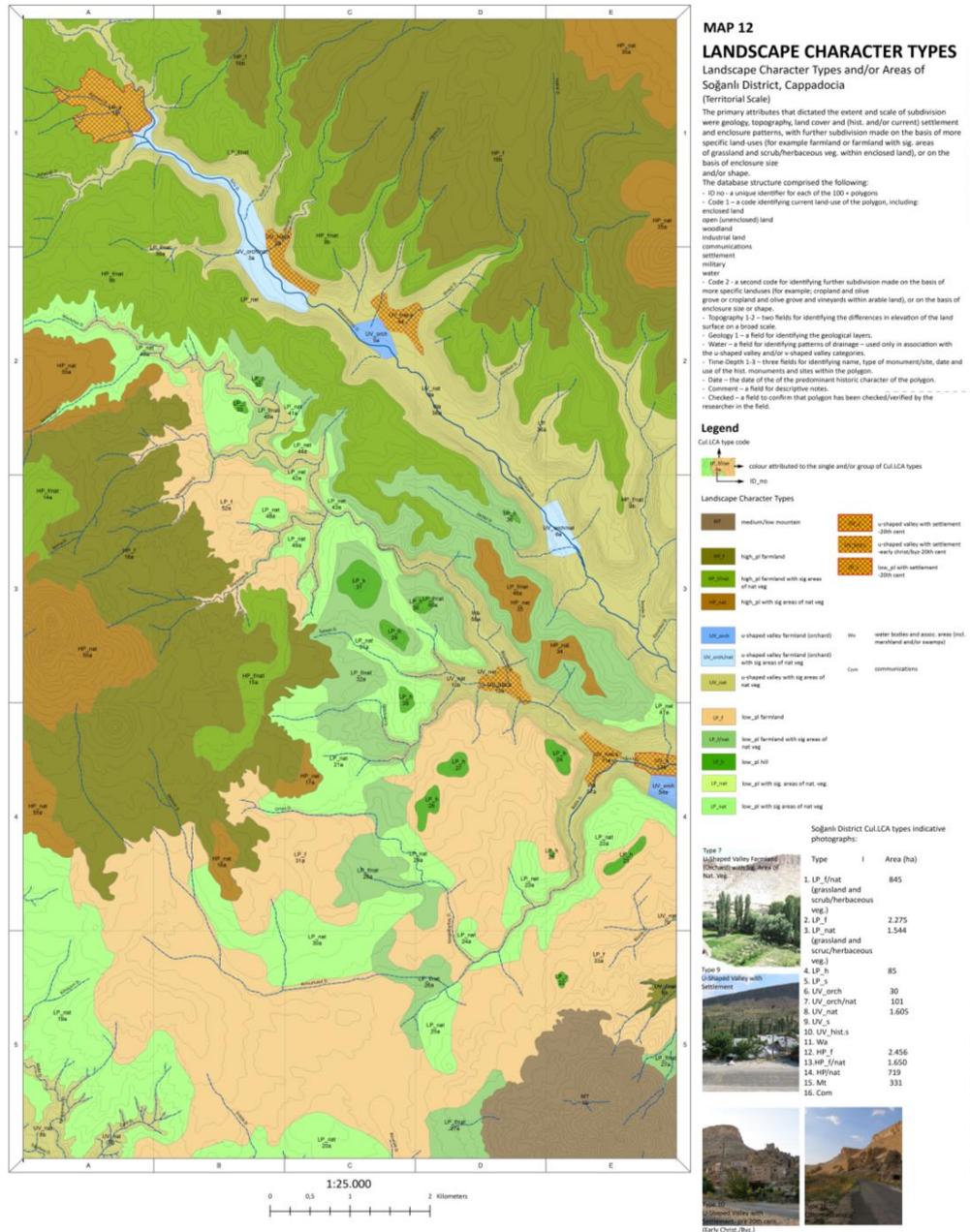
Sultan Han, on the Konya-Aksaray road;

Sarı Han, located on the Avanos-Ürgüp road at a distance of 5 km from Avanos.

See Turan, O. (1946). Selçuklu Kervansarayları. *Belleten*, Vol. X, pp.471-495.; Erdmann, K. (1961). *Das Anatolische Karavansaray des 13. Jahrhunderts*, 3 vols. Berlin: Verlag Gebr. Mann.; and, Sözen, M. (2000) “Eleventh Century Onwards: Seljuks and Ottomans” in M. Sözen (eds.), *Cappadocia* (pp.399-478).

For the complete list of types of monuments and/or sites see **Appendix C – Inventory of Archaeological Remains, Monuments and Sites of Cappadocia**. And **Map 4f** for their distribution and location within the region.

### 3.3 Cultural Landscape Character (Types and/or Areas) of Cappadocia



**Figure 3.15 Territorial level Cul.LCA types** Simplified map showing the extent of the Territorial level Cul.LCA Types. **Farmland** accounts for well over half the land area of Soğanlı (60% or 7.227 hectares; see figure above). **Sig. Areas of Nat. Veg.** (20%), **Settlement-20<sup>th</sup> cent** (1%) and **Valley** (13%) make up the other main land cover types within the region, which together with **Farmland** account for 94%. **Gardens, Veg. and Soft Fruits (Orchards)** covers just over 1% or approximately 130 hectares, **Water** (mainly streams) and associated areas both just under 164 hectares. Built-up areas, including **Settlement** and **Communications** account for over 1% of the land area and tend to be broadly concentrated along the river valleys and in north Soğanlı.

**Table 3.6 List of Territorial level landscape character types.** The letters in brackets are used to identify individual Landscape Character Types in Section 3.3: Cultural Landscape Character (Types and/or Areas) of Cappadocia, page 143 onwards.

<b>1</b>	Low Plain Farmland <b>(LP_f)</b>	143
<b>2</b>	Low Plain Farmland with Significant Areas of Natural Vegetation <b>(LP_f/nat)</b>	145
<b>3</b>	Low Plain with Significant Areas of Natural Vegetation <b>(LP_nat)</b>	147
<b>4</b>	Low Plain Hill <b>(LP_h)</b>	149
<b>5</b>	Low Plain with Settlement <b>(LP_s)</b>	151
<b>6</b>	U-Shaped Valley Farmland (Orchard) <b>(UV_orch)</b>	153
<b>7</b>	U-Shaped Valley Farmland (Orchard) with Significant Areas of Natural Vegetation <b>(UV_orch/nat)</b>	156
<b>8</b>	U-Shaped Valley with Significant Areas of Natural Vegetation <b>(UV_nat)</b>	158
<b>9</b>	U-Shaped Valley with Settlement <b>(UV_s)</b>	164
<b>10</b>	U-Shaped Valley with Settlement – pre 20 <sup>th</sup> cent. (Early Christian/Byzantine) <b>(UV_hist.s)</b>	166
<b>11</b>	Water Bodies and Associated Areas (including marshland and/or swamps) <b>(Wa)</b>	172
<b>12</b>	High Plain Farmland <b>(HP_f)</b>	175
<b>13</b>	High Plain Farmland with Significant Areas of Natural Vegetation <b>(HP_f/nat)</b>	177
<b>14</b>	High Plain with Significant Areas of Natural Vegetation <b>(HP_nat)</b>	179
<b>15</b>	Low/Medium Mountain <b>(Mt)</b>	182
<b>16</b>	Communications <b>(Com)</b>	184



Type 1: Low Plain Farmland



Type 4: Low Plain Hill



Type 5: Low Plain with Settlement



Type 7: U-Shaped Valley Farmland (Orchard) with Significant Areas of Natural Vegetation

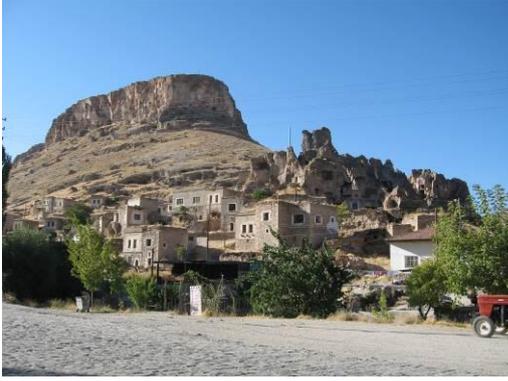


Type 8: U-Shaped Valley with Significant Areas of Natural Vegetation



Type 9: U-Shaped Valley with Settlement

**Figure 3.16 Territorial level Cul.LCA types indicative photographs. (a) & (b): top.** low plain farmland and hill(s) located on the lower (relatively low) agricultural lands in between Karadağ and west of Soğanlı. **(c): middle left.** Derbentbaşı. **(d): middle right.** small-scale field enclosures (orchards), east of Yukarı Soğanlı. **(e): bottom left.** Tahtalı Dere valley. **(f): bottom right.** pre-fabric houses, east of Aşağı Soğanlı.



Type 10: U-Shaped Valley with Settlement - pre-20<sup>th</sup> cent. (Early Christian/Byzantine)



Type 11: Water Bodies and Associated Areas (including marshland and swamps)



Type 12: High Plain Farmland



Type 14: High Plain with Significant Areas of Natural Vegetation



Type 15: Low/Medium Mountain



Type 16: Communications

**Figure 3.17 Territorial level Cul.LCA types indicative photographs.** (a): top left. Yukarı Soğanlı settlement. (b): top right. Soğanlı D. (c): middle left. high plain farmland in Dolluk Sırtı, north of Güzelöz. (d): high plain with significant areas of natural vegetation in Ortasirt Tepe, north-east of Yukarı Soğanlı. (e): bottom left. Mt.Karadağ. (f): bottom right. Road (north-west Yukarı Soğanlı) along the Büyükkol Dere valley.

### 3.3.1 Cul.LCA Types in Cappadocia: an Overview

The first stage of the Cul.LCA methodology was to identify landscape attributes used to define the Cul.LCA types and to map them digitally.

The attributes that were mapped in the research have been analysed in such a way as to provide a territorial level map showing the broad landscape character of the Soğanlı (Yeşilhisar). These Cul.LCA types are a combination of attributes based on the general characteristics of geology, topography, land-cover, historic and/or current settlement and an interpretation of date, such as Roman, Early Christian/Byzantine or 20<sup>th</sup> cent.

The date categories have been divided into three broad spans. For settlements, **Settlement - pre 20th cent. (Roman)** includes all areas associated with known Roman (prior to ca. 4th cent.) monuments and/or sites. **Settlement-pre 20th cent. (Early Christian/Byzantine)** includes either areas associated with known Early Christian/Byzantine (prior to ca. 11th cent) – now abandoned or the areas of continued use or re-settlement of earlier settled land (with additions and/or alterations). **Settlement – 20th cent.** includes land settled since 1990s having no associations of any kind (in terms of i.e. continued use or re-settlement, etc.) with settlements prior to this date.

In each type the date reflects the surviving character of the present day landscape – the research does not aim to produce a map of 4th cent or Early Christian/Byzantine Soğanlı (Yeşilhisar), but instead to produce a map of Soğanlı showing where the 4th cent. or Early Christian/Byzantine landscape survives today. It is a map showing the time-depth within the modern landscape and, as such, has considerable use for the application of policy and landscape management techniques, compared with studies that reconstruct past landscapes which no longer survive.

Settlements within the region are predominantly nucleated in character which exhibit a continuous habitation from the Early Christian/Byzantine Period. These settlements (UV\_hist.s nos.2a, 4a and 11a-12a), which are now mainly in ruins or evacuated due to structural problems comprise dwellings, single or small groups of hermit cells, churches or other monastic complexes located on the escarpments where the rock is

relatively soft in the Soğanlı Dere and Mavrucan Dere valleys. The region also contains areas of dispersed settlement predominantly built up in the 1990s. These are the Derventbaşı which is included within the Low Plain with Settlement Cul.LCA type and the pre-fabric housing area (UV\_s no.13a) which is located west of Aşağı Soğanlı. They do not include any archaeological components.

**Low Plain Farmland** includes all enclosed land derived from the aerial photographs of the region, flown in 06/2010. **Low Plain Farmland with Significant Areas of Natural Vegetation** includes areas that are more recently enclosed – with significant areas of natural vegetation (mainly grassland and scrub/herbaceous vegetation).

Farmland and Farmland with Significant Areas of Natural Vegetation (i.e. Shrub and Herbaceous Vegetation) comprises the most extensive Cul.LCA type in the study area. Farmland accounts for 39% of enclosed land in Soğanlı, Farmland with Significant Areas of Natural Vegetation for 20% and Orchards for 1 %. The Cul.LCA mapping suggests that most of the farmland is newly enclosed since c.1950, and has remained largely unchanged since then. However, the Cul.LCA process did not evaluate the continuing presence of (or degree of alteration) of previously enclosed landscape as there were no data on the previous enclosures.

**Low Plain with Significant Area of Natural Vegetation** includes those areas marked as grassland and scrub/herbaceous vegetation on the topographic and/or base maps produced by the HGK. **High Plain, U-Shaped Valley** and **V-Shaped Valley** are also similarly divided.

**Water Bodies and Associated Areas** include natural and man-made water bodies. There are no similar types – but there is considerable interaction with the U-Shaped Valley with Significant Areas of Natural Vegetation and U-Shaped Valley Farmland (Orchards) Cul.LCA types as well as U-Shaped Valley with Settlement - pre-20<sup>th</sup> cent. (Early Christ./Byz.). The type has been identified using the current topographic and base mapping produced by the HGK symbol for water bodies.

**Communications** mainly comprises road features, junctions, etc. on the topographic and/or base mapping.

### 3.3.2 Format and Content of the Cul.LCA Descriptions

The information outlined under each Cul.LCA description comes in the following format: first, a general description is included of the background and principal processes associated with each type. This is followed by a summary of the typical sites of archaeological interest, or components, to be found. A table is included for each type that describe the relationship between the Cul.LCA area and the point information held in the Sites and Monuments Inventory. The table comprises a list of the site types in the Cul.LCA type, including a figure for total sites in the Inventory held by the Nevşehir and Kayseri Regional Conservation Council(s) and by the General Directorate of Cultural Resources and Museums (*Kurullar Dairesi Başkanlığı, Kültür Varlıkları ve Müzeler Genel Müdürlüğü*) within the MoCT.

The data is listed in five columns, which include:

- **TYPE.** The site type categories in the Inventory (i.e. ‘rock-hewn church’, ‘stele’ or ‘underground town’).
- **Tot. Type in the region.** The total number of site types in the Inventory in the region (i.e. there are 30 ‘rock-hewn church’ sites recorded in the Inventory).
- **Tot. Type in Cul.LCA area.** The total number of site types in the specific Cul.LCA area (i.e. there are 26 ‘rock-hewn church’ sites recorded in the SMI in the U-Shaped Valley with Significant Areas of Natural Vegetation Cul.LCA type).
- **Ha./site in Cul.LCA area.** The area of each Cul.LCA type (in hectares) divided by the total number of any given site type to give an average area to site ratio for the type (i.e. there are 26 ‘rock-hewn church’ sites in the U-Shaped Valley with Significant Areas of Natural Vegetation Cul.LCA type, which covers 1.605 ha. of Soğanlı (Yeşilhisar), giving an average of one church for every 62 ha. in the type).
- **% of Type in Cul.LCA area.** The total percentage of a site type to found within the specific Cul.LCA type (i.e. 80% of all ‘tumuli’ sites from the

Roman Period in Soğanlı (Yeşilhisar) are found within the High Plain with Significant Areas of Natural Vegetation Cul.LCA type).

Percentages less than 1% are not listed.

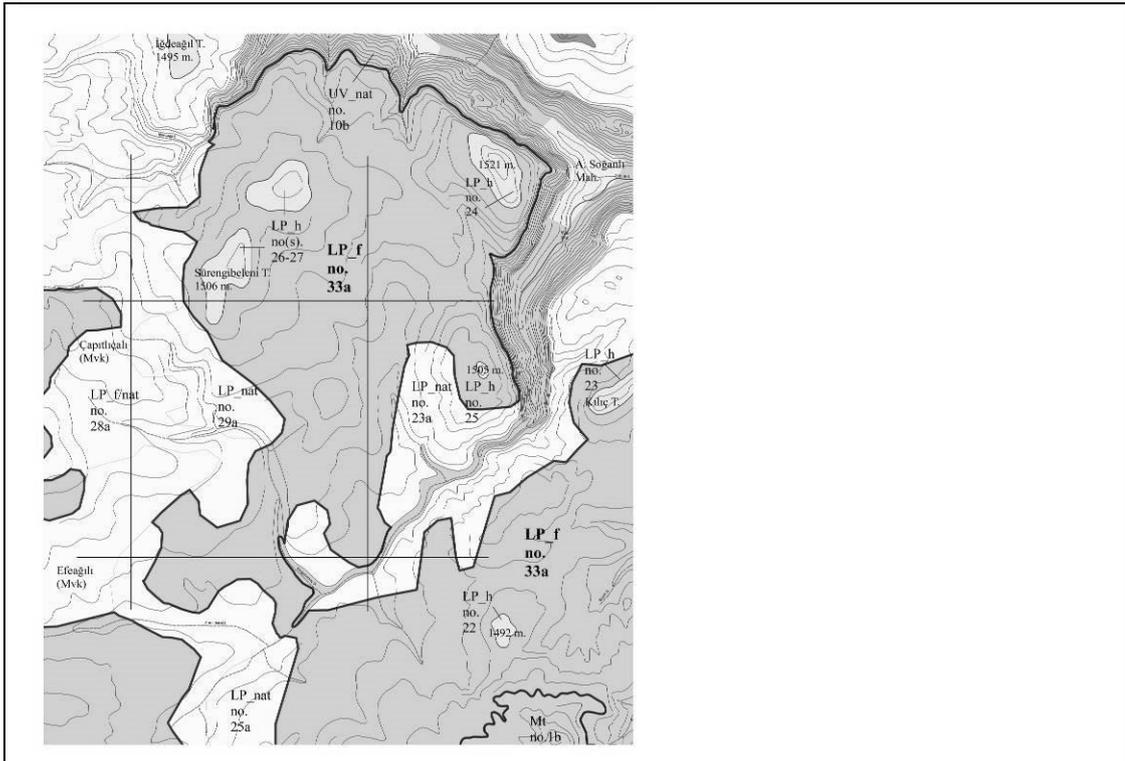
Finally, each Cul.LCA type is described in terms of its similarity with other Cul.LCA types, with particular reference to distinguishing criteria, and an indication is made of the type's overall rarity across the whole of the region.<sup>121</sup>

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<sup>121</sup> As stated earlier (in Chapter 1), it should be noted that only Appendix C. Inventory of Archaeological Remains, Monuments and Sites of Cappadocia data was used and additional field survey to verify the location (GPS coordinates, etc.) and/or other information held within the information taken from the Inventory held within the Nevşehir and Kayseri Regional Conservation Council(s) or other surveys of the researchers was not undertaken due to constraints of time, complexity and the desire to provide a rapid snapshot, rather than a detailed analysis.

As a result the figures given are likely to change when detailed field survey of the area are to be completed.

## Type 1: Low Plain Farmland



### GENERAL DESCRIPTION

The **Low Plain Farmland** Cul.LCA type covers 19% of Soğanlı (2.275 hectares) and accounts for 43% of all enclosed land in the region. It entirely corresponds with the typical regosol soils in the area between Aşağı and Yukarı Soğanlı settlements and Karadağ with a small portion located at north-west of Soğanlı Tepe.

It is generally flat and below approx. 1500 m.

The type has been characterised predominantly by a regular pattern of straight-edged fields identified on the aerial photographs of the region, flown in 06/2010. The **Low Plain Farmland with Significant Areas of Grassland and Shrub/Herbaceous Vegetation** type can be similar to this but is distinguished in the mapping process by its discontinuity of enclosed land.

The **Low Plain Farmland** type comprises a variety of field forms. Size tends to be large (over 6 hectares) but with a significant percentage of medium enclosures. The majority of the type has a regular, planned pattern. This is a reflection of the widespread planned enclosure in the 1990s, rather than the piecemeal private enclosure of land more prevalent in other parts of Soğanlı such as the enclosed land seen in **U-Shape Valley Farmland (Orchard)** and **U-Shaped Valley Farmland (Orchard) with Significant Areas of Natural Vegetation** Cul.LCA type in Soğanlı and Mavrucan Valley(s).

Water-filled ditches and/or ditches bound most of enclosed land in the type. These mainly occur in south-west Güzelöz and in the west of Mt.Karadağ.

In the west of Mt.Karadağ and south-west Güzelöz today the type is mostly retained as arable farmland, occasionally intensively farmed for marketing (i.e. wheat, barley, oat, bean and potato – interview no.2-3). Much of the remainder is either found under their original natural vegetation and/or used for grazing.

1.1 Key characteristics:

- relatively low (approx. below 1500 m.) and flat topography;
- open and extensive;
- large-scale (larger than 6 ha.) field enclosures of regular pattern with a significant percentage of medium enclosures (2 to 6 hectares);
- grazing;
- network of roads and tracks connecting the farmland with the nearby settlements.

1.2 Historical and archaeological components: None.

The type may include tracks and other features as well as below-ground undisturbed archaeological deposits belonging to the Pre-historic, Roman and Early Christian/Byzantine Period(s).

Further research and survey is required to understand this and similar Cul.LCA types, its origins and development.

1.3 Similar types and distinguishing criteria: The type has been characterised predominantly by an irregular pattern of straight-edged fields identified on the aerial photographs of the region, flown in 06/2010. The **Low Plain Farmland with Significant Areas of Grassland and Shrub/Herbaceous Vegetation** type can be similar to this but is distinguished in the mapping process by its discontinuity of enclosed land.

1.4 Rarity: **Low Plain Farmland** covers 19% of Soğanlı region.

1.5 Landscape sensitivities:

- Potential pressures for development, particularly south of Yukarı Soğanlı settlement;
- The (relatively) flat and accessible nature of this Cul.LCA type may encourage proposals for large scale developments, i.e. industrial, residential, etc.

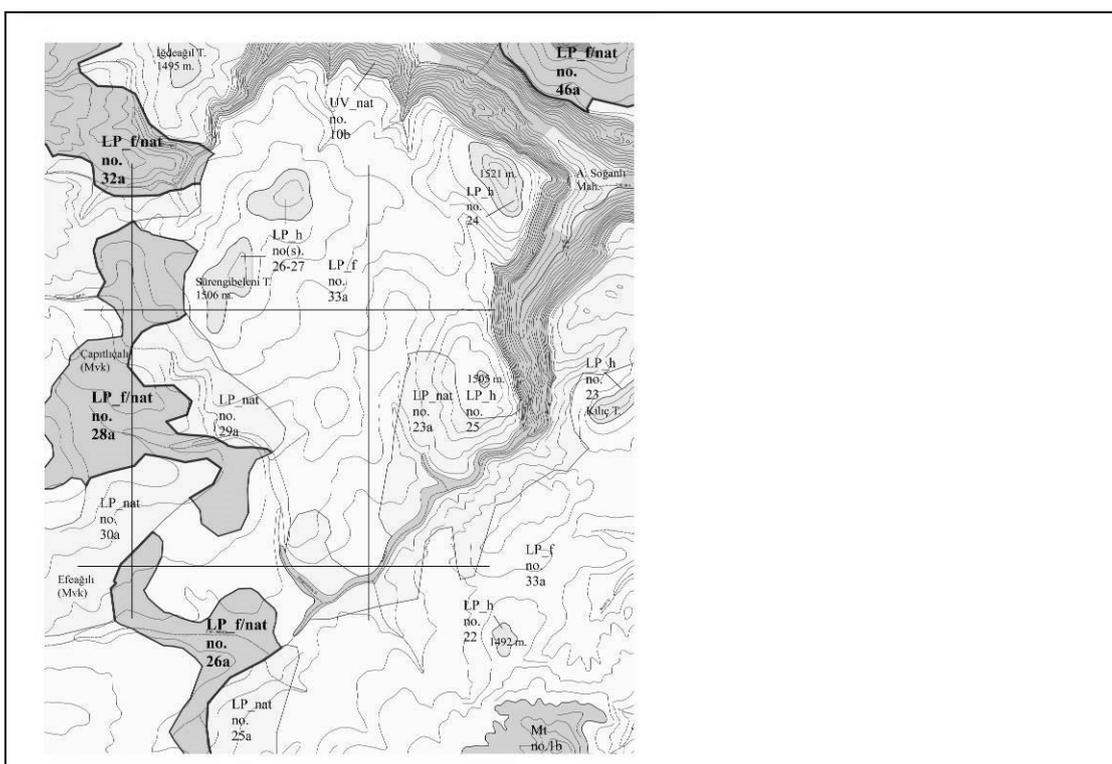
**STRATEGIES AND GUIDANCE**

- *Undertake survey.*

- *Improve management.* Improve the management regime and advice to it to minimise the threat of overgrazing and erosion. Positive management should be encouraged, potentially with the aid of agri-environmental schemes.

- *Control development.* The proximity of this landscape type to Yukarı and Aşağı Soğanlı settlements (UV\_hist.s nos.11a-12a) and its relatively elevated position make particular areas (LP\_f no.33a) within the **Low Plain Farmland** Cul.LCA type an attractive landscape on which to site new housing development. This, however, can be obtrusive, and any new development should be confined to areas of this landscape where more varied topography offers some opportunity for screening. The strong visual relationship with the settlements and the valley is an important characteristic of this Cul.LCA type.

## Type 2: Low Plain Farmland with Significant Areas of Natural Vegetation



### GENERAL DESCRIPTION

**Low Plain Farmland with Significant Areas of Natural (Grassland and Scrub/Herbaceous) Vegetation** covers almost 845 hectares of Soğanlı. Of this 630 ha. are unenclosed, 200 ha. are very large enclosures (often large than ~ 6 ha.) and just over 15 ha. are divided into smaller enclosures. Much of the area was used in the past for communal grazing, only more recently being enclosed.

Most of the enclosure boundaries are water-filled ditches and/or ditches.

**Low Plain Farmland with Significant Areas of Natural Vegetation** Cul.LCA type is a combination of a nature and man-made landscape which most of the current farmland being covered in grass and scrub/herbaceous vegetation in the past. Subsequent clearance, agricultural management and animal grazing combined with the harsh climate of the region created the landscape visible today.

#### 1.1 Key characteristics:

- relatively low (approx. below 1500 m.) and flat topography;
- open and extensive;
- large-scale (larger than 6 ha.) field enclosures of discontinued regular pattern with a significant percentage of medium enclosures (2 to 6 hectares); The areas between the enclosures are covered with grassland and scrub/herbaceous vegetation;
- grazing;
- occasional water (bodies and associated areas) often appearing as (seasonal dry/wet) streams in the landscape showing topographic enclosure.

1.2 Historical and archaeological components: None. The type may include tracks and other

features as well as below-ground undisturbed archaeological deposits belonging to the Pre-historic, Roman and Early Christian/Byzantine Period(s).  
Further research and survey is required to understand this and similar Cul.LCA types, its origins and development.

1.3 Similar types and distinguishing criteria: This type is similar to **Low Plain Farmland**, but is distinguished in the mapping process by its discontinuity of enclosed land. The areas between the enclosures are covered with grassland and scrub/herbaceous vegetation.

The type was identified using the LANDMAP data. Aerial photographs of the region, flown in 06/2010 were referred to verify the extent and shape of vegetation.

1.4 Rarity: **Low Plain Farmland with Significant Areas of Natural (Grassland and Scrub/Herbaceous) Vegetation** covers 7 % of Soğanlı.

1.5 Landscape sensitivities:

- The (relatively) flat and open nature of this Cul.LCA type may encourage proposals for large scale development. i.e. industrial, residential, etc.

#### STRATEGIES AND GUIDANCE

- *Undertake survey.*

- *Improve management.* Improve the management regime and advice to it to minimise the threat of overgrazing and erosion.

Sustainable grazing levels should be pursued to conserve the wildlife interest of areas of grassland and scrub/herbaceous vegetation.

The wildlife value of the vegetation (particularly grassland and scrub/herbaceous vegetation) is largely dependent on sensitive agricultural management. The presence of these grasslands and their botanical diversity is a very important landscape element which should be conserved through sustainable grazing practice.

Positive management should be encouraged, potentially with the aid of agri-environmental schemes.

Water bodies and associated areas occur regularly as (seasonal dry/wet) streams in this landscape and have a major role in the drainage of the water. These features should be conserved and protected from drainage operations, infilling or alterations to the hydrographical structure of the region.

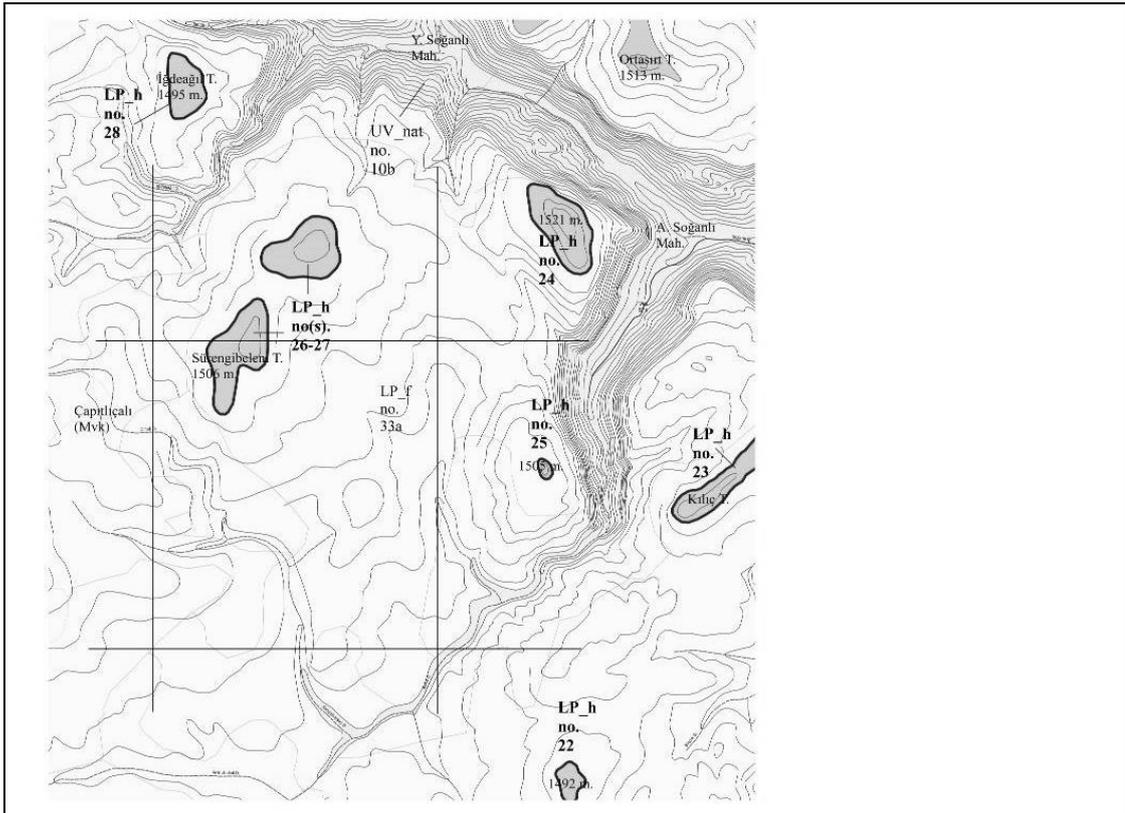
- *Control development.* All development would be obtrusive in this landscape, particularly in the areas of north of Büyükkol Dere (LP\_f/nat no.46a). It is recommended, therefore, that new development is carefully controlled in these landscapes, particularly with regard to massing, design quality and the treatment of highly visible peripheral areas.

The contemporary design of new buildings for this Cul.LCA type should, ideally, reflect the mass and form of historic/traditional buildings, in particular, that of later-period buildings in Soğanlı (UV\_hist.s no(s).11a-12a) and Başköy (UV\_hist.s no.2a), neighbouring to this relatively low, flat landscape.



streams in the landscape showing topographic enclosure.
1.2 <u>Historical and archaeological components:</u> None.
1.2 <u>Similar types and distinguishing criteria:</u> There are no similar types. The type was identified using the LANDMAP data.
1.3 <u>Rarity:</u> <b>Low Plain with Significant Areas of Natural (Grassland and Scrub/Herbaceous) Vegetation</b> covers 13 % of Soğanlı.
1.5 <u>Landscape sensitivities:</u> - The relatively flat and accessible nature of this Cul.LCA type is sensitive to changes in land cover.
<b>STRATEGIES AND GUIDANCE</b> - <i>Avoid development</i> or changes in land management regimes that have a significant effect on the vegetation (particularly grassland and scrub/herbaceous vegetation) and their biological diversity. All such proposals should be informed by an appropriate impact assessment that pays specific regard to the natural character of the Cul.LCA type.

## Type 4: Low Plain Hill



### GENERAL DESCRIPTION

The **Low Plain Hill** Cul.LCA type covers some 85 hectares or 1% of Soğanlı. They are mainly concentrated on the lower agricultural lands in south and north-west of Yukarı Soğanlı. The land within the Cul.LCA type varies from being quite steeply undulating, for example on parts of west of Yukarı Soğanlı and Güzelöz to more gentle slopes on LP\_h nos.24-27 the south of Yukarı Soğanlı.

Heights range from 1500 m. up to 1522m.

The vegetation is largely grassland and shrub/herbaceous with local species (i.e. geven (*Astragalus spp.*), kekik (*Thymus*) and civit otu (*Isatis tinctoria*) interview nos. 2-16) at higher elevations.

The land is completely unenclosed, although some small-scale agricultural activity is visible on some of the lower slopes. Farmland occasionally extends beyond these boundaries.

There are no settlements. However, vertical structures of telecommunications (LP\_h no.24) etc. are an obvious human influence in the landscape.

#### 1.1 Key characteristics:

- undulating hill land;
- grassland and scrub/herbaceous vegetation with local species (i.e. geven (*Astragalus spp.*), kekik (*Thymus*) and civit otu (*Isatis tinctoria*) interview nos.2-16) at higher elevations;
- unenclosed;
- no settlement.

1.2 Historical and archaeological components:

None.

The Cul.LCA type may include tracks and other features as well as below-ground undisturbed archaeological deposits belonging to the Pre-historic, Roman and Early Christian/Byzantine Periods.

Further research and survey is required to understand this and similar Cul.LCA types, its origins and development.

1.3 Similar types and distinguishing criteria: There are no similar types. The type was identified using the landform data produced from the 1:25.000 scale topographic and base map series produced by the HGK.

1.4 Rarity: **Low Plain Hill** covers 1% of Soğanlı.

1.5 Landscape sensitivities:

- Vertical developments such as the telecommunications.

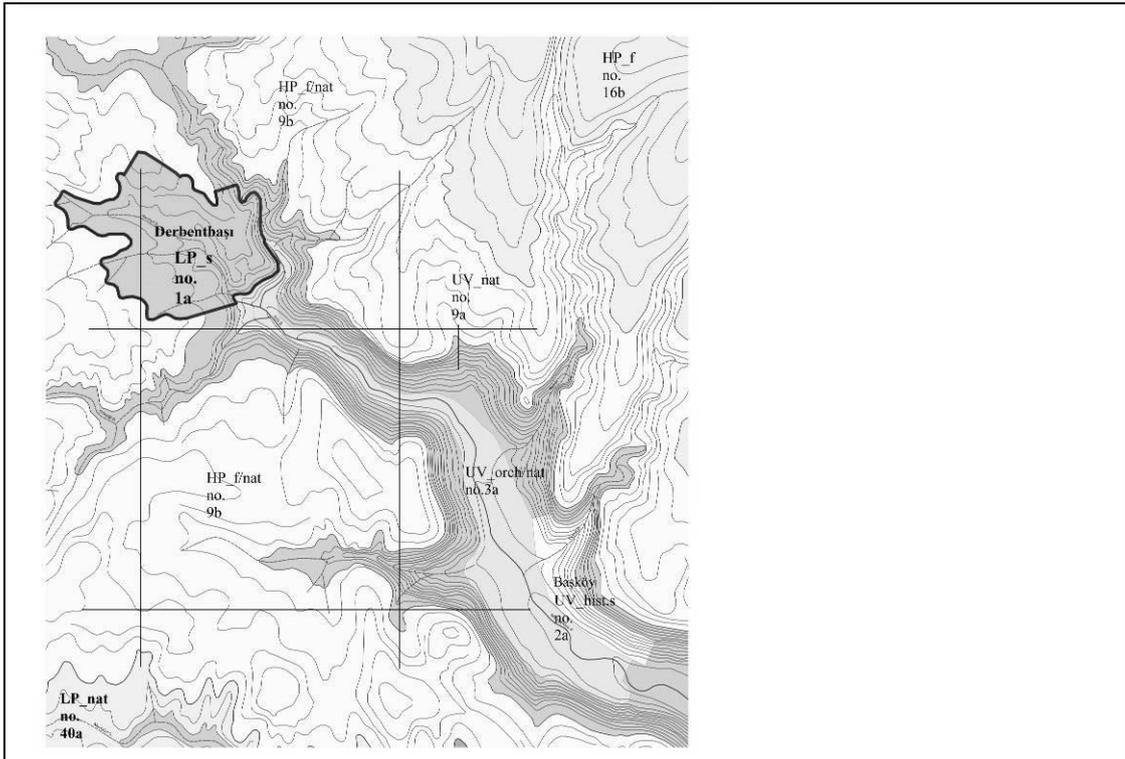
STRATEGIES AND GUIDANCE

- *Retain* the open semi-natural character of the **Low Plain Hill** Cul.LCA type.

The main development pressures appear to be the impact of vertical structures (telecommunications, etc.) within the otherwise undeveloped appearance of this landscape. Such structures can be highly obtrusive against the generally open and rolling topography. Any future development of this kind should be sited with regard to the visibility of the site from surrounding landscapes and the ability of the topography to screen such structures.

- *Undertake survey.* Support more extensive archaeological surveys of hill areas to inform i.e. agricultural proposals and other developments within and/or neighbouring this Cul.LCA type.

## Type 5: Low Plain with Settlement



### GENERAL DESCRIPTION

Settlement within Soğanlı (Yeşilhisar) does not show a very high degree of variation.

The majority of the settlements within the region are predominantly nucleated in character which exhibit a continuous habitation from the Early Christian/Byzantine Period.

These settlements (UV\_hist.s nos.2a, 4a and 11a-12a), which are now mainly in ruins or evacuated due to structural problems comprise dwellings, single or small groups of hermit cells, churches or other monastic complexes located on the escarpments where the rock is relatively soft in the Soğanlı and Mavrucan valleys.

The region also contains areas of dispersed settlement predominantly built up in the 1990s. These are the Derbentbaşı which is included within the Low Plain with Settlement Cul.LCA type and the pre-fabric housing area (UV\_s no.13a) which is located west of Aşağı Soğanlı.

The **Low Plain Settlement** Cul.LCA type is defined primarily by its predominantly residential land-use(s) compared to the rest of the study area.

The size, scale and extensiveness of the structures within these landscapes are such that they are often visible from a significant distance. These landscapes are also likely to be the focus for further development and they are, therefore, generally subject to change and expansion.

Soğanlı (Yeşilhisar) main settlements are, or have been strategic locations developed for agricultural activities, and communications networks. Most development areas are of modest size, i.e. small-sized settlements, however, the positioning, mass, and materials used does not reflect the historic/local building tradition and forms.

They do not contain any archaeological components.

1.1 Key characteristics:

- relatively low (approx. below 1500 m.) and flat topography;
- predominantly residential land-uses;
- structures within dispersed settlements are highly visible from outwith the area;
- focus for further development.

1.2 Historical and archaeological components:

None.

1.3 Similar types and distinguishing criteria: This type is similar to **U-Shaped Valley with Settlement**, but is distinguished in the mapping process by its predominant (relatively) low, flat landscape.

The type has been identified using topographic and/or base maps produced by the HGK. Aerial photographs of 06/2010 were also referred to cross check the extent and shape of the settlement.

1.4 Rarity: **Low Plain with Settlement** accounts for 0,5% of Soğanlı.

1.5 Landscape sensitivities:

- The effects of expansion of development into neighbouring Cul.LCA type areas (i.e. farmland and grass and scrub/herbaceous vegetation Cul.LCA type areas) where visual impact is likely to be considerable.

**STRATEGIES AND GUIDANCE**

- *Protect* the landscape views to and from the neighbouring Cul.LCA types (UV\_nat no.9a and HP\_f/nat no.9b).

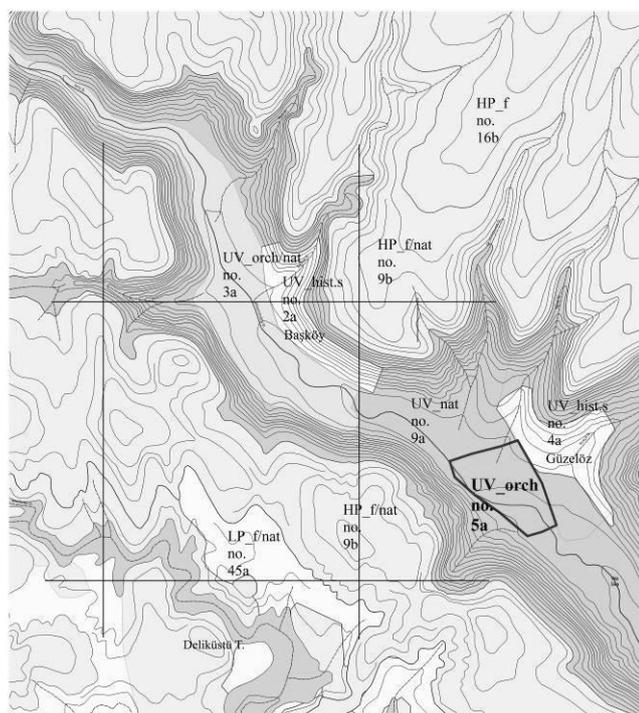
- *Restrict* fringe development around south of Derbentbaşı towards UV\_orch/nat no.3a and UV\_nat no.9a.

