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Dissertação

Urban preferences for rural landscapes

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As preferências dos urbanos por paisagens rurais

RESUMO

A crescente procura social por paisagens rurais, nomeadamente pelas suas funções não produtivas, tem sido evidente na região mediterrânica. Os urbanos tornaram-se novos utilizadores do espaço rural principalmente pelas actividades de recreio e como local de residência e para identificar quais os requisitos destas funções no âmbito da gestão da paisagem e do espaço rural torna-se necessário um conhecimento mais vasto no que respeita às preferências de paisagem destes utilizadores. O objectivo deste estudo é identificar as preferências de paisagem dos urbanos. Um questionário baseado em fotografias foi o suporte para 308 entrevistas aplicadas em 10 concelhos do Alentejo. Este questionário foi aplicado a oito grupos de utilizadores com origem urbana (habitantes rurais, novos rurais, chefes de exploração, caçadores, utilizadores com segunda residência, visitantes regulares, turistas e eco-turistas). Os resultados indicam que existe uma clara diferenciação nas preferências dos urbanos, condicionada pela funcionalidade associada à paisagem rural, pela nacionalidade e pela ligação que os utilizadores têm à agricultura. Apesar da divergência de preferências os resultados demonstram que a agricultura tem uma forte influência nas escolhas dos urbanos e que os valores de consumo, embora estejam na base das funções que estes utilizadores procuram no espaço rural, estão fortemente associados a valores de protecção e produção.

Urban preferences for rural landscapes

ABSTRACT

Society's' growing demand for rural landscapes, mainly for its non-productive functions, has been observed in Mediterranean rural landscapes. Urban dwellers became new users of the countryside mainly for residential and recreational activities. To identify the requirements of these functions in the landscape and rural space management, a better understanding is needed regarding landscape preferences expressed by these users. The aim of this study is to identify landscape preferences among urban rooted. A photo-based survey, applied in 10 municipalities in the Alentejo region, Southern Portugal, was the support for 308 interviews carried out to eight groups of landscape users (rural inhabitants, new rural inhabitants, landowners, hunters, second residents, regular visitors, tourists and eco-tourists) all with an urban living background. Results show that preferences among urban rooted diverge according to landscape's functional aspects, user's nationality and connection to farming. Despite the variance on preferences results demonstrate that farming has a strong influence on preferences among all urban users. Consumption values, although being in the basis of urban user's main purpose in rural space, are closely connected to production and protection values.

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1. INTRODUCTION

During the last decades European rural landscapes have been facing a transition process that affects both landscape structure and landscape functions. The changes related to this process are closely linked with new paradigms of the agricultural sector and with the demands of society. Society's growing awareness and interest in rural landscapes entail the demand for new goods and services besides those provided directly by agricultural production, but that often are externalities of agricultural systems. Agricultural activity is adapting to this demand, as a way to diversify income and secure its maintenance, specially where production is more fragile and may have problems competing in a globalized context (Pinto-Correia *et al.*, 2010).

The production function, which results in a set of *commodities* – goods and services with a market value, coexists with a diversity of non-productive functions, from which result the *non-commodities* – goods and services with no market value, that represent the amenities provided by the rural space, such as cultural identity, environmental quality, nature conservation, outdoor recreation, aesthetic appreciation, and quality of life (OECD, 2001). This demand gives rise to a set of combinations of functions. Rural space is changing from dominantly productive spaces to multifunctional spaces that combine consumption and protection values with the formerly dominant production values (Holmes, 2006).

These changes have been observed in Mediterranean rural landscapes, from which Alentejo region is a good example (Surova and Pinto-Correia, 2008; Pinto-Correia and Primdahl, 2009; Pinto-Correia *et al.*, 2008). A markedly rural area where farming once played a central role in the dynamics of rural space has, over the last decades, witnessed a decrease of population and a significant decrease of agriculture both social and economically, though it is still dominated by agricultural areas (Baptista, 2001). Rural areas in Alentejo have a high diversity and combination of natural and cultural components which makes it more attractive for functions that do not depend on production, although they can be supported by agricultural activity (Hall *et al.*, 2004). Thus, agriculture represents a significant part in rural development and this activity can contribute to a diverse supply of goods and services in rural areas as a response to the social demand.

