

# Exploring Agricultural Heritage Landscapes: A Journey Across *Terra Incognita*

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## Authors' note

THIS ARTICLE EXPLORES THE VALUES AND CHALLENGES of agricultural heritage landscapes, which represent a journey across *terra incognita* as we venture onto less familiar terrain. Over the last several years, we have joined a group of colleagues—including other contributors to this issue—who are considering agricultural heritage landscapes in the wider context of conservation and sustainability. Discussions during the Nature–Culture Journey at the IUCN (International Union for Conservation of Nature) World Conservation Congress in September 2016 inspired us to reflect further on what we can learn from this type of landscape, in particular, about the interconnections of nature and culture. We hope that this article will encourage further work to identify and recognize important agricultural heritage landscapes around the globe as well as in North America and will support efforts to sustain their multiple values and benefits.

## Introduction

Conservation of agricultural heritage landscapes is receiving increased recognition and attention worldwide. The term “agricultural heritage landscapes” is used here to describe productive landscapes that are created and sustained by communities and have natural and cultural heritage values. These landscapes, shaped and sustained by communities, are rich in interrelated cultural and natural heritage values and are often described as complex, dynamic biocultural systems. While agricultural heritage landscapes are receiving increased recognition by a variety of international and national programs, today they face many serious challenges. Several sessions in the Nature–Culture Journey<sup>1</sup> provided an opportunity for an exchange of ideas on this type of landscape.<sup>2</sup> This article reflects on that dialogue and, in particular, on some of the serious threats to the sustainability of these landscapes. In addition, this article highlights some of the emerging initiatives that have been developed in response to these challenges. For example, research is now being conducted to better understand these agricultural systems and to develop indicators of their resilience. Landscape-scale conservation ef-

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forts have begun to recognize the value of working with agricultural heritage landscapes as an important component of a regional strategy. The authors of this article are associated with an ICOMOS (International Council on Monuments and Sites) initiative on World Rural Landscapes that seeks more recognition for agricultural landscapes and new ideas to enhance their long-term sustainability. These resilient and adaptive agricultural heritage systems also have much to contribute to achieving the United Nations (UN) Sustainable Development Goals on food sovereignty and security and for informing a transition to a more sustainable agriculture around the world.

### **Agricultural heritage landscapes are complex biocultural systems**

The heritage values of these working landscapes are created and sustained by people on the land, over long periods of time, and are reliant on traditional ownership and management and governance systems (Brown and Kothari 2011; Kothari et al. 2013; see Ishizawa et al. in this issue). Biocultural practices that continue to evolve have shaped adaptable and resilient production systems and also created characteristic land use patterns and a distinctive sense of place. In addition to providing food and other products, these landscapes sustain communities and support local livelihoods and provide many other benefits including essential ecosystem services such as biodiversity, including agrobiodiversity, as well as food sovereignty and security (Bélair et al. 2010; Altieri and Koohafkan 2013; Gu and Subramanian 2014; Landscapes for People, Food and Nature 2015; Subramanian et al. 2017; FAO n.d.; International Partnership for the Satoyama Initiative 2017a).

Agricultural heritage landscapes produce food and other products in a manner that is shaped and sustained by local and indigenous communities interacting with their natural environment. The result of this interaction has been called a “biocultural landscape” defined as “an intertwined holistic system that has been shaped by human management over long periods of time” (The Christensen Fund n.d.). This is based on the concept of “biocultural diversity,” defined by Terralingua (Maffi and Woodley 2010; Terralingua n.d.) as

the interlinked diversity of life in nature and culture, an integrated whole formed by biodiversity, cultural diversity, and linguistic diversity. Diversity in this fuller sense is the multi-faceted expression of the creative force and potential of life in both nature and culture, a wellspring of vitality and resilience for life on the planet (Maffi and Dilts 2014: 7).

As indicated in these definitions, these ongoing complex biocultural interactions are increasingly referred to as “systems.” The Food and Agriculture Organization of the UN (FAO) has defined “globally important agricultural heritage systems” (GIAHS) as “remarkable land use *systems* and landscapes which are rich in globally significant biological diversity *evolving from the co-adaptation* of a community with its environment and its needs and aspirations for sustainable development” (FAO n.d.: 3; emphasis added).

The term “social-ecological system” is often used to describe the interactions between culture and nature (Bélair et al. 2010; van Oudenhoven et al. 2011; Perez-Soba and Dwyer 2016; Subramanian et al. 2017). When applied to agricultural landscapes, these might

be more accurately labeled “cultural–ecological–social–economic systems,” reflecting their complexity and representing more completely their range of values and intertwined systems. More simply, they can be called “biocultural systems.” As ICOMOS advisor Susan Denyer has written, “Cultural landscapes are about dynamic forces and dynamic responses which have both physical and intangible attributes.... All of these have the capacity to evolve” (quoted in Rössler 2008: 50).

