



# Analysis of knowledge on cultural landscapes at the Mediterranean level



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# Analysis of knowledge on cultural landscapes at the Mediterranean level

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IUCN is pleased to acknowledge the support of its Framework Partners who provide core funding: Ministry of Foreign Affairs, Denmark; Ministry for Foreign Affairs, Finland; Government of France and the French Development Agency (AFD); Ministry of Environment, Republic of Korea; Ministry of the Environment, Climate and Sustainable Development, Grand Duchy of Luxembourg; the Norwegian Agency for Development Cooperation (Norad); the Swedish International Development Cooperation Agency (Sida); the Swiss Agency for Development and Cooperation (SDC) and the United States Department of State.

This document has been prepared by the IUCN Centre for Mediterranean Cooperation (IUCN-Med) as part of the M6 OAP project “Analysis of knowledge on cultural landscapes at Mediterranean level” funded by the MAVA Foundation.

**Published by:** IUCN, Gland, Switzerland

**Produced by:** IUCN Centre for Mediterranean Cooperation (IUCN-Med)

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**Recommended citation:**

IUCN (2023). *Analysis of knowledge on cultural landscapes at the Mediterranean level*. Gland, Switzerland: IUCN.

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**Cover photo:** Vineyards at Mont Ventoux, France © Cecoffman on Dreamstime

An interactive web version of the document is available at: <https://iucn.org/legacy-land>

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## Executive summary

Being defined as the “combined works of nature and of man”, cultural landscapes focus on sustainable land-use techniques, where the local population take into consideration the limits of the natural environment. They constitute a traditional form of land-use that are beneficial for the biological diversity and the cultural diversity for human well-being. They constitute an important landscape in the Mediterranean region, but have long been studied both by social and natural scientists from different perspectives.

Several NGOs working on building awareness and knowledge of cultural landscapes in the Mediterranean region have bundled their forces and formed the Alliance for Mediterranean Nature & Culture (AMNC) in 2021. The focus is on strengthening the knowledge on the economic, social, cultural and environmental benefits of cultural landscapes and advocating for international recognition of cultural landscapes.

This report tries to combine the existing literature dealing with the environmental and socio-cultural aspects of cultural landscapes, focusing on the Mediterranean region. An interactive map was created to visualize the distribution of the cited landscapes. Literature was found for a total of 70 cultural landscapes, including 8 cultural landscapes that form part of the AMNC. Publications issued before 2000 were not considered, nor gray literature (with few exceptions), and the scope was limited by the exclusive use of publications in English.

The Mediterranean region has many models to offer for sustainable land-use management. It is not only a biodiversity hotspot, but also has a rich history of cultural landscapes. Many of these landscapes are characterized by a specific dominant feature like tree-crops (mainly olives, chestnuts, cork oaks and almonds). The traditional land management practices have created a socio-ecological system beneficial for people and the environment and important to protect at a European and global scale.

# Acknowledgements

IUCN-Med would like to thank the partners of the Alliance for Mediterranean Nature & Culture for their valuable expertise and insights. This report would not have been possible without their continuing work and focus on the cultural landscapes situated in the Mediterranean region.

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Society for the Protection of Nature in Lebanon (SPNL) - <https://www.spnl.org/>

Shouf Biosphere Reserve - <http://shoufcedar.org/>

Trashumancia y Naturaleza (TyN) - <https://trashumanciaynaturaleza.org/>

WWF Spain - <https://www.wwf.es/>

WWF Portugal ANP - <https://www.natureza-portugal.org/>

Yolda - <https://yolda.org.tr/>

WWF Tunisia - <https://www.wwf.tn/>

EuroNatur - <https://www.euronatur.org/en>

Tour du Valat - <https://tourduvalat.org/en/>

## List of acronyms

<b>ALPTER:</b>	EU Interreg Alpine Space
<b>AMNC:</b>	Alliance for Mediterranean Nature and Culture
<b>CAP:</b>	Common Agricultural Policy
<b>CICES:</b>	Common International Classification of Ecosystem Services
<b>CLC:</b>	CORINE Land Cover
<b>EEA:</b>	European Environmental Agency
<b>EEC:</b>	European Economic Community
<b>EFA:</b>	Ecological Focus Area
<b>ES:</b>	Ecosystem Services
<b>EU:</b>	European Union
<b>FAO:</b>	Food and Agriculture Organization of the United Nations
<b>FSC:</b>	Forest Stewardship Council
<b>GIAHS:</b>	Globally Important Agricultural Heritage Systems
<b>IPBES:</b>	Intergovernmental Platform for Biodiversity and Ecosystem Services
<b>IUCN:</b>	International Union for Conservation of Nature
<b>JRC:</b>	Joint Research Centre
<b>MA:</b>	Millennium Ecosystem Assessment
<b>MAP:</b>	Mediterranean Action Plan
<b>NGO:</b>	Non-Governmental Organisation
<b>PPI-OSCAN:</b>	Programme de Petites Initiatives pour les Organisations de la Société Civile d'Afrique du Nord
<b>REDD+:</b>	Reducing Emissions from Deforestation and Degradation
<b>SDG:</b>	Sustainable Development Goals
<b>SCBD:</b>	Secretariat of the Convention on Biological Diversity
<b>TEEB:</b>	The Economics of Ecosystems and Biodiversity
<b>UN:</b>	United Nations
<b>UNEP:</b>	United Nations Environment Programme
<b>UNESCO:</b>	United Nations Educational, Scientific and Cultural Organization
<b>WTO:</b>	World Trade Organization