Clear limits should be established for the potential expansion of Derbentbaşı. This should ideally restrict further expansion to the south and south-east which might otherwise effect the integrity of the valley bottom and the orchards within the valley basin to the south. Development within the Cul.LCA type should be maintained at a low, scattered density and continuous linear expansion along the valley (Harman Dere) to the north-west should be prevented.

The Mavrucan Dere valley constitutes an appropriate limit to development east of Derbentbaşı, this and other established limits should be reinforced by i.e. conservation area boundaries, supporting policies at the local level, and/or additional statements within the development plans.

- *Establish* building design guidance for new-built development.

## Type 6: U-Shaped Valley Farmland (Orchard)



### GENERAL DESCRIPTION

The **U-Shaped Valley Farmland (Orchard)** type covers some 30 hectares or 0.2% of Soğanlı. It almost entirely corresponds with the alluvial calcareous soils which are formed by a mixture of eroded material and rock fragments. These soils are suitable for gardens, vegetable and soft fruit planting.

Most of this Cul.LCA type lies in north-west Soğanlı with a scattering across the rest of the region.

The type is characterised by an irregular enclosure pattern with sinuous or wavy-edged field boundaries and winding lanes or tracks connecting these land with the nearby settlements. Fields are irregularly shaped, with the majority (80%) less than 2 hectares in area. The rest are of medium size (up to 6 hectares).

Boundaries are varied and may comprise hedges (typically mixed in nature compared with the single species, usually quickset hawthorn), ditches or drystone walls (of irregular shaped about 1m. high) or combinations thereof, dependent upon location.

The land is mostly retained as vegetable and soft-fruit planting (i.e. eggplants, bell peppers and tomatoes, etc. interview nos.2-3) primarily at a small scale for their domestic use rather than marketing.

#### 1.1 Key characteristics:

- broad U-shaped valley;
- low lying basins (approx. below 50 m.) associated with inland water bodies often appearing as (seasonal dry/wet) streams in the landscape showing topographic enclosure;
- small-scale field enclosures of irregular pattern;

- network of roads and tracks connecting the orchards with the nearby settlements.

1.2 Historical and archaeological components: There is considerable evidence for time-depth in the present day landscape, mostly relating to the agricultural practices. The principal archaeological components of **U-Shaped Valley Farmland (Orchard)** Cul. LCA type are the boundaries that define the enclosed land/fields, and the pattern of roads and trackways that connect them. Hedges (typically mixed in nature compared with the single species, usually quickset hawthorn, which also found in **U-Shape Valley Farmland (Orchard) with Significant Areas of Natural Vegetation**), stone walls, banks (and mixtures thereof) and drainage ditches typify the boundaries of small to medium irregular fields, most of which appear to derive from the enclosure of individually farmed land. The origins of such character might not be instantly recognised but it is appreciated for its diversity and seeming irregularity. This landscape also has the potential to contain much earlier evidence for time-depth, but further research into the earliest origin of Soğanlı’s field systems is necessary to understand local processes of continuity and survival. See section on format and content of Cul.LCA descriptions pp.141-142 for an explanation of the table set out below.

TYPE	Tot. Type in region(regional level or territorial level)	Tot. type in Cul.LCA area	Ha./site in Cul.LCA area	% of Type in Cul.LCA area
<b>Total Sites</b>	191	12	2,5	6%
enclosure boundaries (i.e.dry stone walls)	64	12	2,5	19%

1.3 Similar types and distinguishing criteria: **U-Shaped Valley Farmland (Orchard)** is distinguished from the other farmland (Cul.LCA) types by its predominant irregular pattern of wavy-edged fields identified on the aerial photographs. The **Low Plain Farmland** type can be similar to this but has a more regular appearance even if still overall an irregular pattern. The U-Shaped Valley Farmland (Orchard) and U-Shaped Valley Farmland (Orchard) with Significant Areas of Natural Vegetation Cul.LCA types also distinguish from other farmland types within the region by their type of agricultural production (i.e. vegetables and soft-fruit planting) and scale. Other U-Shaped Valley Cul.LCA type(s) also include areas of similar enclosed land but at a scale unmapped by the research.

1.4 Rarity: **U-Shaped Valley Farmland (Orchard)** covers 0.2% of Soğanlı.

1.5 Landscape sensitivities:

- de-population and the potential abandonment of property (in the neighbouring Cul.LCA type UV\_hist.s no. 12a and 11a) – as a result decline and/or change in agricultural

management;  
- lack of maintenance of dry-stone walls.

#### STRATEGIES AND GUIDANCE

- *Undertake Survey*

Further information and surveys are required to understand this Cul.LCA type, its origins and development. In particular assessments are needed to quantify and qualify surviving boundaries and particular patterns of interrelationship of these elements to each other and the settlements nearby.

This information can then be used to guide future management proposals and appropriate conservation measures.

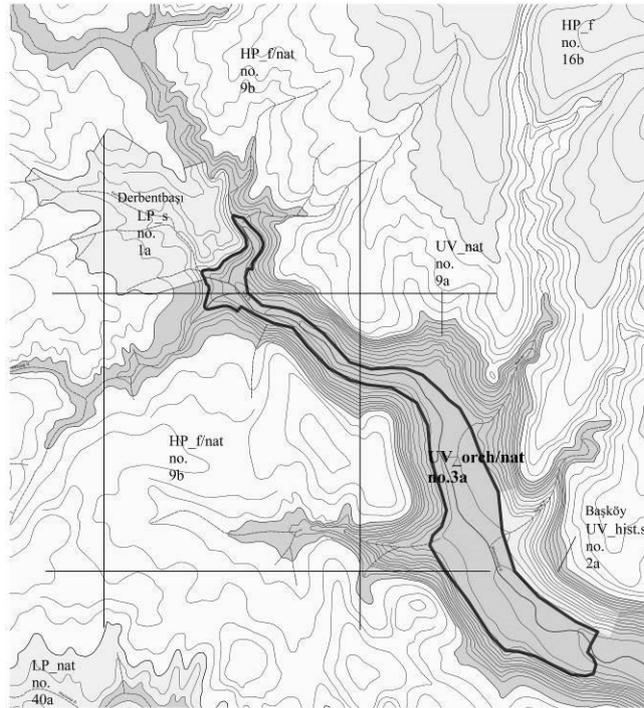
- *Encourage* retention of existing field patterns based on current layout, i.e. prevent field enlargement and wall removal.

- *Maintain* dry-stone wall field boundaries.

Dry-stone wall boundaries should be maintained or re-built to their original patterns around the small-scale field enclosures, where their presence is an important evidence of the previous agricultural activity.

- *Conserve* water bodies and associated areas (including marshland and/or swamps). Water bodies and associated areas occur regularly as (seasonal dry/wet) streams in this landscape and have a major role in the drainage of the water. These features should be conserved and protected from drainage operations, infilling or alterations to the hydrographical structure of the region.

## Type 7: U-Shaped Valley Farmland (Orchard) with Significant Areas of Natural Vegetation



### GENERAL DESCRIPTION

**U-Shaped Valley Farmland (Orchard) with Significant Areas of Natural Vegetation** covers 0.8% of Soğanlı (101 hectares). It almost corresponds with the typical alluvial calcareous soils in the area between Başköy and Derbentbaşı settlements with a small portion located at south-east of Mavruca Dere valley.

The type is characterised by an irregular enclosure pattern with sinuous or wavy-edged field enclosures of small size (less than 2 hectares) with few medium fields (2 to 6 hectares). However, most of the type represents an alteration of the landscape already enclosed by c. 1960, rather than new reclamation and improvement of grassland and scrub/herbaceous vegetation, and hence has often been constrained by the broad irregular framework of those earlier enclosure systems. The irregular pattern, which is prevalent, suggests that some earlier features still exist.

Boundaries are varied and may comprise hedges, ditches or drystone walls (of irregular shaped about 1m. high) or combinations thereof, dependent upon location.

#### 1.1 Key characteristics:

- broad U-shaped valley;
- low lying basins (approx. below 50 m.) associated with inland water bodies often appearing as (seasonal dry/wet) streams in the landscape showing topographic enclosure;
- small-scale field enclosures of discontinued irregular pattern. The areas between the enclosures are covered with grassland and scrub/herbaceous vegetation and occasionally broad-leaved trees - i.e. poplar (*Populus sp.*), willow (*Salix sp.*), etc.;

- network of roads and tracks connecting the orchards with the nearby settlements.

1.2 Historical and archaeological components: There is considerable evidence for time-depth in the present day landscape, mostly relating to the agricultural practices. The boundaries that define the enclosed land, and the pattern of roads and trackways that connect them survive to produce a complexity of historic landscape character typical of that farmed from the post-18<sup>th</sup> cent. onwards. In this Cul.LCA type relic components of previous land-uses or methods of working may also be present.

TYPE	Tot. Type in region(regional level or territorial level)	Tot. type in Cul.LCA area	Ha./site in Cul.LCA area	% of Type in Cul.LCA area
<b>Total Sites</b>	191	30	3	16%
enclosure boundaries (dry stone walls)	64	30	3	47%

1.3 Similar types and distinguishing criteria: This type is similar to **U-Shaped Valley Farmland (Orchard)**, but is distinguished in the mapping process by its discontinuity of enclosed land. The areas between the enclosures are covered with grassland and scrub/herbaceous vegetation and occasionally with deciduous trees. The type was identified using the LANDMAP data. Aerial photographs of the region, flown in 06/2010 were referred to cross check the extent and shape of enclosures.

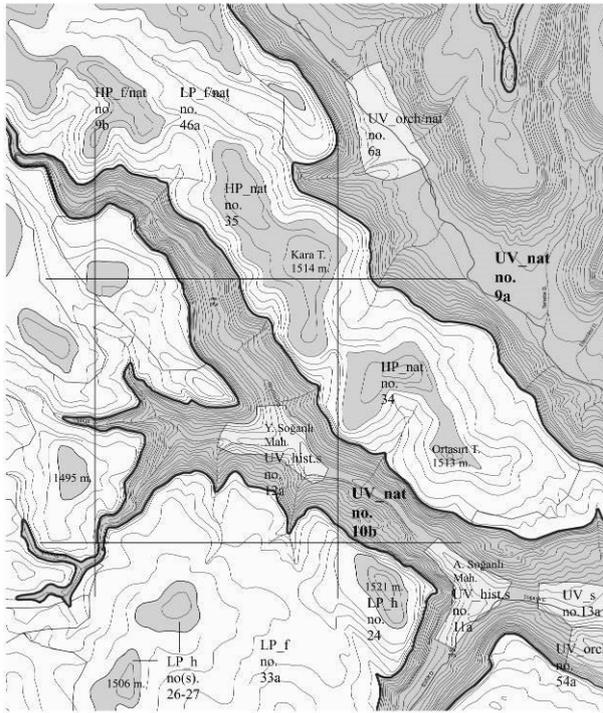
1.4 Rarity: **U-Shaped Valley Farmland (Orchard) with Significant Areas of Natural Vegetation** covers 0.8% of Soğanlı.

1.5 Landscape sensitivities:  
 - de-population and the potential abandonment of property (in the neighbouring Cul.LCA type UV\_hist.s no. 12a and 11a) – as a result decline and/or change in agricultural management;  
 - decline of remaining dry-stone walls.

**STRATEGIES AND GUIDANCE**

- *Undertake Survey.*  
 - *Encourage* retention of traditional field patterns and restoration of lost field boundaries. Field patterns are important local features, reflecting the previous agricultural practices. Where present, the maintenance of dry-stone walls would enhance the definition of this Cul.LCA type character.  
 - *Conserve* water bodies and associated areas (including marshland and/or swamps). Water bodies and associated areas occur regularly as (seasonal dry/wet) streams in this landscape and have a major role in the drainage of the water. These features should be conserved and protected from drainage operations, infilling or alterations to the hydrographical structure of the region.

## Type 8: U-Shaped Valley with Significant Areas of Natural Vegetation



### GENERAL DESCRIPTION

**U-Shaped Valley with Significant Areas of Natural Vegetation** Cul. LCA type covers 1.605 hectares or just over 13% of Soğanlı. The Cul.LCA type are mainly located in low lying topographic basins, associated with the inland water bodies. The land is typically steep but flat at the bottom of the valleys, approx. below 50 m.

It is characterised by extensive areas of grassland and herbaceous vegetation located at the valley floors which continues up to a certain level on the valley sides, although small-scale agricultural activity (usually dry-stone walled) can be seen – but a scale and distribution that could not be mapped by the research.

The patch of broad-leaved trees (i.e. elm, oak and poplar, etc.) occupying the stream beds at the main valleys of Soğanlı Dere and Mavrucan Dere and their tributaries (Ballık Dere, Tahtalı Dere and Büyükkol Dere) are also distinctive within the landscape.

There are high concentration of rock-hewn settlements associated with the churches and other ecclesiastical structures present within the valley.

Much of them date from the Early Christian/Byzantine or earlier periods.

More than half of this concentration of rock-hewn settlements lies in north Yukarı Soğanlı, Başköy and Güzelöz settlements, whilst a further concentration is found on the eastern fringe of the Ballık Dere valley.

Predictably, **U-Shaped Valley with Significant areas of Natural Vegetation** encompasses the **U-Shaped Valley with Settlement – pre-20th cent** type and would have had strong links with this neighbouring Cul.LCA type.

1.1 Key characteristics:

- broad U-shaped valley
- low lying basins (approx. below 50m.) associated with inland water bodies often appearing as (seasonal dry/wet) streams in the landscape showing topographic enclosure;
- grassland and scrub/herbaceous vegetation with occasional broad-leaved trees (i.e. elm, oak, maple and poplar, etc.);
- small-scale field enclosures (not mapped) occasionally walled;
- high concentration of rock-hewn settlements associated with the churches and other ecclesiastical complexes dating from the Early Christian/Byzantine Period;
- network of roads and tracks connecting the churches, monasteries, etc. and separate dwelling units (i.e. living units/rooms, storage rooms, etc.) to each other and to the fields outside the settlements.

1.2 Historical and archaeological components: The principle archaeological components of **U-Shaped Valley with Significant Areas of Natural Vegetation** Cul.LCA type are the rock-hewn settlements associated with the rock-hewn churches and other ecclesiastical structures and the pattern of roads and trackways that connect them to each other and the fields outside the settlements.

Settlements are predominantly rock-hewn, masonry construction being used only for extensions and retaining walls.

They contain different levels connected by a complex pattern of passages, steps, tunnels, living quarters, etc.

The process of erosion have caused large block of stone to break off and fall into the valley bottom. It is thus extremely difficult –especially within the settlements - to establish a full inventorying of the settlements. Many settlements have been completely deserted due to this problem of rock fall including the Aşağı and Yukarı Soğanlı settlements. And to this must be added the a further difficulty of dating the different stages of construction of a settlement which was extended and developed over a long period of years.

Building types are varied and include hermit cells, chapels, churches, monasteries, and separate dwelling units (i.e. living units/rooms, storage rooms – sometimes arranged on several levels, kitchens, olive presses, etc).

The most important being:

- Karabaş Kilise
- Kubbeli Kilise
- St. Barbara (Tahtalı Kilise)
- Saklı Kilise
- Yılanlı Kilise
- Geyikli Kilise
- Tokalı Kilise
- Ballık Kilise; and
- Gök Kilise

(See Map 4e: ‘time-depth’ – The Historic Dimension of the Landscape in Cappadocia, Central Anatolia included in Appendix D for their location and distribution.)

Dovecotes are carved out of the rock covering areas of over 100 hectares.

Associated with the settlements are a network of tracks along the valleys (either along the streams in the valley bottoms or hewn out of the tufa along the flanks of the cliffs, following the clefts and irregularities in the rock) connecting these churches, monasteries, etc. and separate dwelling units to each other and to other sources (i.e water), and to the fields (i.e. vineyards, fruit and vegetable gardens) outside the settlements.

Most are along the streams in the valley bottoms, but some are hewn out of tufa along the cliffs. Many are irregular in form and are complemented by an extensive network of irregular footpaths.

<b>TYPE</b>	<b>Tot. Type in region(regional level or territorial level)</b>	<b>Tot. type in Cul.LCA area</b>	<b>Ha./site in Cul.LCA area</b>	<b>% of Type in Cul.LCA area</b>
<b>Total Sites</b>	191	47	34	25%
rock-hewn settlement (incl. underground tunnels between spaces)	6	2	802	33%
hermits' cell	3	2	802	67%
rock-hewn church	30	26	62	87%
chapel	1	1	1.605	100%
refectory	2	2	802	100%
masonry-built church	5	2	802	40%
necropol (rock-hewn)	1	1	1.605	100%
dovecotes	5 (loc.)	over 1000* 1 (loc.)	1.605	20%
enclosure boundaries (dry-stone walls)	64	10	160	16%

(\*) the number of the dovecotes was impossible to calculate at this stage of the research, and it is only observed at one location in the Cul.LCA type (no.10b) between the settlements of Yukarı Soğanlı and Aşağı Soğanlı – as a result it has been added to the total number as a single site.

**1.3 Similar types and distinguishing criteria:** This type (apart from its morphological and geological differences) is distinguished from other Significant Areas of Natural Vegetation Cul.LCA types by its concentration of rock-hewn churches and other ecclesiastical structures dating from the early Christian/Byzantine Period. This type was identified using the landform data produced from the topographic and/or base mapping 1:25.000 series.

1.4 **Rarity: U-shaped Valley with Significant Areas of Natural Vegetation** covers 13% of Soğanlı.

1.5 Landscape sensitivities:

- visitor pressure;

The cultural and natural qualities within these Cul.LCA type have resulted in high number of visitors (10.000 persons per month in the peak season (June-September) – interview no.9), particularly on Büyükkol Dere and Ballık Dere valleys.

- inappropriate use and/or alteration of rock-hewn churches for new uses i.e. storage, dovecotes, etc. (interview nos.1, 6 and 17).

- potential new-built development in neighbouring Cul.LCA types (UV\_s no.13a) which would have an intrusive effect and compromise the integrity of the landscape character;

- wildlife interest of whole basin may be compromised by any drainage and/or reduction of water levels within the main valleys.

**STRATEGIES AND GUIDANCE**

- *Undertake survey.* With few exceptions (Jerphanion, 1925-42; Thierry, 1961, 1983-84; Giovannini, 1971; Hild & Restle, 1981; Ousterhout, 2005 - but most of them concentrated their work in the area between Göreme, Uçhisar and Zelve) Soğanlı region has not undergone a systematic programme of research to identify its archaeological components.

The reasons for this previous limited research are associated with the visibility of the evidence, much of which remains eroded due to the nature of the material itself, the types of activity carried out on the Cul.LCA type, issues concerning access and a lack of resources.

One primary consequence of this lack of information is that the historic environment is often under-represented in both strategic and local decision-making. On rare occasions when survey work has been undertaken, for example in parts of the İğdeağıl Dere valley, the number of known sites and structures has been increased.

Further systematic research and survey are therefore required in order to understand more fully the archaeological potential represented within this (and similar) Cul.LCA type(s).

In particular assessments are needed to quantify and qualify the rock-hewn churches or other monastic structures within the valleys (especially in the Mavrucan valley), surviving boundaries and historic routeways and particular patterns of interrelationships of these elements to each other.

This information can then be used to guide future management proposals and appropriate conservation measures and to target scarce resources.

- *Conserve* the field enclosures, rock-hewn churches, and other ecclesiastical structures, settlements and trackways that connect them to each other and to the fields outside the settlements.

The enclosure boundaries (drystone walls, many of which date from the late 18th cent. onwards, although earlier earth and stone banks, boundary ditches and drainage dykes are also in evidence), trackways and isolated rock-hewn churches, settlements is a distinctive characteristic of the U-Shaped Valley with Significant Areas of Natural Vegetation landscape, both providing time-depth and historic variation – priority should be to those features according to their period, rarity, documentation, group value, condition,

vulnerability, diversity and potential.

Where stabilisation and/or restoration is not feasible the base courses and foundation stones of enclosure walls should be maintained as evidence of former activity.

- *Conserve* the evidence of relict occupation and land use. U-Shaped Valley with Significant Areas of Natural Vegetation Cul.LCA type contains the best-preserved evidence for Early Christian/ Byzantine settlement, ritual use and land management in the region.

Priority will be given to the preservation of these characteristic attributes of U-Shaped Valley with Significant Areas of Natural Vegetation landscape.

There are limited measures that could be taken to protect, enhance or conserve this Cul.LCA type as natural forces remain the biggest influence both in its creation and in its destruction.

*Avoid* development or changes in land management regimes that have a significant effect upon the surviving areas of rock-hewn settlements. All such proposals should be informed by an appropriate impact assessment that pays specific regard to the (time-depth/ archaeological) potential of the type.

- Respect historic/local building tradition in any proposals for settlement expansion.

The proximity of this landscape to the settlements make particular areas (UV\_nat no.10b) within the **U-Shaped Valley with Significant Areas of Natural Vegetation** Cul.LCA type an attractive landscape on which to site new housing development. This, however, can be visually intrusive, and any new development should be confined to areas of this landscape where more varied topography offers some opportunity for screening. The strong visual relationship between the settlements and the valley is an important characteristic of this Cul.LCA type.

Any developments proposed in these visually sensitive areas should adopt the local pattern of building distribution and, ideally, should restore traditional buildings, if available.

Any expansion of nucleated settlements should be done with respect to the existing form of the settlement and to the historic/local building tradition.

- Much of this Cul.LCA type falls within the mixed (archaeological and natural) ‘*site*’ and other nature conservation designations, and is subject to the requirements of the Protection of Cultural and Natural Property Act No.2863, and its supplementary regulations.

Attention should be given to emphasising the historic dimension to such designated areas, either directly or indirectly, and to ensuring that it is considered alongside the ‘primary’ natural attributes.

- Those areas not protected (through national legislation) should be assessed for their possible inclusion as nature and/or cultural conservation/protection areas.

- The grassland and herbaceous vegetation type are important potential reservoirs of archaeological information and as such any proposed changes to them and their extent should be fully discussed with the regional conservation councils.

- *Avoid* over-expansion of visitor amenities.

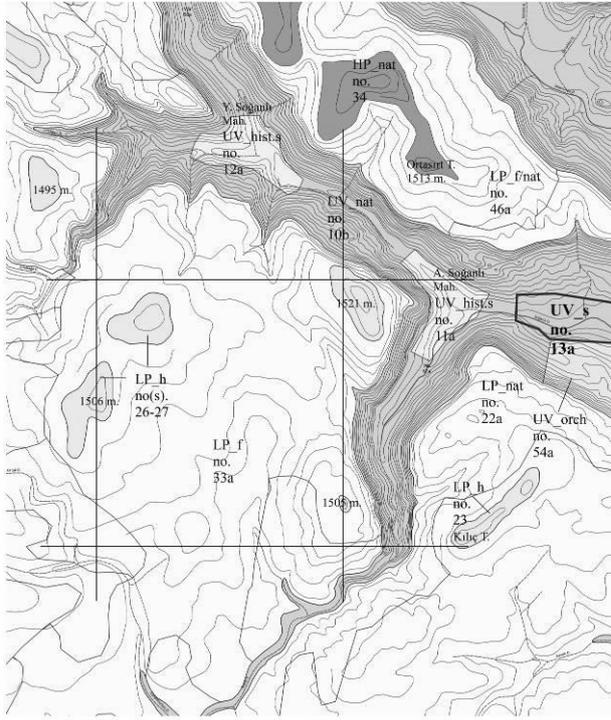
- *Monitor* environmental impact of visitor use, particularly erosion, and adopt informal

visitor management where necessary.

The Cul.LCA type is very popular for tourists, as it inhabits a high concentration of rock-hewn churches, and other ecclesiastical structures, settlements and trackways that connect them on the Soğanlı Dere valley to the very scenic but more inaccessible valleys of the Buyukkol Dere, Tahtalı Dere and Ballık Dere valleys. Care should be taken to maintain a low level of visitor service provision, i.e. in terms of basic amenities. Footpath erosion should be monitored carefully, and some informal management of visitors may be required, perhaps in conjunction with site interpretation.

- *Enhance* interpretation. The role of humans in the creation and management of the valley (landscape) is not well appreciated. Opportunities for increased and improved interpretation, and the appropriate extension of access, should be taken whilst at the same time deflecting visitors from sensitive historic attributes.

## Type 9: U-Shaped Valley with Settlement



### GENERAL DESCRIPTION

The **U-Shaped Valley with Settlement** Cul. LCA type includes the pre-fabric housing area located west of Aşağı Soğanlı.

It was built-up temporarily as a consequence of A. Soğanlı and Y. Soğanlı settlements declared as 'disaster area' (rock falls) according to the Act no.7269 in 1995 - but still inhabited by the locals due to economic factors (most of the residents do not have the economic resources to build new houses on the lands that have been allocated for re-settlement by the local government interview nos.2-3).

Some form of new-built development exists in the north part of the Cul.LCA type (which was previously included in the conservation area boundaries – but was excluded with the Kayseri Regional Conservation Council's Decision No.1839 in 1995).

It is of modest size, however, the positioning, mass, and materials used does not reflect the local/historic building tradition and forms.

The Cul.LCA type is also likely to be the focus for further development and it is, therefore, generally subject to change and expansion.

#### 1.1 Key characteristics:

- broad U-shaped valley;
- low lying basins (approx. below 50m.) associated with inland water courses/bodies often appearing as (seasonal dry/wet) streams in the landscape showing topographic enclosure;
- predominantly residential land-uses, situated within the valley sides;
- pre-fabric structures;

- focus for further development and it is, therefore, generally subject to change and expansion.

1.2 Historical and archaeological components:

Evidence for time-depth in the present day landscape is limited. There is likely that ecclesiastical structures and/or other features associated with the historic settlements (i.e. roads/tracks from previous periods) may be present, for example, in the adjoining Cul.LCA type UV\_orch no.54a south to the pre-fabric houses.

The hermits' cell (now used as a dwelling illegally/without consent) is an indication of reason for further field survey in the area.

TYPE	Tot. Type in region(regional level or territorial level)	Tot. type in Cul.LCA area	Ha./site in Cul.LCA area	% of Type in Cul.LCA area
<b>Total Sites</b>	191	1	12	(na)
Hermits' cell	3	1	12	33%

1.3 Similar types and distinguishing criteria: The only similar type is **U-Shape Valley with Settlement – pre-20th cent.** Cul.LCA type. These types are distinguished by their presence or absence of evidence of time-depth in the present-day landscape.

1.4 Rarity: **U-Shaped Valley with Settlement** covers 0.1% of Soğanlı.

1.5 Landscape sensitivities:

- The effect of expansion of (new-built) development into neighbouring U-Shaped Valley with Significant Areas of Natural Vegetation (UV\_nat no.10b), particularly elevated sites where visual impact is likely to be considered.

**STRATEGIES AND GUIDANCE**

- *Protect* the landscape views to and from the neighbouring Cul.LCA types (UV\_nat no.10b, UV\_orch no.54a and UV\_hist.s no.11a).

The valley and the rock-hewn settlements within the U-Shaped Valley Cul.LCA types are an essential part of the of the regions character. It must be protected from the interference by buildings on higher ground in this Cul.LCA type or from the development of inappropriately (large and/or high) buildings in or around Aşağı Soğanlı settlement. Clear limits should be established for the potential re-settlement of Yukarı and Aşağı Soğanlı settlements, these should ideally restrict further expansion to the south and south-west which might otherwise effect the integrity of the valley and the orchards beyond the valley basin to the south. Development to the north should be maintained at a low scattered density and continuous linear expansion along the Soğanlı Dere to Aşağı Soğanlı settlement should be prevented.

The orchards to the south constitutes an appropriate limit to development south of the Cul.LCA type (UV\_s no.54a), this and other established limits should be reinforced either through conservation area boundaries, or other related policies within the development plans.

- *Establish* (housing) design guidance for new-built development.



and (tufa) rock faces of the valley with later-period (post-18<sup>th</sup> cent.) settlements at the lower altitudes of masonry built structures. Settlements tends to be sited along the major stream valleys of the Soğanlı Dere and Mavrucan Dere.

Landform have also influenced sitting, with the scarp slopes being an obvious barrier. The layout of the settlements (position of the building, etc.), the concentration of the enclosures outside the settlements and tracks connecting these, indicate a mixed farm economy where arable agriculture was widespread.

Over 50% of the listed buildings and/or sites in Soğanlı (Yeşilhisar) fall within the **U-Shaped Valley with Settlement – pre 20th cent. (Early Christian/Byzantine)** Cul.CLA type areas (96 out of a total of 191 listed buildings and/or sites).

#### 1.1 Key characteristics:

- broad U-shaped valley
- low lying basins (approx. below 50m.) associated with inland water bodies often appearing as (seasonal dry/wet) streams in the landscape showing topographic enclosure;
  
- predominantly residential land-uses, often situated within valley sides;
- masonry-built structures;
- high concentration of rock-hewn settlements associated with the churches and other ecclesiastical complexes dating from the Early Christian/Byzantine Period on the valley walls;
- small-scale field enclosures;
- mobile landscape – many major changes, often due to human influence, since 4<sup>th</sup> cent. BC

#### 1.2 Historical and archaeological components:

The historical components of the **U-Shaped Valley with Settlement – pre 20th cent (Early Christian/Byzantine)** Cul.LCA type include the present-day settlement layout and its relationship with the well preserved remains of rock-hewn settlements dating from the Early Christian/Byzantine Period within the scarp slopes of the valley.

The majority of the extant buildings are post-18<sup>th</sup> cent. or modern in date, with the notable exception of the rock-hewn churches, hermits cells and other ecclesiastical structures (within certain localities), but the type still remains a diversity of function, materials, and form.

However, preservation of such sites is severely compromised by the fact that erosion is a continuing process and has to take place with its own pace. This highlight the importance of the remaining areas of settlements, both in this **U-Shaped Valley with Settlement – pre 20th cent (Early Christian/Byzantine)** and in the other **U-Shaped Valley** Cul.LCA types where erosion of the ignimbrites are still at accelerating rates.

In addition **U-Shaped Valley with Settlement – pre 20th cent (Early Christian/Byzantine)** Cul.LCA type may contain evidence for roads and tracks belonging to the Early Christian/Byzantine and Roman Period(s).

<b>TYPE</b>	<b>Tot. Type in region(regional level or territorial level)</b>	<b>Tot. type in Cul.LCA area</b>	<b>Ha./site in Cul.LCA area</b>	<b>% of Type in Cul.LCA area</b>
<b>Total Sites</b>	191	96	0,7	50%
Rock-hewn settlement	6	4	18	67%
Later period settlement (majority of the houses are masonry built)	4	4	18	100%
Rock-hewn church	30	4	18	13%
Masonry-built church	5	3	25	60%
Mixed (mb and rc) church	1	1	74	100%
School (masonry built – 1913)	1	1	74	100%
Masonry-built dwellings	63	63	1	100%
Dovecotes	5	4 (loc.)	18	80%
Enclosure boundaries (dry-stone walls)	64	12	6	19%

1.3 Similar types and distinguishing criteria: The only similar type is **U-Shape Valley with Settlement** Cul.LCA type. These types are distinguished by their presence or absence of evidence of time-depth in the present-day landscape.

The type has been identified using the topographic and/or base mapping produced by the HGK and Appendix C. Inventory of Archaeological Remains, Monuments and Sites (see pp.277-295) – prepared to a considerable extent from the inventory of monuments and LBs and (recent and past) surveys of researcher on history, archaeology, etc. within the area. The territorial and site level field survey results undertaken in August 2014 were also incorporated to the study.

1.4 Rarity: **U-Shaped Valley with Settlement – pre 20th cent (Early Christian/Byzantine)** accounts for 0.3% of Soğanlı.

1.5 Landscape sensitivities:

- visitor pressure;
- de-population;
- abandonment of property and/or inappropriate use of or alteration of masonry-built structures (post-18<sup>th</sup> cent.) for new uses (i.e. storage, etc.).

A.Soğanlı and Y.Soğanlı settlements were declared as ‘disaster area’ – due to rock falls – according to Act no.7269 in 1995. It was abandoned – and most of its residents were re-

located to the pre-fabric houses west of A.Soğanlı. While some of the residents continued to stay in these new houses some moved to Yeşilhisar or Kayseri to live with their relatives. The settlements still continue a certain amount of de-population. This, however, is not just the result of the settlement policies of the local government – but also due to limited employment opportunities (interview nos.10-12).

#### STRATEGIES AND GUIDANCE

Guidance on **U-Shaped Valley with Settlement – pre 20th cent (Early Christian/Byzantine)** has been broken down into three (interrelated) parts. These comprise historic buildings and structures, archaeology and the general historic character of settlements.

More detail on each of these components of the historic environment should be included in the strategies developed resulting from the site level survey at each of the settlements included in the Cul. LCA type. The following guidance based on the field survey in Yukarı Soğanlı settlement (UV\_hist.s no.12a) at the site level carried out in Aug. 2014 provides only a framework for future study within the area.

*Historic buildings and structures.* A large proportion of the key historic buildings and structures located within the **U-Shaped Valley with Settlement – pre 20th cent (Early Christian/Byzantine)** Cul.LCA type is listed or within conservation areas, and therefore subject to additional protection through the Protection of Cultural and Natural Resources Act No.2863. Proposals that effect either listed structures or those within conservation areas should be accompanied by an appropriately detailed assessment of the impact of those proposals upon the historic interest of the structure. i.e. Heritage Impact Assessment (HIA) – in line with the ICOMOS Guidelines on HIAs for cultural properties.

Considerations should also be given to identifying locally important historic structures and buildings (through the listed buildings, or identification in conservation plans, Site/Local Design Guidance or Strategies) in order that individual sites of local significance can be properly assessed as a part of proposals for change. The post-18<sup>th</sup>. cent masonry-built structures in Yukarı Soğanlı settlement are particularly of interest here – as there is a decision by the Kayseri Regional Conservation Council giving consent for their demolition stating that “... *considering the characteristics of the region/area, the process of demolition should be done without use of heavy construction equipment under the supervision of the Directorate of the [Kasyseri] Museum ..... the debris and similar construction waste to be removed from the site without damage .....*”. (Kayseri Regional Conservation Council Decision No.1455, 27.08.2009).

*Archaeology.* The **U-Shaped Valley with Settlement – pre 20th cent (Early Christian/Byzantine)**, contain the most significant archaeological components of the settlement Cul.LCA types. Such significance is the result of the concentration of human activity, increased evidence of time-depth, greater varieties of activities and a greater range of social types, roles and functions. Evidence within the type will take the form of both an earlier settlement activity and its predecessor. Given that most historic settlements still corresponds with the modern/late period, it is also a type within which there is a considerable rate of development, although not on a large scale. Such dynamism, through

modern service, etc. activities, has the potential for significant detrimental impact upon archaeological remains. Recommendations for mitigation can be broken down into the following management areas:

- monuments. This included any monuments that is included in the SMI as defined in the Protection of Cultural and Natural Properties Act No.2863. Responsibility for these rests with the General Directorate of Cultural Resources and Museums within the MoCT.

Monuments are of national importance, and the Act No.2863 and its Supplementary Regulations No.660 – Classification, Maintenance and Restoration of Immovable Cultural Resources (*Taşınmaz Kültür Varlıklarının Gruplandırılması, Bakım ve Onarımları*) presumption is in favour of preservation *in situ*.

- areas of archaeological potential. This includes areas of the historic settlement. Development proposals within this area will be treated in accordance with the Protection of Cultural and Natural Resources Act No.2863 and its supplementary regulation no.658 – Archaeological Sites’, Protection and Use Principles, using the Cul.LCA at the site level as the basis for the archaeological appraisal of the site and recommendations made as a result.

*The General Historic Character of Settlements.* The settlements in Soğanlı (Yeşilhisar) are a unique, distinct and irreplaceable asset representing local variety (of material, scale, forms and function) given the visible time-depth apparent in the Cul.LCA type. The need for change within settlements is both desirable and necessary – indeed the diverse character of the historic environment is the product of such change in the past. Government policies and approaches to regional and local development, will result in increased pressure for change within these areas. But such change should take place in the context of the historic environment in order to maintain historic character.

In order to maintain and enhance the distinctive historic character of Soğanlı settlements, development and other proposals for change should have due regard to the historic dimension of:

- local distinctiveness,
- the layout and scale of buildings,
- the quality and character of the built fabric, and
- historic patterns and attributes of the landscape.

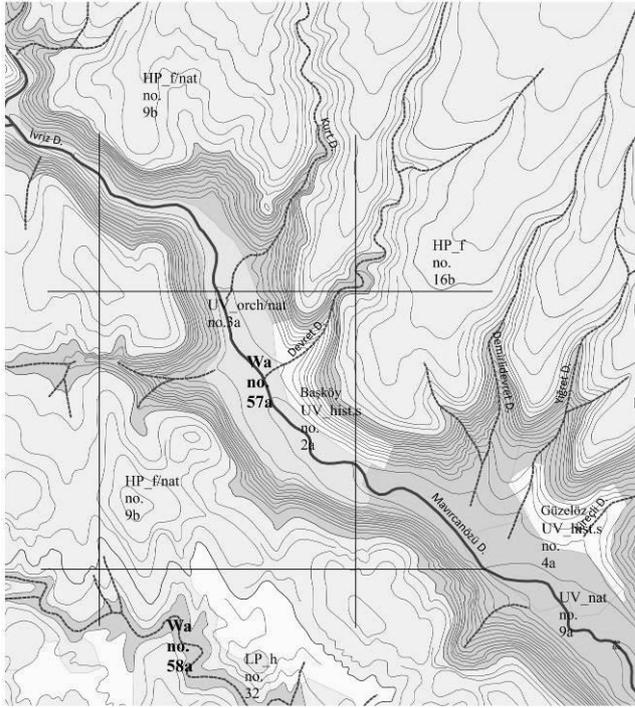
In order to do so proposals should acknowledge and respect the following broad principles:

- Soğanlı has a locally distinct cultural landscape. This is the product of the layout and scale of buildings, use of material and the (seeming irregularity of) trackways that connect them to each other and the enclosed land outside these settlements.
- Cultural landscape is important: it gives people and places an identity and a significance. It gives localities their distinctive character and marks their individuality. It enhances quality of life and provides a sense of belonging.

- Change is inevitable, but needs to be managed in order to preserve that which is valued.
- Proposals for change on a landscape scale should include an assessment of the existing (historic) character of an area and its surroundings, and an assessment of the impact of proposals upon such character. A strategic framework for this assessment should be in place through the region-wide historic settlements survey carried out by the local authorities (i.e. Kayseri Regional Conservation Council) in partnership with experts from the MoCT, MoEP and related departments from the universities. More detailed local studies, such as HIA in accordance with the ICOMOS Guidelines on HIAs for cultural properties, may also be prepared.

More specific guidance within the **U-Shaped Valley with Settlement – pre 20th cent (Early Christian/Byzantine Cul.LCA** type relates to the preservation and enhancement of key attributes of local historic distinctiveness, in particularly the settlement pattern, buildings and use of materials. Given the visible time-depth apparent in this Cul.LCA these will almost certainly include both local variety (of materials, scale, forms and functions) and seeming irregularity of enclosures and the tracks that connect them to the settlements.

## Type 11: Water Bodies and Associated Areas (including marshland and/or swamps)



### GENERAL DESCRIPTION

Water is an important feature in the formation of the landscape as it is today and it has influenced, and continues to influence the physical form of the land. The hydrographic structure of Soğanlı comprises two main drainage basins: to the north the Mavrucan Dere basin and to the north-east the basin of the Soğanlı Dere.

The Soğanlı Dere basin is drained on the south by Ballık Dere and a small number of other streams, the most of which are in the area between Karadağ, Kızıltepe and Efeğılı Mevki. The valleys on the north-east, however, have a much more elaborate drainage system, due to the lithological and structural characteristic of the rock. Among the numerous tributaries on this bank the most important are the Büyükkol Dere, flowing down to Yukarı Soğanlı settlement (UV\_hist.s no.12a) and the Tahtalı Dere, coming from the Kızıl Tepe massif near Derinkuyu.

The Mavrucan Dere drains an area of some 1.427 hectares which flows past Güzelöz and Başköy and is fed by various streams coming down from HP\_nat and HP\_f/nat Cul.LCA types on the northern part of the study area.

The tributaries of these two main streams whose flow is regulated by seasonal variations in rainfall and other precipitations and this factor, combined with the lithological characteristics of the rock (mainly pyroclastic deposits), has led to a high rate of erosion and transport of material, producing considerable deposits of detritus and a progressive deepening of the valleys.

