



Gardens & Landscapes of Portugal

The Douro Valley: Landscape heritage corridor of Humanity - From the past, towards the future

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Reference: Desidério Batista and Rute Sousa Matos, "The Douro Valley: Landscape heritage corridor of Humanity - From the past, towards the future", *Gardens & Landscapes of Portugal*, CIUHCT/CHAIA/CHAM/Mediterranean Garden Society, nr. 3 (May 2015), pp. 60-70. ISSN 2182-942X URL: <http://www.chaia_gardens_landscapesofportugal.uevora.pt/index%20home%20presentation.htm>

ABSTRACT

The conceptual convergence of the notions of landscape and heritage, conveyed by the international normative documents, assumes them as an historical construction resulting from the interaction between society and Nature. In the Douro Valley, the presence of a significant number of landscapes (urban, rural and natural) of interest and of international value turns it into an authentic heritage corridor. The sustainability and resilience of this cultural landscape imply its acceptance as an inheritance received and to be passed on to future generations, through the perpetuation of its cultural identity.

ARTICLE

1. The concepts of heritage and landscape in international documents

In the last decades, the United Nations, the International Council on Monuments and Sites, and the European Council have been consolidating a process of reflection about the rational use and the profitability of the natural, cultural and economic pre-existing resources. This process, materialized through the issue of various international normative documents (Charters, Recommendations and Conventions) is marked by the evolution of the notions of heritage and landscape. Landscape and heritage are understood, nowadays, through a wide and comprehensive concept, as a social and historical product, as a legacy that should be preserved, valued and incorporated active and dynamically, in the processes of social-economic development, under sustainability criteria, so that the received inheritance can be transmitted in the long term.

In this sense, and after successive conceptual expansions, there are two fundamental questions, given the intricate inter-relations between the ideas of heritage and of landscape conveyed by that set of documents. The first question relates to the current meaning of heritage that claims a broad consideration which incorporates the landscape as an historical construction. And the second question relates to the operational delimitation of landscape which, in the broadest sense, covers the set of manifestations that result from the relationships between Society and Nature. In fact, the text from the European Landscape Convention (EC, 2000) among others texts issued by those International Organizations, recognizes landscape as an expression of the diversity of the European Cultural and Natural Heritage, and the basis of their identity. This document emphasizes precisely the idea of landscape as a cultural and historical construction, meaning, as a space of complex organization, a product of the sum and interaction of multiple processes, both natural and anthropogenic. The intricate tissue of the relationships that are established between the populations and their territory, underlying the process of spatial occupation and organization, is translated in simultaneous or successive overlapping of different cultures, on the one hand, and, on the other hand, in its articulation and juxtaposition. A fact that contributes to the acceptance of the ideas of landscape and heritage as a palimpsest, considering a vertical reading of the space, and as a corridor that connects and relates points or areas, from their horizontal reading. This idea is implied in the spirit of those international documents and has in the Douro territory a clear example of the spatial and temporal continuity of the secular human actions

and marks imprinted in the territory within the historical process of construction and transformation of its landscape, recognized worldwide for its natural and/or cultural interest and value.

2. Brief natural and cultural history of the Douro Valley landscape

Douro River as a linear element of Iberian expression unifies the territories of the interior and coast through a route that, in Portuguese territory extends for about 300 Km (including its international course), being characterized for its high geographical and cultural complexity and diversity, although it is, in its whole, an landscape unit (CANCELA D´ABREU et al 2004: 221), of undeniable beauty and landscape and heritage richness, both on national and worldwide level. The natural and cultural history of this landscape (of landscapes) translates, precisely, the adaptation of the human communities to the environmental variables (relieve, soil, climate, water), which determined a greater concentration of the population in the inferior part of the river where the climate is milder (Atlantic influence) and the topography less pronounced, or the construction of terraces for the cultivation of vines on the slopes of schist, where the climate has Mediterranean influences (Alto-Douro), differentiating itself from the most upstream section where the poly-culture (almond and olive groves, vineyards and vegetable gardens) alternated with the granitic cliffs and the thickets that grant it a greater biodiversity. With effect, the landscape of the Douro Valley is the result of the use that people make of the ecological niches present through arduous and permanent work that allowed their own survival, from the beginning of the humanization of this territory (from about 20 000 years ago) until the development of a traditional agriculture responsible for the construction of landscapes, considered to this day, biologically balanced, socially useful and aesthetically beautiful.

