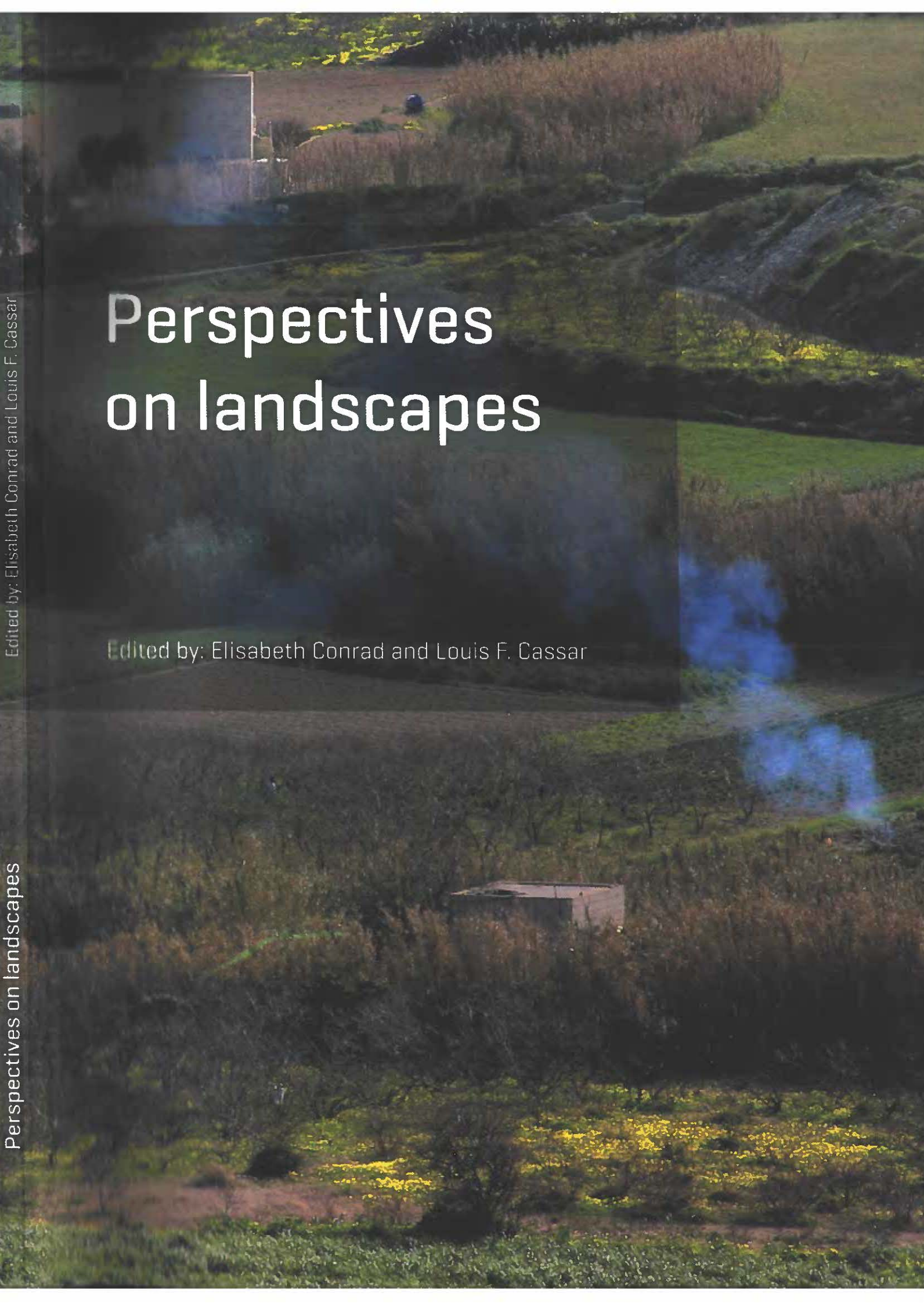

Perspectives on landscapes

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Maltese National Commission for UNESCO

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Foreword

The rich and complex history of the Maltese Islands is perhaps nowhere more evident than in the country's landscapes. Settlers in Malta and Gozo throughout the islands' history have all adapted to the context provided by the physical environment, modifying and altering this to greater and lesser degrees. Over time, successive generations of inhabitants have shaped the distinctive landscape we know and identify with today, a landscape of karstic plateaux, sheer sea cliffs and rolling hills, upon which is superimposed a complexity of human land-elements such as terraced fields and rubble walls, coastal towers, old and new urban elements, and many other landscape features that combine to create a unique character. Past and present thus intertwine in a spatial and temporal context of ongoing interactions between man and nature, resulting in particular cultural landscapes.

It is appropriate that this publication, and the seminar on which these proceedings are based, were made possible through UNESCO financial aid and the support of the Maltese National Commission for UNESCO. In 1992, the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, better known as the World Heritage Convention, became the first international legal instrument to recognize and protect cultural landscapes. UNESCO's landmark decision had a number of important impacts on the conservation of such landscapes across the world, not only with regard to landscapes that were listed as World Heritage, but also on other more 'ordinary' landscapes. Amongst other things, the decision to recognize cultural landscapes as heritage contributed substantially to an appreciation of both tangible and intangible aspects of natural and cultural heritage, enhancing awareness of the value of such landscapes amongst local communities. The decision also enabled the maintenance of land-use systems that depend specifically on interactions between man and nature; such land-use systems are increasingly under threat in a globalizing world which is rapidly moving away from a nature-based economy. The World Heritage Convention indeed provided an impetus for expanding the consideration of landscape in policy and legal domains, pre-empting the adoption of the European Landscape Convention in 2000.

This emphasis on cultural landscapes is particularly appropriate in islands such as Malta, where the small land area means that natural and anthropogenic land-uses cannot be easily separated, each impacting on the other. Malta now faces ever greater challenges in seeking to safeguard the character of its landscapes, which are key to its identity (and tourism potential), in a context of a growing population, expanding urban footprint and changing way of life. A delicate and difficult balance needs to be struck between safeguarding that which has made our landscapes distinctive and allowing for the fact that landscapes are dynamic and change is thus simply part of the equation.

These proceedings are intended to introduce various aspects of the debate, combining perspectives on the local context with insights from experiences gained elsewhere in the world. It is hoped that this work will serve as a stimulus for further discussion of the subject amongst various members of Maltese society, bearing in mind that landscape is the common heritage of all.

Professor Charles J. Farrugia
Chairman
Maltese National Commission for UNESCO

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This publication would not have been possible without the financial support of the Maltese National Commission for UNESCO, and in this regard, we are very grateful to Professor Charles J. Farrugia, Chairman of the Commission, as well as to all its other members.

We are indebted to all those who contributed in one way or another to the success of this project, including all contributors to this volume as well as lecturers and facilitators in the related seminar and workshop held in November 2008. In particular, we would like to thank Dr. Jean-Marc Boffa, Ms. Anja Delia, Dr. Geoffrey H. Griffiths, Mr. Joseph Magro Conti, Mr. Frans Mallia, Prof. Stephen Morse, Mr. Gareth Roberts, Mr. Conor Skehan, Prof. Theano Terkenli, Dr. Conrad Thake, and Dr. Ioannis Vogiatzakis. We are also grateful to the Malta Environment and Planning Authority and to the Ministry for Gozo, which co-organized the seminar and workshop, and are particularly indebted to Dr. Godwin Cassar (MEPA) and Mr. Anthony Zammit (Ministry for Gozo) who facilitated the process. Our thanks are also due to all participants who enthusiastically participated in these events, fuelling our drive for this project.

Sincere thanks are due to Mr. Mario Borg and Mr. Gabriel Bajada for managing the design and layout process, and to members to staff at the Institute of Earth Systems (until recently, the International Environment Institute), namely Ms. Dorianne Cortis, Ms. Michelle Cassar, and Mr. Robert Caruana, who contributed in various invaluable ways to the finalization of this volume. We are also grateful to Mr. Guido Bonett for the provision of cover photographs.

Finally, we apologize to anyone whose contribution we may have overlooked.

Introduction

The landscapes of the Maltese Islands are a fundamental component of the country's heritage, forming a crucial aspect of the identity of the country and of its people. The Islands' biogeographic characteristics, combined with the country's rich history and cultural fabric, come together to produce landscapes which are distinctive, and which make the Maltese Islands different and recognizable. At the same time, landscapes are inherently dynamic, constantly evolving over time, in response to changes in both nature and society. Increasingly, however, there is growing concern about the nature and rate of change of landscapes, with trends towards unrestrained urbanization and the homogenization of landscapes across Europe, with a resultant loss of sense of place.

It is precisely this situation that the European Landscape Convention seeks to rectify. The European Landscape Convention, which marks its ten year anniversary in 2010, innovatively calls for a suite of protection, planning and management measures to cover all landscapes and seascapes. It addresses natural and cultural features within a holistic landscape framework, and underlines its goal of safeguarding landscape quality, linking this with human quality of life. Malta signed the Convention in 2000, but has as yet not ratified it. Whilst landscapes are indeed a fundamental component of our heritage, they are also perhaps not yet adequately appreciated as such. A first step towards eventual ratification and implementation of the Convention thus needs to be the development of an appreciation of the country's landscape heritage.

This publication has been developed with this aim in mind. It leads on from a seminar and workshop held in November 2008 on the subject of Maltese landscapes. Both the seminar and workshop event, as well as this publication have been made possible through the financial support of the Maltese National Commission for UNESCO. This volume brings together contributions from various authors, combining specific perspectives concerning the Maltese Islands with general concepts and tools for landscape protection, planning and management. Whilst promoting the uniqueness of our landscape heritage, we must also seek to learn from experiences elsewhere.

We hope that this publication will serve as a first step towards the development of a healthy Maltese landscape conscience.

Chapter 1

Understanding and Analyzing Cultural Landscapes

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1.1 Context and objectives

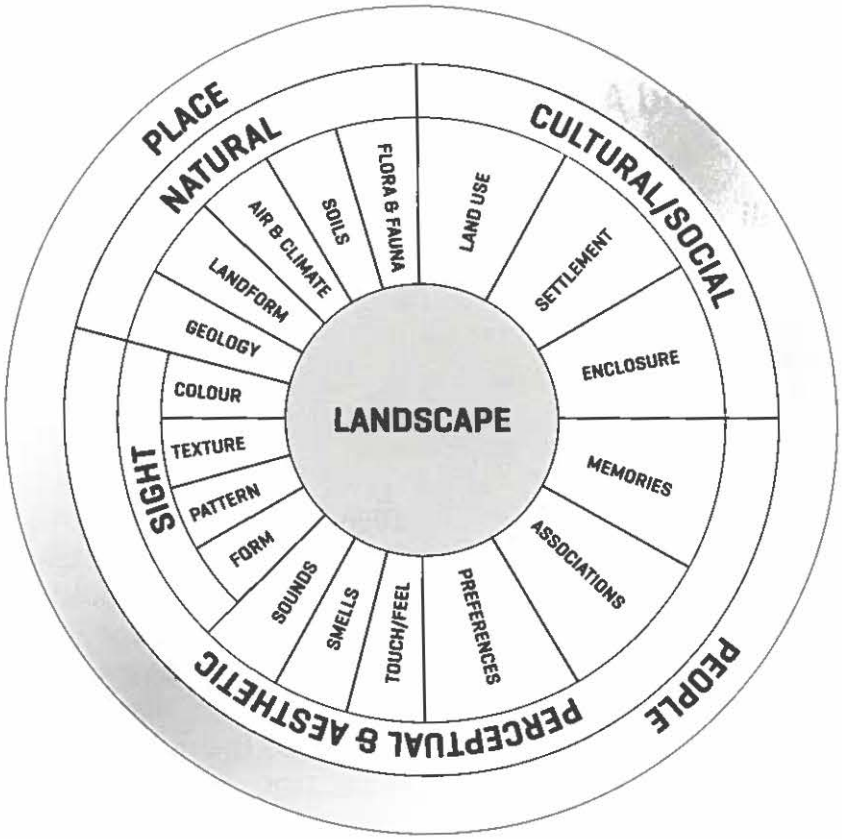
Our lives are filled with landscapes; they are carried out and assume their meanings through landscapes. Landscape forms, functions and meanings shape our activities, perceptions and emotions about our surroundings. Their characteristics colour our existence and contribute to our well-being and the quality of our life. As landscapes are continuously changing - all the more so nowadays - it becomes critical to understand them, to assess the changes they are going through and to manage this change for the benefit of our generation and of all future generations that will live, work and play in them.

All landscapes are cultural, since all parts of the world have by now been irrevocably altered or affected by human activity, and since a landscape exists only and always through human cognitive processes. That is the premise of the discipline of geography and a basic assumption of this chapter, which will follow a geographical perspective to the analysis of cultural landscapes (Meinig, 1979; Tuan, 1979; Jackson, 1984). Geographers have shown that the unique cultural experiences of a half-millennium of cultural and environmental modernization have produced characteristically European models, experiences and expressions of landscape which were subsequently disseminated worldwide and which changed the face of the earth (Cosgrove, 1998). Recent trends of spatial re-organization (*i.e.* globalization, time-space compression, explosion of communication systems and proliferation of image flows) have been contributing to the spread and establishment of new Western landscape models, altering the face of landscapes worldwide. Meanwhile, in the light of rapid and irrevocable change, landscapes around the world, old or new, highly-prized or ordinary, prominent or mundane, have been increasingly calling for acknowledgment, recording, preservation, management and/or development. Some are under threat of being irretrievably lost (Pedroli *et al.*, 2007).

The purpose of this chapter is to re-examine the cultural landscape and to revive the perspectives, arguments, tensions, understandings and interpretations that underlie it as a concept (an idea or set of ideas), as a construct (an objective reality) and as conduct (a set of human-environment relationships), through time, space and social context. The chapter is accordingly organized into the following six sections:

- What is a cultural landscape? Cultural landscape definitions;
- Landscape dimensions and characteristics;
- Geographical approaches to landscape analysis;
- Case study: a Mediterranean cultural landscape;

Figure 1.1 The constitution of landscape at the interface of the natural, the aesthetic, the social and the perceptual.
Source: Countryside Agency and Scottish Natural Heritage (2002)



- Landscapes of a new cultural economy of space;
- Towards landscape planning and management: a conclusion.

1.2 What is a cultural landscape? Cultural landscape definitions

According to the European Landscape Convention (Council of Europe, 2000), landscape is defined as a zone or an area, as perceived by local people or visitors, whose visual features and character are the result of the action of natural and/or cultural (that is, human) factors. This definition reflects the idea that landscapes evolve through time, as a result of being acted upon both by natural forces and by human beings. It also underlines the fact that a landscape forms a whole, whose natural and cultural components are taken together and not separately. Of course, at the basis of any human-environment interrelationship lie ideologically and symbolically charged conceptions of space (Figure 1.1). Such conceptions grow out of humanity's quest for meaning and identity and point to the centrality of culture in the articulation of space and landscape through time. By definition, however, landscape exists only in and through the human mind, in ways that we will proceed to understand next.

Landscape is one step closer to human experience than the more abstract concept of place: it is the concrete backdrop of life, that is space or place as conceived and appropriated through the senses and powers of cognition. What distinguishes landscape from other types of places are its two constitutive qualities: a) the visual and b) the relational (its definition vis-à-vis an 'observer') (Terkenli, 2005). The original, three-hundred-year-old definition of the cultural landscape sets it up as "a *portion of*

land which the eye can comprehend at a glance" (Jackson 1984, p. 3), a visible expression of the humanized environment, perceived mainly through sensory, and particularly visual, as well as cognitive processes. Thus emerge what have long been considered the two defining characteristics of landscape: a) landscape is delimited by the range of our senses, where vision holds a prominent role, mainly for historical reasons that we will refer to below, and b) a part of the environment becomes a landscape only when 'viewed' by an 'observer(s)' (Terkenli, 2005).

As the literal or metaphorical image of a place, landscape is constituted and substantiated primarily through the human senses and particularly through its visual attributes; it thus becomes the first and most enduring medium of contact between humans and their environments. Perceived landscape forms and visual conceptualizations of the landscape pertain to its iconological/representational qualities, articulated at the scale of direct human contact with landscape. This points to the impossibility of defining landscape, be that landscape as home, as an economic resource or as an object of recreation, without also considering landscape production, reproduction and consumption at the scale of the human body and the human's reach into the surroundings. As will be further described later, this level of landscape analysis represents the most intimate scale at which landscape is articulated, intricately relating the subject (observer, user, and visitor) with the object of perception, exploration or intervention (landscape) (Meinig, 1979; Tuan, 1979; Appleton, 1996; Nash, 1996; Rose, 1996). Thus, real, perceived or imaginary landscapes emerge only through their relationships with their 'observer', thus leading to the creation of multiple 'landscape spatialities'.

However, we may add a third distinctive characteristic to landscape definition, namely the emotional connection underlying the human - landscape relationship. More specifically, the enduring intensity of pleasure sought and found in landscape since the Renaissance, in the context of an emerging European bourgeoisie, expresses something profound and constant about the human condition (Daniels in Rose, 1996), 'something' that links landscape and pleasure or attraction inextricably together (Plate 1.1).

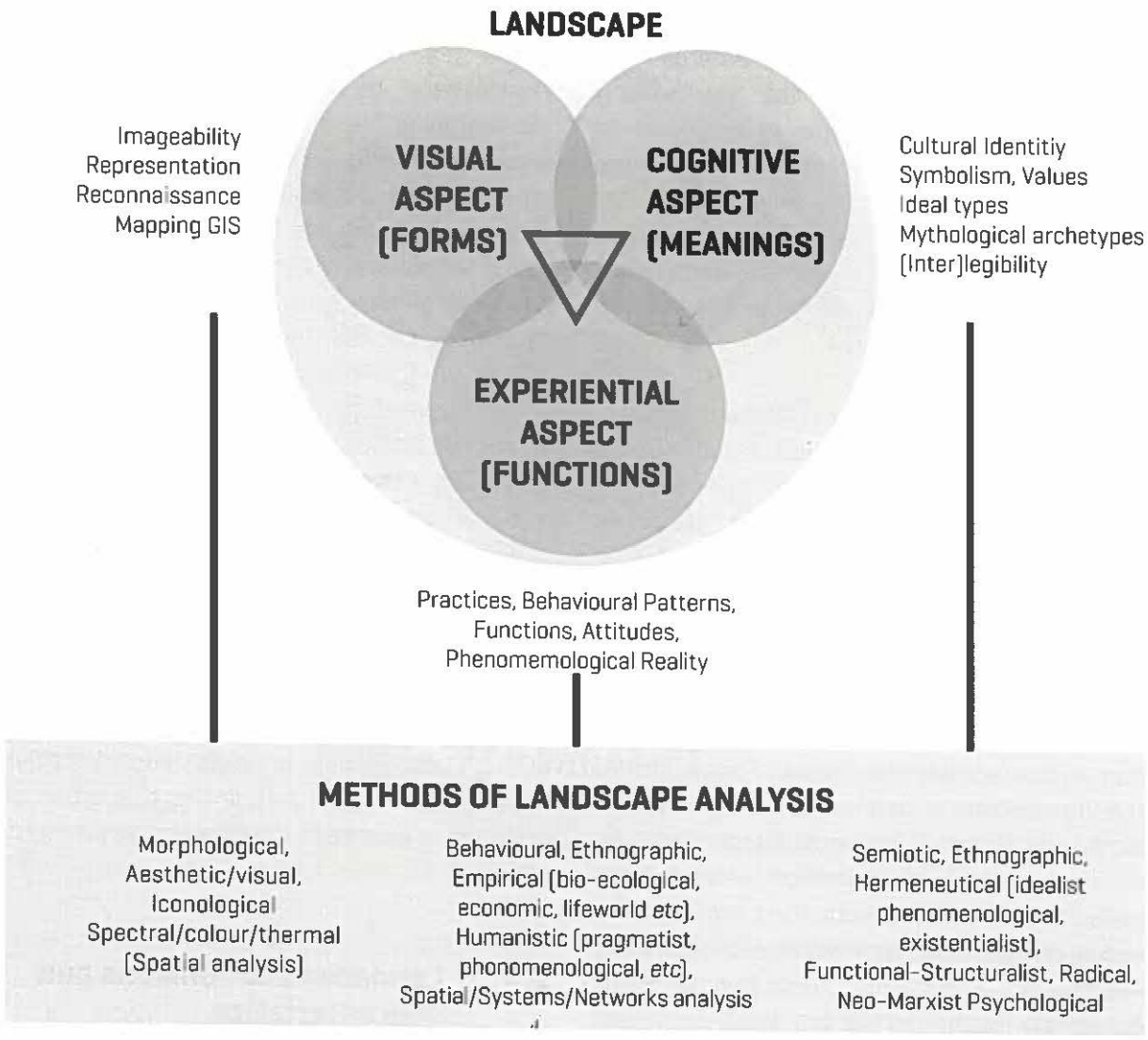
Conclusively, geographers have traditionally been arguing for a cultural definition of the landscape, where culture connotes systems of meanings/symbols/ideas and ways of life, both tangible and intangible. Moreover, in the last few years, the cultural constitution of the landscape has been gaining ground in all scientific fields pertaining to the landscape (Tress *et al.*, 2001). On this basis, the landscape may be conceptualized as a literal or metaphorical image of the humanized environment (Daniels, 1988; Urry, 1995; Cosgrove, 1998). It represents both a medium and an outcome of human perception, experience and action. Conversely, landscapes are created by human action and experience inscribed in place, through time. For instance, the evolution of particular trends in tourist demand inevitably led to and stemmed from appropriate interventions in visited landscapes, through very specific principles and strategies of landscape design and planning that grew out of the art or science of the perspective (Terkenli, 2000).

1.3 Landscape dimensions and characteristics

All landscapes are cultural, best understood contextually and historically. They are also multifunctional, consequently requiring integrated sustainable management. In real life situations, these functions interweave. Together they constitute the lived-in horizons of people in actual places; options taken in one region bear implications for other regions at scales ranging from local to global (Buttimer, 1998).

Three interlocking dimensions or aspects may be attributed to the landscape: a) the visual, b) the cognitive and c) the experiential, which may alternately be theorized as form (the visual), meaning (the cognitive) and function (processes and experiences), and these three dimensions are highly interrelated and interactive (Figure 1.2). All three of these landscape dimensions

Figure 1.2 Landscape aspects and methods of analysis.



are shaped by both biological laws and cultural rules, interpreted and applied on the land through personal and interpersonal strategies. They consequently vary in time, space and social context. By their visual/pictorial, experiential and symbolic nature, landscapes become the most visible and eloquent expressions of variable and ever-transforming human-environment relationships.

We relate with the landscape through all our human faculties: a) cognitive (mental and perceptual processes), b) experiential (landscape functions, uses and behaviors) and c) psychological (emotional responses and connections to the landscape). Thus, landscape acquires its distinctive character (identity) through all of these dimensions of the way we interact with it.

What renders a landscape distinctive as a place is primarily its distinctive geography (Morley, 1995), that is, distinctive attributes and relationships that gain expression to a different degree in each particular case, along cultural and subjective lines (Lowenthal, 1961; Donald, 1988), thus defining a place in the local minds, in a community, or in nationalist ideology and propaganda. Landscape identity, however, is not established once and for all, nor does it remain constant in place. Place identity, as it bears on landscape, is simply an idea with a history, a geography, an imagery and a vocabulary, on which it depends in order to become realized in a social context (Plate 1.5).

For geographers, though, the landscape is not only a spatial whole existing in historical time and exhibiting a unique place identity. It also constitutes a system of energy, material and information flows interwoven in real, perceived and symbolic ways. Traditionally, during the long centuries of the evolution of the landscape idea in Europe after the Middle Ages, landscape signified the shape of the land as inhabited by agrarian communities. Cosgrove points out that in the Germanic language community, to which the English language belongs, *"landscape denotes a form of spatiality: expressing the experience and intention of a social group tied by bonds of custom and law to a determined territory"* (1998: p. 66). At this scale, the landscape is equated with the home grounds, the piece of the earth's surface comprehended at a glance (the observer's mind). In modern English usage of the term, however, landscape has acquired another connotation, that of a view, a vista or scenery that we tend to relate with aesthetically or later, in the 19th and 20th centuries, scientifically, as its stewards and arbiters.

In current landscape analysis, planning and management, *"for sustainable landscapes and livelihoods it is important that an appropriate scale for action and interaction be identified: a scale at which 'bottom-up' and 'top-down' interests could be negotiated"* (Buttimer, 1998: p. 3). Buttimer (1998) places this scale of contemporary landscape analysis somewhere in the middle, in between the larger world and the home grounds. The landscape scales in Buttimer's analysis differ from those in the old experiential definition of landscape (organization of the landscape in the individual observer's mind). They extend to the organization of landscape in reference to a group of people (locals or others), grounded in the old definition of landscape as the context of a community's livelihood systems, although extending to a broader scale. In Buttimer's landscape analysis, these middle scales also encompass the metropolitan and the regional scales at which most landscape analysis, policy and management has, in effect, traditionally been conducted and implemented.

Finally, landscapes exist at yet another scale, in our minds: symbolic, or as they are often called, national landscapes, are constructed at the national or generally even broader scale. Accordingly, Denis Cosgrove traces European landscape spatialities historically from local agrarian communities to landscapes of modern urban commercial life and symbolic landscapes of national identities. *"The unique cultural experiences of a half-millennium of social and environmental modernization have yielded characteristically European ideas, experiences and expressions of landscape, with associated design principles by which their landscapes have come to be recognized and evaluated"* (1998: p. 65).

1.4 Geographical approaches to landscape analysis

Cultural landscapes represent material constructions reflective of the basic organization of society and economy, and thus they may be read rather like texts (Meinig, 1979) or as image spectacles - the metaphor of landscape as mirror. They support unquestioned assumptions about the organization of society and culture through the naturalization of particular readings from particular positions (Norton, 1996). Contemporary cultural geography attempts such inter-textual readings of landscapes as three-dimensional realities that stage our lives - the metaphor of landscape as theatre.

Several methodological approaches to landscape analysis and evaluation have been developed, spanning the whole range of methods in at least the social and environmental sciences. In geography, such methodologies have evolved from the descriptive approach established by Sauer's Landscape School in the 1920's to 1960's and from the 1970's humanistic approaches to landscape analysis (Meinig, 1979; Jackson, 1984; Norton, 1996). According to the Berkeley School of Landscape and its founder, Carl O. Sauer, all landscapes are cultural. *"Culture is the agent, the natural area is the medium, the cultural landscape is the result"*. Sauer thus argued for a science that inquired into how individual landscapes came to take on their shapes and for an analytical approach that would be rigorous but whose end result would never become some general

law explaining all outcomes (Crang, 1998). The humanistic tradition in geography also views landscapes as synthetic realities which are created through and understood by inter-subjective social, and not biological, processes and which are ever-transforming in space-time, reflecting all change in society.

Paralleling the evolution of the term 'landscape' from traditional agrarian connotations at the local scale to landscape aesthetic views to mental constructs laden with meaning and value, methodological approaches to its analysis turned from landscape representation to landscape symbolism (1980's and early 1990's). This shift materialized in the form of a critique applied to the Landscape School of Geography by the New Cultural Geography that draws on the humanist Marxist tradition and views the material and symbolic dimensions of landscape production, reproduction and representation as inextricably intertwined. Nonetheless, symbolic landscape conceptualizations (Norton, 1996; Olwig, 1996, Stathatos, 1996) have long drawn support for the perspective that landscape is a form of representation and not an empirical object (Rose, 1993). Accordingly, landscape is viewed not as a material expression of a particular relationship between land and humans, observable in the field through an objective gaze, but rather as a way of seeing, *"a cultural image, a pictorial way of representing, structuring or symbolizing surroundings"* (Daniels, 1988: p. 1).

Recently, another shift occurred in landscape conceptualization, from recomposed landscape geographies as conceived or symbolic images of place and space to more-than-representational, enacted landscape realities (Ingold, 1993; Dewsbury, 2002; Rose, 2002; Wylie, 2002; Lorimer, 2005; Wylie, 2005). According to this new landscape paradigm, landscape is viewed as enacted, inhabited and processed. This latter methodological approach emphasizes the unfolding nature of landscape and the relational means of landscape constitution prevailing between the two sides, the subject and the world, thus highlighting the relational constitution of the landscape and refocusing on humanistic approaches, although taking them a step further towards the understanding of landscape.

1.5 Case Study: A Mediterranean cultural landscape

Mediterranean landscapes may be regarded as the cultural images, the visible and symbolic expressions of human-environment relationships forming over a historical period of millennia, through a pronounced and sustained degree of interaction between the physical and the human realms of life (Houston, 1964; King, 1997; Selwyn, 2000). These relationships are manifested in variable, distinctive and complex patterns of environmental/natural resource perception, evaluation and management by the human groups that have inhabited this land since prehistory, and in these ways, they essentially constitute the Mediterranean cultural landscapes.

The defining characteristics of the cultural landscape of the Mediterranean may be summarized as a) a long tradition of urban life characterized by political/ideological and cultural progressivism and a strong orientation towards commerce and maritime mercantilism, in contrast to b) the harsh conditions of rural life characterized by inwardness and meagre self-sufficiency, typified in the rural landscapes of olive groves and maquis grazing lands and, secondarily, cereal farming and vineyards (Rackham, 1996; King, 1997). These two landscape characteristics are especially prominent in our schematic case study of the islands of the Aegean Sea. In the islands of the Aegean, these two aspects of the humanized Aegean landscape come together in c) the dry, barren, under-developed coastal landscape, where livelihood has traditionally depended on fishing and which now represents the cultural landscape of Greek island tourism, the pure expression of the 3S (sun, sea and sand) model of tourism attraction (Plate 1.2).

As a landscape of tourism, the landscape of the Aegean islands embodies stereotypes woven into the myth of 'Aegeanity', constituted by attributes of the 'perfect' climate (warm and sunny), its ancient history and long-standing traditions, and its hospitable, friendly people inviting visitors to an easy way of life. For the locals, however, the Aegean landscape is the

quintessential representation of 'home', a representation that feeds on existing social networks, family roots and bonds to place and 'traditional' ways of life. Tourism folklore aside, though, traditionality translates into marginality, articulated on the basis of insularity and underdevelopment (Terkenli, 2000).

This brings us to the realization of a plurality of Aegean landscapes: a series of cultural/symbolic Aegean landscapes, illustrating the relational characteristic of landscape. For example, the Aegean landscape may be conceived of a) as a cultural image of tourist consumption, for the visitors, b) as a home, ridden with problems, for the local populations, or c) as a cultural hearth, for the rest of the Greeks (Terkenli, 2000). The Aegean landscape as a national symbol and as a cultural and family hearth is constructed in collective Greek imagination with an orientation towards a historical past, turning it into an anachronistic construct. According to this myth, it is imagined as an essentially uninhabited landscape during the best part of the year, while, during holidays and especially summer, it becomes 'vacation-land', the playground of both Greek and international tourism.

As regards Aegean landscape analysis and interpretation, each of the variables contributing to the definition of one or more aspects or myths of the Aegean landscape requires a different methodological approach of measurement or assessment. Selected methodologies must conform and adjust to the specific goals and frameworks of landscape analysis, *i.e.* ethnographic approaches to social scientific research, or top-down planning for local development. For instance, the first and most immediate cultural image of place identity to a visitor is in the landscape's visual composition and articulation. Preservation efforts have, at least nominally, sought to protect the unique visual character of the Greek island landscape (Plate 1.3). Based on a comprehensive typology of 'vernacular' elements of Cycladic domestic and townscape architecture (Terkenli, 2000), an architectural survey of such elements was undertaken on the Cycladic island of Serifos, Greece. This comparative survey between the more traditional hilltop community of Hora and the modern, touristic port community of Livadi reveals a marked emphasis on the domestic architecture and the townscape of Livadi of visual landscape elements that seemingly respect the character of the local landscape still preserved in Hora (*e.g.* forms, functions, construction techniques and materials, layout of streets, semi-public private spaces) (Terkenli, 2000). Also, a behavioural analysis of regular everyday activity in open urban spaces points to a differentiation of spaces touched by modern tourism in Livadi, in contrast to the ones in Hora which continued to exhibit more traditional behaviour patterns (Sancar, 1995).