It is also important to emphasize that local and indigenous communities are integral to these biocultural systems as they sustain the system and its resilience over time. As communities have significant leadership roles in agricultural heritage landscapes, it is critical to have a community-based and people-centered approach that respects governance systems and is conducted in close cooperation with associated communities (Brown and Kothari 2011; Kothari et al. 2013; Brown 2015; Larsen and Wijesuriya in this issue). As this discussion demonstrates, nature and culture are so intertwined and mutually influential within these dynamic systems, they provide an excellent example of landscapes with multiple values and illustrate the concept of “entanglement” (see Leitão and Brown articles in this issue).

### **Recognition of agricultural heritage landscapes**

Agricultural heritage landscapes are diverse and found in many parts of the world. For example, there are centuries-old forms of cultivation that have shaped the land into rice terraces and vineyards, agropastoral practices including transhumance that have developed patterns of use over extensive areas, and a wide range of indigenous agricultural practices that have specifically adapted to the varied ecosystems around the globe (Brown et al. 2005; Taylor and Lennon 2012; UNESCO World Heritage Centre 2013; Zogib 2013; Taylor et al. 2015). Fortunately, there are a number of international and national programs that are working to recognize and help maintain the diverse values of these places, usually through an inventory and designation process and, in some cases, support for ongoing stewardship. A brief description of several of these programs is included below; however, this listing is not intended to be comprehensive.

Under the UNESCO World Heritage Convention sites of Outstanding Universal Value can be inscribed on the World Heritage List if they meet specific criteria (UNESCO World Heritage Centre n.d.). Prior to 1992, nominations of agricultural heritage landscapes to the World Heritage List proved to be difficult as there was no framework for recognizing places defined by the interaction of nature and culture (Cameron and Rössler 2013). For example, the iconic English Lake District (Figure 1) was proposed in 1987 for World Heritage inscription as a mixed site, under both cultural and natural criteria; however, this nomination was deferred so that the World Heritage Committee could seek more guidance on evaluation for this type of site. In 1992, the World Heritage Committee recognized cultural landscapes as eligible for the World Heritage List in the *Operational Guidelines for the Implementation of the World Heritage Convention* (Mitchell et al. 2009; UNESCO World Heritage Centre 2016). Agricultural heritage landscapes can now be considered as a type of “organically evolved continuing cultural landscape” retaining “an active social role in contemporary society closely associated with the traditional way of life, and in which an evolutionary process is still in

**Figure 1.** Nestled between mountains, the landscape of valleys of the English Lake District, added to the World Heritage List in 2016, have been shaped by an agro-pastoral land use system. (Brenda Barrett)



progress” with “significant material evidence of its evolution over time” (UNESCO World Heritage Centre 2016: Annex 3, paragraph 10 (ii)). In 2016, the Lake District was again nominated, this time as a cultural landscape, and was inscribed on the World Heritage List. Today, a number of agricultural heritage landscapes are inscribed as cultural landscapes on the World Heritage List, including the vineyards of Italy’s Cinque Terre, Hungary’s Tokaj wine region, and China’s Honghe Hani Rice Terraces (UNESCO World Heritage Centre 2013; UNESCO World Heritage Centre n.d.).

UNESCO’s Man and the Biosphere (MAB) is another global program that recognizes working farm and forest landscapes (UNESCO MAB n.d.). MAB has developed an international network of biosphere reserves that include terrestrial, marine, and coastal ecosystems, each nominated by a national government. Many of these biosphere reserves are large and may contain considerable agricultural heritage uses such as traditional cropping, livestock herding, and forestry. In addition, IUCN’s framework of protected area management categories recognizes the importance of the interactions of people and nature over time, in particular through Category V, protected landscapes and seascapes (Brown et al. 2005; Dudley and Stolton 2012; Dudley 2013). In the management of Category V protected areas safeguarding those interactions is important to sustaining the biocultural diversity of these places, including wild and agrobiodiversity values, spiritual values, and other cultural values (Mitchell and Buggey 2000; Phillips 2002; Mallarach 2008; Amend et al. 2008; Brown 2015; Dudley et al. 2016). In countries worldwide this protected area management category is used at the national, regional, and local level to designate places that often have rich agricultural heritage.

