



# A landscape menu to please them all: Relating users' preferences to land cover classes in the Mediterranean region of Alentejo, Southern Portugal



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## ABSTRACT

To address multifunctional land-use management, and as a response to societal expectations with regard to agriculture and well-being in rural spaces, one of the aspects in need of particular attention in the current research is the spatial expression of the landscape attractiveness. Current knowledge about the attributes of landscape that are most highly appreciated, and the ways that individual differences may influence landscape preferences, is still incomplete, particularly for complex agricultural landscapes in the Mediterranean.

The aim of this paper is to provide an assessment, including quantitative and qualitative approaches, of user-based landscape preferences in the Mediterranean region of Alentejo, Southern Portugal. To allow for the spatial expression of these preferences and the evaluation of the impact of changes to land-use, specific land cover classes have been used as the basis for our survey. The results are aimed at adding to the body of research literature on the diversity of the landscape attributes that are valued by different user groups and at contributing to informed decision-making processes when resolving land-use issues in the region being studied. To attain this objective, a photo-questionnaire was conducted to identify preferred land cover classes and the land cover qualities that landscape users appreciate most.

The study shows that the way that landscape is used is a significant factor influencing the preferences, following a clear functional demand pattern. Not only are there differences between land managers as producers and others as consumers, but the appreciated land cover qualities and land cover preferences also differ from one consumer group to another. Knowledge regarding the preferences of specific groups can inform landscape management at different levels of governance in such a way that multi-functionality may be more successfully attained.

Moreover, certain particularities with regard to the preferred landscapes in the region being studied are discussed in comparison with the results of earlier studies from other regions. In this regard, this paper puts great weight on the importance of territorial contextualization in regard to making general assessments concerning landscape preferences.

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## 1. Introduction

Landscape quality objectives play an important role in several European policies, particularly in the Common Agricultural Policy (CAP) and at various levels of the Structural Fund programs (Dax, 2014), aimed at attaining sustainable rural development, territo-

rial cohesion and the conservation of natural resources (Johansson et al., 2012; Jones and Stenseke, 2011; European Commission, 2010). In addition, the European Landscape Convention (ELC) encourages public authorities to adopt policies and measures aimed at protecting, managing and planning landscapes to maintain and improve their quality and level of recognition (Council of Europe, 2000).

With the current rapid and profound changes in rural areas, assigned mainly to changing levels of agricultural land-use intensity, to increasingly urbanised society and to life-style changes (Primdahl and Swaffield, 2010; Primdahl et al., 2013), rural land-

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scapes need effective management interventions that will maintain or improve delivery of their goods and services. Agriculture, as a main land use in rural areas, is the principal sculptor of landscape, and it is expected to satisfy societal demands in a way to provide multi-functional spaces that fulfil both productive as well as non-productive functions (Holmes, 2012). At the same time, agricultural management in rural areas plays an important role in issues of food security, shortages in natural resources, and climate change. These matters lead to increasing interest and effort of policy and research in attainment of sustainable rural development focusing on territorial cohesion, conservation of natural resources and rural well-being. Consequently, the scientific community is facing the challenge of producing reliable, comprehensible, and “solution-oriented” data to support the drafting of effective policy regulations. With regard to land-use management, generating data calls for a shift from a sector-based to a geographical perspective, given that most of the functions that society expects from rural areas vary from one geographical landscape to another (Selman, 2012). Moreover, the involvement of non-academic stakeholders in academic research is crucial (Marsden and Sonnino, 2008), in such a way that all involved user groups are considered, to effectively contribute to the creation of a new science-policy-society dialog (Pohl, 2008).

The need to recognize the diversity of society's preference to landscape use is upheld in the ELC as well as in its Recommendations for Implementation (CM, 2008). These documents stress the importance of identifying the link between society's requirements and the values the public attaches to different landscapes.

Although a wide range of landscape indicators is often used in monitoring processes, the public's evaluation of landscape is often disregarded (Paracchini et al., 2015; Pinto-Correia and Kristensen, 2013), even if some of the services, such as cultural, rely fully on public recognition. The need for sound scientific preference data as a basis for generating operational indicators has been an ongoing demand in recent years (Paracchini et al., 2015; Pinto-Correia et al., 2014). In particular, urgent research requirements have been the indicators of users' landscape preferences, adapted to different regional landscape typologies, (Jones et al., 2015; Paracchini et al., 2012; Pinto-Correia and Carvalho-Ribeiro, 2012), which also involves the spatial expression of landscape attractiveness (Carvalho-Ribeiro et al., 2016; Paracchini et al., 2012). The objective mapping, monitoring and quantification of land-user preferences requires preference data regarding existing mapped units, which allow for the upscaling of locally collected data (Jones et al., 2015).