1.6 Landscapes of a new cultural economy of space

Forces of globalization, postmodernism and homogenizing ways of life have been transforming spatial organization, through processes of 'a new cultural economy of space', resulting in a re-negotiation of spatial forms and units (place, landscape, region) on the basis of contemporary trends in socio-economic organization (Terkenli, 2006). Occurring at a much more rapid pace than in the past, this current re-organization of space and landscape is resulting in spatial forms, functions and meanings that transcend pre-existing divisions and interconnections among scales and sectors of human activity (*e.g.* borders, networks, flows). Since it affects all aspects of life and space, this series of changes constitutes a broader cultural transformation, affected by and affecting the overall articulation of space and landscape worldwide.

The basic characteristics of this new cultural economy of space include: a) the breakdown of geographical barriers of distance and place delineation, as well as of distinctions among public-private spheres of life, b) the de-segregation of the realm of leisure from the realms of home and work life, and c) the rapid exchange/communication of symbolic goods (*e.g.* flows of money, ideas, trends, information, images) through variable global processes of networking where visual media predominate over textual media (Terkenli, 2006). These processes assume distinctive political,

economic, historical and cultural references are articulated, some familiar and some new. They constitute a series of transformations increasingly reconfiguring the entire world, albeit very unevenly, as capital seeks ever more locations where to raise profits. Thus, though it is conceptualized as a cultural re-negotiation of space, it is still very much profit motivated (in the broader sense of the term). Conscious or unconscious application and expression of such transformation in human contexts of life becomes most direct, eloquent and discernible in their landscapes.

Specifically, the processes of the new cultural economy of space comprise the following five distinctive, but highly interrelated and intricately interwoven, trends (Terkenli, 2006):

a. A selective compression and condensation of geographically distinct versions of the world into single landscapes, simulating a multitude of various pre-existing landscapes, with the aim of creating competitive poles of consumption, attraction and spectacle: *e.g.* shopping malls, tourist markets, theme parks. This first set of processes signals the geographical transferability and encompassing of previously distinct worlds and all possible amenities, attractions and privileges in single highly seductive landscapes.
b. Processes such as these often lead to the loss of pre-existing place and landscape identity, blurring the boundaries between nature and culture, dissolving geographical particularity and any pre-existing sense of place, sometimes destroying local landscape attachment, as in Disneylands and Casino-lands. They install 'inauthenticity' (MacCannell, 1973; Taylor, 2001) and 'placelessness' (Relph, 1976), or the loss of a sense of home (Terkenli, 1995), a dissipation of all stable relations and ties to local physical and cultural geography (Sorkin, 1992).
c. These processes often lapse into the creation of fictitious, commercialized, ephemeral, incongruous, disposable and staged worlds of recyclable and expendable illusion, deliberately blurring the real with the artificial and the imaginary. The products of such landscape deconstruction and redefinition tend to urge and/or effectuate escape into worlds of fantasy and life as a spectacle or style (Debord, 1994), *e.g.* Las Vegas and Disneyworld (Plate 1.4).
d. These commoditized landscape wonderlands are constantly reproduced, promoted, and disseminated around the world through actual, virtual or imaginary connections and flows. The vast proliferation of media, and especially visual media (Rodaway, 1995), plays a pivotal role in the ways that the dissemination of images, texts and sounds create new types of landscapes in this information economy and network society (Castells, 1996) - electronic, ephemeral, mediated, standardized, detached and instantaneous.
e. Such trends and associated developments cut across much of the more traditional landscape typologies, forming new types of landscapes. One outcome is that landscape becomes a product, produced for purposes of wholesale consumption in any and all of its dimensions: visual/aesthetic, functional/experiential and symbolic/spiritual.

Finally, these processes are further reinforced and accelerated by the emergence of a so-called symbolic economy (Zukin, 1995), demanding new cultural apprehensions of space and landscape, suggesting the need to think of space and landscape in terms of global flows and connections, rather than of localized constructs and activities. Nonetheless, actual world circumstances, for the most part, remain complex, geographically and historically differentiated. If complexity could always be said to have applied to the human-environment relationship, today it seems to be more technologically sophisticated, intensified and intricate, apparently creating new ways of relating to the landscape that are much more fluid, complex, and creative than in the past.

1.7 Towards landscape planning and management: A conclusion

Although multifunctionality and sustainability have been inherent qualities of cultural landscapes for the best part of human history, and despite the fact that technological capacity for intervention has been much enhanced recently, landscape multifunctionality and sustainability are nowadays seriously endangered. So far, the proliferation of new landscape forms and functions and an often increasing internal landscape differentiation have been accompanied by growing landscape specialization and the loss of variety and complexity in landscape meanings and values, if not also in functions and activities. This loss (in both natural and cultural landscape attributes and aspects) is presently acquiring an irreversible quality, necessitating fast and concerted action. Thus, sustainable, integrated landscape management, now more urgently than ever before, needs to address, combine and interweave a large number of diverse landscape functions such as ecological stability, economic viability, expression of place identity, recreational activity, historical dynamics, and so on.

This remains quite a daunting task, but offers, nonetheless, exciting challenges for all related disciplines and practitioners at all levels and sectors. What are harder to negotiate, however, are human ways of thought and action, deemed central and foremost to any landscape change or articulation (lay landscape conscience). Human mentalities are already appearing to be more difficult to adjust than changes in the landscape itself, especially at a time when changes are occurring at a global scale, at a faster pace, and within longer-term time-frames beyond individual grasp.

More specifically, the content and character of the landscape have hitherto not generally been seen in relation to local or regional development. Qualities in the landscape and their relationship to social planning are matters that we actually do not know very much about (Sporrong, 1996). Nonetheless, they represent an area of increasing convergence in interdepartmental interest (Tress, 2001). Interest in the landscape, landscape identity and landscape studies has recently skyrocketed, at least in Europe. However, no all-encompassing theory or analytical framework has thus far been formulated that adequately addresses the study of landscape. Moreover, the plethora of processes of action and interaction among the various components and functions of a landscape dictate that almost all existing theoretical frameworks of analysis, as well as methodological tools, have some application in landscape study, planning, use or policy implementation (Terkenli, 2000; Taylor, 2001). As a matter of practice, however, the term landscape is used by planners and developers indiscriminately or interchangeably with the term environment. It has been routinely used with a clear, almost exclusive, leaning towards its material and tangible aspects and with a lack of theoretical substantiation, merely as a tool of environmental policy formation and implementation.

Conclusively, the resurgence of interest in the general landscape, the urgency for a change of attitude towards it and a preoccupation with its broader, but essential, cultural nature have been evident in various contexts (*i.e.* environmental consultants and researchers, academics, administrators and various sorts of managers, the mass media). By aspiring to integrate natural and cultural values in preservation contexts, modern preservation work has recently been oriented to areas instead of to objects. An alternative approach has been advocated, namely to start from a landscape totality and then study the various parts, on the basis of their relevance for the whole.

At least in the Western world, common landscape potentialities and threats point to the necessity for concerted and well-orchestrated interregional measures of landscape protection, development and sustainable management. Landscapes must accordingly be regarded and managed: a) as repositories of collective meaning and symbolism through time; b) as integral parts of our natural and cultural heritage; c) as policy-relevant issues in contemporary urban and regional planning and resource management; d) as complex realities developing in historical time and thus

embodying and exhibiting place identity, useful in place promotion; e) as systems of energy, material and information flows, interwoven in harmonious environmental wholes; and f) as material constructions, reflective of the basic organization of society, culture and economy, ever supporting, representing and affecting local ways of life and local knowledge.

References

Appleton, J., 1996. *The Experience of Landscape*. New York: John Wiley and Sons.

Buttimer, A., 1998. Landscape and life: appropriate scales for sustainable development. *Irish Geography*, 31 (1), pp.1-33.

Castells, M., 1996. *The rise of the network society, Vol. 1. The information age: economy, society and culture*. Oxford: Blackwell.

Cosgrove, D., 1998. Cultural landscapes. In: T. Unwin, ed. *A European Geography*. London: Longman.

Council of Europe, 2000. *European Landscape Convention*. [Online]
Available at: http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm
[Accessed 20 May 2010].

Countryside Agency/Scottish Natural Heritage, 2002. *Landscape Character Assessment: Guidance for England and Scotland*. [Online]
Available at: http://www.countryside.gov.uk/Images/LCA_Guidance_tcm2-19316.pdf
[Accessed 20 May 2010].

Crang, M., 1998. *Cultural geography (Routledge Contemporary Human Geography)*. London: Routledge.

Daniels, S. & Cosgrove, D. eds., 1988. *The iconography of landscape essays on the symbolic representation, design, and use of past environments*. Cambridge: Cambridge University Press.

Debord, G., 1994. *The society of the spectacle*. New York: Zone Books.

Dewsbury, J.D., Harrison, P., Rose, M. & Wylie, J., 2002. Introduction: enacting geographies. *Geoforum*, 33, pp.437-440.

Donald, J., 1988. How English is it? Popular literature and national culture. *New Formations*, 6, pp.31-47.

Houston, J.M., 1964. *The Western Mediterranean world*. London: Longman.

Ingold, T., 1993. The temporality of landscape. *World Archaeology*, 25 (2), pp.152-174.

Jackson, J.B., 1984. *Discovering the vernacular landscape*. New Haven: Yale University Press.

King, R., 1997. Introduction: an essay on Mediterraneanism. In: R. King, L. Proudfoot & B. Smith, eds. *The Mediterranean: environment and society*. London: Arnold.

Lorimer, H., 2005. Cultural geography: the busyness of being 'more-than-representational'. *Progress in Human Geography*, 29 (1), pp.83-94.

Lowenthal, D., 1961. Geography, experience and imagination: towards a geographical epistemology. *Annals of the Association of American Geographers*, 51, pp.241-260.

MacCannell, D., 1973. Staged authenticity: arrangements of social space in tourist settings. *American Sociological Review*, 79, pp.589-603.

Meinig, D. ed., 1979. *The interpretation of ordinary landscapes: geographical essays*. New York: Oxford University Press.

Morley, D. & Robins, K., 1995. *Spaces of identity: global media, electronic landscapes and cultural boundaries*. London: Routledge.

Nash, C., 1996. Reclaiming vision: looking at landscape and the body. *Gender, Place and Culture*, 3 (2), pp.149-170.

Norton, A., 1996. Experiencing nature: the reproduction of environmental discourse through safari tourism in East Africa. *Geoforum*, 27 (3), pp.355-373.

Olwig, K.R., 1996. Recovering the substantive nature of landscape. *Annals of the Association of American Geographers*, 86, pp.630-653.

Pedroli, B., Wascher, D., de Blust, G., Paracchini, M.L. & van Doorn, A., 2007. Introduction: Europe's living landscapes at a turning point. In: B. Pedroli, A. Van Doorn, G. de Blust, M. L. Paracchini, D. Wascher & F. Bunce, eds. *Europe's living landscapes: essays exploring our identity in the countryside*. Zeist: KNNV Publishing, pp.11-18.

Rackham, O. & Moody, J., 1996. *The making of the Cretan landscape*. Manchester: Manchester University Press.

Relph, E., 1976. *Place and placelessness*. London: Pion Limited.

Rodaway, P., 1995. Exploring the subject in hyper-reality. In: S. Pile & N. Thrift, eds. *Mapping the subject: geographies of cultural transformation*. London: Routledge, pp.241-266.

Rose, G., 1993. *Feminism and geography: the limits of geographical knowledge*. Cambridge: Polity Press.

Rose, G., 1996. Geography and the science of observation: the landscape, the gaze and masculinity. In: J. Agnew, D.N. Livingstone & A. Rogers, eds. *Human geography: an essential anthology*. Oxford: Blackwell.

Rose, M., 2002. Landscape and Labyrinths. *Geoforum*, 33, pp.455-467.

Sancar, F.H. & Koop, T.T., 1995. Proposing a behavioural definition of the 'vernacular' based on a comparative analysis of the behaviour settings in three settlements in Turkey and Greece. *Journal of Architectural and Planning Research*, 12 (2), pp.141-165.

Selwyn, T., 2000. The De-Mediterraneanization of the Mediterranean. *Current Issues in Tourism*, 3 (3), pp.226-245.

Sorkin, M. ed., 1992. *Variations on a theme park: the new American city and the end of public space*. New York: Noonday Press.

Sporrong, U., 1996. The landscape, a field in which research can be integrated: using landscape research in a wider context. In:

M. Ihse, ed. *Landscape analysis in the Nordic countries: integrated research in a holistic perspective, Proceedings from the Second Seminar of Nordic Landscape Research.* Stockholm: Swedish Council for Planning and Coordination of Research, pp.12-18.

Stathatos, J., 1996. *The invention of landscape: Greek landscape and Greek photography 1870-1995.* Thessaloniki: Camera Obscura.

Taylor, J.P., 2001. Authenticity and sincerity in tourism. *Annals of Tourism Research,* 28 (1), pp.7-26.

Terkenli, T.S., 1995. Home as a region. *The Geographical Review,* 83 (3), pp.324-334.

Terkenli, T.S., 2000. Landscapes of tourism: a cultural geographical perspective. In: H. Briassoulis & J. van der Straaten, eds. *Tourism and the environment: regional, economic, cultural and policy issues.* Dordrecht: Kluwer Academic Publishers, pp.179-202.

Terkenli, T.S., 2005. One space, many landscapes: geographical perspectives of landscape spatialities. In: *Proceedings of the Workshop on the Rural Landscape: the palimpsest of centuries of agrarian strife.* The Mercuri Estate, Olympia, 19 July 2003. Athens: Ktima Merkouri.

Terkenli, T.S., 2006. Introduction. In: T.S. Terkenli & A.M. D'Hauteserre, eds. *Landscapes of a new cultural economy of space.* Dordrecht: Springer.

Tress, B., Tress, G., Decamps, H. & D'Hauteserre, A.M., 2001. Bridging human and natural sciences in landscape research. *Landscape and Urban Planning,* 57, pp.137-141.

Tuan, Y.F., 1979. Thought and landscape: the eye and the mind's eye. In: D.W. Meinig, ed. *The interpretation of ordinary landscapes: geographical essays.* Oxford: Oxford University Press, pp.89-102.

Urry, J., 1995. *Consuming places.* London: Routledge.

Wylie, J., 2002. An essay on ascending Glastonbury Tor. *Geoforum,* 33, pp.441-454.

Wylie, J., 2005. A single day's walking: narrating self and landscape on the South West Coast path. *Transactions of the Institute of British Geographers,* 30, pp.234-247.

Zukin, S., 1995. *The culture of cities.* Oxford: Blackwell.

Chapter 2

Interpreting the Landscape of the Maltese Islands

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2.1 Introduction

"Malitah [Malta] . . . rich in everything that is good and in the blessing of God . . . well peopled, possessing towns and villages, trees and fruits ...Malta abounds in pasture, flocks, fruit, and above all honey."
A 12th-century description of Malta by the Muslim geographer, Idrisi (Blouet, 1989).

"Melita [Malta] . . . merely a rock barely covered with more than three or four feet of earth, which was strong and very unfit to grow corn. . . . The inhabitants are poor and miserable, owing to the bareness of the soil and the frequent descents of corsairs. . . . There are troglodytes in Malta: they dig caves, and these are their houses."
An early 16th-century description of Malta by the French chronicler, J. Quintin d'Autun (Quintin d'Autun, 1536).

These two diametrically opposed interpretations of the Maltese landscape in medieval times reflect the contrasting perceptions of visiting Arab and European chroniclers. Both assessments were made relative to the diverse cultural backgrounds of the two men. To Idrisi, Malta appeared to be a potentially fertile land in comparison to the arid land of the Arab regions; whereas to Quintin d'Autun, the islands appeared barren and desolate in contrast to the rich agricultural lands and natural environment in continental Europe.

The Maltese islands, strategically located at the crossroads of the Mediterranean Sea, have throughout their history acted as a cultural bridge between Christian West Europe and the Muslim regions of North Africa and the Middle East (Figure 2.1) The islands have been inhabited since prehistoric times, as witnessed by the various Megalithic temple sites dispersed throughout the landscape. Since antiquity, Malta has been host to a wide range of foreign cultures that have included Phoenicians, Romans, Byzantines, Arabs (870-1090), Siculo-Normans (1090-1194), Swabians (1194-1266), Anjevins (1266-1283), Aragonese (1283-1530), Knights of St. John (1530-1798), French (1798-1801), and British (1801-1964). This diverse, multicultural background has determined the distinctive ethnicity, language, religion and social customs of Maltese society through an uneven process of selective assimilation and reinterpretation.

The successive overlaying of cultural elements appropriated from the various foreign rulers is a recurring theme in many aspects of Maltese life. The Maltese language has a predominantly Semitic linguistic structure, derived from the Phoenicians, overlaid with a Romance vocabulary. The amalgamation of two seemingly incongruent linguistic cultures, one borrowed from the Arab Middle East and the other from Southern Europe, is synthesized into a distinct, local language. The same phenomenon applies

Figure 2.1 Partial view of a late 18th-century map of the Mediterranean, from the De Fez atlas, showing the location of the Maltese islands. (Source: National Library of Malta.)

to settlement patterns. The Maltese landscape is highly discontinuous in its physical structure, reflecting the diverse settlement patterns and urban forms that were introduced over various centuries by Arab and later European cultures.

2.2 The Legacy of Arab Settlement Patterns

The urban morphology of many Maltese towns and villages, although outdating the period of Arab rule, closely resembles that of Middle Eastern settlements. The prevalence of tightly clustered courtyard houses within a highly irregular network of narrow, serpentine streets and dead-end alleys suggests a strong Arab influence (Lapidus, 1969; Lapidus, 1973). Even the Maltese words used for describing the various physical components of the traditional dwelling unit and village are almost identical to equivalent Arabic terms. Examples include words such as *dar* (house), *setah* (terrace), *bir* (well), *bitha* (courtyard), *suq* (marketplace), and *sqaq* (alley). Even the names of various villages and rural places are Arabic in origin, such as places beginning with the words *ghajn* (water spring), *wied* (ravine), and *zejt* (oil). In the absence of written documentation dating from the Arabic occupation of Malta, the etymology of words related to architectural forms and places provides a valuable source for reconstructing the islands' physical landscape.

The Arabs conquered Malta from Sicily in 870, and they ruled until 1090, when the islands were ceded to the Siculo-Normans. The Arabs introduced to Malta various irrigation techniques to improve the quality of arable farming land. Presumably, the Arabs also introduced the *noria* (Maltese *sinja*), an animal-driven mechanism used to lift water for irrigation. Although the land was not very fertile because of a lack of water, most of the inhabitants were involved in some form of subsistence agriculture. Thus, local human settlements in early medieval times were mainly in the form of dispersed small landholdings and farm-type hamlets. This would explain the star-shaped radial development of the later villages, as village dwellers chose to construct their houses in close proximity to their tract of agricultural land.

The Arabs also introduced Western Europe to a variety of new crops. From meagre agricultural products such as barley, grain and clover used as animal fodder, a more sophisticated agricultural system developed based on the cultivation of citrus fruits and cotton. The latter product, in particular, became the main economic staple of the island, and was exported in great quantities to nearby countries in the Mediterranean. However, as the production of cotton was very labour intensive and required larger landholdings, there must have been a shift in settlement patterns on the island that favoured the formation of larger villages. A number of small hamlets, particularly those dispersed in the outlying coastal regions, were depopulated and eventually became extinct, as larger inland villages flourished and grew in population. This development can also be explained by the need for greater security, as smaller coastal settlements were more exposed

to the frequent raids of corsairs seeking to enslave villagers. However, the British historical geographer Brian Blouet, in his research on agricultural and settlement patterns in Malta, makes a convincing argument that one should not overemphasize the preoccupation with defence and its effect on the general landscape (Blouet, 1978). He is of the opinion that it was more the case that the changes in modes of agricultural production dictated the shift in settlement patterns.

Besides local traditional villages organized on an organic model, there were a number of fortified citadels on the islands that served as defensive outposts for the inhabitants. There were two main citadels, one on Malta and the other on the smaller island of Gozo (Plate 2.1). The larger citadel on Malta was known as Mdina. Strategically located on the highest terrain of the island, it was ideally suited for defence (Figure 2.2). It was from within the enclave of Mdina that the *hakem* ruled over Malta. Outside the fortified citadel was Rabat, a sprawling residential settlement with an intricate web of narrow streets and cul-de-sacs. The relationship of Mdina to Rabat is typical of a number of similar situations in Middle Eastern cities (AlSayyad, 1991).

Malta's Mdina was derivative of the Arabic *madina*. The term, as used by Muslim geographers, described not just a city but any place with political (and usually religious) jurisdictional supremacy. The *madina* was basically where justice was administered and where the government had its administrative base (Lapidus, 1969; Lapidus, 1973). As security was a major concern, the *madina* was usually strategically located and defended by elaborate fortification walls. Mdina served as the main political centre in Malta until the Knights of the Order of St. John founded the new city of Valletta in 1566. After that time it was abandoned to the disempowered and disgruntled local nobility.

Arab influence lasted longer than official Arab rule of the islands. But by the time of the Sicilian Vespers at the beginning of the thirteenth century, Malta under the rule of the Siculo-Normans was drawn more into the orbit of Western Europe. Still, it would be incorrect to assume that medieval Maltese society was homogeneous. A population census of 1241 recorded a total of 1,119 families residing in Malta, of which 836 were Muslim, 250 were Christian and 33 were Jewish (Luttrell, 1975). It was only by the late fifteenth century during Aragonese rule, that Maltese society became almost exclusively Christian. This followed the expulsion of the Jews in 1492 and the forced conversion of the remaining Muslim families.

Figure 2.2 An aerial view of Mdina, the old medieval capital city of Malta.

2.3 The European urban tradition in Malta

After their expulsion from Rhodes by the Ottoman Turks in 1530, the Knights of the Order of St. John set up base in Malta. At this point Malta became the southernmost outpost of the Christian West European powers, intent on preventing the westward expansion of the Muslim Ottoman Turks. The islands became a Christian bulwark within the Spanish-controlled axis of the Southern Italian peninsula and Sicily, which served as the dividing line between the Christian and Muslim regions of the Mediterranean. Malta's role as a strategic military outpost had a major impact on the built environment of the island.

Figure 2.3 The new city of Valletta, from an engraving in Giacomo Bosio, Istoria della Sacra Religione di S. Giovanni Gerosolimitano, Rome, 1594.

The crucial victories attained by West European forces over the Turks at the Great Siege of Malta in 1565 and the battle of Lepanto six years later seriously checked the expansionist aspirations of the Ottoman Empire (Plate 2.2). However, the Knights recognized the vulnerability of the islands to future attacks and set out to build extensive fortifications and a new capital city. The only existing urban enclaves, Mdina and the Borgo around Fort St. Angelo, were too small and too spatially restricted to serve the military and religious needs of the Order adequately. In 1566 the Order of St. John set out to build their own capital city, which they named Valletta after its founder, the French Grand Master Jean de La Vallette (Hughes, 1969; Hughes, 1976). Valletta was to be unlike any previous urban settlement in Malta. It was planned according to a strict gridiron pattern and located on a strategic land peninsula, whose perimeter was to be fortified by massive bastions that would appear to rise straight from the sea (Figure 2.3).

The Italian military engineer Francesco Laparelli was commissioned with the task of planning the city. In effect, Laparelli's plan for Valletta was a completely foreign model, imported to the islands to serve the military needs or the Order (Plate 2.3). It had nothing in common with the organic layout of the local traditional settlements. Valletta, to borrow a term from Spiro Kostof, was a city conceived in the form of an ideal diagram (Kostof, 1991). Laparelli was undoubtedly influenced by the various European Renaissance treatises on ideal cities, particularly those of Cattaneo and Scamozzi (Blunt, 1940). Still, the new city had to accommodate the specific requirements of the Order.

The Order of St. John consisted of seven different *langues*, or languages, representing Knights from various West European countries or provinces. Members of each *langue* would take up residence in an *auberge*. Thus, for example, a Knight from Aragon would belong to the *langue* of Aragon and would live in the Auberge d'Aragon. Laparelli's plan for the city had to provide for the construction of the various *auberges*, the magisterial palace for the Grand Master, the Order's conventual cathedral, and the Order's hospital. There were also a number of churches, private palaces, and ancillary buildings such as the Order's bakery and gunpowder magazine. The location of the different urban components within the city was based on the relative status of a particular *langue* and on various military and functional considerations (Hughes, 1969).

Although this preconceived city plan was based on an external model, the Order still had to come to terms with local conditions. During its stay in Rhodes, the Order had delineated an urban area known as the *collachio* which was separate from the residential area of the city (Blouet, 1964). The *collachio* in Rhodes accommodated the various buildings of the Order within one autonomous spatial enclave. This physical separation from the Rhodian population was deemed desirable to preserve the life-style of the members of the Order, who at that time still lived strictly according to vows of celibacy and obedience. Although the Knights' original intention was to maintain the *collachio* in Malta, for practical reasons and for reasons of limited space it was decided to do away with it in Valletta, and the Knight's usual model of urban segregation was abandoned in favour of a looser demarcation of primary areas within the city.

Physical regularity and rational order characterized the urban morphology of the new

city of the Order. To implement the city plan, the Order issued a set of building regulations intended to produce a unified urban design. For one, there was to be no reselling of sites without the permission of a special building commission, the *Officio della Casa*, set up by the Order (Borg Cardona, 1951; Sammut, 1970). This measure was taken to prevent land speculation. Building work had to start within six months, and the house had to be occupied within a year. Also, the building commissioners established the amount of money to be spent on any structure. This ensured that building would be of a high standard and that there were certain streets where sites could only be acquired if the buyer was prepared to erect a *palazzo*. Building sites were to be allocated "*according to the resources and social position of those who will build.*" This ensured that social stratification was reflected in the urban space of the city. The rational grid was not motivated by any initiative towards a more egalitarian urban society.

Other regulations were more in the form of physical urban-design controls. No front gardens or external staircases were allowed in order to preserve the building line of the street. Corner buildings had to be embellished with proper ornamentation, determined by the commissioners. Also the ornamentation of main doorways was to be supervised by a master mason appointed by the *Officio della Casa*. Emphasis was placed on maintaining high aesthetic standards and a contextually harmonious streetscape. These strict building regulations were not that dissimilar to urban-design codes that had appeared or were to appear in other places in Europe such as medieval Siena and the Baroque cities of St. Petersburg and Paris (Kostof, 1991). But such highly centralized control of design and construction had never before existed in Malta.

Although many illustrious Italian military engineers participated in the design and fortification of Valletta, Maltese architects and master masons were not excluded from the process of making this urban vision a reality (Hoppen, 1979; Hoppen, 1981). In fact, the Order's local architect, Gerolamo Cassar, was sent to Italy to familiarize himself with late Renaissance and Mannerist architectural works (Mangion, 1973). Upon his return, he was responsible for designing the main buildings of the Order in Valletta. Although the Knights consistently sought to introduce progressive European architectural and city-planning concepts, they were not adverse to allowing skilled local stone masons some artistic license.

2.4 Transformations of space and power

The rule of the Order of St. John led to a complete realignment of the settlement patterns in the Maltese islands. Once the Order started to exploit the strategic harbours around Valletta, it became inevitable that the main centres of administration and commercial activities would lie in this region. The Order was by far the major employer on the island, as a substantial number of the local population worked for it in activities such as shipbuilding, construction and maintenance of fortifications, and retailing. The Order was mainly financed by revenue derived from the various European estates of its noble members and from monetary gifts by various Christian European sovereign states. A financial crisis ensued whenever this foreign income was not so forthcoming, such as when the French estates of the Order were confiscated in the aftermath of the French revolution (Hoppen, 1973).

During the rule of the Order, Malta experienced rapid economic growth, and there occurred a shift to a more diversified economy from complete dependence on agriculture. This led to a greater urbanization around the harbour areas of Valletta and the Three Cities. Villages experienced considerable population losses, and the old capital, Mdina, languished in a dilapidated state until its urban renewal in the early eighteenth century. Suffice it to say that when the Order came to Malta in 1530, hardly one in ten of the inhabitants could be classified as town dwellers. By the time the Order was expelled by the French in 1798, half the Maltese population lived in the harbour conurbation of Valletta and the Three Cities (Blouet, 1964).

The Maltese landscape evolved over centuries according to a discontinuous historical process based on the assimilation of foreign urban morphologies from the Middle East and Western Europe. It is imperative to discern that the derivation of the Maltese landscape has been based on an evolution reflecting changing socio-political conditions within the islands. One would be mistaken to analyze the local landscape as having been shaped by a homogeneous and mono-cultural historical process. Such a process never existed. A good illustration is the physical form of the old city of Mdina.

As described earlier, the genesis of Mdina goes back to the Arab period, and its pattern of narrow streets and alleys was similar to that of Middle Eastern settlements. During the rule of the Order of St. John, as Valletta flourished, Mdina was rendered politically obsolete, and eventually it became physically dilapidated. The earthquake of 1693 aggravated this urban decay. However, in the early eighteenth century, the Order wanted to restore the old citadel as a showpiece. At this time the earlier urban morphology was altered by the creation of a processional way from the triumphal gate of the city to a grand square, which was carved out in front of a monumental Baroque cathedral, built after the earthquake. Thus, today the physical form of the citadel is disparate; the older part is organic, while the remaining has been altered by various urban interventions that have included the creation of a regular urban space and the construction of a number of imposing Baroque buildings.

In other words, Mdina's physical form has been shaped by both Arab and European Baroque urban traditions, with Baroque forms being partially superimposed on the pre-existing Arab medieval fabric. Such an analysis depends on being able to recognize the culturally diverse urban typologies that have shaped the Maltese landscape over time.

For a more thorough understanding of the Maltese landscape, one has to go beyond the limitations of urban morphology. Aspects such as the social stratification of Maltese society and the role played by the various religious authorities have had an appreciable impact on its formation. A good example is the very intricate and complex issue of local religious powers. During the rule of the Order of St. John (1530 — 1798) the three main religious authorities were the Grand Master, the Bishop of Malta, and the Inquisitor. The Grand Master, as the head of the Order, was the undisputed sovereign ruler of the Maltese islands. The Bishop of Malta was in charge of the diocesan church and controlled the various village parishes dispersed over the island. He owed his candidacy for the bishopric to the Grand Master, but his nomination to the King of Sicily. The Inquisitor was the apostolic delegate of the Vatican and was appointed by the Pope. Although all three gave their unconditional allegiance to the Catholic Church in Rome, there was considerable political intrigue, as each attempted to undermine the other's authority. At times their thinly disguised animosity erupted into bitter, open conflict (Koster, 1983; Koster, 1984).

One might question how all of this is relevant to the physical landscape. Yet each of these three religious powers exerted influence through the appropriation of urban space. The Grand Master's palace was the seat of governmental power, and it was located at the centre of Valletta, conceived as the city of the Order. The residence of the Bishop of Malta was in the old citadel, Mdina. As head of the diocesan church, he wielded considerable influence over, and received grass-roots support from, clergy dispersed through the various villages. In times of dissent against taxation measures enacted by the Order, the Maltese Bishop usually became a rallying figure for the disgruntled locals (Wettinger, 1974). Finally, the Inquisitor had his palace in the old Borgo. The Inquisitor, as the papal envoy, had special powers to arrest people on the mere suspicion of heresy, and could take individual knights into custody just to spite the Grand Master. All the three factions had staked out their own distinct spatial enclaves from which they operated.

