Rehabilitation of the rural built heritage in central Algarve: from the coastline urban areas to the scarcely populated inland region

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Abstract— Rural settlements and landscape constructions have gradually played a bigger role on the discussions focusing on heritage conservation and rehabilitation. Reasons for this include the conceptual development of heritage and the quantifiable changes affecting rural heritage in the last few decades. This article will analyse the purpose of rural heritage conservation in the specific region of the Algarve, in southern Portugal. In this region, rural built heritage intervention inscribes itself in a number of thematic approaches covering different models for territorial occupation, landscape units or the typo-morphological classification of buildings. The following analysis will consider such conceptualisations when proposing tailored solutions for the diverse circumstances covered by this region. The differences that separate the region’s urbanised coastal areas from the scarcely populated inland areas will therefore be taken into account here. In the context of contemporary landscape transformation, this article will propose guidelines for the preservation of rural heritage in the Algarve based on a concise analysis of its traditional economy and on the different population trends of its regional units.

Keywords— Rural settlements; landscape heritage; vernacular architecture; geographical units; rural-urban regions; depopulated areas; heritage conservation and rehabilitation.

I. INTRODUCTION

The progressively increasing discussions on conservation and rehabilitation of rural constructions and architecture inscribe themselves in a wider debate, heritage as including landscape. Through these discussions, a fundamental question should be raised: what role is to be performed by rural built heritage in the profound changes affecting contemporary landscape? This article approaches this issue in the southern most part of Portugal by readdressing and developing ideas included in previously presented research [1].

The current trends for strong deruralization have negatively affected the conservation and rehabilitation of rural settlements and landscape’s constructed elements, which could otherwise be valued for their special architectural and historical interest.

II. GEOGRAPHICAL UNITS OF THE ALGARVE

The Algarve is the most southern area of Portugal and one with a marked identity of its own, reinforced historically by its northern mountain unit which separates this region from the rest of the country. The region is formed by three distinct geological zones which are from north to south: the Mountains (schist and greywacke), the Hills (calcareous) and the Coast (sedimentary) (fig.1). The diverse geology which characterizes these zones is naturally reflected at the orohydrographic, biotic, and cultural level. It shapes the landscape units into different forms within the region and produces quite distinct patterns of occupation [2]. Additionally, the characteristics of built rural heritage are necessarily connected to these three

Displayed in national planning documents, the criteria used for the most part for establishing different categories for heritage preservation is, nevertheless, unclear, due to the overall high number but deficient understanding of these rural constructions.

The area under study is the Algarve region which lies on the southern rim mainland Portugal and more specifically the central area of this region (including the municipalities of Faro, Olhão, São Brás, Loulé and Albufeira, and in which can also be included Tavira to the east and Silves to the west). This area is particularly relevant to the topic of this paper in that it includes sharply contrasting geographical units and is at the same time subject to nearly oppositional processes of transformation in land use patterns. These include a tendency to concentrate population near the coast and depopulation of inland areas.

In the first part of this article, we will characterise the traditional landscape in the region’s main geographical units, taking into account the different trends in territorial occupation and the resources of the traditional economy. In the second part, we will address the transformations affecting those units from the beginning of the second half of the 20th century until today. In particular, we will address the consequences of these changes on the present state of conservation of rural built heritage. On the third and final section, and taking into consideration the differences between the coastal and inland areas of this region, we will examine the possible roles to be played by rural built heritage and vernacular architecture in the transformations affecting contemporary landscape.
geographical units not only in terms of the construction materials or resources available but also fundamentally in how built rural heritage is integrated into this landscape. Its major urban centers are mainly located on the coastline which is characterised by fairly hierarchical populating trends. Contrasting with these, small hamlets prevail in the mountain areas, as the mountains are not suited for the larger population centres.