Kapikiri village and Latmos Besparmak Mountains, Aegean region of Turkey © Serturvetan on Dreamstime

# 1. Introduction

## 1.1. Cultural landscapes in international documents

Cultural landscapes were introduced in the World Heritage Convention in 1992 as the “combined works of nature and of man”. The revised version of the Operational Guidelines for the Implementation of the World Heritage Convention further states that “they are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal” (Annex 3, §1) and that “cultural landscapes often reflect specific techniques of sustainable land-use, considering the characteristics and limits of the natural environment they are established in, and a specific spiritual relation to nature. Protection of cultural landscapes can contribute to modern techniques of sustainable land-use and can maintain or enhance natural values in the landscape. The continued existence of traditional forms of land-use supports biological diversity in many regions of the world a “The protection of traditional cultural landscapes is therefore helpful in maintaining biological diversity” (Operational Guidelines for the Implementation of the World Heritage Convention, Annex 3, §6). The category of cultural landscapes does not only include *organically evolved landscape* but also *landscape designed and created intentionally by man* such as *garden and parkland landscapes*, as well as *associative cultural landscape*, which inscription on the World Heritage List “is justifiable by virtue of the powerful religious, artistic or cultural associations of the natural element rather than material cultural evidence, which may be insignificant or even absent” (Samuels, 2017).

At the European level, the relationship between landscapes and biodiversity and other benefits is merely implicit in the European Landscape Convention of 2000, which defines its object as “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors” and “landscape protection” as “actions to conserve and maintain the significant or characteristic features of a landscape, justified by its heritage value derived from its natural configuration and/or from human activity” (Seardo, 2016).

On the other hand, despite the Natura 2000 framework’s focus on biodiversity, the Habitats Directive foresees that “Member States shall endeavour, where they consider it necessary, in their land-use planning and development policies and, in particular, with a view to improving the ecological coherence of the Natura network, to encourage the management of features of the landscape which are of major importance for wild fauna and flora” (Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, consolidated text, art. 10).

Still focusing on the European level, the Florence Declaration promoted by UNESCO and the Secretariat of the Convention on Biological Diversity might be the document that offers the most comprehensive, and in a sense up-to-date – at least with the literature included in this report – view on cultural landscapes. “As it assimilates economic, social, cultural and environmental processes in time and space, the European landscape is predominantly a biocultural multifunctional landscape. As such, it provides a crucial and effective space for integration of biological and cultural diversity for human well-being, including in the context of rural territories [...]” (UNESCO-SCBD, 2014; Agnoletti and Emanuelli, 2016).

Still, cultural landscapes are not explicitly considered within the Agenda 2030 (although SDG target 11.4 “Strengthen efforts to protect and safeguard the world’s cultural and natural heritage”), nor in documents related to the Decade on Ecosystem Restoration (2021–2030) (FAO & UNEP, 2022). Considering the essential relationships between cultural landscapes, sustainable development and ecosystems, highlighted within UNESCO programmes such as World Heritage and Man and the Biosphere but also in FAO’s GIAHS, there seems to be room for further integration of the concept within the United Nations’ standards and strategies.

## 1.2. Cultural landscapes, ecosystem services and biodiversity: outlining a growing research field

Cultural landscapes in the Mediterranean have long been studied both by social and natural scientists, although from different perspectives and approaches – and following different definitions of the concept.

As elsewhere, the introduction of the concept of ecosystem services, especially through the Millennium Ecosystem Assessment international research project (or MA, concluded in 2005), has prompted further research and cross-disciplinary dialogue. Still, research exploring relationships between landscapes and ecosystems rather than focusing on one or the other dimension, thus involving at once humanities, social and natural sciences, seems relatively limited.

While it might be said that landscapes host or correspond to ecosystems, the former characterized by a significant cultural dimension, which in turn has been recognized in terms of ecosystem services. Cultural Ecosystem Services, defined by the MA as ‘nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences’, have been dedicated a vast amount of literature on their own – often dealing with the issue of how to quantify them with respect to the other Ecosystem Services categories (Blicharska et al., 2017; Daniel et al., 2012; Hølleland et al., 2017; Paracchini et al., 2014; Plieninger et al., 2014; Smith & Ram, 2017; Scholte et al., 2015; Winthrop, 2014).

Focusing on landscape management in relationship to ecosystem services, Setten et al. (2012) identify the three following challenges:

- ▶ A lack of compatibility between the framework and the inherent character, or the logics of landscapes.
- ▶ Difficulties arise in addressing the complexity of ecosystems, unsubstitutable values, and intangible dimensions in economic valuation when applied to landscapes.
- ▶ The Ecosystem Services framework to a large degree falls short in understanding how context-specific sociocultural processes are crucial to environmental attitudes and behaviours.

The same authors concluded arguing that “currently, these are parallel research discourses, each having a deep understanding from their respective perspectives”, thus “it is crucial to create platforms for improving the possibilities to communicate across these discourses”. A glance at the amount of literature produced over the last decade suggests that although much has been done in that sense, the plea is more relevant than ever.

Answering this plea is the Alliance for Mediterranean Nature and Culture (AMNC), a partnership between several NGOs working on building awareness and knowledge of cultural landscapes. Joining forces in 2021, the partners of AMNC share the vision of a Mediterranean region where cultural landscapes contribute effectively to conserving both biodiversity and maintaining the well-being of communities. The focus in their project sites, ranging from mountain ranges to lowland areas and islands, is on the economic, social, cultural and environmental processes of cultural landscapes. This partnership works on strengthening awareness and understanding of cultural landscapes and advocates for the international recognition of their benefits by scaling up its membership and impact.