Any attempt to trespass on the jurisdiction of the other was not taken lightly. Since the role and limitations of each religious

authority were not clearly defined and there was considerable overlap, there were frequent occasions when conflicts arose. The disputes usually concerned the use of prerogatives, tax exemptions, privileges, and precedents in processions and ceremonies (Koster, 1983; Koster, 1984). However, there were also cases when conflict arose due to one party challenging the spatial territory of another. One good example took place during the reign of Grand Master La Cassiere (1572—1581) (Schermerhorn, 1929). Bishop Tommaso Caligares, moved by a sudden affection for the neighbourhood of the Grand Master, started to build an Episcopal palace in Valletta. The Council of the Order strongly opposed this, interpreting it as an intrusion in the jurisdiction of the Order within its own city. An injunction suspending construction works was issued, and the matter was only resolved after the intervention of the Papacy. Although the Vatican ruled that the construction of the Episcopal palace should be allowed to continue, various concessions had to be made by the Maltese Bishop, including the elimination of planned dungeons.

2.5 The Domestic Landscape of Traditional Settlements

So far we have been concerned with a general overview of the various typologies of the Maltese urban landscape and the dynamics of urbanization. But the argument of culturally derived transformations can be extended more specifically to the local domestic environment of the various Maltese towns and villages. The reign of the Order of St. John was characterized by the evolution of a highly sophisticated public realm that encompassed a number of elaborate public spectacles, rituals and ceremonies. During the celebration of the various feasts, Baroque perceptions of the street as a public theatre inverted the older Islamic concept of the streetscape as an impermeable boundary between the public realm and the private interiors of dwelling units. Whereas the Arab-derived courtyard dwelling was highly introverted and gave its back to the public urban space, the opposite was the case with the village house in the Baroque period, whose facade became a backdrop for the street and the square.

The higher the social class of the owner of a Baroque house, the more visually elaborate and ornamented its facade became. Social status and prestige were reflected through the physical image projected within the public domain. And this principle was not limited to the aesthetic treatment of the facade; it also applied to the arrangement of internal domestic spaces. The main formal sitting room, usually containing opulent furniture and crystal chandeliers, was located at the front of the house. Whenever there was a village feast, and particularly during religious processions, the windows and doors of this room would be opened, revealing the full splendour of the interior to other members of the community. In this way, a private internal room had the potential to be utilized as an extension of the public street domain. Domestic space could be externalized as a rhetorical means of projecting an impression of well-being to the community.

Local studies dealing with cultural anthropology, material culture, and folklore customs provide us with invaluable information regarding various aspects of village life in Malta.[1] The celebration of religious festivities entailing the decoration of church facades and streets, the production of statuary, and the appearance of decorative festoons, temporary structures, and fireworks are all part of the rich Baroque culture which still survives to the present.

In Malta local vernacular expression was assimilated within a more academic monumental tradition. The local architectural historian Jo Tonna, in an essay that explores the interpenetration and cross-fertilization of so-called 'high and folk traditions,' reconciles the two in the following terms:

1 The Dutch social anthropologist Jeremy F. Boissevain has published some fascinating studies on twentieth-century village life in Malta. Refer to Saints and Fireworks: Religion & Politics in Rural Malta (London: Athlone Press University of London, 1965); and Hal-Farrug: A Village in Malta (New York: Holt Rinehart and Winston, 1969).

> *One could examine how elite groups display their values and achievements to the common people and lead the latter to emulate them, how craftsmen simultaneously work in both high and low traditions and mediate between the two, and how organizational measures initiated by the elite deflect folk traditions to new ends or in new directions* (Tonna, 1989).

The Knights had sought to project Valletta as the monumental capital of the sovereign and military Order and to impress upon the other European states the Order's growing status and prestige within the Mediterranean region. Even on a local level, various villages and towns attempted to emulate Valletta's Baroque monuments. Thus, during the seventeenth and eighteenth centuries many of the village parish churches were completely rebuilt on a much grander scale, and neighbouring villages even competed with each other in seeking to build the most imposing and elaborate Baroque churches. One can today still identify a village from its skyline, with the distinctive dome of its parish church at its centre, towering over surrounding cubic masses of dwelling units.

The Order could draw upon various European sovereigns to supply it with the services of some of the most distinguished foreign military engineers, architects and artists. In fact, the Order, throughout its rule in Malta, always maintained a resident military engineer, who was usually of French or Italian nationality (Hoppen, 1981). Still, the contribution of a number of highly skilled Maltese master masons and stone carvers was invaluable in the transformation of Valletta as a resplendent Baroque capital. There was a symbiotic relationship between the academically trained military engineers of the Order and the skilled Maltese master masons, who were well versed in local tradition. Although the foreign military engineers were active in the building of Valletta, it was mainly the Maltese master masons that disseminated the Baroque tradition in the local villages. It is within the dispersed traditional settlements that one can best experience the blending of the academic Baroque with the deeply rooted vernacular tradition.

2.6 A methodology for analyzing the Maltese landscape

A critical issue in the formulation of an analytical model for interpreting the Maltese landscape is the recognition of the discontinuous historical process by which it evolved over time. In Malta linear historical narratives are not sensitive to the superimposition of distinct urban patterns derived from European and Arab traditions. They usually result in simplistic observations that the two traditions are incompatible and mutually exclusive. Rather, by pursuing an interdisciplinary approach that goes beyond the traditional confines of chronological urban history, one is able to make better connections between landscape, form and culture. A sensitive analytical urban paradigm has to take into account the underlying urban patterns and the various cultural superimpositions in a collage-like manner.

Even within such a small island state as Malta, one can decipher a diverse range of urban typologies. These include Mdina, an organic citadel overlaid with some monumental urban interventions in the tradition of the "Grand Manner," and Valletta, a strict grid city constructed according to a preconceived and ideal geometric diagram that was representative of the absolutist ideology of the Order of St. John. Rural villages provide a third typology, that of organic settlements which grew out of a number of dispersed agricultural communities. The skylines of the Maltese villages with their cubic masses of dwelling units are dominated by the overpowering silhouettes of domed Baroque parish churches. The vernacular skyline can thus be interpreted as a historical text, providing a physical representation of the hegemony of the Catholic Church over the various rural communities, in the same manner that the Mosque, with its distinctive dome and minaret, is representative of the Islamic city (Kostof, 1991).

The formation of the Maltese landscape can be seen as having been derived from larger underlying regional patterns. One cannot afford to overlook externalities such as the geopolitical history of the Mediterranean basin,

with its shifts in political and economic power, the relevance of maritime cities in relation to sea trade routes, and the impact on the urban environment by the various European colonizing powers. Cities and countries are very rarely "closed" systems, and it is imperative to consider regional processes of diffusion via geographical, political and cultural patterns (Abu-Lughod, 1976). A historical interpretation of the landscape has to go beyond a parochial approach, and has to be seen within the framework of a broader regional context.

This brief outline of the Maltese landscape was based on an interdisciplinary approach that recognizes the validity of a historical and multicultural evolutionary process. As an island state at the crossroads of the Mediterranean, ruled for centuries by diverse foreign powers, Malta is characterized by a layering of human settlement patterns. The Maltese landscape is, in essence, a symbiotic and cultural microcosm within the Mediterranean that bridges the traditional geopolitical divide between Christian West European and Muslim Middle Eastern powers.

Reference Notes

Abu-Lughod, J., 1976. The legitimacy of comparisons in comparative urban studies. In: J. Walton & L. Masoti, eds. *The city in comparative perspective*. Beverly Hills: Sage Publications.

AlSayyad, N., 1991. *Cities and caliphs: on the genesis of Arab Muslim urbanism*. Connecticut: Greenwood Press.

Blouet, B., 1964. Town planning in Malta, 1530-1798. *Town Planning Review*, 35, pp.183-194.

Blouet, B., 1978. The impact of armed conflict on the rural settlement pattern of Malta. *Transactions of the Institute of British Geographers* (New Series), 3 (3), pp.367-380.

Blouet, B., 1989. *The story of Malta*. Malta: Progress Press.

Blunt, A., 1940. *Artistic theory in Italy 1450-1600*. Oxford: Oxford University Press.

Borg Cardona, S.R., 1951. The Officio delle Case and the housing laws of the earlier Grand Masters 1531-69. *The Law Journal*, II-III (1), pp.39-69.

Hoppen, A., 1973. Finances of the Order of St John of Jerusalem in the sixteenth and seventeenth centuries. *European Studies Review*, III (2), pp.103-119.

Hoppen, A., 1979. *The fortification of Malta by the Order of Saint John, 1530-1789*. Edinburgh: Scottish Academic Press.

Hoppen, A., 1981. Military engineers in Malta, 1530-1798. *Annals of Science*, 38, pp.413-433.

Hughes, Q., 1969. Valletta: city of the Knights. *Architectural Review*, CXLVI (869), pp.9-74.

Hughes, Q., 1976. The defence of Malta. *Quaderno dell'Istituto Dipartimentale di Architettura ed Urbanistica, Universita' di Catania*, 8, pp.1-40.

Koster, A., 1983. The Knights' state (1530-1800): a regular regime. *Melita Historica*, VII (4), pp.299-314.

Koster, A., 1984. *Prelates and politicians in Malta: changing power-balances between church and state in a Mediterranean island fortress (1800-1976)*. The Netherlands: Van Gorcum.

Kostof, S., 1991. *The city shaped: urban patterns and meanings through history*. London: Thames and Hudson.

Lapidus, I., 1969. Muslim cities and Islamic societies. In: I. Lapidus, ed. *Middle Eastern cities*. Berkeley: University of California Press.

Lapidus, I., 1973. Traditional Muslim cities: structure and change. In: L.C. Brown, ed. *From madina to metropolis*. Princeton: Darwin Press.

Luttrell, A., ed., 1975. *Medieval Malta: studies on Malta before the Knights*. London: The British School at Rome.

Mangion, G., 1973. Giovanni Cassar Architetto Maltese del Cinquecento. *Melita Historica*,VI (2), pp.192-200.

Quintin d'Autun, J., 1536. *The earliest description of Malta*. Translated from Italian by H.C.R. Vella, 1989. Malta: Interprint.

Sammut, E., 1970. L'Officio delle Case ed i regolamenti per la fabrica della Valletta (1556-1629). In: *L'architettura a Malta - Atti del XV Congresso di Storia dell'Architettura*. Rome, pp.387-397.

Schermerhorn, E.W., 1929. *Malta of the Knights*. Surrey: Windmill Press.

Tonna, J., 1989. The interpenetration of high and folk traditions in Malta. In: N. AlSayyad & J.-P. Bourdier, eds. *Dwellings, settlements and tradition*. Lanham (MD): University Press of America, pp.161-181.

Wettinger, G., 1974. Early Maltese popular attitudes to the government of the Order of St. John. *Melita Historica*, VI (3), pp.255-278.

Chapter 3

People and landscapes... coming in from the cold

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3.1 Introduction: the ties between people and landscape

Landscape is a complex idea. Laurie Olin, a well-known American landscape architect, has described it as that *"vast, difficult, slippery and mercurial subject"* (cited in Benson and Roe, 2000). The English word *landscape* is a borrowing of the Middle Dutch word *lantscap*, Modern Dutch *landschap*, which in turn derives from the common Germanic *land* and the suffix *-schap*, meaning 'constitution, condition'. However, the word has evolved to take on a plurality of meanings and associations. Makhzoumi and Pungetti (1999) identify four major perspectives in our understanding of landscape:

a. Landscape as scenery, deriving from the Dutch expression described above, and linked to the use of the term in landscape painting – this perspective associates landscape with, for example, scenes of blue skies, pastures, streams and trees, with people engaged in traditional rural activities, in a characteristic artistic motif.
b. Landscape as a specific place, referring to physical and geographical aspects of the landscape of particular regions, such as characteristics of landform and land cover within a geographical area.
c. Landscape as an expression of culture, illustrating how people have modified their environment from the natural state to the man-made. Landscape is thus a place which humans inhabit and within which they modify the terrain.
d. Landscape as a holistic entity, providing a framework for integrated study of the environment, taking into account not only natural ecological factors but also those involved in land use, urbanization and society – Alexander von Humboldt described landscape along these lines, as *"der Totalcharakter einer Erdengegend"* (the total character of a given territory) (cited in Zonneveld, 1995).

It is thus clear that landscape means different things to different people, although there are evidently common elements. Despite the multitude of definitions, there is one thing we can say with certainty about landscapes, and that is that they are very much tied to human society. This association is two-way: we affect landscapes and landscapes affect us. Landscapes are more than simply passive features – we continually interact with them. Phillips (2005) observes that the impact of landscape is felt through all the senses– it is not only seen, but also heard, smelt and felt – *"think of a cliff top walk on a windy day: the landscape presents itself as a combination of sights, sounds and the tang of the salt spray – with the feel of springy turf underfoot"* (p. 19). Landscapes

Box 3.1 Antarctic 'wilderness' landscapes?

Antartica has been described as *"the coldest, iciest, windiest, highest and remotest of the world's continents, girded by the stormiest ocean"* (Dingwall, 1998, p. 1) – seemingly, one of humankind's last tracts of pristine wilderness (Plate 3.1). There are those who argue, however, that wilderness no longer exists (McKibben, 1989; Cronon, 1995). Even in Antartica, we find evidence of cumulative human impacts, such as anthropogenic lead pollution over past centuries, and traces of pesticides deriving from use in industrialized areas elsewhere on the planet (Vallelonga *et al.*, 2002; Wolff and Suttie, 1994; Muir and Rose, 2004). Human influence is also more direct – even back in the 19th century, Antarctica felt the onslaught of human exploitation when the region's fur seals were brought to the brink of extinction (Hucke-Gaete *et al.*, 2004). Now Antarctica faces ever growing pressures from a range of sources, including the multitude of scientific activities which are ongoing in the region. Additionally, global warming and its likely impacts on Antarctic ice cover are a looming threat.

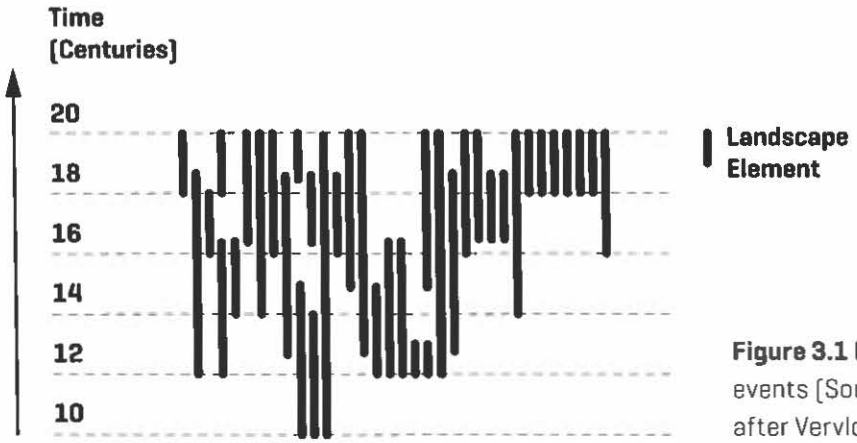

Figure 3.1 Landscape as a palimpsest of events (Source: Palang and Fry, 2003 – after Vervloet, 1986)

also influence human well-being, having many values, both tangible and intangible – economic, aesthetic, recreational, spiritual and therapeutic values, amongst others (Brown and Raymond, 2007). Fundamentally, landscapes serve to reinforce our very identity (Phillips, 2005), contributing to a sense of place. Landscape is also uniquely positioned as an interface (Palang and Fry, 2003; Philips, 2005) between past and present; it is a palimpsest with multiple layers of human ancestry and meaning, laid down generation after generation – the landscape we have today includes elements of both our present-day society and of those societies that came before (Figure 3.1).

The influence of humans on landscape is pervasive and widespread and more and more we are coming to realize that no environmental management issue can be dealt with, without due consideration of the human dimension – particularly in a globalized and inter-dependent earth system. It is no longer possible to talk of landscapes without taking the human footprint into account. The two examples in Boxes 3.1 and 3.2 serve to illustrate this point. It is almost illogical to exclude people from our discussions of landscape, particularly when, nowadays, we also constantly talk of sustainability. Like landscape, sustainability is a complex idea, but one which at its core seeks to strike a balance between social, cultural and economic needs, and environmental limits. The two ideas of 'landscape and 'sustainability' are indeed very much related (Benson and Roe, 2000). Like sustainability, landscape is a universal,

Box 3.2 The 'natural' (or not so natural) landscapes of Africa

At times, our perceptions of natural landscapes have failed to take into account the real extent of human influence – Africa (Plate 3.2) is a case in point. Many of us have a vision of 'wild Africa' as it was before Europeans arrived to colonize it – *"teeming with wildebeest and elephants, lions and zebras"* (Pearce, 2000, p. 30) – a more sophisticated version of the Africa we know today. We now know, however, that this vision of Africa is largely a myth. Africa's nature and landscape were profoundly altered by the accidental introduction of a cattle virus in the late 19th century. The virus, which causes a disease called rinderpest, devastated cattle-rearing societies across the continent – Pearce (2000) quotes the recollections of one Masai elder: the corpses of cattle and people were *"so many and so close together that the vultures had forgotten how to fly"*. Millions of cattle were wiped out, and native cloven-hooved animals had no immunity to the disease. The disease also opened up Africa for a new invader – the tsetse fly, vector of sleeping sickness, favours lush, extensive vegetation, which prior to the rinderpest outbreak, had been kept in check by grazing. Without grazing animals, the favoured habitat of the tsetse fly flourished, and so do did the fly's range. Enter European colonizers, who thus found a largely depopulated, tsetse-ridden bush – *"imagining that the bush they saw was the natural pristine environment of the savannahs, conservationists concluded that the bush was the 'climax' vegetation of the region. So they set about trying to preserve it"* (Pearce, 2000, p. 33), through the establishment of national parks which excluded humans and their cattle – at times, with frightening social costs.

dynamic and holistic concept (Phillips, 2005). Conversely, like sustainability, landscape is also a contested concept – where I may see a crucial green space within a city, someone else may see a 'wasted' plot which would have been suitable for development. Perceptions also change over time (Howard, 2004) – rugged Alpine scenery was considered repulsive by eighteenth century travellers, but later became the emblematic core of the romantic movement (Phillips, 2005), and is something that is largely considered appealing by our western society. What is certain is that in different ways, people identify with the idea of 'landscape' – more so, perhaps, than when talking of ecosystems or species – and landscapes thus provide a good framework for discussing issues of sustainability.

3.2 The merging of nature and culture in landscape policy

Notwithstanding the influence of people on landscapes, and the importance of landscapes to people, the management of landscapes was, for a long time, focused predominantly on the protection of nature, to the exclusion of human concerns (Olwig, 2002; Stevens, 1997; Olwig and Olwig, 1979). Over time, however, the management of landscapes has gradually evolved towards a more inclusive and culturally-sensitive concept, which considers people as an integral part of both 'problems' and 'solutions' – coming in from the cold, so to say. In parallel, landscape is also taking its rightful place as a focus for regional and international policy initiatives. The remainder of this chapter will outline some of the key milestones in this trajectory.

3.2.1 UNESCO and the protection of cultural landscapes

The Convention Concerning the Protection of the World Cultural and Natural Heritage (the World Heritage Convention) was adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1972. UNESCO works to create the conditions for dialogue among

civilizations, cultures and people, recognizing that it is through this dialogue that global visions of sustainable development can be achieved (UNESCO, 2010a). One component of this mission is safeguarding heritage, i.e. *"our legacy from the past, what we live with today, and what we pass on to future generations"*. The World Heritage Convention was thus established as a unique international legal instrument that recognizes and protects both cultural and natural heritage of outstanding universal value. In addition to recognizing both tangible and intangible values the UNESCO Convention also acknowledges traditional land management systems, customary laws and long-established customary techniques, and knowledge as means for protecting heritage (Rössler, 1995).

Whilst the Convention provided for the protection of both natural and cultural heritage, there was no specific focus on sites whose heritage value was derived precisely because of interactions between the two, sites representing combined works of nature and humankind, and derived through a long and intimate association between people and the natural environment. This was addressed in 1992, when the World Heritage Convention became the first international legal instrument to recognize and protect cultural landscapes, identifying three categories (UNESCO, 2008):

a) Clearly defined landscapes designed and created intentionally by humans, including garden and park landscapes, created for aesthetic ends – the Royal Botanical Gardens in Kew, London, are one example, evolving over several centuries in response to specific design imperatives, which were intrinsically tied to a changing socio-cultural context in the United Kingdom.

b) Organically evolved landscapes, resulting from an initial social, economic, administrative and/or religious influence, and which developed their present form by association with and in response to the natural environment. Two sub-categories are included, namely:

   (i) A relict landscape, where the evolutionary process came to an end in the past, but where significant distinguishing features are still visible; and

   (ii) A continuing landscape, where the evolutionary process is still underway and where landscape retains an active social role closely associated with a traditional way of life, but with evidence of its evolution over time also visible.

   Examples include the rice terraces of the Philippine Cordilleras, which have evolved over the past 2000 years, and are maintained through a cooperative approach of the whole community, based to a large extent on indigenous knowledge. The landscape is also one of 31 sites inscribed on the *List of World Heritage in Danger* (UNESCO, 2010b), due to a lethal combination of out-migration, abandonment of terraces and irrigation systems, enhanced pest and salinity problems and inadequate resource mobilization.

c) Associative cultural landscapes, which are recognized on the basis of powerful religious, artistic or cultural associations of the natural element, rather than material cultural evidence, which may be absent. A classic example is Uluru Kaka Tjuta, the park which includes Ayers Rock (Uluru) and a collection of thirty-six rock domes of varying size (Kaka Tjuta). The heritage value of the landscape to Aboriginal inhabitants is tied to spiritual beliefs and a related Aboriginal land ethic which sees everything as created by *Wandjina*, a form of ancestral being, with all that was created being *Ungud*: spiritual, possessing powerful energy, and untouchable.

As of June 2010, 66 properties on the World Heritage List have been inscribed as cultural landscapes. Their inclusion as World Heritage has had several significant impacts (Rössler, 2006), not least contributing to the recognition of intangible values and of the heritage of local communities and indigenous people. Recognition of cultural landscapes also gave value to land-use systems that represented continuity of people working the land over centuries and sometimes millennia

to adapt the natural environment and enhance biodiversity. Inscription has also had important benefits for the interpretation, presentation and management of these landscapes. The very concept of a cultural landscape has further served to heighten awareness of the fact that features, whether natural or anthropogenic, are not isolated islands, but exist within a larger ecological and cultural whole (Rössler, 2006).

3.2.2 IUCN and Category V Protected Landscapes/Seascapes

The World Conservation Union (IUCN) defines a protected area as *"an area of land and/or sea dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means"* (IUCN, 1994). Phillips (2005) outlines a progressive broadening of thinking amongst those working in protected area policy and practice, from an initial preoccupation with pristine or near-pristine areas to gradual recognition of the importance of working landscapes. The former represents the 'Yellowstone model' of protected areas - the establishment of Yellowstone National Park in the USA in 1872 was intended to preserve permanent remnants of the local ecosystems, through the withdrawal of the area from settlement, occupancy or sale. Early conservationists tended to view humans as a problem factor for wildlife, leading to many clashes between the needs of biodiversity conservation and the needs of people. Conversely, the new paradigm of protected area management seeks to move away from the idea of protecting nature 'from' people, to protecting nature 'for' and 'with' people (Dudley *et al.*, 1999). Now there is an established understanding that *"conservation objectives have to be addressed alongside human needs if either is to make significant progress"* (p. 7) (Dudley *et al.*, 1999). Whilst the need for strict nature reserves still exists, the new approach to protected area management recognizes that this is not the only valid management option.

Category V Protected Landscapes/Seascapes play a pivotal role in this new paradigm. The publication of 1994 Guidelines for Protected Area Management Categories (IUCN, 1994) established a Category V protected landscape/seascape as *"an area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area"*. In the preface to *Management Guidelines for IUCN Category V Protected Areas: Protected Landscapes/Seascapes* (Phillips, 2002), Yolanda Kakabadse describes Category V protected areas as *"an idea whose time has come"* and emphasizes that the Category V approach is not a soft option, stating that managing the interface between people and nature is just about the toughest challenge facing society. Category VI protected areas (managed resource protected area) have also emerged in response to a desire for formal recognition of efforts made to link conservation and sustainable resource use (Phillips, 2002). A Category VI protected area is described as an *"area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.*

3.2.3 The Pan-European Biological and Landscape Diversity Strategy

The Pan-European Biological and Landscape Diversity Strategy was endorsed at the 3rd Ministerial Conference 'Environment for Europe' in 1995. The strategy has the objective of providing an innovative and proactive approach to stop and reverse the degradation of biological and landscape diversity values in Europe, and is strongly tied to the publication of the Dobříš Assessment of Europe's Environment (Stanners and Bourdeau, 1995). It also introduced the idea of landscapes as common European heritage, noting the particular richness, diversity and uniqueness of European landscapes. The Dobříš Assessment, which included a chapter specifically dedicated to landscapes, identified

several threats to the European environment, spanning various sectors. Identified forces of concern in relation to landscapes included:

- Agricultural intensification;
- Agricultural abandonment;
- Urban expansion;
- Standardization of building materials, designs, etc.;
- Infrastructure development, especially roads;
- Tourism and recreation;
- Mining/landfills; and
- Loss of wildlife habitats.

The assessment also recognized that broader environmental problems (e.g. air or water pollution) may have an indirect impact on landscapes through the changes they bring about.

The Pan-European Biological and Landscape Diversity Strategy is thus a European response to the findings of the Dobříš assessment and also intended to support implementation of the Convention on Biological Diversity (CBD). Theme 4, addressing landscapes, seeks to provide a framework for European Action, including the establishment of guidelines for landscape management.

3.2.4 The European Landscape Convention

Perhaps the capstone of these developments which occurred over the course of the 1990s was the formulation of a draft text for a European Landscape Convention. The initiative was driven by the Congress for Local and Regional Authorities of Europe (CLRAE), a constituent body of the Council of Europe, and the Convention became a reality in 2000. The European Landscape Convention is described in further detail in Chapter 9 of this publication. Nevertheless, it is useful to point out its innovations with respect to its approach to people. With preceding developments (outlined above) having truly set the stage for putting human society at the centre of landscape concerns, the European Landscape Convention sets out a highly innovative and ambitious democratic and participatory agenda (Dejeant-Pons, 2006). It first defines the very notion of landscape as *"an area...as perceived by people"* (Article 1) and emphasizes its underlying concern with human quality of life. It extends the scope of concern beyond outstanding natural areas, to include all landscapes, including *"everyday or degraded ones"* (Article 1). The Convention also emphasizes its concern with human wellbeing, and focuses on landscapes as *"an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity"* (Article 5a). As such, the ELC calls for the involvement of the general public in the definition and implementation of landscape policies (Article 5c), including in the identification and assessment of landscape and in the formulation of landscape quality objectives.

3.3 Next steps

As the discussion above illustrates, there has been much progress in enhancing the consideration of human society in landscape protection, planning and management. Has this progress been enough to take us to where we want to be? The answer is a definite no. Whilst the European Landscape Convention sets out important principles which highlight the relevance of landscape to human societies, implementing the Convention's provisions brings with it a whole new set of challenges. These relate, for example, to how we can find ways of effectively involving people in policy making and implementation. The challenges of participatory governance are not new, but remain largely unresolved, with few practical examples of success (Warburton, 1998). Three key constraints make public participation difficult, namely: (i) the time and cost of the process, (ii) the difficulty of translating 'fuzzy' qualitative data into 'hard' policy, and (iii) the limitations of established methods for public participation, such as public hearings (Conrad *et al.*, 2010b). The result is that, notwithstanding established legal requirements for public participation in many countries, the real effectiveness of participation is very limited (Rowe and Frewer, 2004; Chess and Purcell, 1999; Conrad *et al.*, 2010a). There is also an underlying difficulty with the democratic ideal of the European Landscape

Convention – what happens if the landscapes that people want in the short-term are not considered to be sustainable in the long-term? How can we strike a balance between public participation and the professional judgment of 'experts'? The answers to these questions still require much more investigation.

References

Benson, J. & Roe, M. H., 2000. The scale and scope of landscape and sustainability. In: Benson, J. & Roe, M. H, eds. *Landscape and sustainability*. London: Spon Press.

Brown, G. & Raymond, C., 2007. The relationship between place attachment and landscape values: toward mapping place attachment. *Applied Geography*, 27, 89-111.

Chess, C. & Purcell, K., 1999. Public participation and the environment: do we know what works? *Environmental Science & Technology*, 33, 2685-2692.

Conrad, E., Cassar, L.F., Christie, M. & Fazey, I., 2010. Hearing but not listening? A participatory assessment of public participation in planning. Manuscript submitted for publication.

Conrad, E., Christie, M. & Fazey, I., 2010. Understanding public perceptions of landscape: a case study from Gozo, Malta. *Applied Geography*, In Press, Corrected Proof.

Cronon, W., 1995. The Trouble with Wilderness; or, Getting Back to the Wrong Nature. In: Cronon, W., ed. *Uncommon ground: rethinking the human place in nature*. New York: W.W. Norton & Co, pp. 69-90.

Déjeant-Pons, M., 2006. The European Landscape Convention. *Landscape Research*, 31, 363-384.

Dingwall, P.R., 1998. Environmental management for Antarctic wilderness. In: Dingwall, P.R., ed. Antarctica in the environmental era. Wellington: Department of Conservation (New Zealand).

Dudley, N., Gujja, B., Jackson, B., Jeanrenaud, J., Oviedo, G., Phillips, A., Rosabel, P., Stolton, S. & Wells, S., 1999. Challenges for protected areas in the 21st century. In: Stolton, S. and Dudley, N., eds. *Partnerships for Protection: New strategies for planning and management for protected areas*. London: Earthscan, IUCN and WWF.

Howard, P., 2004. Sustainable perception? What landscapes will the future want? Landscape

and spatial planning, Tulcea (Romania), 6-8 May 2004. Strasbourg: Council of Europe Publishing.

Hucke-Gaete, R., Osman, L. P., Moreno, C. A. & Torres, D., 2004. Examining natural population growth from near extinction: the case of the Antarctic fur seal at the South Shetlands, Antarctica. *Polar Biology*, 27, 304-311.

IUCN, 1994. *Guidelines for Protected Area Management Categories*. Gland, Switzerland: CNPPA with the assistance of WCMC.

Makhzoumi, J. & Pungetti, G., 1999. Ecological landscape design and planning. London: E & FN Spon.

McKibben, B., 1989. *The end of nature*. New York: Random House.

Muir, D.C.G. & Rose, N.L., 2004. Lake sediments as records of arctic and antarctic pollution. In: J.P. Smol, R. Pienitz & M.S.V. Douglas , eds. *Long term environmental change in Arctic and Antarctic lakes*, pp.209-239.

Olwig, K. R., 2002. *Landscape, nature and the body politic: from Britain's Renaissance to America's New World*. Madison: The University of Wisconsin Press.

Olwig, K. & Olwig, K., 1979. Underdevelopment and the development of "natural" park ideology. *Antipode*, 4, 16-25.

Palang, H. & Fry, G., 2003. Landscape interfaces. *In:* Palang, H. & Fry, G., eds. *Landscape interfaces: cultural heritage in changing landscapes*. Dordrecht: Kluwer Academic Publishers, 1-13.

Pearce, F., 2000. Inventing Africa. *New Scientist*, 2251, pp.30-33.

Phillips, A., 2002. *Management Guidelines for IUCN Category V Protected Areas: Protected Landscapes/Seascapes*. Gland: IUCN.

Phillips, A., 2005. Landscape as a meeting ground: Category V Protected Landscapes/Seascapes and World Heritage cultural landscapes *In:* Brown, J., Beresford, M. & Mitchell, N., eds. *The Protected Landscape approach: linking nature, culture and community*. Gland: Island Press, pp.19-36.

