CHARACTERISING THE LANDSCAPE
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Introduction

In 2010, Greece ratified the European Landscape Convention (ELC) with the adoption of law N. 3827/2010. The ELC is an international treaty adopted in Florence in 2000 which aims to promote the protection, management and planning of European landscapes, and encourage co-operation in this field. As an international treaty it is the first to be exclusively concerned with all aspects of European landscapes. As such it applies to the entire territory, covering natural, rural, urban and peri-urban areas, including land, inland water and marine areas, and concerning landscapes that might be considered ‘outstanding’ as well as ‘everyday’ or ‘degraded’. The Convention and its reference documents set the following list of directions that each country, including Greece should follow for its implementation:

- strongly emphasises the identification, description and assessment of landscapes as a preliminary phase of any landscape policy;
- stresses the need for public awareness and active participation;
- requires the definition of landscape strategies;
- strongly recommends the integration of landscape dimension in territorial planning and sectoral policies;
- underlines the importance of defining and achieving landscape quality objectives so that all planning and development activities respect –and are adapted to– the features and genius loci of each place in accordance with the aspirations and needs of the local populations; and
- calls for establishing necessary legal measures to achieve the above, in respect to each country’s institutional framework.

These directions, in turn have served as a basis and guided the development of a strategy or “work plan” for the implementation of the ELC in Greece, which Med-INA undertook in 2011 as part of voluntary contribution to the National Landscape Committee of the Ministry of Environment, Energy and Climate Change.

LANDSCAPE CHALLENGES AND ITS GOVERNANCE IN GREECE

The rapid pace of change in Greece –and the wider Mediterranean region– during the past decades has caused significant changes to the character, values and functions of the landscapes, in many cases threatening their ecological diversity, visual quality, cultural patterns and functional integrity. Past and ongoing socio-political and economic trends have resulted in the concentration of activities in urban and coastal areas –uncontrolled urban sprawl and tourism development being identified as the key factors of change. Development has and continues to take place in a way that ignores the carrying capacity of inland and coastal landscapes or the fragility of their ecosystems; while, rural and mountainous areas have been subject to neglect and degradation. Moreover, abandonment of traditional activities, changes in farming practices and continuous demographic decline also constitute key threats to the landscape. As a result the landscapes of Greece and arguably the wider Mediterranean region are in danger of homogenisation, fragmentation and
great loss of their distinct character and identity, underlining the importance of effectively and promptly implementing the ELC for the country.

**Figure 1: Degraded coastal landscape**

**GREEK LEGAL & GOVERNANCE PROVISIONS**

Evidence of legal and governance provisions for landscape protection in Greece date back to the 50’s with law N. 1469/50 on the identification and protection of areas of outstanding natural beauty. Law 996/1971 introduced the concept of the aesthetic forests, whereas Law 1650/86 extended the definition of a protected landscape to include the built landscape or man-made features. In 2000, the new building regulations (N. 2831/2000) contain provisions for the protection of architectural heritage, such as traditional settlements and monuments, but which also foresees protection of their surrounding natural environment, an approach also later adopted in the revision of archaeological law (N. 3028/2002). Environmental legislation such as Law 1650/1986 and recently modified with the biodiversity Law 3937/11 can also be considered albeit indirectly to contain provisions aiding the protection of the landscape. However, all the
aforementioned legal provisions adopt an approach whereby the landscape is an asset for protection or for preserving in a static state, an approach which is not in line with the ELC and does not embed the aforementioned directions and principles (X).

According to the ELC, landscape should no longer be seen just as an ‘asset’ (a heritage concept) neither should it be viewed solely as a part of physical space. On the contrary, the Convention approaches the idea in a holistic way, considering nature and culture in an integrative manner while it builds upon the idea that quality landscapes are recognised as a precondition for sustainable development, as well as a resource conducive to economic activity. Landscape as an approach sees humans not just as the consumers of ecosystem services but also as the agents of change, who have developed a great variety of land uses and practices that contribute to bio-diversity and simultaneously leave room for economic and social development.

However, in Greece until 2011, when the first regional landscape guidelines were developed by Med-INAS there was neither a systematic approach and/or methodology used for landscape management and planning, nor any governance initiative which reflected the principles of the convention. Moreover, there is little evidence of grass root initiatives for securing landscape stewardship and inspiring local people for their protection potentially presenting an additional barrier to be overcome through environmental education and awareness raising campaigns (See Chapter X). Most of the policy instruments and practices available are still dominated by a nature/culture duality, where protection and management of the natural and anthropogenic environment and heritage are viewed as separate processes, while the focus of attention is geared towards what is considered as ‘exceptional’ and tends to neglect ‘everyday’ living landscapes. Existing planning instruments to date, have not been able to respond to the major challenges posed by the ELC; that is, to effectively take into account the aspirations of the local people (See chapter X) and successfully balance between the need to provide opportunities for economic development and heritage values.

In 2011 with Ministerial Decision 4321/28.01.2011 the National Landscape Committee was established, in which the authors participated, in order to facilitate the implementation of the ratified ELC. The authors with the support of Med-INAS designed an overarching strategic framework, presented here in, which was underpinned by commonly agreed principles and which proposed actions and methods for the assessment, evaluation and management of the Greek landscape at the different governance scales, National, Regional, Local and project scale. For the national scale the authors developed an overarching methodology and project proposal for funding which was published by Ministerial Decision 170466/04.10.2011, whereas for the regional scale the authors developed a methodology and criteria which were embedded in the revision of the regional plan specifications issued in 2011 (See Ministerial Decision 45/17.03.2011). Having developed the regional specifications, Med-INAS identified the necessity of developing and adopting specifications for the integration of the landscape dimension at the local scale and ideally into the local plan process. They thus initiated, with the funding from MAVA and organisation of Med-INAS a series of actions for the development of local scale landscape methodology. Below an outline of the principles and methodologies developed for the different levels is presented.
The aim of the current publication is to examine the most prevailing landscape characterization methods and to propose a new approach suitable for the Greek context. Emphasis has been placed in the UK methods and the Catalonian approaches for two reasons: a) they both are the basis for any approach that is developed worldwide and b) they are contradictory in the way they handle the issue of landscape units and therefore the issue of landscape character. For the UK methods a landscape unit is a repeatable pattern on the map while for the Catalonians see it a distinct polygon with unique characteristics and functions. The Greek strategy will build upon all aspects so as to eventually develop that will be suitable for cost-effective real-world application and it will provide practitioners, stakeholders and decision-makers with a sound understanding of complex and dynamic landscape issues and help them to develop policies and actions which further the objective of sustainable development.
Building a GIS based Landscape Character Framework for rural decision making

Steven Warnock and Geoffrey Griffiths

ABSTRACT
The growing interest in landscape assessment has been stimulated by the development of a more structured and systematic approach to the subject, which clearly separates the process of characterisation from evaluation and which gives equal weight to the natural, cultural and visual dimensions of the landscape. A key component of this approach has been the use of geographical information system (GIS) technology, which greatly facilitates the storage, analysis and presentation of map based data. For GIS to be used effectively, however, it needs to be built on a structured, spatial framework for describing and evaluating the landscape. Such a framework, built on distinct and relatively homogenous units of land, termed Land Description Units (LDUs), has been created in Cyprus and illustrates the potential for integrated rural decision making throughout the Mediterranean. This approach has the potential not only to play a more central role in guiding the delivery of countryside management initiatives, but also in providing robust character based planning policies in local development plans. Cross disciplinary working is at the heart of this approach and the challenge is now for planners and land managers to use this framework to develop new ways for accommodating change, whilst retaining and where possible strengthening regional character and local distinctiveness.

INTRODUCTION
Landscape assessment has come a long way from the pseudo-scientific studies of the 1970’s and early 1980’s (Countryside Commission, 1988) and across Europe it is now poised to become a powerful decision support tool for policy makers, planners and land managers. In the United Kingdom, the methods now in use are broadly similar, being strongly influenced by two pioneering studies initiated by the Countryside Commission in the late 1980’s - The Mid Wales Uplands landscape assessment (Land Use Consultants, 1986) and The Warwickshire Landscapes Project (Countryside Commission, 1991). These studies stimulated a considerable amount of interest, particularly amongst Local Authorities and led to the development of the Countryside Character approach in the early 1990’s and the publication of The Character of England map in 1996 (Countryside Agency and English Nature, 1997).

Most counties in England have now completed, or are in the process of completing some form of landscape assessment to assist with planning and land management decisions. This interest comes at a time of con-
siderable concern about the costs and environmental sustainability of farming, the loss of habitats and species in agricultural landscapes and the pressures for new development in the countryside. It is, in part, a recognition of the need to treat the countryside as an integrated whole and a belated recognition that this can only be achieved within a spatial framework that reflects and captures the richness and diversity of different landscapes.

The continued loss of wildlife and landscape features has led to a growing realisation that the countryside cannot be protected by simply focusing on the best bits, and increasingly it is being recognised that it is not enough to protect only our most valued landscapes. The move away from a designation led approach to landscape planning issues has been reinforced by attempts to encourage a more comprehensive, but targeted ‘character based’ approach to rural decision making.

The growing interest in character based decision making has been made possible through the development of a more structured and systematic approach to landscape assessment, which clearly separates the process of characterisation from evaluation and which gives equal weight to the natural, cultural and visual dimensions of the landscape. However, despite the recent publication of national guidance on the subject within the UK (Countryside Agency and Scottish Natural Heritage, 2002), too many assessments are still visually based, focusing on what can be seen rather than trying to understand the processes that drive landscape evolution and change. This failure to incorporate any meaningful analysis of the natural (physical & biological) and cultural factors that contribute to landscape character, in part reflects the relative difficulty of obtaining suitable map, especially historic, data at the appropriate scale and of adequate quality. It is also partly due to the fact that many of the earlier assessments are still ‘paper’ based and have failed to take advantage of recent advances in GIS technology.

If landscape assessment is to be of any practical value as a decision making tool it must be able to do more than simply describe what can be seen. The assessment process must also be able to provide an informed analysis of the way in which the landscape has evolved as a basis for understanding the dynamics of current and future change. The assessment of landscape character should thus be concerned not only with identifying and describing the distinctive patterns that contribute to particular scenes, but perhaps more importantly, with understanding the reasons why the constituent physical, biological and historical components occur in repeating patterns and share certain aesthetic characteristics. Cross disciplinary working is therefore at the heart of the approach described in this paper and it is this that provides the basis for integrated rural decision making.
This paper uses the results of some recent work in Cyprus to illustrate the potential outputs of the landscape characterisation process in a Mediterranean setting. This work grew out of a proposal developed during a landscape training workshop, held in Pafos at the initiative of the Laona Foundation in November 2007. Government officials from the Antiquities, Forestry and Town Planning Departments participated in the Workshop as well as representatives from a number of Non-Governmental Organisations. The conclusion reached was that it would be extremely useful if a programme of work was undertaken, in cooperation with the Government, to map the character of the landscape across the whole island of Cyprus.

THE NEED FOR A SPATIAL FRAMEWORK

A key component of the character based approach to rural decision making is the use of geographical information system (GIS) technology, which is now widely available on standard desktop computers. GIS allows data sets to be assembled in tabular format, and then displayed spatially by linking to a mapped area (polygon) or symbol. This technology greatly facilitates the storage, analysis and presentation of spatial (map based) data, allowing environmental and other information to be compared across both space and time, thus enabling the user to ask questions of the data and to generate hypotheses. The use of GIS also necessitates a rigorous approach to data storage and manipulation, and hence provides the opportunity for establishing a structured database of archival quality.

For GIS to be used effectively as a decision support tool it needs to be built on a structured, spatial framework for describing and evaluating the countryside. This has to be capable of operating at different levels of spatial resolution, ranging from the national/regional (1:250,000), through the county/district (1:50,000), down to the individual farm/site (1:10,000).