Beginning in 2002, FAO started identifying GIAHS around the world (FAO n.d.; Figure 2). The objective of the GIAHS is to enhance global awareness of “remarkable land use systems and landscapes” including agricultural biodiversity and knowledge systems that also have important heritage values. These GIAHS are selected based on criteria such as provision of local food security, the presence of high levels of agrobiodiversity and associated bio-



**Figure 2.** The Globally Important Agricultural Heritage Systems (GIAHS) designation is applied worldwide, including to the Senmaida rice terraces on the Noto Peninsula of Japan. The Shiroyone Senmaida Landscape Conservation Council works with volunteers to continue farming practices and maintain the terraces. (Jessica Brown)

logical diversity, and the existence of stores of indigenous knowledge and ingenuity regarding management systems (Koohafkan and Altieri 2011; FAO n.d.).

In addition, there are programs and policy frameworks at the national and regional level. Europe, in particular, is well known for rural development policies that emphasize community well-being, economic vitality, and equity (Brasier et al. 2012). The 2000 European Landscape Convention advances cooperation on research, planning, and management of the everyday landscape and is the first international agreement of its kind (Council of Europe n.d.). A number of countries have created programs to designate and conserve nationally important working rural landscapes. In both the United Kingdom and France, for example, these designation programs focus on conservation of large-scale landscapes, recognizing the critical role people have played and continue to play in shaping the landscape and conserving its natural and cultural values. England and Wales have two designations for conserving large-scale working landscapes: national parks and areas of outstanding natural beauty (there are 13 of the former and 38 of the latter; Barrett and Taylor 2007).

In the United States, the National Park Service has developed policies for cultural landscapes in national parks and has established standards to evaluate the significance of rural and other landscapes (Mitchell and Melnick 2012). Guidance has been prepared on identifying rural historic districts, first for agricultural landscapes and later for traditional cultural properties (Parker and King 1998; McClelland et al. 1999). There are a number of national parks and national heritage areas that include agricultural landscapes, reflecting the significant role agriculture played in the history of this country. For example, there are initiatives to recognize, interpret, and sustain agriculture in national parks such as Marsh–Billings–Rockefeller National Historical Park (Vermont), Cuyahoga Valley National Park (Ohio), Grant–Kohrs Ranch National Historic Site (Montana; Figure 3), and Canyon de Chelly National Monument (Arizona; Figure 4) (Diamant et al. 2007; Mitchell and Barrett 2014; Mitchell



**Figure 3.** Grant–Kohrs Ranch National Historic Site (Montana, US) interprets a long and evolving tradition of cattle ranching from the mid-19th to early 20th century. (US National Park Service)

and Barrett 2015). Many of these parks work closely with partner organizations and involve the local community as well. However, relatively limited attention has been given to the cultural and natural heritage values of agricultural landscapes outside of national parks or through agricultural policy.



### Conservation challenges for agricultural heritage landscapes

The Nature–Culture Journey at the IUCN World Conservation Congress in September 2016 in Hawai'i offered people involved in various aspects of agricultural heritage to meet and share ideas. As noted previously, discussions during several sessions in the Nature–Culture Journey identified a number of challenges as well as some opportunities to broaden the current scope of conservation thought and practice to intentionally address agricultural heritage landscapes.

Despite the number of designations that exist for agricultural heritage landscapes (described in the previous section), they continue to face mounting threats, most notably from climate change and market globalization. These landscapes are also at risk from increasing urbanization and declining rural populations, loss of food sovereignty and security, ever-increasing dominance of industrialized agricultural practices, and loss of biological diversity and agrobiodiversity. In addition, since these landscapes are a product of dynamic biocultural systems, they are continually influenced by shifting rural social, economic, and ecological conditions. These driving forces can undermine long-standing agricultural land uses that have shaped the landscape and supported rural livelihoods (Gu and Subramanian 2014; Landscapes for People, Food and 2015; Mitchell and Barrett 2015). These circumstances have increased the need for a public dialogue on related issues such as the nature and pace of landscape change, the role of governmental designation and management, and the need for more integrative strategies and new types of collaborative governance for conservation.

One fundamental challenge is that the entangled nature–culture values and the dynamic systems that sustain agricultural landscapes are not widely understood and appreciated. As a result, most conservation efforts do not include consideration of agricultural heritage landscapes and associated communities. In particular, it has been observed that a perspective on agricultural landscapes as complex, adaptive biocultural systems has not yet been incorporated into conservation practice (van Oudenhoven et al. 2011). In addition, as associated communities play a key role in these biocultural systems, it is important to incorporate “a more concerted shift to participatory management that not only includes communities, but also supports and relies on their ways of using and maintaining landscapes” (van Oudenhoven et al. 2011: 155). Such “people-centered approaches” to conservation were a recurring topic in the Nature–Culture Journey (Kothari et al. 2013; Brown 2015; Wijesuriya and Thompson 2016).