Urban dwellers are progressively becoming new users of the countryside, valuing its potentialities and acknowledging its threats, and thus it is important to meet this new demand to better understand how the new functions related to these users could be included in the planning of rural areas. (Sevenant and Antrop, 2010a). Rural landscapes in Alentejo region have aroused great interest among Portuguese and foreign urban dwellers, mainly for residential and recreation functions. To identify the requirements of these new functions in the landscape management a better understanding is needed regarding the landscape preferences expressed by these new users, so that future rural landscape management can meet the society's new demands.

Several studies focused on landscape preferences as a way to identify social demand for rural landscapes and to understand how different landscapes are valued from different points of view. Many researchers have found that different social groups have different landscape preferences (Van den Berg, 1999; Surova and Pinto-Correia, 2008; Tveit, 2009) and those studies have been based on several different approaches to identify landscape preferences among different groups. A great part of scientific literature focus on landscape attributes (Coeterier, 1996; Purcell and Lamb, 1998; Dramstad *et al.*, 2006; Sevenant and Antrop, 2010b), for example the degree of naturalness (Nassauer 1995; Van den Berg *et al.*, 1998; Herzorg *et al.*, 2000), and several studies have highlighted the different attributes of the observers, social and cultural experience and motivations. These attributes are expressed in terms of age, gender, professional background, familiarity with the observed landscapes, place of residence, environmental values and motivations (Zube *et al.*, 1983; Gomez-Limon and Fernandez, 1999; Yu, 1995; de Groot and Van den Born, 2003; Van den Berg and Koole, 2006).

Some of the attributes of landscape users were used in previous research to classify the users in two opposite dimensions, urban and rural. Several studies conclude that urban and rural users express different landscape preferences (Yu, 1995; Van den Berg and Koole, 2006; Bouer *et al.*, 2009). In those studies rural Vs urban dichotomy is defined by place of residence or living environment and this attributes of landscape users includes, most of the times, a former relationship of respondents with natural or rural environments, especially when respondents have a rural background.

As has been focused in previous studies, urban and rural dimensions are a differentiation factor regarding landscape preferences (Yu, 1995; Bauer *et al.*, 2009) but there is a lack of knowledge on landscape preferences among urban users. These users, besides their higher capital availability for rural products and service's consumption, are also seen as possible investors and alongside with the urban population's increasing demand for rural areas are the human, information and capital flows from urban towards rural areas. These flows, according to Kalantaridis (2010) may have a positive effect on rural areas development. For these reasons, a more profound knowledge is needed regarding these user's landscape preferences. Therefore in this study the focus is on urban users, considering those who spent their childhood in an urban area, aiming to identify landscape preferences and to identify the aspects that determine urban user's preferences for rural landscapes.

2. CONCEPTUAL FRAMEWORK

2.1. CHANGES IN RURAL SPACE

The role of agriculture in Mediterranean rural areas has been changing in the last few decades and agriculture is not currently the dominant economic activity in rural space (OECD, 2001). As a result of the abandonment of less productive areas and the intensification of the most productive ones, accelerated by the Common Agricultural Policy (Goméz-Limon and Férnandez, 1999), agriculture does not currently supports the economic and social dynamics of rural areas (Baptista, 2001). However, agriculture, in addition to its productive function, can change the landscape, contribute to the economic and social viability of many rural areas, promote the preservation of biodiversity (OECD, 2008) and contribute to the conservation of the rural environment (Coeterier, 1994).

Traditionally the primary uses of rural areas through agriculture were multifunctional, not only because of the diversity of products but also because of the coexistence of protection and consumption values related to the production activity (Holmes, 2006). With the emergence of agro-industrial products monofunctional land use was considered the most efficient development strategy (Vejire *et al.*, 2007) and monofunctionality became a norm not merely by the material outputs but by the dominance of production goals over the protection and consumption values (Holmes, 2006) although this strategy does not reflect the complex demands of society (Vejre *et al.*, 2007).