Figure 1 illustrates the relationship between the different levels of assessment. The landscape level, which sits in the middle of the diagram, can be defined as a scale of assessment that is smaller than the global environment, but larger than the individual site. Landscape assessment thus gives a context for farm and site based (Level 3) decision making, whilst at the same time providing a spatial framework for linking local planning and land management activities with national/regional policy objectives.
There are two main users of landscape level information – national agencies who generally require a regional policy perspective and local authorities who have county/district wide planning and land management responsibilities – hence the division of landscape assessment activity into regional (Level 1) and local (Level 2) studies. Natural England (formerly the Countryside Agency) is the lead agency for character assessment at Level 1 and in conjunction with The Living Landscapes Project, has produced a provisional national GIS based landscape character framework and associated database for the whole of England (Warnock, 2002). At Level 2 the onus is on individual local authorities to undertake county/district level assessments and it is at this Level that The Living Landscapes Project has worked closely with over twenty county and other partners to build a consistent, linked landscape decision making framework across almost half of England.
The key building blocks at the landscape level are Land Description Units (termed LDUs). LDUs are distinct and relatively homogenous units of land, within which the constituent physical, biological and historical elements occur in repeating patterns and share certain aesthetic characteristics. These elements are described by a series of definitive attributes, so called because they define the extent of each spatial unit. There are four definitive attributes at Level 1 – physiography and ground type, which together encapsulate the underlying natural dimension of the landscape; landcover, reflecting surface vegetation; and settlement pattern, which describes the structural component of the cultural landscape.

At Level 2 each of the Level 1 attributes is split into two parts, giving a total of eight definitive attributes for county/district level characterisation. This allows for a much finer grain of mapping, whilst retaining the hierarchical structure of the spatial framework. Thus an LDU defined as ‘soft rock low hills’ at Level 1 might be sub-divided into two or more LDUs at Level 2 (eg. scarp edge, plateau summits and/or dip slope valleys). The relationship between the Level 1 and 2 definitive attributes is summarised in Figure 2.

<table>
<thead>
<tr>
<th>Level 1 (1:250,000)</th>
<th>Level 2 (1:50,000)</th>
<th>Descriptive features</th>
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<tr>
<td>Physiography</td>
<td>Landform</td>
<td>Natural features</td>
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<tr>
<td>Ground type</td>
<td>Geology (structure)</td>
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<td>Ecol</td>
<td>Soils</td>
<td>Associated habitats</td>
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<td>Landcover</td>
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<td>Farm type (cover)</td>
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<tr>
<td>Settlement pattern</td>
<td>Farm type (structure)</td>
<td>Field boundaries</td>
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<td>Building styles</td>
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<td>Building styles</td>
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Figure 2: Summary of LDU typology
THE LANDSCAPE CHARACTERISATION PROCESS

Landscape character is influenced by a range of natural (physical & biological) and cultural factors which determine the way in which the land has evolved. The visual dimension of the landscape is a reflection of the way in which these components interact to create the qualities of scale, form and enclosure that viewers actually experience. The assessment of landscape character is concerned not only with identifying and describing these features, but perhaps more importantly, with understanding the way in which they combine to create the distinctive patterns that contribute to particular scenes.

The practical process of landscape character assessment involves a combination of desk study, field survey and analysis (Figure 3), leading to the production of a map and written descriptions of the different Landscape Types and/or Character Areas that occur within a given study area.

The desk study requires an understanding of the elements of a landscape that define its character, along with an expertise in the analysis of digital map data. LDU mapping is undertaken manually and requires an understanding of the historical evolution of different landscapes within the context of their physical setting. Definitive attributes are derived through a process of overlay mapping, which is essentially a desk based exercise involving the preparation and analysis of simplified map overlays in order to define land description units. The natural dimension of the landscape (physiography and ground type) is mapped first, not only because it provides a context for analysing the historical evolution of the landscape, but also because the baseline attributes of relief, geology and soils have ‘real’ boundaries which can be readily extracted from existing published maps. Cultural attributes do not usually have such clearly defined boundaries, but because of the constraints that have historically been imposed on land use by slope, soil fertility and land drainage, it is often possible to map cultural patterns at the landscape scale using the emerging LDU framework.

Using Cyprus as an example to illustrate the characterisation process, a series of GIS based map overlays at approximately 1:100,000 scale, were produced for the whole island using the spatial data derived from digital maps provided by the Cypriot authorities. A key function of these overlays was to systematically divide the whole island into discrete and relatively homogenous units of land, termed Land Description Units. By overlaying contour height data on top of the geological/soils maps, the island was initially divided into broad Physiographic Units.
These units were then overlaid on the ground type/land cover data and subdivided, where appropriate, to distinguish the ecological character and inherent capability of the land. This in turn was used as a framework for understanding and mapping the historic pattern of land use and settlement, where this infor-
mation was available. The end result was a thematic map at a scale of approximately 1:100,000 divided into a series of discrete Land Description Units. Unfortunately, in Cyprus, as is often the case elsewhere, the full potential of GIS continues to be constrained by difficulties associated with availability and access to digital data.

The process of LDU mapping involves 4 main phases of analysis:

**Task 1  Physiographic analysis**
Physiography is an expression of the shape and structure of the land surface as influenced both by the nature of the underlying geology and the effect of subsequent geomorphological processes. Two definitive attributes are used at Level 2, one defining the geological structure (and relative relief) of the unit and the other to describe the form of the land surface.

**Task 2  Ground type analysis**
Ground type is an expression of the soil forming environment and its influence in determining the surface pattern of vegetation and land use. Two definitive attributes are used at Level 2, one describing the nature
of the underlying bedrock/drift, the other to reflect variations in the process of soil formation related to drainage and soil fertility.

Task 3  Landcover analysis
Landcover is an expression of the type of vegetation (natural and man made) covering the land surface. Two definitive attributes are used at Level 2, one describing the predominant land use/type of farming, the other reflecting the contribution that trees and woodlands make to the character of the landscape.
Task 4 Cultural pattern analysis
Cultural pattern is an expression of the structural component of the cultural landscape as reflected in the historic pattern of enclosure and rural settlement. As with each of the other Level 1 headings, there are two definitive attributes at Level 2, one describing the broad pattern of village formation and settlement dispersion, the other reflecting the structure (size/tenure) of agricultural holdings. The analysis of cultural pattern is the least well developed part of the characterisation process and this area is currently the subject of on-going development.
Each task in the process of LDU mapping involves a step by step procedure of data acquisition, processing and synthesis to produce a series of character based overlays incorporating the key factors that contribute to landscape character. These factors are summarised in the GIS database as a series of 2-digit definitive codes. The definition of discrete LDUs, however, also provides a meaningful and structured spatial framework for gathering additional descriptive information about the landscape. Descriptive attributes include both character based information (e.g., species associations, building styles, etc.), as well as qualitative information relating to the significance of particular attributes, their condition and their vulnerability to change. All of this information is held on a GIS database linked to the LDU polygons, where it is shown as a lower case descriptive code associated with the 2-digit definitive codes.

The process of LDU mapping and subsequent characterisation with other descriptive data, enables broad patterns to be distinguished, which in turn makes it possible to begin to understand the relationship between the many factors that contribute to landscape character. The iterative nature of this process greatly assists in the understanding of how a particular landscape has developed and is the key to assessing the character of that landscape.
Once the inherent character of the land has been described it is then much easier to understand and describe the more intangible aesthetic aspects of the landscape, such as scale, form and enclosure. Although these are the qualities which are most apparent to viewers on the ground, the fact that they are almost invariably controlled by either relief, or the surface pattern of vegetation and land use, explains why the LDUs defined by the process of overlay mapping provide a structured framework for the next step in the assessment process – the field survey.

Field survey builds on the map analysis by providing essential information about the visual dimension of the landscape that cannot be gained from the desk study. The primary function of the field survey is to assess the aesthetic qualities of the landscape, identify the key characteristics that contribute to local distinctiveness and to gather information about the condition of the landscape, in particular the impact of recent change. This is done using a structured field assessment sheet.

Change by its nature is often site/area specific, and in order to assess the condition of the landscape more effectively each land description unit can be further sub-divided into Level 3 landcover/land management parcels before going out into the field. This allows features such as rural settlements, commons, parkland, or areas of disturbed land to be individually recorded and assessed. Landcover parcels are defined primarily on the basis of current land use, but also take into account historic features, such as rural parish boundaries, or relic deer parks where these can still be recognised in the present day landscape.

On completion of the field survey the next task is to re-assess the findings of the desk study and group the land description units into discrete Landscape Character Types and/or Character Areas. The process by which this is carried out is an iterative one, based on a combination of known facts, informed consensus and professional judgement. The reason for making a distinction between landscape character types and character areas is largely a practical one. 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 landscape, they are a more appropriate vehicle for presenting countryside information to a public audience.

Landscape character types are usually described in the context of their wider regional setting and presented in the form of a summary description and list of key characteristics, supported by a sketch, or photograph to convey a visual impression of that landscape. Seventeen draft Landscape Character Types, excluding large urban centres, have emerged at the regional level in Cyprus (Map 5).
Map 5. Draft Landscape Character Types at the regional level in Cyprus
LANDSCAPE DECISION MAKING

Land use planning issues have traditionally been tackled through the designation of ‘special areas’, where change, in particular new development, is deemed to be inappropriate and is restricted through strict planning policies. Increasingly, however, it is being recognised that it is not enough to protect only our most valued landscapes, but that every landscape makes a contribution – no matter how small – to the overall picture. The challenge for planners and land managers is to find new ways for accommodating change, whilst retaining and where possible strengthening local distinctiveness. In order to meet this challenge, it is critical that the decision making process is underpinned by a robust and widely accepted character based framework that takes proper account of the natural, cultural and visual dimensions of the landscape. Landscape character assessment is the process by which it is possible to build such a framework, both at a strategic planning level and to address more site specific countryside design/management issues.

There are four areas in which the emerging character based approach can feed into the decision making process:

- Raising public awareness
- Environmental monitoring
- Countryside management
- Land use planning

The landscape assessment and decision making process involves a number of clearly defined stages, as already shown in Figure 3. Depending on the purpose of the exercise, a description may be all that is required from the assessment, leading to a celebration of the landscape for the purpose of helping people appreciate and enjoy it more. A full character assessment, on the other hand, will also include a classification to define the various landscape types, or character areas in a particular locality. Increasingly, these are being used as a framework for evaluation and decision making.

The key to effective decision making is to have a clear vision from the outset of what one hopes to achieve. This provides a rational context for addressing the following questions:

- What needs to be done to retain pattern and diversity in landscape;
- Where should resources be targeted to achieve the greatest benefit;
- How can change be accommodated, with minimum impact on regional diversity and local distinctiveness.

In order to answer these questions effectively the landscape assessment and decision making process needs to do more than simply identify important, or ‘high quality’ landscapes. It must also be able to make reasoned judgements not only about the nature and pattern of key elements that contribute to the character of a particular landscape, but also about its condition and vulnerability to change.

The distinction between the character of a particular landscape and its condition helps to focus the decision making process by providing a rational basis on which to assess the need and/or opportunities for
enhancement. The aim should be to distinguish between those areas where the character of the countryside is particularly strong and where conservation, or restoration of the existing pattern should be a priority; and other areas where the landscape is less distinct, or in poor condition and where there are opportunities for creating new landscapes and/or accommodating change. These options are not rigid distinctions, but form part of a continuum of strategy options (Figure 4).

![Figure 4: Defining strategy options](image)

In practice, most landscapes will fall somewhere between these two extremes. The strategy in these areas will need to strike a balance between conservation, restoration and innovative design. This balance will vary from place to place depending on the inherent character of a particular landscape and the reasons why it has become degraded.

Having defined the direction in which the strategy should be aimed, the next step is to translate the conclusions of this analysis into a vision for the future. The vision should include a short statement that encapsu-
lates the essence of what the strategy is trying to achieve. This needs to be supported by a firm set of proposals that clearly set out how the vision can be achieved in practice. These will need to address:

- **key heritage and nature conservation issues**;
- **enhancement measures** that are necessary to restore, or strengthen countryside character;
- **mitigation measures** that need to be considered in order to accommodate change.

Many of the proposals set out in the vision statement will be implemented through the medium of countryside design and management guidelines. This approach has now been tried and tested in many places in England, while the work on Village design guidelines, originally pioneered by the Countryside Commission, provides a vehicle for addressing issues specifically associated with development control in rural settlements.

A strategic vision is also needed for making rational decisions about how best to accommodate change in the countryside. Historic patterns of settlement and land use are a key determinant of landscape character and it is important that land use change should, where possible, respect these patterns (ie. change should be appropriate to its setting). The impact of land use change, in particular new development, can also be minimised if it is targeted at those landscapes which are least sensitive to change.