In many cases, conservationists find themselves in opposition to agricultural practices that are environmentally destructive. These experiences have contributed to the general misperception that any type of agriculture is fundamentally incompatible with conservation. This misperception is exacerbated when the heritage values of certain agricultural landscapes are overlooked or when it is automatically assumed that any type of human activity is problematic. For example, natural resource or land use studies often refer to “human activities in ecosystems as disturbances, focusing largely on their negative impacts ... resulting in a ... pervasive view of all agriculture as inherently damaging to biodiversity and ecosystems” (van Oudenhoven et al. 2011: 155).

### Emerging new initiatives

In response to these challenges, a number of initiatives have emerged

**Figure 4.** Canyon de Chelly National Monument (Arizona, US) is co-managed by the Navajo Nation and the US National Park Service. Today, the canyon is still home to Navajo families who have continued to farm, plant orchards, and raise livestock since the 17th century. (Nora J. Mitchell)



and several that were discussed during the Nature–Culture Journey are highlighted here. Fortunately, additional research is focused on better understanding of agricultural heritage landscapes, examining the types of interventions that are part of traditional biocultural systems and assessing the benefits to nature conservation (Amend et al. 2008; Mallarach 2008; Dudley and Stolton 2012; Gu and Subramanian 2014; Dudley et al. 2016). These research findings have contributed to re-evaluation of the contributions from agricultural landscapes. Perhaps one of the most dramatic shifts in perspective occurred when strategies for the Convention for Biological Diversity (CBD) identified agricultural heritage landscapes (there referred to as socio-ecological production landscapes) as an important component for meeting its targets (Bélair et al. 2010; CBD 2010). It is significant that the CBD recognizes agrobiodiversity as a component (Amend et al. 2008). As a result, the biodiversity strategy is based not only on pristine environments, such as wilderness, but also recognizes that “human-influenced areas, such as socio-ecological production landscapes ... can contain rich sustainable practices and traditional knowledge” (Bélair et al. 2010: 5).

It is important to be able to make a distinction between the ecological impacts of agricultural land use practices that are beneficial and those that are detrimental. This has prompted researchers to work on a common framework and development of social-ecological indicators of resilience that can be used to assess land use impacts and influence strategies to prevent loss of biocultural diversity (van Oudenhoven et al. 2011; Gu and Subramanian 2014; Mononen et al. 2016; International Partnership for the Satoyama Initiative 2017a, 2017b). These indicators can inform conservation efforts and it can be argued that “the future success of conservation will depend on our ability to understand, harness and support those practices that are beneficial to the maintenance of the diversity and resilience of natural ecosystems, while changing those that are not” (van Oudenhoven et al. 2011: 155).

There is a growing call—in the US and around the world—for conservation on a landscape scale to effectively protect wildlife habitat, provide corridors for climate change-influenced migration, sustain cultural heritage, and enhance regional and global resilience (National Academies of Sciences, Engineering, and Medicine 2016). While landscape-scale conservation is challenging, it offers opportunities for links with agricultural heritage landscapes. Today, it is understood that ecosystems and ecological dynamics extend across geographic and political boundaries (Network for Landscape Conservation n.d.). Similarly, agricultural lands often contain cultural connections that make up an important piece of the puzzle for any large-landscape conservation effort. In particular, traditional land use practices and livelihoods, such as ranching, farming or subsistence harvesting, often cover large areas and span public, private, and tribal lands. Thus agricultural heritage landscapes can play an important role in formulation of conservation strategies for large landscapes that must encompass a mosaic of protected areas, forests, and farms.

Although this is still a new approach, some promising work is being done to incorporate agricultural lands—ranches and farms specifically—into this large-scale approach. In the Chesapeake watershed in the US, for example, indicators have been developed to track farmland preservation as part of larger landscape conservation goals for improving water quality in the bay (Chesapeake Conservancy n.d.; Figure 5). The Crown of the Continent initiative





**Figure 5.** Conserved farmland in the Chesapeake Bay watershed is now counted as an asset that contributes to the improvement of the bay’s water quality. (Chesapeake Bay Office, US National Park Service)

on the Canada–US (Alberta–Montana) border has developed a ranch conservation program along the Rocky Mountain Front and in the Blackfoot Valley that has been an important part of the conservation strategy. Preserving land for both wildlife and family farming has helped to build local support for making continuous connections across large landscapes and along important corridors (The Nature Conservancy n.d.). The recently formed Network for Landscape Conservation is focused on supporting and advancing the practice of landscape scale conservation and has made integrating cultural and working landscapes into this new approach one of its priorities (Network for Landscape Conservation n.d.).