The very embedded valley constitutes a morphological unit that is characterized by climatic oscillations (from the Atlantic influences to the continental ones) and significant altimetric ones (on the margins of the river there are many altitudes ranging from sea level, near the mouth, and 120 meters, near the border, up to the greatest altitudes, associated with the ridges that reach 600 and 800 meters), being included in the Old Massif, corresponding a geological substrate constituted mainly by schist, occurring sporadically, granite, and in which predominate the lithosols (CANCELA D´ABREU et al 2004: 223).

Historically, the uses of the soil are determined by these natural factors and by a process of human intervention, slow and progressive, of which resulted an extremely original agricultural landscape, which variable pattern along the river, expresses a specific understanding of the territory.

The presence of the river that runs perpendicular to the ocean, fitted between steep slopes, and the grandeur of the valley highlighted by the clipping of the valleys by its main effluents, determines distinct ecological situations that are on the basis of different cultural expressions. These are responsible for a diversity of landscapes that, associated to the valley and the river, hold a common denominator: a high identity and strong character, a result of the wise and enterprising work of generations that, for centuries have been able to take full advantage of the pre-existing hard natural conditions, building on the ecological history of the place, a cultural landscape that does not exist elsewhere. This landscape integrates an unmatched set of areas, urban, rural and natural, meanwhile classified as “areas of protected landscape” of international value that validates, with justice, the idea of landscape as a dynamic cultural construction in permanent evolution and transformation. In fact, in the Portuguese Douro territory there are four areas of worldwide recognized interest and value (from downstream to upstream): the Historical Centre of Oporto (classified as World Heritage by UNESCO in 1996), the Vineyard Landscape of Alto-Douro (classified by UNESCO as Cultural Landscape, in 2001), the Archaeological Park of Côa Valley

(inscribed in 1998 in the List of UNESCO's World Heritage, under the designation "Prehistoric Rock Art Sites"), and the National Park of the International Douro (Natura 2000 network) (fig.1).

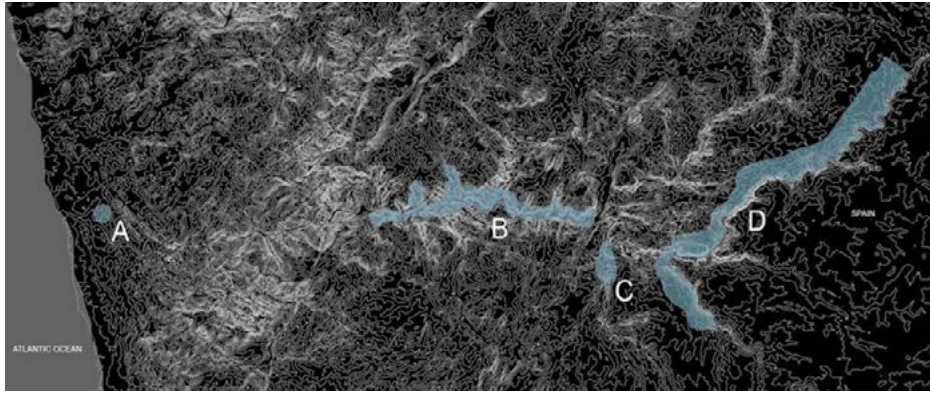


Fig. 1. The Douro Valley: landscape and world heritage corridor - (A) Historic Centre of Oporto; (B) Wine Cultural Landscape; (C) Côa Prehistoric Rock Art Site; (D) Natural Park of International Douro.

These areas correspond to distinct and successive cycles or stages of the colonization of the territory, marked by the rational and sustainable use of the natural and cultural resources by the human communities. The historical process of spatial organization and occupation that underlies it, puts into evidence the construction of a landscape (of landscapes) that served, through time, as habitat of several people, civilizations and generations, and it is recognized today as a unique cultural heritage in worldwide context.