Sensitivity can be defined as the degree to which the countryside can accept change without causing irreparable damage to the essential character and fabric of the landscape – the term change being used in this context to refer both to beneficial change, such as new woodland planting, as well as change brought about by new development. Sensitivity is closely related to the nature and pattern of key elements that define the character of a particular landscape. Landscapes with ‘time depth’ (ie. those that display a long and continuous history of evolution), together with those that are characterised by a clear and consistent pattern of key elements, thus tend to be more sensitive to change than landscapes of more recent origin, or those that have fewer distinguishing features. Visibility is also a factor which contributes to sensitivity, particularly at a site level. Thus, well wooded lowland landscapes tend to be less sensitive to change by virtue of the fact that new development can be more easily hidden from view.

The twin concepts of appropriateness and sensitivity underpin the emerging approach to character based planning. In developing practical ways of adopting these concepts into the planning process, the approach described here has the potential not only to play a more central role in guiding the delivery of countryside management initiatives, but also in providing robust character based planning policies in local development plans.
The use of character and sensitivity to gauge the impact of development has strong parallels with the process of Landscape and Visual Impact Assessment, advocated by the Landscape Institute/Institute of Environmental Assessment. On-going work in the UK has taken this approach a stage further and practical techniques for assessing sensitivity are currently being tested as part of the structure plan review process in a number of places across the country. Landscape, of course, is only one of a number of considerations which have to be taken into account in the decision making process. It is the landscape assessors’ job to ensure that the case for landscape conservation and enhancement is clearly articulated.

REFERENCES


Lessons learnt from the preparation of the Landscape Catalogues of Lleida and Girona (Catalonia)

Maria Goula and Ioanna Spanou

ABSTRACT
This paper critically assesses the methodology developed during the past decade by the Research Centre for Landscape Planning in Barcelona, which has served as the basis for landscape characterisation and evaluation through the Landscape Catalogues, developed under the coordination of the Landscape Observatory of Catalonia. Focus is particularly given to: defining landscape units and limits/boundaries; selective and multifaceted mapping of areas and landscape characteristics and the advantages these present for spatial planning; analysing the tools used to achieve the goals and guidelines set in accordance to the agreed landscape quality objectives.

INTRODUCTION
First of all, this paper presents the methodology developed by the Research Centre for Landscape Planning in Barcelona (Department of Urban and Spatial Planning, Polytechnic University of Catalonia) during the past decade. This approach has served as the basis for drafting the Landscape Catalogues, an endeavour that has been coordinated by the Landscape Observatory of Catalonia since 2005. Second, it analyses the key pillars of the methodology, aiming to demonstrate its hybrid nature in terms of contemporary landscapes interpretation, and to present in this way a critical review of conventional landscape characterisation methods.

A brief paper as this one cannot address such a complex issue in depth. Nevertheless, it attempts to elaborate on the key concepts that have played a catalytic role in developing the methodology. More specifically:

- concerning the organisation of the Catalogues, it outlines the concept of (defining) Landscape Units (Unitats) and limits/boundaries, and how these were shaped (and refined) through different forms (levels) of public participation;
- concerning graphic representation of the landscape, it analyses the process of selective mapping of areas and landscape characteristics, and ways to combine (and incorporate) data sources of various scales, in order to develop maps that are compatible to the scales used in planning;
- finally, it briefly presents the landscape quality objectives and the associated guidelines that have been proposed so as to conserve the quality and character of the landscapes under study; focus is given in concerted actions that aim to promote and enhance their combined natural and cultural/morphological characteristics.
THE APPROACH

The landscape assessment method used can be described as ‘holistic’, as it incorporates a visual/morphologic assessment and the analysis of environmental conditions and the historic dimension, in association to the preferences of the local population and actors. It does not restrict its scope to a mere landscape description, as its principal aim is the essential integration of results to the process of spatial planning. As such, it is structured along two basic thematic categories:

- Landscape characterisation, which involves delimitation of distinct Landscape Units, recognition of landscapes of particular interest/special attention, and identification of the characteristics which contribute to their distinctive character;
- Defining landscape quality objectives for each Landscape Unit, in the form of general guidelines that should be respected in the planning process so as to secure the protection of existing (identified) landscape values and promote the overall enhancement of the landscape; these objectives have been developed in tandem with the local public participation process, so as to express the aspirations of the local community with regard to the landscape characteristics of their surroundings. The final output of this exercise has been the definition of measures and actions –which are binding for the spatial and urban plans of the respective territories– aiming to secure the achievement of the agreed landscape quality objectives.

Main content of the two thematic categories and innovations achieved in the process of drafting the Landscape Catalogues of Lleida and Girona

A. LANDSCAPE CHARACTERISATION

Landscape characterisation involves two types of (assessment and mapping) results and the respective mapping data.

a.1 Mapping Landscape Units

A Landscape Unit is defined as a part of the territory under study, characterised by a specific combination of environmental, cultural and morphological elements and by clearly recognisable dynamics that contribute to its distinct and unique character, which can be used as a reference area for the implementation of a particular planning strategy. Landscape Units cover the whole area of the territory under study and their size should be appropriately selected so as to ensure the effective integration of the landscape-related objectives and guidelines into the formal local planning process. To this end, Landscape Units are defined at scale 1:50,000 –the typical planning scale in Catalonia– even though recording and analysing particular landscape elements often require using larger mapping scales (1:25,000). An interesting innovation in the mapping process is that the scale of analysis is independent from the scale of representation, the latter being 1:50,000 for the general maps and 1:25,000 for the Landscape Units maps; depending on the requirements of the analysis, the mapping scale may also incorporate details based on 1:5,000 scale sources (usually topographic plans and orthophotomaps).
Delimitation of Landscape Units is based on seven main physiographic and cultural factors, which are considered as constituents of the basic landscape structure. Particular mention is made here in the factors that mostly influenced the delimitation process, as i.e. studying the diversity and the fragmentation of landscape. This method is typical of landscape ecology and allows for characterisation of landscape structure, understanding of its dynamic, as well as testing/verifying the coherence of grouping and superimposing of other factors/data sources.

Landscape and perception – experience, memory, representation(s) – are absolutely interconnected notions. The methodology described has placed much emphasis in identifying visual/aesthetic characteristics, mostly through visibility studies, in order to probe into the visual structure of the landscape and ‘objectify’ the subjective local collective perceptions. Landscape perception is deeply influenced by the existence of specific observation points (topographic features, towns, roads, etc), thus the definition and identification of these points, along with the illustration/representation of all potential perceived images/entities from them, becomes necessary for the definition of Landscape Units.

It is of course obvious that the notion and meaning of landscape exceeds the mere sum of its composing natural or historic and social factors. Landscape is to a large extent a lived experience, interwoven with feelings of belonging and the identity these entail. The historic, social and economic relation developed between different populations or between a village and a nearby river, the use of certain crop management techniques and practices, place names, dialects, are all examples of immaterial factors of attachment/identification with a particular landscape.

Nevertheless, the decisive factor to help overcome problems of Landscape Unit definition is the residents’ perception of the landscape. Each time the ‘objective’ variables of the methodology failed to produce a clear boundary, it was the collective conscience of the inhabitants that provided the solution (sometimes at the expense of ‘objective’ or ‘common’ sense).

Seeking to define Landscape Units, often in representation of identity, has required searching for what is permanent, homogeneous or representative, during the preparation of the Catalogues. Following the recent introduction of landscape studying in Catalonia and, wider, in the Mediterranean, the notion of Landscape Unit seems to be established, not only as a term related to geographic description, but rather as the most appropriate tool to describe contemporary landscapes. This remark raises a series of questions regarding the validity of the notion of Unit. On one hand, it is worth noting that, perhaps, this is due to the fact that Unit seems to be an intrinsic landscape value (property seems more correct here).

The Unit, of course, may easily be considered as a static means to refer to the landscape, since it is associated to historic landscape representations. A usual critical response to this epistemological handicap is to conduct layer analysis, which offers rather open and multiple readings. However, seeking to define Landscape Units reveals geographical tensions and morphological overlaps; in other words, it helps to recognise landscape characteristics and the autonomy of their boundaries, possible overlaps between adjacent landscapes and, mostly, the internal boundaries of each landscape. Persistence in the notion of Landscape Units, particularly when geographical-scale readings are concerned, finally seems to contribute to the under-
standing of landscapes and to their characterisation, by means of studying how particular boundaries can be defined.

Taking into account internal boundaries to characterise each Unit has been an important part of the study. In reality, these are fundamentally linked to the discourse about identity, since they do not only refer to the function, but also define the perceptual image of landscapes; a landscape with soft and successive boundaries is never the same with another one that has fixed, recognisable and clearly demarcated boundaries. Simultaneously, they remind us of the importance of scale for the delimitation of Units; when scaling down, boundaries are transformed from abstract lines into landscapes/boundaries out of which new landscapes sometimes emerge—ones that can be recognised through their place names in terms of eco-tone characteristics, thus having an interesting ecological behaviour.
a.2 Mapping landscapes of particular interest/special attention

Morphological criteria are essentially the primary factors for Landscape Unit delimitation. These however represent a more or less static image of the landscape; when it comes to analysing current landscape transformation dynamics, the need to map parts of the territory characterised by a particular heterogeneity, complexity or uniqueness emerges. Such places could for example include suburban or other areas undergoing intense and rapid transformations as a result of socioeconomic trends or of implementing a new planning policy, thus requiring the application of special, differentiated protection, management and classification criteria. Experience has shown that in the majority of cases landscapes of particular interest are not restricted into the boundaries of a single Landscape Unit. Most of the times they form part of multiple Units, reminding us once again of the need to be flexible when defining Landscape Units, in accordance to the characteristics of the landscape and the pursued objectives of the study.

a.3 Landscape Units character description

This is a process based on the analysis and mapping of all factors shaping the landscape, organised in three basic thematic categories:

1. Landscape values, conceived as elements to which a special value is assigned in regard to their contribution in shaping the distinct landscape character.
2. Existing pressures, threats or negative impacts to the landscape, mainly caused by human activity.
3. Intrinsic weaknesses of each area, as a result of natural hazards.

1. Landscape values

Landscape values are mapped at scale 1:25,000 and are classified under the following categories: environmental values, aesthetic/morphological values, historic values, other values. Emphasis here is given to the category of aesthetic values, since it presents a key innovation in landscape representation. Aesthetic values are related to the ability a landscape has to convey a certain sense of composition/basic perceptual structure. Examples include: the harmonious transition between landscapes of different character (i.e. between agricultural and natural land, or between the coast and the sea), the presence of surface waters, distinctly recognisable landscape patterns (i.e. concentric farming structures, terraces, etc), panoramic views as a morphological patterns, historic monuments with their associated surroundings, as well as other unique characteristics of particular aesthetic value (i.e. tree alignments along agricultural roads).

Particular reference is made here to landscape patterns, because mapping them not only helps to identify individual landscape characteristics, but also reveals structural relations between them. Landscape patterns are considered as dense distillations of landscape character, as symbols of landscape particularity. They reflect processes with which local communities have diachronically shaped the landscape to cover basic survival needs (i.e. patterns related to farming, irrigation and stockbreeding), but may also refer to natural patterns characterised by special morphologic compositions as for example contrasting patterns of colours or shapes. Equally important is the fact that they refer to subsets of the landscape, at a scale which enables their effective integration to spatial and urban planning considerations.
2. Threats
Landscape threats are synthetically presented on a special 1:25,000 map, which depicts all human-induced factors that contribute to landscape degradation; road and infrastructure construction, quarries and landfills, unplanned residential areas, industrial sites, extensive presence of greenhouses, etc. This synthetic representation helps to identify the range of influence of each threat, by means of analysing the density of its presence in each Landscape Unit, so as to enable the selection of the appropriate planning scale for intervention and lead to the definition of areas in need of special attention. The study is complemented by the variable of visual sensitivity (exposure), which maps parts of the landscape systematically exposed (visible) to the local population and through traffic by arterial roads. The parts of each Unit which are found to be constantly exposed are being considered as more vulnerable and thus more ‘sensitive’ to any alteration of their image – and therefore landscape identity as perceived by the majority of the population.

3. Natural hazards
Mapping natural hazards on a special 1:25,000 map aims to point out areas prone to negative impacts by a natural disaster, as a result of their particular climatic conditions; i.e. flooding, soil erosion, avalanches and periodical forest fires. Such areas are subject to potential landscape transformation and thus require particular planning measures to secure both the protection of human activities developed on them and the free manifestation of natural phenomena. Riverside areas constitute typical examples.