Holmes (2006) suggests an alternative concept, according to a territorial approach as a result of his interpretation of the changes occurring in rural areas: multifunctional rural transition. This transition can be characterized as a change in production goals, formerly dominant, to a more complex and diverse objectives. According to the same author, the three basic goals of human occupation – production, consumption and protection – are linked with three driving forces that lead this transition to a multifunctional rural occupation. One of the driving forces is the a*gricultural overcapacity*, resulting from technological advances that had driven the intensification in favored areas (*Production goal*), another is *the emergence of market-driven amenity oriented uses* resulting from the growing demand for rural areas for new functions such

as tourism or recreation and the increasing dependence of farm households on non-farming income (*Consumption goal*) and finally the *changing societal values* as evidenced by the growing social concern for sustainable resource management and landscape protection (*Protection goal*). This three driving forces contribute to increase spatial heterogeneity in the use of rural resources (Holmes 2006).

Rural landscapes can be analyzed according to different approaches, considering the primary productive sector, at the farm level, or considering the territory, at the landscape level (Vejre *et al.*, 2007). The transition process currently taking place in European rural spaces is influenced by the demand for non-commodity functions occurring at the landscape level (Pinto-Correia and Primdahl, 2009). therefore, and being landscape the main space unit that may support a wide diversity of functions demanded by society (Vejre *et al.*, 2007), identifying landscape preferences provides an important basis to support the development and definition of management objectives, particularly when it comes to decide the integration of non-productive functions in rural areas.

2.2. ASSESSING LANDSCAPE PREFERENCES

The European Landscape Convention (2000) very explicitly considers public perception as a central aspect in the landscape definition, thus public perception must be taking into account when considering the different functions that a specific landscape can support. According to Bell (2001) in the basis of the perception process are the physical aspects of the reception of visual stimuli, the intuitive recognition of the aesthetic quality, and the mind's ability to relate sensory information to other knowledge and thus develop opinions about what was perceived. Rural landscape can be considered the final product, at both visual and aesthetic level, of a series of interacting factors, such as climate, topography, water, soil, flora, fauna and human actions, resulting in a specific layout of ecosystems that characterizes the territory. Rural landscape is the most noticeable dimension of this interaction (Sayadi *et al.*, 2009) and the way it is perceived depends on a diverse set of factors related to the particular characteristics of the landscape, the context in which it is perceived and the attributes of those who perceive it (Van den Berg, 1999). Human perception has a great influence on landscape preferences (Nassauer, 1995) and the expectations,

demands and needs of the landscape users, individually or within a social group, are reflected in their preferences (Goméz-Limon and Férnandez, 1999).

Market can guide patterns of commodities production but the demand for non-commodities is not always identified in a market (able to guide this production) (Hall *et al.*, 2004) therefore, landscape preferences can be seen as a way to identify public demand for new products and services resulting from non-productive functions on rural space. Therefore, landscape preferences can reveal which land uses best respond to the social demand for a specific function.

Rural areas are mostly shaped by land use systems and farm activities (Pinto-Correia and Primdahl, 2009), as a consequence, land cover is the most changeable feature in the landscape. Hence, land covers is the component that, better than morphology or climate (that are not directly or in a short period of time influenced by human management), better represents different rural landscapes. Land cover has been used to assess landscape preferences through several methods such as on-site surveys or slide projection but photo-based surveys have been the most used particularly in the Mediterranean region (Surová and Pinto-Correia, 2008). Landscapes in this region are marked by fuzziness, due to their specific physical structure and its complex composition (Pinto-Correia *et al.*, 2011) and photo-based surveys provide a visual stimuli that, besides being very close real-life experience of landscape, can represent specific land covers easily perceived by respondents mainly through the use of photographs manipulated by computer (Barroso *et al.*, 2011).

2.3. URBAN PREFERENCES FOR RURAL LANDSCAPES

Urban dwellers are increasingly looking for outdoor recreation, such as hiking, climbing, cycling or rafting, and countryside has become their preferred setting for these activities (Claval, 2005). In the past few years, the number of urban dwellers visiting and moving to Alentejo has increased. There is a rising demand for this region as a place for tourism due to the great diversity of natural and cultural heritage as well as for place of residence.