This unique heritage corridor constitutes a living and evolving example of a landscape demonstrative of diverse periods and layers of the natural and human history. Of millennial occupation, since prehistory, the Douro Valley constitutes a cultural and ecological corridor that testifies the adaptation of the human communities to the circumstances of the environment. The history of its humanization reveals a secular process of landscape construction (urban, rural) based on an extraordinary ability to take advantage, in the best possible way, of the difficult natural conditions and its adaption to civilizational evolution. The urban evolution of Oporto or the cultivation of vines in terraces, on the steep slopes, testify the effort of multiple generations that were able to construct, over centuries, landscapes that correspond, today, to cultural assets classified by UNESCO as World Heritage.

The city of Oporto and the *Paiç Vinhateiro*, name given by the Baron Forrester to the territory of licorous wine production (BARRETO 2014: 68), assume through the strong character of urban and rural landscapes, respectively, the understanding of Douro Valley as a landscape and heritage corridor of Humankind. In both cases, the communion with the river conveys them originality and singularity which man enhanced in the construction of such historic landscapes, considered unique in an international ground. On the one side, José Saramago (2013: 178-186) wrote "(...) Finally, Oporto, to really honour its name is, above everything else, this large bosom open towards the river, but that only the river sees (...) a hard mystery of shady streets and brown houses, so fascinating, all this, as the lights which set on fire on the slopes at nightfall, city together with a river called Doiro (...)." On the other side, on the wine-growing landscape, Orlando Ribeiro (1997: 33-34) in one of his various descriptions made on her, considers that "(...) Douro's originality, deepen engraved of a great river inserted until its mouth and one of the most prodigious works of rural engineering built by man to the external market appeal. Historic vicissitudes that, opening to a superfluous and appreciated product a rewarding sell (Porto wine), allowed the hills dismount and the immense and regular construction of ices. An inclusive and integration approach in Douro wine-growing cultural landscape study is necessary. We consider that the history of this landscape is intrinsically related to the history of the river itself, but also to the history of the *quintas* and the history of the rail tray.

Therefore, if historically the foundation of the wine-growing country is associated with the historic *quintas* of the region which origin goes back to the fourteenth and fifteenth centuries, but especially to those built in the eighteenth century, its re-foundation is connected with the Douro's rail way construction late nineteenth century (PEREIRA 2002: 141). Both structures of land exploration and of the famous wine, as well as the railway as fundamental structure associated to its exportation, had a vital role in the construction and preservation of the value of memory and set up of regional and national identity.

Supported by the rail way and in a profitable alliance between the transport and science, the wine-growing landscape was converted in a scientific landscape (MACEDO 2011: 168, MACEDO 2012). In this case, large vineyards were transformed in an authentic open air lab where innovative experiments have been made to fight back diseases such as the oidium (grape-mildew) in 1852, the phylloxera (vine pest) in 1863 and the mildew in 1893, and in the introduction of American graft porta-enxertos, both in vineyards cultivation techniques and in wine processes (PEREIRA 2005: 189). Under a true agricultural and commercial revolution (BARRETO 2014: 131), the scientific colonization of the wine-growing territory, had a decisive impact on landscape. It has contributed to the forsaking of the most steep hills and less productive and with the most inaccessible terraces, to which they have given the name of “mortórios” (which comes from death in Portuguese language and has no translation into English). It was also invaded by copse wood, and considered a “(...) Douro's ancient torment and permanent scar (...)” (BARRETO 2014: 78). Nevertheless, it promoted the regularization and enlargement of the more accessible and narrow terraces with the consequent densification of grape-vines' replantation (MACEDO 2011: 169; PEREIRA 2005: 189).

The historical process of construction and transformation of the Alto-Douro wine-growing cultural landscape is marked by strong dichotomies which express the specificity of the place, but also the socio-economic conjuncture and national politics throughout that process.

It is one of the most ancient and important delimited wine-growing regions in the world (with origin in 1756 by Marquis of Pombal decision) considered poor, but able to produce great richness (PEREIRA 2011) it has evolved between tradition and innovation, protectionism and free-cambium (Pereira 2011; Sequeira 2006: 138), immigration and emigration, intermingled with periods of crisis (of production, commercial, social), and of euphoria or cleavages associated to production and to Porto wine exportation (BARRETO 2014: 93).