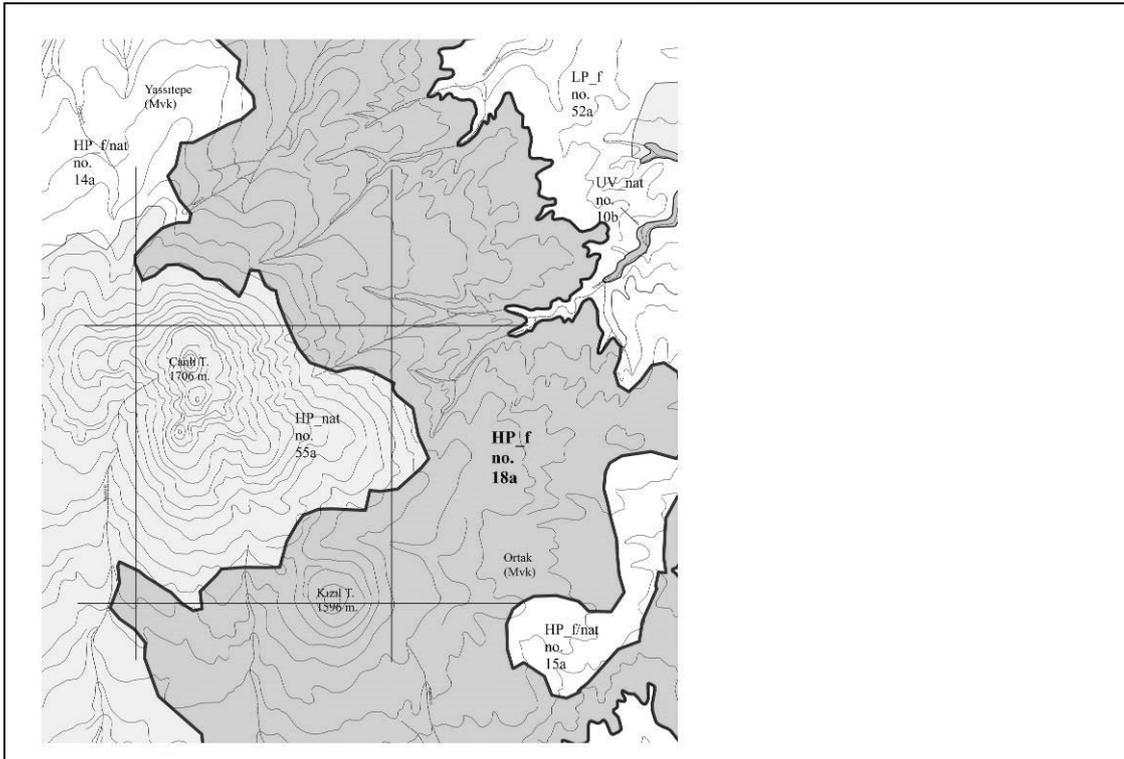
<p>Farmland Cul. LCA types associated with the catchment areas of these streams, supported the human occupation within the valleys since the Early Christian/Byzantine Period. – are a key feature of the water type.</p> <p>These associated landscapes encompass mainly <b>U-Shaped Valley with Significant Areas of Natural Vegetation</b> and <b>U-Shaped Valley Farmland (Orchards)</b> Cul. landscape character types as well as <b>U-Shaped Valley with Settlement - pre-20<sup>th</sup> cent. (Early Christian/Byzantine)</b></p>
<p>1.1 <u>Key characteristics</u>:</p> <ul style="list-style-type: none"> <li>- landscape dominated by bodies of water and associated areas (including marshland and swamps) often appearing as (seasonal dry/wet) streams showing topographic enclosure.;</li> <li>- streams (seasonal dry/wet);</li> <li>- irregular pattern of field enclosures along the main streams;</li> <li>- strong visual relationship with the (above) U-Shaped Valley with Significant Areas of Natural Vegetation and U-Shaped Valley with Settlement-pre 20<sup>th</sup> cent. (Early Christian/Byzantine) Cul.LCA type(s) where there is high concentration of Early Christian/Byzantine Period rock-hewn churches and other ecclesiastical complexes (i.e. monasteries, etc.) which can be observed along the main streams within the valleys.</li> </ul>
<p>1.2 <u>Historical and archaeological components</u>: Visible components in the Cul.LCA type relate mainly to the man-made features and include enclosure boundaries (i.e dry stone walls).</p> <p>They are mainly found along the Büyükkol Dere and Tahtalı Dere.</p>
<p>1.3 <u>Similar types and distinguishing criteria</u>: There are no similar types, but there is considerable interaction with the <b>U-Shaped Valley with Significant Areas of Natural Vegetation</b> and <b>U-Shaped Valley Farmland (Orchards)</b> Cul. LCA types as well as <b>U-Shaped Valley with Settlement - pre-20<sup>th</sup> cent. (Early Christian/Byzantine)</b>.</p> <p>The type has been identified using the current 1:25.000 topographic and/or base mapping symbol for water bodies (i.e. stream, dry stream, etc.)</p>
<p>1.4 <u>Rarity</u>: <b>Water Water Bodies and Associated Areas (including marshland and/or swamps)</b> covers 1% of Soğanlı.</p>
<p>1.5 <u>Landscape sensitivities</u>:</p> <ul style="list-style-type: none"> <li>- Drainage and reduction of (underground) water levels within the main valleys (from the surrounding settlements – i.e Derinkuyu (interview nos.2-3)</li> </ul>
<p><b>STRATEGIES AND GUIDANCE</b></p> <ul style="list-style-type: none"> <li>- <i>Conserve</i> water and water-edge features. These areas are the most sensitive to change (i.e through drainage operations, infilling or alterations to the hydrographic structure of the region) and contain the greatest concentration of features of natural interest.</li> </ul> <p>Improved management through water corridor survey, establishment of good practice guidance and monitoring should be carried out in partnership with the related nature conservation departments within the MoEP.</p>

For projected new schemes that would fall into this Cul.LCA type (especially in the Mavrucan Dere valley --- although similar to Soğanlı Dere valley has no legal protection within the current legal system concerning the protection of cultural and natural resources – and as a result vulnerable to incompatible new development), such as reservoir constructions, etc., early consultation with the Kayseri Regional Conservation Council or the Kayseri Museum will be required to formulate strategies that will reduce the possible negative effects of new development.

- *Maintain and Restore* (underground) water levels. The maintenance of high water levels and alluvial deposits are all considered to be priority measures for implementation.

- *Maintain* dry-stone wall boundaries. In this Cul.LCA type, field boundaries are important features in the landscape. The nature of the landform and the instability of the alluvial soils makes them valuable in both visual and practical terms. Dry-stone walls should, therefore, be maintained to preserve soil stability, visual and cultural interest.

## Type 12: High Plain Farmland



### GENERAL DESCRIPTION

The **High Plain Farmland** Cul.LCA type covers 20% of Soğanlı (2.456 hectares) and accounts for 47 % of all enclosed land in the region. The distribution of the type coincides with that of regosol soils. It is rarely found on typical brown podzolic soils.

The **High Plain Farmland** type comprises a variety of field forms. Size tends to be large (over 6 hectares) but with a significant percentage of medium enclosures.

The majority of the type has a regular, planned pattern. This is a reflection of the widespread planned enclosure in the 1990s, rather than the piecemeal private enclosure of land more prevalent in other parts of Soğanlı such as the enclosed land seen in **U-Shape Valley Farmland (Orchard)** and **U-Shaped Valley with Significant Areas of Natural Vegetation** Cul.LCA type in Soğanlı and Mavrucan Valley(s).

Water-filled ditches bound most of enclosed land in the type. These mainly occur in north-east Güzelöz and in the eastern slopes of Çanlı Tepe.

#### 1.1 Key characteristics:

- relatively high (up to 1650 m.) topography;
- generally flat relief with an open character, except in the eastern slopes of Çanlı Tepe (HP\_f no.18a) where the relief is much stronger;
- farmland, occasionally intensively farmed for marketing (i.e. wheat, barley, oat, bean and potato – interview nos.2-3);
- grazing.

1.2 Historical and archaeological components: Evidence for time depth in the present day landscape is limited. An impression of the former existence of habitation is identifiable

within the eastern slopes of Kızııl Tepe (HP\_f no.18a).

Kızııltepe tumulus located 1 km south-east from the other 3 tumuli at Çanlı Tepe is composed of rubble stone and earth.

This landscape also has the potential to contain much earlier evidence for time-depth, particularly of the Pre-Historic and Roman Period(s)- but further research into the earliest origins of regions' settlement patterns is necessary to understand local processes of continuity and survival (especially west of the study area surrounding Çanlı Tepe and Kızııl Tepe).

TYPE	Tot. Type in region(regional level or territorial level)	Tot. type in Cul.LCA area	Ha./site in Cul.LCA area	% of Type in Cul.LCA area
<b>Total Sites</b>	191	1	2.456	(na)
Tumulus (mix. - rubble stone walls and earth)	5	1	2.456	20%

1.3 Similar types and distinguishing criteria: The relatively higher reliefs of the Cul.LCA type and continuity of enclosures of the landscape distinguish this type from the **Low Plain Farmland** and **High Plain Farmland with Significant Areas of Natural Vegetation** Cul.LCA type(s).

The type was identified using the LANDMAP data. Aerial photographs of the region, flown in 06/2010 were referred to cross check the extent and shape of enclosures.

1.4 Rarity: **High Plain Farmland** covers 20% of Soğanlı.

1.5 Landscape sensitivities:

- The relatively flat and accessible/open nature of this Cul.LCA type may encourage proposals for large scale developments - i.e. industrial, housing, etc.

#### STRATEGIES AND GUIDANCE

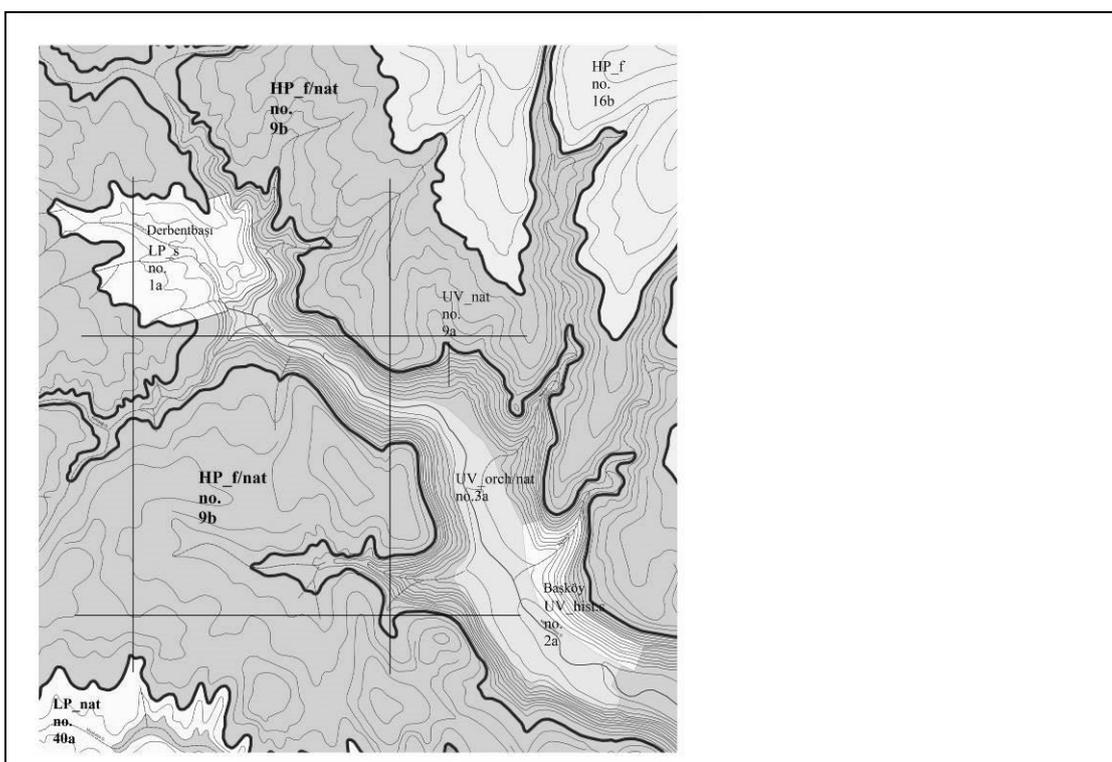
- *Control* development. All development would be obtrusive in this landscape, particularly on the eastern slopes of Çanlı Tepe (HP\_f no. 18a). It is recommended, therefore, that new development is carefully controlled in these landscapes, particularly with regard to massing, design quality and the treatment of highly visible peripheral areas.

- *Undertake survey*.

Conduct more research into the archaeology of this Cul.LCA type and its distribution within the region.

- *Protect* and *enhance* known archaeological sites and structures through the Act No. 2863 and its supplementary regulations, and ensure that the potential for new sites is taken into consideration in the preparation of the Regional and/or Local Development Plans.

### Type 13: High Plain Farmland with Significant Areas of Natural (Grassland and Scrub/Herbaceous) Vegetation



#### GENERAL DESCRIPTION

The **High Plain Farmland with Significant Areas of Natural (Grassland and Scrub/Herbaceous) Vegetation** Cul.LCA type covers 14% of Soğanlı (1.650 hectares). The distribution of the type coincides with that of regosol soils found on two distinct areas east of Çanlı Tepe and on the north and south-west of the Mavrucan Valley. The topography is undulating, reaching maximum heights of about 1600 m. The Cul.LCA type lacks strong topographic features and is composed of a homogenous mixture of gently undulating slopes, ridges and depressions which create natural enclosures in the relatively lower attitudes (HP\_f/nat no.9b).

The **High Plain Farmland with Significant Areas of Natural Vegetation** type comprises a variety of field forms. Size tends to be large (over 6 hectares) but with a significant percentage of medium enclosures.

Majority of the farmland do not have enclosure boundaries.

In the north of Mavrucan Valley and west Başköy today the type is mostly retained as arable farmland, occasionally intensively farmed for marketing (i.e. wheat, barley, oat, bean and potato). Much of the remainder is down to pasture.

An important characteristics of this landscape type is that it is closely related to the U-Shaped Valley with Settlement – pre-20<sup>th</sup> cent (Early Christian/Byzantine) Cul.LCA type, with views from higher vantage points being strongly influenced by the surrounding expanse of settlements.

#### 1.1 Key characteristics:

- undulating topography up to 1600 m;

- generally weak relief with an open character, except in deeper depressions (i.e. east parts of HP\_f/nat no.9b) where there is local enclosure;  
 - strong visual relationship with the (below) **U-Shaped Valley with Settlement – pre-20<sup>th</sup> cent.** Cul.LCA type (UV\_hist.s nos. 2a and 4a) from highest altitudes.

1.2 Historical and archaeological components:

None. There is likely that significant subsurface archaeological features are present, for example, at the lower altitudes of HP\_f/nat no.15a. (east of Çanlı Tepe).

1.3 Similar types and distinguishing criteria: It is distinguished from the **High Plain Farmland** Cul. LCA type by its discontinuity of enclosures.

The type was identified using the LANDMAP data. Aerial photographs of the region, flown in 06/2010 were referred to cross check/verify the extent and shape of enclosures.

1.4 Rarity: **High Plain Farmland with Significant Areas of Natural Vegetation** covers 14% of Soğanlı.

1.5 Landscape sensitivities:

- (intensive) agriculture preventing opportunities for nature conservation and development of wildlife habitats;  
 - visual relationship with settlements sensitive to obtrusive development on higher ridges.

STRATEGIES AND GUIDANCE

- *Encourage* farm management to increase wildlife diversity, particularly through a relationship with topographic variety.

Agriculture is the main land-use in the **High Plain Farmland with Significant Areas of Scrub/Herbaceous Vegetation** Cul.LCA type and, consequently, the main opportunities for landscape conservation and/or enhancement are through agricultural management. Topographic variety creates a less open and exposed landscape with opportunities for wildlife habitat enhancement, particularly in deeper depressions of (relatively) lower ground or on steeper slopes.

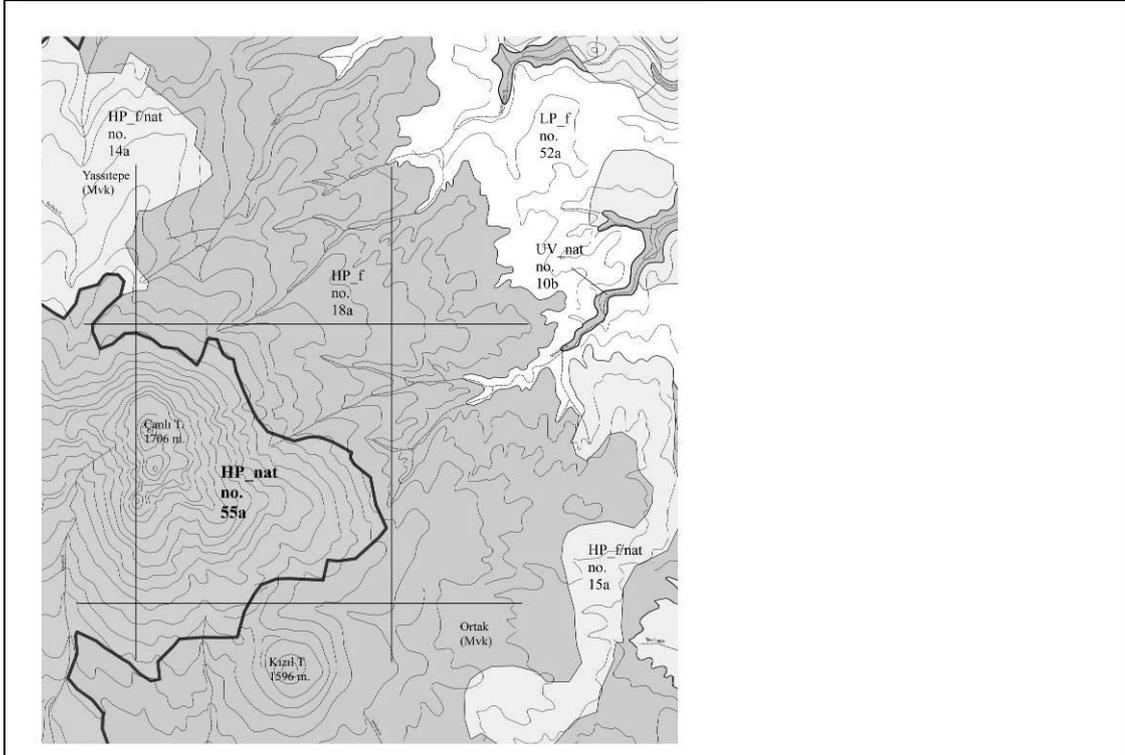
Topographic variations should be used to guide management for wildlife diversity and could include small scale planting in deeper depressions and the retention of wetland.

- *Respect* historic/local building tradition in any proposals for settlement expansion.

The proximity of this landscape to the settlements (i.e. Başköy UV\_hist.s no.2a) and its relatively elevated position make the particular areas (HP\_f/nat no.9b) within the **High Plain Farmland with Significant Areas of Scrub/Herbaceous Vegetation** Cul.LCA type an attractive landscape on which to site new housing development. This, however, can appear obtrusive, and any new development should be confined to areas of this landscape where more varied topography offers some opportunity for screening. The strong visual relationship with the settlements and the valley is an important characteristic of this Cul.LCA type.

Any developments proposed in these visually sensitive areas should adopt the local pattern of building distribution and, ideally, should restore traditional buildings, if available.

## Type 14: High Plain with Significant Areas of Natural (Grassland and Scrub/Herbaceous) Vegetation



### GENERAL DESCRIPTION

**High Plain with Significant Areas of Natural (Grassland and Scrub/Herbaceous) Vegetation** Cul.LCA type covers 6% of Soğanlı (719 hectares).

The distribution of the type coincides with that of regosol soils. It is rarely found on typical brown podzolic soils.

High Plain with Significant Areas of Natural Vegetation is a valuable habitat type with its associated flora and fauna and those Cul.LCA-defined areas in the present assessment include the grassland and shrub/herbaceous vegetation of Çanlı Tepe, Sünbüllükoyak Mevki to the south of Çanlı Tepe, area around Kara Tepe and Ortasirt Tepe north-east of Yukarı Soğanlı, area around west of Maskalya Dere, and Karakaya Tepe, north-east of Güzelöz.

#### 1.1 Key characteristics:

- undulating topography up to 1700 m;
- generally weak relief with an open character, except in higher altitudes (i.e. HP\_nat no.55a) where there is local enclosure;
- rough grassland and occasional scrub/herbaceous vegetation;
- strong visual relationship with the (below) U-Shaped Valley with Settlement-pre-20<sup>th</sup> cent. Cul.LCA type (UV\_hist.s no.12a -Yukarı Soğanlı Settlement) from highest altitudes.

#### 1.4 Historical and archaeological components:

Visible components in the Cul.LCA type relate mainly to the burial practices and include 3

tumuli on top of the Çanlı Tepe and 1 at the south-eastern slopes dating from the Roman Period.

This landscape type also has the potential to contain much earlier evidence for time-depth, particularly of the Pre-Historic and Roman Periods (see Map 4-d: ‘time-depth’ – The Historic Dimension of the Landscape in Cappadocia, Central Anatolia included in Appendix D), but further research into the earliest origins of the regions’ settlement patterns is necessary to understand the local processes of continuity and survival.

TYPE	Tot. Type in region(regional level or territorial level)	Tot. type in Cul.LCA area	Ha./site in Cul.LCA area	% of Type in Cul.LCA area
<b>Total Sites</b>	191	4	179	2%
Tumulus (mix. - rubble stone walls and earth)	5	4	179	80%

1.3 Similar types and distinguishing criteria: The relatively higher reliefs of the Cul.LCA type and the dominating vegetation cover of the landscape distinguish this type from the **High Plain Farmland** and **High Plain Farmland with Significant Areas of Natural Vegetation** Cul. LCA type(s).

The type was identified using the LANDMAP data.

1.4 Rarity: **High Plain with Significant Areas of Natural (Grassland and Scrub/Herbaceous) Vegetation** Cul.LCA type accounts for 6% of Soğanlı.

1.5 Landscape sensitivities:

- Possible intrusion of development within the neighbouring Cul.LCA types (HP\_f no. 18a).

#### STRATEGIES AND GUIDANCE

- *Undertake survey.*

Conduct more research into the archaeology of this Cul.LCA type and its distribution within the region.

- *Protect and enhance* known archaeological sites and structures through the Act No. 2863 and its supplementary regulations.

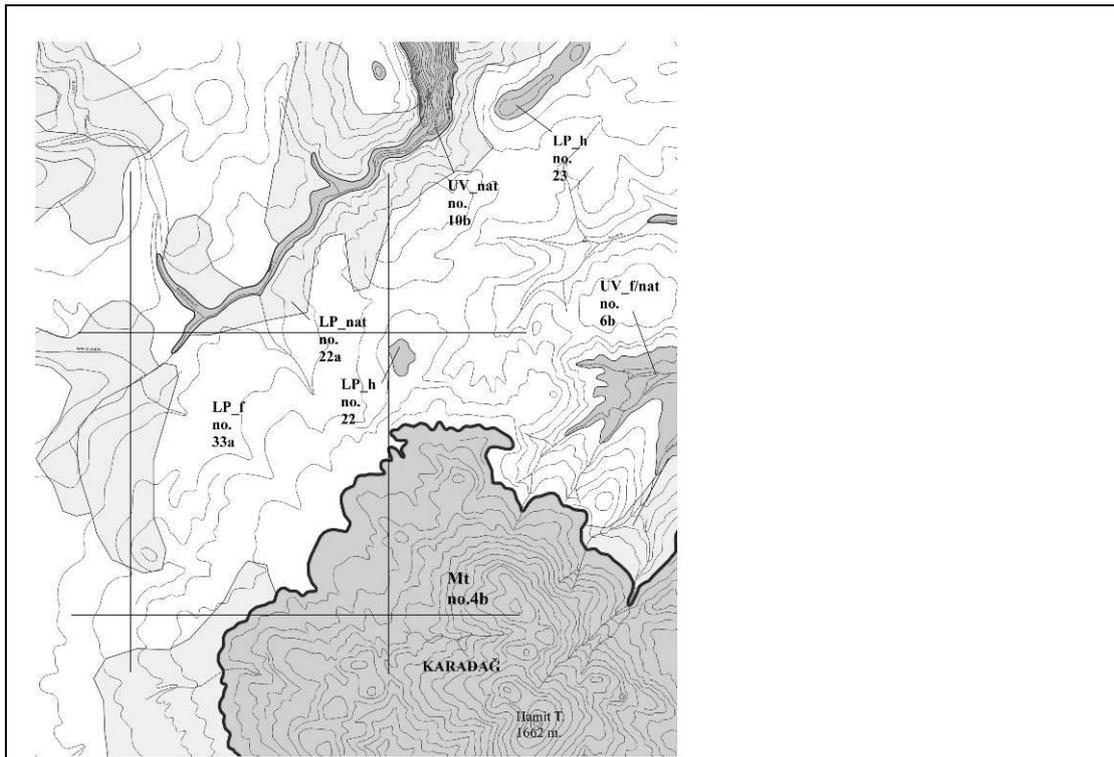
There have been reports (Kemal Kurd, Kayseri Regional Conservation Council (staff) – interview no.6) on the illegal excavations in the eastern slopes of Çanlı Tepe (HP\_nat no.55a) – these could be minimized by preventive measures including inventories, monitoring, imposition of penal or administrative sanctions and educational programmes (i.e. educational programmes to stimulate and develop respect for the cultural heritage within the region etc.).

- *Preserve* the natural character of the **High Plain with Significant Areas of Natural Vegetation** Cul.LCA type.

- *Avoid enclosure and (land) improvement.* Agricultural activities or any other changes in land management regimes could damage the wildlife interest and compromise the integrity of this landscape.

All such proposals should be informed by an appropriate impact assessment that pays specific regard to the natural character of the Cul.LCA type.

## Type 15: Low/Medium Mountain



### GENERAL DESCRIPTION

The **Low/Medium Mountain** Cul.LCA type covers 3% of Soğanlı (331 hectares). It is located on the south-east of Soğanlı, where the relief (which is higher than other Cul.LCA types) and the texture/colour of the rock (dark-coloured – characteristic of the rock type - Gabbro, see Map 6: Geological Map of Soğanlı District, Cappadocia included in Appendix D) create a distinctive landscape.

The mountain was probably named after this characteristic texture/colour of the rock ('*kara*' meaning 'black' and/or 'dark' in Turkish).

Mt. Karadağ is over 1550 meters in height, rising typically to over 1600 meters. Hamit Tepe, the highest point on Mt. Karadağ, is 1662 meters.

The slopes are steep.

The vegetation is grassland and shrub/herbaceous in character in the low elevations. There is no vegetation on the higher elevations.

The land is unenclosed and there are no settlements.

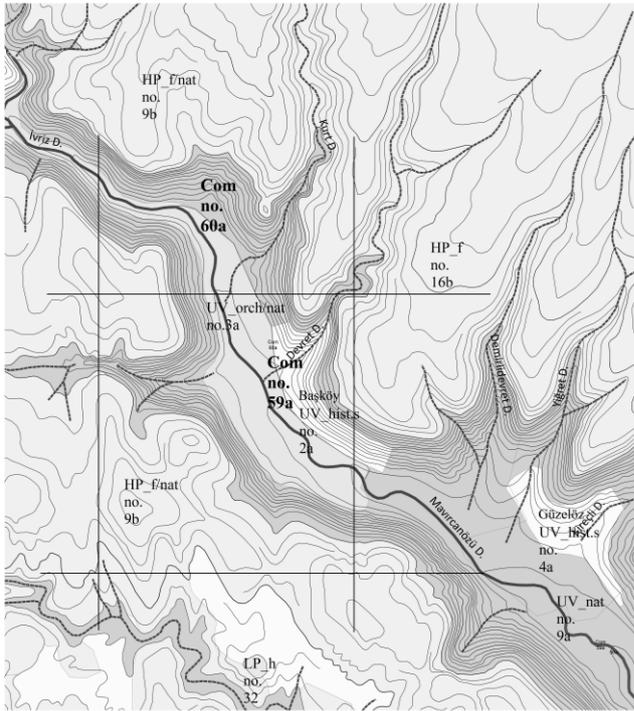
The distinguishing summit of Mt. Karadağ is visible from many other parts of the region, and it provides an elevated vantage point for long distance views across the region.

#### 1.1 Key characteristics:

- high (Hamit Tepe , 1662 m - the highest point on Mt.Karadağ) and generally steep topography;
- distinctive texture/colour of the rock (dark coloured);

<ul style="list-style-type: none"> <li>- grassland and shrub/herbaceous vegetation;</li> <li>- no settlement.</li> </ul>
<p>1.2 <u>Historical and archaeological components:</u> None. The type may include tracks and other features as well as sub-surface archaeological deposits belonging to the Pre-Historic period.</p>
<p>1.3 <u>Similar types and distinguishing criteria:</u> There are no similar types. The type was identified on the topographic and/or base mapping 1:25.000 series using the topographical contours. Further south the boundary between the southern slopes of Mt. Karadağ and Halaçkeleri Mevki has been taken as the limit of the study area.</p>
<p>1.4 <u>Rarity:</u> <b>Low/Medium Mountain</b> accounts for 3% of the Soğanlı area.</p>
<p>1.5 <u>Landscape sensitivities:</u> Possible effect of new-built development within the neighbouring Cul.LCA types (LP_f no. 33a).</p>
<p><b>STRATEGIES AND GUIDANCE</b></p> <ul style="list-style-type: none"> <li>- <i>Undertake survey.</i></li> <li>- <i>Avoid enclosure and land improvement.</i> Improvement and agricultural activities could damage the wildlife interest and compromise the integrity of this landscape.</li> <li>- <i>Preserve</i> the natural character of the <b>Medium/Low Mountain</b> Cul.LCA type. Much of this land is unsuitable and/or undesirable for development. However, development in the neighbouring Cul.LCA types (i.e. LP_f no.33a) also has a major effect on the visibility of the Mt. Karadağ.</li> </ul> <p>Any future development should be sited with regard to the visibility of the site from the surrounding landscapes. Also see development strategies and guidance for <b>Low Plain Farmland</b> and <b>Low Plain Hill</b> Cul.LCA types.</p>

## Type 16: Communications



### GENERAL DESCRIPTION

The **Communications** Cul.LCA type mainly comprises road features, junctions, cuttings and service areas.

#### 1.1 Key characteristics:

- road features, junctions, cuttings and service areas.

1.2 Historical and archaeological components: None. The scale and development associated with the construction of major communications infrastructure has resulted in the destruction of the visible components relating to earlier periods of human activity.

Of most intrinsic are the features associated with the neighbouring Cul.LCA types (i.e. pinnacles located on the side of the road, see Figure 3.17).

1.3 Similar types and distinguishing criteria: There are no similar types. The type was identified on the topographic and/or base map 1:25.000 series using the mapping symbol for roads.

1.4 Rarity: The **Communications** Cul.LCA type covers just below 1% of Soğanlı.

1.5 Landscape sensitivities: None.

### STRATEGIES AND GUIDANCE

- *Conserve* and *enhance* key features of the **Communications** Cul.LCA type, giving priority to those associated with the neighbouring Cul.LCA types. These have perhaps the most potential in terms of historic interest and time-depth.

## **CHAPTER 4**

### **APPLICATIONS OF CULTURAL LANDSCAPE CHARACTER ASSESSMENT IN PRACTICE**

The Cultural Landscape Character Assessment (Cul.LCA) method that has been developed and exemplified through a case study in Cappadocia (Turkey) in the previous chapter (Chapter 3) has a wide range of applications as it provides a comprehensive overview of the historic landscape. Its framework, offers a background understanding and a better informed starting point from which to consider strategies and planning policies. Cul.LCA should not be a stand-alone tool for advising on landscape conservation strategies and/or i.e. the identification of boundaries of ‘special’ areas of landscape. To be effective it needs to be used in conjunction with other datasets, such as the Sites and Monument Inventory (SMI) held by the MoCT. Cul.LCA provides a context for existing data. In the current situation the landscape as a whole is being overlooked as attention is confined to specific monuments and point data recorded in the SMI. Cul.LCA emphasises that the historic landscape has importance as a whole – the sum of all its parts – as well as being able to show how individual sites fit into their surroundings and the wider landscape.

However, it is not concerned to preserve the landscape unchanged, nor to return it to some past point in its evolution. The aim is not to determine how the landscape of the past is to be protected, or how it should be maintained or re-created. Instead Cul.LCA is about identifying the traces of the past within the current landscape, and recognising that essentially the landscape has its present character because of the changes it has undergone through time – i.e. the historic character of the current

landscape. The challenge, therefore, is to address how future change can sensitively respect historic character and diversity.

Considering the above defined principles of the Cul.LCA methodology, the following sections explores how this information and understanding can be used to inform a range of applications including:

- Spatial Planning** the role of Cul.LCA in work relating to the planning system including: planning policies, identifying areas (with potential) for new built development and design of new development as well as development control  
(i.e. input into guidelines for the cultural landscape capacity for change without undue loss of significance or erosion of character; assessment of impact of property on the ‘setting’ of individual landscape components, etc.).
  
- Landscape Conservation and Management** reviews the way how Cul.LCA can be used in relation to the development of landscape management strategies, working on particular designated areas, and in guiding major landscape change, i.e. arising from woodland expansion and/or agricultural change.

The chapter focusses on various possible applications of Cul.LCA methodology in Turkey. It begins with an overview of the range of applications for character assessment, their scope and potential. It then outlines, with case studies – based on the outcomes of the territorial and/or site level field surveys in the previous chapter (Chapter 3) - some of the applications in more detail.

## **4.1 Application of Cultural Landscape Character Assessment: an Overview**

Broadly, applications of character assessment fall into two categories: planning and landscape conservation and management. In terms of planning, Cul.LCA may contribute at a variety of levels to formulation of development plan policies; development capacity studies and strategies for particular forms of development; and development control and environmental impact assessment (EIA). In terms of landscape conservation and management, it may provide the basis for landscape management strategies and play an important role in a wide range of other issues including identifying the archaeological potential of gaps in the SMI and targeting future archaeological research.

The potential Cul.LCA applications are listed below to illustrate the range. Further details are provided in the following sections.

- **Input into Landscape Strategies and Development Plan Policies.**
- **Identifying areas with potential for new-built development.**
- **Design of new development.**
- **Development control.**

Guidelines for the historic landscape's capacity for change without undue loss of significance or erosion of character. Assessment of the impact of proposals on the 'setting' of individual landscape components such as sites and buildings.
- **Inputs to Environmental Impact Assessment (EIA)**

Use of Cul.LCA as an environmental assessment tool to prevent and/or modify large scale development effecting historic character, such as: hydroelectric power plants, reservoirs, and major road schemes, etc.
- **'Special' Areas of Landscape – identification and boundaries of designations.**

- **Predictive modelling for archaeological sites in areas where none are recorded in the Inventory (SMI).**

- **Identifying the archaeological potential of gaps in the SMI**

Sites and Monuments Inventory (SMI) comprise data that has been drawn from a large and varied number of sources. These might include comprehensive surveys of discrete areas, but they also include the more incidental results of individual research interests. SMI reflect the pattern of discovery more than the extent of the archaeological resource and the historic environment.

Cul.LCA, however, can offer an understanding of the potential archaeological and historical attributes for each Cul.LCA Type, regardless of an absence of SMI information.

The time-depth matrices of Soğanlı (at the Territorial Level), and the Inventory in Appendix C for example (see pp.277-295), show the correlation between Cul.LCA types and the features listed in the SMI, which can be used successfully to target future inventorying programme of the MoCT and archaeological research.

- **Targeting future archaeological work.**

- **Local communities**

Cul.LCA can be a useful tool in helping local communities gain an insight into the historical roots of their area, enhancing their sense of place. It helps highlight local distinctiveness and diversity, by clarifying how areas have developed differently. It can be used to inform community-based local projects. In the territorial level Cul. LCA of the Soğanlı (Yeşilhisar) and more detailed site surveys in Yukarı Soğanlı, it has proven to be a useful tool for informing and stimulating discussion about what local communities view as the key characteristics of their local landscape (see Chapter 3 - Stakeholder Involvement at Different Stages of the Cul.LCA, pp.103-111).

- **Land-use planning**

- **Guiding woodland expansion/ proposals**
- **Input into agri-environment schemes and targets**
- **Transport planning**
- **Monitoring landscape change.**

In addition to its potential role in managing landscape change the Cul.LCA carried out in the study area will provide a general overview of the condition of the landscape in the 2010s. This will be of particular value in the future, when it will be possible to assess the state of the landscape and the nature of landscape change through time by using the current Cul.LCA as a baseline information.

This will help with an understanding of how the historic landscape is changing and will also highlight diminishing resources within the Cul.LCA types. Archaeologist, planners, etc. are already using historic maps (or earlier topographic and/or base maps produced by the HGK) and aerial photographs to monitor changes in the landscape and Cul.LCA will be a useful additional tool in the future.

### **Relationships with other data sets**

Since Cul.LCA method is a relatively recent method to describe and assess landscapes in Turkey, it will not be possible to relate the different types of Cul.LCA to each other. However, it can be linked directly with Sites and Monuments Inventory (SMI), giving a wider landscape and land use context for specific site information.

In fact, the Soğanlı (Yeşilhisar) Cul.LCA at the territorial level shows that the Cul.LCA method can become fundamental to the Regional SMI (held by the Regional Conservation Councils), since the Cul.LCA identifies the historic influences across the landscape of Soğanlı, while a conventional SMI shows only the individual features that have survived.

Because Cul.LCA is mostly GIS-based, it can also be linked relatively easily to other data sets, such as those for wetlands or rural areas. Furthermore, they are capable of analysis in a variety of ways and against different sets of information, such as settlement types or buildings. They can also be linked to environmental records so as to analyse, for instance, the correlation between historical processes and biodiversity. In many cases, however, this correlation can be difficult because every Ministry and/or other local authorities (i.e. Yeşilhisar Municipality) has different scales and methods of production for information/data and they are generally distinct products. Nevertheless, Cul.LCA forms an important layer of information, and GIS makes it entirely possible to relate other data-sets to each other. Cul.LCA and other data-sets listed in Table 3.2 (in Chapter 3) clearly convey complementary information about the landscape, and, used in combination, enhance our understanding of the modern landscape and the human influence on it.

## **4.2 Spatial Planning**

Many different factors contribute to change in the landscape. There can be little doubt, however, that in some areas built development is one of the most significant causes of change. Most forms of built development are subject to planning controls and both planning policies and the implementation of these policies through development control can have a significant influence on the evolution of the landscape. Cul.LCA can make a valuable contribution to the formulation of planning policies at regional and local level; to development control activities; to the allocation of land for development, and to processes such as environmental assessment providing an input to Environmental Impact Assessment (EIA), both at the regional level relating to plans and policies, and at the level of individual development projects.

### **4.2.1 Input into Development Plan Policies**

In addressing landscape issues, development plans in Turkey have traditionally tended to be restrictive, focussing on policies for the protection of:

- nationally designated landscapes like ‘national parks’ through the National Parks Act (*Milli Parklar Kanunu*) No.2873, 1983;
- locally designated areas, usually either natural ‘sites’ and/or two or more types/categories of ‘sites’ – according to the size and characteristics i.e mixed (1st degree natural and 2nd degree archaeological) ‘site’ of Soğanlı (Yeşilhisar) - through the Protection of Cultural and Natural Resources Act No. 2863, 1983 (as amended by the Act No: 3386, 1987 and Act No: 5226, 2004);
- individual landscape features, such as rock-hewn churches and/or pinnacles (i.e. designated as ‘monuments’ through the Protection of Cultural and Natural Resources Act No. 2863, 1983) the most frequently mentioned.

It is likely that policies for designated areas will continue to receive the major emphasis in development plans in Turkey. However, approaches to non-statutory landscape protection i.e. through the existing planning systems are more varied and are largely determined by current government policy as set down in relevant national law and regulations concerning planning and national/regional development such as the Planning Act (*İmar Kanunu*) No. 3194, 1985 and its Regulation for Preparation of Spatial Plans (*Mekansal Planlar Yapım Yönetmeliği*) No.29030, 2014<sup>122</sup>. The Planning Act (*İmar Kanunu*) No. 3194, 1985 clearly states that landscapes are important resource but are often vulnerable to damage and destruction. It outlines the importance of development plan policy to balance the need for development with the interest of conservation, including nature.<sup>123</sup> The effect of development (on protected areas by the Act No.3194) has since been controlled and mitigated through the

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<sup>122</sup> The Regulation for Preparation of Spatial Plans (*Mekansal Planlar Yapım Yönetmeliği*) No.29030 ratified in 2014 – is the main piece of legislative document outlining the rules and regulations in the processes of the preparation and implementation of (all levels of ) plans in Turkey. (including Plans to be prepared for the areas designated as ‘sites’ under the Act No.2863).

It replaces the Regulation for Rules for the Preparation and Amendments of Development Plans (*İmar Planı Yapılması ve Değişikliklerine Ait Esaslara Dair Yönetmelik*) No.18916, 1985 (amended by the Regulation No.24345, 2001) and the Regulation for the Preparation of Environmental Plans (*Çevre Düzeni Planlarına Dair Yönetmelik*) No.24220, 2000.

<sup>123</sup>The Regulation for Preparation of Spatial Plans (*Mekansal Planlar Yapım Yönetmeliği*) No.29030, 2014. Article 7(f).

planning process, supported by development plan policies, however, focus only on individual sites and monuments (and it does not differentiate between the wide variety of landscapes within the designated areas by the Protection of Cultural and Natural Resources Act No.2863, and National Parks Act No.2873) gives no indications as to what is valuable about them. The landscape characterisation acknowledges that all of the landscape is valuable (including the ordinary landscapes and even the degraded areas) and that each part has a character of its own. It emphasises the need for a broader cultural landscape-based policies.