B. DEFINING LANDSCAPE QUALITY OBJECTIVES FOR EACH UNIT
The definition of landscape quality objectives is presented at a 1:25,000 scale map, and is organised in the following categories:

- Landscape conservation: Instruments to secure the identified natural, cultural and visual values of the landscape;
- Landscape enhancement: Criteria to improve the quality of the landscape;
- Landscape restoration: Regulation of activities aiming to restore the landscape to a state prior to its transformation by human activity;
- Landscape reclaiming: Instruments to stop degradation or extinction of a landscape characteristic (or a group of characteristics), and restore them to their earlier state, ensuring their future presence;
- Landscape appraisal (maybe she means valorisation): Instruments to valorise the environmental, cultural and visual landscape values;
- Landscape creation: Active intervention on a part of the territory, aiming to improve its quality and create a new landscape, where the original has disappeared or has an insignificant presence;
- A combination of the above.

There are two innovations in this section of the Landscape Catalogues:
• First, mapping of the landscape quality objectives has been based on the characterisation maps. This means that it directly refers to the characterisation process and associated issues, rather than to identifying general areas (maybe objectives) as initially suggested in the Prototype Catalogue. Thus, it proposes a direct and mutual relation between characterisation and planning.

• The second issue relates to the legibility of objectives; the selected graphic representation aims to support easy understanding of landscape conditions, by using a differentiated colour range for areas requiring protection of their existing values, in contrast to areas where immediate planning interventions have been deemed necessary in order to improve their quality.

In conclusion, we shall comment on the contribution of the above presented methodology concerning the need to replace models which are restricted in analysing objective variables, leading to deterministic applications of assessment in planning. Or even in regard to the necessity to transcend the distinction between the artificial (culture) and the natural (nature) which dominates landscape approaches due to its twofold nature.

On one hand, it is common place that landscape is by its essence a hybrid notion. British landscape architect James Corner has stressed how often landscape is related to nature but also to image. Thus, the fruitless division between the natural and the artificial, rooted in 18th century thinking, ceases to exist due to the emergence of new, hybrid languages. This Cartesian division has contributed to a general recognition of identities, where certain characteristics, usually morphologic and immediately recognisable, are considered representative.

On the other hand, there is an evident global interest for what is hybrid and variable. More and more often, an urgent change concerning the interpretation of the notion of identity –that is, the gradual transition from a gestalt reading and its dominant relation of figure-background towards its dissolution into a mosaic without clear and determining boundaries– is being accepted.

In the particular process, landscape is understood:

- as a cultural lens that reconciles us with nature,
- as a hybrid language promoting interdisciplinary exchange and communication,
- as a framework for analysis and action which brings us closer to the ideas of variability and hybrid working methods.

The Catalogues aim to answer a basic, yet difficult question: which are the key elements of contemporary landscapes’ identity in the framework of a deep understanding of the spatiotemporal conditions that have shaped them, but mostly in relation to the pressures and future transformations they are subject to, thus avoiding schematic mental constructs and, particularly, overcoming artificial barriers (divisions).

The lack of such landscape related studies in the Mediterranean makes us think about the necessity to timely respond to questions of contemporary landscapes’ sustainability (conservation through development), by taking into account the memories and aspirations of the people who live and work in them, without resorting to already developed imported models nor to a blind confidence backed by a well-planned
process, but rather by promoting and creatively using the special knowledge and criteria stemming from
the particularity of the Mediterranean landscape.

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A landscape archaeology for research and management: historic landscape characterisation and its potential for use in Greece

Sam Turner

ABSTRACT

Over the last 15 years landscape archaeology has developed integrative, multi-layered approaches to studying landscapes. Though the focus has remained on the landscapes of the past, we now realise that relationships between people, places and things can be traced and explained not only in past landscapes, but also from the past to the present and on into the future. The landscapes we study are the result of hundreds or thousands of years of development and change, not ‘fossils’ stranded in time from Antiquity. Every field, track, tree, road, hedge, woodland, wall, ruin, building, earthwork, town, patch of scrubland, village, mountain pasture or meadow exists because chains of human actions in the past (from the distant to the recent) have created them, shaped them, or allowed them to remain. They all have histories, and viewed together as landscapes these histories give rise to ‘historic character’ (Fig. 1). By understanding these histories and relationships we can better appreciate and value past and present landscapes, and use our insights to contribute to planning the landscapes of the future. New possibilities are therefore opening for archaeologists to contribute to live debates about the role that historic landscapes can play in addressing today’s social and environmental challenge.

Figure 1 Potamia, Naxos, looking north-east. The church of Agios Mamas is visible in the valley, with the village of Kato Potamia in the distance. In combination with aspects of the ‘natural’ environment such as topography and rainfall, the patterns of fields, terraces, settlements, trees and land-use have developed over many centuries and lend this landscape its distinctive historic character (Photo: Jim Crow, 2006).
HISTORIC LANDSCAPE CHARACTERISATION

Historic Landscape Characterisation (HLC) is a method for understanding and mapping the landscape with reference to the historic processes that have shaped its development and character (McNab and Lambrick 1999: 54; Fairclough 2003; Turner and Fairclough 2007). The method used today was developed in England in the 1990s and early 2000s as a landscape management tool, though its potential for research has been recognised increasingly widely in Britain and Europe.

Historic Landscape Characterisations (HLCs) have two key characteristics. Firstly, it recognises that landscape is ubiquitous. Secondly, it is concerned with both physical features and the ways they are perceived and valued. In Europe, nearly all landscapes have been modified by people through agriculture, pastoralism, industry and other activities. Landscapes in the present therefore have historic character that results from both ‘natural’ processes and the activities of people in the past. Even the wildest mountains, tundras and forests are still visited, sometimes lived in and certainly valued according to cultural perceptions and meanings.

HLCs present these perceptions and interpretations based on landscape archaeologists’ understanding of historic processes. Nevertheless, HLCs also recognises that the same landscapes can be seen and valued by different people in different ways. Although this means that landscapes are frequently contested, much of what people experience is still closely related to the physical features that make up landscapes. People’s perceptions are not completely subjective because they are rooted in this materiality. Even ‘intangible’ elements of landscape such as battlefields, place-names or folklore are usually linked to particular features or locales. We can use an ‘archaeological’ approach to map these physical elements of a landscape and the range of different perceptions linked to them, whether they are buildings, ruins, trees, boundaries, terraces or other things. The use of HLC is therefore consonant with the interpretation of landscape presented in the European Landscape Convention, which regards landscape as both ubiquitous and culturally constituted (Council of Europe 2000).

The HLC method originated in the early 1990s when English Heritage commissioned a project to evaluate and compare different methods for understanding and valuing the historic landscape. This research evaluated two different types of approach. First, there were the so-called ‘top-down’ techniques, where experts delimited areas of landscape with historical and archaeological characteristics they considered to be of particular significance. Second, there were ‘bottom-up’ methods, which included techniques for presenting interpretations of the historic character of the whole landscape (Fairclough et al. 1999; for a ‘top-down’ approach see e.g. Darvill et al. 1993; for ‘bottom-up’ Herring 1998: 7-8). The first detailed HLC work was undertaken by Cornwall Archaeological Unit and its partners on Bodmin Moor in late 1993. This project was extended to cover the whole of the county of Cornwall in 1994. English Heritage has since been instrumental in developing and applying the method across much of the rest of England for use in applications related to landscape management and planning (Fairclough and Møller 2008). HLCs for the whole of England are scheduled to be completed by 2014, including both rural, urban and maritime areas (see http://www.english-heritage.org.uk/professional/research/landscapes-and-areas/characterisation).

Similar historic characterisations or assessments have been carried out in Scotland and Wales.
HLC METHODOLOGY

HLCs differ in important ways from traditional methods for describing the historic ‘resource’ such as inventories of archaeological sites or intensive field surveys. Instead of plotting individual archaeological sites as points or lines on a map, HLCs present more generalised interpretations of the whole landscape. The HLC technique draws on methods which have been used in other disciplines for many years, for example to map soil-types or habitats. In the same sense that all parts of the landscape are different types of habitat, HLCs recognize that all parts of the landscape have historical significance which is the result of human activity over time. Peter Herring has explained the basis of the method developed in Cornwall as follows: ‘Closer examination [of the landscape] reveals that particular groupings and patterns of components which recur throughout the county can be seen to have been determined by similar histories. Cornwall’s historic landscape can, therefore, be characterised, mapped and described, using a finite number of categories or types of historic landscape character’ (Herring 1998: 11). In the HLC of Cornwall, seventeen such historic landscape character ‘types’ were identified:

1. Rough ground
2. Prehistoric enclosures [field systems]
3. Medieval enclosures
4. Post-medieval enclosures
5. Modern enclosures
6. Ancient woodland
7. Plantations and scrub woodland
8. Settlement (historic)
9. Settlement (modern)
10. Industrial (disused)
11. Industrial (active)
12. Communications
13. Recreation
14. Military
15. Ornamental
16. Water (reservoirs etc)
17. Water (natural bodies)

The basis of the HLC method is to analyse the present-day landscape using modern data-bases (in Britain, usually the Ordnance Survey maps) and other sources (for example historic Ordnance Survey maps or vertical air photographs) and characterise it into landscape ‘types’. These ‘types’ are classified in advance of the characterisation mapping and define the broad characteristics exhibited by areas of land with similar past uses (Figs 2-3). The exact number of HLC ‘types’ chosen depends on the aims and objectives of the specific project, and the first step in preparing an HLC is usually to define the appropriate scale for the characterisation and a range of relevant landscape character ‘types’. At the simplest level, just three or four HLC ‘types’ may be adequate to address defined research questions (for an example relating to early medieval south-west England, see Turner 2006a). More commonly, between 15-40 ‘types’ are used. Some detailed characterisations, particularly those designed for use in urban areas, may employ more than 200 ‘types’ (Collins and Turner, in prep.).
Historic landscape character 'types' are mapped using GIS. In different regions different 'types' will be appropriate because landscape histories vary from place to place, or because the landscape characterisation has been designed to reflect particular aspects of landscape at larger or smaller scales. The method can therefore be very flexible. In Cornwall characterisations of localised areas have been undertaken at 1:10,000 and 1:2,500 scale using project-specific 'types' (Herring 1998: 20-1; Turner 2006a). By contrast, a recent European project proposed a method that could be implemented at the Continental scale, by mapping cultural landscape character at 1:250,000 (Fairclough and Turner 2010).

Figure 2. A simple historic landscape characterisation of Chassenon, Charente, western France. The characterisation was created as part of a project researching the historic settlement pattern of this rural landscape. The sources included modern and historic maps and vertical air photographs (Turner 2011).

A common difficulty with HLCs is how to map the features and patterns evident in the historic landscape reliably as different HLC 'types'. It is not always possible to know exactly when particular groups of features were created without undertaking very detailed field-based research. Most areas that are characterised in an HLC will have been subject to little or no work of this kind, and many European landscapes will have no
detailed map evidence before the 20th century. In the 1970s similar problems led to the decline of morphogenetic studies of European landscapes, because many cultural geographers argued that this work could not reliably identify the contexts in which particular landscapes were formed. Since various processes at different dates might lead to similar physical results they argued that it was not enough to rely on the morphology of settlements and fields to make historical interpretations (Widgren 2004).

Figure 3. The verdant historic landscape of Chassenon, Charente, western France: Château de la Brosse and the valley of the River Graine, looking west (see Fig. 2). (Photo: Maria Duggan, 2012).

In the last 40 years a great deal of archaeological and historical work has been dedicated to improving our knowledge of historic landscapes, and this research provides various strategies that can be used to manage this problem. For example, it is common to base the character types used in an HLC on a range of well-researched case-studies that have already been subject to detailed historical and/or archaeological study. Detailed landscape-related studies of this kind were not generally available to mid-20th century geographers but today there is a much wider range of detailed case-studies. These can be used to provide analogies that help explain and map the historic character of wider study areas. Using analogies in this way to interpret archaeological features is a well-established and accepted aspect of archaeological field survey: whilst it is clear that non-intrusive earthwork surveys or transcriptions from aerial photographs do not
necessarily provide exact dates for the creation of the features they describe, analogies with documented or excavated examples can help us to identify their purposes, general period of origin and processes of development. By drawing on previous studies of landscape features and settlements it is possible to decide which HLC 'types' are appropriate for individual HLC projects.

Using GIS provides considerable flexibility and allows each block of each historic character type to be given more than one descriptive characteristic. Since the early 2000s, English Heritage’s landscape characterisations have used a database linked to the GIS to relate a range of attributes to individual blocks or ‘polygons’ (see the ‘template project design’: Fairclough 2002; Turner 2007). This allows the production of detailed models of the historical development of the landscape over time. Using GIS, we can represent the different phases of development each landscape has passed through on its journey to the present. GIS also allows us to represent the extent to which historic features or patterns influence later landscapes, right up to the present. It is important to recognise that a ‘recent’ landscape (e.g. one created by nineteenth-century reorganisation of field patterns) may conceal strong elements of another kind of landscape (e.g. Roman centuriation); GIS provides a flexible mapping tool that can show these relationships.