Cork oak trees in National Park Tazekka, Morocco © Marketa Novakova on Dreamstime

## 2. Methodology

This report seeks to account for existing literature dealing at least partially with the issues mentioned above, focusing on the Mediterranean area.

Beside a significant number of literature reviews (Blicharska et al., 2017; Cicinelli et al., 2021; Daniel et al., 2012; Hølleland et al., 2017; Martín-López et al., 2016; Orr et al., 2021; Picchi et al., 2019; Sayer et al., 2013; Vallés-Planells et al., 2014), many publications provide case analyses from virtually all parts of the world. A map was presented to visualize the distribution of those landscapes in the Mediterranean area (Figure 1). The cultural landscapes of the Alliance for Mediterranean Nature and Culture (AMNC) are separated. An interactive map, with more in-depth information on each landscape is [available online](#). The sections have been elaborated following AMNC's objectives on the one hand, and seeking for thematic coherence among references on the other.

References selected and used in this report include both types of publications, retrieved from the main academic journal portals including Web of Science, Scopus and through cross-reference. The initial survey of publications on "landscape + benefits", "landscape + ecosystem" and "landscape + biodiversity" was completed with specific search for publications dealing with cultural landscapes identified as such within UNESCO World Heritage programme, FAO's GIAHS or other programmes (see further, par. "Landscape typologies/patterns"). The use of the most cited literature reviews and conceptual papers has thus provided the background for a wider overview of case analyses, including a wide array of the various areas of the Mediterranean and landscape typologies, as well as of different approaches and methodologies.

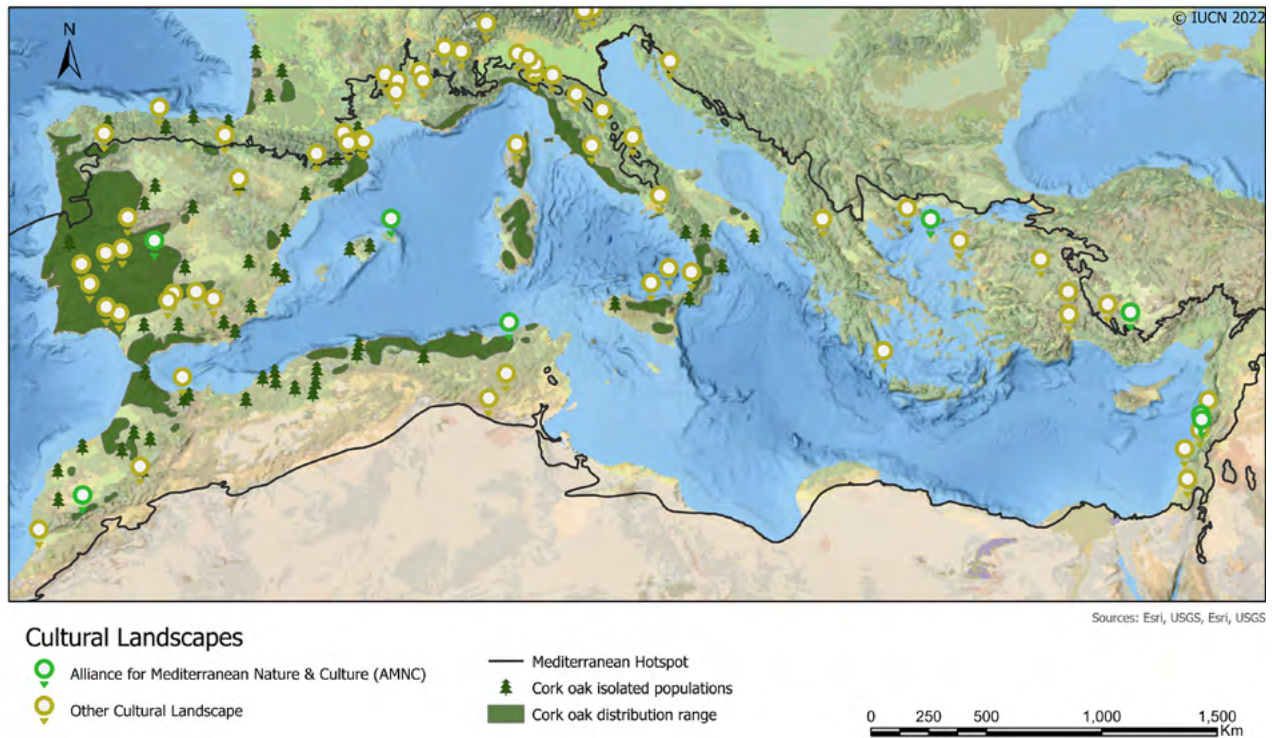


Figure 1. Map of Cultural Landscapes: <https://iucn.org/legacy-land>

In the map, you will find more specific information on 70 Mediterranean cultural landscapes, including 8 cultural landscapes that form part of the Alliance for Mediterranean Culture and Nature (AMNC).

As for the latter type of publication, the survey has been focused on cases situated in the Mediterranean area and corresponding to the three broad typologies represented among AMNC project areas (listed below between parentheses), several of which also appear in one or more publications included in the bibliography:

- ▶ Mountain/high altitude sites characterised by traditional farming, grazing, agroforestry and water management practices (the High Atlas Mountains of Morocco, the Al-Shouf Biosphere Reserve, West Bekaa and Mount Lebanon in Lebanon, and the Taurus mountains in Central and Southern Anatolia, Turkey).
- ▶ Traditional agro-silvo-pastoral systems in lowland areas (the corridor with dehesas/montados stretching from Extremadura and Córdoba, Spain, to Coruche in Santarém, Portugal, and Kroumirie Mogod in North-western Tunisia).
- ▶ Island sites characterised by a mosaic of traditional farming, livestock breeding and water management (the islands of Lemnos, Greece and Menorca, Spain).