The priority now is to find new approaches to maintaining the distinctive character of the whole landscape whilst accommodating appropriate development, in order to complement the protection which designations offer. Cul.LCA has a major role to play in this process. Neither the Planning Act No.3194 nor the Act No.2863 and its supplementary regulations concerning protection of the cultural and natural resources currently promote approaches based on character as an alternative to protection through the existing planning systems or ‘*sites*’ designations. It can be used both within such designated areas and outside them, to inform individual planning and management decisions, and to help identify the conditions for development and change.

The balance has to shift away from policies for designated areas alone towards an emphasis on maintaining and enhancing the distinctive character everywhere. Landscape designations will undoubtedly still continue to be the focus for development plan policies but, in future, policies based on landscape character are likely to emerge alongside those based on approaches to non-statutory landscape protection i.e. through the planning systems in regional and local plans.

If landscape protection through the planning systems are to be supplemented by, an approach based on character, ways must be found of linking landscape policies to landscape character. The most straightforward approach is (to use) a policy that simply requires that development is in keeping with the character of the landscape and maintains its distinctiveness, as in the example in **Table 4.1** (an ex. to illustrate

how the Cul.LCA at the territorial level could be incorporated to the planning policies at the regional and/or local level in Kayseri Development Plan for the Soğanlı Region). Such a policy must be accompanied by some form of a character map, with descriptions of the landscape types and/or areas embraced by the plan, and guidance on the implications of these for development.

An alternative approach is that the Cultural Landscape Character Assessment document itself may be adopted as a supplementary planning guidance, and thereby become a material consideration in planning decisions.

The benefit of this type of policy is its simplicity. The possible disadvantage is that the landscape guidelines may be open to differing interpretation by the planning authority and developers.

**Table 4.1 A Character-Based Planning Policy**

**Policy E1**

“The quality of Yeşilhisar’s landscape and its distinctive local characteristics should be maintained and enhanced. In providing for new development, particular care should be taken to conserve those features that contribute to local distinctiveness including:

- (a) The setting of settlements and historic/local buildings within the landscape.
- (b) The patterns of fields, hedgerows and tree features.
- (c) The special qualities of bodies of water and associated areas (including marshland and swamps) often appearing as streams,
- (d) Historic landscapes; and
- (e) Skylines and hill features, including prominent views.

Local plans should seek to protect and enhance landscape character and criteria should be established for the assessment of the sensitivity of local landscape types to different categories of development.

A more prescriptive approach would be to develop map-based policies which make use of the landscape strategies approach to making judgements, as outlined in **Table 4.2**. In the outlined hypothetical Yeşilhisar District Local Plan, for example, judgements about landscape quality and sensitivity are here combined to create a map of (Landscape) Policy Zones linked to an accompanying policy on development. In this case the strategy approach is framed in three policy objectives – including:

- **conservation**  
(of existing character and of particular features which contribute to this character);
- **restoration**  
(of character);
- **enhancement**  
(by creation of new landscapes where character and quality had either declined so far, or other circumstances); or
- some combination of these options, especially where regeneration activity is occurring, involving much development and change.

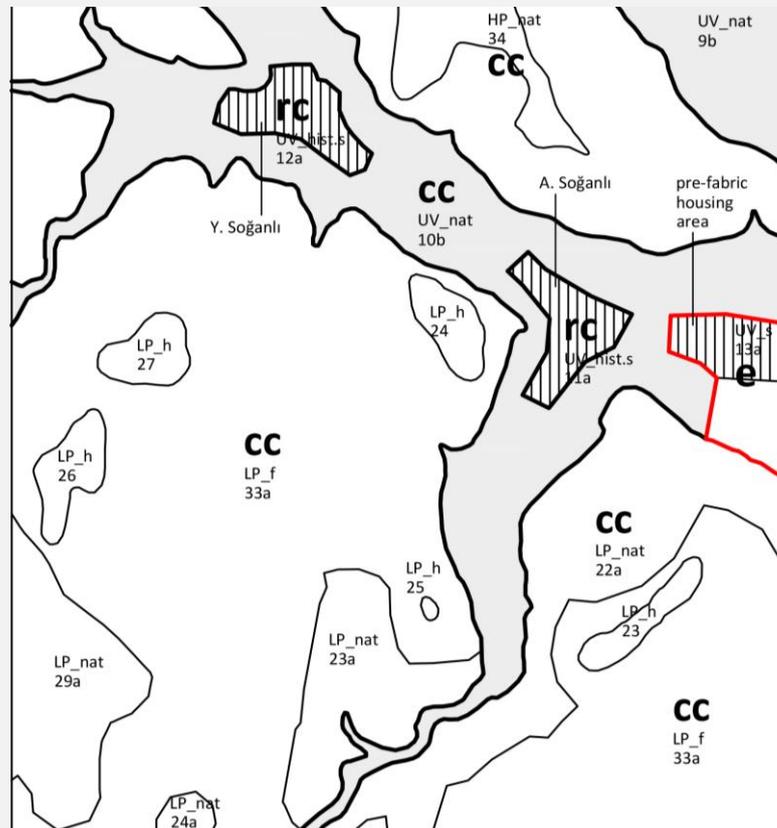
This strategy-based approach can be much more comprehensive than the use of non-statutory protections provided by the existing planning systems under the Planning Act No.3194 and, when combined with landscape guidelines, can give more guidance on what forms of development may be acceptable in different areas.

**Table 4.2 A strategy-based approach to developing planning landscape policies.**

The assessment used the (regional level) Cul.LCA framework as a starting point for describing character, then developed a finer grain description and classification of landscape character at the territorial level. The assessment adopted a hierarchical approach to defining landscape character types but ultimately used the smallest units of landscape character areas, - as the basis for further judgements and decision making.

In moving from landscape character to the judgements required in practical applications, the territorial level character types together with (more detailed) site level field study can be used as the framework and in each character area judgements are made, based on fieldwork, about landscape quality and landscape sensitivity. These are then combined, to define a series of landscape policy zones linked to a local plan policy (see Policy E2).

**Soğanlı (Yeşilhisar) Landscape Policy Zones (part of map)**



**Landscape policy objectives**

- cc** conservation (of existing character and of particular features which contribute to this character)
- rc** restoration (of character)
- e** enhancement (by creation of new landscapes where character and

**Table 4.2 (continued)**

(n_ dev)	quality had either declined, or other circumstances.....)
—	areas of highest landscape sensitivity
—	landscape at risk of rapid loss of (existing) character and quality
□	areas of outstanding natural beauty (and characteristic)
▣	areas of built character

### **Policy E2: Landscape Protection and Restoration**

Development should be informed by and be sympathetic to landscape character and should contribute, as appropriate, to the restoration, enhancement, maintenance or active conservation of the landscape likely to be affected.

Proposals with landscape and visual implications will be assessed having regard to the extent to which they would:

- (a) cause unacceptable visual harm;
- (b) introduce (or conversely remove) incompatible/inconsistent landscape elements;
- (c) cause the disturbance or loss of (or conversely help to maintain):
  - landscape elements that contribute to local distinctiveness;
  - historic elements that contribute significantly to landscape character and quality, such as field, settlement or road patterns;
  - semi-natural vegetation which is characteristic of that landscape type;
  - the visual condition of landscape elements.

### **4.2.2 Identifying Areas with Potential for New-Built Development**

The results of Cul.LCA can make an important contribution - alongside other environmental considerations - to identifying areas with potential for new-built development, as discussed in **Table 4.3**. A broad overview can be taken initially at the territorial scale, where the character descriptions along with the landscape typology/classification can provide a starting point in identifying areas of search. However, at the site level, studies of development potential need to be further

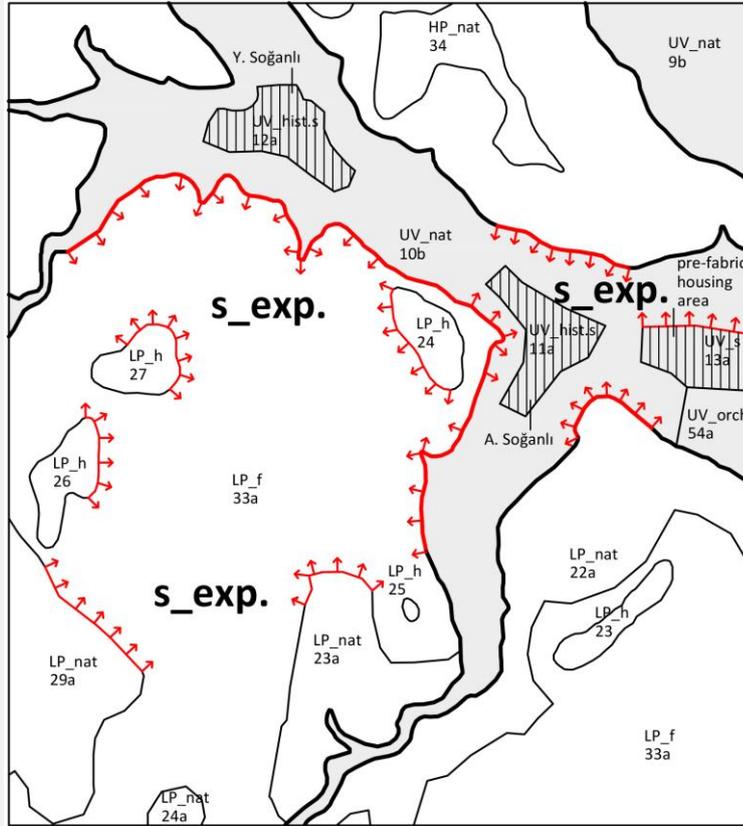
supported by detailed site level assessment. Judgements made on the basis of concepts such as landscape value, and condition of landscape elements/features, and the policy zones that result (see previous section on strategy-based approach to developing planning landscape policies, **Table 4.2**), can help identify areas that can be considered suitable for development – while the design of the development should be informed by the local character (see next section on design guidelines, **Table 4.4**).

Pressures for new-development are usually focused around existing settlements. Planning considerations relating to transport, infrastructure and sustainability issues all point to a preference for locating new development either within or on the edge of existing settlements. Given that opportunities within existing settled areas will inevitably be increasingly limited, there will be growing pressures on the edges of the existing settlements. Historic settlements – such as in the case discussed in **Table 4.3** can pose particular challenges when it comes to identifying areas for potential expansion – as the landscape setting of such settlements is often an important contributor to their character which will have a strong influence on what and how development takes place. Many of these areas around historic settlements will also be subject to rules and regulations imposed by the Act No. 2863 and/or other relevant protection measures depending on the areas' designation status. Characterisation of the landscape, together with appropriate frameworks for making judgements, can help here by providing a close examination of the landscape setting of such historic settlements and their potential to accommodate development.

The example in **Table 4.3** assessed the character of the landscape around the historic settlement of Soğanlı (Yeşilhisar) and used this as a framework for assessing a number of potential new-settlement sites, including the area designated as mixed 'site' by the Kayseri Regional Conservation Council's Decision No. 1310 in 2009.

The use of Cul.LCA in assessing potential new-development for Soğanlı settlement can be further developed in work relating to other historic settlements within Yeşilhisar (such as Başköy) and the wider area covered by the Yeşilhisar Municipality.

**Table 4.3 Using Cul.LCA studies to inform capacity to accommodate new-development in Soğanlı (Yeşilhisar).**



**Cul.LCA types in the area of consideration showing the locality of expansion.**

Aşağı and Yukarı Soğanlı settlements UV\_hist.s (nos.11a-12a) is a historic district that contain nationally important and sensitive landscapes including a mixed archaeological and natural designated ‘sites’ and part of the National Park, set within a distinctive wider landscape.

One of the key tasks within the Yeşilhisar Municipality’s local plan review was to identify how to accommodate the existing residents that had to be re-located due to the area being declared as ‘disaster area’ (due to rock falls) according to the Act no.7269 in 1995.

The residents were re-located to the pre-fabric houses located at the east of the Aşağı Soğanlı settlement UV\_s (no.13a). They were also shown location for new-settlement in the north part of the pre-fabric housing area which was previously located within the conservation area boundaries (this area was excluded from the conservation area boundaries with the Kayseri Regional Conservation Council’s Decision no.1839 – 16.03.1995).

The following will re-evaluate the decision.

The capacity of landscapes around Yukarı and Aşağı Soğanlı settlements in the study area were assessed for their potential to accommodate further built-

**Table 4.3 (continued)**

development in the form of small scale (~ 150 households) expansion.

The study area contained six territorial level landscape character types shown in the map above. These were re-analysed according to factors such as topography, slope, infrastructure etc. for assessment in relation to both settlements, and to assess the landscape capacity to accommodate a new settlement in addition to one already allocated for new built development UV\_s (no.13a).

[Recognising the area is sensitive to changes in the landscape - in addition to the Cul.LCA at the territorial level the detailed fieldwork in the locality carried out in Aug.2014 (especially the interviews evaluating the reactions of landowners) both can be useful to assist in developing a (locational) strategy to meet such needs while sustaining the landscape qualities and characteristics.]

The assessment concluded that:

- the landscape around Yukarı and Aşağı Soğanlı settlements have limited capacity to accommodate further expansion (or new-development) if the setting and character of the landscape is to be sustained;
- Yukarı Soğanlı settlement has effectively reached its capacity to accommodate development in landscape and visual terms;
- there is scope to accommodate a new settlement in one landscape character type UV\_s (no.13a), and for small-scale expansion in Aşağı Soğanlı settlement (see map above);
- some could accommodate a new settlement LP\_f (no.33a) LP\_nat (no.22a) but not of the size necessary to make it viable and/or sustainable in respect to other considerations.

When individual sites or small local areas are being assessed, however, it may also be necessary to incorporate a more detailed landscape and visual appraisal of the site aimed to develop and refine the assessment at the territorial level for certain specified areas which had been identified as potential locations for development. This might include factors such as views to and from the site, visually prominent landscape features and landmarks, key approaches, skylines etc. When dealing with historic settlements their interface with the surrounding landscape merits special attention, including factors such as:

- the landscape setting of the settlement and the relationship between the two, including the presence of any apparently ‘natural’ limits to development;
- the relationship of roads and other access routes to the form of the settlement and to the landscape setting;
- the nature of views from the surrounding area to key landscape features, i.e. rock-hewn churches and other monastic complexes etc.

At the settlement edge, the focus of Cul.LCA is on the open land around the settlement, including natural corridors penetrating into it, and on the interface with the built-up area.<sup>124</sup> Analysis of the different relationships between the two may also be required in order to characterise the landscape in an appropriate way and judge its capacity to accommodate development.

#### 4.2.3 Development Control

The Planning Act No.3194, 1985 and its supplementary Regulation for Preparation of Spatial Plans (*Mekansal Planlar Yapım Yönetmeliği*) No.29030, 2014 makes it clear that applications must conform to the development plans. Thus, it is important

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<sup>124</sup> Recent studies have also incorporated characterisation of the urban area itself (Croft, 2005; Menuge et al., 2005; 2004; Cattell, 2002).

**For example, in the case of Queenborough and Rushenden, Kent (Thames Gateway), the character assessment of the Queenborough and its neighbouring residential suburb Rushenden - which encompassed extensive marshland of both historic and natural conservation interest and were likely to see considerable housing growth and other changes in the forthcoming years as part of the regeneration of the Thames Gateway - formed an important part of the development framework for Queenborough and the Local Plan review** (Croft, 2005).

Urban characterisation is, however, slightly different from landscape characterisation as it deals predominantly with the built environment. It is a form of townscape assessment or urban morphology analysis. Although important in its own right, these techniques are not considered in this chapter, for recent guidance on the subject see:

English Heritage (2010). *Historic Area Assessments: Principles and Practice*. London: English Heritage.

English Heritage (2010). *Understanding Place: Historic Area Assessments in a Planning and Development Context*. London: EH (Leaflet).

English Heritage (2006). *Understanding Historic Buildings: a guide to good recording practice*. Swindon: English Heritage.

English Heritage (2007). *Understanding the Archaeology of Landscapes: a guide to good recording practice*. Swindon: English Heritage.

English Heritage (2008). *Understanding Historic Buildings: policy and guidance for local planning authorities*. London: English Heritage.

that policies relating to landscape character are included in development plans and other plans concerning the area. Once this is achieved it is important that the design of new proposals for development are informed by policies for landscape character and often they will need to achieve appropriate fit within the landscape. The ‘acceptability’ of a development proposal should be based on whether or not it is judged to have an adverse impact on the area’s character. For example, a Development Plan could contain a policy that states:

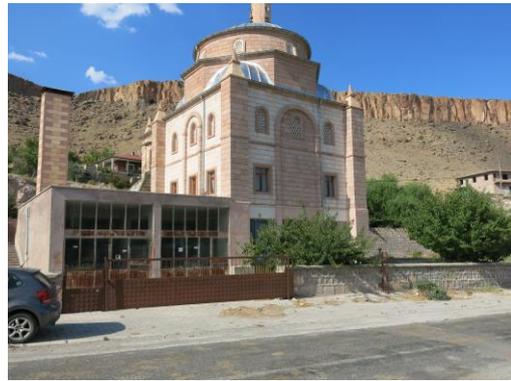
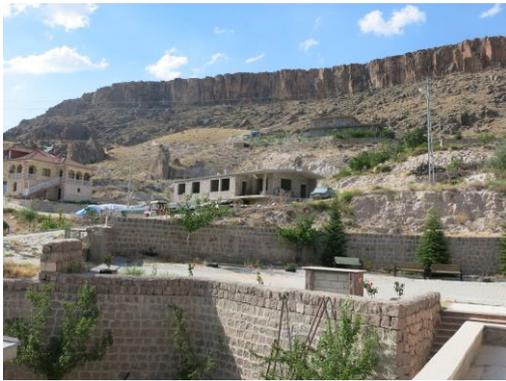
**Policy E3**

Within the landscape character areas...development will be permitted if it does not adversely affect the particular character of the landscape, and is in accordance with other policies of this plan.

However, where local planning authorities use this approach, they need to set out criteria to judge whether the change and development will be deemed to be adverse. Such criteria will need to be based on particular elements and/or characteristics of the area’s character which are judged to be sensitive to particular forms of development.

An alternative approach could be to develop a set of design guidance which may be adopted alongside the local plan, as outlined in **Table 4.4**. The aim of design guidance should be to ensure that essential change is sympathetic to the character of the landscape and where possible enhances it. In some situations it could also identify what changes might be possible to the area’s character.

In the outlined case in **Table 4.4** – for example – it suggests that local authorities develop complementary techniques, alongside Cul.LCA, for assessing the character of the built environment and its relationship to the landscape through Territorial (i.e. Municipality, District) Level Design Guides (TDG) and Local Design Guidance. It is desirable for a Cul.LCA and the Territorial (i.e. Municipality, District) Level Design Guides to be prepared in parallel or in close sequence, for the same area, with the TDG concentrating on buildings and settlements in the landscape.

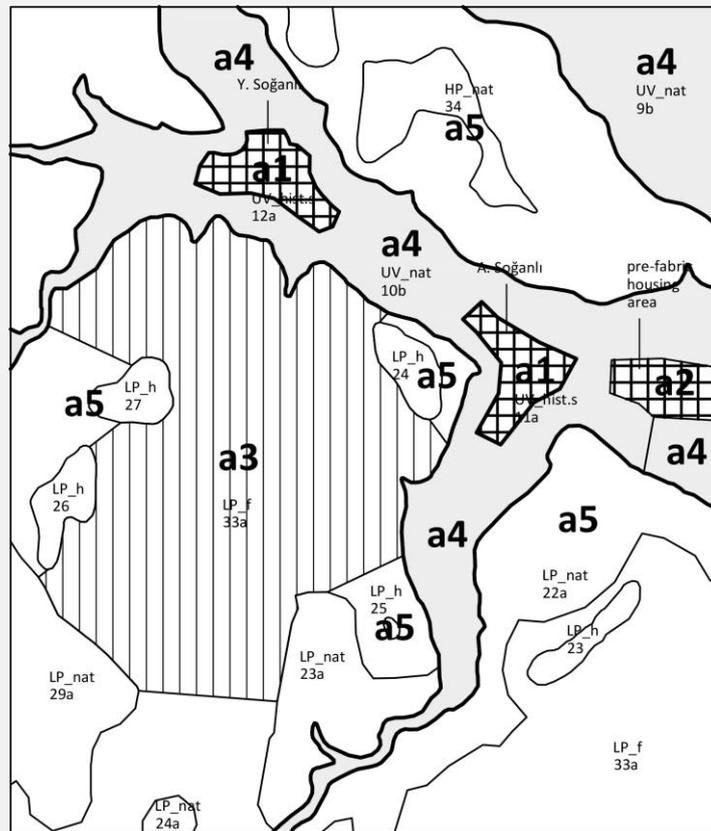


**Figure 4.1 Examples of New-Built Development and Extensions/Alterations to Existing Settlements. (a) & (b): top.** Pre-fabric houses located at the east of Aşağı Soğanlı settlement UV\_s (no.13a) **(c): middle left.** New-built development located at the east of Aşağı Soğanlı settlement UV\_s (no.13a). **(d): middle right.** Mosque, east of Aşağı Soğanlı UV\_s (no.13a). **(e): bottom left.** Güzelöz UV\_hist.s (no.4a). **(f): bottom right.** Visitor amenities (i.e.toilets). Yukarı Soğanlı UV\_hist.s (no.12a).

**Table 4.4 Soğanlı (Yeşilhisar) - Territorial (i.e. Municipality, District) Level Design Guides (TDG) and Local Design Guidelines.**

The following outlines the general content of a two-levelled design guidance that complements the Territorial Level Character Map produced for Soğanlı (Yeşilhisar) and includes:

- Territorial (i.e. Municipality, District) Level Design Guides (TDG) - including a character map and key design principles - which provides a broad overview of the character of the built environment and its relationship to the landscape;
- Local Design Guidance - a document that incorporates and expands upon the TDG, providing detailed descriptions and design principles (ideally produced by local authorities in collaboration with local communities, providing detailed information about their specific settlements).



**(part of map)**

The TDG divides the district into five main character areas, each of which could be further divided into sub-areas to account for local differences. These character areas and their description are drawn up on the basis of the general Cul.LCA descriptions with the character areas responding in broad outline to those identified in the Landscape Character Types/Areas of Soğanlı District (Territorial

**Table 4.4 (continued)**

Level) map. The TDG can make slight changes to the boundaries of the Assessment’s original character types, in response to local perceptions and a more deliberate focus on settlement pattern, structure, form and predominant building materials.

The TDG and the more detailed Local Design Guidelines aims to set out general design principles that promote using settlements themselves as a design resource to maintain and enhance the distinctive local character of each area.

The principles derive from an understanding of the historical processes that have created the District’s settlements and buildings.

In particular they can consider:

**1. Settlement location and form (and its relationship to the landscape)**

Valley and/or valley-side settlements tend to extend parallel to the contour lines of the valley-side and secondarily downward along main routes.



Low plain settlements tend to extend/disperse within the relatively flat topography.



**2. Skyline, views and edge character**

**3. Internal characteristics of settlements (i.e street pattern, plot pattern, individual plots, buildings – including materials, colour, height, form and detailing).**

This also includes particular local features which might add distinctiveness to new development.

### 4.3 Landscape Conservation and Management

Cul.LCA can be used to inform policies for landscape conservation and management. From the point of view of landscape conservation, the method has a number of potential applications. For instance, Cul.LCA could make important contributions to a number of activities which are core to the MoCT. It could provide a context for the works relating to Sites and Monuments Inventory (SMI) and the management of monuments, LBs and '*sites*'.

A national Cul.LCA would provide a context for decisions relating to the inventorying of ancient monuments under the Protection of Cultural and Natural Resources Act No.2863. By defining Landscape Character Types, Cul.LCA can indicate where monuments are likely to survive. Compare for instance the survival of rock-hewn churches within the valleys in Soğanlı (Yeşilhisar) as in the example in **Table 4.5**. These considerations can be used to prioritise MoCT's inventorying programme and further research.

It is also important to protect monuments of nationally importance within an appropriate setting and Cul.LCA could assist with the assessment of the setting of monuments. This has been addressed with regard to the assessment of the wider setting of areas designated as '*sites*' – Act No.2863, but similar considerations will be relevant to the protection of the setting and/or immediate surroundings of monuments in Turkey.

Finally, Cul.LCA can be a useful tool in helping local communities gain an insight into the historical roots of the landscapes that they live within, enhancing their sense of place. It helps communities to understand the local distinctiveness and diversity, by clarifying how areas have developed differently. It can be used actively to inform community-based projects. In the territorial level Cul.LCA of the Soğanlı (Yeşilhisar) and more detailed site surveys in Yukarı Soğanlı settlement, it has proven to be a useful tool for informing and stimulating discussion about what local communities view as the key characteristics of their local landscape (see - Stakeholder Involvement at Different Stages of the Cul.LCA, pp.103-111).

#### **4.3.1 Identifying the Archaeological Potential of Gaps in the SMI**

Although Cul.LCA surveys were not designed as predictive archaeological models, they can help in the assessment of the archaeological potential of an area. Therefore they can be used as an aid to selecting areas that would most benefit from survey and/or further research, and may help in predicting the type and range of monuments, etc. that might be found. This may also help in the future with the zoning of different areas of landscape with regard to the potential for the survival of archaeological monuments. This topic requires further research but the Soğanlı (Yeşilhisar) provides a case study of the potential of the technique.

The Cul.LCA survey of the Soğanlı can be used to address two issues regarding SMI data: first, the possible survival and location of Early Christian/Byzantine settlements and the individual rock-hewn churches within the valleys; second, the relationship (i.e. connections underground, above-ground, tracks, etc.) between the settlements and the scattered rock-hewn churches and/or other ecclesiastical structures.

Ground survey in adjacent peninsula of Aşağı and Yukarı Soğanlı settlements (Jerphanion, 1925-42; Thierry, 1961, 1983-84; Giovannini, 1971; Hild & Restle, 1981; Ousterhout, 2005) has shown that there are extensive remains of rock-hewn churches and other ecclesiastical structures (i.e. hermit cells, chapels, etc.) dating from the Early Christian/Byzantine period along the (tufa) rock faces of the valley where the rock is relatively soft. The identification in the Cul.LCA survey of Mavrucan Dere valley of areas with similar geological and topographic formation suggest that, as on the Soğanlı Dere Valley, these areas are also likely to include traces of rock-hewn churches, etc. that accompanied the settlements. In a similar vein, field survey on Soğanlı Dere valley recovered the remains of numerous isolated rock-hewn churches within the valleys and these areas represent locations in which visible evidence for later early Christian/Byzantine settlement has survived later land-use. Similar conditions exists on the Mavrucan Dere valley where a small number of individual rock-cut churches (See Appendix C – Inventory of Archaeological Remains, Monuments and Sites of Cappadocia for the complete list and Map 4e for their distribution and location within the region) are known in



**Table 4.5 (continued)**

**Mavrucan Dere valley, Soğanlı (Yeşilhisar) areas of priority for survey and further research overlying Cul.LCA mapping.**

pa1: priority area for survey and further research (stage 1)

pa1-(a): Başköy and its surrounding

pa1-(b): St.George Church (s12 – invent. no. in Appendix C) and its surrounding

pa1-(c): Güzelöz and its surrounding

pa1-(d): SE of Güzelöz

pa2: priority area for survey and further research (stage 2)

### **4.3.2 Identification and Boundaries of ‘special areas’ of Landscape**

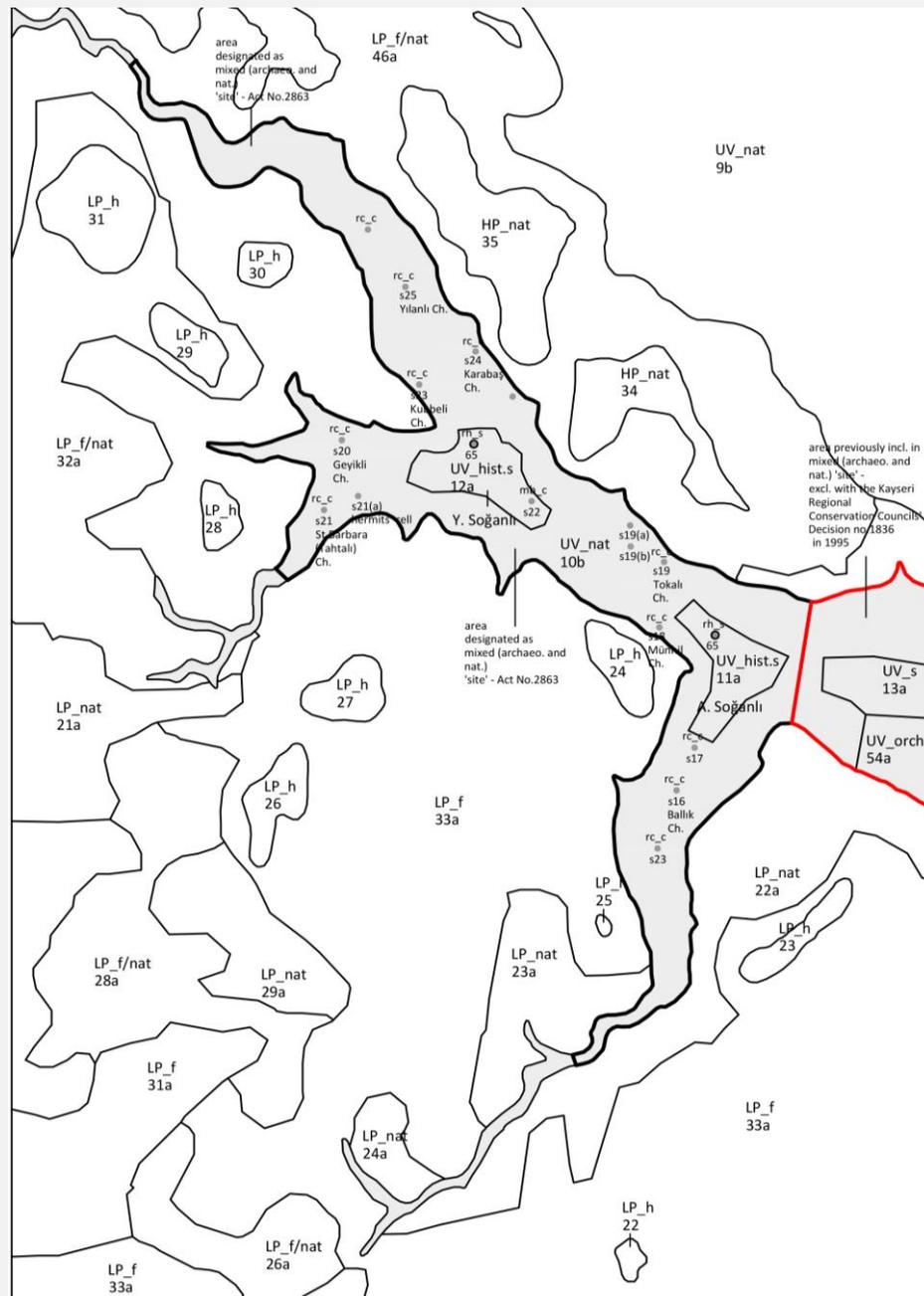
Designation of areas of landscape deemed to be of ‘special’ landscape value has, for many years, been the key policy of landscape conservation and management. General Directorate of Cultural Resources and Museums within the MoCT through its Regional Conservation Councils, have played an important role in planning policy and development control, as well as conserving, managing and enhancing the landscapes.

In Turkey, the first step in the designation of nationally important landscapes has been to choose the broad area of ‘special’ landscape and then to define an appropriate administrative boundary that encapsulates areas of appropriate character. In principle broad character areas – equivalent to those in **Figure 3.13** Territorial Level Cul.LCA types, Soğanlı (Yeşilhisar)– can be selected on the basis of their special value measured against a series of criteria of the type listed in **Table 4.6**. Such criteria can also provide the basis for a statement about why a particular area is valued, and such comments can be found in the descriptions contained within the Cul.LCA Type descriptions.

Once a broad area has been selected for national designation, a map of landscape character at the local level can help to define detailed boundaries. But – as illustrated in **Table 4.6** – character area boundaries may not always coincide with designation

boundaries. There are often other, completely different criteria, for a variety of environmental, social or political reasons that are also used to select boundaries of such areas.

**Table 4.6 Use of Cul.LCA to inform identification and boundaries of ‘special areas’ of landscape.**



**Soğanlı (Yeşilhisar) mixed (archaeological and natural) ‘site’ – Act No.2863 boundary overlying Cul.LCA mapping.**

**Table 4.6 (continued)**

Aşağı and Yukarı Soğanlı settlements and the valley that they are located within (Soğanlı Dere Valley) and its tributaries (Ballık Dere, Tahtalı Dere and Büyükkol Dere ) were designated as mixed (archaeological and natural) conservation ‘site’ by the Kayseri Regional Conservation Council’s Decision no.1310 in 02/2009.

The area (shaded in the above figure) was designated for its natural formations, existence of rock-hewn churches and other ecclesiastical structures from the Early Christian/Byzantine Period.

The SMI record sheet for the Soğanlı ‘site’ also lists the following rock-hewn churches as most important among them:

No	Name	Type of Mon.	Date
s19	Tokalı Kilise	church, inscribed cross plan	11th c.
s19_a		church, 3 aisles	
s19_b		chapel, single aisle	
s20	Geyikli Kilise	church, 2 aisles	11th c.
s20_a		church, single aisle	11th c.
s21	St Barbara (Tahtalı Kilise)	church, single aisle	11th c.
s21_a		hermits'cell	
s24	Karabaş Kilise	church with 2 aisles, enlarged by 2 additional aisles	10th-11th c.
s24_a		hermits'cell	
s25	Yılanlı Kilise	church, 2 aisles refectory	11th c.
s23	Kubbeli I, lower church (small cone)	church, 3 aisles	10th c.
s23_a	Kubbeli II, upper church (large cone)	church, free-standing cross plan	10th c.
s23_b	Kubbeli II, lower church (large cone)	church with transverse nave	
s23_c	Kubbeli III (medium-sized cone)	church, single aisle	10th c.
s16	Ballık Kilise	church, 2 aisles	10th c.

(the above list is an extract from Appendix C. Inventory of Archaeological Remains, Monuments and Sites of Cappadocia)

Although the SMI record sheet emphasis the co-existence of the rock-hewn settlements with the later period settlements and their relationship as an important contributing factor to the present landscape character – a later decision by the Kayseri Regional Conservation Council in 08/2009 allows the later period dwellings to be demolished (provided that their demolition process does not harm the earlier period (Early Christian/Byzantine) structures) due to the area being declared as ‘disaster area’ as a result of rock –fall in the earlier years.

With this decision, the area has been evacuated – leaving the area even more prone to decay.

**Table 4.6 (continued)**

The decision on declaring the area as ‘danger area’ and the basis for the decision will not be argued here since there are many factors that has to be considered before taking such extreme measures.

The main concern of the research here is the boundaries of the conservation area and the Kayseri Regional Conservation Decision No.1455, 08/2009.

Where a part of landscape is selected for ‘*special*’ recognition, judgements need to be based on a range of different considerations. National landscape designations in Turkey are based on criteria that encompass much more than landscape alone.

The key considerations are:

- **natural beauty**: encompasses flora, fauna, geological and physiographical features and is the term that has been used in defining natural ‘*sites*’- Act no.2863 and ‘national parks’ – Act no.2873 in Turkey;

- **recreational opportunity**: opportunities afforded for open-air recreation, having regard both to landscape character and position in relation to centres of population. (used in defining ‘national parks’ – Act no.2873 in Turkey);

- **natural beauty and characteristics** (özellik – in Turkish): a composite term, used in the founding legislation of natural ‘*sites*’ contained with the Protection of Cultural and Natural Resources Act No.2863.

The Act defines the natural resources as including the physical elements of flora, fauna, geology, physiographic features and natural beauty and characteristics. This combination of terms covers the physical landscape, but also the less tangible aspects such as remoteness or tranquillity, and aspects of landscape experience which appeal to senses other than sight.

In considering natural beauty and characteristics, and in any other situation which requires that a landscape be identified as requiring special attention, judgements must be based at least in part on the concept of **landscape value**. This refers to the relative value or importance that stakeholders attach to different landscapes and their reasons for valuing them. The reasons may be set out according to a range of more detailed criteria that may include the following:

- **landscape quality**: the intactness of the landscape and the condition of features and elements;
- **scenic quality**: the term that is used to describe landscapes which appeal primarily to the visual senses;
- **rarity**: the presence of rare features and elements in the landscape, or the presence of a rare landscape character type;
- **representativeness**: whether the landscape contains a particular character, and/or features and elements, which is felt by stakeholders to be worthy of representing;

**Table 4.6 (continued)**

- **conservation interests:** the presence of features of particular wildlife, earth science or archaeological, historical and cultural interest can add to the value of a landscape as well as having value in their own right;
- **wildness:** the presence of wild (or relatively wild) character in the landscape which makes a particular contribution to sense of place;
- **associations:** with particular people, artists, writers, or other events in history.

The full range of criteria set out above may be used to identify valued landscapes that merit some form of designation or recognition. They can be used, either individually or in combination, to assist the definition of nationally important areas throughout Turkey. These include ‘national parks’, natural ‘*sites*’ and/or mixed i.e. archaeological and natural ‘*sites*’ and equivalent areas.

The criteria of ‘natural beauty’, ‘recreational opportunity’ and ‘natural beauty and amenity’ can be the starting points for selecting the broad area of search for designation or recognition of ‘special areas’. The criteria listed in the above could be used to provide a supporting statement about why a particular area is valued. Boundaries can then be determined by assessing the character and quality of the landscapes within the area of search to determine whether or not they should be included.

The existing conservation area boundary encompasses 3 of the Cul. LCA types: Aşağı and Yukarı Soğanlı settlements UV<sub>s</sub> (nos.11a-12a) and UV<sub>nat</sub> (10b).

UV<sub>orch</sub> (no.54a) which is not different from UV<sub>nat</sub> (10b) except from the dominating vegetation type was included in the previous designated area but has been excluded with the Kayseri Regional Conservation Decision no.1310, 02/2009.

When the designation area boundary is overlaid with the Cul.LCA boundaries (and the type descriptions are being evaluated for the criteria listed above) it can be seen that they coincide with each other (except for the area that has been excluded in 02/2009).

So, it can be said that the decision regarding the boundaries of the mixed (archaeological and natural) ‘*site*’ can be justified by the Cul.LCA. Once this is completed, the Cul.LCA can aid in the justification of the statements about the character and quality of the area.

The area does:

Inhabit significant amount of rock-hewn churches dating from the Early Christian/Byzantine period.

Most of them are intact.

The area does show a continuity of settlement as early as from the Early Christian/Byzantine Period.

It does display an unusual form of natural formations.

**Table 4.6 (continued)**

And the togetherness of the natural formations, the rock-hewn churches, settlements and the network of tracks along the valleys connecting these to each other and the fields outside the settlements display a unique example how humans have used nature under difficult circumstances for their survival.

But the record sheet does not include the fact that the area does:

Have a value for research for both period settlements (Early Christian/Byzantine and post-18<sup>th</sup> cent.) and extraordinary geological formations.

It does represent a period and way of life that people have lived in the Byzantine Period.

It can also aid in the further decisions regarding other planning applications within the conservation area – such as the decision to grant permission to demolish the later period (post-18<sup>th</sup> cent.) dwellings.

If the Cul.LCA could be adopted as an additional document beside the SMI record sheet or any other plan that is to be developed in the future – the decision makers could see that the later period settlement is an integral part of the landscape and would encourage other means of precautions for their survival other than their destruction.

The designation of a conservation area should not be an end in itself. Local authorities need to develop policies which clearly identify what features of the area should be preserved or enhanced, and set out how this can be done.

Clear assessment and definition of an area's character and the action needed to protect it should be developed.

The Cul.LCA methodology developed will be a valuable tool in drawing up these guidelines.

### **4.3.3 Assessment of the Wider Setting of Monuments and ‘special areas’ of Landscape**

It is important to protect monuments of nationally importance within an appropriate setting<sup>125</sup> and Cul.LCA could assist with the assessment of the setting of monuments. According to the Act No.2863 this area is referred to as a ‘*protection area*’ and defined as: “*areas that have to be protected due to their effect on the protection of the cultural and natural properties within their historic environment*”<sup>126</sup>. According

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<sup>125</sup> Protection of Cultural and Natural Resources Act (*Kültür ve Tabiat Varlıklarını Koruma Kanunu*) No.2863, 1983 (as amended by the Act No.3386, 1987 and Act No.5226, 2004). Article 3.

<sup>126</sup> Act No.2863, 1983. Article 3a (5).

to this the ‘*protection area*’ is the area which is related and is either effected and/or is capable of having an effect on these monuments and/or group of monuments. Therefore, any decisions regarding these areas should aim to protect the visual appearance of the monuments and/or groups of monuments and their relationships with each other and their surrounding environment. It should prevent any planning application which is capable of having such an impact.