This heritage landscape is simultaneously characterized by the vine monoculture associated to the disperse habitat and to the great properties of *quintas* encompassed by erudite architecture, where pleasure gardens appear. It is also characterized by the Mediterranean multi-culture in small scale farms and concentrated peopling in villages of vernacular architecture, where kitchen gardens and orchards exist to self-food production.

However, this diversity and landscape complexity has in vineyards and wine production its value, its major-work, of worldwide recognition, that certainly is “(...) the most expressive agricultural landscape that has ever existed in Portugal (...)” (CALDAS 1997: 24). The history of the Douro valley is linked since the seventeenth century to the most profound transformation of Portuguese landscape. Behind this landscape transformation is the Porto wine culture created with the English. The quality of this product, fame and economic value justified the slow, difficult but irreversible cultural landscape construction (RIBEIRO 2011: 64).

Although there are some demographic and socio-economic disequilibrium in some areas of this territory (loss of people and emigration; unemployment and lack of rail way infra-structures and of social and cultural equipment's mainly in Riba Douro and Douro Superior) and of environment dysfunctions and heritage loss of identity,

“(…) what is really impressive is the region as a whole. It is a spectacle that reconcile oneself with Man’s nature (…)” (BARRETO 2014: 110).

3. Douro River as a landscape and heritage corridor of universal value

The idea of *continuum naturale* and *culturale* as a principle of spatial organization of the historical and traditional landscapes (and resumed, today, as a fundamental assumption under the current plans of landscape intervention both in urban and rural environments), has, in the Douro Valley, an unmistakable example of a model of occupation of territory that has always sought the long term development both of Nature and Society.

In the Douro territory, the relationship between economy – culture – ecology created a multi-faceted and complex landscape reality that, based on the use of methods and environmental optimized methods and solutions, is anticipatory in the time of the emerging concepts of sustainability, which lead to the internalization of landscape as a second nature by the resident populations, and which is identifiable in the adaptation of villages, of farms and of the diversified agricultural mosaic to its surroundings and to the productive process, not only just the cultivation of the vine, but of also Mediterranean cultivations, as almond and olive trees, in slopes or in the vegetable gardens and orchards in the more fertile lands in the areas adjacent to the water lines, and of thickets in areas of greater altitude (AGUIAR 2000: 147) (fig.2).



Fig. 2. The Douro landscape. Photograph by Desidério Batista.

In this sense, this landscape understood as heritage resulting from successive civilizational and generational interventions and, as such, deeply rooted in time, it acquired a social, economic and heritage value, by being composed of elements of which the national identity, as well as European, depends. Indeed, of very ancient occupation, the Douro Valley constituted a ...*corridor of people and culture* (AGUIAR 2000:145; PEREIRA 2011:20) that here left their marks, turning it into an historical reservoir, a container of traces and memories, and in reading area of the world. Therefore, “(…) throughout Douro vestiges from other periods of time abound, such as megalithic monuments, old castles, villages, roads and Roman bridges, hermits and paleochristians chapels, medieval castles, convents and Romanesque and gothic churches, (...) temples and Renaissance, Baroque or Neoclassic palaces, iron architectures and Arte Nova...Cities and monumental and friendly villages (...) and also villages, villas and disperse farms (...)” (PEREIRA 2011: 20).

As an historical compendium that reveals signs of an old and continuous human presence and occupation, the Douro cultural landscape, having the river and its tributaries as a structuring and crucial element, it takes form as a

collective work of art that integrates the following set of rare natural and cultural assets, considered true treasures of Humanity to be preserved and perpetuated:

(i) The Historic Centre of Oporto, situated on the right margin of the river, corresponds to the urban space delimited by the Fernandina Wall which was consolidated over the last eight centuries through a thorough process of adaptation of multicolor houses to the rugged topography, which grants it a strong character, to which contribute, with equal measure, the monastery of Serra do Pilar and the D. Luís I Bridge, to which UNESCO attributed the status of Cultural Heritage of the World (fig. 3, 4). It was this alive and original scenery, of the diverse houses combined in a harmonious conjunction of forms and colors hidden by the haze and frequent fog, this piece of the old borough in permanent dialogue with the river, the monastery and the bridge have justified such an honorable evaluation (JORGE et al. 2000: 17).