Detailed explanatory text explaining the method chosen for any HLC project should accompany the GIS database. This accompanying text can provide the justification, description and analysis of the HLC types that have been selected. This should include discussion of the historical, archaeological or geographical studies that have been used to help define the HLC types. When applied carefully with well-defined and clearly-recorded methodologies, Historic Landscape Characterisation allows the historic landscape to be given archaeological significance on a wide scale. As the pioneers of the method in Cornwall hoped, HLC can help us to 'break-out from the site-based myopia' of past approaches to historic landscapes (Herring and Johnson 1997: 54).

HLC AND ARCHAEOLOGICAL RESEARCH

Over the last decade archaeologists have begun to realise the potential of HLC as a research tool (for an early example, see e.g. Turner 2006a). In the last five years, research-oriented HLCs have been undertaken in several parts of Europe either as stand-alone studies or as elements of broader research projects in both rural and urban settings. For example, the Making Christian Landscapes project sponsored by the Irish Heritage Council’s INSTAR programme represents the first substantial use of HLC for archaeological research in Ireland (Ó Carragáin and Sheehan 2009). The project has created new models of landscape change in the early Middle Ages by using HLC to help contextualise the results of archaeological fieldwork undertaken as part of the Irish government’s recent road-building programme. Work in the Mediterranean has demonstrated that the method is flexible enough to be adapted to landscapes quite different to those originally studied in north-west Europe with good results (e.g. Turner and Crow 2010; see further below). Of particular note is its successful application in western Turkey in an area that has traditionally never had permanent field-boundaries such as walls or hedges (Crow and Turner 2009). Very similar techniques are now being applied on a large scale in some regions, for example the University of Lleida/ Catalan Landscape Observatory PaHisCat project (Bolós 2010; http://www.paisatgehistoric.udl.cat/). As noted above, a recent
EU Culture 2007 project created an experimental methodology for characterising the landscape of Europe at the continental scale (Fairclough and Turner 2010).

A MEDITERRANEAN HLC: NAXOS, GREECE

The first HLC work focussed on Greece was undertaken on the island of Naxos as part of a pilot project designed to test whether the HLC method could be used in Mediterranean contexts (Turner and Crow 2010; Crow et al. 2011). The Naxos HLC used a wide range of sources and a database designed to represent interpretations of the historic character of both the current landscape and earlier patterns. The main sources used included IKONOS 1m black-and-white satellite data (acquired 2006-7); historic air photography taken by the RAF in 1943; digital maps including 20th century 1:50,000 Russian military maps; and Google Earth imagery.

To select character types for the Naxos project we researched all the available historical and archaeological studies relating to the island’s landscape archaeology, and made comparisons to neighbouring regions. Parts of our study area were recently surveyed by field archaeologists working under the aegis of the 2nd Ephorate of Byzantine Antiquities, for example around the churches of Agios Isidoros near Rachi and Agia Kyriaki. These studies provided some data about earlier settlement patterns and historical agriculture. Nevertheless, relatively little work had previously been dedicated to understanding the cultural landscape of the island in the historic period. In order to inform how we defined our character types, we decided to combine the data with new studies based on a series of retrogressive analyses before beginning our HLC mapping. This helped provide focussed case-studies of landscape development where previous research was lacking. Retrogressive analysis is a simple technique for unravelling the physical and chronological relationships between different elements of the cultural landscape (for example field boundaries, roads, etc.). It uses the same principles as the analysis of earthworks developed by surveyors such as O.G.S. Crawford and his successors in the UK’s state archaeology services to unpick the order features were created by working backwards from the present landscape (for examples of the application of this method in England, Wales and France see Williamson 1987; 1998; Oosthuizen 2006; Rippon 2004: 79-99; Watteaux 2005). Retrogressive analysis can help identify significant periods and processes of change, such as major episodes of enclosure or other reorganisations of field systems. This analysis can then be used to inform the definition of HLC character types for places where little or no earlier research has been undertaken.

At the most basic level, the data from the Naxos HLC can be displayed in the GIS to show where very simple categories of land-use lie: fields, settlements, rough ground and so on (Fig. 4). The GIS also allows us to create maps using different variables from the database for a range of purposes. For example, the characterisation was designed to allow a sequence of character types to be recorded for each ‘polygon’, including interpretations of present and (where possible) past historic landscape character. This allows us to represent the changing character of the landscape over time. First, the present-day character type was recorded based on the evidence from the IKONOS satellite imagery. Second, an interpretation of earlier phases of landscape character was made using all the available sources. This means that for much of the study area it is possible to model earlier patterns of land-use and trace which landscapes have remained most stable and which have changed most quickly. We can also analyse how earlier land-uses have affected later pat-
terns in the historic landscape. These analyses all have potential applications for landscape research, management and planning in Greece and elsewhere in the eastern Mediterranean (Crow and Turner 2009; Crow et al. 2011).

Figure 4. Historic landscape characterisation (HLC) and retrogressive analysis of the valley of Aria, Naxos, Greece. (Includes IKONOS material © 2006, Space Imaging LLC. All rights reserved).

FUTURE DEVELOPMENTS

Even though archaeology is a multidisciplinary field, archaeologists (and historians) have not always found effective ways to communicate and disseminate their insights widely amongst other practitioners of landscape disciplines, particularly compared to those working on the natural environment. Nevertheless, the HLC approach is well-suited to integration with other perspectives. To create a new generation of what we
might call ‘integrated landscape characterisations’ it is important to overcome some entrenched divisions between disciplines. The idea that the whole landscape (rather than just particular sites or monuments) is historic and cultural is not even universally accepted in archaeology, where a tendency to focus on the ‘site’ remains (particularly in the Mediterranean). More generally, the idea that it is not possible to fully understand and manage the ‘natural’ environment without also understanding its ‘cultural’ and ‘historic’ aspects is still not widely recognized, despite acknowledgement of human involvement in processes such as climate change. It is important that archaeologists of landscape communicate with a much wider range of people to promote the sustainable management of landscapes. This is also a pressing concern for public authorities charged the day-to-day management of landscapes (and with implementing the European Landscape Convention), so successfully integrating these methods is sure to have a significant impact on practice.

Communication, collaboration and co-investigation at all scales will be made possible by permeating the boundaries between academic disciplines including archaeology, history, landscape architecture, planning, environmental science, ecology, geography and sociology. This is particularly true in the Mediterranean, where genuinely interdisciplinary research has been relatively limited in the past. By developing approaches such as Historic Landscape Characterisation further, it may be possible to bring people together as partners to conserve, manage and improve cultural landscapes for the future.

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Interpreting and Implementing the ELC participation provisions in Greece.

Kallia Pediaditis and Aphrodite Sorotou

ABSTRACT

Over the last decade the focus in landscape policy is shifting from traditional top-down perspectives into a bottom-up and integrated approach involving participation of local stakeholders. More specifically, participation with regard to landscape policy formulation and the implementation of the ELC, art 5 states:

“Each party undertakes: ... c to establish procedures for the participation of the general public, local and regional authorities, and other parties with an interest in the definition and implementation of the landscape policies ...”

Considering in 2010 Greece ratified the ELC, this indicates the need for it to ensure participation regarding landscape policy at the different planning and decision making levels ranging from National to local and project scale. In this Chapter the authors present the outcomes of their voluntary work and proposals presented before the National Landscape Committee for adoption, under the context of a wider national strategy for the implementation of the ELC (see chapter X)

INTRODUCTION

It is important to define participation as it is an ambiguous term with many definitions. At a generic level participation can be described as forms of exchange that are organized for the purpose of facilitating communication between stakeholders regarding a specific decision (Webler and Renn, 1995). Collier (2002, p. 7), defines stakeholders as “constituencies, organized groups, or individuals that have a direct or indirect interest in the decision”. Local community participation, or what is more commonly referred to as public participation is a subset of participation used when local community stakeholders or the public are involved.

Participation may have different purposes, which in turn affect the methods used, the stakeholders involved and the extent of involvement (See Buono et al. 2012). Sanoff (2000, pg 11) describes the different purposes which participation can serve, as:

- to generate ideas;
- to identify attitudes;
- to disseminate information;
- to resolve some identified conflict;
- to measure opinion;
to review a proposal;
merely to serve as a safety valve for pent – up emotions."

The purpose of participation will affect its nature. In fact a number of different hierarchies illustrating the
different levels of participation can be found in the literature (Arnstein, 1969; Dorcey et al, 1994; Wilcox,
1994; Pretty and Shah, 1994; UNDP, 1997). Arnstein (1969) describes the different levels of participation
using the metaphor of the ‘ladder of participation’. The ladder essentially depicts a hierarchy ranging from
non-participation and degrees of tokenism, where participants essentially do not have the power to influence
a decision, through to the top level of the ladder of citizen power where participants have total control
over the decision making process. One problem with such hierarchies is that they imply that more participa-
tion is necessarily better. However, more recent practitioners experience indicate that the appropriate
level and methods of participation used should reflect the purpose of the participation (IEMA, 2002) (Fig-
ure X).

Similarly to the participation hierarchies, Dakin, (2003) presents a continuum in landscape assessment
methodologies ranging from the expert based ones relying on evaluation by professionals, through percept-
tual and experimental approaches obtaining observer responses to landscape photographs, to experiential
and humanistic approaches exploring and clarifying meanings of landscape. Therefore it is ascertained that
even the selection of landscape assessment method will in turn affect the participation purpose and meth-
ods used. This finding is also important in that it underlines the need to design of a participation strategy
hand in hand with the ELC implementation strategy something which the authors attempted from the on-
set.

The CM/Rec(2008)3  EU Committee of Ministers guidelines for the implementation of ELC state that “All
actions taken to define, implement and monitor landscape policies should be preceded and accompanied
by procedures for participation by members of the public and other relevant stakeholders, with the aim of
enabling them to play an active role in formulating, implementing and monitoring landscape quality objec-
tive. Participation implies two-way communication from experts and scientists to the population and vice
versa. The population possesses empirical knowledge (local and naturalistic knowledge) that may be useful
in completing and contextualising specialist knowledge. This also has an influence on “assessment” activity,
understood as a dialectical comparison between analyses by experts and the values attached by the popu-
lation to landscape”

From the above it is clear that ELC participation is meant to serve more than one of Sanoffs (2000) afore-
mentioned purposes. Indicatively considering the embryonic stage of Greece in ELC implementation par-
ticipation is needed to achieve at a minimum the three following objectives:

1. To obtain information regarding the landscape character and its value to be used in the land-
scape characterisation studies at the different levels;
2. To disseminate information and generate awareness about landscape management, protection
and enhancement in general;
3. To review proposed landscape policies and strategies at different levels

This indicates the need for the design of a participatory framework which utilises a combination of participation methods ranging from expert engagement to public consultation and which makes use of different techniques. To design such a framework important questions such as exactly who should participate? When? How? For what? How will the outcomes of the participation be utilised? need to be answered. However, such specifications are not provided in the ELC guidance leaving a gap which this paper tries to address specifically for Greece.