Rössler, M., 1995. Neue Perspektiven für den Schutz von Kulturlandschaften: Natur und Kultur im Rahmen der Welterbekonvention. *Geographische Rundschau*, 47, 343-347.

Rössler, M., 2006. World Heritage cultural landscapes: a UNESCO flagship programme 1992 – 2006. *Landscape Research*, 31, 333-353.

Rowe, G. & Frewer, L. J., 2004. Evaluating public participation exercises: a research agenda. *Science, Technology and Human Values*, 29, 512-557.

Stanners, D. & Bourdeau, P., 1995. *Europe's environment: the Dobříš assessment*. Copenhagen: European Environment Agency.

Stevens, S., 1997. The legacy of Yellowstone. In: Stevens, S., ed. *Conservation through cultural survival*. Washington D.C.: Island Press.

Vallelonga, P., Van de Velde, K., Candelone, J.P., Morgan, V.I., Boutron, C.F. & Rosman, K.J.R., 2002. The lead pollution history of Law Dome, Antarctica, from isotopic measurements on ice cores: 1500 AD to 1989 AD. *Earth and Planetary Science Letters*, 204 (1-2), pp.291-306.

UNESCO (2008). *Guidelines on the inscription of specific types of properties on the World Heritage List*. [Online]
Available at: http://whc.unesco.org/archive/opguide08-en.pdf#annex3

UNESCO (2010a). *Introducing UNESCO: what we are*. [Online]
Available at: http://www.unesco.org/new/en/unesco/about-us/who-we-are/introducing-unesco/
[Accessed 10 May 2010].

UNESCO (2010b) *List of World Heritage in danger*. [Online]
Available at: http://whc.unesco.org/en/danger
[Accessed 10 May 2010].

Warburton, D., 1998. *Community & sustainable*

development: participation in the future. London: Earthscan.

Wolff, E.W. & Suttie, E.D., 1994. Antarctic snow record of southern hemisphere lead pollution. *Geophysical Research Letters*, 21(9), pp.781.

Zonneveld, I. S., 1995. *Land ecology: an introduction to landscape ecology as a base for land evaluation, land management and conservation*. Amsterdam: SPB Academic Publishing.

Chapter 4

Tourism Planning and Landscapes in the Maltese Islands

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4.1 Introduction

At one point or another, all of us have played the role of those curious complex animals called tourists. Yes, a tourist is a complicated being particularly since being a tourist entails different forms of behaviour than those experienced at one's place of residence. Being away from one's home, experiencing new environments and peoples, is bound to induce changes in the behaviour of individuals, and very often this behaviour is conditioned by curiosity and expectations - curiosity to see as much of the destination as possible, based on expectations accumulated during the pre-holiday period.

Tourism is defined as: *"the temporary movement of people to destinations outside their normal places of work and residence, the activities undertaken during their stay in those destinations, and the facilities created to cater to their needs"*
(Mathieson & Wall, 1982).

Tourism is thus a complex activity bringing into play diverse players and interests, each pulling their own ropes, hopefully towards the same goal, *i.e.* giving the tourist a satisfactory holiday experience. In reality, conflicts between different stakeholders frequently emerge. Tourism thus necessitates careful planning to ensure that all sectors work in harmony, and that those aspects of the tourist product which are an important element of a tourist's experience are maintained. However, this is easier said than done.

4.2 Tourism and Landscape

Landscape is defined in the European Landscape Convention as *"an area of land, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"* (Council of Europe, 2000). The term landscape is commonly used to refer to the appearance of the land, including its shape, texture and colours. It also reflects the way in which these various components combine to create specific patterns and pictures that are distinctive to particular localities. The landscape is not simply a visual phenomenon; it relies heavily on other influences for its character. These include the underlying geology and soils, the topography, archaeology, history, land use, land management, ecology, architecture and cultural associations, all of which can influence the ways in which landscape is experienced and valued (Plate 4.1).

"Tourism by definition takes place in a "tourism landscape" ... the tourism landscape is the end result of a process of social construction that has played out over a number of decades and perhaps centuries and millenia..... The act of touring is thus quite complex and revolves around deciphering the identity of a place and

its inhabitants from that place's landscape, using all the tools available to the modern tourist (previous experiences, the internet, pocket histories, guidebooks, tour guides and so on)"(Knudsen *et al.*, 2008, p. 5].

The relationship between the tourist and the landscape, therefore, becomes something intimate and personal, with landscapes giving meaning to the tourist experience.

However, landscapes also change as a result of tourism. Tourism development has resulted in the transformation of entire physical landscapes. Tourism demand has encouraged the development of facilities which have, more often than not, intruded into pristine landscapes, in some cases altering these irreversibly. Examples are the many seaside resorts, which transformed quaint fishing villages, and the ski resorts which altered the character of mountain villages, to mention just a few. In other instances tourism demand has generated specific new landscapes, which replaced existing ones; these created landscapes have in some cases become the main attraction luring tourists to a destination. One example is the gambling mecca of Las Vegas (Plate 1.4); golf courses are similarly artificially created landscapes, integral to tourism in many areas.

A tourist landscape is also socially constructed, often the result of images created in the tourist's mind, having processed substantial information about the destination. The socially constructed landscapes created by each individual tourist thus often vary from the physical reality, since they are the result of the tourist's understanding and perception of the images and information received. Perceptions may be both positive and negative; in the latter case, when the perceived landscape is not what the visitor was expecting, disappointment is likely to result.

Landscapes are characterized by physical features, by wildlife, by scents, and by sounds. These features and elements also determine and encourage activity-based rural tourism *e.g.* caves for potholing, rocky peaks for climbing, cliffs or scarps for hand gliding, steep slopes for skiing. Water is also important in the form of rivers, lakes, canals and inland seas and beaches encouraging activities like canoeing, sailing and windsurfing. Landscapes also offer opportunities for the development of tourism products *e.g.* abseiling, walking, rafting, mountain climbing, horse riding, cycling and safaris.

Man's influence on the landscape is equally important. Much of the natural vegetation has been greatly modified by man through agricultural and forestry practices as well as building activity. Buildings, roads, power lines, bridges and other man made constructions add artificial elements to the landscape. In some cases, human interaction with the natural features of the land has resulted in the creation of unique and distinctive cultural landscapes, ranging from the detailed intimate landscapes of enclosed fields and hedges in the English lowlands, or the terraced hillsides of Southeast Asia, to the Sassi World Heritage site in Matera, Italy.

Different landscapes have different levels of attraction *e.g.* high relative relief areas, mainly deep valleys or cliffs, have higher appeal, as do fjords (Plate 4.2). Classic examples of such tourist attractions include the white cliffs of Dover, Dingli cliffs, Scandinavian fjords and the Grand Canyon. Flat landscapes have lesser appeal but their attractiveness to visitors also depends on other factors like wildlife or vegetation – consider, for example, the appeal generated by the wildlife present in African landscapes (Plate 4.3). Landscapes are dynamic, changing by time of day, year or season – this is termed the temporal aspect of landscapes. The mental picture of an area which a tourist has is thus often incomplete, reflecting only a snapshot in time. A visit to Mdina in the morning will differ from one in the evening! Landscapes also offer experiences to tourists and these travel to such destinations to satisfy various motivations – relaxation, adventure, escapism, and prestige. Therefore landscapes may also be the determining factor that results in the decision to travel to one place and not another.

One negative aspect of tourism has been the creation of stereotyped landscapes, lacking

individual character and distinctiveness; this lack of differentiation in product has brought about strong competition amongst destinations. Thus, the retention or development of distinct landscapes moves towards the creation of a competitive advantage over other destinations. The maintenance of a sense of place may thus have economic, as well as social, cultural and environmental benefits.

Changing values through time have also changed the meanings given to places by different generations. This resulted in the complete transformation of traditional landscapes, with the introduction of new land uses and new forms of architecture. Inevitably, value judgments lead to preferential attention to some areas, and lack of maintenance of others. However, there now seems to be some resurgence of the latter, as small villages which were at risk of becoming ghost towns have looked towards restoration and revitalization, using tourism as an important player in economic regeneration. Examples include South Wales and various Italian villages. The closure of coal mines in South Wales induced a shift towards other economic activities with tourism taking the lead; thus these once industrial landscapes became catchment areas for tourists. Similarly villages in Italy which were being abandoned, as people sought employment in the industrial areas and cities, turned to rural forms of tourism to ensure a livelihood away from or in addition to the traditional agricultural activity.

Specific attributes of a tourism destination can also be of importance. In cities like Cyrene or Ephesus, age and history are key considerations, and visitor management is crucial to ensure a positive overall experience of the site. Place names are likewise important since they conjure up various images for the tourist. A local example is *Il-Maqluba* (Qrendi, Malta), a sinkhole which literally translates as turned over or upside down, whilst one destination in Grand Cayman is expressively entitled Hell (Plate 4.4).

Landscape impacts are changes in the fabric, character and quality of the landscape as a result of development. These impacts have often resulted in the degradation of the tourism product and in its potential to cater for specific target tourist markets. The construction works presently underway in Sliema (Malta), for example, have detracted from the tourism product offered. Landscape impacts could be of various types, including:

- Direct impacts upon specific landscape elements *e.g.* tall buildings, quarrying;
- More subtle effects upon the overall pattern of elements that gives rise to landscape character and regional and local distinctiveness *e.g.* removal of timber balconies, crumbling rubble walls, soil erosion.

Tourism itself can also be a source of negative impacts on the landscape. The siting of tourism development, as well as the design, determines the level of impact on the landscape. Generally tourism development seeks to be located at strategic locations, for instance, to capitalize on scenic views; however, in doing so, such structures themselves would impact negatively on the existing landscape.

Transportation is an important element for tourism to occur and various landscapes may be adversely affected by the provision of transportation infrastructure such as roads and car parks. In planning for tourism, one must take into consideration the fact that the route towards important sites is a build up to the experience.

4.3 Tourism Planning

An important stage in tourism planning for destinations is Area Analysis which entails identification of key biophysical factors (geology, ecology, climate, soils, and wildlife) and cultural factors (demographics, human settlements, economic activities, infrastructure, land use patterns). These are generally represented on maps, using Geographic Information Systems (GIS).

Zoning is a planning tool whereby uses are assigned to specific areas ensuring that environmental and social factors are not

adversely affected and that, through integrated planning, the various uses do not impact negatively on each other. Zoning includes areas designated for protection and others designated for limited or specified activities or developments.

Tourism planning with regard to landscapes should ensure the following:

a. Resources which help satisfy the tourist experience are to be protected;
b. Tourism development should occur within the carrying capacity of the destination;
c. Marketing and product development go hand in hand;
d. Local communities are important stakeholders in the process;
e. Visitor management techniques, such as interpretation, help to create a positive experience of the destination visited;
f. Conflicting uses need to be addressed and priorities set and defined;
g. Tourism planning does not occur in a vacuum and must be integrated with other sectors and vice versa.

The media used in promoting destinations and the manner in which images are presented to some degree determine landscape perceptions and the tourist experience. With regard to the promotion of rural villages in the UK, the National Trust expresses this very view:

> *"It is sustained and developed by media images and popular imagination. It portrays a world of unchanging values, traditional and community living which some people feel with regret has been lost forever from their own lives. The heritage industry has developed to meet such expectations. It packages and presents aspects of the heritage in ways which broadly sustain the illusion of unchanging values"* (The National Trust, 1995, p. 11).

Luginbühl (1992) suggests that tourist publicity posters that appeared toward the end of the nineteenth century were used to represent the Mediterranean landscape and to reinforce the selective view of that landscape held by an elite stratum of society. Characteristic of these posters is the emphasis on the 'exotic' in the Mediterranean landscape. Plant life especially is used to symbolize the ideal tourist scenery whilst constructing a landscape that retreats from reality:

> *"The Mediterranean landscape is replaced with a landscape in which the only thing that is Mediterranean is the stuff of the tourist promotion: a beach, a palm-tree, and a couple browning their skin in the sun or letting their hair blow in the wind. The Mediterranean landscape no longer exists, because it has been made palatable to all"* (Luginbühl, 1992, p. 227).

On the other hand, Areas of Outstanding Natural Beauty (AONB), in the UK, created by the legislation of the National Parks and Access to the Countryside Act of 1949, are exactly as claimed - precious landscapes whose distinctive character and natural beauty are so outstanding that it is in the nation's interest to safeguard them. These areas are regulated by the Countryside and Rights of Way Act (2000). This Act provides that a conservation board is set up for each of these designated AONBs, having various functions amongst which is the preparation of a management plan for the area, within two years of the setting up of the board.

4.4 Conclusion

Landscapes play an important role in attracting tourists to a locality, and in maintaining the attractiveness of a destination. It is imperative for tourism planning to take account of the need to protect such landscapes since these ensure the attainment of the tourist experience as expressed through the images seen in publicity and promotional material. Landscapes create identity and are synonymous with the individual destinations, hence creating a competitive advantage over other more homogeneous destinations.

References

Council of Europe, 2000. *European Landscape Convention*. [Online]
Available at: http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm
[Accessed 20 May 2010].

Knudsen, D.C., Metro-Roland, M.M., Soper, A.K. & Greer, C.E. eds., 2008. *Landscape, tourism and meaning*. Aldershot: Ashgate.

Luginbühl, Y., 1992. Apollonian and Dionysian. In: Y. Luginbühl, ed. *Mediterranean Landscape, Sevilla, Cartuja de Santa Maria de las Cuevas, June-October 1992*. Milan: Electa, pp.24-31 & 224-227.

Mathieson, A. & Wall, G., 1982. *Tourism, economic, physical and social impacts*. Essex: Longman.

The National Trust, 1995. *Linking people and place: a consultation report*. Cirencester: The National Trust.

Chapter 5

Rehabilitating landscapes: the role of landscape ecology

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5.1 A man-induced metamorphosis

The relationship between humans and their environment within the semi-enclosed basin that comprises the Mediterranean dates back many millennia. However, even if various locations within the region were colonized as early as 400,000 years B.P., perhaps even earlier, it was not until the agricultural revolution, some twelve thousand years or so ago, that the Basin was settled and, as a consequence, exploited for its resources permanently and extensively. Indeed, the conversion of large tracts of land, notably those supporting schlerophyll forests or its lower seres, took place systematically, largely to make way for cultivation, while large-scale grazing also had a negative influence on natural habitats, primarily as the demographics within the Region swelled. The exploitation of woodland resources for fuels was yet another human activity that led to the wholesome degradation of woodland biotopes and, as a result, alteration of the landscape. The unsustainable exploitation of forests was further accelerated as Mediterranean populations grew and lands conquered. To cite one example, it is thought that the cedar forests of the southern shores of the Mediterranean extended across this eco-region, broadly from Morocco to the Lebanon. Due to incessant felling/forestry activity over centuries, these conifer forests now survive as mere relict stands, pocketed and scattered across the region, including the southernmost mountains of Cádiz and Málaga in Spain, on high elevations of major mountain massifs (Ozenda, 1975; Quézel, 1983; Dallman, 1998).

These natural monuments are all that remain of a characteristic landscape that once was! However, it is not just the monumental trees or charismatic species that conservationists should be concerned with. The urban footprint, or rather the human footprint, is forever on the increase, notwithstanding the steady publication of authoritative reports, backed by meaningful data, that human society should be doing precisely the opposite, where the use of resources are concerned. The tension is especially acute in the Mediterranean, given the fact that the region harbours a repository of biological diversity of global significance, whilst, simultaneously, acting as an interface for different cultures and peoples. Indeed, it was the latter that has, in-part, shaped the terrain within the region over time, primarily as a consequence of cultural needs.

As time went by and as human populations grew, landscapes changed to accommodate demographic escalation while resources and land take-up manifested the expansionistic mind-set of the time across the ages. This kaleidoscope of human activity called history, coupled by the dynamics governing natural phenomena and processes, contributed towards that distinct sense of identify that is the Mediterranean.

In recent decades, notwithstanding every effort, on paper, to counter and even reverse trends, the crisis of unsustainability continued to rear its threatening head, largely as a result of a 'perverted' public perception of a desired quality of life coupled by a lack of appreciation (and proper understanding) that our very well-being is critically linked to the health of the planet!

As open green space becomes more restricted in extent and as, with every passing day, more cultivated land becomes abandoned due to changing employment trends that are intimately linked with wealth-related aspirations, policies are required to deal with land-use change. Such strategy should be framed and firmly lodged within the concept of sustainable practices and not become solely, as often happens, the prerogative of economic drivers.

5.2 The challenges of a landscape approach

Given that much of the terrain within the Mediterranean region has, overtime, been modified to suit human needs, little remains that can be termed 'pristine' in the true sense of the word. However, there is a certain aspect that renders the region particularly distinct from other places on Earth, the ingredients of which are the climate geomorphology and, human agency. Eliminate any of these three characterizing elements, and, in all likelihood, the Basin's environment would have evolved considerably differently from how we know it today. Notwithstanding the immense human pressures on environmental resources, the region provides a somewhat distinctive setting and almost irreplaceable 'sense of place' to many of its inhabitants. Thus, any effort towards conserving the region's assets - hydrological, ecological, rural, aesthetic, etc., - requires an approach that encompasses the cultural dimension in its broadest sense, since people form an integral part of the Mediterranean environment *per se*.

The landscape approach provides an appropriate interface that effectively considers people and their environment at various scales, both spatially and temporally. The social fabric or structure is the resultant combination of people and their 'habitat' (hence, the use of the term *sociology of the habitat*), including:

- elements that are urban, rural, semi-natural and natural;
- aspects involving places where people live, work and commute, as well as locations they use for worship, leisure and recreation;
- experiences of interaction with others, often allied with the transfer of indigenous knowledge, and interrelationships between different cultural and ethnic groupings, age groups and gender; and,
- that intangible facet pertaining to perception, memory, associations and aesthetics, among others.

Moreover, to these one need also add yet another dimension, notably, that comprising the chronology of events as dictated by the dynamic of history, together with the influences of the present and, to some degree (in particular, for planning purposes), stakeholders' aspirations relating to the future. All of these components, and more, which influence people's daily lives and experiences, directly or indirectly, can be drawn together via the landscape approach. But what is landscape and what is there in this scale of approach that differs, or indeed provides an advantage over other more local or even larger scales, for example, that of the ecosystem?

As early as two centuries ago, the term 'landscape' was defined by Alexander von Humboldt as the total character of a given parcel of land or region as determined by its existing geophysical, ecological and anthropogenic factors (Barbina, 2001). Carl Troll (1950) maintained that the perspective of holistic landscape should also take into consideration those aspects pertaining to culture and tradition. Various specialists described 'landscape' as a complex and integrated system that encompasses spatial patterns that are influenced and/or formed by biotic, abiotic and anthropic factors and processes (Naveh 1987; Leser 1997; Farina 2000; Bastian 2001), while others associated the concept with both dynamics and holism, claiming that such

approach helps bridge process-related fields of study and spatial planning (Ahern, 1999; Moss, 2000; Opdam *et al.*, 2001).

The issue of bridging the natural sciences with the human dimension via the landscape approach, within academia and between science and society, has been the topic of much debate and deliberation; the landmark conference in Roskilde entitled *"Multifunctional Landscapes – Interdisciplinary Approaches to Landscape Research and Management"* in 2000 is testimony of this. There is no doubt that landscape-related issues are of interest to many disciplines, but, according to Tress *et al.* (2001), are seldom seen as an opportunity for inter- or trans-disciplinary cooperation, which may, essentially, limit the capacity to account for real world complexity. Décamps (2000), on the other hand, argues that the very interdisciplinary nature of landscape research can facilitate issues pertaining to resource management and help solve, as well as coordinate and manage, conflicting interests when tackled collectively by different disciplines. Antrop (2001) adds that landscape research has the potential of serving as a constant means of 'communication' among disciplines.

Given that more than fifty percent of the Region's land surface is under cultivation, a considerable portion of the Mediterranean's biodiversity is, directly or indirectly, dependent on this anthropicised, but significant portion of terrain. It is thus clear that both nature and the human dimension form a fundamental part of that spatial entity known as the 'landscape' and, as a result, require a holistic analysis of the various components that comprise the matrix, the study of which requires a multidisciplinary approach consequent to the convergence of various disciplines.

Forman and Godron (1986) list three major characteristics concerning a holistic landscape ecological approach, notably:

- spatial relations (landscape structures),
- functional relationships (interaction and flow of material and energy), and
- temporal relations (change of structure, characteristics and functions).

Farina (1998) further declared that:
"landscape ecology cannot explain all the processes but can undoubtedly help us to understand the complexity".

It was further maintained that the notion behind landscape ecology may be deemed a co-evolution between environmental, socio-cultural and economic systems (Fairbanks *et al.*, 1999). In 1998, as a consequence of growing environmental awareness post-1970s, landscape ecology was defined as a 'problem-oriented science' by the International Association for Landscape Ecology (Opdam *et al.*, 2001), and although it may not be an all-embracing environmental science, it nevertheless has the ability to address issues relating to natural resource management (Moss, 2000). Moreover, Naveh (2000) proposes landscape ecology to become a *"holistic problem-solving oriented science"* by combining traditional, sectoral approaches with holistic methodologies, ensuring inter-connectedness and trans-disciplinarity. In considering the intensification in environmental issues and constraints over the last three or four decades, particularly, in relation to the notion of sustainability, the real challenges for landscape ecology lie in the 'human – nature' relationship (Bastian, 2001).

As a consequence to these as well as other views, two 'schools' of thought have emerged, the European and the American. The former focuses on typology, classification and nomenclature, and more recently on the discipline of planning, placing in the vanguard the cultural dimension of landscape reflected by a long history of terrain modification (Bastian 2001). The American school, on the other hand, which gained prominence in the 1980s, focuses more on natural systems and heterogeneity within the landscape. Thus, the latter makes emphasis on biotic-biotope relationships and ecological consequences of larger spatial patterns, without necessarily invoking human elements into the equation (McIntyre, 2001) and can be broadly characterized as the study of ecological effects of patches (within the landscape) and their interactions.

Rather than creating disagreement, these two schools rather strengthen the field, giving

landscape ecology an inter- and multi-disciplinary pitch that draws upon expertise from various specialisms, including the ecological sciences, planning, geographical sciences and landscape architecture, among others. However, beyond the academic debate and because various elements of spatial planning have since become mainstay within landscape research, the holistic notion of landscape, including the importance of aesthetic value and the visual dimension, is thus drawn into the decision-taking arena (Ayad 2005).

5.2.1 A shift towards ecosystem management

The continued shift from environmental management towards ecosystem management continued to gain momentum in an effort to engage stakeholders through the notion of participation (Szaro *et al.* 1998), even if the union between specialist knowledge and people's perception remains somewhat shaky within the process leading to plan and policy formulation and decision-taking (Daniel 2001). The approach has aided scientists, planners and environmental managers become more aware of the spatial dimension of ecosystem management, and to further understand that many critical matters need to be dealt with at spatial scales larger than the individual patch (Franklin 1997). Ecosystem management and landscape ecology are closely aligned approaches that necessitate a linkage between natural processes and dynamics with the human-cultural dimension. A former Chair of the IUCN Commission on Ecosystem Management, stated:

"ecosystem management offers a new framework for a more integrated and comprehensive approach to conservation in which people are part of the equation", adding *"... emphasis is not on ecosystem processes per se but on human actions which are likely to alter those processes in magnitude or pattern"*.
Maltby (1997).

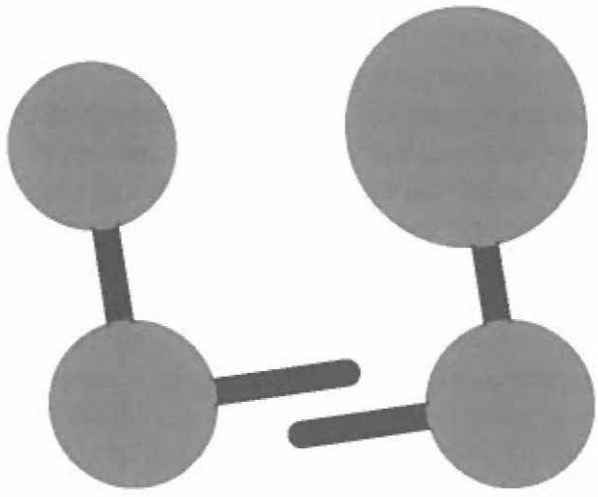
What is consistent between the two approaches is that while landscape ecology is concerned with spatial patterns at landscape scale, taking into account the dynamics of spatial heterogeneity, in particular human agency-generated development and its influence on ecological processes (Turner, 1998), while ecosystem management aims to implement ecosystem-based management practices in a manner than respects conservation goals and socio-economic needs. Ecosystem management also provides the tools to address any arising conflicts between the two dimensions.

Within the Mediterranean region, the landscape prescribes to the blend of natural, semi-natural, rural and urbanized elements as a consequence to the significant human presence, which has had a substantial influence in determining landscape evolution. This process was described by Makhzoumi and Pungetti (1999) as a *"structurally heterogeneous landscape"*. Naveh (1995) regards the landscape in the Mediterranean a consequence to a co-evolution of the Region's peoples and the restricted natural resources on hand. Today, the Mediterranean can be described as the result of changing land-use patterns which, over time, have seen the gradual alteration of natural biotopes into agricultural systems and, eventually, into a semi-natural vegetation cover as a consequence of abandonment. It is thus crucial that planning strategies take this heterogeneity into account, ensuring the involvement of people with a view to include both indigenous knowledge and perception in the policy formulation and decision-making process.

5.2.2 Relevant themes in landscape ecology

As indicated above, landscape ecology is concerned with the dynamics of spatial and temporal interactions across the landscape matrix, which also includes the influence that various processes may have on biotic and abiotic elements present, the role of natural and man-induced disturbances within ecosystems and the role of humans. The advantage of this approach is that it deals with larger areas than has traditionally been the focus in ecology, and whilst ecosystems have no clear borders and political boundaries are arbitrary, landscapes serve as more tangible and inclusive matrix (all

Figure 5.1 Patches and corridors of varying size, length and width.



components of which are of direct relevance to management) for the function of all organisms, including humans.

In addition to the study of patches, that is, homogeneous areas that differ from their immediate surroundings, landscape ecology also takes into account the degree of connectivity in a patchy environment and how the arrangement of and interaction between patches affect ecology (Fig. 5.1)? Such analysis of a heterogenic mosaic that constitutes a given landscape is of particular bearing to both conservation and resource management. Although patches within a landscape may support similar assemblages or biotopes (homogenous patches), these may nonetheless vary in size, shape or their degree of isolation. The latter phenomenon is often the result of fragmentation, which may be natural or man-induced. Causes are varied and most often consequent to activities related to agriculture, urbanization, forestry (including the creation of firebreaks), and infrastructural development. Natural fragmentation is created by 'natural disturbances' that may be caused by the dynamics of perennial valley systems and rivers, desert environments, among others. In order to counter pressures posed by fragmentation, which most often lead to an overall *loss* of habitat, a reduction in *size* of remaining habitats, increased *isolation* of remaining habitats and an increase in *edge effect* & its influence, restoration ecology requires serious consideration.

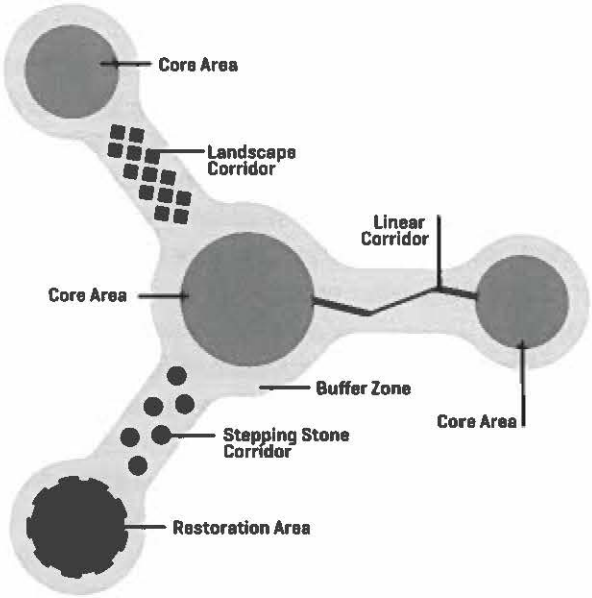
5.3 The case of Gozo

The Mediterranean's long history of human interaction has led, as explained earlier in this chapter, to a progressive alteration of the terrain, which has, in a way, encouraged colonization and the subsequent regeneration of floral assemblages that have over time become resilient to human pressure and activity. The island of Gozo is no different from the rest of the Mediterranean and its small size makes it particularly vulnerable to fragmentation. The island boasts a variety of assets, both ecological and cultural, but has experienced the same fate as have other rural localities within the Region, as a result of modification of the landscape that has often led to land-use conflict. Hence, Gozo shares a multitude of environmental constraints, consequent to the considerable demands on the use of land, which render the island an ideal case-study for landscape management and biotope conservation.

The concept of multifunctional landscapes, which inherently encourages trans-disciplinary research, may be appraised in the context of such an island setting, primarily in relation to the island's strong cultural affinities, linking its rural characteristics with a semi-natural environment that supports important biotopes. The rural landscapes of Gozo, which initially fragmented existing biotopes due to an expansion of agricultural practices, are now being fragmented by infrastructure and urbanization (Plate. 5.1). Numerous components within these landscapes, such as rubble wall networks, cereal fields, archaeophytic trees (e.g. carobs, olives, figs) among others, provide an element of connectivity across open spaces, which are critically important to a suite of species as corridors for movement (Plate. 5.2, 5.3).

In addition to linking fragments to achieve or enhance connectivity, restoration ecology also serves other functions apart from creating wildlife corridors or greenways. For example, it supplements diminishing habitat areas through the provision of complementary habitats while

Figure 5.2 Examples of wildlife corridors. At landscape scale, such example would fit adequately within a rural setting.



increasing connectivity between existing biotopes, which in turn reduces problems of fragmentation. Moreover, ecologically restored fragments may contribute towards the re-establishment of a large-scale network of ecosystems. Restoration ecology also creates visually attractive vegetation, which may provide educational and possibly even scientific interest, while acting as a safeguard or sink for rare species and/or scarce ecological communities. The fact that the very concept of ecological restoration relies on the use of indigenous species helps in constructing low maintenance landscapes (since native species are acclimatized to local conditions). However, before any effort to restore or rehabilitate areas that have experienced degradation or agricultural land abandonment is made, thorough familiarity of the site in question is crucial; otherwise, the attempt runs the risk, as is often the outcome, of ending up as a poorly designed afforestation scheme. Apart from following the foremost principle of planting species in ecological context, various other factors need to be addressed. Principal among these is the importance of a clear understanding of what needs to be created, the species it is meant to cater for, and its precise function in the broader ecosystem context. Therefore, in addition to a sound justification, a detailed knowledge of the pertinent species' foraging strategies, home range, predator-prey relationships and other relevant information on behaviour is absolutely crucial. A second tier of information (closely related to the previous) that is crucial to successful ecological restoration is that associated with connectivity. Design considerations are influenced wholly by (i) the species to be conserved and managed, (ii) their overall habitat requirements, and, (iii) existing biotopes. It is for this reason, vital to ensure a comprehensive understanding of potential/existing *pathways of movement*, the *sources and sinks for biotic and abiotic effects* (when possible), and what effectively acts as a *barrier* to species' movements. Such knowledge will prove critical during the design process, essentially when designating core and buffer zones, and the various wildlife corridors or greenways, which may consist of *landscape* or *mosaic corridors*, *linear corridors* and/or *stepping stone corridors* (Fig. 5.2).