A. The Coast

The Coast is the geographical zone which has experienced the most profound transformation in the last half century, resulting from different forms of urban expansion and the growing importance of emerging activities such as tourism. The traditional rural landscape here is associated with a highly diversified landscape mosaic as noted in numerous historical sources such as H. F. Link at the turn of the XVIII century [3]. In addition to pine groves along the coast, this mosaic includes diverse agricultural activities such as irrigated and non-irrigated fields, dry orchards, citrus groves, or vineyards. Irrigated crops confer a special quality to the most fertile lands of this plain. The organization of the landscape has been clearly stamped by the lines of traditional irrigation systems consisting of waterwheels (noras), stone water courses (levadas), and water tanks.

The same diversity can be seen in the size of rural settlements since the coastal population follows a significantly hierarchical occupation within the area [4]. This population, polarized by the larger urban centres, was shaped by a rural economy into towns and villages and into in-between areas of scattered hamlets. This scattered built heritage is also highly diversified, as the result of, among other factors, the size and location of farms. Among the most important clusters of buildings in the coastal plain are manor farms (quintas) which are almost always located on the outskirts of the main urban centres. These farms have tended to emphasize the importance of irrigation associated with large land plots within these deeply subdivided zones.

The overall majority of the dispersed constructed clusters are connected to small property keeping. This constitutes an ancient way of populating these areas and covers a wide-range of solutions variable according to different historical cycles. The most decisive period for the consolidation of this populating trend initiated, nevertheless, during the second half of the nineteen century, facilitated by the changes in property system following the arrival of liberalism. In addition to scattered constructions, a linear implementation of buildings alongside ever more important routes was privileged.

B. The Hills

The diversity which characterizes the flat lands of the coast tends to diminish in the first line of hills in the calcareous region. The Hills are characterized by a predominance of dry orchards which include in different combinations almond, fig, carob, and olive trees. The importance of these species in the traditional economy included, whether as undergrowth in orchards or in more open fields, cereal crops which provided grain and fodder [5]. In the Hills, the irrigated fields have been mostly confined to riverside areas where vegetable gardens can be supplied by underground watercourses and wells or directly from rivers. In some valleys, irrigation meant a more complex system of dams and water channels linked to a large number of
land parcels, requiring community management of irrigation schedules. This solution, while very common in traditional agriculture of various northern regions of Portugal, is less frequently seen in the south and is a worthwhile heritage to rehabilitate.

The Hills are characterized by stony red soil so that stones are prevalent in the landscape in large stone walls and terraces which were used to expand productive lands and reduce erosion, as well as in a variety of buildings in this landscape (fig.3). The scattered population pattern described for the coastal area is present throughout the calcareous hillsides of the Hills. However, this pattern is here often associated with noticeably lower population density and it becomes less relevant closer to the northern mountains. Although large estates are present in the Hills, the greatest number of scattered buildings is connected to small properties, just as it happens on the coast.

Many of these settlements inscribe themselves in one of the solutions most commonly found across Algarve's different subunits: the tradition of housing organisation where basic single-pitched roof constructions are joined together. The volumetric composition is linked to frugal adaptation strategies, often visible in open systems of housing construction stretching over time. Contrary to what happens on the mountains or to the northern area of the Hills, from the second half of the nineteenth century onwards, the cumulative construction process on the southern stretch of central Algarve, is characterised by a diversity of roofing solutions (flat roof, single and double pitched roof).

C. The Mountains

The transition from the Hills to the Mountains is very visible from any of the many roadways that crossover the region. This clear demarcation originates in abiotic and biotic factors in addition to cultural reasons. One of the important features in this transition is in particular the settlements, differentiating the characteristic scattered buildings of the Lower Algarve (Coast and Hills) from the network of small hamlets in the mountainous areas. These hamlets frequently included a few dozen houses which mostly belonged to small-scale rural landowners. This type of settlement is largely typical of many mountainous areas of the Mediterranean region. It was the preferred pattern in areas which poor soil, traditional economies and the distance to important commercial and travel routes encouraged concentration into settlements without allowing larger centres to develop.