Further selection has been operated in order to avoid redundancy both in terms of case studies, authors, topics and approaches. In case of similar contributions in one or more of those terms, only the most cited and/or recent paper was included in the bibliography. Publications issued before 2000 were not considered, nor grey literature (with few exceptions).

Despite the relevance of the Mediterranean area and references included (see bibliography), it should be noted that this report's scope is limited by the exclusive use of publications in English, thus overlooking national, regional and local experiences and analyses accounted for in other languages.

## CULTURAL LANDSCAPES AMNC PARTNERS

**COUNTRY:** Greece  
**PLACE/PROVINCE/REGION:** Lemnos  
**LANDSCAPE TYPOLOGY:** Island (focus on mandras)  
<https://med-ina.org/>



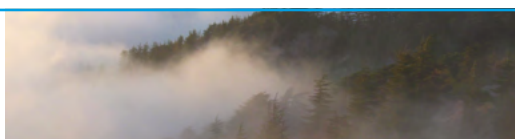
Mandra system, Lemnos © MedINA

**COUNTRY:** Lebanon  
**PLACE/PROVINCE/REGION:** Mount Lebanon & West Bekaa  
**LANDSCAPE TYPOLOGY:** Mountain/high altitude (focus on himas)  
<https://www.spnl.org/>



Hima Ras El Matn, Mount Lebanon © Paul Marc Massabni

**COUNTRY:** Lebanon  
**PLACE/PROVINCE/REGION:** Al-Shouf Biosphere Reserve  
**LANDSCAPE TYPOLOGY:** Mountain/high altitude  
<http://shoufcedar.org/>



Cedar forest © Shouf Biosphere Reserve

**COUNTRY:** Morocco  
**PLACE/PROVINCE/REGION:** High Atlas Mountains  
 (Al Haouz, Azilal, Demnate hubs)  
**LANDSCAPE TYPOLOGY:** Mountain/high altitude (focus on agdals)  
<https://global-diversity.org>  
<https://www.mblaassociation.org/>



High Atlas Mountains © Inanc Tekguc GDF

**COUNTRY:** Portugal and Spain  
**PLACE/PROVINCE/REGION:** Dehesas and Montados, Iberian Peninsula  
**LANDSCAPE TYPOLOGY:** Agro-silvo-pastoral systems in lowland areas (focus on dehesas/montados and tree-crop: holm and cork oak)  
<https://trashumanciaynaturaleza.org/>  
<https://www.wwf.es>  
<https://www.natureza-portugal.org/>



Dehesas © Ofelia de Pablo y Javier Zurita.WWF Spain

**COUNTRY:** Spain  
**PLACE/PROVINCE/REGION:** Menorca  
**LANDSCAPE TYPOLOGY:** Island  
<https://www.gobmenorca.com/>



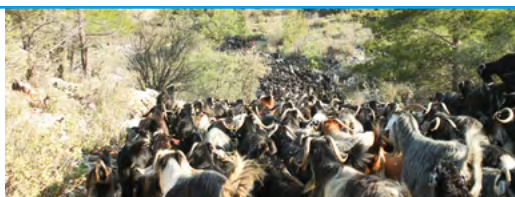
Traditional wild olive tree gate © D.Arquimbau GOB Menorca

**COUNTRY:** Tunisia  
**PLACE/PROVINCE/REGION:** Kroumerie Mogod  
**LANDSCAPE TYPOLOGY:** Agro-silvo-pastoral systems in lowland areas (focus on tree-crop: cork oak)  
<https://www.wwf.tn/>



Kroumerie Mogod © WWF North Africa

**COUNTRY:** Turkey  
**PLACE/PROVINCE/REGION:** Tarsus mountains  
 (Central and Southern Anatolia)  
**LANDSCAPE TYPOLOGY:** Mountain/high altitude  
 (focus on pastoralism)  
<https://yolda.org.tr/>



Spring migration, Tarsus mountains © Engin Yilmaz Yolda Initiative



Sheeps grazing at Yaylacık, Konya © ekrem osmanoglu on Unsplash autes on Unsplash

### 3. The multiple values of cultural landscapes: the Mediterranean between tradition and innovation

The diversity and richness of cultural landscapes existing in an area so wide as the Mediterranean can hardly be overstated. Accounting for Mediterranean cultural landscapes and their benefits for the environment and communities through existing literature thus raises several difficulties, briefly discussed in the following paragraphs in order to introduce and comment the landscapes list (Figure 1):

- ▶ Different definitions of landscape typologies and/or units are used and/or provided.
- ▶ Various methods have been developed to analyse landscape change, which suggest a cautious approach to causalities.
- ▶ Fewer studies provide a comprehensive analysis of benefits provided by cultural landscapes.
- ▶ While many publications assess how policies at various levels affect cultural landscapes and related benefits, only few attempts to analyse and contextualize such policies.

### 3.1. Landscape typologies and/or units

“Because of the predominance of so-called *socio-ecological mosaics* (i.e. a patchwork of landscape units that range from intensively managed to unmanaged areas, all within the same landscape), fine-grained spatial analysis should be a core of any Ecosystem Service assessment. The recognition of tangible ecological or physical boundaries of ecosystems, however arbitrary it may sometimes be, provides an important basis for adaptive and practical management through the mapping of particular functions and landscape units, or even so-called *service-providing units*” (TEEB, 2010).