LEVELS OF PARTICIPATION, TECHNIQUES AND FACTORS INFLUENCING THE SELECTION OF TECHNIQUES

Another important dimension which needs to be taken into consideration is the direction provided by the ELC and guidance on how landscape needs to be integrated into existing planning processes, so in this case integrated within the Greek planning and development processes. This raises the important questions of what existing statutory participation processes are there in the Greek planning system and at the different levels, from national to local and project scale? Are they on par with those of the ELC guidance and what are the practical limitations in terms of time, budget etc which need to be taken into account. This is a critical point as although participation is recognised in the literature for its benefits (Buono et al, 2012), it is also characterised by a range of barriers to its effective implementation (Collier, 2002). The design of a participatory processes and framework undoubtedly, as in this case is bound by issues and dilemmas finding a balance and compromise between legitimacy and representation versus feasibility issues (Buono et al, 2012). Moreover, participatory planning and generally the employment of collaborative decision making processes and local engagement methods can not happen over night (XX). It is a way of working or functioning as an organised group which is slowly learnt and above all requires trust amongst those participating (XX). The more close contact and two-way engagement processes are adopted the greater experience, trust and/or facilitation is required. In designing therefore a national strategy for participation for implementing the ELC participation provisions throughout the different governance and planning processes in Greece, it is vital that a review of the status of participation experiences, opportunities and existing statutory provisions is undertaken. Below we outline the statutory participation planning provisions and attempt to analyse the nature of Greek participation experience drawing important contextual information which would help design a pragmatic implementable landscape participation framework.
Figure 1: Adapted from IEMA, 2002
PARTICIPATION PROVISIONS IN THE GREEK PLANNING SYSTEM

In general, Greece despite being the mother of democracy appears to be lagging in the adoption of collaborative decision making processes as is the trend throughout Europe (Apostolopoulou, et al, 2012). Apostolopoulou & Pantis, 2009 & Apostolopoulou et al 2012, underline, how there is a limited culture in public participation in planning and decision making processes, in general there is a hiatus in trust between decision makers and the public. Buchecder et al (2003) in discussing participation specifically for landscape assessment and planning, highlights how a culture of participation takes time to be built, with the public and stakeholders learning from the engagement processes themselves and gradually gaining faith in them. He points out how the topic of landscape is a good forum for bridging the gap between citizens and state. Therefore, for the case of Greece, the authors viewed landscape consultation as an opportunity to enhance participation in planning decision making processes overall.

The authors proposal for a strategy to implement the ELC grapples with the national, regional, local plans, project EIA and the special environmental studies (see chapter X), as such it is important to review the participation provisions of these different planning and assessment tools and evaluate whether they suffice to fulfill the participation requirements for the implementation of the ELC and at a minimum the three aforementioned objectives.

Greek planning law N. 2742/99 regarding national spatial plans foresees a consultations system which is very centralized, top down and does not allow for two-way public consultation. Indicatively there are provisions for the establishment of special committees which consist of ministers, or other committees which consist of high level government officials designated by ministers, in conjunction with minister appointed professors as well as representatives from the main unions which however can participate without the possibility to vote, i.e. active engagement in decision making. More recently in 2011 with ministerial decision N. 51949 the need for the establishment of another committee for the monitoring and implementation of the plans was prescribed. However, even though the role of this committee was predominantly regarding monitoring and evaluation, again a closed top down mechanisms was proposed with no provisions for public involvement.

Similarly in article 8 of law N 2742 in which the provisions for regional spatial plans are set out, again an absence of referral to public participation is noted. Key role again have the aforementioned ministerial committees, with only differentiation being the provision for proposed plans to be sent to regional councils for consultation. Specifications regarding the duration, statutory nature of the consultation etc are not provided.

The legislation regarding the local plan development process in Greece is scattered throughout different laws, presidential decrees and ministerial decisions. The key law is 2508/97, yet provisions regarding participation are stipulated in art 3 of law 1337/1983. This article describes the procedure of initiating and adopting a local plan, both by a local authority or a ministry, and within this process refers to the need for participation. More specifically for the initiation of the process an announcement in the government legal newspaper is required, detailing the boundaries the proposed plan will cover. A process of sending the draft plan to statutory consultees, such as other government authorities and local councils for review, in-
cluding regional authorities, the ministry of finance, the ministry of agriculture, Ministry of culture, Ministry of public works, the tourism authority and other utilities bodies whose work covers the geographic expanse of the proposed plan for the provision of written feedback within a 2 month period is described (par 2. art 3). If no feedback is received the process continues without delay.

The need to involve the public is mentioned, however the provisions are vague to say the least and consist solely of the following sentence. “the participation of interested citizens should be encouraged in the development of the plan using any applicable means. For example open meetings or news releases”

In both cases of stakeholder and public participation No specifications regarding the need to, or on how to incorporate the feedback into the decision making process are provided, so feedback could be theoretically ignored.

These statutory provisions for local plans are 20 years old and experience of their implementation indicates a lot of room for improvement. The process has been characterized for being very bureaucratic, consisting predominantly of written opinions, thus limiting the potential for fostering collaborative engagement and deliberation. The most collaborative processes which could allow for the two-way communication as proposed by ELC guidelines, consist of the local or regional council meetings, yet the potential for direct citizen input has been to date virtually non-existent.

However, all the aforementioned plans according to the European Directive 2001/42/EC have to undergo the process of Strategic Environmental Assessment (SEA). This Directive which has provisions for the assessment of plan impacts on the landscape, was transposed into Greek law with joint ministerial decision N. xxx has provisions for an obligatory public consultation process of the SEA. In accordance with the EU principle of subsidiarity Greece has adopted these provisions in the form of a 2 stage consultation processes, which can be characterized as heavily bureaucratic consisting solely of written opinions of statutory consultees consisting mainly of government officials, thus limiting opportunities for dialogue and consensus building, and subsequently the benefits of adopting a participatory process. Regarding opportunities for public participation, there are provisions for the announcement of the availability of the study and a 45 day period for the public to visit specific offices, read on the premises and make written comments regarding the study. However, as in all the Greek legal provisions for participation, whether and how the consultations should be processed and taken into account is not specified so they could be theoretically ignored. The potential of the SEA process however, to serve as a legal provision for consultations regarding landscape issues however, does exist and it worth considering further.

Similar to the SEA Directive at the project scale according to Directive 97/11/EC on Environmental Impact Assessment which has been amended 3 times and codified by Directive 2011/92/EU incorporating Directive 2003/35/EC aligning the provisions on public participation with the Aarhus Convention on public participation in decision making and access to justice in environmental matters. The EIA Directive which has provisions for the assessment of project impacts on the landscape, has long been transposed into the Greek legal system, and has been characterized for being a cumbersome highly bureaucratic procedure which essentially often fails to meet its aim which is environmental protection. This issue being recognized resulted in its revision in 2011 with Greek law N. 4014/2011, which had provisions for public and stakehold-
er consultation which where issued recently through ministerial decision 964/B/19-4-2013. These new provisions albeit still bureaucratic consisting of posting the Environmental Statements to different statutory consultees and announcements to the public through newspapers at least do foresee processes for the collation and publication of comments made during the consultation, adding some transparency to the participation process, and opening the door for future more constructive engagement processes. The authors note however, the failure to make the procedure and information available on-line is a missed opportunity and a barrier to public access to EIA information.

Special Environmental Studies required for NATURA 2000 protected areas in Greece, according to Law N. 2742/99 should undergo a process of public consultation which consist of 15 days period for the public to view and comment on the study. Additional written statutory written consultations from government officials are also included, but the process again fails to describe how the views presented are taken on board etc.

On the other hand, more recent laws which are not relevant to planning nor the environment, such as Law N. 3861/2010 on increasing transparency through the obligatory publication of all laws and government decisions on the internet (diavgeia portal) as well as Law N. 4048/2012 art 6 which foresees the mandatory publication on the internet opengov.gr and using ICT forum tools open consultation where anyone can comment on each article of proposed legislation, we see an opportunity emerging for two-way public participation through the use of ICT tools and the internet. As plans and programmes are published in the form of Presidential Decrees they theoretically fall under the category of the documents which should be presented on opengov.gr site for open public consultation, thus providing an open accessible forum for consultation, late in the process. The use of these ICT media for public consultation of special spatial plans for example the national tourism spatial plan and the spatial plan for fishfarms has proven to be a very direct and open two-way form for consultation with potential for wider application.

Considering all the above, it can be concluded that although legal planning and environmental provisions do exist for participation and public involvement, these in most cases are highly bureaucratic, limit two-way communication and dialogue and do not reflect the principles of the ELC. So essentially regarding participation for the Greek landscape planning process there is a need to build on these limited legal foundations. The analysis of the legislation for example of law 1337/1983 regarding local plans due to its vagueness indicates a flexibility to introduce new methods and approaches. Thus, there is an opportunity to develop non-statutory methodology, processes and means for public involvement for landscape characterization. In turn, and following their implementation and evaluation these processes could help to promote and slowly encourage the more formal adoption of inclusive participatory approaches in the local plan development process. Below ideas and recommendations regarding such processes are outlined in conjunction with the next steps for their adoption.

PARTICIPATION IN LANDSCAPE CHARACTERIZATION AND ASSESSMENT

The ELC foresees provisions for participation practice in decision making regarding the landscape, awareness raising and landscape knowledge and perceptions obtainment. Although this is clear, how to do so is
not (Sevenant & Antrop, 2010). It has been left to be formulated according to each country's context following the principle of subsidiary. Taking into account the particularities of the Greek context analysed above, we propose the development of a participation framework which adopts a combined approach which will also promote a long-term learning process and raising awareness regarding landscape.

In accordance to CMRec(2008) this framework should introduce public involvement from the onset, right from the information gathering phase for the landscape characterization. This would not only help instil trust in the process and raise awareness, but would also improve the characterization itself. This assumption is based on the recognized issue of fragmented and inaccessible government information needed to conduct the landscape characterization in Greece (Nedas et al, 2010). The authors believe that by designing processes which would encourage the public and stakeholders to share information regarding the landscape – the lack of information barrier would be significantly overcome. To this end the authors proposed as part of the national landscape strategy presented to the landscape committee, that a national scale information campaign should be launched which would be combined with a web portal whereby citizens would be encouraged to contribute thoughts, photographs material regarding landscape which they value or which they consider are degraded and in need of restoration. So adopting a learning by doing approach whose aims would be two-fold and to raise awareness regarding the ELC and the under development national landscape strategy, but also the obtaining of information on the landscape, which the existing lack of is a serious barrier to the landscape characterization study (See chapter X).

In the ELC the role of public knowledge & perceptions determination is underlined. Specifically CMRec(2008) states “the perception of landscape by the public should also be analysed from the viewpoint of both its historical development and its recent significance.” so participation is needed in collecting “the knowledge” on the landscape as well as recording the different perceptions. Considering the practical limitations of the Greek planning process, i.e. two months consultation period and very limited budget and experience in facilitation processes, the challenge is great and requires innovative approaches.

Ross (2006) reviews the potential use of the internet as a new means for participation in landscape assessment and concludes that there is great potential despite its novelty. He identifies benefits of low cost, accessibility, transparency openness amongst others. The use of crowd sourcing for public participation processes in planning is increasingly becoming popular (Brabham, 2009). The authors here propose an innovative approach to supplement a wider participation framework which utilized internet crowd sourcing techniques for experiential landscape value identification and landscape quality objective setting. At the first stage to be posed to the local communities for the purpose of the landscape assessment include:

a) What is important to the inhabitants of the plan coverage area?

b) Why is it important? This can be classified in to landscape elements, local and landscape experiences (see Dakin, 2003). Another novel idea is the modification of participant directed landscape imaging methods (eg see Dakin, 2003) which are often used to supplement expert methods and going one step further to using open source web applications for participation crowd-sourcing utilizing existing landscape picture which have been uploaded on the web. Additionally, considering tourism is the main industry in Greece, and that landscape is a key tourism resource; the introduction of visitor perspectives into the landscape
characterization and assessment seems a logical step (Aranzabal et al, 2009). Methods such as visitor employed photography and visitor surveys tend to be very resource intensive, and have limited statutory application (ibid). So we propose in absence of time and budget an alternative could be to conduct secondary data analysis of picture uploaded on to Google earth, or other sites such as “visit my Greece” which would an analysis of at least the frequencies of the most photographed scenes as a proxy indicator of interest value.

RECOMMENDATIONS FOR NEXT STEPS

In conclusion introducing a participation framework for landscape issues in the greek planning and environmental assessment processes is not only necessary but also challenging. The lack of budgets, time allocations and experience in high interaction collaborative public processes indicates the need to be innovative. Some novel ideas are proposed here, based on best practice and Greek context analysis, however there is a need for the following steps to be undertaken.

Firstly a complete participation framework following each step of the landscape characterization and planning process needs to be designed defining both public and stakeholder engagement processes. The proposed framework then needs to be piloted and revised following the experiences gained. The revision should obtain feedback from planners and policy makers regarding usefulness of methods & tools used, but should also be evaluated on the basis of the final outputs obtained. Having refined the method, the next steps for its wider deployment and utilization include the modification of the planning and environmental law articles regarding participation and landscape assessment for that matter. As both participation and landscape assessment practice in in Greece are their infancy the creation of participation guidelines and free open provision of web tools for local plan development is considered of paramount importance. Finally as also recommended by CMReC(2008) there is a need for exchange of experiences and best practice as it develops over time as such an internet forum to meet this purpose could be a first step in the right direction.

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DEVELOPING A STRATEGY FOR THE IMPLEMENTATION OF THE EUROPEAN LANDSCAPE CONVENTION IN GREECE.