There is also a similar protection measure for areas designated as ‘*sites*’ – Act No.2863 referred to as ‘*interaction-transition zone*’. Act No.2863, in its Article 3 defines these areas as: “... *areas that directly effect cultural properties and conservation ‘sites’. Show [demonstrate] an integrity with conservation ‘sites’. Areas that were previously included within conservation ‘sites’ or streets, square, building groups or similar areas that need protection that have been excluded from conservation ‘sites’. Areas between two or more conservation ‘sites’ which have a direct effect on conservation ‘sites’ or areas which should be taken into consideration in the process of preparing conservation area plans.*”<sup>127</sup>

Although the term and the idea behind the ‘*interaction-transition zone*’ seems to provide the needed protection for the designated ‘*sites*’ and their setting - it has found no legal grounds in the existing legal system as the Act No.2863 does not legally force Regional Conservation Councils and/or other government authorities who are responsible for the preparation of conservation area plans to define such areas.

Therefore, apart from the input that the Cul.LCA can provide in assessing the wider landscape setting for designated areas, it is also important that Cul.LCA guide the policies/planning applications for these transition zones. These zones/areas are equally important as any development that take place within these areas will have major effect on the designated sites due to their close relationship between each other.

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<sup>127</sup> Act.No.2863, Article 3a (17).

#### 4.3.4 Landscape Management Strategies and Guidance

Although the previous sections mainly focusses on the use of Cul.LCA in ‘*special areas*’ of landscape, and on their appropriate management (including the identification of areas, mapping of boundaries, preparation of justifications for special treatment, and input to management plans, etc.) – developing strategies and guidelines to help to conserve and enhance the diversity of character in the wider landscape (outside these areas) is also important. This can involve the use of Cul.LCA to influence decisions about land-use change, such as: guide the planned increase in the extent of woodland in the landscape; inform the targeting of agri-environment schemes; inform strategies for regeneration, and land reclamation and restoration strategies; and contribute to wider environmental initiatives, such as Local Agenda 21 and Biodiversity Action Plans.

The holistic approach of Cul.LCA, which recognises the importance of character in all landscapes, makes it particularly suited to informing landscape management strategies and guidance. These strategies rely on analysis of key characteristics, understanding of the pressures causing landscape change, and the drawing up of landscape guidelines. The guidelines could be developed within strategies or objectives for individual landscape character types and/or areas, as set out in **Table 4.7**. Establishing a clear link between key characteristics, analysis of change and landscape guidelines is particularly important and is best achieved by the involvement of a range of stakeholders, especially those representing land management interests. The Cul.LCA at the territorial level for the Soğanlı (Yeşilhisar) can be an example of Cul.LCA being used in this way. For example; the brief descriptions of the Cul.LCA types for the Soğanlı (Yeşilhisar) in the territorial level (see pp.143-184) contain: an analysis of the issues facing the landscape, and guidelines for conservation and/or enhancement which are not highly prescriptive but which indicate actions required.

This could be further supported by a series of workshops involving all the main stakeholders with an interest in the study area – as it would encourage discussion and interpretation of the landscape guidelines developed at the local level.



**Table 4.7 (continued)**

Key characteristics:

- relatively low (approx. below 1500 m.) and flat topography;
- open and extensive;
- large-scale (larger than 6 ha.) field enclosures of discontinued regular pattern with a significant percentage of medium enclosures (2 to 6 hectares); The areas between the enclosures are covered with grassland and scrub/herbaceous vegetation;
- grazing;
- occasional water (bodies and associated areas) often appearing as (seasonal dry/wet) streams in the landscape showing topographic enclosure.

Historical and archaeological components: None.

The type may include tracks and other features as well as below-ground undisturbed archaeological deposits belonging to the Pre-historic, Roman and Early Christian/Byzantine Period(s).

Further research and survey is required to understand this and similar Cul.LCA types, its origins and development.

Similar types and distinguishing criteria: This type is similar to **Low Plain Farmland**, but is distinguished in the mapping process by its discontinuity of enclosed land. The areas between the enclosures are covered with grassland and scrub/herbaceous vegetation.

The type was identified using the LANDMAP data. Aerial photographs of the region, flown in 06/2010 were referred to verify the extent and shape of vegetation.

Rarity: **Low Plain Farmland with Significant Areas of Natural (Grassland and Scrub/Herbaceous) Vegetation** covers 7 % of Soğanlı.

Landscape sensitivities:

- The (relatively) flat and open nature of this Cul.LCA type may encourage proposals for large scale development. i.e. industrial, residential, etc.

**STRATEGIES AND GUIDANCE**

- *Undertake survey.*

- *Improve management.* Improve the management regime and advice to it to minimise the threat of overgrazing and erosion.

Sustainable grazing levels should be pursued to conserve the wildlife interest of areas of grassland and scrub/herbaceous vegetation.

The wildlife value of the vegetation (particularly grassland and scrub/herbaceous vegetation) is largely dependent on sensitive agricultural management. The presence of these grasslands and their botanical diversity is a very important landscape element which should be conserved through sustainable grazing practice.

Positive management should be encouraged, potentially with the aid of agri-environmental schemes.

**Table 4.7 (continued)**

-*Avoid* damage to historic environment through inappropriate tree planting and agricultural improvement.

Full archaeological assessment prior to decision making should be carried out where appropriate.

- *Conserve* water bodies and associated areas (including marshland and/or swamps). Water bodies and associated areas occur regularly as (seasonal dry/wet) streams in this landscape and have a major role in the drainage of the water. These features should be conserved and protected from drainage operations, infilling or alterations to the hydrographical structure of the region.

- *Control development*. All development would be obtrusive in this landscape, particularly in the areas of north of Büyükkol Dere (LP\_f/nat no.46a). It is recommended, therefore, that new development is carefully controlled in these landscapes, particularly with regard to massing, design quality and the treatment of highly visible peripheral areas.

The contemporary design of new buildings for this Cul.LCA type should, ideally, reflect the mass and form of hist./traditional buildings, in particular, that of later-period buildings in Soğanlı (UV\_hist.s nos.11a-12a) and Başköy (UV\_hist.s no.2a), neighbouring to this relatively low, flat landscape.

#### **4.3.5 Informing Agri-Environment Schemes**

Assessments of the likely impact of agri-environment schemes on the historic environment has typically been limited to a search of the Sites and Monuments Inventory (SMI) held by the Regional Conservation Councils, to check the effect upon known archaeological sites. Use of Cul.LCA – as a tool in devising and targeting agri-environment schemes and raising awareness of the historic environment in rural areas – can encourage a shift in perspective from the site specific to consideration of the landscape as a whole, which is more complementary to the requirements of historic environment management.

This change in perspective, adding to site specific information, is closer to current and likely future management trends and may be used to produce generic recommendations for individual character types. These provide a useful point of reference for local authorities and others involved in drawing up agri-environment

schemes and other land management strategies. In some cases these sustainable management issues can be included in Cul.LCA type descriptions.

For example, the descriptions of the Cul.LCA types for the Soğanlı (Yeşilhisar) in the territorial level includes a part entitled Strategies and Guidance, which – among other strategies towards enhancing and safeguarding the type – identifies management recommendations for each character type (see **Table 4.7**). The ‘type’ specific part on strategies and guidance in the Soğanlı Cul.LCA type descriptions contain much relevant information that becomes useful when a scheme is being put together. The example on **Table 4.7** outlines the features that are likely to be encountered and how they can be best managed, and makes a clear statement about the need for assessment prior to schemes such as tree planting, etc. Under ‘*Improve management*’ heading it highlights the need for positive management, and lists some of the preferred means of achieving this.

Cul.LCA therefore can provide a basis for considering the location and scope of agri-environment schemes. It can identify general issues that need to be looked at in detail and interpreted alongside historic maps and specific SMI information about the proposed area.

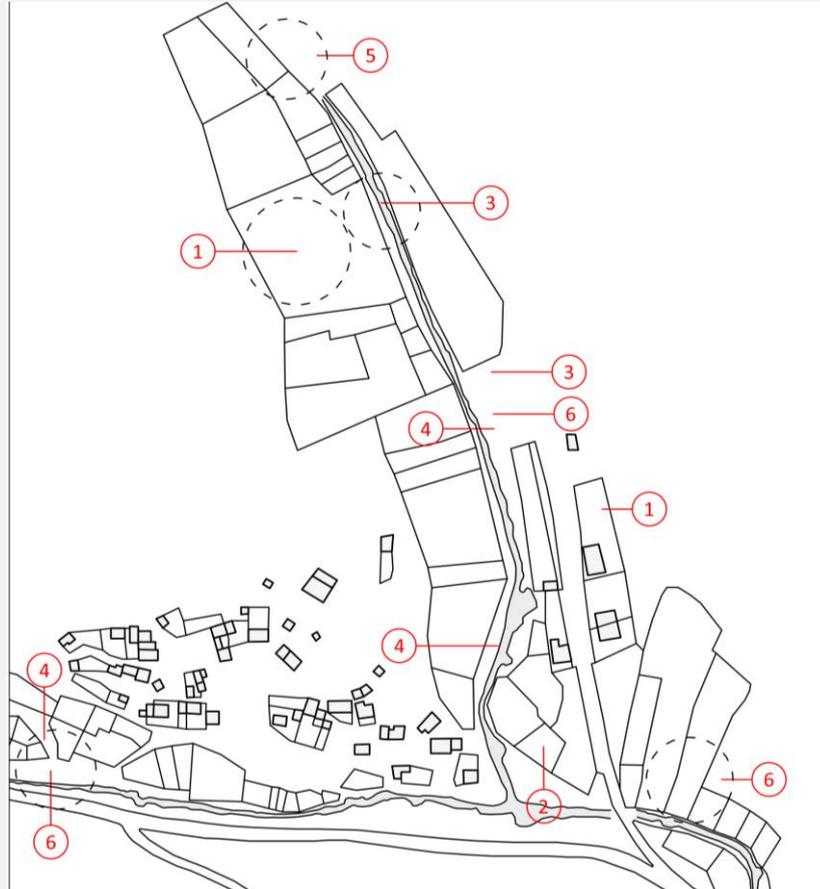
The use of Cul.LCA information can be taken a step further by sharing the Cul.LCA database with the Ministry of Agriculture, General Directorate of Agricultural Reform (*Tarım Reformu Genel Müdürlüğü*) who can use the Cul.LCA database in processing agri-environment schemes (in accordance with the Agriculture Reform Act No.3083, 1984). They can also be used on a daily basis to check the already existing schemes and to make informed recommendations. This will allow the officials to place the area in question (this can be a farm, etc.), and its components and the proposed scheme in their historic environment context, and enables the Ministry of Agriculture, etc. to suggest works that will enhance landscape character.

#### **4.3.6 Guiding Woodland Expansion**

Cul.LCA can be used to advise forestry and/or woodland expansion proposals, administered by initiatives like the Ministry of Forestry and Water Works (MoFWa) in accordance with the Forestry Act No.6831, 1956. There is a detailed database (held by the General Directorate of Forestry within the MoFWa) of woodland patterns for most of the region – and the description of Cul.LCA types can indicate whether planting is typical for that area or not. For example, similar to Low Plain Grassland and Scrub/Herbaceous Vegetation (LP\_nat), the High Plain Grassland and Scrub/Herbaceous Vegetation (HP\_nat) Cul.LCA type is characterised as being an open treeless expanse. Proposals to plant large blocks of woodland in such areas are therefore contrary to landscape character – not necessarily a reason not to proceed with planting, but influential factor in the process of whether to plant and if so how.

Where woodland is proposed, Cul.LCA can be used to inform the location, extent and shape/design of planting (as in the example in **Table 4.8**). Further direction may be provided for those locations where Cul.LCA illustrates the presence of former woodland, through identifying areas of clearance.

**Table 4.8 Planning and Design Guidance for Forestry and Specific-Tree Planting in Yukarı Soğanlı (Yeşilhisar).** The Cul.LCA can be used to develop a forestry and specific-tree planting design guidance for particular landscape character types in the Soğanlı (Yeşilhisar) which are potential areas for woodland expansion, as a reference for farmers and landowners applying for Loan Schemes. For further information on loan schemes see the Forestry Act No.6831 and its supplementary Regulation for Afforestation No.28390, 2012.



**Part of map – showing Yukarı Soğanlı settlement and the valleys defined by the Soğanlı Dere and its tributaries Büyükkol Dere and Tahtalı Dere**

Understanding the area's landscape character is fundamental to forestry strategies and specific-tree planting schemes.

The Cul.LCA at the territorial level and the detailed local level field survey were combined and used to identify indicative planning areas.

The following 6 categories were defined:

1. enhance enclosure pattern with hedgerow and field tree patterns.
2. re-establish hedgerows.
3. manage and improve wetland woodland and scrub habitat on valley margins.

**Table 4.8 (continued)**

4. establish new native planting adjacent to streams. Follow the valley landforms to reinforce their pattern.
5. extensions to woodlands following the landform.
6. vary edges by introducing areas of low density planting, with scrubs and native broad-leaves (i.e. poplar - *Populous Sp.*, willow – *Salix Sp.*, etc.) to maintain diversity and provide views of valleys.

## CHAPTER 5

### CONCLUSIONS

‘*Characterisation*’ has now been used for over twenty years - since the initial project in 1994, Cornwall (UK) - and established as an important practical tool for the conservation, protection and managing landscapes and other environmental resources at all scales. In that time, the range of applications has grown from the planning policy and landscape strategies in development plans, through informing agri-environment schemes, to the more recent emergence of interest in using characterisation to expand research and outreach. Certain areas of use have already entered mainstream conservation practice. For example in the UK, the contribution that characterisation bring to decisions relating to the monuments, LBs and Conservation Areas under the Planning (Listed Buildings and Conservation Areas) Act 1990 is acknowledged in English Heritage advice, where they are said to “... *characterisation has partly been a reaction to a changed perception to the traditional designation system. .... brought large-scale characterisation into the heritage management field, and shifted our objectives from protecting separate sites to managing change in all places.*”<sup>128</sup>, whilst there is also a growing compendium of development plans that draw on Historic Landscape Characterisation (HLC) (as Historic Land-Use Assessment – HLA in Scotland) either directly or indirectly.

Dissemination of the ‘*character*’ concept and of ideas for its use will see more applications entering the mainstream conservation practice, as authorities and related

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<sup>128</sup> Clark J. *et al.* (2004). *Using Historic Landscape Characterisation: English Heritage’s review of HLC Applications 2002-03*. English Heritage & Lancashire County Council. pp.2-3.

organisations understand the value of characterisation and devise ways of working with it which suit their own particular needs.

Completely new uses for characterisation will continue to be found. Emerging government agendas for the wider issues concerning our landscapes will encourage further experimentation and development of characterisation as a tool for managing change. The circle of users will also widen, with a broader application being embraced by local authorities and other groups at the local level as understanding and confidence grow.

By way of a conclusion, in this final chapter, the research aims to evaluate the applied Cul.LCA methodology by summarising its principles, general approach and results. For the latter, the chapter concludes with suggestions towards possible areas for future research.

## **5.1 Cul.LCA Methodology: Evaluation of the Principles, General Approach and Results**

### **Background**

The Cul.LCA methodology carried out has emphasised diversity of method and flexibility. In part this was a consequence of to try to provide an applicable method to those organisations (i.e. General Directorate of Cultural Resources and Museums within the MoCT, MoFWa and MoEP) with differing capacities, data sources and requirements, who are in need to better understand the historic environment, some requiring planning outputs whilst others are more concerned with conservation objectives. However, it also reflected the early experimental nature of the method, combined with the desire to test, extend and develop new methodologies within the existing laws and regulations in Turkey – which clearly needs to be revised to ensure that new and effective means of protection such as those described in the European Landscape Convention (CoE, 2000), are accepted.

As a result, the research – after examining the existing core of concepts and recognised methods, used in England, Scotland, parts of Ireland, Wales and mainland Europe (included in Chapter 2, pp.40-64) which reflect the range of differing interests – aims to present a national approach to carry out Cul.LCA surveys in Turkey.

The list of Historic Landscape Characterisation (HLC) programmes in England, Scotland (as Historic Land-Use Assessment), Ireland, Wales and mainland Europe is provided in the *Bibliography* for further understanding the variations in recognised methods in more detail.

### **Guiding Principles**

The principles (as defined in more detailed in Chapter 3, pp.71-73), behind characterisation, or the identification of essential or distinguishing features and qualities, to representing and interpreting landscapes, are closely related to the CoE European Landscape Convention definition of landscape as: “... *an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*”<sup>129</sup>. They concern mapping the historic dimension of today’s landscape character, and are about being comprehensive, not selective (leaving no ‘grey areas’), and viewing areas rather than individual sites. Cul.LCA is concerned to trace the imprint of the past on the landscape – known as ‘time-depth’. It can be defined as: “... *the long-term interaction between human activity and natural processes*”<sup>130</sup>.

There is two stages to the characterisation process: first in which the landscape is identified, mapped, described and interpreted and a second in which judgements, whether about value or more practical priorities, are applied to this initial assessment and objectives are agreed.

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<sup>129</sup> CoE (2000). Article 1.a.

<sup>130</sup> Macinnes, L. and Wickham-Jones, C.R. (1992). p.2.

This second stage lends itself directly to a variety of land management and conservation applications, which has been examined in Chapter 4.

## Methodology

The aim of the Cul.LCA, as described in Chapter 3, is to characterise the distinctive historic dimension of today's urban and/or rural environment within a given area. Achieving this through the Cul.LCA process is relatively straightforward (see Figure 3.1 p.76). It begins with the systematic identification and description of attributes in the contemporary rural and urban landscape, using a number of common sources. These attributes include present land-use, land cover, physiography (landform, geology and soils) and visible evidence of human activity in the landscape, the built and the semi-natural environment. Thus for the whole of the study area (although there were variations between the different scales of the assessment i.e. regional, territorial, and site level) the following attributes (in Table 5.1) were examined.

**Table 5.1 List of Cul.LCA Attributes.** Extract from Table 3.5 sources of information used for pre-field study (regional, territorial and site levels).

Map Overlays	Source(s)
<b>Geology</b> (geological characteristics, formations)	Geological Survey Data (1:250.000 and/or 1:25.000) General Directorate of Mineral Research and Exploration (MTA), and accompanying reports. Personal archive of Prof.Dr. Vedat Toprak, Department of Geology, METU
<b>Landform</b>	Topographic and/or Base Map Data, and Aerial Photographs Harita Genel Komutanlığı (HGK) and other data suppliers
<b>Hydrology</b> (shape and type of water)	Topographic and/or Base Map Data Harita Genel Komutanlığı (HGK) and other data suppliers
<b>Soils</b>	Soil Survey Data (1:25.000), and accompanying reports Ministry of Food, Agriculture and Animal Breeding ( <i>Gıda, Tarım ve Hayvancılık Bakanlığı</i> ) General Directorate of Agricultural Reform ( <i>Tarım</i>

**Table 5.1 (continued)**

<b>Map Overlays</b>	<b>Source(s)</b>
	<i>Reformu Genel Müdürlüğü</i>
<b>Vegetation</b>	Land Cover Map (LANDMAP) Ministry of Forestry and Water Works ( <i>Orman ve Su İşleri Bakanlığı</i> )
<b>Trees/Woodland</b> (natural forests, plantations: trees, shrubs, hedges, etc., species specifications)	Topographic and/or Base Map Data (1:25.000) Aerial Photographs
<b>Land Use</b> and enclosure/field patterns (field shape, size and groups; boundary types)	Land Cover Map (LANDMAP) Topographic and/or Base Map Data (1:25.000) Aerial Photographs
<b>Settlement</b>	Topographic and/or Base Map Data (1:25.000) Aerial Photographs
<b>‘time-depth’</b> – the historic dimension of the landscape	Conservation Area Designations Monuments and LBs ), and accompanying reports/research  General Directorate of Cultural Heritage and Museums, Ministry of Culture and Tourism ( <i>Kültür ve Turizm Bakanlığı</i> ) General Directorate of Natural Heritage Conservation, Ministry of Environment and Planning ( <i>Çevre ve Şehircilik Bakanlığı</i> ) Nevşehir and Kayseri Regional Conservation Council(s) Local Authorities

This structured data gathering process is followed by the analysis and identification of Cul.LCA Types which shared distinct groupings of landscape attributes. For example, in the Soğanlı Territorial Level Cul.LCA, an area possessing a pattern of small, irregular fields, associated with known Early Christian and Byzantine monuments and/or sites, place names, and shown to be in existence prior to the earliest comprehensive map evidence may have been allocated to the *pre- 20<sup>th</sup> cent.*

*Settlement (Early Christian/Byzantine)* Cul.LCA type. Alternatively, an extensive area of natural vegetation marked on the topographic and/or base maps produced by the HGK would be placed in the *Low Plain with Significant Areas of Natural Vegetation* or *High Plain with Significant Areas of Natural Vegetation* and/or *Low Plain Farmland with Significant Areas of Natural Vegetation* Cul.LCA type - depending on the dominating landform and other data coming from the land cover map layer.

The number of Cul.LCA Types can vary depending on the purpose of specific types of analysis, objectives and the landscapes encountered, but there is a common core of Cul.LCA Types (see Table 5.2) that allows each to be joined at a higher level. In all cases these types are subdivided. U-Shaped Valley with Settlement, for example, might have Pre-Historic, early Christian/Byzantine or modern divisions, or High Plain Farmland may be divided between areas that include discrete clusters of farm buildings and those that do not.

The resulting mapping is hierarchical and included the following 7 Broad Types at the Regional Level and 16 Sub-Types at the Territorial Level.

**Table 5.2 List of Regional and Territorial Level Cul.LCA Types – showing the hierarchy of mapping between different levels of the Cul.LCA.** The letters left of each list are used to identify individual Cul.LCA types in Map(s) 5 and 12 included in Appendix D showing the extent and distribution of Cul.LCA types.

<b>(Regional Level ) Cul.LCA Types</b>		<b>(Territorial Level) Cul.LCA Types[1]</b>	
<b>h_pl (non-volc.)</b>	high plain (non-volcanic)	<b>HP_f</b>	High Plain Farmland
		<b>HP_f/nat</b>	High Plain Farmland with Significant Areas of Natural Vegetation
		<b>HP_nat</b>	High Plain with Significant Areas of Natural Vegetation
		<b>Com</b>	Communications
<b>wa</b>	water and associated areas	<b>Wa</b>	Water Bodies and Associated Areas (incl. marshland and/or swamps)
<b>l_pl (non-volc.)</b>	low plain (non-volcanic)		
<b>mt (volc.)</b>	mountainous (volcanic)		
<b>l_pl (volc.)</b>	low plain (volcanic)	<b>LP_f</b>	Low Plain Farmland
		<b>LP_f/nat</b>	Low Plain Farmland with Significant Areas of Natural Vegetation
		<b>LP_nat</b>	Low Plain with Significant Areas of Natural Vegetation
		<b>LP_h</b>	Low Plain Hill
		<b>Mt</b>	Low/Medium Mountain [2]
		<b>Com</b>	Communications
		<b>v</b>	valleys
		<b>UV_orch/nat</b>	U-Shaped Valley Farmland (orchard) with Significant Areas of Natural Vegetation

**Table 5.2 (continued)**

<b>(Regional Level ) Cul.LCA Types</b>		<b>(Territorial Level) Cul.LCA Types[1]</b>	
<b>v</b>	valleys	<b>UV_nat</b>	U-Shaped Valley with Significant Areas of Natural Vegetation
		<b>Wa</b>	Water Bodies and Associated Areas (incl. marshland and/or swamps) [2]
		<b>Com</b>	Communications
<b>s</b>	settlement	<b>UV_s</b>	U-Shaped Valley with Settlement
		<b>UV_hist.s</b>	U-Shaped Valley with Settlement – pre 20 <sup>th</sup> cent. (Early Christ./Byz)
		<b>LP_s</b>	Low Plain with Settlement

**Notes:**  
 [1] The study area at the territorial level was within the following four regional level Cul.LCA types: high plain (non.volc.), low plain (volc.), valley, and the settlement - as a result the above table shows only a representative part of the hierarchy of Cul.LCA types between the two levels.  
 [2] These areas also existed in the regional level Cul.LCA types – but as they were too small to be represented in the regional level map scale were included in the greater/adjacent Cul.LCA type.

The method is flexible enough to allow still further and more detailed characterisation below the sub-types at a more localised scale (see Table 3.3 in Chapter 3).

Use of GIS ensures that additional characterisation above and beyond the definition of simple Cul.LCA types to be produced. Aspects that can be characterised in more detail include time-depth and previous landscape character (if data is available). The presence of post-18<sup>th</sup> cent. field systems and pre-hist. settlement beneath HP\_f/nat (farmland) may be recorded, for instance, as may the extent of earlier woodland that had later been reduced through assarting and conversion to pasture. Such flexibility allows a wide variety of Cul.LCA analyses and map outputs, ranging from

illustrations of boundary loss or change since the 1990s through to interpretative reconstructions of earlier land uses.

However, the Cul.LCA mapping process is focused upon the historic components of the present-day landscape. Its primary objective is not, for example, to map the former extent of post-18<sup>th</sup> cent. field systems in a given area (although this may be achieved indirectly), but instead to illustrate where today's landscape is broadly post-18<sup>th</sup> cent. in origin and in surviving character.

The potential for combinations of enquiries made of the dataset, and with others, such as the Sites and Monuments Inventory (SMI) is endless. Perhaps most importantly, for the first time it was possible to set Cappadocia's individual historic attributes, its buildings, sites and monuments, within a broad framework of historic landscape character, and to measure the impact of future proposals upon the whole of the historic environment.

The main product of Cul.LCA is the character mapping, available in GIS format. In addition to this, it includes written descriptions of each Character Type and/or Area and its main features.

In the case of Soğanlı (Yeşilhisar) - for each Character Type there are summary descriptions that outline the following:

- The defining, distinguishing attributes, i.e. geology, basic topographical features or association with settlements
- The principal historical processes that have led to the creation of the landscape type
- Typical historical and archaeological components
- Rarity
- Survival
- Evidence for time-depth
- Potential for historical and archaeological research
- Forces for change
- Recommendations

## Results

The Cul.LCA has produced extensive information, which made possible complex interpretations to serve a variety of uses. Many of these uses can be anticipated or planned at the outset of the Step 1 (Scope) whilst others will be developed as the method will evolve. As the discussion of current and emerging applications in the previous Chapter 4 demonstrated there is a great variety of Cul.LCA applications, including:

### **Spatial Planning**

- Input into Landscape Strategies and Development Plan Policies.
- Identifying areas with potential for new-built development.
- Design of new development.
- Development control.
- Inputs to Environmental Impact Assessment (EIA)

### **Landscape Conservation and Management**

- ‘Special’ Areas of Landscape – identification and boundaries of designations.
- Predictive modelling for archaeological sites in areas where none are recorded in the Inventory (SMI).
- Identifying the archaeological potential of gaps in the SMI
- Targeting future archaeological work.
- Local communities
- Land-use planning
- Guiding woodland expansion/ proposals
- Input into agri-environment schemes and

targets

- Transport planning
- Monitoring landscape change.

The development of such methods, however, is just the first step towards a consistent approach to the evaluation and management of landscapes.

The experience gained in the process of testing and refining the Cul.LCA methodology outlined in this chapter as well as in some detail in Chapter 3 would suggest that the general principles behind the Cul.LCA and its methodology complements the methodologies for inventory and evaluation within the existing protection mechanism provided by the Act No.2863. It provides a systematic methodology to ensure that the multiple values of landscapes (i.e. land-use, land cover, geology, soils, topography and visible evidence of human activity in the landscape) are considered. Clearly, the protection of cultural landscapes, as with all other cultural and natural properties, needs to be protected as part of the Act No.2863 and its supplementary regulations. In Turkey, where the primary strategy for protection of landscapes has been to register these areas to the SMI as ‘*monuments*’ and/or two or more types/categories of ‘*sites*’ – according to their size and characteristics and thus approached within the existing ‘*site*’ definition and norms, the current laws and regulations need to be revised to ensure that new and effective means of conservation (including the definition of ‘*cultural landscapes*’) such as those described in the CoE<sup>131</sup> and UNESCO<sup>132</sup> documents, are accepted. This re-evaluation is critical for future protection of the diverse, complex and dynamic nature of landscapes.

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<sup>131</sup> CoE (2000).

<sup>132</sup> UNESCO (1972).

Also see UNESCO Operational Guidelines for the Implementation of the World Heritage Convention and its Annex 3 (Guidelines on the inscription of specific types of property of the World Heritage List). And other related reports and working documents (UNESCO, 1992; 1993; 1994a; 1994b; 1996; 1999; and 2003b) which are briefly outlined in Chapter 3 and also included in the *Bibliography*.

This study also indicates that landscape character can provide the framework for dealing with development in the landscape (which are ‘ordinary’ – do not merit protection under the Protection of Cultural and Natural Resources Act No.2863, 1983 as amended by the Act No.3386, 1987 and Act No.5226, 2004 or others such as National Parks Act No. 2873, 1983 and Environment Act No.2872, 1983, but still provide a wider setting for ‘monuments’ and ‘sites’) in a manner that balances the need to protect existing resources with encouragement of change. The character areas identified can be used in the consideration of how new development or land use will change that character (in accordance with the Planning Act No.3194, 1985) – without comment as to *whether* it should – whereas landscape sensitivity provides the basis for decision regarding, first, *whether* change is acceptable and, second, if so, *how*.

However, real progress can only be made through the application of the Cul.LCA method in different geographic locations and under different socio-economic conditions, thus allowing for further testing and refinement. In order to achieve this, and to ensure optimum methodological benefit, the entire process will require careful monitoring of results by a central body, probably headed by the MoCT.

This process of advancing landscape assessment in Turkey should include the following:

- Further development of the approach to landscape character identification. i.e. the use of the three levels or ways of understanding landscape and how they are combined to produce maps that are useful for planning, landscape conservation and management.
- Computer automation, using GIS, of part of the landscape assessment process.

The success of this depends on the availability of the required data sets in digital form and on close co-operation between MoCT, MoEP, MoFWa and other possible data suppliers listed in Table 3.2, pp.83-87.

- Identification of the most effective scale for use of landscape character in regard to different kinds of land use and development. While it may be

interesting academically to identify many landscape character areas and have them as a reference in a regional development plan, it is quite possible that only a few more broadly scaled types are sufficient for the practical needs of planners to help guide and control change in the landscape.

- Establishment of the optimum ways of involving the stakeholders. This should involve investigation and testing of evaluation methods in the identification of the values attached to landscape by different groups.

Expansion in the scope of this form of assessment, including the addition of techniques for involving stakeholders and the need to embrace work on the historic dimension of landscape character, adds to the complexity and cost of such work, potentially making it more difficult to persuade local authorities to give it priority. At the same time there is yet no conclusive evidence about the benefits of using this technique. Although it is in wide use (in other countries such as England and Scotland), the value it has added in terms of the quality of decisions made about the landscape, the nature of landscape change or the character of new development is not so far examined. The value of character assessment in informing decisions in highly contested areas such as the fringes of historic settlements is particularly worthy of further examination, as this is where the most difficult problems arise in finding land suitable for development and in maintaining environmental quality. There is therefore a need to assess the value of Cul.LCA in the decision making process. Above all, it requires the raising of awareness and understanding among policy-makers, managers and practitioners, in both the public and private sectors.

- Production of planning and design guidelines as well as sensitivity maps at a site level.
- Determination of the process by which assessment results can be translated into regional development plan policy and other planning tools, while ensuring compatibility throughout Turkey.

## 5.2 Implications for Future Research

Use of Cul.LCA is still in its infancy and there remain many areas to be explored. In this research this was achieved through exploring the local landscape in more detail. In the case of Cappadocia (Turkey), the Soğanlı (Yeşilhisar) district (which is defined by the two narrow valleys of Mavrucan Dere and Soğanlı Dere including the settlements of Soğanlı, Güzelöz and Başköy) is one which is little understood but has considerable potential.

More specifically, it used the territorial level landscape characterisation as a springboard for more detailed work within the broad framework provided by the Cornwall, (UK)<sup>133</sup> method. The principal aim of the research was to ‘*extend and test the landscape characterisation methodology*’ within the current legislative framework in Turkey.

This was achieved through the following:

- Extend the landscape characterisation to identify more local attributes and scales.
- Test the landscape characterisation as a tool for identifying and expressing intangible cultural landscape attributes (such as local perceptions, attitudes and associations).
- Test and extend the landscape characterisation methodology to incorporate stakeholder participation and views.

In the early stages of its evolution landscape assessment was primarily seen as a professional process with the work carried out by professionals for use by professionals. Over the years, however, there has been growing recognition of the need to involve the much wider constituency of people who have a particular interest in the landscape, often now referred to as the stakeholders. This approach is particularly important given the new emphasis in local perceptions in the characterisation process. Practitioners are still

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<sup>133</sup> Herring, P. 1995; 1998

learning about the best ways of involving stakeholders in the process of Cul.LCA but it is widely recognised that investment in this area is likely to produce both better informed assessments and greater ownership of the results when they are applied in practice. This was achieved by the in-depth interviews carried out in parallel with the main assessment at the territorial and site levels. Chapter 3 includes the method used and the summaries of the results.

- Identify further research uses for the landscape characterisation, such as identification of boundaries of ‘special areas’ of landscape and assessment of their wider setting.
- Identify and develop a dialogue between the landscape characterisation information and that held within other data-sets, in particular the Sites and Monuments Inventory.

A second, and increasingly important area in which the landscape characterisation methodology could be used and tested is that of the urban historic environment. A methodology that could provide information on the urban archaeological resource for use in spatial planning and management.

This will, expand the (Cul.LCA) approach by transferring the landscape characterisation methodology from the broad landscape to individual towns. The methodology could involve the mapping of urban character types and use this to draw together separate aspects of the built and below-ground heritage. As with landscape characterisation the work could involve the definition of urban character types sharing common attributes (in this case building types, street plans, building mass, nodes, barriers, edges and voids, roads, paths and boundaries, materials, period and function), followed by an assessment of importance in terms of rarity, time depth, completeness and the potential forces for change.

Once completed it will be a means by which the historic dimension to townscape can be mapped and evaluated, and brought into the planning process as a powerful tool for managing change.



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## GLOSSARY

The definitions of terms (and/or words) given here are not intended to be authoritative, but instead guide the reader to the meanings generally used in this research. Some are deliberately limited (i.e. natural, cultural, etc.).

### A

**alluvium** sedimentary deposits resulting from the action of rivers, including those laid down in river channels, floodplains, estuaries and lakes.

### B

**basin (geo)** a large-scale structural formation of rock strata formed by tectonic warping of previously flat lying strata. Structural basins are geological depressions, and are the inverse of domes. Some elongated structural basins are also known as synclines. Structural basins may also be sedimentary basins, which are aggregations of sediment that filled up a depression or accumulated in an area; however, many structural basins were formed by tectonic events long after the sedimentary layers were deposited.

### C

**character** a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse. (CA & Scottish Nat. Her., 2002.p.8)

characteristic; collective peculiarities, sort, style; distinction, individuality (COD, 1983)

**character type** distinct types of landscape that are relatively homogeneous in character. They are generic in nature in that they may occur in different areas in different parts of a region, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns and vegetation etc. pattern. (CA & Scottish Nat. Her., 2002.p.9)

For example U-Shaped Valley with Significant Areas of Natural Vegetation and Low/Medium Mountain are recognisable and distinct landscape character types.

**character area** By comparison, these are single unique areas and are the discrete geographical areas of a particular landscape type. (CA & Scottish Nat. Her., 2002.p.9)

Taking the U-Shaped Valley with Significant Areas of Natural Vegetation example, the Mavrucan Dere Valley, the Soğanlı Dere Valley, the Ballık Dere Valley (all u-shaped valley with significant areas of natural vegetation) would be separate landscape character areas, of the u-shaped valley with significant areas of natural vegetation landscape character type.

This distinction could be reflected in the naming of types and areas.

- characteristics** elements, or combinations of elements, which make a particular contribution to distinctive character. (CA & Scottish Nat. Her., 2002.p.8)
- characterisation** the process of identifying areas of similar character, classifying and mapping them and describing their character. (CA & Scottish Nat. Her., 2002.p.8)
- catchment area** see **drainage basin**
- cinder cone** a cinder cone is a steep conical hill of volcanic fragments that accumulate around and downwind from a volcanic vent. Cinder cones range in size. They are made of pyroclastic ( see **pyroclastics**) material.
- cliff** a significant vertical, or near vertical, rock exposure. Cliffs are formed as erosion landforms due to the processes of erosion and weathering that produce them. Cliffs are common on coasts, in mountainous areas, escarpments (see **escarpment**) and along rivers.  
Cliffs are usually formed by rock that is resistant to erosion and weathering.
- cultural** Relating in various ways to people. (Herring, P., 1998)

## D

- drainage basin** a drainage basin is an extent or an area of land where surface water from rain and melting snow or ice converges to a single point, usually the exit of the basin, where the waters join another waterbody, such as a river, lake, reservoir, estuary, wetland, sea, or ocean. In closed drainage basins the water converges to a single point inside the basin, known as a sink, which may be a permanent lake, dry lake, or a point where surface water is lost underground. The drainage basin includes both the streams and rivers that convey the water as well as the land surfaces from which water drains into those channels, and is separated from adjacent basins by a drainage divide.  
The drainage basin acts as a funnel by collecting all the water within the area covered by the basin and channelling it to a single point. Each drainage basin is separated topographically from adjacent basins by a geographical barrier such as a ridge, hill or mountain.  
Other terms that are used to describe a drainage basin are **catchment**, **catchment area**, **catchment basin**, **drainage area**, **river basin**, **water basin** and **watershed**.
- detritus** is particles of rock derived from pre-existing rock through processes of weathering and erosion.  
These particles are often transported through sedimentary processes into depositional systems such as riverbeds, lakes or the ocean forming sedimentary successions.
- depression** is a landform sunken or depressed below the surrounding area.

## E

- elements** individual components which make up the landscape, such as trees and hedges.
- escarpment** an escarpment (or **scarp**) is a type of cliff, formed by the movement of a geologic fault, or a landslide.

## F

**features** particularly prominent or eye-catching elements, i.e. fairy chimneys

## G

**gorge** is a deep ravine between pairs of escarpments or cliffs and is the most often carved landscapes by the erosive activities of a river.

**gully** a landform created by running water, eroding sharply into soil, typically on a hillside.

## H

**hedge** a hedge (or hedgerow) is a line of closely spaced shrubs and tree species, planted to form a barrier or to mark the boundary of an area. Hedges used to separate a road from adjoining fields or one field from another, and of sufficient age to incorporate larger trees, are known as hedgerows.

**hedgerow** see **hedge**

**hedge trees** see **hedge**

**hill** a hill is a landform that extends above the surrounding terrain. Hills often have a distinct summit, although in areas with scarp topography (see **scarp** or **escarpment**) a hill may refer to a particular section of flat terrain without a massive summit.

The distinction between a hill and a mountain is unclear and largely subjective, but a hill is generally lower and less steep than a mountain.

## I

**ignimbrite** is the deposit of a pyroclastic (see **pyroclastics**) density current, or pyroclastic flow, a hot suspension of particles and gases that flows rapidly from a volcano, driven by a greater density than the surrounding atmosphere.

Ignimbrites are made of :

A very poorly sorted mixture of volcanic ash (or tuff when lithified) and pumice lapilli (see **tephra**), commonly with scattered lithic fragments.

Ignimbrites may be white, grey, pink beige, brown or black depending on their composition and density.

The term “ignimbrite” has been firstly used Marshall (1935) and the term is introduced into the geological literature. Confusion about the definition of “ignimbrite” still exists, because it is sometimes used as a “litological unit” that means welded tuff, and sometimes as a “genetic” term that means the rock or deposits formed by pyroclastic flows. (Mutlu, M.Ö., 2008)

## J

## K

## L

**land cover** combination of land use and vegetation that cover the land surface

- landform** combinations of slope and elevation that produce the shape and form of the land surface
- landscape** primarily the visual appearance of the land including its shape, form and colours. However, landscape is not purely a visual phenomenon. The landscape relies on a range of other dimensions including geology, landform, soils, ecology, archaeology, landscape history, land use, architecture and cultural associations.
- landscape capacity** the degree to which a particular landscape character type or area is able to accommodate change without significant effects on its character, or overall change of landscape character type. Capacity is likely to vary according to the type and nature of change being proposed. (CA & Scottish Nat. Her., 2002. p.53)
- landscape character** the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how these are perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement. It creates the particular sense of place of different areas of the landscape. (CA & Scottish Nat. Her., 2002. p.53)
- landscape quality (or condition)** is based on judgements about the physical state of the landscape, and about its intactness, from visual, functional, and ecological perspectives. It also reflects the state of repair of individual features and elements which make up the character in any one place. (CA & Scottish Nat. Her., 2002. p.53)
- landscape value** Landscape value is concerned with the relative value that is attached to different landscapes.  
In a policy context the usual basis for recognising certain highly valued landscapes is through the application of a local or national landscape designation. Yet a landscape may be valued by different communities of interest for many different reasons without any formal designation, recognising, for example, perceptual aspects such as scenic beauty, tranquillity or wildness; special cultural associations; the influence and presence of other conservation interests; or the existence of a consensus about importance, either nationally or locally. (CA & Scottish Nat. Her., 2002. p.53)
- lowland** is any broad expanse of land with a general low level.

## M

- monogenetic volcano** one short eruptive event at each volcano form in single eruptions and are mostly associated with vents aligned on dike-like tabular conduits. (Toprak, V., 1998. p.58)

## N

- natural** neither the work of, nor interfered with by people. (Herring, P., 1998)

## O

## P

- polygenetic volcano** having more than one eruptive event from the same vent(s). High level of magma chamber.  
repeated eruptions on multiple vents building over a pipe-like central vent. (Toprak, V., 1998. p.58)

**pyroclastics** are clastic rocks composed solely or primarily of volcanic materials. Where the volcanic material has been transported and reworked through mechanical action – such as wind or water – these rocks are termed **volcaniclastics**.