While this report doesn't aim to discuss the variety of items and characters used to define landscape units or typologies (Arnalte-Alegre & Ortiz-Miranda, 2013; Martín-López et al., 2016), it illustrates how landscapes are often classified according to a wide array of programmes and labels both at national and international levels. Each of the following works according to its own principles and guidelines, but all share a rather comprehensive view of (cultural) landscapes and include one or more sites in the Mediterranean area:

- ▶ UNESCO MAB reserves
- ▶ UNESCO World Heritage properties (including 'cultural landscapes')
- ▶ FAO GIAHS
- ▶ Natura 2000
- ▶ National and Regional Parks (in turn often part of EUROPARC network)
- ▶ High Nature Value Farming systems (included in the data set based on the JRC/EEA methodology, introduced by Paracchini et al. (2008) and currently under revision)
- ▶ Slow Food Presidia
- ▶ IUCN Green List of Protected and Conserved Areas

In addition to AMNC project areas, many other projects funded by various schemes have or still involve cultural landscape, like PPI-OSCAN (IUCN Centre for Mediterranean Cooperation) or ALPTER (EU Interreg Alpine Space, see Fontanari & Patassini, 2008; Scaramellini & Varotto, 2008). It should be noted that such labels and programmes (see the dedicated column in online map) may be either cited as an element of the studied landscape's setting, or considered for their own sake within the case analyses (see for instance Mathevet & Cibien, 2020; Torralba et al., 2020; Lafrenz Samuels, 2017 and Osipova et al., 2014 on World Heritage sites).

Several of the labels and programmes mentioned above may apply at least partially to the same landscape. Similarly, a few landscape units and typologies concentrate a large amount of literature, like dehesas/montados and terraced landscapes. Much less knowledge is available, at least in English, on many other landscapes, like Slow Food Presidia or PPI-OSCAN project areas not included in Figure 1 because of the lack of dedicated scientific literature – not to mention areas which may not be *labelled* or included in programmes such as the above –. Furthermore, studies like the one by De Pablo et al. (2020) on Picos de Europa National Park in Spain suggest how virtual landscape boundaries and/or perimeters can be, both because they may be modified and inasmuch as similar processes occur inside and outside of them. In the case of “the art of dry-stone walling, knowledge and techniques”, inscribed on UNESCO's Representative List of the Intangible Cultural Heritage of Humanity, related landscapes may not be associated with a specific perimeter (although it is the case of the Huerta de Pegalajar site analysed in Jiménez de Madariaga, 2021). Finally, broader perspectives, like the one by Hernández-Morcillo et al. (2018) on the role of agroforestry for climate change mitigation and adaptation at the European level or the one by Pardini and Nori (2011) on agro-silvo-pastoral systems in Italy, as well as



studies dedicated to landscapes similar to those of the Mediterranean area, like the one by Ojeda et al. (2021) on post wildfire landscape identity in Chile, shouldn't be overlooked.



View over the village Serpa, Alentejo Region © Antonio Ribeiro on Dreamstime

### 3.2. Changing landscapes: drivers and scenarios

In a significant attempt to analyse and systematize “driving forces of landscape change” (Bürgi et al., 2004), identified four major challenges to that aim: “studying processes and not merely spatial patterns, extrapolating results in space and time, linking data of different qualities, and considering culture as a driver of landscape change”. Their method thus implied the following tasks:

<p><b>STUDYING</b> landscape change across borders and transects</p>	<p><b>FOCUSING</b> on persistence as well as change</p>	<p><b>INVESTIGATING</b> rates of change, considering attractors of landscape change</p>	<p><b>TARGETING</b> correlation and causality</p>	<p><b>SEARCHING</b> for precursors of landscape change</p>
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While such a systematic approach to landscape change is not always developed in case studies cited in this report, the concept of landscape-change drivers itself has been further discussed and put into perspective. For instance, Plieninger et al. (2021) propose an approach along more coordinates, including, in addition to “drivers” themselves, “pressures”, “state”, “impacts” and “responses”. Resuming results from Bürgi et al. (2004), Wolpert et al. (2020) highlight that “driving forces mostly appear in bundles and interdependencies across natural, political technological, socio-cultural and economic factors, calling for a multi-sectorial and holistic approach to landscape management”.

Thus, landscapes are now generally approached as the constantly evolving results of intertwined processes. Rather than through their physical features and associated practices, or by their either “traditional” or “abandoned” state (Frattaroli et al., 2014), landscapes have been increasingly characterised in terms of “scenarios”, “trajectories”, “patterns”, or “processes”. This latter term is used by Wolpert et al. (2020), who identify the following among the three types of tree-crop Mediterranean landscapes they analyse:

▶ **EXPANSION**

A tree-crop landscape that is flourishing and growing in its extent as well as in its importance for human use

▶ **CONTINUITY**

A landscape that is not significantly changing but rather remaining in the same state over a period of time. The tree crop is either still one of many trees or already enjoys a certain level of importance, depending on the landscape

▶ **POLARISATION**

Concurrent processes of abandonment on less fertile, steeper places as well as intensification on fertile zones

▶ **ABANDONMENT**

A tree-crop landscape that is undergoing a process of decreasing inputs as well as outputs

▶ **INTENSIFICATION**

A tree-crop landscape whose management has resulted in an increased yield per area. This often but does not necessarily coincide with an intensified use of industrial inputs, such as machinery and agrochemicals

▶ **RENAISSANCE**

The process of returning to expansion following a phase of abandonment, intensification or polarisation

Such processes can be confronted for instance with the “scenario” identified by Felipe-Lucia et al., (2022), i.e. “current situation”, “conservation and active ecological restoration”, “intensive agriculture”, “conservation and agricultural production”, and “rural abandonment”. Instead, “a common trajectory from an expanding, multifunctional landscape towards either intensified or abandoned systems” (Wolpert et al., 2020) is generally observed within the Mediterranean area (van Vliet et al., 2015).