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ABSTRACT

In this Chapter the authors present a summary of the strategy we developed and proposed to the Committee for the implementation of the Convention, in conjunction with the background theory and important context information regarding the specific situation in Greece which helped shape the strategy. This chapter reflects on the progress made to date in adopting the strategy proposals, identifying key barriers as well as concluding with recommendations on the next steps forward.

INTRODUCTION

Developing a strategy for the Implementation of the ELC in Greece has not been a straightforward process. Political, financial and scientific difficulties have been occurring constantly. Eventually there has been a consensus amongst all interested parties (MEECC, National Landscape Committee, National NGOs and MedINA) upon five key principles, which address the requirements of the ELC and tackle the challenges facing currently in Greece. These are:

*To promote an integrated view of nature and culture:* Current practice theoretically recognises this perspective but often fails to bring it forward in a constructive way, focusing on the natural constituent of the landscape (particularly when considered as outstanding) or on features of significant heritage value. The challenge lies in understanding—and subsequently evaluating—landscape character through the dynamic spatiotemporal interplay of nature and human intervention. In other words, to assess how humans have shaped the landscape over time—either by using natural resources to serve their productive needs, or by modifying their environment to overcome limitations posed by natural factors, or by valorising natural features in relation to their cultural values and spiritual beliefs—and how this is reflected in their perception of the landscape. This principle is understood in the same way as in the ELC, while it also underpins the second principle.

*To provide proactive and applicable tools for landscape management and planning that apply to the whole territory:* This principle tackles two other requirements of the ELC, by shifting attention in Greece from the outstanding landscapes to the whole of the territory under study (including ‘degraded’ and ‘everyday’ landscapes) aiming to identify the distinctive characteristics and particular dynamics of each landscape, record the values attached to it by people and capture the sense of place it conveys. This approach also facilitates understanding of the general structure and overall function of the territory, revealing the dynamic relationships between different areas—in and out of the territory under study—and the internal cohesion or fragmentation of the landscape. This approach feeds well into the typical planning process—in terms of scale and methodology—thus it supports another key objective, which is to effectively integrate
proposals and guidelines of the landscape studies into the territorial planning instruments in place, providing an applicable tool that is useful to planners.

To interpret rather than simply describe the character of the Mediterranean / Greek landscape: The uniqueness of the Mediterranean biodiversity, the multicultural character and the time depth of the history of the Basin, highlight the need to document landscape character as holistically as possible, and map landscape change –as revealed on biodiversity and culture– in time and space. In this rationale, the characterisation process needs to effectively integrate the historic dimension, incorporate elements of valuation and place emphasis on the relations and interaction of people (as values attached to the landscape).

To recognise the dynamic character of the landscape and the multiplicity of its values: This principle relates directly to the ELC’s concept of managing landscape change in a sustainable and forward looking perspective, as opposed to a strictly preservationist attitude, and recognises the importance of studying the diachronic formation of landscape. It also recognises the diverse readings and multiple meanings of the landscape in the framework of democratic territorial planning.

To strengthen public participation and promote the democratisation of decisions: This is directly related to the concept of territorial democracy, which is central in the ELC, and largely depends on effective cooperation between all involved agents (whether being scientists, policy makers or the general public) at all steps of the process (and not simply at the end, as is usually the case). The aim is to engage public participation in all stages of the exercise and develop (in addition to the standard process) less formal procedures to capture the views and aspirations of groups and individuals who are less likely to participate in formal, typical processes. (See Chapter X, for an analysis of implementing ELC participation provisions in Greece)

MOVING FORWARD
A MULTI-LEVEL NATIONAL STRATEGY FOR PROTECTION, MANAGEMENT AND PLANNING OF THE GREEK LANDSCAPES

The ratification of the ELC, in itself does not offer any protection for the Greek Landscapes, what is needed is the development of a strategy and action plan which reflects the particularities of the Greek governance, planning system and of course its implementation, monitoring and embracement by the citizens. In order to implement the provisions of article 5 of the ELC, it is evident that the strategy should foresee actions for implementation regarding three key issues.

a) the characterization, classification, evaluation and management of Greek landscape in its entirety
b) the development and enforcement of legal and planning instruments for the incorporation of landscape considerations.

The development and implementation of a stakeholder participation strategy, which enables two-way communication and value sharing, but also promotes awareness raising regarding landscape issues.

Following, preliminary work conducted by the authors which included meetings with government officials, review of existing legislation and planning policies regarding both participation provisions and landscape
issues, it became apparent that there was little existing material (statutory guidance, policy or legislation) neither suitable governance structure to work from and that one would have to start essentially from scratch. However, at the same time, a realistic approach was necessary, considering the financial crises undergoing the country, and the rapid reforms undergoing the public sector in general. This predetermined the need for the design of a non resource or time consuming approach which would limit any additional burden to the public sector. Therefore, the authors designed a multilevel national strategy, which proposed work to be conducted focusing on alterations to existing planning and legislative instruments rather than proposing the development of new additional tools. This approach is also compatible with the recommendations of the ELC itself.

In understanding the breadth and challenge of the proposed implementation strategy it is important to understand the primitive stage of the starting point. In 2011 when the authors developed the strategy proposal no landscape Character assessment existed for Greece at any scale, neither have methodologies been developed or trialled. Participation practice is legally and practically very limited. Public as well as policy maker awareness regarding the issues of the ELC is also very limited (See section X). This meant that the proposed strategy would have to aim to fulfil all three gaps, simultaneously, yet on a limited budget. This undoubtedly has required trade-offs from the theoretically, ideal, as well as the search for innovative low cost solutions (eg. see following Chapter on crowdsourcing and e-participation proposals), something the authors wish to point out from the onset.

**The National Scale (1:250,000)**

As a starting point the need for a National Scale (1:250,000), Landscape Character Assessment to be conducted in order to develop a national typology of Greek landscapes (i.e. to identify and characterise Landscape Types and Areas for the whole country) is of paramount importance. These typologies can then be utilised and refined for utilisation as a baseline in the regional and local level assessments. The identification and mapping of the different types (typology) of landscapes in Greece, based on their characteristics and basic values, constituting in turn a foundation platform for the wider implementation of the ELC. The LCA method proposed by the authors follows the UK LCA methodology which includes the mapping and description of landscape types and areas in conjunction with a statistical analysis such as TWINSPAN, as well as the use of character assessment techniques following site surveys. The implementation of such techniques foresees the classification of a given area into similar- homogeneous “landscape units” which share certain similar geomorphological, hydrological, soil, climate characteristics as well as manmade elements such as, land use, settlement patterns, field patterns etc. The classification of the landscape units which will occur will present the spatial framework in which the LCA will be applied and which in turn can then lead to the development of a typology which will include the following:

- Identification and assessment of each type
- Characterisation of each type
- Management guidelines for each type

The proposed method should be undertaken in three stages outlined below:
Stage 1: Preliminary Spatial Analysis (identification of landscape types)

The first stage consists of a desk study. The desk study requires expertise in the analysis of digital map data within a GIS (Geographical Information System), combined with an understanding of the elements of the landscape that define its character. Mapping is undertaken visually and requires an understanding of the historical evolution of different landscapes within the context of their physical setting.

A series of map overlays at approximately 1:250 000 scale, should be produced for the entire country using the spatial data derived from digital maps provided by the Greek authorities utilising provisions of law 3882/2010. These maps should be used to assist in the identification and description of relatively homogeneous units of land, each with a similar pattern of physical, ecological and historical attributes. These units, termed Land Description Units (LDUs) are the building blocks of the landscape and they form the framework on which all subsequent description, classification and evaluation is based.

Limited accessibility or availability of high quality, updated relevant spatial digital data covering the entire country, is a serious issue posing significant constraints on the methodology of the study. However, it is proposed that part of the study includes the identification and collation of all relevant, readily information onto a series of simplified map overlays. Indicatively these could include (following Ref Griffiths):

- Physiography: combined geological (structure) and landform
- Ground type: combined geological (rock type) and soils
- Land cover
- Cultural pattern (settlement) from topographic maps

Landscape character is a description of general patterns (typologies) at a landscape scale. The desk study therefore, does not include information about individual ancient sites and monuments. This detailed type of information instead has been proposed for inclusion at the Regional level studies (See section 4.2) By contrast, information about cultural patterns (e.g. land use, settlement patterns, field size & shape) are of critical significance for Landscape Character Assessment.

Following the desk study a number of LDUs will occur whose character will have to be further examined through the field survey (Stage 2). The number of LDUs and their detail will depend on the precision of the available data to start with as well as the nature of the landscape itself.

Stage 2: Site survey

The site survey is an important component of the study, albeit time and resource consuming. It is during this stage that perceptual information can enter the characterization as well as aspects such as aesthetic values. The site survey enables the ground truthing of the desk study landscape types, and should facilitate the proposal and design of applicable landscape management measures and policies for each type. Briefly in the project proposal, a site survey for each LDU was proposed, complete with GPS, and photographic records.
Stage 3: Data Analysis, Landscape Characterisation, Description & Management guidelines

This is essentially the final stage of the characterization should entail the classification and detailed description of the character of each identified landscape type. Following the development of a landscape type classification and their boundary depiction on a 1:250,000 map, it is proposed that a detailed description of the character of each type is provided in conjunction with a unique onomatology which would be used as a standard throughout Greece from thereon. For each of the main character types the final step in stage 3 foresees, following the analysis of the results of the participation and consultation exercises (see Chapter X) the development of individual management guidelines. These guidelines should include a description of the main characteristics of each type, their key common threats as well as recommendations for the sustainable management of these landscapes as well as for their enhancement or restoration where relevant. A basic monitoring strategy covering all landscape types, should also be proposed utilizing indicators which do not require extensive additional data collection but existing data obtained regularly by the government or other sources.

The Regional Scale (1:250,000)

In 2011 the authors developed the specifications and a methodology for the integration of landscape into the Regional Spatial Plans which were undergoing revision during that period. Their contribution was more of an opportunistic approach of "strike while the iron is hot" rather than following a standard logical sequence which would foresee the completion of the national strategy prior to the initiation of the regional scale landscape strategies. However, the authors designed the two strategies to be conducted simultaneously, and that the results of the Regional plans could be refined at the end to reflect any inconsistencies with the national scale strategy. Both National Scale and Regional scale studies are to be conducted at the 1:250,000 scale as pre-established by generic spatial plan law.

Simply put, the work at the Regional Scale involves the identification of Landscape Areas and areas of International, National and Regional importance for each of the 12 Regions of the country. The process-methodology is based predominantly on the UK LCA method. This work essentially consists of the first attempt of integrating landscape appraisal provisions planning system and should be viewed as an important milestone but also as a pilot for review and future revision. Public consultation unfortunately is bound by the limited legal provisions foreseen in the regional spatial plan law (see section X) and therefore will take place only at the level of key stakeholders and of the elected representatives in the Regional Councils.

The regional spatial plan specifications state that landscape provisions should be integrated throughout all spatial policies, with the aim to ensure that for example a regional tourism policy takes into account landscape goals, but also in a separate section of the plan, accompanied by relevant maps and zones. This specific landscape chapter in the Spatial plan should include the following:

Generic policies and guidelines for the protection, enhancement and sustainable management of the landscape covering the entirety of the Region, drawing on guidance of the National landscape type specific guidance (section X) as well as setting out key priorities.
Identification and delineation of boundaries of distinct landscape areas “referred to as landscape zones” as well as of high value landscapes (local, regional, national or international value) and/or highly degraded landscapes

Landscape quality objectives for each landscape area/zone to ensure policy appraisal against these objectives with secure the compatibility between other sector policies and landscape objective achievement. Specific measure for the minimization of landscape degradation influences and management plans should be elaborated upon in the lower level local plans as well as in EIA statements. However, generic guidance should be available to serve as a basis. The regional spatial plan specifications foresee that each regional plan will conduct and deliver at least the following during a 2 phase project. The methodology as described in the UK LCA consists of a desk study, field visits and surveys, characterisation and evaluation including some limited consultation provisions.

**Phase 1:**

a) Spatial 1:250000 regional map depicting at least:
   a. Landscape Area / zone boundaries
   b. Natura 2000 site boundaries
   c. Forests and Aesthetic forests
   d. Monuments and historic areas (natural, geological, cultural, religious etc)
   e. Areas of Special Natural Beauty (as defined by law XX)
   f. Archeological sites
   g. Settlement designated as traditional (law XX)
   h. Agricultural land and high agricultural value land,
   i. Nature and culture trails
   j. Landscape features / landmarks only of International, National or Regional value
   k. Coastal areas or areas of high visitation facing high development pressures or extensive-rapid change of the natural environment.
   l. Extensive quarried areas
   m. Topography

b) General description of proposed regional landscape areas/ zones, 1 page description per area.