The entire notion of connectivity revolves around the spatial characteristics within a given landscape, as well as the manner by which such elements influence movement of organisms across habitat patches (Merriam 1984, 1991; Forman 1995). With respect to Gozo, the island supports two of the three spatial scales: landscape (1 - 10s kilometres) and local (<1 kilometre), while associates with the regional scale (100 - 1000s kilometers), as defined below. On the regional scale and in view of the island's geographical location, Gozo has the potential of meeting long-term conservation requirements, as a central Mediterranean island-hub, chiefly for bi-annual migration of avifauna. In the case of connectivity at the local and landscape scales, fragmentation poses a major risk, particularly, when the ecological function of a given land parcel no longer meets the habitat requirements of a species or a group of species and, as a consequence, may fail to support viable populations.

Conservation strategies within rural landscapes need to ensure that effective connectivity is maintained at a widest possible range of spatial scales (Bennett 1999) if the fundamental aim is to protect viable natural communities and

the integrity of ecological processes (Noss 1991). In the case of Gozo, local scale linkages include a range of linear corridors that include roadside vegetation, the ubiquitous prickly pear stands (*Opuntia ficus-indica*) and the somewhat extensive network of dry stone rubble walls around field boundaries, together with the numerous archaeophytes (cultivated carob and olive trees) that afford a stepping stone function across the largely cultivated territory of Gozo.

In the light of the above, the following strategic management recommendations are being proposed:

- The quality of existing habitats needs to be enhanced while ensuring that these are serviced by a network of corridors.
- In order to counter the impact of habitat isolation, particularly when fragmentation is deemed to have pocketed important wildlife refugia, connectivity needs to be encouraged through a holistic and integrated landscape approach to conservation.
- A system of conservation areas/ protected landscapes should be set-up and linked via sites that have been ecologically restored; the latter could also serve as buffer zones for protected areas.
- Every effort ought to be made to restore linkages and create new ones as research and monitoring identify such needs, both on the landscape and local scale.

(adapted from: Cassar, 2010).

References

Ahern, J.F. 1999. Barriers, opportunities, strategies and models for the application of landscape ecology in landscape planning and design. Abstract, 5th *IALE World Congress*, Snowmass, Colorado, USA.

Antrop, M., 2001. The language of landscape ecologists and planners: a comparative content analysis of concepts used in landscape ecology. *Landscape and Urban Planning*, 55, pp.163-173.

Ayad, Y.M., 2005. Remote sensing and GIS in modeling visual landscape change: a case study of the northwestern arid coast of Egypt. *Landscape and Urban Planning*, 73, pp.307-325.

Barbina, G., 2001.*La geografia umana nel mondo contmporaneo*. Rome, Italy: Carocci Editore.

Bastian, O., 2001. Landscape ecology- towards a unified discipline. In: D.J. Mladenoff, ed. *Landscape Ecology*. Preston, UK: IALE (UK).

Bennett, A.F., 1998. *Linkages in the landscape: the Role of corridors and connectivity in wildlife conservation*. Gland, Switzerland: IUCN.

Cassar, L.F., 2010. *A landscape approach to conservation: integrating ecological sciences & participatory methods*. Malta: International Environment Institute.

Dallman, P.R. 1998. *Plant life in the world's Mediterranean climates*. Oxford: Oxford University Press.

Daniel, T.C., 2001. Whither scenic beauty? Visual landscape quality assessment in the 21st century. *Landscape and Urban Planning*, 54, pp.267-281.

Décamps, H., 2000. Demanding more of landscape research (and researchers). *Landscape and Urban Planning*, 47, pp.105-109.

Fairbanks, D.H.K, Van Jaarsveld, A.S. & Norgraard, R.B., 1999. Development of a coevolutionary landscape ecology framework for analysis the sustainability of biodiversity conservation. Abstract, 5th *IALE World Congress*, Snowmass, Colorado, USA.

Farina, A., 1998. *Principles and methods in landscape ecology*. London, UK: Chapman & Hall.

Farina, A., 2000. *Landscape ecology in action*. Dordrecht, The Netherlands: Kluwer Academic Publishers.

Forman, R.T.T., 1995. *Land mosaics: the ecology of landscape and regions*. Cambridge, UK: Cambridge University Press.

Forman, R.T.T. & Gordon, M., 1986. *Landscape ecology*. New York, USA: John Wiley & Sons.

Franklin, J.F., 1993. Preserving biodiversity, species, ecosystems or landscapes? *Ecological Application*, 3, pp.202-205.

Leser, H., 1997. *Landschaftökologie*. Stuttgart, Germany: Ulmer.

Makhzoumi, J. & Pungetti, G., 1999. *Ecological landscape design and planning: the Mediteranean context*. London, UK: E & FN Spon.

Maltby, E., 1997. Ecosystems management: the concept and strategy. *World conservation*, 3, pp.3-4.

Mcintyre, N.E., 2001. *Landscape ecology and advanced landscape ecology*. Texas, USA: Department of Biological Sciences, Texas Technical University.

Merriam, G., 1984. Connectivity: a fundamental ecological characteristic of landscape pattern. In: M. Ruzicka, T. Hrnciarova & L. Miklos, eds. *Proceedings of the First International Seminar on Methodology in Landscape Ecological Research and Planning*. Roskilde, Denmark: International Association for Landscape Ecology, pp.5-15.

Merriam, G., 1991. Corridors and connectivity: animal populations in heterogeneous environments. In: D.A. Saunders & R.J. Hobbs, eds. *Nature Conservation 2: the role of corridors*. Chipping Norton, New South Wales, Australia: Surrey Beatty & Sons, pp.133-142.

Moss, M.R., 2000. Interdisciplinary, landscape ecology and the 'Transformation of Agricultural Landscape'. In: D.J. Mladenoff, ed. *Landscape Ecology*. Preston, UK: IALE (UK).

Naveh, Z., 1987. Biocybernetic and thermodynamic perspective of landscape functions and land use patterns. *Landscape Ecology*, 1, pp.75-83.

Naveh, Z., 1995. Interactions of landscapes and cultures. *Landscape and Urban Planning*, 32, pp.43-54.

Naveh, Z., 2000. What is holistic landscape ecology? A conception of introduction. *Landscapes and Urban Planning*, 50, pp.7-26.

Noss, R.F., 1991. Effects of edge and internal patchiness on avian habitat use in an old-growth Florida hammock. *Natural Areas Journal*, 11, pp.34-47.

Opdam, P., Foppen, R. & Vos, C., 2001. Bridging the gap between ecology and spatial planning in landscape ecology. In: D.J. Mladenoff, ed. *Landscape Ecology*. Preston, UK: IALE (UK).

Ozenda, P. 1975. Sur les étages de végétation dans les montagnes du bassin méditerranéen. Doc. *Cartogr. Ecology*, 16, pp.1-32.

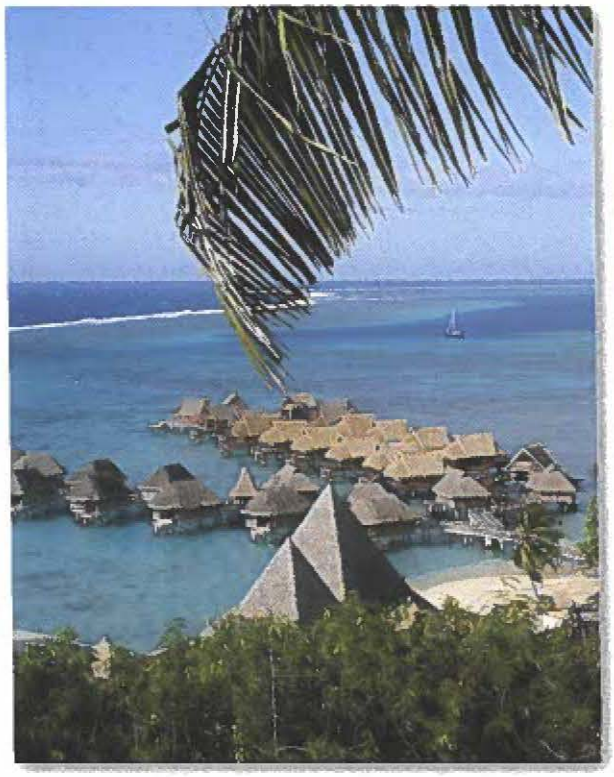
Quézel, P. 1983. Flore et végétation actuelles de l'Afrique du Nord, leur signification en fonction de l'origine, de l'évolution et des migrations des flores et structures de végétation passées. *Bothalia*, 14, pp.3-4.

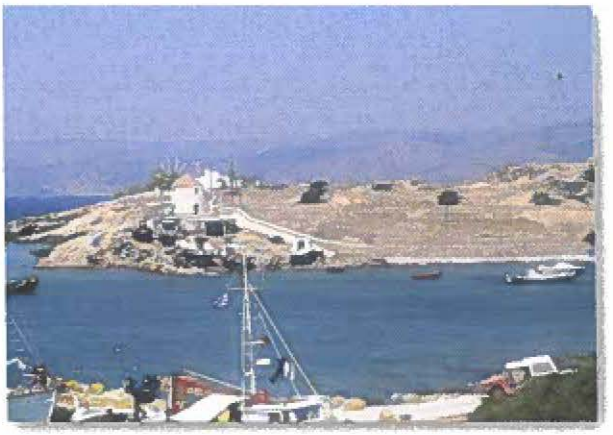
Szaro, R., Sexton, W. & Malone, C., 1998. The emergence of ecosystems management as a tool for meeting people's needs and sustaining ecosystems. *Landscape and Urban Planning*, 40, pp.1-7.

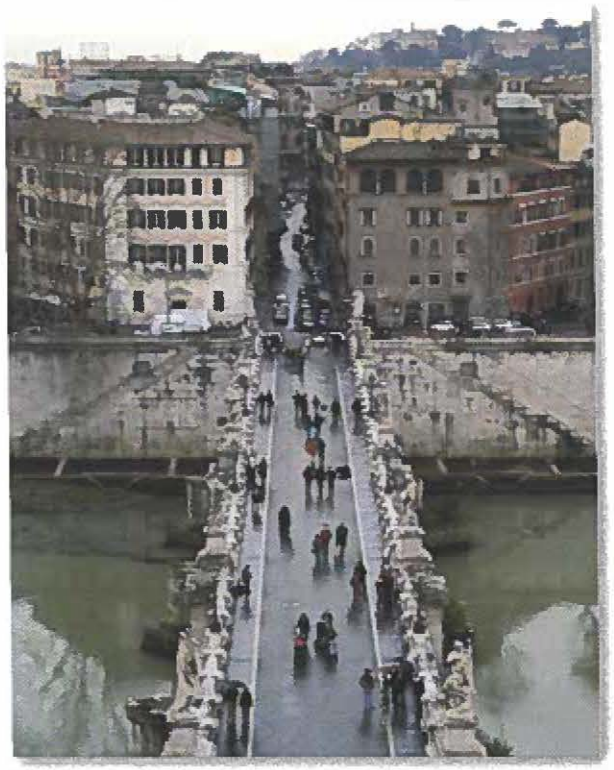
Tress, B., Tress, G., Décamps, H. & D'Hauteserre, A. M., 2001. Bridging human and natural sciences in landscape research. *Landscape and Urban Planning*, 57, pp.137-141.

Troll, C., 1950. *Die geographisce Landschaft und ihre Erforschung, Studium Generale 3*. Heidelberg, Germany: Springer-Verlag.

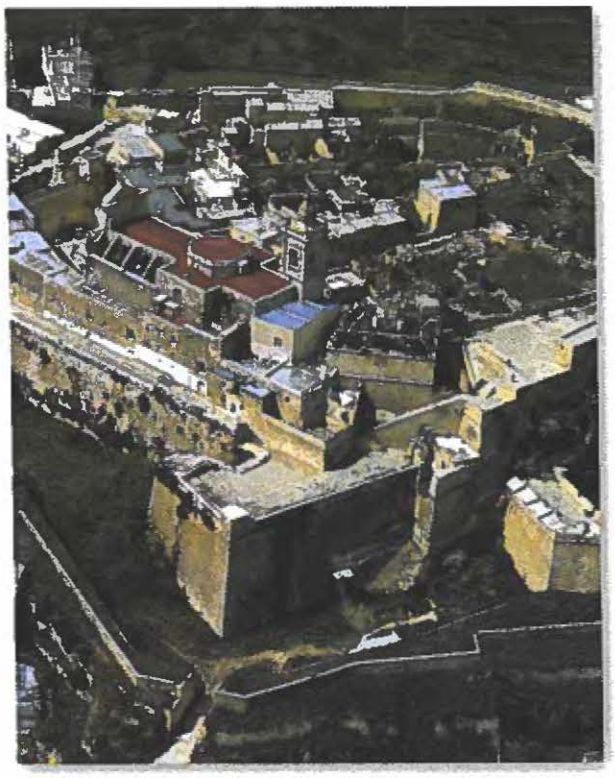
Turner, M., 1998. Landscape ecology; living in a mosaic. In: S.I. Dodson, T.F. Allen, S.R. Carpenter, A.R. Ives, R.L. Jeanne, J.F. Kitchell, N.F. Langston & M. Turner, eds. *Ecology*. Oxford, UK: Oxford University Press.





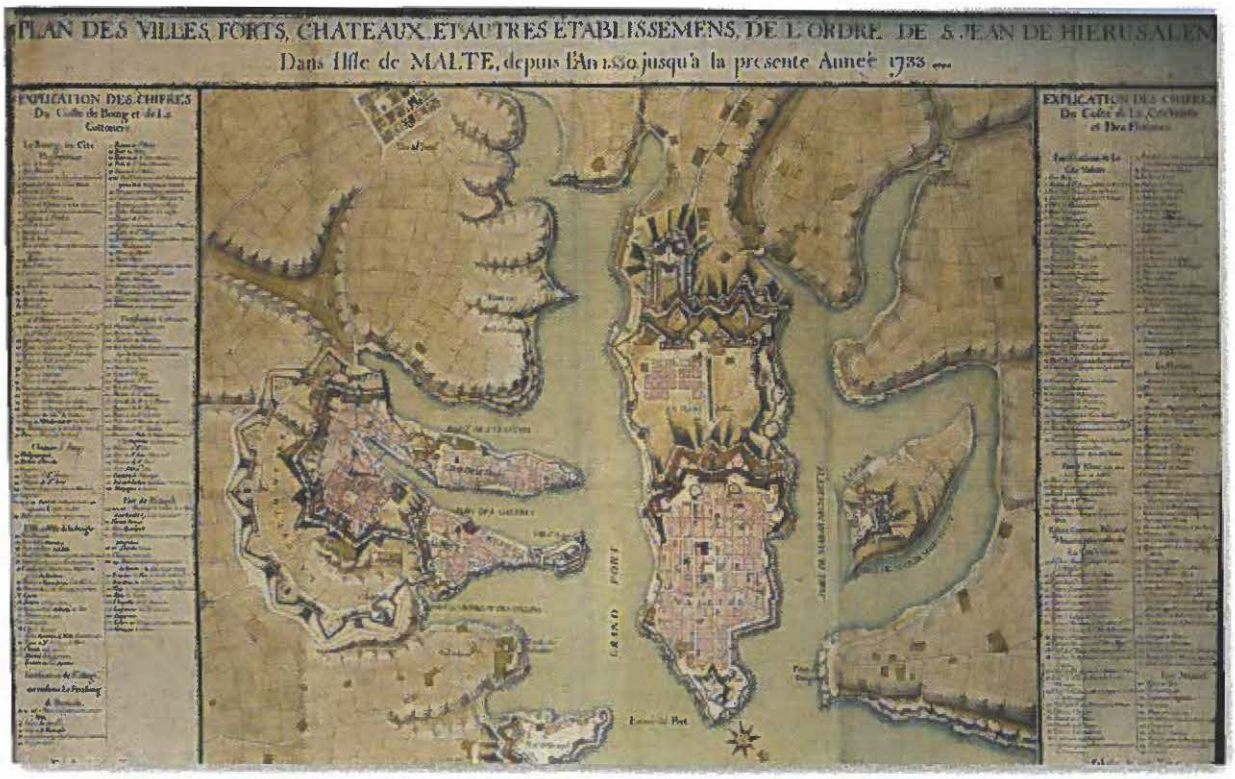


1.1 Landscape of Moorea, French Polynesia.
Credit: Theano S. Terkenli.
1.2 Fishing port in Koufonissia, Greece.
Credit: Theano S. Terkenli.
1.3 View of the village of Oia (Santorini), Greece.
Credit: Theano S. Terkenli.
1.4 Las Vegas.
Credit: Theano S. Terkenli.
1.5 View of Rome from Castel Sant'Angelo.
Credit: Theano S. Terkenli.



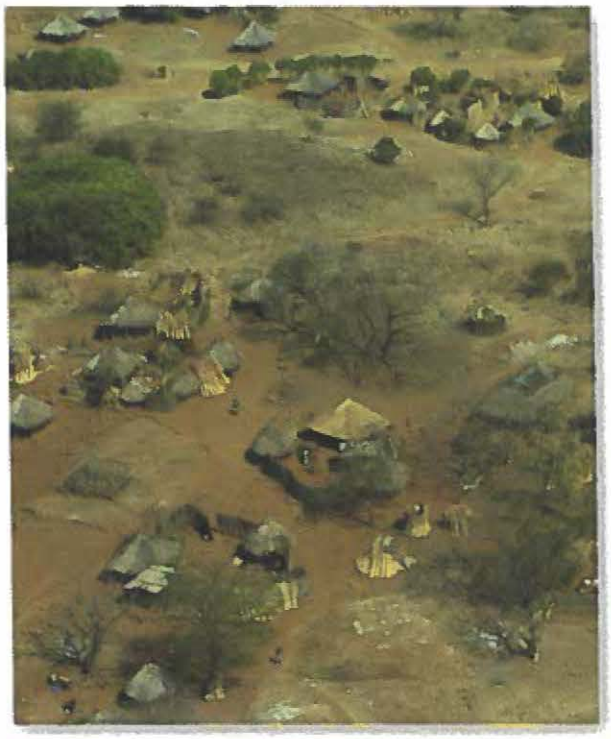
2.1 A view of the Cittadella, a defensive citadel in Gozo.

2.2 Fresco painting by Egnazio Danti illustrating the Sceberras peninsula during the Great Siege of the Ottoman Turks in 1565. On the bottom left is a partial view of Laparelli's city plan of Valletta, for which construction commenced in 1566.
Source: Map room in the Vatican Museum.

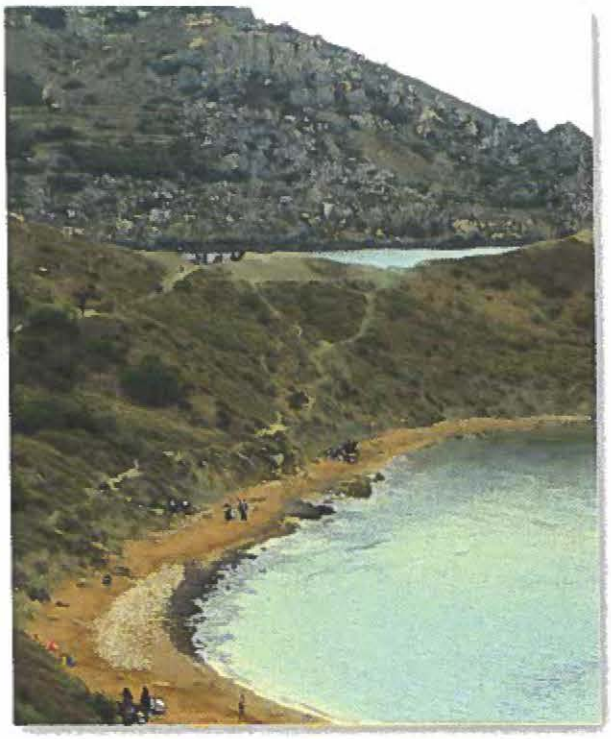


2.3 Plan of the Grand Harbour fortifications, entitled Plan des Villes, Chateaux et Autres Etablissements de L'Ordre de St Jean de Hierusalem dans l'Isle de Malte. The plan shows the new city of Valletta, in relation to The Three Cities which are on the left side, enclosed by the encircling Cottonera lines.
Source: Archivio di Stato, Naples, Italy

3.1 'Wilderness' areas: Antarctica – even perceived 'wilderness' is impacted by human activities.
Source: NASA



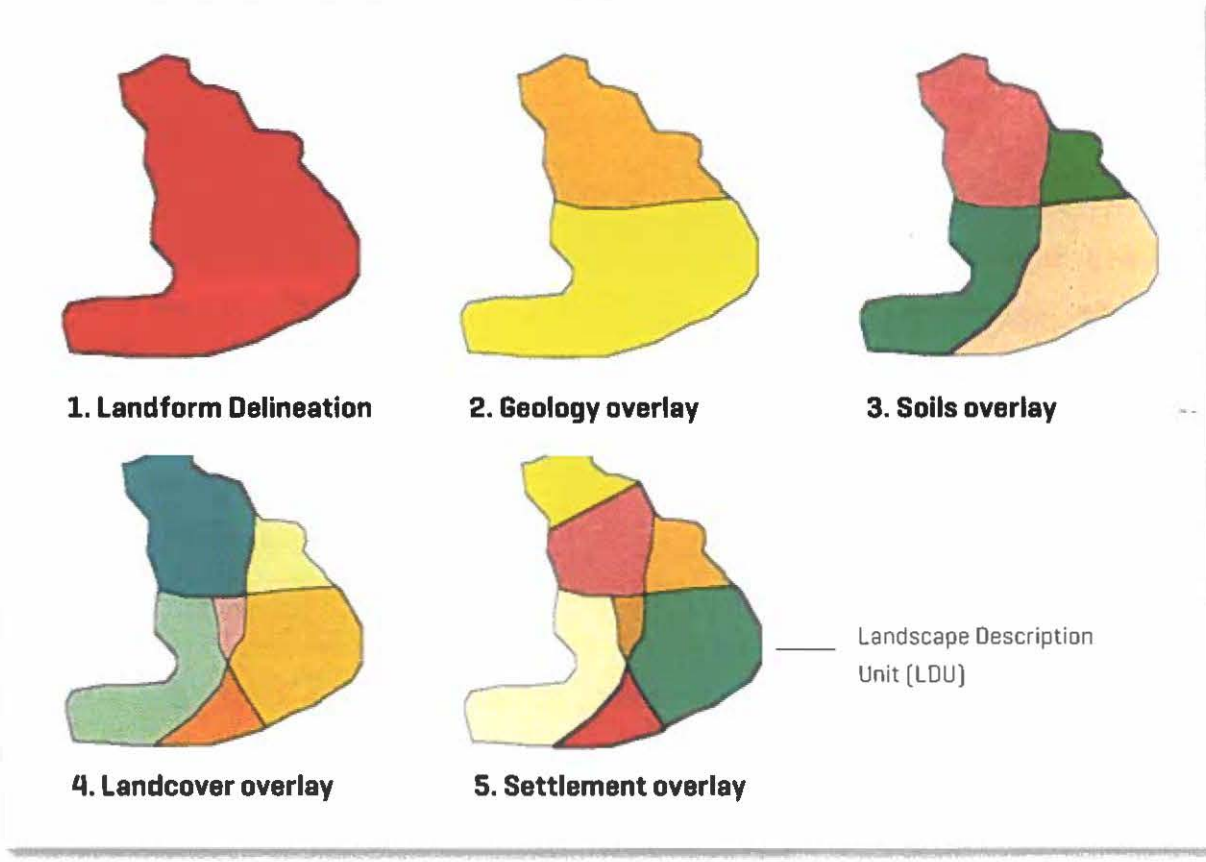
3.2 Natural-human interactions in the landscape: an example from Africa. Even seemingly 'natural' landscapes in Africa have been strongly influenced by human activities.
Credit: E. Conrad



4.1 The coastal landscape of the north west of Malta.
Credit: E. Conrad.

Clockwise from above:
4.2 Geirangerfjord, Norway: high relief areas generate more visual interest than low flat areas
Source: Go to Norway, 2010: www.gotonorway.info/interesting-places-in-norway/
4.3 Etosha National Park, Namibia: wildlife increases interest in otherwise less interesting landscapes.
Credit: L.F. Cassar.
4.4 Hell, Grand Cayman
Source: http://en.wikipedia.org/wiki/File:Hell_Grand_Cayman.JPG

Clockwise from above:
5.1 Fragmentation of an agricultural landscape: the effect of ribbon development. Credit: L.F. Cassar
5.2 Both anthropicized rural landscapes and sea-cliffs have the capacity to function as linkages betweencoastal biotopes. Credit: L.F. Cassar
5.3 Escarpments and screes serve as both corridors and barriers to movement of species across landscapes. Credit: L.F. Cassar



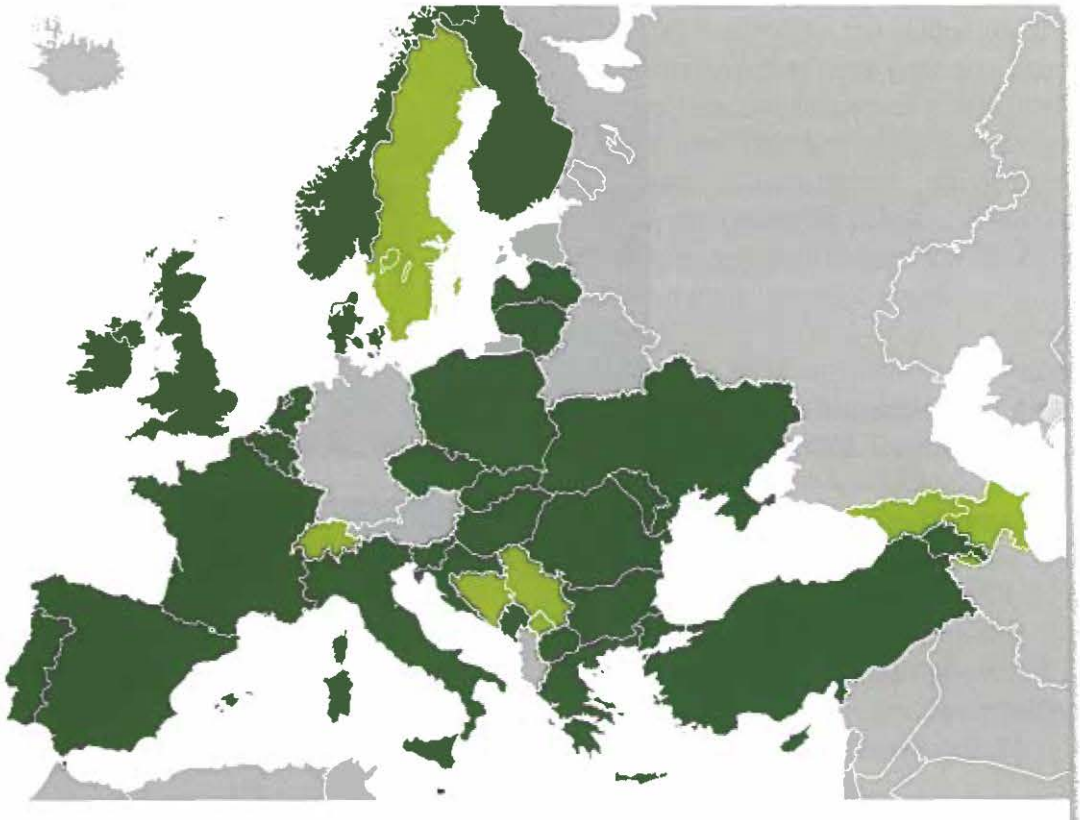
6.1 Schematic diagram of the overlay procedure used during desk top mapping exercise.

8.1 Photo taken from near Kanzem, Saar Valley (Germany), looking south. Credit: E. Meller.

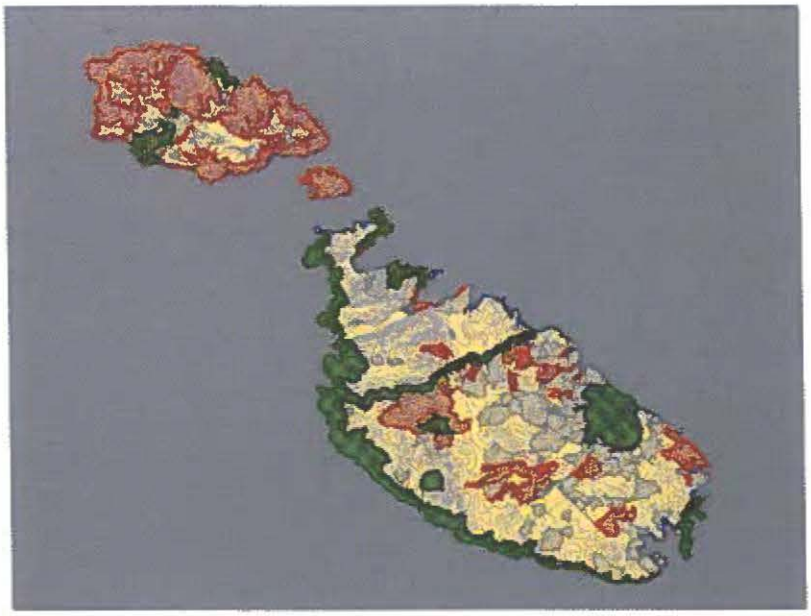
8.2 Meerfelder Maar (volcanic crater lake) looking towards Meerfeld town at back left (Eifel Region, Germany). Credit: E. Meller.

8.3 Muermes protected area, near Saxler (Eifel Region, Germany). Credit: E. Meller.

8.4 Aerial photograph of the same landscape shown in Plate 8.1 (Google Earth). The town at the top of the photography is Kanzem and the arrow shows the direction of the photograph in Plate 8.1.



9.1 The state of the European Landscape Convention in Europe.



11.1 Areas of High Landscape Value. Source: MEPA GIS database.

11.2 Landscape character map Source: MEPA (2004).

11.3 Landscape Sensitivity Map Source: MEPA (2004).

Chapter 6

Landscape Character Assessment: An Overview

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6.1 Background to Landscape Character Assessment

What is a landscape? *"Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"* (Council of Europe, 2000). An ecological definition is that of Forman and Gordon (1986): *"a landscape is a mosaic of 'interacting ecosystems'"*. There is increasing recognition that the spatial structure of landscape elements is a factor of critical significance in determining biodiversity (Turner, 2005) and achieving sustainable development (Morse *et al.*, 2009). This is also highlighted by recent European legislation *i.e.* the European Landscape Convention (Council of Europe, 2000) which is the first international convention on landscape, dedicated exclusively to the protection, management and planning of all landscapes in Europe. As signatories to the Convention, country members are required to demonstrate compliance, including:

- to recognize landscapes in law as an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity;
- to establish and implement landscape policies aimed at landscape protection, management and planning through the adoption of certain specific measures;
- 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 landscape policies;
- to integrate landscape into their regional and town planning policies and their cultural, environmental, agricultural, social and economic policies, as well as any other policies with possible direct or indirect impact on landscape.

Landscape means different things to different people and this is also reflected in Landscape Character Assessment (LCA). The common denominator though, *i.e.* the landscape, provides the appropriate framework where environmental issues/pressures can be understood and dealt with. Therefore LCA has evolved into a more complex and holistic approach over the years (Table 6.1). The implementation of LCA is important for all the countries that have ratified the European Landscape Convention (ELC). LCA provides a framework to identify and assess landscapes, understand landscape change, and develop landscape quality objectives in partnership with stakeholders - all specific measures of the ELC (Washer and Jongman, 2003).