Several studies emphasize the relevance of cultural drivers, but also the difficulty to assess their impacts (Plieninger et al., 2016; Wolpert et al., 2020; Zagaria et al., 2017). The question of stakeholders’ perceptions and involvement in landscape management is crucial, as much as the understanding of cultural and especially recreational services, from the impact of tourism on land-use (Aretano et al., 2013; Savo et al., 2016) to natural park trails on biodiversity (Atik et al., 2012). Vallés-Planells et al. (2014) thus propose a classification of landscape services “based on spatial landscape patterns instead of land-cover types, [which] will require an increased use of participatory techniques to involve stakeholders”, adapting that provided by Common International Classification of Ecosystem Services (CICES).

Such elaborate methods to analyse change in landscapes appear especially useful when they shed light on unexpected evolutions: for instance, Acha and Newing (2015) suggest that rewilding degraded dehesas landscapes could provide increased ecosystem services and biodiversity. Similarly, Agnoletti et al. (2011, 2019) show that terraced landscapes abandoned for a long time provide more ecosystem services and biodiversity than those abandoned more recently. Other studies highlight patterns of change differing from those observed at the Mediterranean, national or regional scale, like (Salvati et al., 2016) on reforestation.

### 3.3. Which benefits? Climate change impacts vs. ecosystem services, biodiversity and well-being

During the session on ‘Traditional agricultural landscapes and community conserved areas’ at the International Congress on Ethnobiology of 2011, it was stated that “these [traditional agricultural landscapes] are rich in agrobiodiversity values as well as inherent wild biodiversity and cultural values, and encompass holistic knowledge and collective management systems and complex institutions of customary law. They play a vital role in ensuring resilience, ecosystem function, and livelihood and food sovereignty. Inextricably linked to the material values of these landscapes are their spiritual and cultural values. These special landscapes offer us beauty and a palpable sense of place. They are living landscapes worth living in” (presented in Brown & Kothari, 2011).

Still, it may be argued that there is an overall focus on drivers of landscape change – and often on the consecutive loss of ecosystem services, biodiversity and well-being – rather than on an effective assessment of the benefits provided by landscapes themselves. Beside sophisticated mapping and modelling exercises registering land-use change (Perpiña Castillo et al., 2021; van Vliet et al., 2015) or bioclimatic evolution (Savo et al., 2016) or dating man-made structures (Turner et al., 2018) with a significant level of detail, benefits provided by landscapes are not always assessed in such a comprehensive and dynamic way. Instead, when they are not merely described, benefits are assessed singularly, i.e. in terms either of a single class of ecosystem services (Arslan & Kaymaz, 2020; Howlett et al., 2011; Paracchini et al., 2014; Picchi et al., 2019, the latter dealing with the relationship between renewable energy and ecosystem services for landscape planning and design), or of biodiversity (Atik et al., 2012; Bassols Isamat et al., 2011; Dudley & Stolton, 2012; Manenti, 2014; Santoro et al., 2020; Saadaoui et al., 2018). Several studies assess potential evolutions in benefits, more or less comprehensively considered,



Chestnut forest, Northern Apennines © Federico Panaiotti on Unsplash

in different scenarios like landscape restoration (Acha and Newing, 2015; de Groot et al., 2022) or improved management (Rocchi et al., 2019; Santoro et al., 2020), Felipe-Lucia et al. (2022) instead value the evolution of 16 ecosystem services in five alternative scenarios.

Well-being is directly considered by fewer studies, and following even more various and less systematic approaches. Soy-Massoni et al. (2016a) is the only publication (among those included in the Bibliography) to focus on the “the linkages that people perceive between a landscape and their subjective well-being”, explored through a face-to-face survey among 241 people, both locals and visitors. The same authors observe that “landscape beauty was cited most (115), followed by natural environment (73), health (51), spiritual values (48), and occupation (45) [whilst] learning (8), nature conservation (9), and carbon stock (10) were the least cited’. Interestingly, ‘most benefits mentioned by the respondents can be related to the ecosystem services categories: 62.3% of the mentioned benefits are cultural services, 24.7% supporting services, 10.5% provisioning services, and 2.5% regulating services”.

Relationships between landscapes, agriculture, food and health offer another relevant field of study, especially in the Mediterranean area, inasmuch as “diets are embedded in bio-cultural landscapes” (Ponti et al., 2016), while in turn “landscape products foster biocultural diversity” (García-Martín et al., 2021). In relation to the issue of traditional agriculture’s profitability, several studies elaborate solutions to secure revenues for locals. Borrello et al. (2022) thus demonstrate that traditional agricultural landscape certification (associated for instance with the preservation of terraced olive groves) can increase consumers’ willingness to pay, both individually and combined with other labels. Bugalho et al. (2011) focus on regulating services provided by cork-oak savannas both in the Northern and Southern Mediterranean also at the global level, arguing that “payment for ecosystem services” schemes, such as Forest Stewardship Council (FSC) certification or Reducing Emissions from Deforestation and Degradation and enhancement of carbon stocks (REDD+) programs could provide revenues for local communities and promote sustainable landscape management. Finally, Sørensen et al. (2021) inquire into Montados’ cork value chain, suggesting “potential leverage points for sustainability in the landscape of origin, which could eventually bring a positive trickle-effect of benefits for the whole sector”.