**Phase 2:**

a) Map of Region 1:250 000 depicting boundaries of landscape areas, no less than 3 areas per region, including boundaries of landscape of international, national and regional value including highly degraded landscape areas in need of restoration measures.

b) Description of Landscape areas and areas of International, national and regional value which have been included. The description needs to include reference to the special characteristics-elements and features of those landscapes which contribute to its high value. There is provision for completion of standardised sur-
vey sheet including of photographic documentation of those areas including the special features presented in the reports.

c) Policy and guidance provision as well as a list of priorities for the sustainable management of each of the landscape areas as well as for each of the high landscape value areas. Guidance needs to enable the enhancement, marketing and protection of the landscape character and in particular its identified important values.

d) Policy and guidance provision for the sustainable management and restoration of highly degraded landscapes with specific guidance per landscape area. The regional spatial plans for each identified highly degraded landscape, should include a description of the pressures and causes leading to the degradation as well as policies and measures for their restoration, or for further elaboration as local plan or project level studies (e.g. EIA mitigation measures).

For the above deliverables a detailed methodology and guidance has been elaborated upon and presented to the Ministry of Environment Energy and Climate Change by the authors (in Greek) which was subsequently provided to all subcontracted planners in charge of the revision of the 12 regional spatial plan studies.

The Local Scale (1:50,000)

The proposed approach for the local scale is based on the analysis of physiographical and natural factors, land cover, and elements of the historical and cultural dimensions of the landscape; it will also provide a set of visibility studies, identify recent dynamics, trends and factors for change. The scope of the assessment will exceed landscape characterisation, to include landscape evaluation, definition of quality objectives, establishment of management and planning proposals, development of an action plan for implementation of the local landscape strategy and definition of follow-up indicators for monitoring its implementation.

The concept approach for developing the Greek methodology at a scale of 1:50,000 or 1:25,000 aims to creatively combine as many of the existing LC approaches as needed in order to interpret rather than simply describe the character of the Mediterranean / Greek landscape. It thus aims to integrate the HLC perspective into a typical 6-step LCA structure, incorporating key elements of the Catalan method throughout the whole process.

At this scale the involvement of the public plays a major, if not the most significant, part (see Chapter X). The process of consultation will aim to democratise decisions, in order to allow the voices to be heard of all those, whose quality of life could be affected by development decisions. It will contribute to sustainable land use management and promote a type of governance which takes both individual rights and collective

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1 Elements of five well-established methodologies have been examined; these are (i) UK’s LCA, (ii) UK’s HLC, (iii) the method of the Catalan Landscape Catalogues, (iv) the Landskabet i Kommunenplanlægning of Denmark, and (v) the Icelandic LCA.

2 Most notably these include visibility and connectivity studies; simultaneous characterisation / evaluation; public consultation techniques; definition of landscape quality objectives; and relevance / integration of the method to existing territorial planning instruments.
beliefs into account. In practice, emphasis will be placed on the local perceptions and the values attributed to the landscape, and local communities will be asked to provide input for the identification of threats and opportunities. In this way, consultation will develop at various levels; indicatively, direct interviews, open seminars and/or a web-based inventory.

Below is an outline of the proposed method, refined according to the conclusions of the landscape characterisation workshop held in Athens, December 2011.

**Step 1**
Step 1 involves defining the *scope of the study*:

- Purpose and aims;
- Scale (in this case local) and level of detail;
- People and resources required;
- Scope and stakeholder input.

**Step 2**
Step 2 is the *desk study*, which involves the analysis and collation of a wide array of available data (including maps, photographs and orthophotomaps, master plans, literature, archaeological survey records, ethnographic records etc.). It will examine:

- Natural aspects (geology, landform, hydrology, topography, climate, soils, land cover / vegetation, ecological features, prevailing ecological functions);
- Anthropogenic (cultural) aspects (current and past land use, settlement types and patterns, communication types and patterns, enclosures / field morphology, place names, recorded archaeological and historic sites, historic maps).

Step 2 will lead to drafting the landscape character types and/or areas (dividing big areas into character types and then defining character areas within each type), producing the draft landscape character maps.

**Step 3**
Step 3 is the *field survey*, which is particularly important in the case of Mediterranean / Greece, as it may also cover for the inadequacy or incompatibility of available datasets. To this end, it is envisaged to include a ‘spatial visual analysis’ which will help fill the gaps created in the previous step due to the unavailability of data. Field survey may help gather most information regarding the cultural-historical dimension of the landscape, as well as understand aesthetic aspects, perceptions and sensitivity. Great emphasis will be given to public consultation (including both formal and informal interviews with local people) in order to record all the above and be able to interpret the landscape at a later stage. Therefore the surveys will be designed in order to record:

- Aesthetic and perceptual aspects;
- Perceived character (this point has been considered as relatively general and it has been discussed that it needs to be elaborated);
- Key physical - morphologic characteristics / landscape features (landmarks) and their condition;
• Ecological character;
• Condition and sensitivity trends;
• Spatial visual analysis (on-site verification – e.g. by driving around the territory – of the boundaries defined at the desk study step).

**Step 4**

Step 4 involves *landscape mapping and description*. During this step the desk study is combined with the outcomes of the field survey, in order to map the character types and areas. Here the draft landscape character map will be reviewed based on the new information, particularly from the spatial visual analysis. At this stage it is possible that character types will be merged or divided further into more types. When character types and areas have been formed, the notes from field survey will be used to describe each landscape character type or area. The outcomes of this step include *the map and the description of character types and areas*. Descriptions should include:

• A qualitative definition;
• The identification of key characteristics;
• The diachronic forces of change (natural, anthropogenic, management, climatic etc.);
• Current trends and their impacts, constraints and opportunities;
• Degree of sensitivity / vulnerability and risk and the capacity for change (including mapping and description).

**Step 5**

Step 5 concerns *landscape evaluation*. This is considered as one of the most important steps of the process as it may help to identify the variations in quality that exist across the landscape so that appropriate strategies for landscape conservation, management and enhancement can be defined. The evaluation process thus aims to determine the capacity of the landscape to accommodate future changes. It should examine:

• *Landscape integrity*; this is a general valuation based on the simultaneous assessment of *intrinsic landscape qualities* (i.e. number and contribution of positive visual qualities / characteristics to landscape value and sense of place - it has been suggested to expand the evaluation criteria examined), *biodiversity value and connectivity* (i.e. contribution of positive ecological elements or features to landscape value and sense of place, as well as identifying and mapping ecological corridors in the landscape) and *historic integrity* (i.e. contribution of positive visible historic elements within the area, taking into account the intactness and integrity of historic landscape patterns and the presence of valued historic features - the title of this criterion has been suggested to change);

• *Visibility* - exposure refers to the degree to which an area is widely visible from surrounding areas and particularly from crowded places (such as arterial roads). It reflects the visual vulnerability of the landscape and also examines its (positive or negative) influence to the character of surrounding areas;

• *Impacts of change already realised*; this is an assessment of negative impacts of previous developments, which should help determine what has to change in the future (i.e. to be improved or stopped);

• *Re-creatability*; this refers to the degree to which the intrinsic landscape qualities, biodiversity / connectivity value and *historic integrity* of an area can be re-created if eroded or lost.
Step 6

Step 6 involves decision making for the future development of the landscape. It includes:

- Landscape enhancement proposals;
- Landscape stewardship based on quality objectives and monitoring system;
- Information for planning policies;
- Special recognition;
- Landscape strategies and guidelines;
- Proposals for location and design of development.

Project Scale (Environmental Impact Assessment),

In order to secure landscape considerations on the ground, the provision of processes and methods to assess the landscape impacts of development projects and propose mitigation measures is of paramount importance. Key legislative tool for this throughout the EU is Environmental Impact Assessment, Directive 2011/92/EU which has been transposed by Greek law N 4014/2011 (ΦΕΚ 209/Α/2011). This new Greek law has now inconsistencies with the revised directive 2011/92/EU and more so with the new directive proposal (Ref). However, there is a provision in Annex II. Art 3 of the EU 2011/09/EU Directive explicitly states “The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case and in accordance with Articles 4 to 12, the direct and indirect effects of a project on the following factors:

- human beings, fauna and flora;
- soil, water, air, climate and the landscape;
- material assets and the cultural heritage;
- the interaction between the factors referred to in points (a), (b) and (c).

It is evident that in order to effectively fulfill the above, established methods to do so are required. The authors at the time of writing of law N4014/2011 did provide the relevant ministry authorities with guidelines and specifications based on the Landscape Institute & IEMA guidelines (2007). However, these have yet to be adopted. Moreover, the difficulty of conducting effectively, a landscape impact assessment at the project scale in absence of a baseline character or typology to base it on or use as a reference, is questionable.

Integrating Landscape considerations into the Strategic Environmental Assessment process

Directive 2001/04/EC aims at enabling the integration of environmental considerations into the preparation and adoption of plans and programmes with a view of promoting sustainable development. Within its definition of environmental considerations which need to examined in the assessment, landscape as well as architectural and cultural heritage are included. Thus SEA lends itself as a potentially valuable tool to integrated landscape considerations into all plans and programmes as proposed by the ELC convention. The SEA Directive has been transposed, with the Joint Ministerial Decision ΥΠΕΧΩΔΕ/ΕΥΠΕ/οικ.107017/28.8.2006 and therefore with the aim of limiting the administrational addi-
tional burden of adopting the ELC, integrating specific Landscape considerations and character and impact assessment processes within the SEA process could prove to be beneficial. The SEA Directives extensive public participation provisions render it a very compatible process for ELC implementation. However, in Greece, the transposition and adoption in practice of the SEA directive has been limited to say the least. The authors therefore, proposed as an action to be implemented in the framework of the ELC national implementation strategy - action plan, the revision of the SEA joint ministerial decision and as part of that revision to incorporate landscape provisions.

**Incorporating Landscape provisions into Special Environmental Studies of Habitats Directive.**

As part of the Greek legal provisions for the implementation of the Habitats Directive 92/43/EC a Special Environmental Study should be prepared for each Natura 2000 site in the country. Indicatively, the Natura 2000 network covers approximately 30% of the Greek territory, constituting it a potentially important tool for landscape protection. However, current provisions in the specifications of the contents of the Special Environmental Studies do not make reference of landscape assessment and management explicitly, and this is something which the authors proposed to the National Landscape Committee for modification as part of the list of necessary actions for the implementation of ELC in Greece.

**RECOMMENDATIONS FOR NEXT STEPS**

Since 2010 with the ratification on ELC in Greece interest regarding the issue of landscape has risen, and the initial steps particularly until 2011 have taken place with the set up of the National Landscape Committee and the development by the authors of the aforementioned national implementation strategy proposals. However, since then little has taken place regarding implementing the proposed strategy. Specifically:

- the funding program for the national strategy has not been put out to tender despite being ready since 2011,
- the regional spatial plans are still in their first phase facing significant delays
- the inclusion of EIA & SEA or Special Environmental Studies, landscape specifications is not being promoted
- No landscape related public participation or awareness raising events have taken place
- The National Landscape Committee hasn’t convened since xx

The failure to put out to tender and materialise the programme which would deliver the national landscape character classification and typology and generic guidelines, has serious implications for the effective completion and execution of the Regional Spatial Plans.

Therefore, the authors wish to reinstate the importance of completing the national programme, including the foreseen consultation actions (See Chapter X) to provide a starting point for the implementation of the convention.

Furthermore, many of the proposals and specifications developed and proposed by the authors, albeit based on best practice theory and international experiences, require following their implementation, ideal-
ly pilot testing, evaluation and revision based on the experiences gained. There is therefore definite scope for the facilitation of the academic and relevant NGO community to this extent.

In a time of economic crises, and therefore dealing with landscape issues may seem to be of a lesser priority. However, the authors beg to differ. Landscape is more than ever under the threat of degradation from uncontrolled construction such as “fast track projects” taking place in the name of economic development. At the same time tourism, which is a primary experiential consumer of landscape continues to be the number one income generating sector of the country, underlining the economic need to preserve our natural and cultural heritage. Therefore, the implementation of structured processes described above which will facilitate and potentially streamline decision making are considered of paramount importance, and everyone’s help in achieving them is needed.

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