Landscape Character Assessment has a long history in Europe with north-west European countries leading the way on methodological aspects but also on implementation through

Table 6.1 The evolution of landscape character assessment (adapted from Swanwick, 2002)

Early 1970s	Mid 1980s	Mid 1990s
Landscape Evaluation	**Landscape Assessment**	**Landscape Character Assessment**
1. Focused on landscape value **2.** Claimed to be an objective process **3.** Compared value of one landscape with another **4.** Relied on quantitative measurement of landscape elements	**1.** Recognized role for both subjectivity and objectivity **2.** Stressed differences between inventory, classification and evaluation of landscape **3.** Provided scope for incorporating other people's perceptions of the landscape	**1.** Focuses on landscape character **2.** Separates process of characterization from making judgements **3.** Stresses potential for use at different scales **4.** Links to Historic Landscape Characterization **5.** More recent emphasis on need for stakeholders to be involved

policy and legislation (*e.g.* Griffiths *et al.*, 2004). In recent years, significant progress has been made also in south Europe with regard to the description and mapping of landscape types (Marušič, and Jančič, 1998; Blasi *et al.*, 2000; Pinto-Correia *et al.*, 2002).

6.2 LCA stages

The process of landscape character assessment involves a number of distinct stages:

Stage 1: Characterization;
Stage 2: Evaluation of areas emerging from Stage 1;
Stage 3: Decision-making: responding to the pressures affecting each of the different landscapes.

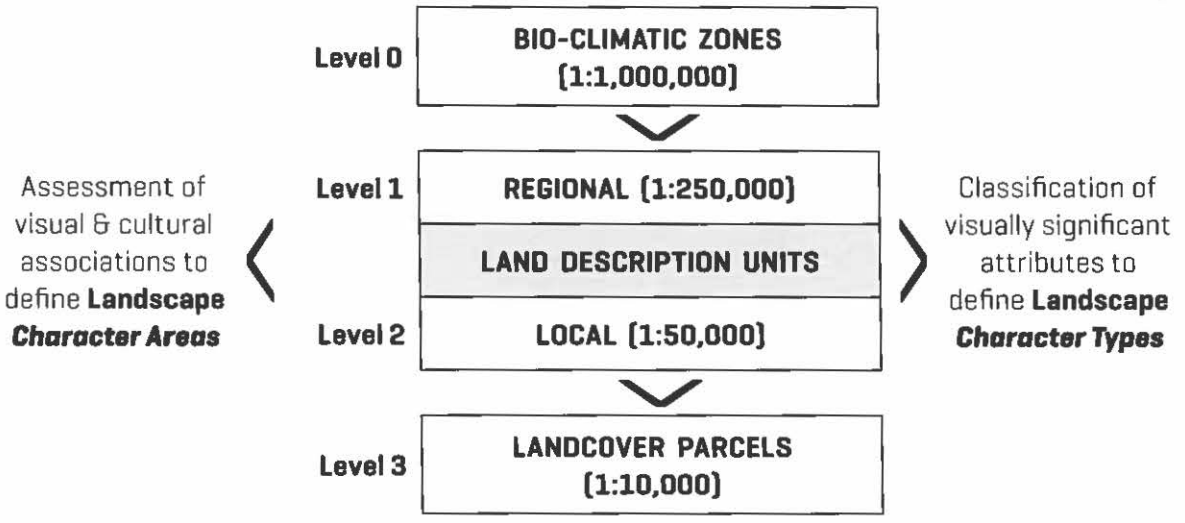
6.2.1 Characterization

This first stage involves the process of identifying and mapping areas of distinctive character and describing their key characteristics:

- Step 1: Defining the scope - the purpose of the LCA will determine the scale and level of detail of the assessment and the resources required.
- Step 2: Data collection and analysis - this stage involves a review of all relevant background reports, existing mapped information and other data sets used to sub-divide the study area into a series of Land Description Units (LDUs).
- Step 3: Field survey - field data is collected to validate and describe each of the Land Description Units defined by the desk study.
- Step 4: Classification and description - the final step is to classify and describe the character of each type/area.

The aim of this stage of the assessment is to divide the landscape into areas of common character. The rationale behind landscape character mapping is that particular combinations of physical and cultural factors occurring in different areas result in similar landscapes. The approach is based on a series of natural (*i.e.* landform, geology, soils) and cultural (*i.e.* land use, settlement pattern) factors that are used to describe the variability in the landscape at various spatial scales depending on the research scope. In this context cultural factors refer to the structural

Figure 6.1 The Landscape Description Unit Spatial Framework (Griffiths *et al.*, 2004)



component of the cultural landscape as reflected in the historic and current patterns of land use and rural settlement.

The mapping of the physical and cultural factors is done with the help of a Geographical Information System (GIS). GIS is used for the collation and analysis of information gathered as part of the desk study stage of a Landscape Character Assessment. GIS can be used to build up an information base by collating existing layers of digital data or digitizing new layers. GIS allows complex layers of data to be overlaid and viewed. The spatial relationships between datasets can then be analyzed. It is important to remember that there will be assumptions, errors and inconsistency in many of the base datasets used for Landscape Character Assessment. Mapping is undertaken visually and requires an understanding of the historical evolution of different landscapes within the context of their physical setting.

Typically the most relevant information transferred onto the series of simplified map overlays includes:

- Geology(structure[1]);
- Geology (rock type) and soils;
- Land cover; and
- Cultural pattern (settlement) from topographic maps.

The system is hierarchical, based upon the successive sub-division of the mapped attributes. The landscape is first divided into physiographic units from contour and geological data. The resulting units are then further sub-divided by soil type and finally by cultural patterns to derive the building blocks of the system, the Landscape Description Unit (LDU). Plate 6.1 illustrates the general approach and shows how the physical and cultural attributes are successively combined to derive the LDUs. These units are subsequently amalgamated into Landscape Types, with similar physical and cultural attributes, using cluster analysis (Figure 6.1)[2].

6.2.2 Evaluation

The evaluation phase is included to demonstrate the applications of LCA for land management within the national and local planning system. The evaluation phase should adhere to the aims and objectives of the European Landscape Convention.

1 Geology-structure refers both to geological Period and to broad differences in lithology.

2 The term encompasses a number of different algorithms and methods for grouping objects of similar kind into respective categories.

Box 6.1 Defining a vision for the future: an example from Cyprus *(Warnock et al., 2008)*

Cyprus Landscape Assessment

Settled plateau farmlands: A plateau landscape with a rolling topography associated with a limestone geology. The limestone has weathered to give rendzina soils which are often shallow with rocky outcrops. This is a settled agricultural landscape of nucleated hilltop villages and a mixed land use of arable crops, vineyards and orchards. It is a generally open landscape of scattered trees with little surviving natural vegetation.

Strength of character: This is an ancient settled agricultural landscape with a strong cultural character. This is reflected in the presence of villages surrounded by an irregular pattern of small fields often bounded by stone walls.

Condition: Many of the significant stone boundary features, although still present, were in decline due to lack of management.

The vision: Conserve and restore the historic pattern of this settled, cultivated landscape.

(Warnock *et al.* 2008)

Two important landscape properties, particularly associated with change and therefore inextricably linked with decision making are landscape sensitivity and capacity. Landscape sensitivity, be it ecological, cultural or perceptual, is the ability of a landscape to accommodate change or development while capacity refers to the amount of this change that is 'acceptable' (Swanwick, 2004). A sensitivity analysis maybe undertaken to determine the ecological, cultural and visual sensitivity of each Landscape Description Unit. These aspects may be further described as follows:

- Ecological sensitivity: a measure of the likelihood that the physical attributes of an LDU support diverse and extensive habitats. For example, a LDU characterized by shallow, impoverished soils on siliceous rocks and steep slopes is more likely to retain its semi-natural vegetation compared to a LDU on gentle slopes with deep, fertile soils.
- Cultural sensitivity: a measure of the extent to which a LDU displays historical continuity ('time-depth') and the consistency with which cultural patterns are represented spatially within the LDU. Thus, a LDU with an ancient pattern of dispersed settlement characterized by a consistent pattern of small, irregular terraced fields would be deemed to be a sensitive cultural landscape unit.
- Visual sensitivity: a measure of the degree to which change is likely to cause a visual impact within a particular landscape. Visibility can be defined as a function of landform and the presence of trees and woodland.

Sensitivity analysis is proving to be a useful planning tool, providing important information about the capacity for different landscape types to absorb change. In this way it can be used both for development control and, in a more positive forward-looking way to assist with defining a vision for future management (Box 6.1). Ideally, the sensitivity analysis should also be informed by information on the 'condition' of each LDU from field survey.

6.2.3 Decision Making

The spatial units (landscape types) emerging from LCA provide an important strategic overview within which to develop policies for a multifunctional landscape in which

Table 6.2 The most common applications of Landscape Character Assessment

Application	Example
Development	Use LCA to inform criteria-based planning policies and guidance in Local Development Documents, integrating development planning with conservation and land management within the planning system.
Planning policy & Planning strategy	As part of an Integrated Rural Development Programme aiming at landscape and heritage protection and economic and community regeneration
Biodiversity Action Plans	Establish appropriate targets for habitat restoration at a range of scales
Landscape monitoring & Landscape designations	Undertake sensitivity analysis to determine the potential for change
Environmental Impact Assessment	Make an assessment of condition to determine needs and opportunities for change
Planning future townscapes	Assessment of the character of the landscape around the town, which can be used as the basis for policies and proposals that provide a framework for protecting landscape quality around the town and the character of the urban area itself.
Sustainable Development	Use landscape as the spatial framework to derive sustainability indicators

the conflicting demands of agriculture, development, recreation and nature conservation need to be resolved. There is a long list of applications where LCA can be employed which might include developing landscape strategies, developing management guidelines, assessing the capacity for landscape change, and assessing the degree of protection to conserve landscape distinctiveness (Table 6.2). LCA is increasingly embedded in policy and decision making in North Europe. The adoption of the method and its application has been slow in the south, although the last ten years have seen the development of many schemes including in Portugal, Spain, Slovenia and more recently Cyprus, and some limited application in the area of biodiversity conservation (Blasi *et al.*, 2000) and coastal zone management (Vogiatzakis *et al.*, 2005).

6.3 Conclusion

Although the value of, and the need for the use of LCA in landscape management is increasingly self-evident, there are still important issues/ challenges that it has to face. The most important perhaps include:

- The important distinction between character and condition which is central to debate about the value of landscape character for rural policy. A robust and acceptable assessment of character must relate to the presence of features in the contemporary landscape and not to a past landscape that can never be recovered. *Character* is therefore time dependent and its changes are usually gradual and measured in decades

rather than years. The *condition* of a landscape on the other hand is a measure of how far removed that landscape is from an 'optimal' state, where all the key characteristics are present and functional. Condition can change much more rapidly, due to the impact of external factors, such as land use change, agricultural intensification or neglect.

- Interdisciplinarity & multidisciplinarity: The merit of involvement of professionals from many different disciplines in Landscape Assessment still remains a matter of debate since it sometimes adds to the confusion about what landscape is and who should be managing it.
- The main challenge, however for the continued development of a spatial framework for landscape planning, is the integration of disciplines and data to develop an increasingly holistic view of the landscape at multiple scales. Any such framework should be able to translate policies and targets from a national down to a local level.

References

Blasi, C., Carranza, M.L., Frondoni, R. & Rosati, L., 2000. Ecosystem classification and mapping: a proposal for the Italian landscapes. *Applied Vegetation Science*, 3, pp.233-242.

Council of Europe, 2000. European Landscape Convention (Florence). European Treaty Series - No 176. Florence: Council of Europe.

Forman, R.T.T. & Godron, M., 1986. *Landscape Ecology*. New York: Wiley.

Griffiths, G.H., Porter, J., Simmons, E. & Warnock, S., 2004. The Living Landscapes Project: landscape character and biodiversity. *English Nature Research Reports*, 475.

Marušič, J. & Jančič, M., 1998. *Regional Distribution of Landscape Types in Slovenia, Methodological Bases*. Ljubljana: Ministry of Environment and Physical Planning.

Morse, S., Vogiatzakis, I.N. & Griffiths, G.H., (in press). Space and sustainability. Potential for landscape as a spatial unit for assessing sustainability. *Sustainable Development*. (Published online in advance of print June 2009).

Pinto-Correia, T., Cancela d'Abreu, A. & Oliveira, R., 2003. Landscape units in Portugal and the development and application of landscape indicators. In: W. Dramstad and C. Sogge, eds. *Proceedings of NIJOS/OECD Expert Meeting on Agricultural Landscape Indicators, NIJOS 7/2003*. Oslo, 7-9 October 2002.

Swanwick, C., 2002. Topic Paper 1: *Recent practice and the evolution of landscape character assessment*. UK: Landscape Character Network. Countryside Agency and Scottish Natural Heritage.

Swanwick, C., 2004. *Topic Paper 6: Techniques and criteria for judging capacity and sensitivity*. UK: Landscape Character Network Countryside Agency and Scottish Natural Heritage.

Turner, M., 2005. What is the state of science? *Annual Review of Ecology, Evolution and Systematics*, 36, pp.319-344.

Vogiatzakis, I.N., Griffiths, G.H., Cassar, L. & Morse, S., 2005. *Mediterranean coastal landscapes: management practices, typology and sustainability.* UNEP PAP/RAC Project Report, pp.50.

Washer, D. & Jongman, R. eds., 2003. *European landscapes- classification, evaluation and conservation.* EEA Environment Technical Report. Copenhagen: European Environment Agency.

Warnock, S., Griffiths, G.H., & Vogiatzakis, I.N. 2008. *Cyprus landscape mapping project. Final Report.* Landscape Mapping Group, University of Reading, p.31

Chapter 7

Payments for environmental services in Malta's agricultural landscapes

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7.1 Introduction

Ecosystems provide a myriad of benefits that sustain human life. These include goods such as food and drinking water, and multiple services such as pest control, nitrogen and carbon fixation, flood control, crop pollination, nutrient cycling and waste detoxification, as well as no less essential aesthetic, recreational and spiritual benefits. These direct and indirect benefits that humans obtain from nature are often referred to as ecosystem services. The Millennium Ecosystem Assessment [MEA, 2005], a large study undertaken in 2001-2005 on the consequences of ecosystem change for human well-being and necessary actions for their conservation and sustainable use, has classified such services into four broad categories. Categories include provisioning services, regulating services, cultural services and supporting services [Figure 7.1]. The MEA emphasized that people intimately depend on the many services that ecosystems provide in their daily lives, and that economic development fundamentally depends on nature's benefits. In turn development has a drastic impact on ecosystem services.

Indeed the Assessment found that 15 out of the 24 ecosystem services considered are being degraded faster than they can recover, with substantial and rising costs to society. *"Over the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history"* [MEA, 2005]. Because they occupy over half of the land area globally, agricultural ecosystems [including forests and woodlands] have been particularly important to meet rapidly growing demands for food, fresh water, timber, fibre, and fuel. However the provisioning of food and fibre has also been associated with the degradation of many other ecosystem services.

Farmers have a central role to play in harnessing processes involved in the provision of ecosystem services [FAO, 2007]. They are the largest group of ecosystem managers in the world. Their livelihoods depend on the sustained availability of ecosystem services and at the same time they generate a wide range of such services. While producing food and other agricultural goods, farmers also generate positive or negative impacts on ecosystem services which affect a variety of groups located beyond the specific production location. For instance, upstream soil conservation and agroforestry practices may contribute to the reduction of soil runoff and the maintenance of water quality for downstream communities. Conversely, the application of agricultural pesticides can negatively impact pollinator populations which are essential to human food supplies. However, unlike the food they produce intentionally for sale or home consumption, these impacts are not reflected in farmer incomes, nor is their

Figure 7.1 Ecosystem services: the benefits people obtain from ecosystems. Source: Adapted from MEA (2005)

Ecosystem Services		
Provisioning Goods produced or provided by ecosystems	**Regulating** Benefits obtained from regulation of ecosystem processes	**Cultural** Non-material benefits from ecosystems
• food • fresh water • fuel wood • fibre • biochemicals • genetic resources	• invasion resistance • pollination • climate regulation • disease regulation • flood regulation	• spiritual • recreational • aesthetic • inspirational • educational • sense of place • cultural heritage
Supporting Services necessary for production of all other ecosystem services • Soil formation • Nutrient cycling • Primary production		

provision deliberately planned and considered in farmer choices. In economic terms, these impacts are 'externalities[1]'. Furthermore, many ecosystem services are undervalued or have no financial value. No one owns them or is rewarded for them.

7.2 Payment for environmental services

Payments for environmental services[2] (PES) are emerging as a group of promising economic instruments designed to pay land users for supplying environmental services (ES) that benefit society more broadly, but necessarily constrain their revenue-generating opportunities. In the narrow definition provided by Wunder (2005), PES are voluntary negotiated transactions, rather than a regulation measure. They result in the provision of a measurable service (or land management practices likely to secure that service). The environmental service is being 'bought' by a buyer from a provider through a transfer of resources in cash or kind, if and only if the provider secures provision (conditionality). Payments are ideally scaled according to the amount or quality of the environmental service supplied. They require monitoring of performance. While this definition restricts PES to those supported by private demand, broader definitions of PES include government payment schemes, regulatory cap and trade systems and eco-labelling (Swallow *et al.*, 2007).

With declining conservation funding trends and the limited success of the traditional regulatory approach emphasizing protected areas, PES have generated much interest.

1 Externalities are unintended consequences of a primary activity (*e.g.* food production) and individuals affected by these consequences cannot influence their production (FAO 2007).

2 Environmental services are the subset of ecosystem services characterized by externalities.

Many PES projects are being implemented in developed and developing countries, primarily for forest-based environmental services (FAO, 2007). They have also been received with mixed reactions. Proponents argue that they are more cost-effective than traditional conservation approaches and can improve the livelihoods of poor communities selling these services. Sceptics in turn feel that market instruments for environmental management have serious limitations and their application can weaken local traditional non-for-profit conservation values and exclude poor people or weaken their access rights to land (Wunder, 2005).

PES mechanisms should be seen as one among a set of potential environmental economic policy tools for increasing the provision of environmental services, including command and control regulations, information provision, policy reforms to reduce market distortions and taxation. They may constitute successful 'carrots' where resource users fail to comply under direct control measures or 'sticks'. The development of payment for environmental services programs has been emphasized for four major types of ecosystem services: i) climate change mitigation; ii) watershed protection; iii) biodiversity conservation; and iv) landscape aesthetics. The next sections of the paper consider the role of Maltese agricultural landscapes in providing landscape beauty and biodiversity conservation services and explores the potential of PES for rewarding land managers for these services.

7.3 Environmental services of agricultural landscapes in Malta

Agriculture is the largest land user in Malta representing 48% of its land base, yet conventional measures assess its direct economic importance to be only 3% of the national Gross Domestic Product (RDD, 2007). The value of agricultural landscapes, however, is greater than represented in these figures and many services are provided as indirect benefits in that they are unintended and unaccounted for consequences of agricultural activity. Agriculture in Malta is characterized by an ageing population of self-taught farmers, 91% of whom are only involved as part timers, as well as small and fragmented family-based landholdings (RDD, 2007). The sector is in need of a revitalizing and encompassing new policy guideline and strategic innovations, including judicious investment, new market products, environmental accountability, stronger leadership of producer organizations and capacity building opportunities suited to selected strategic orientations (Delia, 2005).

7.3.1 Aesthetic values

Agricultural land use has historically been a central force in shaping the rural landscape and the environmental character of the islands in both positive and negative ways (Schembri, 1997). Over time terracing and the construction of retaining limestone rubble walls have made agriculture possible on sloping ground. Rural areas also host a shareofarcheologicalandarchitecturalmonuments that are unique to the island as well a wide range of structures in local limestone bearing evidence of the rich heritage of the island's past agrarian society (RDD, 2007). These include farmhouses, cobbled huts (*giren*), old reservoirs (*gwiebi*), open water channels (*konali*) and dry stone rubble walls. Weaved together both spatially in the rural-urban continuum as well as in time through references to the archipelago's rich history, these elements have given the Maltese agricultural landscapes their distinctive, pervasive characteristic. Particularly in an island state, the tourist experience is enhanced by the distinctiveness of these landscapes and is inextricably linked to all attributes of rural areas. Therefore, conserving the integrity of Malta's rural landscapes appears essential to the sustainability and quality of the island's tourism industry. Also targeted here are the needs of local residents and the value of agricultural landscapes for recreation and the mental/spiritual well-being of the local population. The most popular informal rural recreational areas are known to be in the North and West of the island, where agricultural land use predominates.

Within the tourism sector which is a primary income earner for the country with 25% of the GDP (RDD, 2007), it is worthwhile examining how payment mechanisms for landscape beauty

could be developed. These would consist in landowners and land managers charging tourists and tour operators for access to the scenic beauty and activities agrarian landscapes offer. Agro-tourism is a component of nature-based or ecotourism, a subsector which is growing three times faster that the tourism sector as a whole (FAO, 2010) and represents 40 to 60% of all international tourist destinations (Landell-Mills and Porras, 2002). While they have the longest history globally among ES considered in this paper, these markets are not well advanced or sophisticated. This has often been due to the disproportionately high capture of returns by tour operators relative to those managing land who contribute to landscape beauty, as well as the pressure by government and the tourism industry to keep entrance fees and charges low. However changes are taking place (Landell-Mills and Porras, 2002). Higher entrance fees are being re-emphasized for protected area financing and, while landscape beauty was previously considered as a free input, private sector investments are increasingly realized when lucrative businesses are threatened by under-investment or resource degradation. Community groups also seek to capture a fair share of business by offering value-added products (guides, accommodation, food) directly to customers and thus set up their own businesses or develop joint ventures with tour operators (Landell-Mills and Porras, 2002).

A study in the Western High Atlas region of Morocco shows that farmer involvement in the supply of agro-tourism services (board, lodging and excursion support services) contributed to higher overall farm income, lower farm dependence on supplementary income, higher infrastructural investment, as well as higher market integration in food consumption patterns (Allali, 2009). This and other studies show that economic and social benefits can be significant, yet may depend on local conditions, and when tourist agencies are involved, on the nature and terms of agreement.

In Malta, the potential for development of agro-tourism services benefiting from landscape beauty which could take place in rural settings, such as rural accommodation, open-air recreation and sports, cultural excursions and the marketing of food items and crafts from local cottage industries, appears largely untapped in comparison to mainstream tourism enterprises. The small-scale, authentic nature of agro-tourism may be well suited to the fact that agriculture is for the greatest part a family initiative in Malta. One should ensure however that this development be subject to strict conditions of compliance and monitoring to avoid additional urban-like encroachment in the countryside. While this subsector may not be large, the participation of farmers and rural land managers in the provision of such services would increase rural wealth that could be reinvested in agriculture and provide added leverage for the conservation of Malta's rural landscapes.

7.3.2 Biodiversity conservation

It is well known that agricultural practices on a global scale have been responsible for a drastic reduction of wild habitat in landscapes which is critical to biological diversity. At the same time, there is mounting evidence that a variety of agricultural production systems have neutral or positive influence on the conservation of wild biodiversity (McNeely and Scherr, 2003).

Since the 1980s, major efforts have been undertaken in Malta to document the diversity of species supported by Maltese habitats, as well as plan and regulate their conservation. Despite their small size, the Maltese islands harbour a relatively large number of terrestrial plants and animals. They are also subject to very high urbanization pressure resulting in the rapid decline of numbers and distribution ranges of vascular plants over recent years. Malta has the largest number of threatened and extinct plant species among Mediterranean islands (RDD, 2007). Even though still largely unquantified, agricultural land plays an important role in sustaining the diversity of many plant and animal species. Fields, whether cultivated or abandoned, provide food supplies as well as breeding ground for a number of breeding birds and other taxa. Besides their value for soil conservation, rubble walls and other rural structures provide habitat for a string of important species of amphibians (Painted frog

Discoglossus pictus pictus), reptiles (Moorish gecko, *Tarentola mauritanica*; the endemic Maltese wall lizard, *Podarcis filfolensis*; the ocellated skink, *Chalcides ocellatus;* Western whip snake, *Coluber viridiflavus;* the leopard snake, *Elaphe situla, etc.*), molluscs, insects and small mammals (shrews, weasel). The condition and density of retaining rubble walls and border trees (carob, prickly pear, *etc.*) appear to be an effective indicator of the conservation value of farmland (RDD, 2007).

FAO (2007) recognizes three major categories of actions by which farmers can contribute to biodiversity conservation: 1) reducing agricultural expansion into biodiversity-rich lands; 2) promoting biodiversity-conserving agricultural management and 3) conserving agricultural biodiversity. Within the second category, in the Maltese context, PES can seek to provide ecosystem services of improved landscape connectivity for mobile species and habitat protection for terrestrial species through specific farm production and landscape management practices. Research aiming at identifying Maltese landscape and field characteristics (including corridors, patches of natural habitat, linear and scattered configurations of on-farm trees that favour various biodiversity profiles) would provide insights on possible agro-ecological and agroforestry interventions for enhancing conservation services.

Buyers of Environmental Services for biodiversity may include public sectors agencies (such as the Ministry of Rural Affairs for Agri-environment schemes), private sector companies having to offset their negative environmental impacts, private businesses to demonstrate environmental corporate responsibility, philanthropic buyers and consumers of eco-certified products (Scherr and McNeely, 2007). However, the development of biodiversity payments faces several constraints. Conditional payments rely on the need to demonstrate and measure the actual provision of biodiversity conservation services. However, knowledge about measurement of biodiversity remains limited and there is no established consensus on how to define 'units of biodiversity' on which to base market transactions. Implementation of biodiversity PES is hindered by high transaction costs, scale dependence from farm to landscape in order to achieve landscape conservation impacts, as well as the difficult farmer access to information about actors and conditions of these markets. Finally, the relative value of spending conservation funds in agricultural lands that may be considerably degraded rather than in more intact natural areas continues to be debated. Solutions to these barriers will thus need to be overcome in the crafting of locally-adapted PES mechanisms.

7.3.3 The case of Agri-Environment Schemes in Malta

In 2004-2006, the Rural Development Programme, supported up to 80% by the European Agricultural Guidance and Guarantee Fund (EAGGF) and up to 20% by the government, funded three agri-environment schemes which emphasized environmental sustainability in production methods in an overall pursuit of demand-oriented market competitiveness. Rather than paying farmers for the provision of documented environmental services, these agri-environment schemes offer cost-sharing options for the adoption of prescribed practices. In fact rates of support are calculated to offset additional costs, income forgone and transaction costs involved in applying the measures. These included the restoration of terraced rubble walls, the conservation of local species, and the promotion of organic farming. The first measure attracted the greatest number of applications and a total of 76,600 m² of rubble walls were restored in the first two years of the program. Interest grew in the third year and a total of 1,937 applications were registered overall, yet restoration activities for that year had not yet been validated in the field (RDD, 2007).

The initial programme was instrumental in generating several lessons for the design and targeting of environmental service incentives. First, requesting a 5-year commitment from farmers in the adoption of rubble wall conservation activities seemed inadequately suited to the highly dynamic nature of land ownership status of farms and the changing

socio-economic conditions faced by farmers over a 5-year term. Frequent deaths and land transfers among the ageing farmer population made the administration of the measure difficult. The small average size of farm holdings and their limited economic capacity for sharing the cost of investment also limited the range of obligations linked to the agri-environment measures which farmers could take on. The lack of clear land tenure security also deterred uptake of the measure (RDD, 2007).

In Malta's 2007-2013 Rural Development plan, the number of agri-environmental measures has expanded to nine to cater to various systems and increase uptake (RDD, 2007). These included support for the use of low or environmentally-friendly input systems, sulla and bee forage cultivation, and buffer strip conservation. Because it previously involved tedious field monitoring, heavy administration costs and significant financial investment for farmers, the measure for rubble walls no longer consists in restoration but only conservation through the maintenance of buffer strips. The maintenance of retaining rubble walls in good condition is a mandatory standard of Good Agricultural and Environmental Conditions and is a prerequisite for farmers to receive payment. This raises the question of knowing how farmers now successfully manage to maintain rubble walls without any financial support, although they could not easily afford this exercise in previous years while receiving a subsidy. Heavy time commitments to fulfil obligations, insufficient clarity and communication, and a confusing division of roles between institutions involved in the chain of operations were reported as high transaction costs in the 2004-2006 scheme (Role *et al.*, 2005). In order to reduce transaction costs, one recommends simplification of the rules, facilitation of buyer-seller linkages and exploitation of economies of scale (FAO, 2007).

7.4 Conclusions

While there has been a significant increase in PES programmes in recent years, the overall size of markets remains small. They have primarily originated from the public sector and complement approaches based on regulations and taxes. PES provide unique instruments to compensate farmers for off-site environmental benefits they provide, which are valued to external beneficiaries. In order to identify potential markets for environmental services in the Maltese agricultural landscapes, additional information is needed on the local economic potential of agro-tourism and how farmers and land managers can be supported to supply landscape beauty services and capture a greater portion of the rural tourism business. Research is also needed to assess the contribution of agricultural landscapes to, and the effect of farming practices on, biodiversity conservation, as well as watershed services (which were not considered here). This would precede the four steps needed in the process of designing effective PES which consist in identifying what should be paid for, who should be paid, how much should be paid, and what payment mechanisms should be used. Investments in the development of such innovative instruments could make a significant contribution to the economic revitalization of Maltese agricultural landscapes, reversing their degradation and finding the appreciation they deserve for the overall well-being of the local population.

References

Allali, K., 2009. Agricultural landscape externalities, agro-tourism and rural poverty reduction in Morocco. In: L. Lipper, T. Sakuyama, R. Stringer & D. Zilberman, eds. *Payment for environmental services in agricultural landscapes: economic policies and poverty reduction in developing countries. Natural Resource Management and Policy Series, Vol. 31*. New York: Springer and FAO, pp.189-220.

Delia, E.P., 2005. *The economic relevance of agriculture for Malta's economy*. Occasional Paper 5. Malta: APS Bank.

FAO, 2007. *The state of food and agriculture: paying farmers for environmental services*. FAO Agriculture Series No. 38. Rome: FAO.

FAO, 2010. *Payments for environmental services (PES) from agricultural landscapes*. [Online] Available at: http://www.fao.org/es/esa/pesal/ESmarkets8.html

Landell-Mills, N. & Porras, I.T., 2002. *Silver bullet or fools' gold? A global review of markets for forest environmental services and their impact on the poor. Instruments for sustainable private sector forestry series*. London: International Institute for Environment and Development.

Millennium Ecosystem Assessment, 2005. *Ecosystems and Human Well-Being: Synthesis*. [Internet] Washington DC: Island Press. Available at: http://www.maweb.org/documents/document.356.aspx.pdf

McNeely, J. & Scherr, S., 2003. *Eco-agriculture: strategies for feeding the world and conserving wild biodiversity*. Washington DC: Island Press.

Role, A., Attard, G., Muscat, J., Camilleri, S., Sammut, S., Camilleri, P. & Scicluna, K., 2005. Sustainable rural land management in the Maltese Islands: an evaluation of policy instruments and future needs. In: P. Zdruli & G.T. Liuzzi, eds. *Proceedings of the MEDCOASTLAND workshop on drafting appropriate policies and guidelines to support sustainable land management in the Mediterranean Region*. Bari, Italy, 6-11 September 2005. Italy: IAMB.

Rural Development Department, 2007. *Rural Development Programme for Malta 2007-2013*. Malta: Ministry for Rural Affairs and the Environment.

Schembri, P.J., 1997. The Maltese Islands: climate, vegetation and landscape. *GeoJournal*, 41 (2), pp.115-125.

Sherr, S. & McNeely, J., 2007. *Farming with nature: the science and practice of ecoagriculture*. Washington DC: Island Press.

Swallow, B., Kallesoe, M., Iftikhar, U., van Noordwijk, M., Bracer, C., Scherr, S., Raju, K.V., Poats, S., Duraiappah, A., Ochieng, B., Mallee, H. & Rumley, R., 2007. *Compensation and rewards for environmental services in the developing world: framing pan-tropical analysis and comparison*. ICRAF Working Paper no. 32. Nairobi: World Agroforestry Centre.

Wunder, S., 2005. *Payments for environmental services: Some nuts and bolts*. CIFOR Occasional Paper No. 42. Indonesia: Center for International Forestry Research.