**plain** land with relatively low relief, that is flat or gently rolling

**plateau** also called a **high plain** or **tableland**, is an area of highland, usually consisting of relatively flat terrain.  
Plateaus can be formed by a number of processes, including, upwelling of volcanic magma, extrusion of lava, and erosion by water and glaciers.

## Q

## R

**ravine** is narrower than canyon. Often the product of stream-cutting erosion. ravines are typically classified as larger in scale than **gullies**.

**ridge** a ridge or mountain ridge is a geological feature consisting of a chain of mountains or hills that form a continuous elevated crest for some distance.

**rock outcrop** is a visible exposure of bedrock or ancient superficial deposits on the surface of the Earth.

## S

**semi-natural** habitats or communities which are only partially naturally derived, being in various ways also determined by human actions. (Herring, P., 1998)

**shrub** is distinguished from a tree by its multiple stems and shorter height, usually under 6 m tall. Plants of many species may grow either into shrubs or trees, depending on their growing conditions

## T

**tephra** is a fragmental material produced by a volcanic eruption regardless of composition, fragment and size. Once **clasts** have fallen to the ground they remain as tephra unless hot enough to fuse together into **pyroclastic** rock or tuff.  
Tephra fragments are classified by size:

- Ash – particles smaller than 2 mm in diameter
- **Lapilli** (or **volcanic ciders**) – between 2-64 mm
- Volcanic bombs (or volcanic blocks) – larger than 64 mm

The use of tephra layers, which bear their own unique chemistry and character, as temporal marker horizons in archaeology and geological sites is known as **tephrochronology**.

**time-depth** the long-term interaction between human activity and natural processes. It recognises that the long sequence of events and actions that have produced the present environment, and which is visible within the landscape, is the result of human activity as well as natural processes.

The visible evidence in the landscape for change and continuity over periods of time. (Herring, P., 1998)

## U

**V**

**vocaniclastic deposits** see **pyroclastic rocks** or **pyroclastics**

## APPENDIX A

### CHRONOLOGICAL REVIEW OF THE EXISTING AGREEMENTS AND INITIATIVES ON PROTECTION OF CULTURAL AND NATURAL HERITAGE

Information about the existing international conventions, charters, recommendations and other related legal documents on culture and nature conservation is to a considerable extent taken from the inventory prepared by the IUCN Commission on Environmental Law<sup>134</sup>, but more recent documents have also been incorporated to the study from various individual sources.

International conventions, charters, recommendations and other related legal docs. have been listed by chronological order and are summarized under the following headings:

- title,
- year initiated,
- secretariat,
- scope (meaning – geographical scope of application),
- area of policy and
- aims/objectives.

In terms of ‘area of policy’ subjects have been grouped under three general topics. ‘CH’ indicating that the convention, charter and/or the recommendations’ main area of policy is on cultural heritage; ‘EC’ environmental conservation and biodiversity and ‘D’ urban development.

**Table A.1 Chronological Review of the Existing Agreements and Initiatives on Protection of Cultural and Natural Heritage**

Title	Year Initiated	Secretariat / focal point	Scope (Geo. Scope of App.)	Area of Policy	Aims / Objectives
Athens Charter for the Restoration of Historic Monuments (Athens Charter)	1931	Participants of the Congress of Architects and Technicians of Hist. Monuments	Global	‘cultural’ heritage (CH)	To define general principles guiding the preservation and restoration of historic/ancient monuments. <b>Keywords: historic/ancient monument, restoration, conservation</b>
Recommendation concerning the Safeguarding of the Beauty and Character of Landscapes and Sites	1962	UNESCO	Global	CH	To set out measures aimed at protecting natural, rural and/or urban landscapes and sites, whether natural or man-made, which have cultural or aesthetic interest. <b>Keywords: natural, rural, urban landscape, sites, preservation, restoration</b>
International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter)	1964	ICOMOS	Global	CH	To set out the fundamental principles of conservation and rest. of the monuments and sites. <b>Keywords: monuments, sites - meaning monuments’ urban/rural setting, rest., conservation</b>

<sup>134</sup> IUCN Commission on Environmental Law (2000). *Landscape Conservation Law: Present Trends and Perspectives in International and Comparative Law*. Gland, Switzerland and Cambridge, UK: IUCN.



**Table A.1 (continued)**

Title	Year Initiated	Secretariat / focal point	Scope (Geo. Scope of App.)	Area of Policy	Aims / Objectives
Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention)	1971	Ramsar Convention Bureau	Global	environmental conservation, biodiversity (EC)	To ensure the conservation of wetlands, especially those of international importance, by fostering wise use, international co-operation. <b>Keywords: wetlands, wise use - meaning sustainable use of resources</b>
Declaration of the United Nations Conference on the Human Environment (the Stockholm Declaration)	1972	UN	Global	EC; urb.dev. (D)	To set out principles concerning the environment and development. <b>Keywords: environment, development</b>
Convention concerning the Protection of the World Cultural and Natural Heritage	1972	UNESCO	Global	CH	The identification, protection, conservation, presentation and transmission to future generations of cultural and natural heritage of 'outstanding universal value'. <b>Keywords: cultural/natural heritage, identification, protection, conservation, 'outstanding universal value'</b>
Recommendation concerning the Protection, at National Level, of the Cultural and Natural Heritage	1972	UNESCO	Global	CH	The identification, protection, conservation, presentation and transmission to future generations of cultural and natural heritage of national importance. <b>Keywords: cultural/natural heritage, identification, protection, conservation, national imp.</b>
European Architectural Heritage Year (EAHY)	1975	Council of Europe	Regional- Europe	CH	To awaken the interest and pride of the European peoples in their common arch. Heritage. <b>Keywords: architectural heritage, conservation, developing awareness, training</b>
Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)	1979	Council of Europe	Regional -Europe	EC	To maintain populations of wild flora and fauna with particular emphasis on endangered and vulnerable species. <b>Keywords: flora/fauna, endangered species, sustainable use</b>
International Charter for the Preservation of Historic Gardens (The Florence Charter)	1981	ICOMOS	Global	CH	Identification, conservation, restoration and re-construction of historic gardens. <b>Keywords: historic garden, architectural compositions of hist. gardens, identification, conservation, restoration, re-construction</b>
Convention for the Protection of the Architectural Heritage of Europe	1985	Council of Europe	Regional - Europe	CH	Reinforce and promote policies and co-operation for the protection and enhancement of heritage within Europe. <b>Keywords: architectural heritage, identification, protection, conservation</b>
Agenda 21	1992	UNCED	Global	D	Outline priorities and guidelines towards sustainable development to be implemented at the national level. <b>Keywords: sustainable development</b>
Convention on Biological Diversity	1992	UNEP	Global	EC	The conservation of biological diversity. <b>Keywords: biological diversity, sustainable use</b>
International Framework for Protected Area Management Categories endorsed by the IUCN General Assembly	1994	IUCN	Global	EC; CH	Protection of the nature-culture balance and associated values and ecosystems. <b>Keywords: people and nature, protected landscapes/seascapes, biodiversity, sustainability, ecosystem integrity, national or sub-national importance</b>
The Nara Document on Authenticity	1994	ICOMOS	Global	CH	Re-consider the criteria governing authenticity and integrity in the Operational Guidelines on the Implementation of the World Heritage Convention. <b>Keywords: authenticity, integrity, tangible / intangible heritage</b>
European Nature Conservation Year (ENCY)	1995	Council of Europe	Regional -Europe	EC	To develop a public awareness campaign in 1995 on conservation outside protected areas.
Pan-European Biological and Landscape Diversity Strategy	1996	CoE; UNEP; European Centre for Nature Cons.	Regional -Europe	EC; CH	To find a consistent response to the decline of biological and landscape diversity values in Europe and to enhance the sustainability of the natural environment <b>Keywords: biological diversity, landscape diversity, sustainability</b>
European Landscape Convention	2000	Council of Europe	Regional -Europe	CH	Protection, management and planning, and to organize European co-operation on landscape issues. <b>Keywords: people and nature; a balance and harmonious relationship between social needs, economic activity and the environment; sustainability</b>
Convention for the Safeguarding of the Intangible Cultural Heritage	2003	UNESCO	Global	CH	To set int./national principles for the safeguarding, development and promotion of the intangible heritage. <b>Keywords: intangible heritage, cultural diversity, sustainable development</b>



## APPENDIX B

### COMPARATIVE CHRONOLOGY

This section of comparative chronology of Cappadocia within a historical framework covering the whole of Anatolia is an extract from Giovannini, L. (eds.) *Arts of Cappadocia* (1971, pp.208-214).

In some parts corrections and/or further information are incorporated to the chronology based on research carried on as part of the ‘time-depth’ – the Archaeological and Historical Dimension of the Landscape in Cappadocia and the Maps associated with it (Maps 4a-f). These are identified by an asterisk (\*) attached to the statement added.

**Table B.1 Comparative Chronology**

DATE	ANATOLIA	DATE	CAPPADOCIA
<b>The Pre-Hist. period</b>			
c.7040 B.C.	Hacılar		
6200 B.C.(*)	Mural painting of a volcano at Çatalhöyük, perhaps Hasan Dağ; the oldest known landscape painting		
		5 <sup>th</sup> – 4 <sup>th</sup> mill. B.C.	Cappadocia is occupied by Anatolian peoples organised in small independent states ruled by local princes; the chief town is Puruškanda
3 <sup>rd</sup> mill. B.C.	Copper/Early Bronze Age (Troy I)	3 <sup>rd</sup> mill. B.C.	Foundation of Kaniş (present day Kültepe).(*) Commercial and political penetration by the Assyrians.
2100-2000 B.C. (*)	The Hattian Period (*) (The Hatti in) Central and Southern Anatolia. Objects in gold, silver and amber. Metal mining and metal working. Alacahöyük (*)	2320-2284 B.C.	Coalition of 17 kings (including Zipani king of Kaneş and Tişbinki king of Kurşaura) against one of Sargon’s successors as king of Assyria. Spread of Cappadocian pottery, decorated with geometric motifs and symbols, throughout Asia Minor

**Table B.1 (continued)**

2000-1750	Palaeo-Hittite period (the Early Hittite Period) (*)		
		19 <sup>th</sup> c.	Establishment of a considerable Assyrian colony ( <i>karum</i> ) (*) outside Kaneş and other settlements near the small towns of Zalpa, Wakhşusdana and Şumukha
		1800	This area becomes the geographical centre of the Hittite Kingdom with its capital Kaniş (or Kaneş) (*)
1750-1450	Hittite Old Kingdom. (The Old Hittite Kingdom) (*) Conquest of Aleppo and Babylon. Cuneiform script in Anatolia.		
1450-1200	Hittite Empire (Hattuša, Yazılıkaya). Immigration of Phrygians. Mitannian culture in Eastern and South-Eastern Anatolia.		
1200	The Dorians in Anatolia; destruction of Troy. Thracian tribes enter South-East Europe; invasion by Sea Peoples.	1200	The Hittite kingdom in Cappadocia collapses in face of an invasion by peoples from the north, including the Phrygians. The Phrygians built a town on the ruins of Kaneş
		10 <sup>th</sup> – 7 <sup>th</sup> c. B.C.	Dark Age; foreign invasions of Anatolia and Cappadocia
1000-800 B.C.	The Greeks (Achaeans, Ionians, Aeolians, Dorians) colonise Ionia: Miletus, Ephesus, Smyrna		
860-585	Kingdom of Urartu		
800-700	Syro-Hittite (Neo-Hittite) principalities in Eastern/south and south-east Anatolia (Malatya/Konya and Karaman). Influence of Aramaean, Assyrian and Phoenician civilizations		
800-600	Development of numerous Anatolian civilizations influenced in varying degree by Greek culture: the Phrygians (King Midas at Gordion), the Lycians (Xanthus), the Mysians, the Carians (Iasus), the Lydians (King Croesus at Sardis)		
657	Foundation of Byzantion (Byzantium) by the Megarians		
6 <sup>th</sup> c.	Kingdom of Lydia	6 <sup>th</sup> c. B.C.	Cappadocia is incorporated in the Kingdom of Lydia, and with it falls under Persian control
588	Total eclipse of the sun, forecast by Thales		
546	Cyrus the Great annexes Lydia to the Persian Empire		

**Table B.1 (continued)**

Middle of 6 <sup>th</sup> c.	Asia Minor a Persian province		
401	Retreat by the Ten Thousand (Xenophon's <i>Anabasis</i> )		
		4 <sup>th</sup> c.	Abrocomas and Ariarathes rule as Persian satraps. Satrapal coins with Aramaic inscriptions
		4 <sup>th</sup> c.	Ariarathes I (b.403) founds a dynasty which is to rule for centuries in Cappadocia. Division of the country into Cappadocia ad Pontum and Cappadocia ad Taurum. Alexander passes through Cappadocia and leaves his lieutenant Cabictas as satrap (tr- vali)
334-332	Alexander the Great's conquests		
		332-322	Ariarathes I maintains the independence of his kingdom and succeeds in extending its frontiers
301	Asia Minor under Seljukid rule (except Pontus, Cappadocia, Bithynia and Pergamon)	323-282 B.C.	Cappadocia is governed officially by the satraps of Macedonia-Eumenes, Nicanor and Aminta. Antigonus the One-Eyed occupies Cappadocia. Lysimachus and Seleucus I rule as satraps, but their authority is not recognised by the people of Cappadocia Under Antiochus I, the successor of Seleucus I, Ariarathes II consolidates and extends his rule over Cappadocia, from the river Halys in the north to the Taurus in the south and the Euphrates in the east
283-133 B.C.	Kingdom of Pergamon	256	Ariaramnes, son of Ariarathes II, has the independence of his kingdom recognised by Antiochus II of Syria The Greek alphabet comes into use in place of Aramaic
190	Battle of Magnesia: Antiochus of Syria defeated by the Romans	220-163	Reign of Ariarathes IV, who fights on the side of Antiochus against the Romans at the battle of Magnesia (190 B.C.) Ariarathes IV follows a policy of friendship and alliance with Rome, and also with the king of Pergamon in order to protect his eastern frontiers (Armenians and Parthians)

**Table B.1 (continued)**

			Cappadocia is divided into ten provinces ( <i>strategiai</i> ) ruled by <i>hegemones</i>
		163-130	Reign of Ariarathes V, also known as Eusebius Philopator, who is recognised as sole ruler of Cappadocia. The country is exposed to Greek influence. Re-settlement of Mazaca and Tyana, now renamed Eusebeia on Argaeus and Eusebeia of the Taurus.
132-63	Mithridates king of Pontus		
129 B.C.	Establishment of the Roman province of Asia. Principle towns: Ephesus, Sardis, Aphrodisias, Hierapolis, Side, Perge, Aspendus, Termessus		
		96	Ariarathes VIII is driven out of Cappadocia by Mithridates, king of Pontus
		95-36	War between Rome and Mithridates, who allies himself with king Ariobarzanes I, founder of a new local dynasty which lasts for three generations Territorial extension of the kingdom of Cappadocia
64	Pontus and Cilicia become Roman provinces	52-42	Ariobarzanes III
46	Thrace becomes a Roman province		
27-25	Galatia becomes a Roman province		
		18-17	Cappadocia becomes a Roman province. The division into <i>strategiai</i> is maintained by Antony
		53 A.D.	Paul of Tarsus passes through Cappadocia, on his first journey
c.57	Paul's Epistle to the Galatians (Ancyra)		
		70	Vespasian establishes two legions in the country
c.95	The revelation of St John, addressed to the seven churches in Asia Minor: Ephesus, Smyrna, Pergamon, Thyatira, Sardis, Philadelphia, Laodicea.	1 <sup>st</sup> c.	Martyrdom of St Longinus (?)
2 <sup>nd</sup> c. A.D.	Diocese of Ephesus. Ignatius of Antioch's letter to the churches in Asia Minor; Melito of Sardis. Spread of Montanism		
		161	Vologeses III, king of Parthia, invades Cappadocia
		3 <sup>rd</sup> c. c.200	Diocese of Caesarea Alexander bishop of Caesarea

**Table B.1 (continued)**

		c.250	Firmilian bishop of Caesarea
		284-305	Diocletian organises Cappadocia into seven sub-provinces
4 <sup>th</sup> c.	Spread of Arianism	4 <sup>th</sup> c.	Preaching and pastoral activity of the three great Cappadocia-Gregory of Nyssa (d.394), Gregory of Nazianzus (329-390) and Basil (300-379)
325 330	Council of Nicaea Byzantium, now known as Constantinople, becomes capital of the Empire in the East. (Official beginning of Byzantine history)		
		After 350 A.D.	Beginnings of monasticism
		371-372	Valens divides Cappadocia into two regions: Cappadocia Prima (Caesarea) and Secunda (Tyana)
381	Council of Constantinople on the Holy Ghost		
395-408	Arcadius I Emperor of the East		
431	Council of Ephesus: Mary declared to be the Mother of God		
451	Council of Chalcedon (against Monophysism)		
520-530 527-536	St Irene, Constantinople SS. Sergius and Bacchus, Constantinople	6 <sup>th</sup> - 7 <sup>th</sup> c.	First paintings in Cappadocia: Church No.1 at Balkan Deresi, St John the Baptist at Çavuşin Palaeo-Christian symbols and decoration in Churches No.3 and 4 at Zelve, 3 at Balkan Deresi, 3 at Güllü Dere
527-565	Justinian		
529-548	Building of St Sophia, Constantinople		
		7 <sup>th</sup> -8 <sup>th</sup> c.	Güllü Dere No.2, St Stephen, SS. Peter and Paul at Meskendir; Church of the Stylite Nicetas; SS. Joachim and Anna, Kızıl Çukur; Açıkell Ağa Kilisesi (same decorative repertoire as in S. Maria Antiqua and S. Stefano Rotondo, Rome)
		605-611 A.D.	Caesarea occupied by the Sassanid Persians
610-641 A.D.	Emperor Heraclius: eastern Asia Minor, Transcaucasia and Mesopotamia freed from Sassanid control		
626	The Sassanids besiege Constantinople		
7 <sup>th</sup> -9 <sup>th</sup> c.	Organisation of the Empire in themes		

**Table B.1 (continued)**

		647	Caesarea occupied by the Arabs
663-678	Arab incursions into Asia Minor. Occupation of the islands of Cyprus, Rhodes, Cos and Chios. Repeated sieges of Constantinople		
		7 <sup>th</sup> -9 <sup>th</sup> c.	Defensive organisation of the Hasan Dağ region (castles, watch-towers and signalling system)
717	The Arabs again besiege Constantinople		
726-843	Iconoclastic period (787-815: restoration of images)	726	Caesarea again occupied by the Arabs
		726-780	Iconoclastic church of St Basil
		726-843	Depopulation of the monastic communities
754	Iconoclastic Council of Hiera		
		806 A.D.	Tyana occupied for some months by the Arabs
838	The Arabs occupy Ancyra (Ankara) and Amorium		
867-1056	Macedonian dynasty. Byzantine expansion into Eastern Anatolia		
		913-920	St John, Güllü Dere; Tavşanlı Kilise, Ortahisar
		950	Paintings in classical Byzantine style: Tokalı Kilise (New Church), Large Pigeon-House at Çavuşin. 10 <sup>th</sup> c. ivories
		964-965	Nicephorus Phocas and his family in Cappadocia Frescoes of the Large Pigeon-House, Çavuşin
		976-1025	Direkli Kilise, Belisirma
		1000-1075	Paintings of typically Byzantine type, e.g. in the Columned Churches at Göreme (similar to those found in Greece, Cyprus, the Balkans, Georgia and Kiev) Communion of the Apostles, Karabaş Kilise (1060-1061)
		1006 or 1021	St Barbara, Soğanlı
1012	Defeat of the Bulgarians by the Byzantines		
1054	Eastern Schism		
		1060-1061	Karabaş Kilise, Soğanlı
		1067 A.D.	The Seljuks take Caesarea (Kayseri)

**Table B.1 (continued)**

1080-1300	Konya capital of the Seljuk Sultanate of Rum		
1081-1204	Dynasty of the Comneni	1082 A.D.	The Seljuks finally occupy Caesarea (Kayseri)
		1135-1150	Ulu Cami, Kayseri
		1156	Alaeddin Cami, Aksaray
		13 <sup>th</sup> c.	A period of artistic decline, producing works of interior quality and imitations of older models (Church of the Forty Martyrs, Suveş, 1216-1217)
		1202	Çifte Medrese, Kayseri
1204	Sack of Constantinople by the Venetians and Crusaders		
1204-1261	Greek Empire of Nicaea. Latin Empire of the East		
		1206	Foundation of school of medicine at Kayseri
		1207-1273	Mevlâna Celaleddin-i Rumî
1219-1237 A.D.	Reign of Sultan Alaeddin Keykubad I		
		1223	Alaeddin Cami, Niğde
		1226-1312	Sultan Veled, son of Mevlâna
1243	The “Golden Horde” of Genghis Khan routs the army of the Turkish Sultan Gıyasüddin Keyhusrev II at Kuzedaz (Kösedağ)	1248-1270	Preaching of Hacı Bektaş
1261	Restoration of the Greek Empire with the help of the Genoese		
1261-1453	Dynasty of the Palaeologi		
		1268	Sahibiye Medresesi, Kayseri
		1278	Sultan Hanı, between Konya and Aksaray Karamanids
		1283-1295	Latest dated decoration in church of St George, Belisirma
1299	Osman I (d.1326) founds the Turkish Ottoman Empire in Asia Minor	End of 13 <sup>th</sup> c.	Foundation of Halveti order at Niğde by Ahi Yusuf Halveti
1302	Adoption by the Turks of a new calendar, the <i>Khâni</i>	1300-1350	Sungur Bey Cami, Niğde
1308	Collapse of the Seljuk state. Emergence of the principalities:	1308 A.D.	Karamanoğulları Principality rule the region (*)

**Table B.1 (continued)**

	Karamanid emirate at Konya, emirate of Kastamonu, six emirates in South-Western Anatolia, Ottoman sultanate in the north-west, emirate of Artenaoğlu in the east		
1326 A.D.	The Ottoman capture Bursa and make it their capital		
1360-1383	Mosque of Murat I, Bursa		
1361	The Ottomans take Edirne		
1366	Edirne capital of the Ottoman Sultanate		
1369-1405	Incursion of Tamerlane's Mongols into Asia Minor		
1378	Green Mosque, İznik (tile decoration)		
1384-1413	Ulu Cami, Bursa		
1402	Battle of Ankara between Beyazıt I and Tamerlane		
1403	Mongol domination of Anatolia. Death of Beyazıt		
1413-1421	Green Mosque (Yeşil Cami), Bursa		
1413	Re-unification of the Ottoman Empire under Mehmet II		
1422	First siege of Constantinople		
1438	Establishment of the Corps of Janissaries		
1438-1447	Üç Şerefli Cami (Mosque of the Three Balconies), Edirne		
1450-1480	The Turkish mathematician Molla Lutfi writes a treatise on the duplication of the cube		
1451 A.D.	Accession of Mehmet II		
1453	Mehmet II captures Constantinople, which becomes capital of the Ottoman Empire (Istanbul)	c.1450-1470 A.D.	Fatih Cami, Kayseri Melik Gazi Cami, Kayseri
1461	Conquest of the Greek Empire of Trebizond	1483	The region included within the boundaries of the Ottoman Empire (*)
1470-1554	Piri Reis, Turkish admiral and geographer		
1471	Külliye of Mehmet II, Istanbul		
1479	Peace treaty between Venice and the Ottoman Empire		
1480-1481	Gentle Bellini is invited to Mehmet's court at Istanbul and paints the Sultan's portrait		
1481	Death of Mehmet II		

**Table B.1 (continued)**

1484-1488	Külliye of Beyazıt II, Edirne		
1520-1566	Sultanate of Suleiman the Magnificent		
1522	The Turks occupy Rhodes		
1534-1543	Sinan architect to the Sultan (d.1588)		
1534-1543 A.D.	The Algerian corsair Khairaddin Barbarossa becomes admiral to the Turkish fleet		
1550-1556	Süleymaniye Mosque, Istanbul		
1555	Mihrimah Mosque, Istanbul	c.1555	Dış Cami, Niğde
1565-1575	Selimiye Cami, Edirne		
1575	The Turkish astronomer Taki al-Din builds an observatory at Istanbul for Sultan Murat III		
		1616	Kurşunlu Cami, Kayseri
		1660 A.D.	Caravanserai at İncesu
1923	Foundation of the Turkish Republic.		



## APPENDIX C

### INVENTORY OF ARCHAEOLOGICAL REMAINS, MONUMENTS AND SITES OF CAPPADOCIA

The information about monuments and sites is to a considerable extent taken from the cultural inventory prepared by the Nevşehir, Kayseri and Niğde Regional Conservation Council(s), but recent and past surveys of researchers, particularly the works of: H. Rott, “*Kleinasiatische Denkmäler aus Pisidien, Pamphylien, Kappadokien un Lykien*”, (Leipzig, 1908); W.M. Ramsay and G.L. Bell, “*The Thousand and One Churches*”, (London, 1909); G. de Jerphanion, “*Une nouvelle province de l’art byzantine: Les églises rupestres de Cappadoce*”, (Paris, 1925-1942); Y. Ötüken, “*Research on the Byzantine Architecture of Cappadocia*” (in Turkish; Ankara, 1981); L. Giovannini, “*Arts of Cappadocia*”, (Geneva, 1971); and S. Kostof, “*Caves of God: The Monastic Environment of Byzantine Cappadocia*”, (Cambridge, 1972) have also been incorporated to the study.

Monuments and sites have been listed under periods (Pre-Historic, Hittite, Roman, etc.) and are given numbers within these headings. It is, in any event, frequently convenient to refer to monuments by numbers rather than names, since the present-day inhabitants of the area may not know of their existence and may therefore have no names for them. In some cases further structures have been discovered near a monument already recorded; these are identified by a letter (a, b, c, etc.) attached to the number of the first monument recorded.

**Table C.1 Pre-History and Hittite**

No	Location (province/district)	Name	Type of Mon.	Date	Source	Inventory No (MoCT)	Inventory No (other sources)	Notes
1	Aksaray	Acıyar	level settlement	pre-hist				
2	Kızılıkaya village, 25 km S.E. of Aksaray	Aşıklı Höyük	mound	pre-hist	Esin, 2000; Esin et al. 1991			Aşıklı Höyük, a medium-sized settlement, located 25 km south-east of Aksaray on the banks of the Melendiz River. The mound covers an area of 3.5-4 hectares. 4,250 m <sup>2</sup> - approx. 10% of the site has been unearthed since the first excavations in 1989. [Esin, 2000; Esin et al. 1991]
2a		a 'Aşıklı Höyük'	level settlement	pre-hist	Esin, 1996			
3	Aksaray	Musular	level settlement	pre-hist	Harmankaya et al., 1997			Discovered during the surface investigations carried out by the Istanbul University, Dep. of Prehistory. Excavations began in 1996. [Harmankaya et al., 1997]
4	Aksaray	Yelibelen Mevkii	level settlement	pre-hist				
5	Aksaray	Sırcan Tepe	level settlement	pre-hist				
6	Niğde	Güllüce	level settlement	pre-hist				
7	Kayseri	Hacıbeyli	level settlement	pre-hist				
8	Kayseri	Dededağ	level settlement	pre-hist				
9	Kayseri	Toparın Pınar	level settlement	pre-hist				
10	Aksaray	Nenezi	Ob.W	pre-hist	Cauvin et al., 1996; Todd 1980			



**Table C.1 (continued)**

No	Location (province/district)	Name	Type of Mon.	Date
12	Niğde	Boğazköy	Ob.W	pre-hist
13	Niğde	Bozdağ	Ob.W	pre-hist
14	Niğde	Göllüdağ	Ob.W	pre-hist
15	Niğde	Tepecik-Çiftlik	level settlement	pre-hist
16	Niğde	Çiftlik	Ob.W	pre-hist
17	Niğde	Kayırlı	Ob.W	pre-hist
18	Niğde	Ekinlik-İlbiz	Ob.W	pre-hist
19	Niğde	Kaletepe	Ob.W	pre-hist
20	village of Celaller, 4 km W of Çamardı, Niğde	Kestel	mine	pre-hist (EBA)
21	Niğde	Göltepe	level settlement	pre-hist (EBA)
22	Aksaray	Değirmenözü	mound	pre-hist
23	Aksaray	Sapmazköy	mound	pre-hist
24	Niğde	Kayaardı	mound	pre-hist
25	17 km south of Niğde	Köşk Höyük	mound	pre-hist
26	Niğde	Tepebağları	level settlement	pre-hist
27	Niğde	Pınarbaşı-Bor	level settlement	pre-hist
28	Nevşehir	Kumtepe-İncesu	mound	pre-hist
29	Nevşehir	Avladağ	mound	pre-hist
30	Nevşehir	Hasanlar	mound	pre-hist
31	Nevşehir	İğdeli Çeşme	mound	pre-hist
32	Kayseri	Fraktin	level settlement	pre-hist
32a		a 'Fraktin relief'	rock relief	Hittite, 13th c. B.C.
33	1.5 km S.W. of the distr. of Güzelyurt, Aksaray	Gelveri*	mound	pre-hist (Chal)
33a		a 'High Church' (Yüksek Kilise)	church	19th c.
34	Yozgat	Alişar	mound	pre-hist
34a		a 'Alişar'	level settlement ' <i>vabartum</i> '	2nd mill. BC (MBA, LBA), Hittite
35	Çorum	Alacahöyük	mound	pre-hist (Chal, EBA), Hittite
36	Hacıbektaş, Nevşehir	Suluca Karahöyük	mound	pre-hist (EBA), Hittite
37	near the village of Sarılar, 40 km north of Avanos, Nevşehir	Zank Höyük	mound	pre-hist (EBA), Hittite
38	near Gökçeköy, Aksaray	Güvercin Kaya	level settlement	pre-hist (EBA), Hittite
39	Yeşilova village, 18 km west of Aksaray	Acemhöyük	mound	pre-hist (EBA), Hittite
39a		a 'Puruşhanda'	level settlement ' <i>karum</i> '	2nd mill. BC (MBA, LBA), Hittite

**Table C.1 (continued)**

No	Location (province/district)	Name	Type of Mon.	Date
40	Karahöyük or Karaev village 20 km east of Kayseri	Kültepe (anc. Kaniş)	mound	pre-hist (EBA), cont. habitation from the EBA to the Roman period
40a		a 'Kaniş'	level settlement ' <i>karum</i> '	2nd mill. BC (MBA, LBA), Hittite
40b		b 'remains of fortress'	remains of fortress, palace complex	2nd mill. BC (MBA, LBA), Hittite
40c		c 'relief'	relief	1st mill BC (10th-9th c. BC)
41	Boğazköy (today known as Boğazkale)	Hattusha	mound	pre-hist (EBA), cont. habitation from the EBA to 2nd mill BC (MBA, LBA), Hittite
41a		a 'Hattuša'	level settlement ' <i>karum</i> '	2nd mill. BC (MBA, LBA), Hittite
42	near Acıgöl, Nevşehir	Topada	hieroglyphic inscription	1st mill BC
43	Kemerhisar (anc. Tukhana)	Tukhana (also known as the Bor Stele)	stele (with Hittite-Luwian hieroglyphic inscription)	1st mill BC (9th - 8th c. B.C.)
44	near the village of Sivasa (today called Gökçetoprak), S.W. of Gülşehir	Sivasa	Hittite-Luwian hieroglyphic inscription	1st mill BC
45	68 km N.E. of Kayseri	Kululu	stele (with Hittite hieroglyphic inscription)	1st mill BC (late 8th c. BC)
45a	68 km N.E. of Kayseri	a	fortess	
45b	68 km N.E. of Kayseri	b	artifacts (in museum) - indicating the existance of a palace	
46		Sultanhanı	mound	1st mill BC
46a		a	stele (with hieroglyphic inscription)	1st mill BC
47	near the village of Kömürcü in Gölcük, Niğde	Göllüdağ		1st mill BC
47a		a	level settlement fortress	

**Table C.1 (continued)**

No	Location (province/district)	Name	Type of Mon.	Date
<b>47b</b>		b	artifacts (in Kayseri Museum) - indicating the existence of a palace complex	
<b>49</b> (off map)	Kayseri	İmamkulu	rock relief	Hittite
<b>33</b>	Kayseri	Erkilet	level settlement	Hittite
<b>50</b>	Kayseri	Develi	level settlement	Hittite

**Table C.2 Roman**

No	Location (province/district)	Name	Type of Mon.	Date
1	near the village of Sivasa (today called Gökçetoprak), S.W. of Gülşehir		Bas-relief of Zeus Stratios	Roman
2	Hacıbektaş		Stele	Roman
3	Derinkuyu		Stele	Roman
4	Dikilitaş (Eneğil)		Column, rock tombs	Roman
5	near the village of Örenşar, N.W. of İncesu		tomb	Roman
6	N.W. of Develi, on Mt. Erciyes		tomb	Roman, 3rd c.
7	Ayşepınar		tomb	Roman
	(off map)			
8	Aksaray (anc. Archelais)		remains in museum	Greco-Roman
9	Kayseri (anc. Mazaca, and later Caesarea)		remains in museum	Greco-Roman
10	Kemerhisar (anc. Tyana)		aqueduct	Roman
	(off map)			
11	Avcılar		tomb	Roman
12	Mislihan Mevkii, 3.5km S.E. of Güzelöz		necropol	Roman

**Table C.3 Early Christian and Byzantine**

No	Location (province/district)	Name	Type of Mon.	Date
1	Sivasa		octagonal masonry-built church*	5th c.
2	Mamasun	St Michael (or Köy Ensesi Kilisesi)	rock-cut church, inscribed cross plan	
3	7 km N.E. of Akhisar, near Çeltek	Çanlı Kilise	masonry-built church, inscribed cross plan	10th-11th c.
4	8 km N.E. of Akhisar, near Çeltek	Monastery		
4a		a	rock-cut church, inscribed cross plan	
4b		b	rock-cut church, 3 aisles	
4c		c	rock-cut church, single aisle	
4d		d	rock-cut church, single aisle	
5	Gelveri (Yeşilyurt)	Çömlekçi Kilise	rock-cut church, single aisle	
6	Gelveri (Yeşilyurt)	St Gregory of Nazianzus	masonry-built church, inscribed cross plan	6th c. ?
7	3 km south of Karaviran	Anatepesi	masonry-built church, single aisle	5th c.
8	Helvadere	Kiliseköy*	masonry-built church	
9	3 km N.E. of Yenipınar	Sarıgöl	masonry-built church, single aisle	6th c.
10	Viranşehir (near Hasan Dağ)	Kara Kilise	masonry-built church, single aisled basilica	5th c. ?
11	Viranşehir (near Hasan Dağ)	Kemer Kilise	masonry-built church, free-standing cross plan	5th c. ?
12	1 km S.W. of Viranşehir	Süt Kilise	masonry-built church, free-standing cross plan	5th c.
13	2 km S.W. of Viranşehir	Yardıbaş Kilise	masonry-built church, free-standing cross plan	5th c.?
14	3 km S.W. of Viranşehir	Boz Boyun Kilise	masonry-built church, single aisle	6th c.?
15	top of Hasan Dağ		masonry-built church, free-standing cross plan	6th c.?
16	Çavdarlık (near Hasan Dağ)		masonry-built church, 2 aisles	6th c.
17	Dedesivri (near Hasan Dağ)		masonry-built church, free-standing cross plan	6th c.
18	Yenipınar (near Hasan Dağ)	Kale Kilise (or Domuz Kilise)	masonry-built church, free-standing cross plan	
19	Sivrihisar	Kızıl Kilise	masonry-built church, free-standing cross plan	5th-6th c.
20	Gülşehir area	Karşı Kilise (or Church of the Taxiarchs)	rock-cut church, single aisle	
21	Açıksaray		rock-cut church	
22	Çardak		masonry-built church, free-standing cross plan	5th c.
23	Tilköy	St Andrew*	masonry-built church, 2 aisles	5th-6th c.

**Table C.3 (continued)**

No	Location (province/district)	Name	Type of Mon.	Date
24	Eski Andaval	Basilica of Constantine	masonry-built church, 3 aisled basilica	5th-6th c.
25	Uluağaç area		masonry-built church	
26	Uluağaç area		masonry-built church	
27	Uluağaç area		masonry-built church	
28	Eski Gümüş	Eski Gümüş (or Gümüşler)	rock-cut church, inscribed cross plan	
29	Eski Gümüş	Monastery	rock-cut	9th (?) - 11th c.
30	Dikilitaş	Basilica of St Pachomius*	masonry-built church	660 A.D.
31	Hırka	Yedi Kapulu	masonry-built church	
32	Skupı (Küçük Büyüğü) (off map)	Church of the Forty Martyrs of Sebaste*	masonry-built church	5th c.
33	Ağırnaz area (off map)		rock-cut church	
34	Ağırnaz area (off map)		rock-cut church	
35	Ağırnaz area (off map)		rock-cut church	
36	Üskübü (off map)	Panaghis	masonry-built church	
37	Zincirlidere (off map)		rock-cut chapel	
38	Zincirlidere (off map)	St George	rock-cut church	
39	N.W. of Develi, on Mt. Erciyes		masonry-built church	
40	N.W. of Develi, on Mt. Erciyes	Panaghia	masonry-built church, 3 aisled basilica	5th-6th c.
41	N.W. of Develi, on Mt. Erciyes		masonry-built church	
42	N.W. of Develi, on Mt. Erciyes	Peleme*	masonry-built church, free-standing cross plan	5th c.?
43	N.W. of Develi, on Mt. Erciyes	Çarıklı Kilise*	masonry-built church, 3 aisles	
44	Develi (off map)		masonry-built church	
45	Ayşepınar (off map)	Azu Güzel	rock-cut church	
46	Satıköy (off map)		masonry-built church, single aisle	

**Table C.3 (continued)**

No	Location (province/district)	Name	Type of Mon.	Date
47	Satiköy (off map)	Manastır	masonry-built church, single aisle	5th-6th c.
48	1.5 km S.W. of the distr. of Güzelyurt, Aksaray (Gelveri)	High Church' (Yüksek Kilise)	church	19th c.
49	Akhisar	Castle of Sınanı	castle	Byzantine
50	Viranşehir		castle	Byzantine
51	Keçikalesi		castle	Byzantine
52	Sivrihisar		castle	Byzantine
53	Sofular		castle	Byzantine
54	Ortaköy	Castle of Argos	castle	Byzantine
55	Develi area		castle	Byzantine
56	4 km west of Niğde		rock-hewn settlement	
57	Hasanköy		rock-hewn settlement	
58	Ayşepınar (off map)		rock-hewn settlement	
59	Küç Künye (off map)		rock-hewn settlement	
60	Uçhisar		rock-hewn settlement	
61	Ortahisar		rock-hewn settlement	
62	Ürgüp		rock-hewn settlement	
63	Çavuşin		rock-hewn settlement	
64	Zelve		rock-hewn settlement	
65	Soğanlı Valley		rock-hewn settlement	
66	Belisırma (Peristrema) Valley		rock-hewn settlement	
67	Avcılar (Maçan)		rock-hewn settlement	
68	Göreme		rock-hewn settlement	
69	19 km from Nevşehir on the Niğde road	Kaymaklı	underground settlement	
70	29 km from Nevşehir on the Nevşehir-Niğde road	Derinkuyu	underground settlement	
71	Nevşehir	Özkonak	underground settlement	
72	Nevşehir	Mazı	underground settlement	
73	Nevşehir	Tatların	underground settlement	
74	Nevşehir	Gökçetoprak (Sivasa)	underground settlement	
75	Aksaray	Güzelyurt	underground settlement	
76	Kayseri	Pınarbaşı (Geyral)	underground settlement	
77	Kayseri	Ağırnas	underground settlement	
78	20 km from Yeşilhisar	Doğanlı	underground settlement	
79	Nevşehir	Özlüce	underground settlement	
80	Nevşehir	Yeşilöz	underground settlement	

**Table C.4 Early Christian and Byzantine (the Ürgüp Area)**

No	Location (province/district)	Name	Type of Mon.	Date
ü1	2 km south of Avcılar	Karabulut Kilise	church, single aisle	11th c.?
ü2	2 km S.W. of Ürgüp	St Theodore (or Pancarlık Kilise)	church, single aisle	9th c.?
ü3	3 km S.W. of Ürgüp	Kepez Kilise (or Sarıca Kilise)	church, inscribed cross plan	11th c.?
ü4 _a	Ortahisar	Cambazlı Kilise	church, inscribed cross plan	11th c.?
ü4	Ortahisar	Hallaç Manastır	church, inscribed cross plan	10th-11th c.?
ü5	Balkan Deresi	Balkan Deresi I	church, free-standing cross plan	
ü5 _a	Balkan Deresi	Balkan Deresi II	church, free-standing cross plan	10th c.?
ü5 _b	Balkan Deresi	Balkan Deresi III	Hall	
ü5 _c	Balkan Deresi	Balkan Deresi IV	church, free-standing cross plan	10th c.?
ü6	İbrahimpaşaköy	Babayan	church, single aisle	10th c.?
ü7	2 km north of Mustafapaşaköy (or Sinasus)	Holy Apostles (or Kara Kilise)	church, 2 aisles	10th c.?
ü8	2 km west of Mustafapaşaköy	Tavşanlı Kilise	church, single aisle	
ü9	2 km S.W. of Mustafapaşaköy	St Basil	church, 2 aisles	
ü10	2 km S.W. of Mustafapaşaköy	Church of Precious Cross	church, 3 aisles	10th c.?
ü11	Karae valley	Karae I	church, inscribed cross plan	10th c.?
ü11 _a	Karae valley	Karae II	church, single aisle	10th c.?
ü11 _b	Karae valley	Karae III (Panaghia)	church, single aisle	
ü12	Ayvalıköy		church, 3 aisles	11th c.?
ü13	Kemerli Deresi		church, 2 aisles	10th c.?
ü13 _a	Kemerli Deresi		church, 3 aisles	
ü14	Gorgolı		church, single aisle	11th c.?
ü14 _a	Gorgolı		church, single aisle	10th c.?
ü15		Monastery of the Archangel	church, 2 aisles	11th c.?
ü15 _a			chapel, single aisle	
ü16	Taşkınpaşaköy (or Damsa)		church, free-standing cross plan	13th c.?
ü17	Şahinefendi	Church of the Forty Martyrs	church, 2 aisles	13th c.?