Fig. 3. Historic Centre of Oporto. Photograph by Desidério Batista.



Fig. 4. Historic Centre of Oporto. Photograph by Desidério Batista.

(ii) Equal distinction has deserved the vineyard landscape of Alto-Douro that corresponds to the central area of the region of Port Wine which translates into a monumental cultural landscape considered a masterpiece of the human ingenuity to adapt to the scarcity of soil and water and to the accentuated slope, of which resulted the artistic construction of immense continuous terraces supported by walls of schist where the vines are cultivated for the production of the famous wine, between farms of the XVIII century and villages that contribute to the perpetuation of a traditional social-economic activity responsible for the construction of a landscape that is unique in all of the world (fig. 5, 6); “ (...) It will be difficult to find in any other part of the world more tasty grapes and more beautiful landscapes than these (...) ” (DIONÍSIO 1995: 537). Here, in the beginning of the second

half of the eighteenth century, by State political will, a region was demarked and a society and landscape was born (BARRETO 2014: 20) which between tradition and innovation, between permanence and change has been kept in constant evolution and transformation. From that founding act “(...) the most beautiful and painful monument to Portuguese people work (...)” raised up (CORTESÃO 1987: 28). In fact, “(...) two colossal strengths made the Douro which appears in front of our eyes: the river’s and Men’s. (...) Seen from the air, from the valleys, or from the bed of the river, what one sees is always Men’s work (...)” (BARRETO 2014: 157);



Fig. 5. The cultural landscape of Alto-Douro: wine-producing farm complexes with winemaking-terraces. Photograph by Desidério Batista.



Fig. 6. Alto-Douro vineyard landscape: traditional winemaking-terraces. Photograph by Desidério Batista.

(iii) The Archeological Park of Côa is considered the biggest and most significant set of Paleolithic rock art on the outdoors worldwide. The cultural continuity of this place, which extends for over twenty kilometers, is considered an authentic sanctuary associated to a possible veneration of the river waters, which would be sacred, shows us hundreds of pictures of great mammals (horses, deer, etc.) with more than 20 millennia, but also more recent pictures, dated of the Iron Age, representing stylized human figures and geometrical motifs (fig. 7); (www.uc.pt/fozcoa; PEREIRA 2011: 41). Following UNESCO’s, the Côa Valley, integrates the Douro Valley, and provides the best illustration of the iconographic themes and organization of Paleolithic rock art, using the mode of expression in the open air, thus contributing to a greater understanding of this artistic phenomenon. It is considered one of the two sites of the prehistoric era, rich in material evidence of Upper Paleolithic occupation (whc.unesco.org).

(iv) The Natural Park of International Douro is considered an area of protected landscape for its great biological richness associated both to the diversity of the agricultural systems and to the natural habitats and species



Fig. 7. Prehistoric Rock Art Site of the Côa Valley Archeological Park. Photograph by Amélia Santos.

of the wild fauna and flora present in its territory, and it integrates the Natura 2000 network which constitutes an European ecological network of preservation of biodiversity, considered the main instrument of conservation of Nature in the European common space (fig.8). “(...) At the Douro international wildlife knows a rare richness in the country (...) this region still allows species to live that have almost disappeared from the rest of the country (...)” (BARRETO 2014: 83) establishing a fundamental area to the bird fauna living on rocks conservation of which are examples in the Iberian Peninsula, among other species, the royal-eagle, the vulture, the black stork or the Egyptian vulture (ICNF 2001: 117).



Fig. 8. International Douro Natural Park. Photograph by Desidério Batista.

This set of landscapes with extremely rich, intelligible historical, cultural and natural content, holds a high identity associated to river Douro, to the morphology of the valley and the use of its slopes for both the settling of the historic city of Oporto and for the development of the cultivation of vines, almond and olive trees. The construction of these landscapes corresponds to the possible adaptation and transformation of the hard biophysical conditions present, of which resulted a coherence of uses that, covering the multi-functionality both in urban and in rural spaces, reveal their resilience and sustainability (fig. 9).