Chapter 8

Landscapes and Sustainability

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"Landscapes are culture before they are nature - constructs of the imagination projected onto wood and water and rock"
Simon Schama (1995: page 61)

Landscape is obviously something physical – comprising wood, water and rock as Schama states – but it is experienced by people who either live and travel in that landscape or who see it from afar. What some may see as beauty, others can see with fear and trepidation. For example, Schama argues that forest landscapes help foster strong ethnic identities. They embody what we cannot control. Even in our darkest moments this resonance is with us. This may seem like odd language to those of us schooled to think of landscapes in more physical and scientific terms, as things that can be measured and assessed. However, for those who doubt the points made by Schama, the following is taken from a German 1923 recruitment poster for woodlands preservation.

"In every German breast the German forest quivers with its caverns and ravines, crags and boulders, waters and winds, legends and fairy tales, with its songs and its melodies, and awakens a powerful yearning and a longing for home; in all German souls the German forest lives and weaves with its depth and breadth, its stillness and strength, its might and dignity, its riches and its beauty - it is the source of German inwardness, of the German soul, of German freedom. Therefore protect and care for the German forest for the sake of the elders and the youth, and join the new German 'League for the Protection and Consecration of the German Forest'".
Reproduced in Joachim Wolschke-Bulmahn, Auf der Suche nach Arkadien, München, 1990, p. 147, and cited in Staudenmaier (1995)

While the link between the natural and the national may be disconcerting in the turbulent days of the Weimar Republic immediately following the 1st World War, there is nonetheless a great deal of evocative language used. The quote speaks of forest as more than just a landscape of wood, water and rock or an ecosystem of plants and animals. We have an association with fairy tales, songs and melodies and even a *"powerful yearning and a longing for home"*. Later in 1942 during the much darker days of the Third Reich, we have the following edict from Himmler (he of SS infamy), referring to German settlement of the newly conquered territories in Poland:

"The peasant of our racial stock has always carefully endeavoured to increase the natural powers of the soil, plants, and animals, and to preserve the balance of the whole of nature. For him, respect for divine creation is the measure of all culture. If, therefore, the new Lebensräume (living spaces) are to become a homeland for our settlers, the planned arrangement of the landscape to keep it

close to nature is a decisive prerequisite. It is one of the bases for fortifying the German Volk"
Quoted in Heinz Haushofer, Ideengeschichte der Agrarwirtschaft und Agrarpolitik im deutschen Sprachgebiet, Band II, München, 1958, p. 266. Cited in Staudenmaier (1995). Emphasis in the text is mine.

The step from 1923 to 1942 is a large one in many ways of course, not least being the link to Nazi ideology of '*living space*', but there are common elements in both of these quotes. Nationalism is fused with naturalism and people are fused with landscape, and landscape should be kept close to some ideal sense of being close to nature. Despite the controversial source of the above quotation, this vision of landscape is actually not a million miles away from more modern views. The following is from the European Landscape Convention, also known as the Florence Convention, of the Council of Europe (2000):

"the landscape contributes to the formation of local cultures and that it is a basic component of the European natural and cultural heritage, contributing to human well-being and consolidation of the European identity."

Landscapes have thus long been viewed as multi-functional, integrating ecological, economic, socio-cultural, historical and aesthetic dimensions (Fry, 2001; Brandt and Vejre, 2003), rather than being one-dimensional physical entities of wood, water and rock. Indeed the notion that landscape is socially rather than just physically constructed does have much in common with the more modern vision of sustainability so the two should be compatible. At one level we all think we know what sustainability means. Ask for associations and you will hear phrases such as the following:

- Rainforest
- Pollution
- Global warming
- Airport expansion
- Credit Crunch
- Polar bears
- Ice melting
- Traffic

What do all these have in common? They all embody a feeling of decline, of things getting worse, both in terms of the environment and in terms of our quality of life:

- Rainforest – *deforestation, loss of livelihood for indigenous groups, greed*
- Pollution – *ugly, smell, lung and skin diseases, cancer*
- Global warming – *change in climate, flooding, financial costs*
- Airport expansion – *pollution, noise, traffic congestion, danger*
- Credit crunch – *unemployment, decline in income and standard of living, unfairness*
- Polar bears – *sea ice melting as a result of global warming, sense of loss*
- Traffic – *noise, air pollution, smell, disease, accidents*

When reading this you will know in your mind what these terms mean especially if you are one of those affected. Indeed aren't they obvious and indisputable? Surely everyone must think the same way I do? But do they? Someone using their car to commute every day to work will decry traffic congestion but will not want to take their car off the road. I still want to fly to my holiday destination each year but I would also readily agree that air traffic (and airports) shouldn't be expanded. Surely I am just one person. I can carry on with what I do without making much difference. Let the costs be carried by others who are having a much greater impact than I am.

This innate conflict within our modern vision of sustainability is inherent within what is still the mostly widely quoted definition of sustainable development:

"development that meets the needs of the present without compromising the ability of future generations to meet their own needs."
WCED (1987)

Thus what is done now to improve our lives should not be at the disadvantage of our children, their children and so on. The assumption is that there is an inter-generational conflict of interest that needs to be resolved. While this definition does not speak explicitly of equity within a single

generation, others have stressed that this is critical; one group should not be allowed to exploit another. Thus we could simply add the keyword 'all' and have:

"development that meets the needs of all those living in the present without compromising the ability of all those living in future generations to meet their own needs."

However, 'need' is a very subjective word that can mean many things to different people. Thus the definition is vague. Modern definitions of landscape have a resonance with this sense of dynamism, interaction and vagueness:

"[Landscape is] ...an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors".
European Landscape Convention [Council of Europe, 2000]

Putting the two together gives us a definition of a sustainable landscape:

"[Sustainable Landscape is].....an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors and which meets the needs of all those living in the present without compromising the ability of all those living in future generations to meet their own needs."

This definition brings out the notion of the 'use' of a landscape, even if it is only in terms of its aesthetic attractiveness and as a factor in cultural heritage. Others are more explicit in their vision of landscape as an economic resource:

"landscape has an important public interest role in the cultural, ecological, environmental and social fields, and constitutes a resource favourable to economic activity and whose protection, management and planning can contribute to job creation".
European Landscape Convention [Council of Europe 2000]

But as ever with vague definitions there are so many shades of grey. Compare Plates 8.1, 8.2 and 8.3 for instance. These three photographs have elements in common, not least of which is their attractiveness. They have also been taken relatively close together in terms of both space and time [within a few days of each other]. All three landscapes show elements of human interaction with the environment. In Plate 8.1 the fields you see almost carved into the hillside are abandoned vineyards; they were no longer economically viable. If left alone, the abandoned fields in Plate 8.1 will gradually pass through a process of succession towards a climax vegetation; first into scrub and, eventually, woodland. Plate 8.2 has what at first looks like an artificial lake, but which is in fact a natural volcanic sinkhole. In the background you can see human habitation [the town of Meerfeld] and fields. The fencing, cultivation and habitation all point towards human modification of the landscape, and it is easy to imagine why people would want to live in such a marvellous setting. At first glance, the third photograph [Plate 8.3] looks the most 'natural' of those presented here, at least when defined in terms of modification by humans. At the back left there are some fields, but the photo is dominated by woodland and in the immediate foreground there is long grass and bushes. In fact this area is grazed and it is the grazing which stops the succession process. Even the woodland areas are managed through planting and logging. Thus, we have a range of dynamics or pressures operating in these photographs – economic, social and natural – all working at different time-scales and intensities.

So which of these areas is sustainable and which is unsustainable according to my definition above? Well none of them is static – frozen in time – and arguably the landscape in Plate 8.1 is not sustainable as it has clearly not met the needs of the present generation [the vineyards are no longer economically viable] and thus will change. The farmers have lost that source of income as well as any investment they may have made in those vineyards. But here we have the power of perspective. For the farmers working those fields, the landscape as a resource [more accurately the south-facing slopes of the hills] has not been shown to be sustainable but for us wanting to have an attractive landscape to look at and experience, the loss of the vineyards may not necessarily be a bad thing. Plates 8.2 and 8.3 may appear to offer the more sustainable

examples but if management changes then so will the landscape. Would we want to have a uniform climax vegetation across these pictures or would we prefer the patchwork of fields, scrub and woodland currently on view? If the latter then who pays for such a patchwork if the value of that landscape as an economic resource declines? There are a multitude of viewpoints, and in my experience it is always enlightening how little we appreciate what others think.

These three photographs illustrate the problems of translating compact one sentence definitions into reality. The definition may look neat and tidy but sustainability has been plagued by this uncertainty over meaning as well as the nature and relative importance of dynamics that may be at play. We can even see it in high politics. The following is an extract from an interview which Sarah Palin, a US Vice-Presidential candidate, gave to *Newsmax*.

"A changing environment will affect Alaska more than any other state, because of our location. I'm not one though who would attribute it to being man-made."

Sarah Palin, (August 29th 2008)
(www.newsmax.com/headlines/sarah_palin_vp/2008/08/29/126139.html)

While accepting global warming as a reality, this senior politician was still not convinced by the scientific evidence that points towards a major contribution from human beings to global warming. Why is she able to say this? Well simply because the scientific proof is not 100% conclusive. The complexity of the global climate and the dynamics involved only allow us to make best estimates. The following is a quote from the Intergovernmental Panel on Climate Change publication of 2007 (summary version for policy makers).

"Most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic [man made] GHG [greenhouse gas] concentrations. It is likely that there has been significant anthropogenic warming over the past 50 years averaged over each continent (except Antarctica)."

In this report 'very likely' is defined as *"the assessed likelihood, using expert judgment"* of 90% and 'likely' as being 66%. But 90% and 66% are not the same as 100%, and the difference is – by definition – uncertainty. This provides the 'wiggle room' which politicians can exploit for whatever motive.

So what is the answer? On the one hand you could argue that diversity in meaning of sustainability is not necessarily a bad thing. People are different and forcing through one single precise definition (one size fits all) would not be a good move as it is not inclusive. A sustainable landscape will mean different things across society and that is not a problem but an illustration of the richness of the world in which we live. On the other hand, when faced with large-scale pressures such as global warming, is it right to use a small degree of uncertainly in scientific evidence to block ameliorative action? The result of this confusing maelstrom has more often than not been a focus upon some key indicators. The advantage here is that once a set of indicators have been agreed upon (by whom is something of a moot point which is beyond the space available to us here to discuss), they can be measured on a routine basis and used to embody some sense of the quality and/or utility of landscape. They are the numerical alternative to the photographs in Plates 8.1, 8.2 and 8.3; we measure rather than just look.

An example of a set of landscape indicators designed to be applied in the EU is provided by Piorr (2003) and a summary is given here as Table 8.1. The list is in many ways a fairly typical example of such efforts to generate indicators for all sorts of contexts.

The list provides some example indicator categories under 5 themes, only one of which (number 4) is based on 'historical-cultural' features. Themes 1, 2 and 3 are essentially physical measures of the landscape – what is in it and how has it changed? Even the historical-cultural category is very physical in the sense that it measures items (numbers, length or area of them) deemed to be important. The 5th category is focused

Table 8.1 Example of a suite of landscape indicators (adapted from Piorr, 2003).

	Theme	Some example indicators
1	**Landscape composition**	Stock and change in arable land, grassland, forest, built up areas.
2	**Landscape configuration**	Measures of diversity, shape of agricultural parcels, fragmentation
3	**Natural landscape features**	Stock and change of semi-natural, natural and valuable habitats
4	**Historical-cultural landscape features**	Stock and change of historical-cultural features (area, length, number)
5	**Landscape management, conservation and protection**	Change in financial expenditure on agri-environmental schemes and area covered by such schemes Area under specific farming practices Number of farmers taking part in training schemes related to environmental practice

on issues related to management of agri-environmental schemes (expenditure, area, training). The language in the table and the assumptions that rest behind it seem to be far removed from the more flowery language given in the earlier quotations. The indicators are all about making the landscape a more touchable feature, something that can be measured and compared over time and space. They have been designed as an input into management and policy at EU level. This is landscape as nature first and culture second.

But while such indicators do have logic, at least in theoretical terms, just imagine the work involved in putting them into practice. As an exercise I would ask the reader to look again at the photographs in Plates 8.1, 8.2 and 8.3 and to think about how difficult it would be to measure the indicator examples in Table 8.1. Taking the themes in sequence, the first (landscape composition) would perhaps be the easiest as figures for the stock and change in arable land, grassland, forest, and so forth, could be gleaned from aerial photographs. Plate 8.4 is an aerial photograph of the landscape in Plate 8.1, with an arrow showing the approximate direction of the photograph. It is relatively easy to discern woodland, cultivated and abandoned fields, as well as roads, rivers and urban areas in Plate 8.4, and thus they can be measured if we take the two rivers as the boundary.

The second category of Table 8.1 includes indicators (such as measures of diversity and fragmentation) that are more complex as they require identification of plant communities down to species level. The third category could also be addressed with aerial photography although the categories are not so readily applied as those of the first category. What does 'natural' mean in this context and how is it distinguished from 'semi-natural'? Once these have been defined 'on the ground' then aerial photography can be employed for measurement. Similar subjectivity applies to the fourth category – stock and change of historical-cultural features (area, length or number of them). Who decides what these features are? The fifth category is also relatively easy to assess, or at least the examples given here are, given that records have to be kept of expenditure, area associated with that expenditure, attendance on training programmes, *etc.* Thus the apparently simple list of indicators in Table 8.1 comprise a mix of difficulties when it comes to measurement and this is before we even think about the resources required to make this a reality.

Finally, let's assume that all these indicators can be measured and we have the resources to do it. The final question we need to address is how would we use these indicators to influence policy. Just what do we want? We need to have some idea of what we would like the values of the indicators to be in order to be able to identify those which are ok and those which need to be addressed. Once we know which indicators need to be improved the question becomes how best to do it. Clearly there are balances between technical and economic effectiveness to consider, but that is another story.

Thus we have both 'soft' views of landscape as typified by the writing of Schama (1995) and others, and a 'hard' vision as described by Piorr (2003). On the one hand we have culture and romance and on the other we have measurable indicators. One talks about landscape in very human terms employing the media of words and imagery, while the other employs numbers. Sustainability interweaves through all of this; it is all about what people think, believe and dream about landscape as well as what they can see and measure. In a nutshell this brief story of the duality of landscape as a place highlights the central conundrum of sustainability we so often see today. As Piorr (2003; page 24) puts it;

"Landscape – mystic view or scientific approach?"

For sustainability, the answer has to be both...

References

Brandt, J. & Vejre, H., 2003. *Multifunctional landscapes - Volume I: theory, values and history.* Advances in Ecological Sciences Vol 14. Southampton: WIT Press.

Council of Europe, 2000. *European Landscape Convention.* [Online]
Available at: http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm
[Accessed 22 October 2009].

Fry, G.L.A., 2001. Multifunctional landscapes—towards transdisciplinary research. *Landscape and Urban Planning,* 57, pp.159-168.

Intergovernmental Panel on Climate Change, 2007. *Climate Change 2007: Synthesis Report; Summary for Policymakers.* Geneva: IPCC.

Piorr, H-P., 2003. Environmental policy, agri-environmental indicators and landscape indicators. *Agriculture, Ecosystems and Environment,* 98, pp.17-33.

Schama, S., 1995. *Landscape and memory.* New York: Knopf.

Staudenmaier, P., 1995. Fascist ecology: the "Green Wing" of the Nazi Party and its historical antecedents. In: J. Biehl & P. Staudenmaier, eds. *Ecofascism: lessons from the German experience.* Edinburgh: AK Press, pp.5-31.

World Commission on Environment and Development (WCED), 1987. *Our common future.* Oxford: Oxford University Press.

Chapter 9

The European Landscape Convention

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9.1 Introduction

Conventions are international treaties that establish legal obligations between countries. The European Landscape Convention (ELC) is a treaty open for member states of the Council of Europe, which currently comprises 47 countries (Council of Europe, 2000).

The ELC is the first international treaty to be exclusively concerned with all dimensions of European landscape. It was opened for signature in Florence on 20th October 2000 and came into force on 1st March 2004. Its provisions apply to all areas, urban, peri-urban and rural, both on land and water. The Convention challenges countries to address the planning, management and protection of landscapes in an integrated way, and to have regard for all landscapes be they remarkable or ordinary, blighted or in fine condition. Furthermore, it encourages the active and democratic engagement of people in these processes with the overall emphasis being put on improving the *quality* of landscapes and co-operation between countries in setting standards and sharing experience.

The Convention was adopted in Florence (Italy) on 20th October 2000, on the occasion of the first 10 European states confirming their active support for implementing its provisions. By August 2010, 31 countries had signed and ratified the ELC with a further 7 having signed but not ratified, leaving 9 countries yet to sign. Plate 9.1 illustrates the state of the Convention as of August 2010.

9.2 Aims and objectives of the Convention

The Convention seeks to improve the quality of life and well being of European citizens. It reflects the values of the Council of Europe and regards landscape as a common inheritance. Landscapes impact on the quality of our lives, be they the places we live and work in, or visit on holiday or for business. The Convention emphasizes the importance of involving people in recording the character of local landscapes, in order to help raise public awareness and understanding of their diversity and natural and cultural qualities. Encouraging assessments of landscape character is one of the key purposes of the Convention. Character assessments provide the basis from which to set objectives to help raise the quality our landscapes.

The diversity and quality of the cultural and natural values that exist in European landscapes are widely regarded as one of Europe's most important contributions to world heritage and civilization. European countries have a duty under the Convention to make collective provisions for the protection, management and planning of this heritage and the values it enshrines. All signatories to the Convention are

expected to demonstrate their commitment to these objectives, and to achieving sustainable development based on a harmonious relationship between social needs, economic activity and environmental conservation.

9.3 Gestation

The call for a European Landscape Convention first arose in the early 1990s (Phillips, 1992). It came about because of growing concerns about the loss of natural and cultural landscapes across Europe. The implementation of European Union policies, such as the Common Agricultural Policy (CAP), were held responsible for bringing about these changes at a time when controls to regulate the environmental impacts were weak or non-existent (Roberts, 2003).

In June 1991, the European Union's European Environment Agency published a report entitled *'Europe's environment: the Dobříš assessment'* (EEA, 1995). This provided an in-depth analysis of the state of, and, worsening prospects, for the environment in Europe. It concluded with a request that the Council of Europe should take the lead in drawing up a convention on rural landscapes. Other groups representing local and regional authorities and non-governmental organizations throughout Europe supported this, and in July 1999, the Committee of Ministers of the Council of Europe agreed to establish a Select Committee of experts to draft the European Landscape Convention. This Committee was asked to pay particular attention to the drafting of articles concerning the implementation of the Convention and the identification of landscapes of European interest.[1]

Until this time, the approach to the conservation of landscapes adopted by most European countries was limited in scope and dominated by the designation of special areas set aside for strict protection. This 'fortress approach', still popular among nature conservationists, has proved to be less successful in places where the needs of people and nature need to be balanced. For this reason the designation of protected areas can alienate local interests and can be seen as being too exclusive (IUCN, 2005). The ELC is different. It adopts a refreshingly progressive and constructive approach to the planning, management and protection of landscapes. It acknowledges that landscapes change as society changes, and calls for landscapes to be managed in more integrated and complimentary ways.

The Convention also seeks to ensure that people can become more directly involved in landscape issues, so that they come to value landscapes, and appreciate them better. For this to happen it is necessary for people to be given rights and opportunities to engage in landscape issues readily and directly, thereby raising their awareness and understanding of the drivers that bring about changes in landscape. Empowering the public to become involved in the political processes that bring about landscape change is seen to be key. The Council of Europe believes that *"Landscape must become a mainstream political concern, since it plays an important role in the well-being of Europeans who are no longer prepared to tolerate the alteration of their surroundings by technical and economic developments in which they have had no say. Landscape is the concern of all and lends itself to democratic treatment, particularly at local and regional level"*.

9.4 Implementing the Convention

The ELC has reached the third, critical stage, in its gestation – its implementation phase. Stage one, which began in the early 1990s witnessed the emergence of the concept and development of the idea of a Convention. Stage two involved its drafting and debates about its scope culminating in the launch of the Convention in Florence in October 2000. This milestone marked the beginning of the third critically important implementation phase. Not all has gone smoothly since then, and for various reasons, almost one fifth of European countries have yet to sign the Convention. While it would

1 The 676th meeting of the Council of Ministers held in Strasbourg on 1st and 2nd July 1999.

Figure 9.1 Twelve things needed to make a reality of the ELC. Source: (after Dower, 2007)

12 THINGS NEEDED TO MAKE A REALITY OF THE ELC

Action by Governments individually	Action by all, for all landscapes	The essential supportive context	Action by Governments collectively
1: recognise landscapes by law	3: identify landscapes	10: promote education and training	12: co-operate in Europe
2: integrate landscape into policy	4: assess landscapes	11: raise awareness, understanding and involvement	
	5: set landscape quality objectives		
	6: protect		
	7: manage		
	8: plan		
	9: monitor change		

appear at face value that the lack of unanimity within the Council of Europe seems prejudicial to the success of the Convention, there remains much to be optimistic about (Roberts, 2008).

A closer analysis of the strengths, weaknesses, opportunities and threats (SWOT) surrounding the Convention lend support to the argument that the overall benefits of implementing its provisions far outweigh dis-benefits. One of the **strengths** of the Convention is that not prescriptive and, unlike EU Directives, not reliant on regulatory processes. Landscape connects people and place (nature) and is a concept to which most people can relate and because of this, provides a holistic focus for social, economic and environmental discussion. A **weakness** with the Convention is that it lacks bite. Failure to comply with the Convention has no direct adverse economic consequences as compared, for example, with the penalties that can be imposed on EU countries if they fail to comply with an EU Directive. Landscape still remains a slippery notion. As a concept it is broadly understood but reveals itself to be full of subjectivity when it comes down to securing consensus about development decisions. This explains why landscape visions are rare, why it is difficult to identify best practice exemplars for setting local landscape quality objectives and the monitoring of landscape policies is generally poor. However, there are signs that these weaknesses are being addressed.

Opportunities to better understand landscapes are fast emerging and 'landscape' is increasingly being recognized as an 'integrating tool' in EU policies and funding programmes. This in turn has allowed exemplar case studies to emerge to further inform good practice and 'networks' to be established across Europe in support of the ELC. Scepticism among politicians is one of the biggest **threats** facing the Convention's long term success. EU demands continue to take priority over the ELC because non-compliance with EU Directives, such as the Habitats and Species Directive, can result in the European Commission withdrawing EU funding to these regions. For this reason nature and cultural (landscape) conservation interests can find

themselves in competition too (Scazzosi, 2001). This is a problem which becomes even more exacerbating when 'landscape' is too narrowly defined, when the planning and management of landscapes are perceived to be synonymous with the conservation of nature and a constraint on development.

9.5 Future challenges

Making a reality of the ELC is about implementing 12 things. (Dower, 2008) These are broadly prescribed in the general and specific measures set out in the Articles of the Convention. The key ones dealing with national measures are covered by Articles 4 - 6 and those dealing with international co-operation, in Articles 7 - 9. Figure 9.1 summarizes the sequence and relationship of these activities.

The successful implementation begins with states ensuring that landscapes are recognized in law, that landscape considerations are enshrined in policy, and that provision exists for the public to engage in the formulation of these policies (Article 5).

This legislative and policy framework should provide opportunities for civil society, local and regional government, and non-governmental organizations to engage in landscape issues by identifying and assessing landscapes and setting quality objectives for their planning, management and protection. These specific measures are set out in Article 6 of the Convention. They are to be supported by measures to raise public awareness and understanding of landscapes and underpinned by landscape training and education through schools and colleges and professional institutions.

The planning, management and protection of our environment requires an international as well as local perspective. The co-operation of European states is crucial to the success of the Convention. Parties are expected to undertake to co-operate in the landscape dimension of international policies and programmes such as those to do with mitigating the adverse impacts of global warming. Mutual assistance and exchange of information is emphasized, too with states being expected to render each other technical and scientific assistance, promote exchanges and share good practice experience. Parties are also encouraged to co-operate in preparing and implementing joint transfrontier landscape programmes such as those to do with the planning and management of rivers, coastal areas, and wildlife conservation.

The Articles of the ELC needs to be planned as a package rather than delivered incrementally. Achieving 'good practice' is about implementing the provisions of the Convention in their entirety. Achieving 'best practice' is doing so with aplomb to a high quality standard and consistently well. As the benefits of the ELC are becoming better appreciated, networks are developing in support of the Convention. Web links to three of the most important European wide networks working in support of the implementation of the ELC are given below.[2]

9.6 Conclusions

The ELC is fundamentally about the connections between people and place but with the emphasis on people. The ELC provides an unrivaled platform to engage with communities about contemporary social, economic and environmental issues that concern them. However, for this to happen and for the benefits of the ELC to be fully realized there is a need for the profile of landscape and landscape matters to be raised on the agendas of European Governments in general and the EU in particular (Wascher and Pedroli, 2008). Politicians should welcome this because the Convention calls for an essential rethinking of the main approaches

2 RECEP-ENELC: European Network of Local and Regional Authorities in support of the implementation of the European Landscape Convention (http://www.recep-enelc.net);
UNISCAPE: European Network of Universities in support of the implementation of the European Landscape Convention (http://www.uniscape.net)
CIVILSCAPE: European Network of Non Governmental Organizations in support of the European landscape Convention (http://civilscape.net)

to landscape planning that have traditionally been prevalent in Europe (Scazzosi, 2001). It heralds a paradigm shift away from policies aimed primarily at protection and conservation, towards more integrated and multi-functional approaches to the planning and management of landscapes, informed by past experience and contemporary public attitudes. The role of people in this process is central because it is for them that these landscapes function and have their *raison d'etre*. As the needs of European society changes so will its landscapes. The challenge is to ensure that we recognize and understand the drivers of change, like global warming, so that we can plan, manage and protect our landscapes better (*i.e.* their quality is improved) and that, in turn, brings about a better quality of life for our citizens, too.

References

Brown, J., Mitchell, N. & Beresford, M. eds., 2005. *The protected landscape approach linking nature, culture and community. Mitchell and Michael.* Gland, Switzerland: IUCN.

Council of Europe, 2000. *European Landscape Convention.* [Online]
Available at: http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm
[Accessed 1 May 2009].

EEA, 1995. *Europe's environment, the Dobris assessment.* Copenhagen: European Environment Agency.

Dower, M., 2007. Taking stock, taking opportunities. In: *Landscape Research Group Conference on the European Landscape Convention.* Sheffield, November 2007. Oxford: Landscape Research Group Ltd.

Phillips, A., 1992. Proposal for a convention for the conservation of the rural landscapes of Europe. *Paysage & Amenagement*, 21, pp.94-101.

Roberts, G., 2003. Sustainable landscapes in an enlarged Europe – the Landscape Research Group/Czech Institute for Landscape Ecology Symposium. *Landscape Research*, 28 (3), pp.273-278.

Roberts, G., Scott, A., Hughes, E. & Howard, P., 2009. *Identifying good practice from countries implementing the European Landscape Convention - report to the Scottish Government by the International Centre for Protected Landscapes.* Edinburgh: The Scottish Government.

Scazzosi, L., 2001. *Politiche e culture del paesaggio.* Rome: Gangemi.

Wascher, D. & Pedroli, B., 2008. *Blueprint for Euroscape 2020- Reframing the future of European landscape – policy visions and research support.* Waggeningen: Landscape Europe.

Chapter 10

The Landscape is a Verb, not a Noun

Critical Reflections on Landscape and Visual Impact Assessment in the Environmental Impact Assessment Process

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10.1 Prologue

Landscapes have long occupied a very important position in planning policies, objectives and decisions. This is because they are very important to us; indeed many view planning as mainly being a means of protecting landscapes. This attitude has converged with more recent concerns to protect a broader understanding of the environment - of which landscape issues are but one part - though the underlying protectionist sentiment still prevails. One of the main reasons for the landscape's importance is that it seems to be an easily understood summary of the complexity of the environment. People who might be nervous expressing opinions about ecology, heritage or water quality, for example, confidently express very strong views about whether a new development might fit in with or spoil the view. Landscape is the environmental topic for Everyman.

This chapter provides some reflections on why it is important to question some of the assumptions that are used when making decisions that affect the landscape. It also draws attention to the uncertainty that surrounds many of the methods used for assessing this topic - both for planning and decision-making. It is important not to confuse the strength of our feelings about landscape with the confidence that we can place in its role as a criterion for either planning policy or decision-making about individual projects.

10.2 Introduction to landscape effects

We begin by making sure that we are all talking about the same thing. Professionals who work on landscape effects are always careful to say that they examine effects on the 'appearance and character' of the area. They say this to emphasize that landscape is about much more than just how the countryside looks. It is also about how it affects our senses through sounds, smells or traffic, for instance. Remember too that landscapes almost always have meanings for people - who think of them as being beautiful, bountiful, natural or historic, for instance. The character of the landscape can be important to people at a deeply emotional level. Indeed they will often react vigorously if they perceive a threat to the character of a landscape that they value. In defence they will cite potential effects on appearance, history or ecology - but what they really mean is that they feel uneasy at the prospect of the landscape's character changing.

This presents a fundamental difficulty that lies at the heart of any discussion about landscape and visual impact assessment. Landscapes change, as they always have, and they always will. Trying to stop such change can be a misconceived effort - one that can cause significant distress and division in society. Landscape and Visual Impact Assessment [LVIA] and the associated Landscape Character

Assessments [LCA] are the principle weapons employed when opinions are contested and therefore are the subject of closer scrutiny here. This chapter will provide an overview of the methods (and limitations) of LVIA and LCA where relevant. It will also attempt to argue that the solution to this persistent problem does not lie in the assessment of the effects of projects or in the designation of landscapes. In reality any potential resolution lies elsewhere, namely in a recognition that changes in appearance - and resultant conflicts - are mere symptoms of deeper processes and of contested value systems. Addressing the fear of landscape changes requires an increasingly urbanized society to engage in trying to understand and to accept the needs of those who change landscapes – particularly those rural societies who live in, own and depend on these landscapes for a livelihood.

Only by first putting in place structures that accept and acknowledge the constantly changing nature of landscapes and then seeking to constructively manage that change will there be a resolution. This involves trying to avoid thinking of the countryside as a static object – a *noun*. It may be more fruitful to think of 'landscape' as the description of an activity – a *verb*, a series of processes that constantly, if slowly, change it. This points to a way forward – protect the process of landscape formation and renewal – but not the landscape itself. Preservation and conservation may be appropriate strategies for dealing with objects like statues, monuments or buildings – but not for living landscapes that are owned, used and valued by many people. Landscapes cannot be preserved or protected, instead they need to be managed as they are constantly changed and renewed.

10.3 Two fundamental challenges

Most of the other topics addressed in Environmental Assessment are essentially scientific in nature, such as studying data on the existing condition of air, noise or water, or making predictions of the likely effects of additional pollution loads due to new developments. Assessing landscape impact is a different and more difficult endeavour on account of two fundamental characteristics of the landscape. First, any assessment of effects needs to take account of objective as well as subjective concerns. This significantly affects the reliability of such assessments, compared to others that are based solely on factual evidence. Secondly, both the landscape and attitudes towards it change over time. These challenges are compounded by significant limitations to the methods used, which will be examined in the next section. All of these factors point to the need for caution when making important decisions solely on the basis of LVIA.