The question of ecosystem services’ management “costs” is tackled by Campos et al. (2021) in the national context of Portugal and by Rocchi et al. (2019) in the case of Natura 2000 sites in Umbria, Italy, suggesting that they are significantly lower than related benefits (see also Shirvani Dastgerdi (2020) still in the context of Central Italy, Dimopoulos et al. (2017) on the Greek context, Flinzberger et al. (2020) on agroforestry labels in the Mediterranean area).

Indeed, recent studies emphasize the opportunity to consider benefit ‘bundles’ (Meacham et al., 2022) or ‘baskets’ (Morgan et al., 2022), or landscapes’ ‘multifunctionality’, the latter consisting in ‘the capacity of a landscape to simultaneously support multiple benefits to society from its interacting ecosystems’ (Mastrangelo et al., 2014). Such capacity relies as much upon to landscapes’ management and local practices (especially in terms of land use, see Crouzat et al., 2015), as upon “landscape features, most notably a mosaic of land uses, scattered tree cover, low-intensity livestock grazing, rich landscape structure, and unfragmented ecosystems, underpin the biodiversity and ecosystem services values” (Plieninger et al., 2021, in the case of the dehesa system). On the other hand, multifunctionality also requires a realistic approach, as suggested by Pedrolí et al. (2016), inasmuch as “the demand for multifunctionality has also overwhelmed agriculture as many of the functions that society expects today from rural areas cannot be provided by a single farm or managed by individual farmers”, whilst – the same authors argue – “the polarising trends affecting European rural landscapes [have led] to a segregation of agricultural production landscapes and high-priority nature reserves”. Similarly, Torquati et al. (2015), analysing “Traditional Cultural Vineyard Landscapes” in Italy in terms of wine farms’ economic performance, suggest that “the key issue is not the contrast between those who support the costs of landscape preservation (vineyard owners) and those who reap its benefits (the community as a whole), but rather in the way in which the added value resulting from preservation of the landscape is being obtained and distributed”.

Following the brief discussion initiated in par. 3.2, it may be argued that a clear distinction between “challenges” or “threats” and “benefits” is not always easy, both because of the complexity of landscape processes through time, which imply “contrasts and contingencies” at various scales (Bevan & Conolly, 2013), and because of differing perceptions and potentially conflicting expectations regarding especially, but not exclusively, “productive functions [and] cultural values, including recreation and conservation values” (Soy-Massoni, 2016b). Some studies thus develop an approach to how stakeholder perceive ecosystem services and biodiversity: for instance Sagie and Orenstein (2022) conclude, in the case of Mount Carmel Biosphere Reserve, that ecosystem services are considered overall “as an empirical tool to influence decision-makers (instrumental), as a support tool to advance plans/actions/policies/initiatives that they are already advancing (strategic) and mostly as an effective rhetorical to raise public awareness (conceptual)”. On the other hand, Rolo et al. (2020) observe that management and socio-economic challenges are most often identified as the major challenges for the long-term sustainability of High Nature Culture Value agroforestry in Europe. Muñoz-Rojas et al. (2019) identify, in the case of Montados, “three discourses, and related management paradigms [which] address three fundamental aspects of the Portuguese silvo-pastoral system: the historical and heritage value, the production role, and the environmental benefits”, arguing that “each discourse and management paradigm in isolation fails to propose a uniquely valid solution to the sustainable reproduction of the system”. Contrasting discourses also characterize the relationships between local stakeholders and policy-makers, as suggested by Fagerholm et al. (2019) who illustrate “how a local perspective can contribute to the development of contextualized and socially acceptable policies for sustainable ecosystem services management”.



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### 3.4. Landscape management vs. landscape policies: research, practice and decision-making

“More research focusing on the links between cultural and biological diversity at the landscape level is also needed. This is an important task as these links, are rarely been formalized from a scientific perspective, therefore knowledge about them has often been ignored or lost. This has led not only to a separation between nature and culture in policies, but also between science and humanities in the study and management of natural and cultural values, affecting the conservation of cultural heritage as well as the natural heritage” (UNESCO-SCBD, 2014). Indeed, literature considered in this report generally suggests a sensible gap between landscape management at the local level, and policies which have an impact on both at national and international – and especially EU – level.

On the one hand landscape management is generally considered as an opportunity for landscapes conservation and/or sustainable development. While as evoked in par. 3.1 it may be framed by specific principles and guidelines, labels and programmes are often presented as best practices that may be replicated elsewhere (Samuels, 2017; Osipova, 2014; Salizzoni, 2016). On the other hand, landscapes may not be sustained by “a set of visions and more concrete objectives for protection and change, a number of strategic projects which are more or less comprehensively described, and a spatial outline to which the objectives and projects refer”, for instance, Pedrolí et al. (2016) observe the implementation of such landscape strategies in the two Northern Europe cases they analyse, but not in Portuguese case of Serpa olive groves. Based upon a systematic literature review and following expert discussions, Sayer et al. (2013) develop “ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses”.