However, the landscape and heritage corridor of the Douro valley as a linear structure of ecological and culturally fragile landscapes demands a careful and thorough management that conciliates the objectives of environmental and heritage protection, and of agricultural and wine production with the objectives of enjoyment connected to cultural tourism and ecotourism. In this heritage corridor of Humanity, the organized landscapes that integrate it hold a high aesthetic quality and a singular sensorial dimension that comes from the strong feeling of grandeur



Fig. 9. The historic vineyard village and the wine-producing farms. Photograph by Desidério Batista.

resulting from the natural morphology and from the secular and balanced human interventions. The safeguard and perpetuation of its cultural identity will pass by maintaining and valuing the traditional social-economic activities associated to its own productive sustainability which, complemented with actions of dissemination and dynamism of this set of protected areas for the sake of a cultural and leisure tourism, will contribute to the active protection of the landscapes and world heritage of the Douro valley.

Although the landscape transformation of this territory had occurred throughout history, between tradition and innovation, between permanence and mutation, maintaining biological balance, social usefulness and landscape aesthetics, recent changes might be threatening the sustainable development of that region.

António Barreto (2014: 276) considers that in the nearby future we need to be more rigorous in planning, regulation and development of Douro's region. In fact, the author stresses that because of progress, risks are permanent, not only because of uncertainty created, but also since profound environment and ecological unbalances threaten conservation and renewal of natural resources. In view of this, UNESCO stresses in its last reports that the danger of loss of Douro's landscape identity is real, as consequence of new techniques, construction materials and new methods of Porto vineyards cultivation: large and ill-proportionated embankments, new slopes, vertical vineyards, or vines without modulation and terrain structure.

If the undergone changes seem unavoidable and their consequences unknown, the loss of character and landscape identity seems certain since traditional processes are replaced by new ones and cultivation techniques that have nothing to do with the wine growing landscape are used.

The adulteration and destruction of what is valued as original and exceptional might cause in the nearby future prejudice. In view of this, sustainable management of Douro's landscape should take into consideration that its cultural value depends directly on a complex historical structure that embodies schist terraces and pathways adapted to topography. These provide communication between estates since the fourteenth and fifteenth centuries for the spread of traditional methods of vineyard grow and for related heritage share. Consequently, the transformation of this landscape and heritage should be carefully evaluated because a loss of cultural identity will be decisive for its future in a globalized world where other geographic regions might easily produce the same quality of wine (CANCELA D'ABREU et al 2004: 242). Therefore, we prompt that economic benefits provided by Douro's wines and tourism in this region - agro and ethno-tourism, cultural tourism and cruises departing from Porto and Régua -, should return to protect and to enhance this heritage.



Fig. 10. The cruces by the Douro river. Photograph by Desidério Batista.

The future Douro's landscape and heritage corridor, of universal value, and the social, economic and cultural future of the people's region are profoundly intermingled and interdependent. This fact demands an integrated and prospective vision of its problems and potentialities. The sustainable development of the region strains some problems' resolution regarding the fragility of its distinct landscapes (Oporto historic center, vineyard growth cultural landscape, sites of Côa's rupestrian art and Douro's international cultural landscape), such as the loss of cultural identity and collective memory; the population decline and population aging; the high dependence on agriculture and almost vines monoculture; and the isolation of important territory as a result of difficult access, unemployment raise and lack of qualified public equipment. Sustainability and territorial resilience of Douro's valley rely in a comprehensive and inclusive approach to distinctive landscape dimensions: economic, ecologic, cultural and aesthetical, through a strategy of space management that at a local and regional scale seeks to conciliate the objectives of protection and preservation, of natural and cultural heritage, with fruition and recreational goals associated with agriculture and commerce. If Douro's valley, throughout millenniums of art, science and technology have added men's will to the construction of landscapes as World Heritage listed by UNESCO, it is duty of present societies to legate for future generations this collective and anonymous work, legacy of a past linked to the future, because "what in Douro is produced and built, is also thought and written" (BARRETO 2014: 279).

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