**Table C.4 (continued)**

No	Location (province/district)	Name	Type of Mon.	Date
ü18	Karlık		church, inscribed cross plan	
ü19	Tağar	St Theodore	church, free-standing cross plan	
ü20	Zelve		church, single aisle	
ü21	Zelve		church, single aisle	
ü21 _a	Zelve		church, single aisle	9th-10th c.?
ü22	Zelve		church, single aisle	
ü23	Zelve		church, 2 aisles	
ü23 _a	Zelve		church, single aisle	10th c.?
ü23 _b	Zelve		church, single aisle	
ü24	Zelve	(recorded by Jerphanion but not since located)	church with transverse nave	
ü24 _a	Zelve		church, single aisle	
ü25	Zelve	Haçlı Kilise (or Putlu Kilise)	church, single aisle	
ü26	Zelve	St Simeon (or Symeon)	hermits' cell	10th c.?
ü26 _a	Zelve		chapel, single aisle	10th c.?
ü27	Zelve		chapel, single aisle	10th c.?
ü28	Çavuşin	Church of Nikephoros Phokas	church, single aisle	
ü29	Çavuşin	St John the Baptist	church, 3 aisles	
ü30	Güllü Dere	Güllü Dere I	church, single aisle	10th c.?
ü31	Güllü Dere	Güllü Dere II	church, single aisle	
ü32	Güllü Dere	Güllü Dere III (Church of Three Crosses)	church, single aisle	9th c.?
ü33	Güllü Dere	St John (Güllü Dere IV, Ayvalı Kilise)	church, 2 aisles	
ü34	Güllü Dere	Güllü Dere V	church, single aisle	
ü35	Kızıl Çukur	Church of the Virgin (Joachim and Anna)	church, 2 aisles	
ü36	Kızıl Çukur	Haçlı Kilise	church, single aisle	10th c.?
ü37	Kızıl Çukur	Church of the Stylite Nicetas (Üzümlü Kilise)	church, single aisle	
ü37 _a	Kızıl Çukur		chapel	
ü37 _b	Kızıl Çukur	St Nicetas (or Niketas)	hermits' cell	
ü38	Meskendir	SS. Peter and Paul	church, single aisle	
ü39	Meskendir	lower church	church, single aisle	11th c.?
ü40	Avcılar	Orta Mahallı Kilisesi	church, free-standing cross plan	10th c.?

**Table C.4 (continued)**

No	Location (province/district)	Name	Type of Mon.	Date
ü41	Avcılar	Bezirhanı	church, inscribed cross plan	11th c.?
ü41 _a	Avcılar	Mortuary chapel ( <i>Tomb of Hieron</i> )	chapel, single aisle	
ü42	Avcılar		chapel, single aisle	
ü43	Avcılar	Durmuş Kilisesi	church, 3 aisles	
ü44	Avcılar	Yusuf Koç Kilisesi	church, inscribed cross plan	11th c.?
ü45	Avcılar		church, 2 aisles with dome	11th c.?
ü46	Göreme	El Nazar	church, free-standing cross plan	10th c.?
ü47	Göreme	St John (or Saklı Kilise)	church with transverse nave	11th c.?
ü48	Göreme		church with transverse nave	9th c.?
ü49 _a	Göreme		church, single aisle	10th c.?
ü49 _b	Göreme		church, single aisle	
ü49 _c	Göreme		church, free-standing cross plan	11th c.?
ü50	Göreme		church, free-standing cross plan	10th c.?
ü51	Göreme		church with transverse nave	10th c.?
ü51 _a	Göreme		church with transverse nave	10th c.?
ü51 _b	Göreme		church, single aisle	10th c.?
ü52	Göreme	Tokalı Kilise, Old Church	church, single aisle	10th c.?
ü53	Göreme	Tokalı Kilise, New Church	church with transverse nave	10th c.?
ü54	Göreme	Church of the Theotokos (or SS. John and George)	church, single aisle	10th c.?
ü55	Göreme	St Daniel	church, single aisle	11th c.?
ü55 _a	Göreme		church, single aisle	11th c.?
ü56	Göreme	St Eustathius	church, single aisle	10th c.?
ü57	Göreme		church, free-standing cross plan	10th-11th c. ?
ü58	Göreme		church, single aisle	10th c.?
ü59	Göreme	Aynalı Kilise monastic complex	church, 3 aisles	10th-11th c. ?
ü60	Göreme		church, single aisle	10th c.?
ü60 _a	Göreme		church, single aisle	8th-9th c.?

**Table C.4 (continued)**

No	Location (province/district)	Name	Type of Mon.	Date
ü61	Göreme		church with transverse nave	11th c.?
ü62	Göreme	Kızlar Monastery		
ü62 _a			church, inscribed cross plan	11th c.?
ü62 _b			refectory	
ü63	Göreme		church with transverse nave ?	11th c.?
ü64	Göreme	Elmalı Kilise	church, inscribed cross plan	11th c.?
ü65	Göreme	St Barbara	church, inscribed cross plan	11th c.?
ü66	Göreme	St Catherine	church, free-standing cross plan	11th c.?
ü66 _a	Göreme		church, single aisle	10th-11th c. ?
ü66 _b	Göreme		church, free-standing cross plan	10th-11th c. ?
ü66 _c	Göreme		church, single aisle	10th-11th c. ?
ü67	Göreme	Çanklı Kilise	church, inscribed cross plan	11th c.?
ü68	Göreme	Karanlık Kilise	church, inscribed cross plan	11th c.?
ü69	Göreme		refectory	
ü70	Göreme		church, inscribed cross plan	10th-11th c. ?
ü71	Göreme		church, free-standing cross plan	11th c.?
ü72	Göreme	St Onuphrius ( or Yılanlı Kilise)	church with transverse nave	11th c.?
ü73	Göreme	Kılıçlar Kilise	church, inscribed cross plan	10th c.?
ü73 _a	Göreme		chapel, free-standing cross plan	10th c.?
ü74	Göreme		refectory	
ü75	Göreme		church, single aisle	11th c.?
ü76	Göreme		church, inscribed cross plan	11th c.?
ü77	Göreme	Meryemana (or Kuşluk Kilise)	church with transverse nave	11th c.?
ü78 _a	Göreme		church, free-standing cross plan	10th c.?
ü78 _b	Göreme		church, free-standing cross plan	11th c.?

**Table C.5 Early Christian and Byzantine (Soğanlı Valley)**

No	Location (province/district)	Name	Type of Mon.	Date
s26	S.E. of Güzelöz, on Çanlıtepe		tomb	
s27	S.E. of Güzelöz, on Çanlıtepe		tomb	
s28	S.E. of Güzelöz, on Çanlıtepe		tomb	
s29	S.E. of Güzelöz, on Çanlıtepe		tomb	
s30	S.E. of Güzelöz, on Kızıltepe		tomb	
s15	Mislihan Mevkii, 3km S.E. of Güzelöz		church, single aisle*	11th c.?
s31	Güzelöz	Kireçli Kilise	church, cross plan	7-13 th c.
s6	E. of Güzelöz	Kireçli Kilise (II)	church, free-standing cross plan	
12	Mislihan Mevkii, 3.5km S.E. of Güzelöz		necropol	Roman
s31	S.E. of Güzelöz		rock-hewn settlement (incl. underground tunnels between spaces)	
s32	Güzelöz		rock-hewn settlement	
s2	S.E. of Güzelöz		church	
s7	S.E. of Güzelöz		church	
s10	S.E. of Güzelöz		church	
s5	Güzelöz	St Eustathius (Eski Cami)	masonry-built church	7-12 th c.
s33	Güzelöz	Atlı Kilise	masonry-built church	9th c.
s4	Güzelöz	Karaağaçlı Kilise	church, single aisle	13th c.?
s35	Güzelöz	Geyikli Kilise	church,	
s3	S.E. of Güzelöz	Mislihan Kilise	church, single aisle	
s1	S.E. of Güzelöz	Mislihan (II) Kilise	church, 2 aisles	9th c. ?
s36	Başköy		rock-hewn settlement	
s12	W. of Başköy	St George	masonry-built church	6th c.?
s42	Başköy		masonry-built church	
s14	Başköy	St Barbara*	?	?
s13	Başköy	St Nicholas (Çukur Kilise)	church, inscribed cross plan	
65	Soğanlı (upper part)		rock-hewn settlement	
65	Soğanlı (lower part)		rock-hewn settlement	
s19	Soğanlı	Tokalı Kilise	church, inscribed cross plan	11th c.?
s19_a	Soğanlı	a	church, 3 aisles	
s19_b	Soğanlı	b	chapel, single aisle	

**Table C.5 (continued)**

No	Location (province/district)	Name	Type of Mon.	Date
s18	Soğanlı	Munhil (or Münşil) Kilise	church, 2 aisles	10th c.?
s20	Soğanlı	Geyikli Kilise	church, 2 aisles	11th c.?
s20_a	Soğanlı	a	church, single aisle	11th c.?
s20_b	Soğanlı	b	refectory	
s21	Soğanlı	St Barbara (Tahtalı Kilise)	church, single aisle	11th c.?
s21_a	near St Barbara, Soğanlı	a	hermits'cell	
s43	Soğanlı	St John	church,	
s24	Soğanlı	Karabaş Kilise	church with 2 aisles, enlarged by 2 additional aisles	10th-11th c.?
s24_a	near Karabaş Kilise, Soğanlı	a	hermits'cell	
s25	Soğanlı	Yılanlı Kilise	church, 2 aisles	11th c.?
s25a		a	refectory	
s23	Soğanlı	Kubbeli I, lower church (small cone)	church, 3 aisles	10th c.?
s23_a	Soğanlı	Kubbeli II, upper church (large cone)	church, free-standing cross plan	10th c.?
s23_b	Soğanlı	Kubbeli II, lower church (large cone)	church with transverse nave	
s23_c	Soğanlı	Kubbeli III (medium-sized cone)	church, single aisle	10th c.?
s40	Soğanlı	Sütunlu Kilise	church,	
s41	Soğanlı	Saklı Kilise	church,	
s16	Soğanlı	Ballık Kilise	church, 2 aisles	10th c.?
s16_a	Soğanlı	a	church, 2 aisles*	
s17	Soğanlı		church, single aisle*	10th c.?
s22	Soğanlı	Ak Kilise*	masonry-built church	6th c.?
s39	Soğanlı	Soğanlıhan	church	

**Table C.6 Early Christian and Byzantine (Belisirma Valley)**

No	Location (province/district)	Name	Type of Mon.	Date
b1	Ihlara	St Michael (or Kuzey Ambar Kilisesi)	church, single aisle	11th c.?
b2	Ihlara	Eğri Taş Kilisesi	church, single aisle	9th c.?
b3	Ihlara	Kokar Kilise	church, single aisle	9th c.?
b4	Ihlara	Pürenli Seki Kilise	church, single aisle	10th c.?
b5	Ihlara	Karanlık Kale Kilise	church, inscribed cross plan	9th-10th c.?
b6	Ihlara	St Daniel (or Ağaç Altı Kilisesi)	church, free-standing cross plan	
b7	Ihlara	Sümbüllü Kilise	church, single aisle	11th c.?
b8	Ihlara	Kara Baca Kilise (or Eski Baca Kilisesi)	church, single aisle	10th c.?
b9	Belisirma	Yılanlı Kilise	church, free-standing cross plan	9th c.?
b10	Belisirma	Ballık Kilise	church with transverse nave	10th c.?
b11	Belisirma	Church of Prester John (or Alçak Kaya Altı Kilise)	church, single aisle	10th c.?
b12	Belisirma	Karagedik Kilise	masonry-built church, inscribed cross plan	10th c.?
b12_a	Belisirma		church, single aisle	10th c.?
b12_b	Belisirma		church, single aisle	10th c.?
b13	Belisirma	Bezirhanı	church, single aisle	13th c.?
b14	Belisirma	St George (Kırk Dam Altı Kilise)	church, single aisle	13th c.?
b15	Belisirma	Bahattin Samanlığı Kilisesi	church, single aisle	10th c.?
b16	Belisirma	Direkli Kilise	church, inscribed cross plan	11th c.?
b17	Belisirma	Batkın Kilise (or Açıklık Ağa Kilisesi)	church, single aisle	
b18	Belisirma	Ala Kilise	church, inscribed cross plan	11th c.?
b18_a	Belisirma	Küçük Ala Kilise	?	
b19	Yaprakhisar		church, inscribed cross plan	
b20	Yaprakhisar	Güvercinlik Davullu Kilisesi	church, single aisle	
b20_a	Yaprakhisar	Güvercinlik Çohum Kilisesi	church, single aisle	
b20_b	Yaprakhisar	Güvercinlik Yazılı Kilise		inscription dating - 1024
b20_c	Yaprakhisar	Alaygediği Kilisesi	church, single aisle	inscription dating - 1023
b21	Yaprakhisar	Koyunagul Kilisesi	church, inscribed cross plan	11th c.

**Table C.6 (continued)**

No	Location (province/district)	Name	Type of Mon.	Date
<b>b21</b> _a	Yaprakhisar	Panaghia	church, single aisle	inscription dating - 10th c.
<b>b22</b>	Selime	Kara Kilise	church, 3 aisles	10th-11th c. ?
<b>b23</b>	Selime	Doğan Yuvası Mevkunde Kilise	church, single aisled, with attached chapel	10th c.?

**Table C.7 Seljuk, Beyliks and Ottoman Periods**

No	Location (province/district)	Name	Type of Mon.	Date
1	Konya-Aksaray road	Ak Han	caravanserai	13th c.
2	Aksaray	Kılıç Arslan Hanı	caravanserai	
3	Aksaray	Hacı Şükruallah Kervansarayı	caravanserai	
4	Aksaray-Kayseri road	Ağzıkara Han	caravanserai	1231-1239
5	Aksaray-Kayseri road	Öresin Han	caravanserai	1270
6	Aksaray-Kayseri road	Alay Han	caravanserai	1192
7	Aksaray-Kayseri road	Sünnetli Han II	caravanserai	
8	Aksaray-Kayseri road	Sünnetli Han I	caravanserai	
9	Aksaray-Kayseri road (near Nevşehir)	Damat İbrahimpaşa Kervansarayı	caravanserai	
10	Aksaray-Kayseri road	Sarı Han	caravanserai	1238
11	Kayseri (off map)	Kargı Han	caravanserai	
12	Kayseri-Sivas road (off map)		caravanserai	
13	Kayseri-Sivas road (off map)		caravanserai	19th c.
14	Kayseri-Sivas road (off map)	Sultan Han	caravanserai	1232-1236
15	Kayseri-Niğde road (near İncesu)	Merzifonlu Kara Mustafapaşa Kervansarayı	caravanserai	1660
16	Kayseri-Niğde road	Yavaş Han	caravanserai	
17	Kayseri-Niğde road	Telit Hanı	caravanserai	
18	Kayseri-Niğde road		caravanserai	
19	Kayseri-Niğde road	Misli Han	caravanserai	13th c.
20	Kayseri-Niğde road	Aktaş Hanı	caravanserai	
21	Niğde	Sarı Han	caravanserai	1358
22	Niğde (off map)	Baş Han	caravanserai	
23	Bor area (off map)	Bor Hanı	caravanserai	
24	Kayseri-Malatya road (off map)	Sarı Han	caravanserai	1240
25	Kayseri-Malatya road (off map)	Karatay Hanı	caravanserai	1260
26	Aksaray-Kırşehir road	Kesikköprü Hanı	caravanserai	
27	Hacıbektaş	Hacıbektaş Hanı	caravanserai	
28	Ürgüp-Ereğli road	Dolayhanı (or Tıl Hanı)	caravanserai	
29	Develi (off map)	Develi Hanı	caravanserai	
30	Aksaray	Kılıç Arslan IV Türbesi	türbe	1264-1265

**Table C.7 (continued)**

No	Location (province/district)	Name	Type of Mon.	Date
31	Bekar (or Nenezi) area	Bekar Sultan Türbesi	türbe	
32	Hacıbektaş	Hacıbektaş Veli Türbesi	türbe	c.1565
33	Kayseri-Sivas road	Alaeddin Keykubad Türbesi	türbe	1267
	(off map)			
34	Develi	Seyit Şerif Türbesi	türbe	1276
35	Hacıbektaş	Hacı Bektaş Veli Tekkesi	tekke	16th c.
36	Gülşehir	Kurşunlu Cami	mosque	17th c.
37	Nevşehir	Kurşunlu Cami	mosque	1726
38	Develi	Develi Cami	mosque	1821
	(off map)			
39	Bor	Alaeddin Cami	mosque	Seljuk, restored 1410
40	Bor	Sarı Ali Cami	mosque	
	(off map)			
41	Gülşehir		medrese	
42	Nevşehir		castle	Seljuk, re-built in Ottoman period
43	Kayseri-Niğde road (near Yeşilhisar)		castle	
44	Bor		bedesten	15th or 16th c.
	(off map)			
45	Bor		hamam	Ottoman
	(off map)			
46	Bor		hamam	15th c.
	(off map)			
47	Zelve		semi rock-cut mosque	
48	Taşkınpaşaköy (or Damsa)	Mosque of Taşkın Paşa	mosque	13th-14th c.
49	Taşkınpaşaköy (or Damsa)	Taşkın Paşa Türbesi	türbe	14th c.
50	Taşkınpaşaköy (or Damsa)		türbe	14th c.
51	Taşkınpaşaköy (or Damsa)		medrese	
52	Selime		türbe	Seljuk
53	Aksaray-Konya road	Sultan Han	caravanserai	1229



## **APPENDIX D**

### **MAPS**

#### **Technical Explanation of the Mapping Approach**

The map overlays that were used to assist in the identification of areas of common character (draft landscape character types and/or areas) were prepared using existing map information at 1:100.000 and 1:25.000 scale(s).

The GIS analysis and classification were performed using the ESRI ArcView products.

ArcView was used mainly for data storage, preparation of univariate products and map printing. Results were produced at 1:100.000 scale on twelve A2 sheets and at 1:25.000 on seven A1 sheet. See below list of maps included in the CD.

Univariate analysis was mainly used to derive products to assist in the manual landscape characterization, or as input to the multivariate classifications. ArcView was used to derive the following univariate data sets:

- Elevation
- Slope
- Aspect
- Land cover
- Soils
- Solid geology
- Inventory of Archaeological Remains, Monuments and Sites of Cappadocia – density

Map 1: Geology: Geological Map of Cappadocia, Central Anatolia  
(Regional Scale)

Map 2: Topography: Topological Map of Cappadocia, Central Anatolia  
(Regional Scale)

Map 3: Hydrology: Hydrographic Map of Cappadocia, Central Anatolia  
(Regional Scale)

Map 4a: ‘time-depth’: The Historic Dimension of the Landscape in Cappadocia, Central Anatolia  
ca.8500-2000 BC: Pre-Historic Period  
(Regional Scale)

Map 4b: ‘time-depth’: The Historic Dimension of the Landscape in Cappadocia, Central Anatolia  
1900-1700 BC: The Period of Assyrian Trade Colonies  
(Regional Scale)

Map 4c: ‘time-depth’: The Historic Dimension of the Landscape in Cappadocia, Central Anatolia  
ca.6-5/4 cent. BC: Persian Period  
(Regional Scale)

Map 4d: ‘time-depth’: The Historic Dimension of the Landscape in Cappadocia, Central Anatolia  
ca.4 cent. BC -5 cent. AD: the Kingdom of Cappadocia During Hellenistic and Roman Periods  
(Regional Scale)

Map 4e: ‘time-depth’: The Historic Dimension of the Landscape in Cappadocia, Central Anatolia  
ca.4-11 cent.: Early Christian and Byzantine Period  
(Regional Scale)

Map 4e(1): ‘time-depth’: The Historic Dimension of the Landscape in Cappadocia, Central Anatolia  
ca.4-11 cent.: Early Christian and Byzantine Period (Ürgüp Area)  
(Regional Scale)

Map 4e(2): ‘time-depth’: The Historic Dimension of the Landscape in Cappadocia, Central Anatolia  
ca.4-11 cent.: Early Christian and Byzantine Period (Soğanlı Valley)  
(Regional Scale)

Map 4f: ‘time-depth’: The Historic Dimension of the Landscape in Cappadocia, Central Anatolia  
ca.11cent.-1923 Seljuk, Beylik and Ottoman Periods  
(Regional Scale)

**Map 5: Landscape Character Types: Landscape Character Types/Areas of Cappadocia, Central Anatolia  
(Regional Scale)**

Map 6: Geology: Geological Map of Soğanlı District, Cappadocia  
(Territorial Scale)

Map 7: Topography: Topological Map of Soğanlı District, Cappadocia  
(Territorial Scale)

Map 8: Hydrology: Hydrographic Map of Soğanlı District, Cappadocia  
(Territorial Scale)

Map 9: Landform: Morphological Map of Soğanlı District, Cappadocia  
(Territorial Scale)

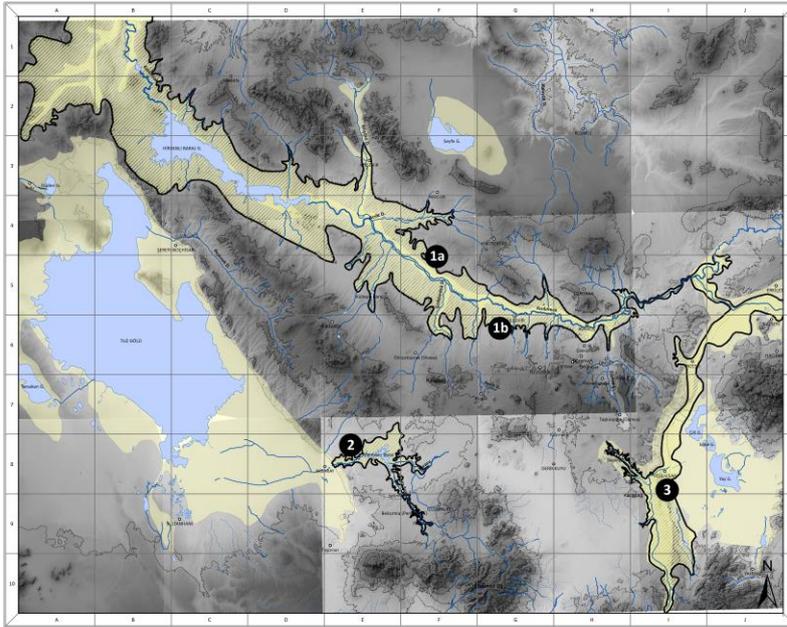
Map 10: Soils: Soil Map of Soğanlı District, Cappadocia  
(Territorial Scale)

Map 11: Landcover: Landcover Map of Soğanlı District, Cappadocia  
(Territorial Scale)

**Map 12: Landscape Character Types: Landscape Character Types/Areas of Soğanlı  
District, Cappadocia  
(Territorial Scale)**







**MAP 3**  
**HYDROLOGY**  
 Hydrographic Map of Cappadocia,  
 Cent. Anatolia  
 (Regional Scale)

**1a Kizilirmak\_north**  
 The Kizilirmak basin is drained on the north bank by a small number of mountain streams, the most important of which are in the area between Kayali, Muzur and Harbaklar.

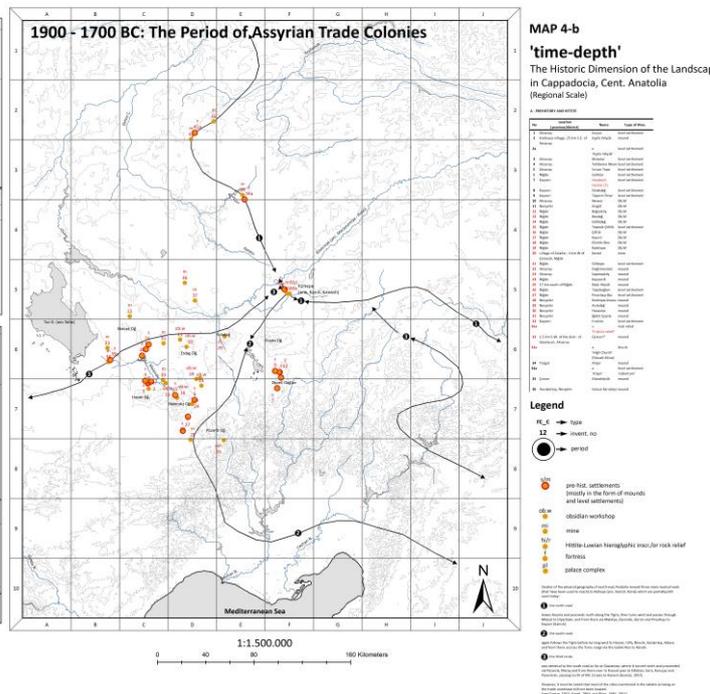
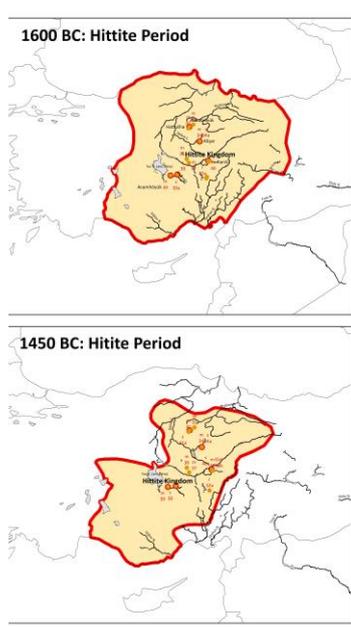
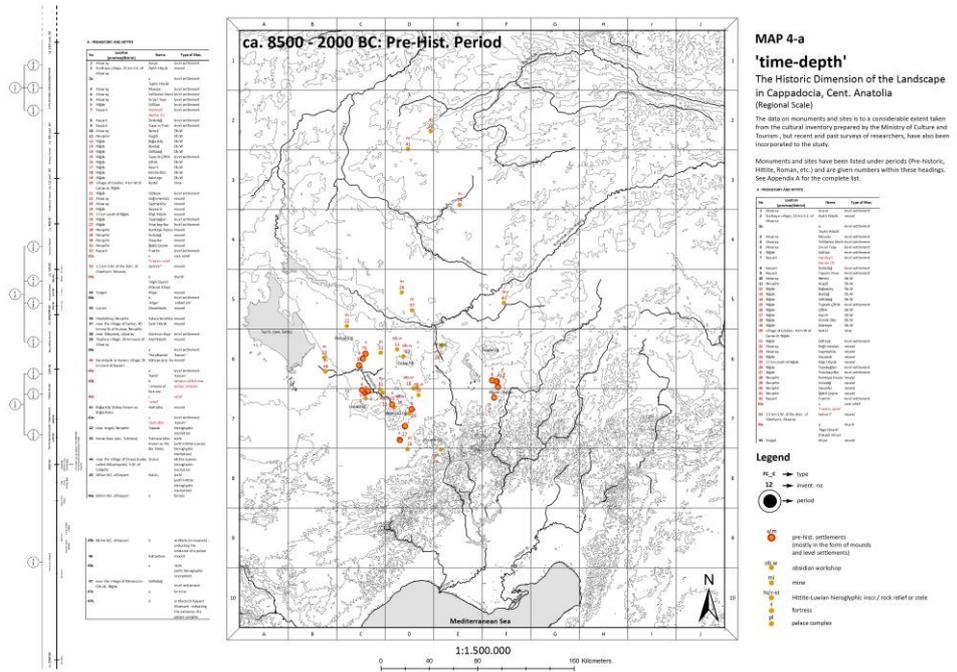


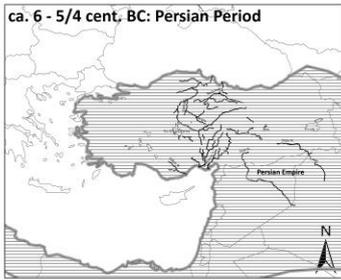
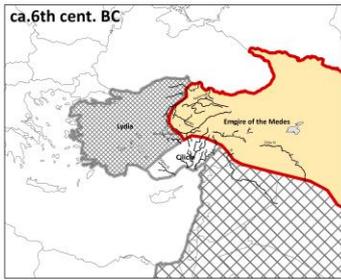
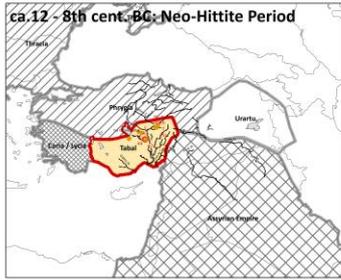
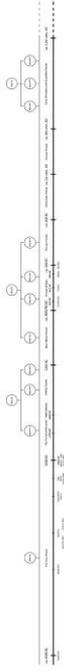
**1b Kizilirmak\_south**  
 The slopes on the south bank have a much more elaborate drainage system, due to the biological and structural characteristics of the rock. Among the numerous tributaries on this bank the most important are the Çelebiözü Dağı, flowing down from Kara Dağı; the Anıca Çayı, coming from the Erciș Dağı, merged near Neopazar; the Şarbaç Çayı, which flows past Çelebi Dağı and is fed by several streams coming down from Anıca Dağı; and the Karan, a substantial river which drains the northern slopes of Erciș Dağı.

**2 Malazgirt**  
 The Malazgirt-Sivas drains an area of some 2000 sq km, on the northern slopes of the Hasan Dağı and Malazgirt Dağı mountains and flows on to provide abundant irrigation for the Saz-Özü plain.

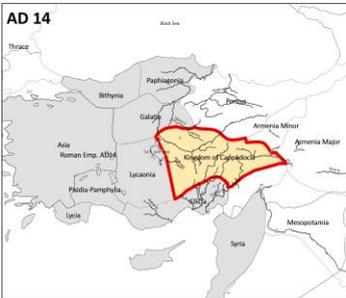
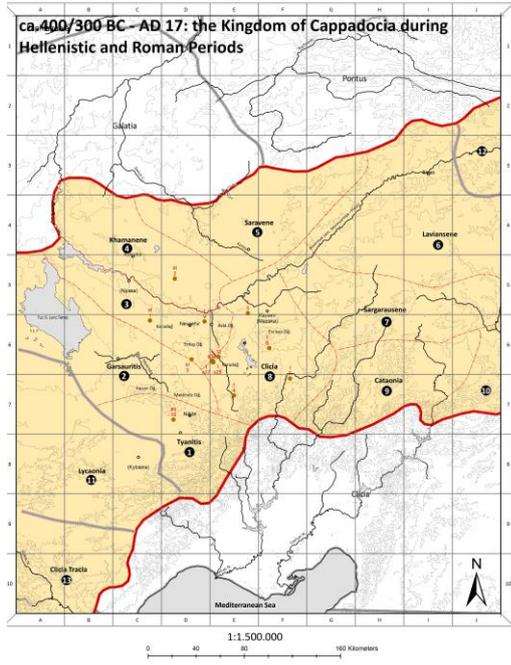
**3 Meriç-Sakarya**  
 The Meriç-Sakarya drains the southern slopes of Anıca Dağı and Kara Dağı.

- Legend**
- river
  - stream
  - dry stream bed
  - alluvium
  - drainage basin

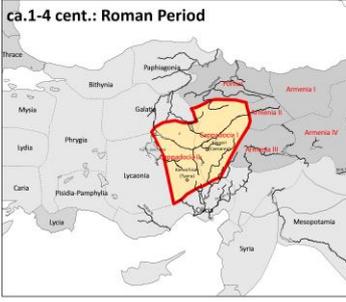




**MAP 4-c**  
**'time-depth'**  
The Historic Dimension of the Landscape in Cappadocia, Cent. Anatolia (Regional Scale)



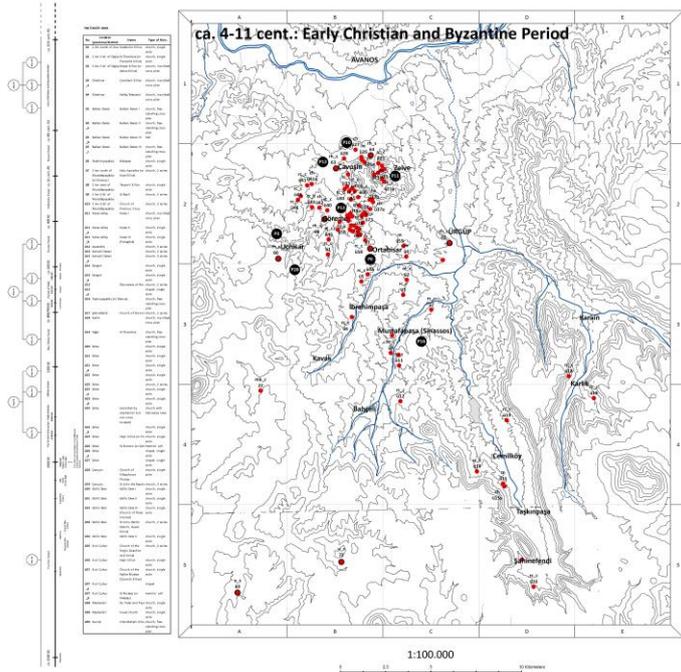
**MAP 4-d**  
**'time-depth'**  
The Historic Dimension of the Landscape in Cappadocia, Cent. Anatolia (Regional Scale)



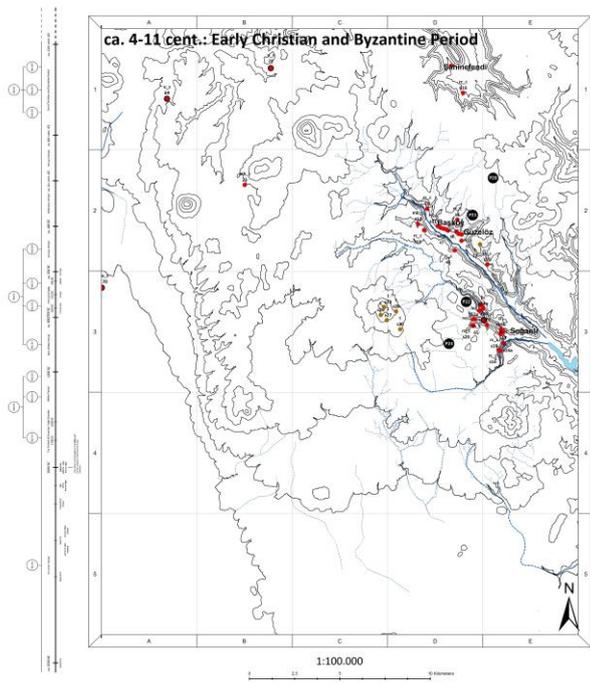
**Legend**

- Kingdom of Cappadocia with its ten administrative parts: 1. Taurus (Kome-Hisar and its surrounding); 2. Ganos; 3. Kaniş; 4. Kaniş (south-west of Kaniş); 5. Sarsapar (south-west of Kaniş); 6. Sarsapar (south-east of Kaniş); 7. Sarsapar (between and Üzümlü region); 8. Cide (Bayat and its surrounding); 9. Cide (Üzümlü, Bayat and its surrounding); and 10. Melendiz (Koculu).
- part of the region the 12th 'time-depth' (centered in Cilicia) that was incl. by Pompeius; 12th 'time-depth' and 13th 'time-depth' (centered in Cilicia) that was incl. by Augustus (c.79 AD).

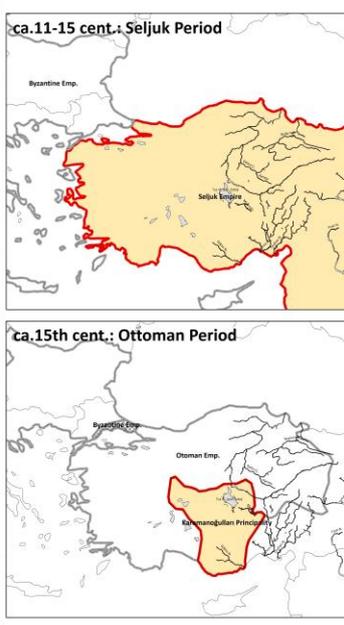
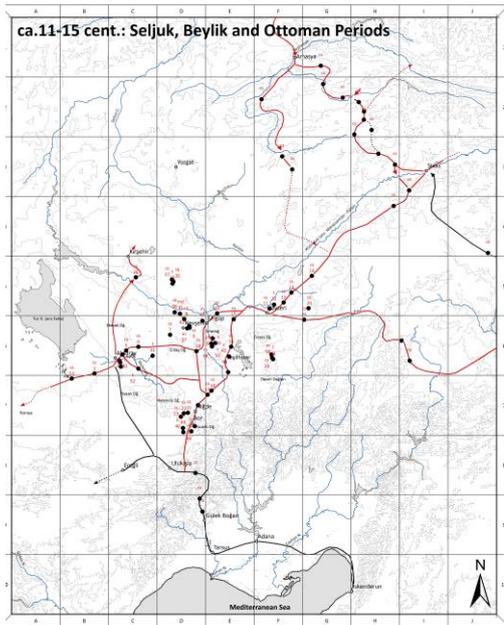




**MAP 4-e (1)**  
**'time-depth'**  
 The Historic Dimension of the Landscape in  
 Cappadocia, Cent. Anatolia  
 Ürgüp Area



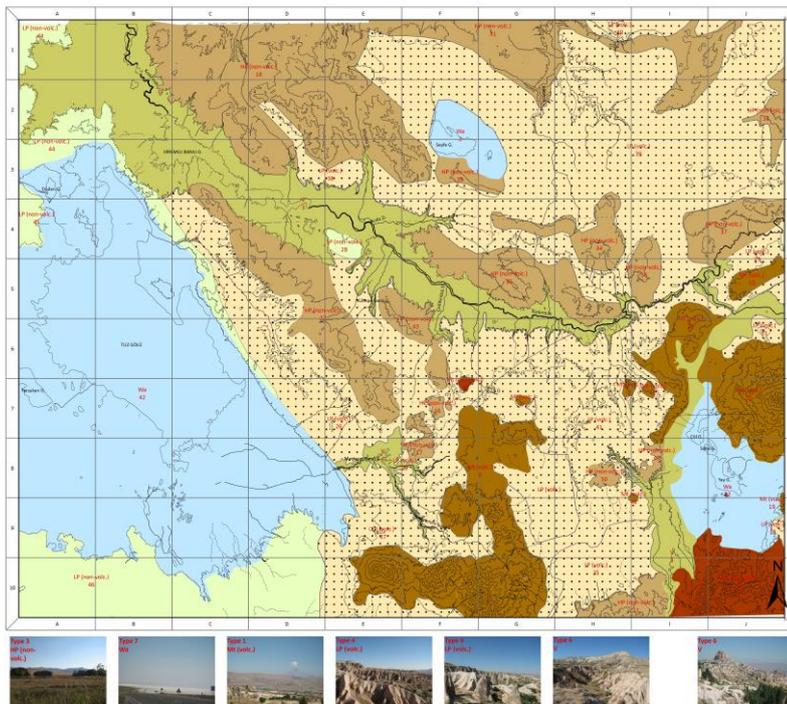
**MAP 4-e (2)**  
**'time-depth'**  
 The Historic Dimension of the Landscape in  
 Cappadocia, Cent. Anatolia  
 Soğanlı Valley



**MAP 4-f**  
**'time-depth'**  
The Historic Dimension of the Landscape in Cappadocia, Cent. Anatolia (Regional Scale)

id	name	type	area
1	Beypazari	city	1000000
2	Boğaziçi	city	1000000
3	Çankaya	city	1000000
4	Çarşamba	city	1000000
5	Çarşamba	city	1000000
6	Çarşamba	city	1000000
7	Çarşamba	city	1000000
8	Çarşamba	city	1000000
9	Çarşamba	city	1000000
10	Çarşamba	city	1000000
11	Çarşamba	city	1000000
12	Çarşamba	city	1000000
13	Çarşamba	city	1000000
14	Çarşamba	city	1000000
15	Çarşamba	city	1000000
16	Çarşamba	city	1000000
17	Çarşamba	city	1000000
18	Çarşamba	city	1000000
19	Çarşamba	city	1000000
20	Çarşamba	city	1000000
21	Çarşamba	city	1000000
22	Çarşamba	city	1000000
23	Çarşamba	city	1000000
24	Çarşamba	city	1000000
25	Çarşamba	city	1000000
26	Çarşamba	city	1000000
27	Çarşamba	city	1000000
28	Çarşamba	city	1000000
29	Çarşamba	city	1000000
30	Çarşamba	city	1000000
31	Çarşamba	city	1000000
32	Çarşamba	city	1000000
33	Çarşamba	city	1000000
34	Çarşamba	city	1000000
35	Çarşamba	city	1000000
36	Çarşamba	city	1000000
37	Çarşamba	city	1000000
38	Çarşamba	city	1000000
39	Çarşamba	city	1000000
40	Çarşamba	city	1000000
41	Çarşamba	city	1000000
42	Çarşamba	city	1000000
43	Çarşamba	city	1000000
44	Çarşamba	city	1000000
45	Çarşamba	city	1000000
46	Çarşamba	city	1000000
47	Çarşamba	city	1000000
48	Çarşamba	city	1000000
49	Çarşamba	city	1000000
50	Çarşamba	city	1000000

- Legend**
- RL\_C → type
  - RL\_C → invert: no
  - → parcel
  - → parcel
  - → settlement (mostly used in Seljuk and Ottoman Periods)
  - → mosque
  - → medrese
  - → türbe



**MAP 5**  
**LANDSCAPE CHARACTER TYPES**  
Landscape Character Types/Areas of Cappadocia, Cent. Anatolia (Regional Scale)

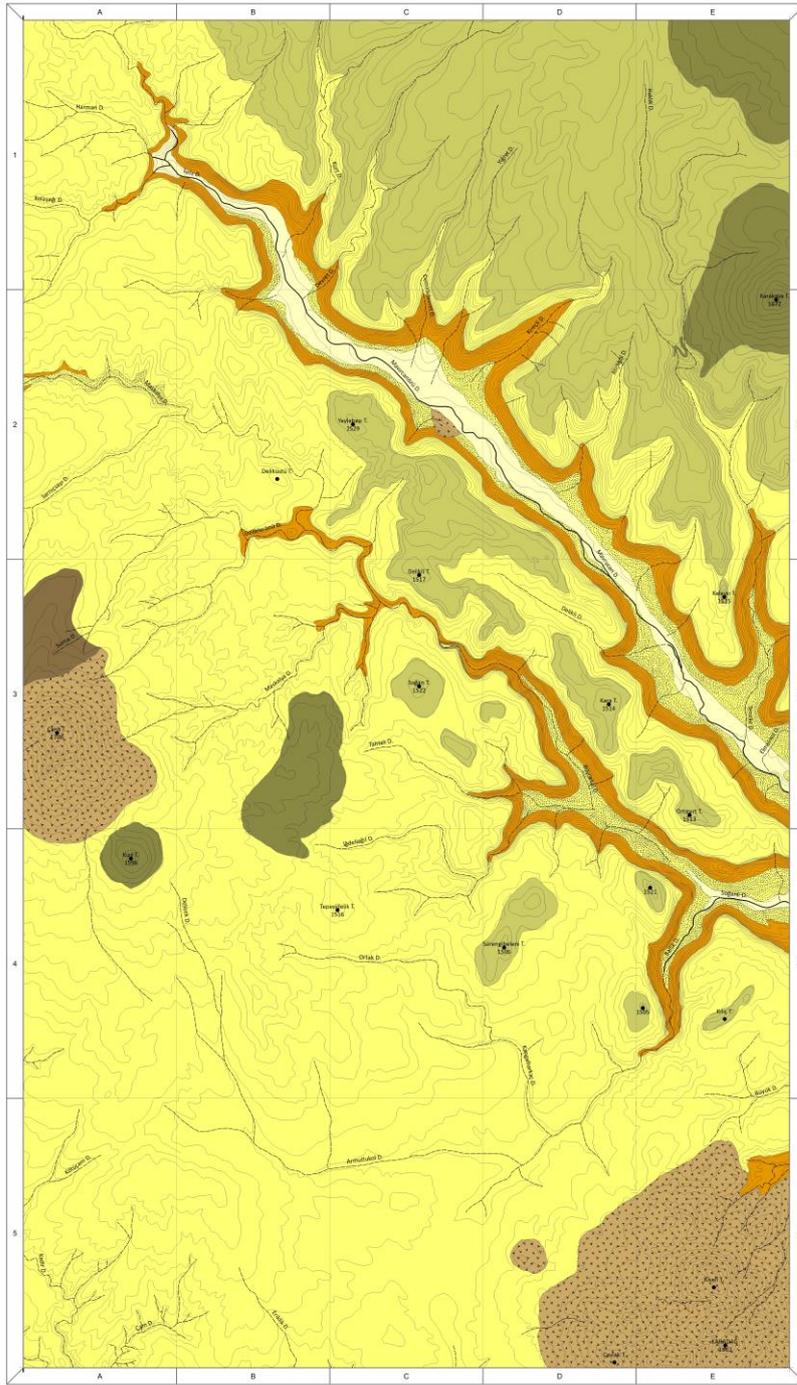
The primary attributes that dictated the extent and scale of subdivision were geology, topography, and hydrology.