This pattern results from the paced population concentration trends arising in the Ancien Régime and continuing into the beginning of the second half of the 20th century. During this period of time, characterised by slow demographic growth, the Caldeirão Mountain registers a decreased number of settlements but an increase in the number of houses. Mountain settlements become increasingly complex as the houses belonging to different families permeate each other. They form constructed clusters with irregular perimeters assembled from the successive occupation of free interstitial spaces.

The Caldeirão Mountains are of low altitude, rarely rising above 500 meters. The condition of mountain area results from a repetitious orography of numerous small hilltops typical of schist mountains. The small mountain settlements tend to be located near the most fertile lands. In the traditional economy, these areas concentrated the permanent agriculture land plots, such as small vegetable gardens along rivers or non-irrigated fields of cereals. Outside of this ring, the mountain slopes were used for occasional crops, pasture, apiculture, or the manufacture of charcoal.

The first half of the last century (especially the second quarter) saw a strong push for cultivating cereals which resulted in the depletion and erosion of topsoil [6]. Because of plentiful forests and cork groves, the mountainous area of the central zone of the Algarve is clearly distinct from the more arid eastern zone. The economic importance of cork trees increased in the last half century at the same time as cultivation of cereals became untenable on the mountain slopes (fig.4).
III. CURRENT LAND OCCUPATION TRENDS

Changes in land occupation patterns over the last decades have resulted increasingly in a contrast between the two different worlds of the urban coastal region and the sparsely populated inland. Especially from the beginning of the fourth quarter of the last century, the diminishing importance of traditional activities and improvement in living conditions of these communities resulted in a profound transformation of land occupation patterns. As part of an observable global tendency, albeit with localized effects, in the Algarve there has also been a tendency towards urban growth in coastal areas and a significant drop in the importance of inland population centres.

The boundaries of these two worlds do not always coincide with natural regions. The southern area of the Hills have been for the most part taken by the process of diffused urbanisation typical of lower Algarve and polarised by the most important urban agglomerations. The northern area, however, is marked by low demographic concentration and the economical trends visible in the Northern mountain.

A. The coastal urbanized region

The changes above mentioned started in the 1960s with the process of urban expansion of the larger cities of the Lower Algarve and with the predominance of tourism activities in some centres along the coast. If at first this urbanization process resulted from a steady growth outward from traditional urban centres, it next began to include a diffuse urbanization of surrounding rural areas and a gradual emergence of a polynucleated system. The diffuse urbanization of the central region of lower Algarve took place over the typical rural landscape mosaic. It intensified the traditional patterns of scattered buildings and the appearance of different building typologies by the main communication routes (fig.5).

The typical trends of diffused urbanisation of rural spaces are found here as they are also identifiable in other locations on the Portuguese coast. This landscape of specific traits is not compatible with the traditional dichotomy of city/countryside still prevalent on Portuguese land management plans [7]. Coastal occupation coincided with a multiplication of holiday resorts catering for beach tourism while urban coastal centres were transformed by the replacement of architectures and by the introduction of new and often dissonant building morphologies.

The new patterns of construction coincided with a greater
use of intensive agriculture (expansion of areas dedicated to citrus trees and to greenhouse nurseries) and with the emergence of different forms of deruralization (abandonment of many agricultural plots and built landscape features). A diversity of new buildings typologies within this landscape and the reconversion of old rural hamlets into urban houses are part of this urbanization of rural spaces, resulting from new means of transportation associated with a new infrastructure network in the area. This transformation will result in decreasing the importance of the connection between buildings and agricultural lands which has in many cases guided the transformation of the pattern of scattered building within metropolitan areas.