The Mediterranean areas are unique in Europe in terms of the predominance of silvo-pastoral systems, in the dynamics of changing agricultural processes (Pinto-Correia et al., 2011), and also at the level of land-use systems in the absence of land units' clear boundaries (Barroso et al., 2012). The silvo-pastoral land-use systems are subject to agricultural competitiveness but also provide a wide range of goods and services and may therefore be considered highly multifunctional. However, to date, there has been a surprising lack of research exploring these landscapes from the perspective of different user groups (Pinto-Correia et al., 2014).

The aim of this paper is to assess user-based preferences for land cover classes in the rural Mediterranean region of Alentejo, Southern Portugal, where extensive traditional land-use systems are still maintained. The results aim to contribute to the research literature about appreciated landscape characteristics of different user groups as well as to contribute to informed decision-making processes in land-use planning issues and the drafting of policy in the region being studied. To attain this goal, a photo-questionnaire has been conducted in the region being examined to ascertain those factors influencing landscape preferences and expected qualities. The survey uses land cover classes as components of these landscapes

to facilitate the transferal of the results onto spatial analyses and scenarios (Carvalho-Ribeiro et al., 2013).

This paper consists of the following sections. Following this Introduction, there is a short literature review of papers that address the evaluation of landscape preferences among different user groups. The next section explains the methodology applied, followed by the presentation of the findings. Following that, there is a discussion of the results and methodology, and the regional particularities together with some implications of the findings for policy makers are addressed; finally, our conclusions are outlined.

## 2. Literature review

Research on landscape preferences shows that there is no consensus between all members of the public (Tudor et al., 2014; Howley, 2011; Buijs et al., 2006). The way people evaluate landscape depends on a variety of factors, such as socio-demographic characteristics (e.g., Junge et al., 2011), cultural and economic aspects, and the individual's values and ways of interacting with the landscape. Some studies have assessed landscape preferences from perspectives related to different user groups. Purcell (2006) showed that, among other characteristics, nationality as well as a sort of preference judgment with regard to where one lives, works or goes on holiday could inform one's preferences. More recently, Hofmann et al. (2012) have illustrated the differences between residents and landscape planners with regard to preferences for urban parks. Farmers and non-farmers had different opinions when it came to assessing the attractiveness of Swiss landscapes (Junge et al., 2011). The divergences in landscape appreciation between farmers and naturalists (Natori and Chenoweth, 2008); among farmers, landscape experts and country-dwellers (Rogge et al., 2007); and also between residents and tourists (Rambonilaza and Dachary-Bernard, 2007) were demonstrated. Searching exclusively for the preferences of one general group of landscape users may bias the results (e.g., Berninger et al., 2010), thereby running the risk of mismatches in policy targeting. It is as such that the multi-functionality of landscapes may be more deeply grasped when the public is divided into different user groups and their specific perspectives, values and requirements are assessed (Pinto-Correia et al., 2014).

Over the years of research conducted into landscape preferences, no standardized assessment method has been established. As such, it is possible to identify a number of different approaches in published studies (Van Zanten et al., 2014). Preference data may be gathered by survey or through expert knowledge. Surveys of the general public are generally considered to generate more accurate information regarding societal values (Tveit, 2009). The two main types of surveys are large-scale quantitative surveys of the public and qualitative, normally small-scale surveys. The first type has the advantage of providing statistically valid results. However, qualitative methods allow for more exploration of the respondents' points of view, complex ideas, values and expectations and are highly regarded for generating a wealth of information. The multi-method strategy that combines both qualitative and quantitative surveys in an integrative manner delivers ‘the best of both worlds’ in terms of their capacity for generalized explanation (Davis and Michelle, 2011). The combination of both can help to build partial and complementary pictures of as complex a reality as that of the public's landscape preferences. Considering the above mentioned statement, and with an intention to choose the best possible approach for the issue at hand, the present study combines quantitative, close-ended questions with qualitative, open-ended questions in a large-scale survey applied to the wide public of landscape users in the studied area.

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