10.3.1 Subjective & objective concerns

LVIA looks at both data and opinions. The data have all of the characteristics of other scientific investigations, often called 'provability' - meaning that different investigators looking at the same facts will come to the same conclusions. Descriptions of the shape and colours of a project, for instance, fall into this category of factual knowledge - often referred as 'objective data', these are facts about the project in the receiving environment, such as location, topography, vegetation and potential visibility. This objective data provides reasonably reliable answers to the question – *'Will it be visible and will its colour or form be obtrusive?'*

However LVIA often tries to address a further question which might be expressed as *'Will it be acceptable?'* At this stage the assessment runs into much more difficult challenges because acceptability will depend on factors which arise from opinions about what is important and what is valued. This varies from person to person and from time to time. Such assessments are very different to those used for other environmental topics such as water or air for which acceptability depends on adherence to objective scientific standards [*e.g.* maximum permissible levels of lead in air].

Such assessments also beg the question *'Acceptable to whom?'* further pointing to the lower reliability of this form of assessment. It shows that

a farmer, builder, planner or ecologist might all make dramatically different assessments about the acceptability of the same project – which means that this is a subjective assessment – based on a combination of opinions and personal preferences. These inconstant standards present a barrier to reliable assessment, which is compounded by the changing nature of landscapes and our changing opinions about them.

10.3.2 Time and change

European landscapes, no matter how old they seem to be, are the product of continuous and continuing change due to humans and to climate for almost 10,000 years. Since the end of the last Ice Age most of Europe has been modified by humans for a much greater part of its existence than for any time that it existed as a natural landscape. For many people it is challenging to accept that the landscapes of Europe are much more human than natural. To make matters more complex, our ideas and values about the landscape also change over time. Today we value landscapes as part of our culture. This was not always so. The appreciation of landscape views and prospects is a relatively recent phenomenon – certainly less than 300 years old. The appreciation of the countryside as a habitat or a cultural landscape is even more recent.

Plans, policies or decisions that aim to protect or preserve landscape are attempting to stop this ancient process of change and renewal. Furthermore the bases for such protectionist aims are themselves inconstant. They vary from time to time, from culture to culture and even from person to person. The basis for judgments about the likely acceptability of landscape effects are highly subjective and must be treated with considerable caution - so too, the tools of the trade.

10.4 Tools of the trade

10.4.1 Landscape & Visual Impact Assessment

Impact Assessment is a misleading term. The word implies a judgement - based on facts. All forms of environmental assessment are actually predictions about the likely effects of projects that do not yet exist. They are in the future, but there are no facts about the future, there are only predictions, projections and speculation. The majority of environmental topics are based on strong empirical evidence that gives them a good predictive capacity, so that future effects can be reliably estimated based on past experience. LVIA is different because it combines objective predictions about effects with subjective speculations about likely preferences and responses. They predict whether something is likely to be visible and, if so, what it will look like and lastly whether that new view will be acceptable. Each of these stages is fraught with increasing uncertainty; indeed the latter issue – acceptability – is as subjective as to have virtually no meaningful level of predictive capacity. Below is a short overview of the major areas of uncertainty that limit the applicability of LVIA as a fundamental basis for policy or development control.

10.4.2 Visibility mapping

Mapping of the extent of the area from which a development is likely to be visible has many names – this is symptomatic of its limitations. Originally known as a Visual Envelope Map, then as a Zone of Visual Influence (ZVI) and, more recently, as a Zone of Theoretical Visibility (ZTV), such changes reflect attempts to address frequent challenges to the certainty that it appeared to offer. The predictive capacity – and hence the reliability – are limited by the quality of data about topography as well as detailed information on the height of buildings and structures and vegetation. Such predictions are further hampered by the effects of seasons, lighting conditions and weather. At best they provide a first order approximation.

10.4.3 Predicting appearance

It is possible to prepare detailed and highly realistic images that illustrate the likely future appearance of a development from a specific viewing point. These are useful for examining

the effects from a limited number of critical viewing positions. However they contribute little to an assessment of the effects on the overall landscape within which an almost infinite number of potential viewpoints exist. A further significant limitation of visualizations is that the visual prominence of features in the landscape is significantly affected by lighting conditions and weather. Thus, at best, visualizations can represent a view from a particular location at a particular time in particular weather conditions. There is no such thing as a fixed or single impact on the appearance or character of the landscape.

10.4.4 Significance of effects

Predictions, or descriptions, of the significance of effects are calibrated against standards. There is no equivalent for assessing the significance of landscape effects and the professional judgement of the assessor is normally used instead of reference to a standard. This is a significant and fundamental limitation to the objectivity of LVIA. Concerns about this limitation have led to the development of attempts to develop standardized landscape descriptions – called Landscape Character Assessments.

10.4.5 Character mapping

It was originally believed that scenic areas could be mapped so that they could be designated and protected by planning legislation. This practice has been gradually abandoned because of difficulties in creating legal restrictions on private rights to development based on value judgements about what was considered beautiful. Instead a practice has arisen of preparing maps of the character of the landscape (Landscape Character Assessment) in an attempt to delineate the location of factors that make areas different from each other. There is a significant element of subjective judgement in this practice – though this is more difficult to discern because much of the mapping combines many layers of scientific data – topography, vegetation, soils *etc.* Fundamental limitations remain. The most obvious is that the landscape is perceived in perspective, not in plan, which means that any view is likely to simultaneously include locations in many different character areas. This severely limits the applicability – or meaningfulness – of such mapping when making policies or decisions.

10.5 Accepting change

There is a strong urge to prevent change in landscapes that are valued, despite the reality that the landscape is always changing. This creates a series of tensions and difficulties for the public and their policy makers alike. The landscape is simultaneously a museum of our past culture and an art gallery of our emerging culture – our work in progress. The urge to protect landscapes is very strong because they form such a fundamental part of our identity. Changes to our landscape threaten our sense of everything that we think is good because it appears to be stable and familiar. Our hearts feel this – yet our heads tell us that this is not consistent with reality. The landscape that we cherish today was an uncomfortably modern new place for our forebearers. Our new landscapes will become the patrimony of future generations. From all of this emerge the challenges of trying to reconcile deep emotional urges to protect the comforting familiarity of the existing countryside while also pragmatically recognizing the necessity to nurture the emergence of new landscapes that meet new needs.

All of this would all be an interesting philosophical debate except for the growing influence of powerful legal instruments – such as EU Directives for Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA), together with formative instruments such as the European Landscape Convention. These threaten to give disproportionate influence to policies and assessments that aim to preserve and protect landscapes – often at the cost of sustaining the social and economic viability that are the *raison d'être* of most European landscapes. Of course this assumes that such policies and assessments are correct. They are not. It has been established here that

the fundamental objective of much landscape policy – prevention or control of change – is misguided. Furthermore the standards used for assessment are based on objective data of limited technical reliability. These limitations are combined with seldom acknowledged, but highly subjective value judgments in Landscape Character Assessment. These all lead to a low capacity to predict contemporary or future acceptability of likely impacts on the landscape.

If it is not feasible to preserve or protect landscapes what do we do? How do we mediate between inevitable forces of change and our deep emotional and cultural needs for continuing connections with the landscapes? What can we do if we cannot prevent our landscapes from changing? Can we find a way to accept and nurture new landscapes?

10.6 Nurturing the new

Changing the language helps to provide a better place to start from. Thinking of the landscape as a verb – a description of activity – rather than as a noun – a static object – may help to avoid the application of inappropriate legal mechanisms of the type that are often used to protect static objects and buildings. It may help us to move away from the fruitless idea of trying to protect the landscapes that we love by preventing change. It may help us to acknowledge such change as the normal characteristic of healthy communities who are continuing to adapt an ancient landscape to meet modern challenges. Landscapes can only be sustained when their dynamic characteristics – together with the social and economic needs of the communities who own and sustain them - are acknowledged, accepted and actively supported - instead of such needs being constrained.

Where change is acknowledged and accepted, it can be accommodated. Planning for a dynamic landscape means that change is anticipated and prepared for. The arrival of change is managed as a welcome means of sustaining and renewing ancient landscapes and giving them new life. Protection of the landscape by policies that seek to prevent change is bound to fail sooner or later. Repeated failures of policies that try to protect landscapes undermine the credibility of such planning systems. When change and development are anticipated and provided for, where there is training, as well as resources and vision to guide and manage change, then there will be success. This improves the credibility and effectiveness of plans.

10.6.1 One or many futures?

Landscape planning must avoid the pitfall of believing that, like an engineer or an architect's design, it must devise a strategy full of certainty and vision that will guide all efforts towards a specific, fixed and optimum future. Landscape planning that has completion as its objective will always fail - either by seeing its successes being overwritten by time or by being overtaken by the unanticipated needs of each new generation. Planning to accommodate a number of likely future scenarios is better because it is planning for success. Each abandoned future scenario is clearer confirmation of some other, more specific, direction. This increases certainty when preparing the next plan and that constitutes a success.

10.6.2 Protect or prepare?

Well-intentioned strategies for landscape protection and preservation – such as those arising on the basis of the European Landscape Convention - are based on the assumption of 'knowing what's best'. They often articulate the need for protection from what are sometimes thought of as 'ignorant' or 'careless' forces in society. Almost inevitably, the source of much of such change is the local population who lives in, owns and lives off the landscape and probably has done so for thousands of years. Ironically much of the knowledge and certainty that is used as the basis for protection is very new and moreover prone to rapid change. Specialists, agencies and the public are all capable of making mistakes. Yesterday's ideal is tomorrow's dogma and next year's 'old hat'.

Sensitive landscapes, fragile habitats or

significant monuments can indeed be excluded from change by erecting regulatory, procedural and physical fences around them - all of which require time, money and bureaucracy. These same landscapes may equally, if differently, be protected by placing the knowledge and the resources into the hands of the actors who will be likely to affect them. Training and trusting the local community, preparing them to change their own landscapes – mindful of the values of society at large is more sustainable and ultimately more successful - both for the environment and for society.

10.6.3...and natural beauty?

Landscapes please us, comfort us and amaze us. They refresh and sustain us by explaining who we are and where we have come from. They hold our memories and all of the wonders of nature for us to enjoy. When they are our home, we think that they are beautiful. But 'beauty' has no objective meaning. It does not exist except in our eyes and yet its loss is very real to us. Natural beauty is an exclusively human concept, it has no existence without us – but this is not to dismiss it. Instead this helps us to understand two important truths.

Our ideas about beauty can change because of what we know and learn. *"To know it is to love it"* is always true about the landscape and as we know more we love more – but differently. This reinforces the strategy already mentioned of protecting landscapes through education and preparation. People are less likely to harm what they love. There needs to be a more widespread understanding of how people own and use landscapes and how they have done so for millennia. Society needs to understand and accept that the countryside is the sum of countless lives, hopes and achievements. We need to develop plans and policies based on an understanding that this is still happening today. If we understand this then it becomes a source of pride and wonder to continue to change the landscape by laying down the layers of our generation on top of those of our numberless forbearers. Then our delight at, and love for, the countryside becomes indistinguishable from a delight at the achievements of our fellow human beings, past and present.

All this understanding helps us to see that the landscape's beauty is partly composed of human achievement. The landscape succeeds or fails in perfect step with its occupants. Surely this is a deeper, richer beauty than mere scenery?

Chapter 11

The development of landscape policy: A case study of the Maltese Islands

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11.1 Introduction

11.1.1 What is landscape and why protect it?

The term landscape often has different meanings to different people. For some, landscape is closely associated with gardening and horticulture; to others, with areas of high scenic value. Other individuals interpret the term landscape to be interchangeable with the word 'environment', the only difference being that the term 'landscape' refers to the 'environment' as perceived by individuals. The European Landscape Convention adopts a rather broad definition when it defines landscape as *"an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"* (Council of Europe, 2000).

There are also approaches which refer only to the visual component of the environment when characterizing and evaluating the landscape, such as that utilized in the Landscape Assessment Study for the Maltese Islands (described in Section 11.6 below). Characterization and evaluation of landscapes are prerequisites for effective landscape protection, since you cannot protect what you do not know. It is important to protect landscapes, *i.e.* to maintain or enhance the level of landscape quality, since this has an impact on quality of life, national identity, the tourism industry, recreation, and the success or otherwise of spatial planning.

- Quality of life;
- National identity;
- Tourism industry;
- Recreation; and
- Success or otherwise of spatial planning.

11.1.2 Maltese landscape characteristics

The Maltese Islands consist of an archipelago of three main inhabited islands and a number of smaller uninhabited ones, covering a total land area of 316 km^2. They lie roughly at the centre of the Mediterranean Sea, some 100 km due south of Sicily. The natural landscape of the islands is dominated by karstic rock formations and Mediterranean flora and fauna. Although natural processes do influence the Maltese landscape character over extremely long periods of time, the main determinants of changes in the Maltese landscape are the seasons, weather conditions, time of day and human activities. Humans have inhabited the islands for at least 7000 years and their impact has left hardly a corner uninfluenced. Moreover, Malta is one of the most densely populated countries in the world, with over 1,300 inhabitants per km^2. Man has therefore become the main agent introducing significant long term changes to the landscape.

The following is a summary of the main characteristics of the Maltese landscape:

- The quality of natural light is normally very good. Long hours of bright sunshine, long periods of cloud-free blue skies and high solar elevations result in high colour contrast.
- Scenically, two seasons dominate – winter, which is the cool and rainy season resulting in a green landscape, and the hot and dry summer, in which the colours blue (of sky and sea) and yellow/brown (of limestone, dry vegetation and exposed soil) dominate.
- The topography is varied due to the presence of numerous hills as well as alternating ridges and valleys. The distances from one ridge-line to another are well within normal visibility limits. Ridge edges and hill-tops command extensive views.
- The sea is visible from many areas around the Maltese Islands. In this sense, the Maltese landscape is a coastal landscape.
- The shallow waters, especially in bays, inlets and along the north-east coast of Malta, contribute to pleasant seascapes. The presence of offshore islands within normal visibility limits also enhances seascapes.
- Significant inland water bodies tend to be absent from the Maltese Islands.
- Relative absence of forest vegetation is a feature of the islands. This however permits the appreciation of long distance views.
- Terraced fields (with enhanced scenic qualities when well maintained), often delineated by rubble walls, are a dominant characteristic of the Maltese countryside.
- Many panoramic spots are accessible due to the extensive carriageway network.
- Cultural heritage is strongly intertwined with natural heritage.
- Fortified structures dominate the Inner Harbour area. Other ex-military structures in the countryside also tend to enhance the landscape.
- Churches and large buildings tend to dominate urban skylines. Maltese churches are intimately linked to the character of the traditional urban settlements.
- Cubic massing through the predominance of flat roofs is a distinct feature of urban areas.
- Most bays along the north-eastern and eastern coast of Malta and some bays in Gozo are dominated by modern development.
- Most urban areas are concentrated within a radius of 5 km from the Grand Harbour, *i.e.* in the north-eastern part of Malta. Most other localities, *i.e.* in Gozo and Western Malta, are essentially rural in character.
- The Maltese landscape is sensitive to detail. Relatively small features imposed on a sensitive landscape can have an incommensurate effect on long distance views.

Most of the landscape elements listed above can be found in other landscapes too. However, this specific mixture is only found on these islands. Thus, the Maltese landscape is indeed special and unique and therefore needs to be safeguarded.

11.2 Landscape in Maltese legislation

Landscape has long been acknowledged as worthy of protection in Maltese legislation. However, most of the provisions are merely general statements which are not enforceable. The only exception may be the concept of areas protected for their landscape value, which is included in the Development Planning Act. On the other hand, only their designation is stipulated but not their management. The main laws containing landscape-related regulations are listed below:

- Constitution of Malta: Safeguarding of landscape and historical and artistic patrimony.
- Development Planning Act (Chapter 356: Act I of 1992): Introduces the scheduling of properties, including areas of landscape importance, by the Malta

Environment and Planning Authority (MEPA). These scheduled sites are called Areas of High Landscape Value (AHLV) (described in further detail in section 11.5 below).

- Environment Protection Act (Chapter 435: Act XX of 2001): Defines landscape as part of the environment, the protection of which is everyone's duty. Landscape assessment is listed as part of an Environmental Impact Assessment (EIA).
- Cultural Heritage Act (Chapter 445: Act VI of 2002): Landscape is defined as part of cultural heritage, the protection of which is everyone's duty.

11.3 Landscape policies in the Structure Plan

The Structure Plan for the Maltese Islands is the policy document that sets out the long-term strategic goals, key directions and policies which should direct development in the whole territory of the Maltese Islands. It was drawn up by the then Planning Authority (now subsumed within MEPA), came into force in 1992 with a validity period of 20 years, and is currently being reviewed. The plan consists of a written statement containing the policies, as well as a Key Diagram indicating the physical locations where particular policies will be applied.

As already stipulated in the Development Planning Act, the Structure Plan recognizes the importance of landscape protection. While most of its policies have an indirect impact on the landscape, there are more than 20 policies referring directly to the issues of 'landscape', 'scenery' or 'views'. They deal with the following issues:

- Designating of Rural Conservation Areas, with one of the sub-categories for designation identified being Areas of High Landscape Value (AHLVs) (described in further detail in section 11.5 below).
- Requiring the blending of developments into their surroundings: This is particularly important for developments in the open countryside. Blending may be achieved through the use of materials, colours and textures that occur in the surrounding area, using the topography to help conceal structures, as well as sensitive landscaping.
- Requiring the use of sensitive landscaping as a component of development projects: This also applies mainly to rural areas. As well as the buildings themselves, the layout of any planting scheme should ideally emulate what is already present in the area, while using native species. The use of hard landscaping, such as rubble walling, for screening purposes is also mentioned in several policies.
- Encouraging the removal of eyesores: This includes, for example, the rehabilitation of abandoned quarries and other degraded habitats, reactivation of abandoned agricultural land, reuse and conversion of rural buildings which are compatible with their scenic setting, and incentives for the relocation of incompatible uses from rural areas.
- Promoting enhancement and restoration of the landscape: In built-up areas, this refers to the upgrading of village cores through restoring old buildings, using traditional designs and materials for new buildings in these areas, as well as enhancing open spaces. In rural areas, this objective can be achieved through sensitive landscaping, habitat restoration and the removal of eyesores.

11.4 Landscape policies in the Local Plans

Local plans are policy documents that build upon the Structure Plan policies and set out more detailed and site-specific guidelines. Seven Local plans have been prepared for the Maltese Islands – the island of Malta has been divided into six Local Plan areas, and there is another Local Plan for Gozo and Comino. The first Local Plan (for Marsaxlokk Bay) came into force in 1995, the last ones in 2006.

The policies within the different Local Plans

The following is a summary of the main characteristics of the Maltese landscape:

- The quality of natural light is normally very good. Long hours of bright sunshine, long periods of cloud-free blue skies and high solar elevations result in high colour contrast.
- Scenically, two seasons dominate – winter, which is the cool and rainy season resulting in a green landscape, and the hot and dry summer, in which the colours blue (of sky and sea) and yellow/brown (of limestone, dry vegetation and exposed soil) dominate.
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- The shallow waters, especially in bays, inlets and along the north-east coast of Malta, contribute to pleasant seascapes. The presence of offshore islands within normal visibility limits also enhances seascapes.
- Significant inland water bodies tend to be absent from the Maltese Islands.
- Relative absence of forest vegetation is a feature of the islands. This however permits the appreciation of long distance views.
- Terraced fields (with enhanced scenic qualities when well maintained), often delineated by rubble walls, are a dominant characteristic of the Maltese countryside.
- Many panoramic spots are accessible due to the extensive carriageway network.
- Cultural heritage is strongly intertwined with natural heritage.
- Fortified structures dominate the Inner Harbour area. Other ex-military structures in the countryside also tend to enhance the landscape.
- Churches and large buildings tend to dominate urban skylines. Maltese churches are intimately linked to the character of the traditional urban settlements.
- Cubic massing through the predominance of flat roofs is a distinct feature of urban areas.
- Most bays along the north-eastern and eastern coast of Malta and some bays in Gozo are dominated by modern development.
- Most urban areas are concentrated within a radius of 5 km from the Grand Harbour, *i.e.* in the north-eastern part of Malta. Most other localities, *i.e.* in Gozo and Western Malta, are essentially rural in character.
- The Maltese landscape is sensitive to detail. Relatively small features imposed on a sensitive landscape can have an incommensurate effect on long distance views.

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Conservation Areas, the adherence with which is checked during the planning application and enforcement system. However, this does not give these areas effective protection.

11.6 Landscape Assessment study

The Landscape Assessment Study, which was published for public consultation in 2004, is one of the subject papers that have been drawn up for the Structure Plan review. It consists of three main sections which are explained in more detail below:

- Definition and description of Landscape Character Areas;
- Description of man-induced changes to the landscape;
- Development of a Landscape Sensitivity Model.

11.6.1 Landscape Character Assessment

Landscape character is defined as a "*distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement.*"

In the Landscape Assessment Study, Landscape Character Areas were delineated, followed by a description of the features and problematic issues within each of these. This was done in order to have a basis for more informed decisions on compatibility of policy proposals with the landscape.

61 character units were defined in Malta and 35 in Gozo (Plate 11.2). Delineation of their boundaries was based upon predominant landscape elements (natural and man-made), topography and zones of visual influence. Natural landscape features include the land-sea interface, elevation, gradient, break of slope, as well as major valley basins. Man-made landscape features incorporate the development boundaries of larger settlements and major roads. Only macro landscape features were used for the exercise, in order to have a set of parameters that are not too complex for systematic categorization.

11.6.2 Man-induced landscape changes

A component of the study considered man-induced landscape changes, with a focus on the identification of trends and issues needing to be addressed. The major changes which occurred during the evaluation period (between 1990 and 2000) are outlined in Table 11.1 below.

11.6.3 Landscape Sensitivity Model: Method and result

The third section of the study consisted of the development of a Landscape Sensitivity Model resulting in a 5-level sensitivity hierarchy. The model highlights the sensitivity of a particular area to change from its current state (usually induced through proposed urban development). In this way, development can be strategically directed to appropriate areas, *i.e.* the results are being used in the revised Structure Plan.

Macro features of the landscape were used in this model, as well as for the delineation of landscape character areas. Natural parameters included topographical elements as well as proximity to the coast and to valleys. Proximity to large-scale anthropogenic features such as fortifications, major settlements, industrial areas, landfill sites and quarries was also incorporated. Values derived through extensive internal discussion were then assigned to these parameters. The datasets for these features, which were mostly available on the Geographic Information Systems (GIS) of MEPA, were combined with the values and fed into specifically developed software.

The result was an accumulated landscape sensitivity value for each square of a 50x50 m grid. This was translated into a map (refer to Plate 11.3) containing five sensitivity ranges, from the dark-red for the most sensitive areas, through orange for medium sensitivity, to grey for low sensitivity/ severely degraded areas.

vary, since they need to take into account the specific circumstances of the respective areas. The following provisions, however, are contained in most of the Local Plans:

- Proposing further AHLVs (refer to section 11.5 below), with some of the recommended sites having been identified through the Landscape Assessment Study, described in section 11.6 below;
- Encouraging soft landscaping schemes for major projects, afforestation and protection of trees;
- Protecting Strategic Open Gaps (in Central Malta, South Malta and Gozo); these are areas of open countryside located between settlements. Strict policies are applied in order to keep them free from development, thus preserving the identities of the adjacent settlements and promoting contact with the countryside for their inhabitants.
- Identifying degraded landscapes and priority areas for landscape restoration.

There are also policies which are found only within one Local Plan due to the special characteristics of the area, but which have a considerable impact on the landscape. The following are a few examples:

- Gozo – 'Edge Policies': The distinctive characteristic of Gozitan villages is that many of them are located on hill tops or along ridge edges. This means that any building located along the development boundary (which usually coincides with the ridge edge) can be seen from far away. This has necessitated a set of policies which outlines specific design criteria for these situations, in order to minimize negative impacts on landscape quality. Furthermore, these policies aim to smooth out and enhance the transition between built-up areas and countryside. They include the following provisions:
  - The sides of buildings facing ODZ (Outside of Development Zone) areas are required to have windows as well as a side garden.
  - Buildings along ridge edges are to be built using traditional designs and materials.
  - Built structures in back gardens (*e.g.* sheds) are not permitted close to ridge edges.
- North Harbours Area – Strategic Views and Landmark Buildings: This part of Malta is densely built up with few remaining open areas, and is characterized by a mix of historic and modern architecture. Strategic and local view corridors as well as landmark buildings are indicated on policy maps and policies set out in the text of the plan. The policies aim to preserve the remaining pleasant viewsheds and designate landmark buildings as focal points within them, while keeping these view corridors free from unsympathetic development.

11.5 Areas of High Landscape Value

The designation of Areas of High Landscape Value (AHLV) is the main landscape protection tool of the Maltese planning system. AHLVs have been progressively scheduled since 1996 and cover around 12% of the territory (indicated in green in Plate 11.1). The Local Plans proposed additional sites, another 22% of the territory dictated in red).

AHLVs often coincide with other (often stricter) designations for scientific importance or nature conservation, *e.g.* Special Areas of Conservation (SAC), a European-wide category of protected areas. In these cases, the sites are required to be managed and monitored regularly, which is beneficial for the landscape quality too. In other cases, where the site is 'only' an AHLV, there is no obligation for active management. The only form of protection such sites receive is through the Structure Plan policies for Rural

- Landscapes with steeper slopes and varied topography scored highly. The converse also applies.
- Proximity to the coast was confirmed as important. The highest scores were obtained for relatively un-spoilt coastal rural areas with sloping terrain and commanding extensive view sheds.
- Valleys received mostly high and very high scores, confirming the weighting attributed in the model algorithm.
- Fortified structures were generally accorded high or very high scores but this also depended on their proximity to detracting features.
- Urban settlements mostly received a neutral value as the juxtaposition of enhancing and detracting features tended to cancel each other out.
- Industrial areas, quarries and landfills in general received low scores although nearby scenery tended to elevate the score.

The survey results correlated very closely with those of the sensitivity model, particularly when considering the limitations of a public survey using photos.

11.7. Conclusion

The above analysis clearly shows that the basis of landscape policy exists in Malta; however it still needs refinement. Several issues remain to be addressed in the future. A more coherent interpretation of landscape policies in decision-making is required. Secondly, further studies need to be carried out, refining the strategies that will lead to the implementation of proposals to enhance the Maltese landscape. Last but not least, it is essential for the realization of these measures that the means to obtain resources are made available.

References

Council of Europe, 2000. *European Landscape Convention*. [Online]
Available at: http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm
[Accessed 22 October 2009].

Malta Environment and Planning Authority, 2003. *Grand Harbour Local Plan*. [Online] Malta: MEPA.
Available at: http://www.mepa.org.mt/ghlp?doctypeid=1&groupid=74&plan=Grand%20Harbour
[Accessed 22 October 2009].

Malta Environment and Planning Authority, 2004. *Landscape assessment study of the Maltese Islands– draft for public consultation*. [Online] Malta: MEPA.
Available at: http://www.mepa.org.mt/news-details?id=524
[Accessed 22 October 2009].

Malta Environment and Planning Authority, 2006. *Central Malta Local Plan*. [Online] Malta: MEPA. Available at: http://www.mepa.org.mt/cmlp-docs
[Accessed 22 October 2009].

Malta Environment and Planning Authority, 2006. *Gozo & Comino Local Plan*. [Online] Malta: MEPA. Available at: http://www.mepa.org.mt/gclp-docs
[Accessed 22 October 2009].

Malta Environment and Planning Authority, 2006. *North Harbour Local Plan*. [Online] Malta: MEPA. Available at: http://www.mepa.org.mt/nhlp-docs
[Accessed 22 October 2009].

Malta Environment and Planning Authority, 2006. *North West Local Plan*. [Online] Malta: MEPA. Available at: http://www.mepa.org.mt/nwlp-docs
[Accessed 22 October 2009].

Malta Environment and Planning Authority, 2006. *South Malta Local Plan*. [Online] Malta: MEPA. Available at: http://www.mepa.org.mt/smlp-docs
[Accessed 22 October 2009].

Table 11.1 Man-induced landscape changes in the Maltese Islands

Urban	The urban sprawl of the 1980s was significantly contained. However, some settlements continued to merge into one another and therefore the physical distinction of each settlement was lost. Landscaping was given more attention especially around major projects and public amenities. Localized improvements in the treatment of facades and open spaces were noted in Urban Conservation Areas (UCAs) and coastal areas (especially promenades). Urban skylines continued to deteriorate especially near the urban fringes. Roof clutter (in the form of antennae, water tanks, lofts, mechanical plant rooms, *etc.*) continued to degrade skylines. During periods of celebration, roofscapes are enhanced through use of multi-coloured flags, lights and other decorations.
Rural	The rate of loss of agricultural land decreased but there was a higher level of visual influence resulting from modern agricultural practices (*e.g.* animal husbandry units, greenhouses, storage facilities, intensive irrigation facilities). Greater accessibility has brought the more remote natural areas under greater pressure from human activities. Waste disposal and dilapidation in the countryside continued to represent a major problem of degradation of the scenery in rural areas.
Industrial	Industrial development imparted negative impacts in some areas (*e.g.* Freeport area, San Gwann, Hal Far, Xewkija *etc.*).
Coastal	Fish farms introduced unsightly features offshore. The visual footprint of these facilities is however fairly limited and they are generally overwhelmed by the scale of the surrounding water body and large marine-going vessels. Sometimes, oilrigs are stationed a few kilometers offshore and this has quite an adverse impact on the seascape.
General	There was an overall improvement in the quality of architecture and public amenities; however, the quality remains highly variable and is in most cases not yet up to standard. Poor workmanship, lack of attention to detail, inappropriate design and lack of a maintenance culture continue to contribute to dereliction and degradation. The very high increase in vehicle ownership translated into additional scenic dereliction.

11.6.4 Landscape Sensitivity Model: Verification through public survey

As a further refinement, the assigned values were subjected to an external public consultation exercise to calibrate the model. For this survey, 40 photographs representative of various landscape characters and sensitivities indicated through the model, were selected from a large number of photos that had been taken around Malta and Gozo during similar lighting conditions and seasons. One-to-one interviews were then carried out with around 300 respondents, who had been chosen by random sampling stratified by gender, region and age group. During the interviews, respondents were asked to evaluate the landscapes represented on the photos according to their individual perceptions.

The following trends were observed when analyzing the replies to the survey:

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Planning Authority, 1990. *Structure Plan for the Maltese Islands - draft final written statement and key diagram*. [Online] Malta: MEPA. Available at: http://www.mepa.org.mt/lpg-structureplan [Accessed 22 October 2009].

Planning Authority, 1995. *Marsaxlokk Bay Local Plan*. [Online] Malta: MEPA. Available at: http://www.mepa.org.mt/mblp-docs [Accessed 22 October 2010].

protected areas, (iii) planning and sustainable development, and (iv) maritime policy. A geographer, artist and professional planner by training he has worked for local and national Park authorities in England and Wales and has been a Director of the *Landscape Research Group* since 1986.

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Anthony Ellul is currently employed as a Senior Manager in the Product Development Directorate within the Malta Tourism Authority, after having worked for a number of years as a planner with MEPA. Anthony has developed a specialization in tourism planning and has lectured at the University of Malta on this subject. Between 1993 and 1999 he formed part of a Committee of a Group of Specialists on Tourism and Environment of the Council of Europe and was commissioned to prepare two reports on Tourism and Environment in European countries. Anthony's academic qualifications include a Masters of Science in Environmental Management and Planning from the University of Malta, a postgraduate Diploma in Environmental Management and Planning from the University of Malta and a Bachelor of Arts (Hons) in Business Management from the University of Malta.

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This publication contributes towards an enhanced understanding and appreciation of landscapes, as an element of our identity and heritage. Landscapes bring together various elements of nature and culture, from both past and present, as they continue to evolve. It is precisely this dynamic quality that renders them a challenge for management efforts, which must seek to safeguard character, whilst allowing for inevitable change. The challenge is particularly pertinent to the Maltese Islands, where a high population density and small land area come together to render threats to landscape even more urgent. This publication brings together contributions from various authors, combining specific perspectives concerning the Maltese Islands, with general concepts and tools for landscape protection, planning and management.

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