This process of urbanization has not only taken place in the coastal area but has also spread to the first calcareous slopes of the southern Hills. Therefore, the polynucleated systems cover landscapes with quite different characteristics, acquiring because of this a great diversity. A large part of the agricultural fields on the calcareous slopes of the Hills have been abandoned or partially abandoned, resulting in a gradual expansion of bush areas. The landscape here is today notable for the preservation of dry orchard trees and for the disappearance of the patches of cultivation typical of the traditional economy. Connected to this disappearance, is the degradation of the built stone elements typical of traditional landscapes which by extension makes its maintenance ever more complex. The Hills thus have functioned as a kind of transition to the mountainous areas where the patterns of abandonment are even more pervasive. As we approach the northern zone of the Hills, we can see that the scattering of new buildings thins out at the same time that more and more abandoned traditional hamlets appear. Some of these small hamlets are overall noticeable for their large number of vacant houses.

B. Abandoned territories of the Inland region

In the last few decades, the mountainous areas of the Algarve were affected by a visible process of negative population growth, as has also happened in the rest of inland Portugal. The transformation of the mountain landscapes, during this period, includes an overall return to the extensive wild bush areas which were common until the beginning of the last century. In the meantime, land use instruments and spatial planning have favoured forest areas, deeming these important for the mountain areas. At present, this policy needs to be questioned for the resulting significant decrease in the prevalence of traditional species and the predominance of intensive plantations of eucalyptus (especially in the west) and of stone pine (more noticeable in the east) [8].

The central areas of the mountains, as part of the natural habitat for cork trees, have preserved the prevalence of this species which has taken over some slopes once dedicated to the cultivation of cereals. Some of the vegetable gardens distributed along watercourses have been preserved, supplementing the pensions of an increasingly aged population. Many other garden plots, however, have been washed away by torrential floods in river valleys, while other vegetable gardens have tended to appear nearer to population centres, benefiting from the evolution of irrigation technology.

The evident decrease and aging of the population in mountain areas has resulted in the complete or partial abandonment of a considerable number of small mountain hamlets namely Várzea do Velho (São Brás de Alportel, Cabaça (Loulé) or Zimbral (Tavira), this last one located not far from the coastline (fig.8). Construction in traditional villages was mostly of one floor structures with schist walls and tiled roofs. While in the last decades some of these settlements have been conserved without significantly altering their buildings, many others are being subjected to an intense process of architectural replacement. As a result of this process, very different solutions have been put into practice contrasting with the settlements’ traditional morphology, which characteristically includes room aggregation and the intricate organisation of different lodgings (fig. 7, fig. 8) [9]. Nevertheless, most of the mountain areas and a significant part of the Hills have, in the meantime, remained peripheral to the socioeconomic dynamics prevalent on the coast.
IV. ROLE OF BUILT RURAL HERITAGE

Rural built heritage has been intensely affected by the profound landscape transformations beginning with the Industrial Revolution and, moreover, from the second half of the last century. Occasionally, and mainly on the urban regions, these structures may remain but they coexist and alternate with the implementation and denaturalisation of the highly variable new structures associated with post-industrial construction systems. Other times, still, this heritage is abandoned, constituting a visible signifier for the entrenched deruralization processes affecting the country’s inland territories.

A. The rehabilitation of rural heritage in diffuse cities

Debates on the conservation of rural architecture and landscape’s rural built heritage generally privilege the areas less densely populated and the territories less affected by the several forms of artificialization of contemporary times. This debate should, however, also consider the present context of changeable cities and the increasingly relevant urban conurbations and diffused urbanism. On a previous article we had already suggested that the rehabilitation of rural heritage located in urban areas should be inscribed in a more wide-
raging model for urban development based on an awareness of the landscape system [10]. Landscape becomes here, therefore, a strategy, by incorporating urban activities, infrastructure, and architecture [11], and a privileged space, by integrating the mutual interactions between complex environmental systems and the contemporary city [12]. Once landscape is considered a model for urbanism, rural built heritage acquires a decisive role in urban development as one of the fundamental cultural components found in landscape.

The purpose of the rehabilitation of this heritage – subject to different international agreements like the Charter on Built Vernacular Heritage [13] or The European Landscape Convention [14] – depends on a great variety of situations within the area under study, as briefly discussed above. Along with other aspects, this diversity arises out of landscape history and more recent transformations. It is affected in discrete areas by the particular characteristics of the three previously described sub-areas within this landscape – the Coast, Hills, and Mountains – and the contrast between southern zones of urbanized lands and northern zones of abandoned lands.

Therefore, it is important to distinguish between the different sizes and shapes which here characterize old rural settlements as they raise different issues about the role they can play within contemporary cities. In the hierarchical population patterns of the Lower Algarve, it is important to mention some rural towns and villages which polarize the dispersal of hamlets scattered across the landscape. The spatial organization and irregular outline of public spaces within these villages are the result of unplanned growth, involving some patterns held in common with the historic centres of larger cities (fig.9). Their shape manifests a community culture as shown by the prominence of public squares and other public spaces or buildings. By their size, these population centres constitute a centrality extending to scattered hamlets located within its sphere of influence.

The biggest challenge presently faced while rehabilitating these building complexes is precisely how to enhance the collective nature of these spaces and their importance to community identity within the transformation process of gradually emerging rural-urban regions. In fact, traditional villages tend to acquire this role through their special community character in contrast to diffuse cities which are largely based on isolated individual housing units and on the general absence of small public spaces. In addition, a part of these population centres still preserve today a relevant heritage which, in our understanding, should be preserved or rehabilitated within the network of the polynucleated systems which are characteristic of contemporary cities.

In the same way, we should give priority to the integrated conservation of scattered building clusters and other built landscape elements of heritage value (fig.10). A significant part of scattered hamlets within metropolitan areas limits have been destroyed and replaced by new buildings. This practice is particularly objectionable when the transformation of rural housing into city housing is compatible with the rehabilitation of pre-existing buildings of heritage value. In the majority of these cases, this rehabilitation should also maintain its private character even if, in certain cases, planners should consider converting these buildings for public use and integrating these into the network of contemporary city facilities.

It could be said that the scattered hamlets acquire in diffused cities an equivalent role to the one that the partially rehabilitated historical centres performed within the traditional city, in the second half of the last century. But while these last tend to emphasize continuity and collective heritage, rural building features form a fragmented structure or a network within the complex alternating patterns of diverse built elements which shape diffuse cities.

Planning this network will be dependent on making the indispensable prior inventory on a municipal scale. This is so, as studies of vernacular heritage generally privilege typomorphological characterisation over exhaustive listings. The model proposed here inscribes itself in the framework where landscape is considered a fundamental factor in the transformation of urban regions. It includes: identifying the clusters and disperse constructions of greater heritage value; evaluating the integrative capacity of each one of the listed buildings in the design of the network simultaneously...
conceived for the municipal and supramunicipal scales; listing of the disperse constructed clusters with the greater potential for constituting structures for collective use by analysing the relationship between building and rustic property; defining different conservation and rehabilitation categories from a preliminary process of heritage assessment and cataloguing.

B. The rehabilitation of built heritage in the depopulated areas of the Inland

While unoccupied built heritage and patterns of deruralization are very common in the Lower Algarve landscape, it is, as we have seen, in the inland where this phenomenon is most prevalent. Further, there is no indication that the trend of decreasing population typical of this area over the last half a century is likely to reverse itself in the next decades. The rural landscape associated with a traditional subsistence economy in mountainous areas was based on communities which dedicated a considerable part of their time to maintaining built landscape structures. A large part of these structures are remains of this lifestyle which therefore cannot be preserved in the future.

These mountain areas are dominated by a low-income traditional economy and by generally parsimonious building systems. Here, only religious and archaeological heritage is generally deemed relevant of being listed for safeguarding. The rehabilitation of rural settlements will therefore depend on their potential adaptability to the new uses and aspirations of modern living.