- The database structure comprised the following:
- id → unique identifier for each of the polygons
  - topography 1,2 → two fields for identifying the differences in elevation of the land surface on a broad scale
  - geology 1 → a field for identifying the geological types, including:
    - fluvial deposits
    - volcanic complexes
    - volcanic and/or cone fields
    - basement rocks
    - continental clastics
  - water → a field for identifying patterns of drainage – used only in association with the same category
  - comment → a field for descriptive notes
  - checked → a field to confirm that polygon has been checked/verified by the researcher in the field

- Legend**
- Cul\_LCA type code
- LP (low-altitude)
  - HP (high-altitude)
  - MP (medium-altitude)
  - WP (water bodies)

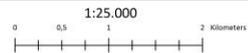
- Landscape Character Types**
- MP (low-altitude)** (mountain belt)
    - low
    - Areas of volcanic relief. The south-eastern part of the region is characterized by a series of volcanic structures forming areas from north-west to south-west for a distance of 200 km, with five major eruption centres.
  - HP (low-altitude)** (high plain (non-volc.))
    - low
    - Areas of non-volcanic relief. These are basic and acid rocks to granite, gneiss and quartz diorite which have been reduced to a fine-grained matrix of volcanic ash and tuff. The average height is about 200-250 m. The concentration along the south-western boundaries of the region where they rise out of the volcanic depression high plain, ranging from north-west to south-east.
  - LP (low-altitude)** (low plain (volc.))
    - low
    - Areas of volcanic basaltic deposits (mainly andesite). This is the large plateau area to the east of the Bayındır basin at an altitude ranging between 2000 and 2500 m, extending for a distance of over 200 km towards the foot of the volcanic relief.
  - LP (low-altitude)** (low plain (non-volc.))
    - low
    - These are the valleys containing the main rivers, which continue to be modified by volcanic ash. These areas also hold strong evidence of human activity in the past which is highly significant to the present day landscape character.
  - WP** (water bodies and associated areas (incl. meadowland and forest))
    - low
    - Areas of lakes and wetlands (mainly low relief) and meadows. These areas have been and appear to be under threat, from west to east the Bayındır, Çarşamba, Özlüdere and Sarısuğlacı basins.

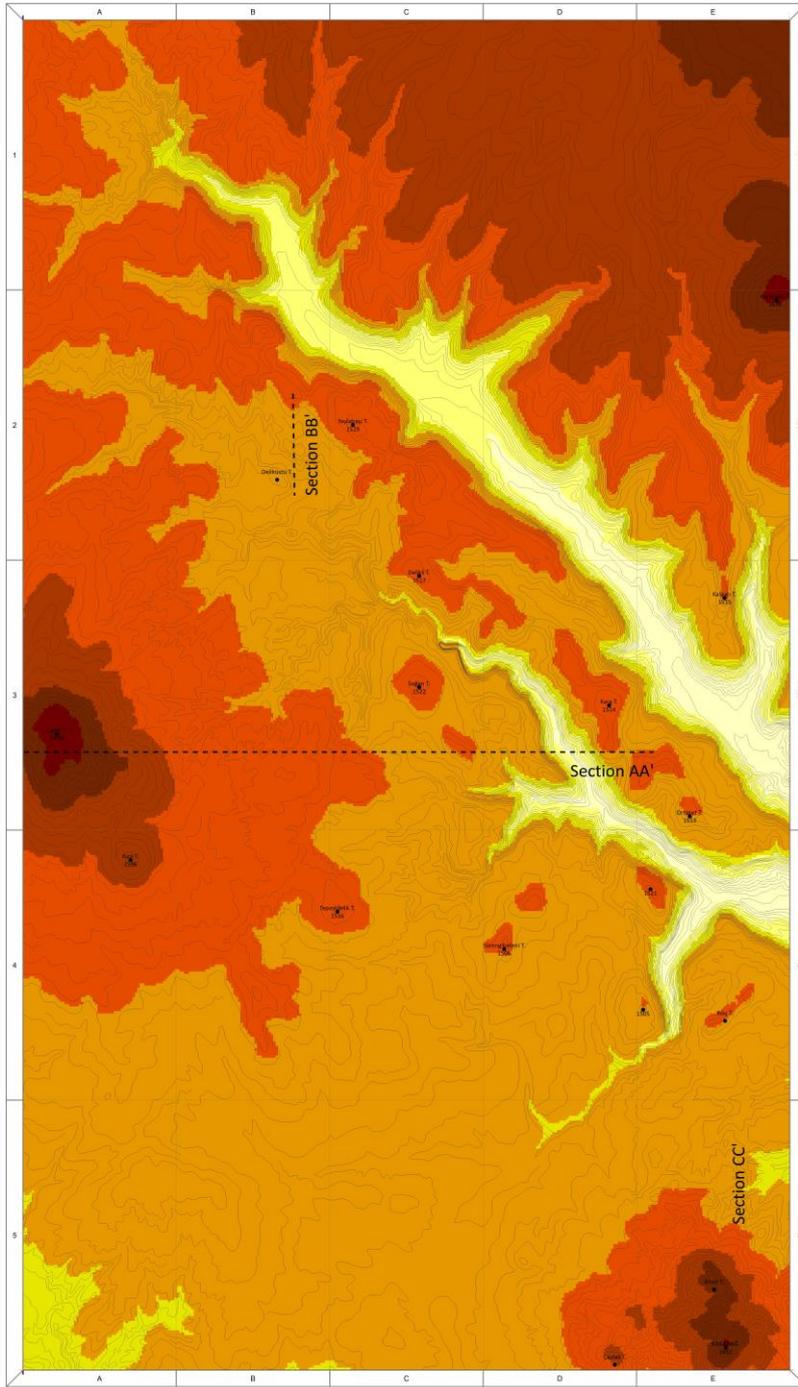




**MAP 6**  
**GEOLOGY**  
 Geological Map of Soğanlı District, Cappadocia  
 (Territorial Scale)

- Legend**
- KARADAG spot elevations
  - SOGANLI spot elevations
  - KIZILIRMAK spot elevations
  - Alluvial
  - Basalt
  - Conglomerate-Sandstone-Mudstone
  - Gabbro
  - Granite
  - Igneimbrite
  - Limestone
  - Tuff





**MAP 7**  
**TOPOGRAPHY**  
 Topological Map of Soğanlı District, Cappadocia  
 (Territorial Scale)

**Legend**

- KARADAG  
1662 spot elevations
- Soğanlı T.  
1572
- KÖRÜ T.  
1506
- KÖRÜ T.  
1506

**contours / contour intervals (per 50 m)**

- 0 - 1300 m.
- 1300 - 1350 m.
- 1350 - 1400 m.
- 1400 - 1450 m.
- 1450 - 1500 m.
- 1500 - 1550 m.
- 1550 - 1600 m.
- 1600 - 1650 m.
- 1650 + m.

--- section

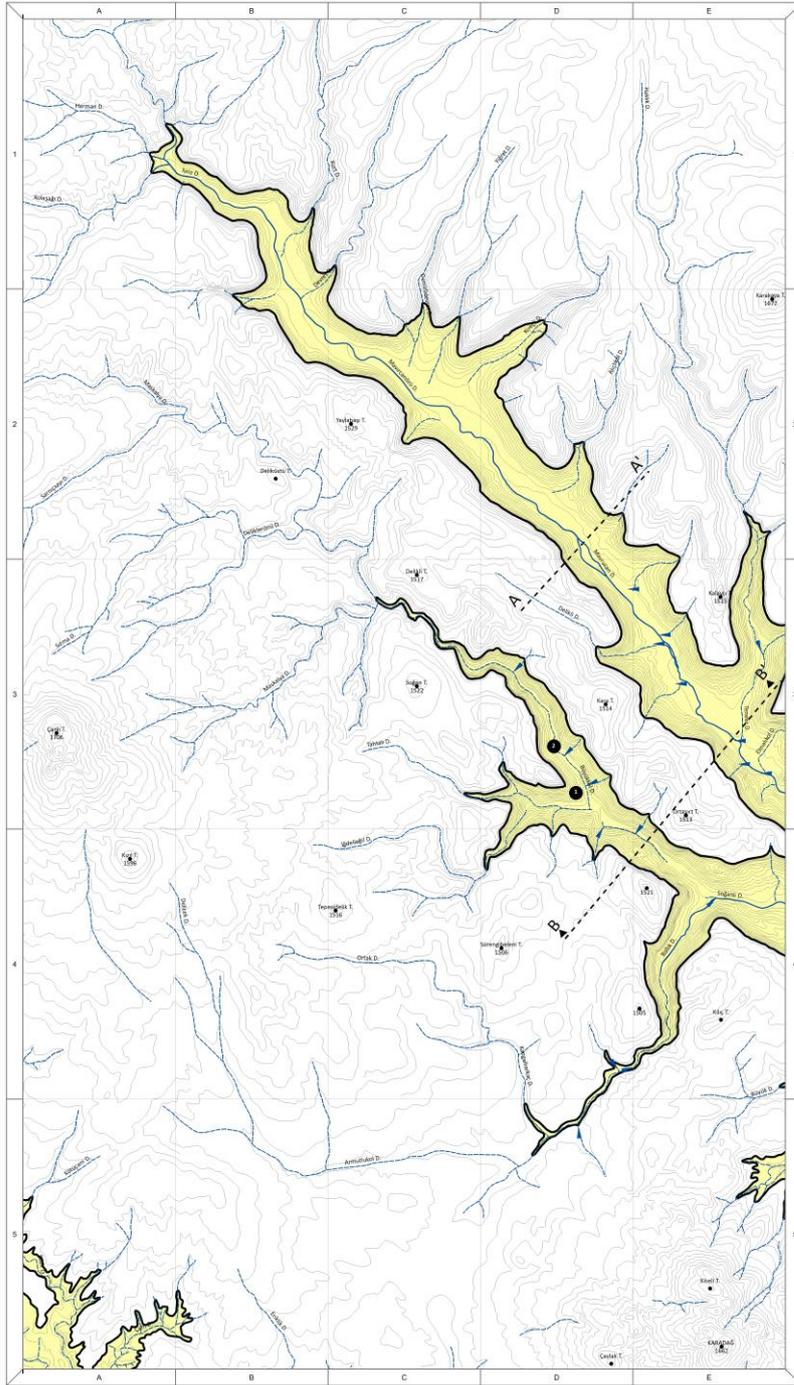
Section AA'

Section BB'

Section CC'

1:25.000

0 0.5 1 2 Kilometers



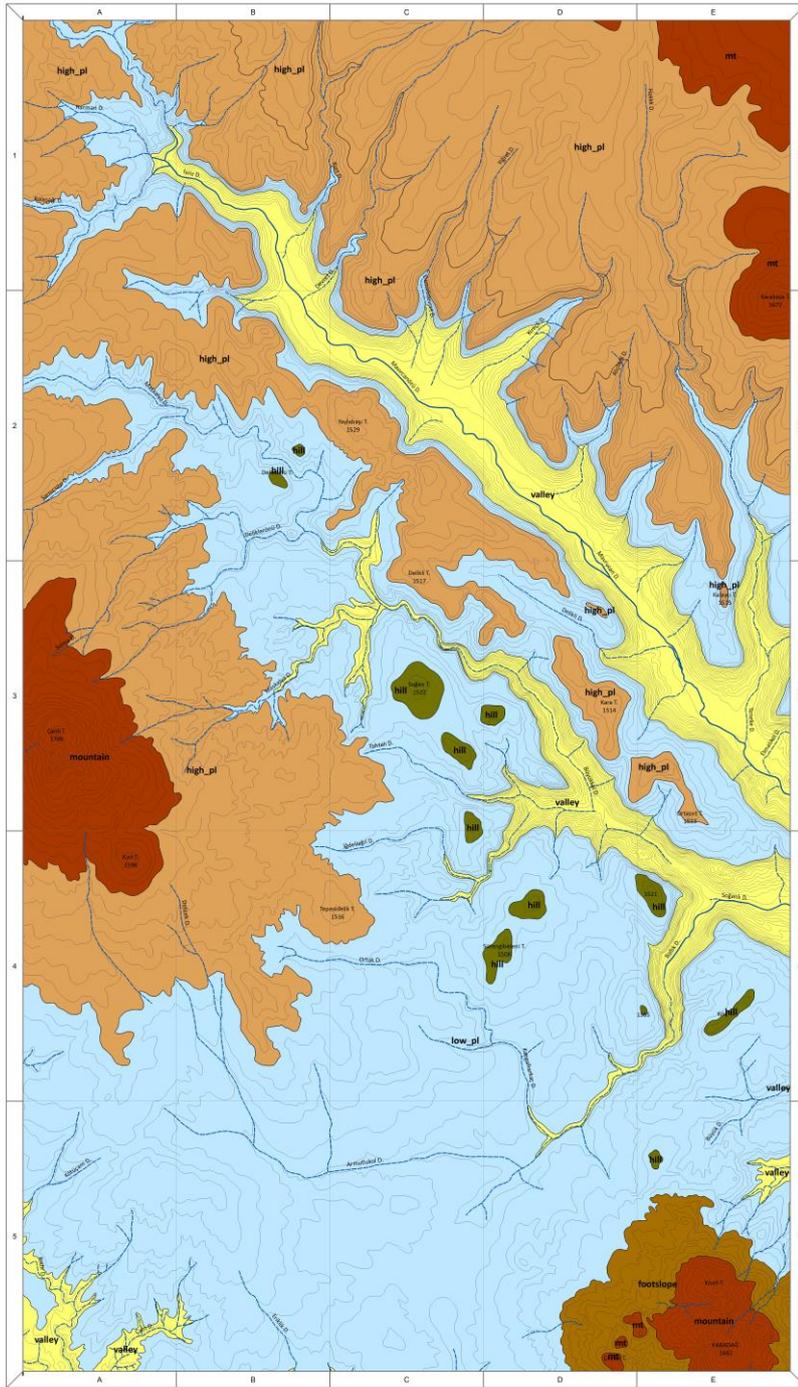
**MAP 8**  
**HYDROLOGY**  
 Hydrographic Map of Soğanlı District, Cappadocia  
 (Territorial Scale)

- Legend**
- KARADAG
  - 1582 spot elevations
  - 1522
  - 1506
  - 1492
- stream bed(s) and flow directions**
- stream
  - dry stream bed
  - flow directions
  - drainage basin (valley)

Section AA'



Section BB'



### MAP 9 LANDFORM

Morphological Map of Soğanlı District, Cappadocia  
(Territorial Scale)

'Landform' - refer to the shape of the land surface. Landforms are described primarily by their morphology - characteristic physical attributes such as elevation, slope, orientation, rock exposure and soil type.

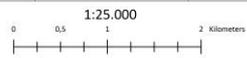
Physical features (or landforms) include elements such as hills, ridges, cliffs, valleys, rivers and numerous other structural and size scaled (i.e. ponds vs. lakes; hills vs. mountains) elements. see below for def.

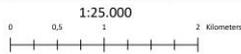
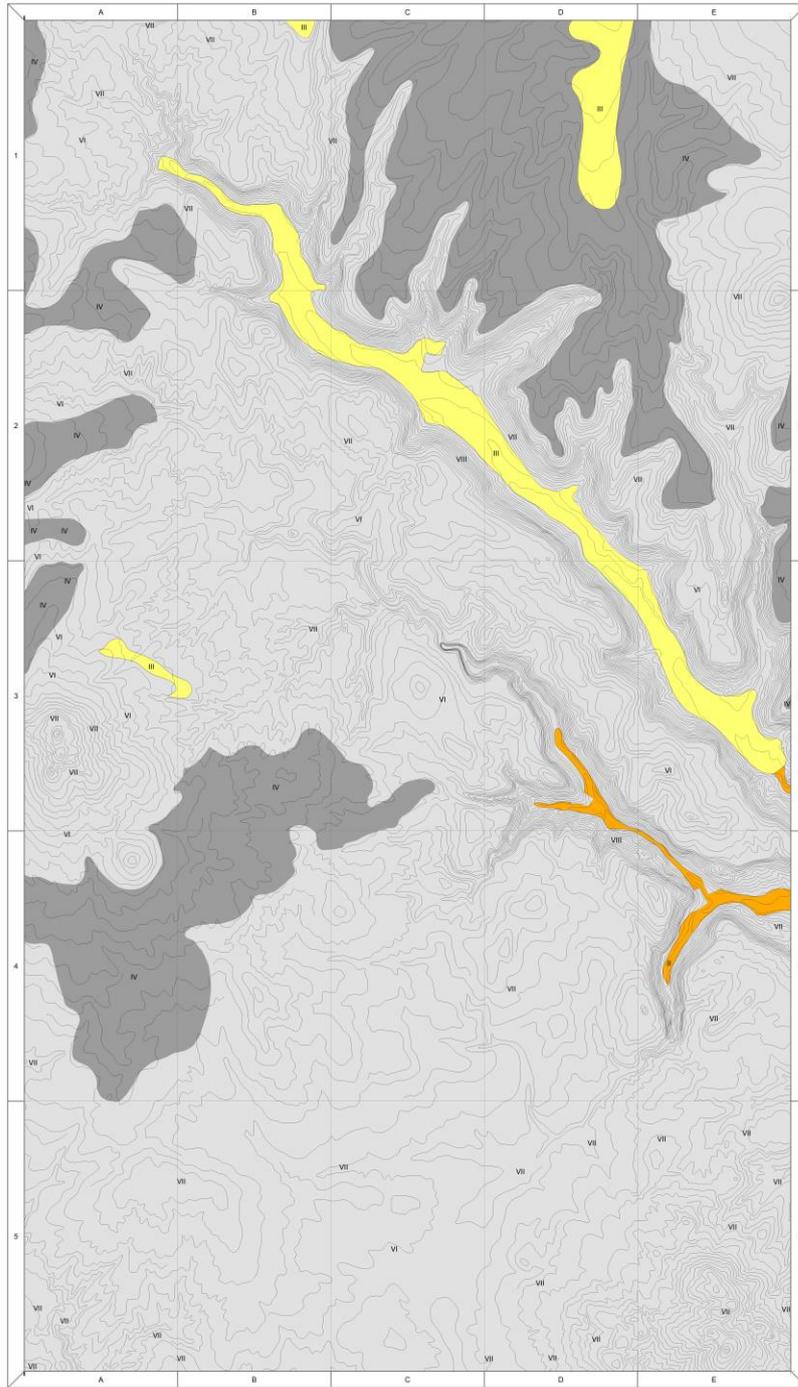
#### Legend

- spot elevations
  - KARADAĞ 3182
  - Soğanlı T. 1532
  - 3706
  - Kızıl T. 1514
- Physiographic boundary  
(Simplified morphological base with contour and hydrographic data overlay - physiographic units shown as bold lines)
- min. 1300 m. - max. 1705 m. 50 m. (per)

#### Morphological Classes:

- mountain (medium/low) relatively high mountainous regions - geo. corresponds to basement rocks
- footslope transitional area between mountains and other classes - particularly low plains;
- plain (def): land with relatively low relief - that is flat or gently rolling; plains occur on lowlands and at the bottom of valleys but also on plateaus or uplands at high elevations.
  - low plain
  - high plain
- low\_pl low plain/relatively low plain
- high\_pl high plain
- hill the distinction between a hill and a mountain is largely subjective - but a hill is generally lower and less steep than a mountain.
- valley - is a depression with predominant extent in one direction
  - broad
  - narrow

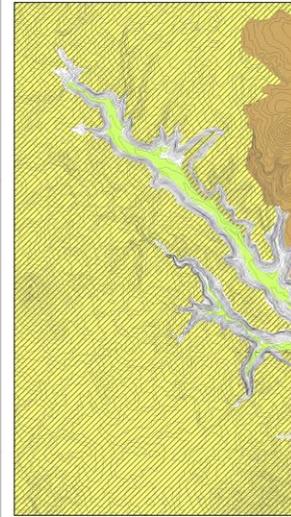




**MAP 10**

**SOILS**

Soil Map of Soğanlı District, Cappadocia  
(Territorial Scale)



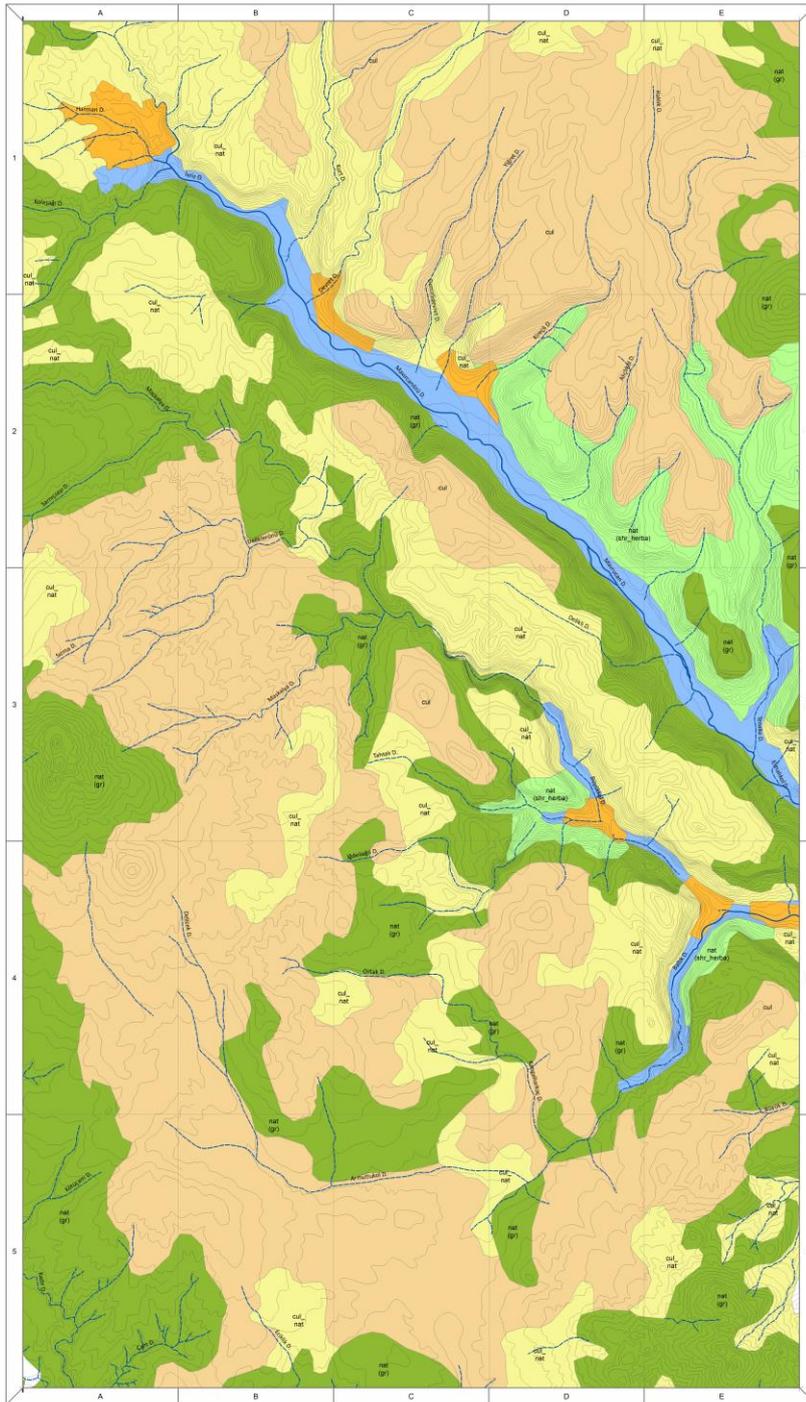
**Legend**

**soil type**

-  typical brown podzolic soils
-  alluvial calcareous soils  
alluvial calcareous soils which are formed by a mixture of eroded material and rock fragments. These soils are suitable for gardens, vegetable and soft fruit planting.
-  regosol soils

**soil classes and use**

- I soil classes
- II
- III
- IV
- V
- VI
- VII
- VIII
-  I 1st degree agricultural lands (absolute agricultural lands)
-  II 2nd degree agricultural lands (land which are suitable for cultivating grain and certain herbs and/or veg. etc. for industrial use)
-  III 3rd degree agricultural lands (orchards)
-  VI other lands (lands which are not suitable or partially suitable for crop cultivation and/or land which are allocated for forest area)
-  V-V I-VII lands which are not suitable for crop cultivation
-  VIII lands which are not suitable for any agricultural use



## MAP 11 LANDCOVER

### Landcover Map of Soğanlı District, Cappadocia (Territorial Scale)

Land cover is the observed physical material (cover) at the surface of the earth.

In a broad sense describe:  
- vegetation;  
- water (surfaces); and  
- man-made features

There are two primary methods for capturing info. on land cover:  
1. field survey, and  
2. analysis of remotely sensed imagery

#### Legend

##### A. Primarily Vegetated Areas

**cul** cultivated and/or managed areas  
**cul\_nat**  
**nat** natural and/or semi-natural vegetated areas  
**nat (shr)**  
**nat (herb)**

trees  
shrubs  
[is distinguished from a tree by its multiple stems a shorter height - usually under 2m tall]  
herbaceous  
[is a plant that has leaves and stems that die down at the end of the growing season to the soil level - they have no persistent woody stems above ground]  
grassland  
[areas where the vegetation is dominated by grasses - they occur naturally]  
type: (broadleaved, coniferous = needleleaved)

height:

spatial aspects:

1. distribution —  
- continuous  
- isolated  
- linear/ linear tree groups  
[also called hedge trees and/or shrubs - is a line of closely spaced shrubs and tree species, planted and trained to form a barrier or to mark the boundary of an area. usually used to separate a road from adjoining fields or one field from another.  
hedgegroves - larger trees]  
2. size —  
large to medium sized field(s)  
small sized field(s)

##### B. Primarily Non-Vegetated Areas

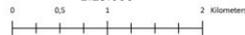
**nat (gr)** natural and/or semi-natural  
lake  
river  
stream

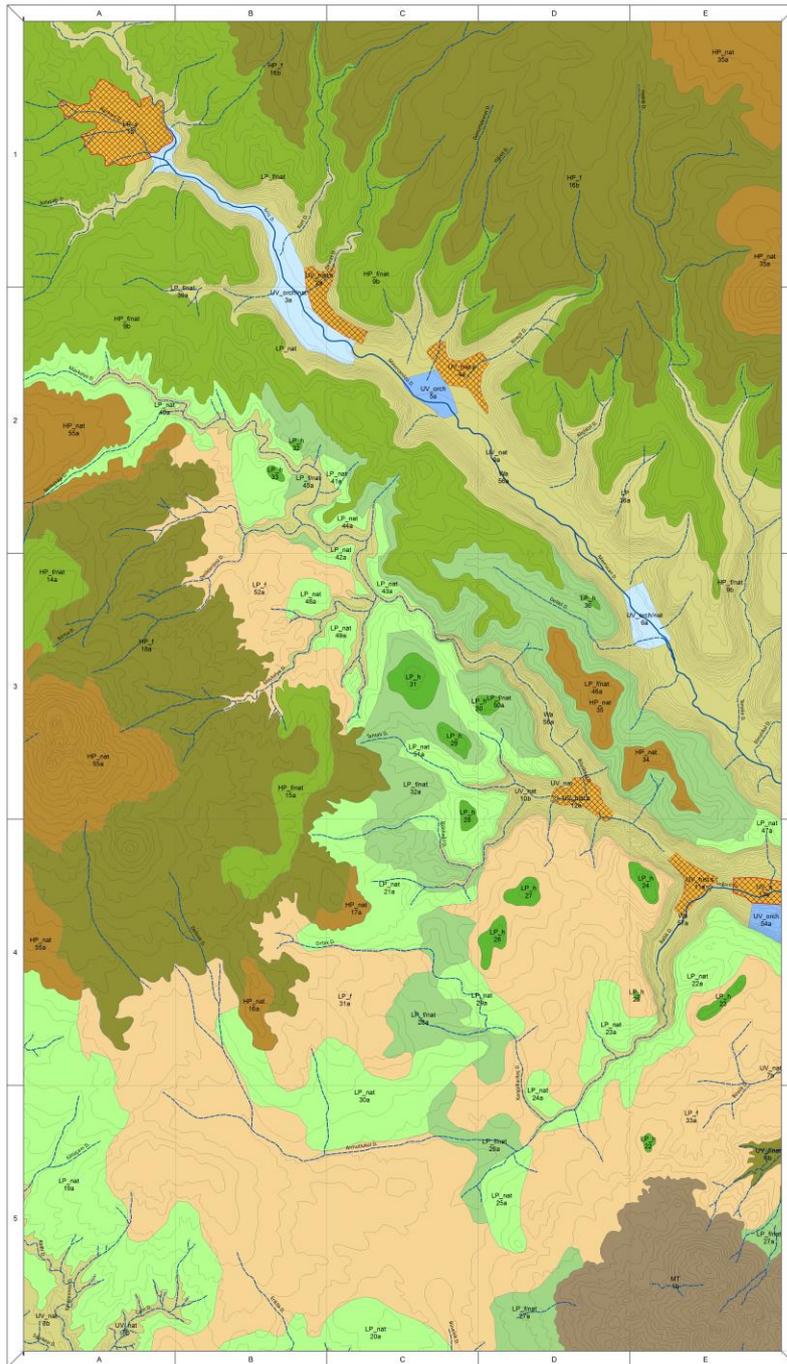
marsh - is a type of wetland that is dominated by herbaceous rather than woody plant species. marshes can often be found at the edges of lakes and/or rivers, streams - where they can form a transition between dif. ecosystems. they are often dominated by grasses, rushes or reeds. if woody plants are present they tend to be low growing shrubs. this form of vegetation is what differentiates marshes from other types of wetland such as swamps, which are dominated by trees.

swamp - is a wetland that is forested, many swamps occur along large rivers where they are critically dependent upon natural water level fluctuations.

**buil** built-up areas  
- linear - this category includes exclusively any transport, communication or supply system that is built as a linear structure (i.e. roads, railways and communication lines/pipelines)  
- non-linear areas - incl. vegetated areas within these boundaries (i.e. parks, parkland, lawns, etc.) (i.e. settlements)

1:25,000





## MAP 12 LANDSCAPE CHARACTER TYPES Landscape Character Types and/or Areas of Soğanlı District, Cappadocia (Territorial Scale)

The primary attributes that dictated the extent and scale of subdivision were geology, topography, land cover and (hist. and/or current) settlement and enclosure patterns, with further subdivision made on the basis of more specific land-uses (for example farmland or farmland with sig. areas of grassland and scrub/herbaceous veg. within enclosed land), or on the basis of enclosure size and/or shape.

The database structure comprised the following:

- ID no - a unique identifier for each of the 100 + polygons
- Code 1 - a code identifying current land-use of the polygon, including: enclosed land, open (unenclosed) land, woodland, industrial land, communications, settlement, military, water
- Code 2 - a second code for identifying further subdivision on the basis of more specific landuses (for example; cropland and olive grove or explained and olive grove and vineyards within arable land), or on the basis of enclosure size or shape.
- Topography 1-2 - two fields for identifying the differences in elevation of the land surface on a broad scale.
- Geology 1 - a field for identifying the geological layers.
- Water - a field for identifying patterns of drainage - used only in association with the u-shaped valley and/or v-shaped valley categories.
- Time-Depth 1-3 - three fields for identifying name, type of monument/site, date and use of the hist. monuments and sites within the polygon.
- Date - the date of the predominant historic character of the polygon.
- Comment - a field for descriptive notes.
- Checked - a field to confirm that polygon has been checked/verified by the researcher in the field.

### Legend

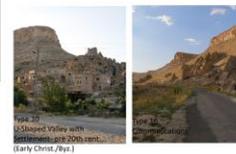
Cul.LCA type code

### Landscape Character Types

MT	medium/low mountain	UV_sch	u-shaped valley farmland (orchard)	Wa	water bodies and assoc. areas (incl. marshland and/or swamps)
HP_f	high pl farmland	UV_sch/nat	u-shaped valley farmland (orchard) with sig areas of nat veg.	Com	communications
HP_f/nat	high pl farmland with sig areas of nat veg.	UV_nat	u-shaped valley with sig areas of nat veg.		
HP_mat	high pl with settlement				
HP_mat	high pl with settlement				
HP_mat	high pl with settlement				
LP_f	low pl farmland				
LP_f/nat	low pl farmland with sig areas of nat veg.				
LP_h	low pl hill				
LP_mat	low pl with sig. areas of nat veg.				
LP_nat	low pl with sig areas of nat veg.				

### Soğanlı District Cul.LCA types indicative photographs:

Type	I	Area (ha)
1. LP_f/nat (grassland and scrub/herbaceous veg.)	845	
2. LP_f (grassland and scrub/herbaceous veg.)	2,275	
3. LP_mat (grassland and scrub/herbaceous veg.)	1,544	
4. LP_h	85	
5. LP_s		
6. UV_orch	30	
7. UV_orch/nat	101	
8. UV_nat	1,605	
9. UV_s		
10. UV_hist		
11. Wa	2,456	
12. HP_f	1,650	
13. HP_f/nat	719	
14. HP/mat	719	
15. Mt	331	
16. Com		



(Early Christ. Byz.)

# CURRICULUM VITAE

## Personal Information

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Gender	Female	

## Education

Institution	Faculty of Arts and Social Sciences, School of Town and Regional Planning, University of Dundee, UK
Title of qualification awarded	<b>MSc in European Urban Conservation</b>
Year of Graduation	2007
	Subject of MSc thesis: Managing Cultural Tourism in Archaeological World Heritage Sites

Institution	Faculty of Architecture, Department of City and Regional Planning, Middle East Technical University, Turkey
Title of qualification awarded	<b>BA degree in City and Regional Planning</b>
Year of Graduation	2004

## Scholarships and Grants Obtained

Chevening Scholarship for a MSc in European Urban Conservation, University of Dundee, September 2004

TEV (The Turkish Education Foundation) grant for a MSc in European Urban Conservation, University of Dundee, September 2004

## Work Experience

Dates	November 2011 –
Occupation or position held	City Planner
Name and address of organization / employer	Department of UNESCO World Heritage Sites, General Directorate of Cultural Resources and Museums, MoCT
Description	-
Dates	April 2011 – November 2011

Occupation or position held	City Planner
Name and address of organization / employer	Ankara Regional Conservation Council, General Directorate of Cultural Resources and Museums, MoCT
Description	-
Dates	February 2009 – April 2011
Occupation or position held	Research Assistant
Name and address of organization / employer	Science and Society Centre – Middle East Technical University, Ankara, Turkey Assoc.Prof. İrem Dikmen Toker
Description	METU – Science and Society Centre, Ankara, Turkey
Dates	April 2008 – September 2008
Occupation or position held	City Planner, Urban Conservation Specialist
Name and address of organization / employer	KA BA Eski Eserler Koruma ve Değerlendirme – Mimarlık Ltd. Güvenevleri Kıbrıs Sokak 4/1-2-3 Kavaklıdere 06690 Ankara, Turkey Cengiz Kabaoğlu
Description	Alanya, Hasbahçe Natural and Cultural Environment Protection Project Demre, St. Nicholas Church 1 <sup>st</sup> Degree Archaeological Site Conservation Plan
Dates	December 2006 – January 2007
Occupation or position held	Data Collector
Name and address of organization / employer	UNICEF (Turkey) – Middle East Technical University, Ankara, Turkey Prof. Dr. Y. Ziya Özcan
Description	External Evaluation of Girl's Education Campaign - Turkey
Dates	May – September 2005
Occupation or position held	Research Assistant
Name and address of organization / employer	Oxford Brookes University, Oxford, UK Dr. Alan Reeve
Description	Heritage Lottery Fund Townscape Heritage Initiative Longitudinal Evaluation Research Project
Dates	June – September 2004
Occupation or position held	Project Assistant
Name and address of organization / employer	TACDAM (Centre for Research and Assessment of the Historic Environment), Middle East Technical University, Ankara, Turkey Prof. Dr. Numan Tuna
Description	Cultural Heritage Development Programme of the GAP Region (The Rehabilitation Project of Şanlıurfa Historic City Centre and the Expansion of Local Capacity)
Dates	January – June 2004
Occupation or position held	Project Assistant

Name and address of organization / employer

TUBİTAK (The Scientific and Technical Research Council of Turkey) – Middle East Technical University, Ankara, Turkey  
Prof. Dr. Murat Güvenç

Description

Social, Economical and Spatial Transformations in Istanbul  
1910 – 1922: Relational Analyses on the Annales Orientals  
and Chase E. Goad Plans

### Language Skills

Mother tongue(s)

**Turkish**

Other language(s)

<b>Understanding</b>		<b>Speaking</b>	<b>Writing</b>
Listening	Reading		
<b>English</b> Advanced	Advanced	Advanced	Advanced