Policies evolve as much as landscapes themselves, moreover, several policy sectors affect landscapes in various ways. At the EU level, Pedrolí et al. (2016) identify “two policy agendas affecting European landscape”:

- ▶ **THE SUSTAINABILITY AGENDA** has become an important policy agenda involving a large number of high-level policymakers in the public debate. It has grown steadily in terms of the number of issues covered and the significance of the competence. Objectives and regulations are often filtered down through the various levels becoming more and more landscape specific at the low levels.
- ▶ **THE MARKET AGENDA**, on the other hand, is highly centralised and most policy decisions are now high-level decisions, usually made at the EU level or in countries outside the EU, but in both cases increasingly compliant with WTO regulations. This agenda is characterised by de-regulation and expanding markets, leaving few competences to local or regional bodies. Agricultural and land market policies are now decided at the EU level for most of Europe. Consequently, the integration of environmental and societal concerns into the market policy agenda can only take place at the higher levels even though the European Treaty prescribes that policy integration must be ensured. Thus, highly globalised technologies and market forces are becoming increasingly influential and the local farmer and the local community are losing autonomy.

The most relevant feature of the “market agenda” is the Common Agricultural Policy, generally considered to have sustained intensification of agriculture in Southern Europe – the membership process of Croatia and the consequent application of the Policy is thus considered by Kale (2016) as “the second most important modern motion after post-feudal agrarian reforms” –, contributing also to a failure of the EU biodiversity strategy and of the Natura 2000 scheme (Palacín & Alonso, 2018), which themselves constitute prominent element

of what Pedrolí et al. (2016) call the “sustainability agenda”. Furthermore, Agnoletti and Emanuelli (2016) argue that if “policies are devoted to the conservation of biodiversity and cultural heritage, [they are] rarely focused on the result of interactions between nature and culture expressed by the rural landscape”. “Greening measures” introduced by the 2014 reform of CAP, which include rules on maintaining permanent grassland, crop diversification and Ecological Focus Areas (EFAs), have instead been acknowledged and their potential highlighted by Tzilivakis et al. (2016). The European Commission’s Long-term Vision for the EU’s Rural Areas – Towards stronger, connected, resilient and prosperous rural areas by 2040 – was issued in the 2021 and has yet to be implemented, and no dedicated scientific publication has been found.

It should still be noted that assessments of EU policies are generally elaborated thanks to significant data and knowledge tools such as CORINE Land Cover (CLC) inventory, provided by EU agencies such as the Joint Research Centre and/or the European Environmental Agency (Paracchini et al., 2008; Perpiña Castillo et al., 2018; Vysna et al., 2021; Zulian et al., 2013). The assessment of policies’ – hereby including the UNEP/MAP Mediterranean strategy for sustainable development 2016–2025 (UNEP/MAP, 2016) – impact on Southern Mediterranean landscapes seems conversely much scarce.

Regarding the broader international level, although it considers the Intergovernmental Platform for Biodiversity and Ecosystem Services’ role for heritage rather than for cultural landscapes more specifically, Bridgewater’s (2017) statement that “examining issues raised in assessments through the prism of heritage can help modify the utilitarian approaches and view of biodiversity and ecosystem services, enriching and humanising the IPBES outputs” is significant. In that way – writes the same author – “heritage issues can be effectively portrayed in IPBES outputs, then that process, in turn, will ensure IPBES outcomes reflect, and have positive impacts on, heritage practice and communication”. Focusing instead on heritage professionals’ perspectives on climate change, a similar reflection is proposed by Sesana et al. (2018).

Many authors suggest, like Plieninger et al. (2021) about the dehesa system, that “plenty of management and policy responses are available, but [that] there is a need to move from single-topic to cross sectorial, landscape-level approaches (Metzger et al., 2021). The dehesa system depends on measures and grants that fit the complexity of their biodiversity and ecosystem services values. Such policy responses should also take landowner and farmer perceptions, willingness, and capacity to innovate or to adopt measures for dehesa conservation into consideration. At the same time, the dehesa has become important for cultural identification and nature conservation, including the values and demands of a wider, more distant, and more urbanized society”. Local practices, research and policies at regional, national and international levels may still be brought to a closer dialogue, and secure a more decisive role for cultural landscapes at the outset of the UN Decade on Ecosystem Restoration.



Almond orchard, Central Apennines © Aleksandra Suzi on Dreamstime

## 4. Conclusions: the Mediterranean as a unique ground for mainstreaming practices, research and policies

“If the Mediterranean region is a microcosm of the world’s problems, it also has many models to offer for sustainable development and human well-being in a beautiful and biologically diverse environment” (Blondel, 2010). It has been identified as a biodiversity hotspot (Myers et al., 2000) and, as remarked in the Introduction to the Mediterranean strategy for sustainable development 2016–2025, “with its rich history and exceptional natural and cultural landscapes, its coasts accounted for 31 per cent of global tourist arrivals in 2011” (UNEP/MAP, 2016).

As illustrated in this report, many publications consider the Mediterranean scale, either as the broader context for case-studies or as the scale for typological or comparison analysis, focused for instance on landscapes characterized by a specific dominant feature like tree-crops (mainly olives, chestnuts, cork oaks and almonds). Indeed, “long-established Mediterranean land management practices have created a socioecological system with an extraordinary wealth of actors, practices, biodiversity, and ecosystem services, a system that has raised European and global conservation interest” (Plieninger et al., 2021). As for policies with a relevant impact – be it intended or not – on landscapes, they may be developed, implemented and assessed in a coherent way among the EU countries on its northern shore.

“The physical configuration of the Mediterranean structures, the flow of people, plants, animals, objects and ideas in specific directions, with important effects over both the short and long term”. What Bevan and Conolly (2013) write about Antikythera, which “sits at one of those geographically nodal points where the resulting contrasts and contingencies are particularly powerful”, may apply to many other landscapes in the Mediterranean, which benefits for people and the environment outreach its borders.





Lighthouse on Antikythera © Charalambos Andronos on Dreamstime

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Study developed thanks to:

