

**AGROSYSTEMS PROTECTION AS HERITAGE ELEMENTS:  
CULTURAL LANDSCAPES**

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**Abstract**

Transformations in agriculture during the last decades have generated a type of industrial intensive farming based on big inputs of energy and agrochemicals, which is considered a major cause of environmental imbalances. Moreover, historical cultures are generally sustainable, provide biological and landscape diversity, and often beauty. Frequently they form valuable heritage spaces. The human need for subsistence food production has kept them alive to this day in many places around the world.

Traditional crops are not natural: they need constant human action for maintenance. But the negative impact in the environment is much lower than in industrial agriculture. Many traditional agrosystems are properly Cultural Landscapes. These areas are being abandoned widespread in developed countries, and simultaneously with the spaces also the traditional social relations system. There are legal protection figures from heritage perspective, as UNESCO World Heritage, Landscape European Convention, or local legislation that can help in the aim to safeguard these ancient places.

We studied the Palmeral de Elche (Spain). It constitutes a representative example of this typology, which has been included in the World Heritage List. There we had a prospect over general aspects of degradation in a present urban transformed environment. It is a major item for conservation to understand his significance and strategic value. We are not only losing elements of the agrosystem, but also the ancestral culture associated with its maintenance and operation. We afford some ideas to evaluate landscape values and to understand essential nuances and places to preserve.

**Keywords:** Agrosystem protection, Sustainability, Cultural Landscape, World Heritage, Palmeral de Elche

**Overview**

World agriculture undergoes a series of transformations caused by the evolution of the global economy, in a more intense way since the last decades of the twentieth century. The situation is evolving into a kind of industrial intensive farming, in huge farms, maintained on the basis of strong energy inputs, machinery, seeds and chemicals, and is considered a major cause of environmental and social imbalances. The change from family or subsistence agriculture to an industrial one is a process common to all developed countries.

Moreover, historical farming is often sustainable, provide biological and landscape diversity and often beauty. Agricultural productivity measured in kg/ha, and economic performance, are lower than in industrial crops. But these are not the only items to be considered. There is also a smaller plot size, the minimum landscape tile. As a result, the extension of the separation lines is much larger in family plots and it represents a basic biodiversity redoubt. J. Lovelock (1993) uses the term "agribusiness vandals" and criticizes some environmentalists for its myopia regarding the disappearance of boundaries between small properties, which were the remains of the original natural matrix.

Traditional crops are not natural; they need human action for maintenance. The whole system falls apart quickly if it is left to their fate. They are designed or modulated from a low intensity use, so their overall impact on the environment is low. The relatively new concept of Cultural Landscape represents almost a new paradigm in planning, landscape or environmental studies. There are different criteria for recognizing a cultural landscape (<http://whc.unesco.org/en/culturallandscape/> Accessed on 07.15.2013).

Here we focus on traditional agricultural environments (Fig. 1,2,3). These areas are being abandoned or destroyed in developed countries (Küster, 2004). Many of them have heritage value in a broad sense of the word, particularly before to the risk of permanent loss. Understanding strategic significance of agrobiodiversity (agricultural and of livestock) conservation and food security is often poor. If we lose these spaces we not lose only elements from the territory, but also the culture accumulated over generations associated with maintenance and operation, usually in a sustainable manner.



Fig. 1. Grapevine Landscape. Vadobbiabene, Italy. From ([www.cultural-landscapes.ca](http://www.cultural-landscapes.ca))

Fig. 2. Terraces in Bali. ([weloveyatours.blogspot.com.es](http://weloveyatours.blogspot.com.es))

Fig. 3. Black Forest, Germany (autor Hans Page)

Cultural landscapes represent the "combined works of man and nature". They are illustrative of the evolution of society and human settlements along the years under the influence of the limitations and advantages of the natural environment, as well as the influence of the successive social, economic and cultural forces. Its area is defined by its functionality and intelligibility. The agro-cultural landscapes are being increasingly recognized as collective heritage items. The concept overlaps to a large extent with the category V established by the IUCN (Dudley N., Ed, 2008).

The early twenty-first century years requires a change of general attitude that involves the recognition of the securities and sustainability held by the traditional ranching and farming, as they are: maintenance of agro-biodiversity, food security, social cohesion, cultural values, etc. We must look ahead to the current reality to affirm the value of the traditional world against the simple logic of global currency markets. We must not simply accept the loss of assets, while it is necessary to redirect the ongoing processes with realistic conservation criteria, provided with the available means and resources.

There are adequate policy instruments and international conventions for the new reality, which reflect the plurality of confluent approaches and regulations and the most recent approaches to environmental heritage. It may be interesting to mention: the European Landscape Convention (<http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm> Accessed on 07.14.2013), the UNESCO program for Biosphere Reserves, UNESCO World Heritage List (<http://whc.unesco.org/en/list/> Accessed on 15.07.2013), the FAO program Globally Important Agricultural Heritage Systems (<http://www.giahs.org/> / Accessed on 16-07-2013), Natura 2000, based on the EU Habitats Directive, Rio and Rio + 20 agreements on biodiversity, the World Database of Protected Areas (<http://www.wdpa.org/> Accessed on 14-07-2013), in addition to regulation at national or local level.

In our experience is important to note that the attainment of an agricultural inclusion in any of these listings does not guarantee preservation, as we found in some points of the *Palmeral de Elche*. The effective achievement of this objective assumes the availability of human and material resources. It requires the existence of active and engaged local communities with efficient management mechanisms, in addition to technical and economic support.

UNESCO develops from the 70's one World Heritage List which contains over 700 properties, of which 80% are cultural, and the rest natural. Most cultural objects are buildings, monuments, archaeological sites and the like, but year by year the number of cultural landscapes in the List is increasing. Today there are some 80, many traditional agricultural areas. In 2000, the Palm Grove of Elche (Spain), an agrosystem cultural landscape was included in the List.

### Palmeral de Elche

UNESCO inscribed the *Palmeral* (palm grove) on the World Heritage List as a cultural element (<http://whc.unesco.org/en/list/930> Accessed on 14.07.2013) at the XXIV meeting of the World Heritage Committee in December 2000. UNESCO considered that it meets the requirements (ii) and (v) of the six available, in addition to authenticity, in the following terms:

- Criterion ii. The Palmeral (palm grove) of Elche represent a remarkable example of the transference of a characteristic landscape from one culture and continent to another, in this case from North Africa to Europe (Fig 4,5).



Fig. 4. Palmeral de Elche. Google maps      Fig. 5. The Palmeral from medium distance (1997)

- Criterion v. The palm grove or garden is a typical feature of the North African landscape which was brought to Europe during the Islamic occupation of much of the Iberian Peninsula and has survived to the present day. The ancient irrigation system, which is still functioning, is of special interest (Fig. 6,7).



Fig. 6. Torre de Vaíllos



Fig. 7. Traditional irrigation

The Palm Grove of Elche, according UNESCO, is an asset of outstanding universal value, representing agriculture and traditional uses. It is formed by a population of *Phoenix dactylifera* in the medieval city environment. It was created by humans as a kind of oasis, with an irrigation system on the basis, around the tenth century (Azuar, 1998, Martinez, 2001), with agricultural functionality. It is a part of the process that some authors (Glick, 1979) called "green revolution", associated with the spread of Islam in medieval Spain. Its foundation was simultaneous with the change of location of the city. According to this criterion, Palm Grove of Elche is the last oasis and the northernmost of those related to the expansion of Arab culture from the original focus on the Arabian Peninsula to its settlement in Spain (Sharq Al Andalus). It is the only large oasis in Europe.

The palm grove of Elche has an importance similar to other recognized elements of the Spanish-Arabic era. Its primary function was to produce food for the people in their immediate environment, as well as the creation of a microclimate suitable for this purpose. In Elche, with about 300 mm of annual precipitation, water for irrigation is scarce and saline. The role of the palm tree was relevant in this transformation, as far as palm tree is a salt resistant species, in addition to its high aesthetic and symbolic value in all the Mediterranean cultures. The Muslims who resettled the palm grove of Elche designed it as a tool to obtain maximum yields in harsh environmental conditions.

From the thirteenth century, with the Christian conquest, the city experienced a change of cultural influence, but many of the uses of the previous stage remained alive (Cavanilles 1795-1797). The palm grove was nestled in the heart of a culture different from his birth, which permeated in many aspects. Its strategic productive value was high at the time, and the degree of integration into the new dominant culture was such that allowed him to reach a functional state almost until today, going on through all kinds of circumstances and difficulties. UNESCO considers a key value the multiculturalism feature displayed in this environment. The palm grove has been for at least a thousand years an agricultural oasis whose function was food production and self-sufficiency, looking for basic materials at the local scale. The basic territorial unit is the huerto (Ortiz C., L. Gracia. 2000). Palm grove vocational activity is agriculture. The traditional irrigation system is still running, with changes, but UNESCO recognizes his value as a part of heritage.

The palm grove, as well as other cultural landscapes, represents a complex system of customs, relationships, social habits, associated rights over water, etc., characterized by sharing in scarcity, which seems to have passed from Muslim to Christian culture with little variations. Traditional production techniques are part of the intangible legacy and they should be object of worthy attention (Fig. 8, 9) UNESCO has recognized the character of Best Safeguarding Practices of the Intangible Cultural Heritage for the pedagogic project of the Center For Traditional Culture - School Museum of Puçol (Elche) (<http://www.museopusol.com/> Accessed on 14.07.2013), which has collected important elements of local culture, acting from a rural school with local community support.





Fig. 8. White palm



Fig. 9. Dates Biodiversity

The rapid socioeconomic changes and the availability of food and materials from remote sources have caused a breakdown in the ancestral system of palm grove exploitation. The functional traditional huerto is an increasingly rare figure (Fig. 10) and is a clear example of agrosystem which has lost his ancient function, because of the changes in social and productive model (Ortiz C. 2002).



Fig. 10. Urban uses in ancient *huertos* (2012)

There exist legal rules establishing different protection figures since 70 years ago, but the practical reality exceeds its regulatory capacity. Under our experience, the simple superposition of new statutory protection over those previously existing may be useless if suitable means are not developed, as well as clear procedures for his effective implementation. Despite legal protection, heritage threats have not disappeared. Usually it is caused by the pressure of the socioeconomic environment, and sometimes it is also due to the lack of understanding of the protected environment by a part of the population and by some of the managers. The transformations involve processes that may lead to a partial or total distortion of the agrosystem (loss of authenticity). If necessary, a system of reasonable and compatible new uses should be proposed for high-risk areas, after getting consensual agreements between stakeholders, along with a good management plan and efficient executive institutions. Decision making is a process of diagnosis and planning, targeting a well-defined set of objectives, which requires work and time to reach the scale of individual project. *State and Management Indicators* for the site are particularly useful even though developing them may be laborious. It is essential to enhance traditional palm farms under current heritage criteria (Gracia L. 2007).

The ideas that we present in the paragraphs above constitute only one of the first steps in the approximation to reality. In later phases of protection process will be essential to consider the overall intangible organization, and to know the environment to be protected at a detailed level, starting with the most valuable points. In our research we need to consider the economic aspects related to the management, in order to ensure its effectiveness. It is very difficult to maintain a farm

today as it was centuries ago, but we must not allow the erosion of the entire heritage. Cultural tourism, education and science are emerging basic references to consider today from UNESCO viewpoint. It is extremely important to recognize agrobiodiversity value, the relevance of local food security as well as the related social structure. They are values to be defended in a world dominated by economic globalization, with the involvement of local communities and institutions.

This is a small summary of our experience in the technical work of protection in a particular element of World Heritage. As we have pointed out, there are other legal or social protection tools, from local actions to other more extensive levels. Any of them will fail if there is no will, knowledge and means to implement it. Our primary goal in this contribution is to relate the world of traditional extensive agriculture with heritage assessment criteria, biodiversity conservation, sustainability, and some other applicable in each case. The value of historical agricultural systems is becoming clear for international institutions as elements of environmental and social stability, also as generators of important cultural expressions.

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