To increase understanding of the role and contributions of agricultural heritage landscapes, the ICOMOS–IFLA (International Federation of Landscape Architects) International Scientific Committee on Cultural Landscapes (ISCCL)<sup>3</sup> launched an initiative on World Rural Landscapes to create a network of colleagues from many countries around the world (ICOMOS–IFLA ISCCL n.d.). This initiative takes a comprehensive view of rural landscapes, noting that many traditional land uses reflect resilient and sustainable systems. These practices respect the natural characteristics of the land, maintain biodiversity, and retain a region’s cultural diversity.

The World Rural Landscape initiative has drafted the “ICOMOS–IFLA Principles Concerning Rural Landscapes as Heritage”<sup>24</sup> to encourage and guide recognition and sustainability of rural landscapes. These principles:

- view rural landscapes through the lens of heritage;
- highlight the cultural, natural, social, spiritual, and economic values of rural landscapes;
- specifically address the rights of indigenous and local communities; and
- recognize the contribution of rural landscapes to biocultural diversity and sustainable agriculture.

The draft principles outline an action agenda to better understand, protect, and sustainably manage rural landscapes and their heritage values, emphasizing the importance of sharing knowledge of these landscapes broadly. This agenda weaves together many important strands, such as the need to draw upon local knowledge of environmental conditions, provide regional food security, develop shared governance, and improve agricultural policy. These draft principles are now under review as a doctrinal text for ICOMOS. Further discussion on these draft principles will take place at the 2017 ICOMOS General Assembly.

### **Concluding remarks**

This paper gives an introduction to the complexity—and urgency—of recognizing and sustaining agricultural heritage landscapes. Given their diverse interconnected values, these agricultural landscapes represent an important area of heritage conservation, addressing biodiversity and agrobiodiversity conservation as well as contributing to the vitality and way of life of associated communities. The interwoven nature–culture values and dynamic biocultural systems of these landscapes must be more widely understood and appreciated. Efforts to develop and apply indicators that demonstrate the conservation value and resilience of working landscapes can also play an important role.

Given the nature of the challenges facing agricultural landscapes, it is critical that these landscapes are part of larger regional conservation efforts embracing the principles of World Rural Landscapes and guidance from other related initiatives. In addition, agricultural heritage landscapes can also make vital contributions to heritage tourism, food sovereignty, and food security. Knowledge and production from these adaptive and resilient biocultural systems also offer a path to achieving more sustainable agriculture, as called for in the UN Sustainable Development Goals (UN General Assembly 2015; see also Potts in this issue). Given the value and vulnerability of these important places, it is time to give more attention to agricultural heritage landscapes. The upcoming Culture–Nature Journey at the 2017 ICOMOS General Assembly and Symposium will offer a valuable opportunity to continue this dialogue.<sup>5</sup>

### **Endnotes**

1. The program of sessions for the IUCN World Heritage and Nature–Culture Journey can be accessed at: [https://www.iucn.org/sites/dev/files/n-c\\_wh\\_journeys\\_programme.pdf](https://www.iucn.org/sites/dev/files/n-c_wh_journeys_programme.pdf).
2. Examples include “Advancing Sustainable Agriculture at the Nexus of Nature and Culture,” online at <https://portals.iucn.org/congress/session/9772>; “Constructing Resilience: The ‘Nature’ and ‘Culture’ of Food Cultivation in the Landscape and Seascape,” online at <https://portals.iucn.org/congress/session/9689>; and “People-

Centered Approaches to Conservation of Natural and Cultural Heritage,” online at <https://portals.iucn.org/congress/session/10316>.

3. The ISCCL has 160 members from more than 50 countries and is one of ICOMOS’s 28 specialist scientific committees whose roles are to gather, investigate, and disseminate information concerning principles, techniques, and policies related to heritage conservation (see Brown in this issue).
4. Online at [http://www.icomos.org/images/DOCUMENTS/General\\_Assemblies/19th\\_Delhi\\_2017/Working\\_Documents-First\\_Batch-August\\_2017/GA2017\\_6-3-1\\_RuralLandscapesPrinciples\\_EN\\_final20170730.pdf](http://www.icomos.org/images/DOCUMENTS/General_Assemblies/19th_Delhi_2017/Working_Documents-First_Batch-August_2017/GA2017_6-3-1_RuralLandscapesPrinciples_EN_final20170730.pdf).
5. ICOMOS General Assembly and Symposium, see <http://icomosga2017.org/>.

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