The landscape as heritage must particularly reflect the basic state of flux currently linked to a decreasing population, the prevalence of forests, and the almost complete disappearance of cereal cultivation. In terms of settlement patterns, this process includes the abandonment of a significant portion of small mountain hamlets, which incidentally already happened in other historical periods. At the same time, the continuity of a significant number of these hamlets appears to be associated with the aging of the remaining population, the return at retirement of some former inhabitants, and an increasing number of second homes in more recent times.

It is within the centres which most clearly exemplify these new communities with material and non-material heritage value that we should consider supporting the conservation of built landscape elements, as well as maintaining agriculture based on vegetable gardens and orchards. The rehabilitation of rural settlements will therefore depend on their potential adaptability to the new uses and aspirations of modern living.

The enhancement of heritage to encourage local development has incidentally been given some attention at different levels of administration. In fact, programs formulated to counteract depopulation in these inland territories have in many cases conferred a great importance to material and non-material heritage, seeing these as essential for the areas’ revitalization. Some villages in the Hills and Mountains have been included in programs which focus specifically on the rehabilitation of inland population nuclei in order to promote cultural tourism by revitalizing some traditional activities and through the appearance of new cultural dynamics.

In any case, supporting cultural tourism as a resource for revitalization has not resulted in an effective conservation strategy for built complexes with heritage value. A significant portion of these settlements have noticeably transformed their buildings. Important among the biggest problems resulting from this process is the entire renovation of some houses including additions of second floors and a complete alteration...
of the original architectural volume. This approach has proved to be maladaptive within the context of mountain architecture since older building clusters are architecturally enmeshed. Within these, land parcels of different landowners entangle with each other, alternating renovated buildings with ruined structures.

As in the Lower Algarve, here also the Regional and Municipal Master Plans seek to restrict the building of new houses to the transformation and expansion of existing settlements. In some cases, this generic model has eventually proven poorly adjusted to the essential nature of these hamlets since it favours expansion into areas traditionally more economically productive around these centres. Proposals for transformation under consideration for these building complexes are: the purpose of their overall conservation and rehabilitation; the renovation of building complexes without altering architectural volume; the establishment of an expansion zone in areas adjoining pre-existing settlements or forming autonomous centres; or even, conversely, the possibility of the eventual disappearance of original buildings. Taking into account that each mountain settlement is made up of entangled structures which can combine some of the different categories described above, planning regulations should favour the revitalization of some of these population centres where the cultural landscape could be a resource for regional development.

V. CONCLUSION

The validation of vernacular architecture and landscape as an integral part of the country’s heritage is relatively recent, and reflects the evolution of this concept during the last century. In fact, the number of rural built heritage presently included in Portugal’s heritage protection listings is very small when compared to the amount of monuments or archaeological sites listed. A similar weighting is found in the local and regional guidelines and strategies included in the land management plans.

One of the main difficulties surrounding the conservation of rural built heritage relates to finding an adequate classification system or on establishing appropriate categories for its protection and safekeep. This is particularly the case as a high number of built structures are integral to the landscape’s cultural dimension. At present, it remains crucial therefore to identify which ones, owing to their intrinsic value, constitute a priority for conservation and rehabilitation.

The conservation and rehabilitation of rural heritage refers in the Algarve to highly differentiated issues. These are related not only to the specific characteristics and integration of different landscape units but also to their place in the overall picture of gradual transformations in land occupation patterns. It is reasonable to conclude that in the central zone of the Algarve, the preservation of built rural heritage can become important as a resource for the revitalization of the inland as well as a way to integrate networks of buildings important to cultural identity within diffuse cities.

However, whether in coastal urban areas or in less populated areas of the inland, built rural heritage is associated with different stages of abandonment and deruralization. The conservation of this landscape’s heritage must necessarily be subject to careful inventories and to the definition of strategies based on important patterns of landscape transformation. Establishing different categories for the preservation of heritage should in this way be based not only on the specific value of this heritage but also on its ability for being used for new purposes, as well as its place in a system of heritage covering the full gamut of urban and inland areas.
REFERENCES