Local traditional communities are sometimes a reference for those who want to settle in rural areas for its strong identity, clearly expressed by landscape (Claval, 2005). Rural

space no longer represents remote and uninhabited (unpopulated) areas. They are now seen as authentic, traditional, natural and idyllic spaces which represents, according to Figueiredo (1999), the *urban utopia*. It is a change in social and environmental values. These changes are related to the emergence of a *new rural-urban dichotomy* not merely the opposition of Traditional Vs Modern or Agriculture Vs Industry but a new dichotomy that tends to oppose social representations driven primarily by perceptions of rural landscape (Figueiredo, 2000).

This dichotomy is closely linked with new functions of rural space. Countryside has actually become a space that is mainly meant to fulfill the various needs of urban dwellers (Antrop, 2005), those who attend to rural areas as visitors or tourists and that look for rural landscapes not for its production function but for consumption and protection functions (Figueiredo, 1999). Urban and rural visions concerning rural landscape are markedly different. Previous research on urban Vs rural visions regarding rural landscape in Northern Portugal concluded that perception of urban respondents is underlying the rural space as an object of aesthetic appreciation (Figueiredo, 2000). Urban visions are focused on the idea that countryside is a space of consumption, an idea that clearly contrasts with rural inhabitant's vision that considers rural space as a resource, a space primarily of production (Cavaco, 1999).

The rural and urban dimensions have been highlighted in several studies focused on landscape preferences, however they have been considered as opposite dimensions that differentiate these two group's opinions. For example, regarding place of residence, van den Berg and Koole, (2006) concluded that urban residents have been found to display higher preference for wilderness landscapes and rural residents display higher preference for managed landscapes, and Bauer and others (2009) observed differences concerning the attitudes towards wilderness between rural and urban users. However few studies have focused on each one of these opposite dimensions, considering differences on landscape preferences among urban or among rural users. Rogge and others (2007), for example, studied landscape preferences within rural residents according to their farming background, an attribute that has an obvious influence on landscape perception (Van den Berg and Koole, 2006), and identified differences between farmers and non-farmers living in the countryside, but concerning urban users there is a lack of information on preferences for rural landscapes.

Recent studies have shown that the experiences during childhood influence the propensity for, in adult, visiting natural areas and shape the attitudes to nature and landscape (Thompson *et al.*, 2008; Hinds and Sparks, 2008), and findings demonstrate that users with urban place of childhood are less engaged with natural environments. Therefore, place of childhood (upbringing) has an important significance in the expressed preferences (Swanwick, 2009) but the existing literature only focus on this aspect comparing rural and urban user's preferences. There is not sufficient information on preferences among urban user's enabling to understand which factors determine the possible variance on their landscape preferences. Thus, the main objective of the present study is to identify preferences for rural landscapes among urban users and to identify the aspects influencing their preferences.

3. METHODS

Data was collected through a survey undertaken in the scope of a wider project - ROSA (*Contributes to the identification of social demand for landscapes in Alentejo*) - aiming to assess social demand for rural landscapes in Alentejo region considering productive and non-productive functions, through expressed preferences of different user groups. In the ROSA project the study area, the sample and the survey design were defined considering the variety of landscapes and users in Alentejo region and also considering three main aspects enabling the assessment of social demand: user's visions and expectations concerning rural landscape; functionality of different landscape patterns and finally, the landscapes considered as a reference, by their functional, symbolic or patrimonial value. The present study, aiming to focus on urban users and their landscape preferences, is based in the methodology used in the ROSA project. Therefore, study area, sample and survey design as well as the data analysis described in this chapter will be limited to the relevant aspects considering the objective of the present study.

3.1. STUDY AREA

Ten sample municipalities were selected for the interviewing process:, Castelo de Vide, Ponte de Sôr, Reguengos de Monsaraz, Montemor-o-Novo, Elvas, Grândola, Ferreira do Alentejo, Vidigueira, Serpa and Almodôvar (Figure 1). This selection took into account the diversity of land cover classes corresponding to different landscapes representative of the entire region. In this study rural/urban areas definition is based on the typology of rural and urban areas in Europe NUTS III. This typology is based on the percentage of population of a region living in rural/rural communes. A commune is classified as rural if the population density is below 150 inhabitants per Km^2. On this basis Alentejo region is classified as a mainly rural region: more than 50% of the region's population lives in rural areas. In order to define the study sample, urban place of childhood corresponds to all regions that according to Europe NUTS III typology are classified as *mainly urban regions* (less than 15% of the region's population lives in rural communes).
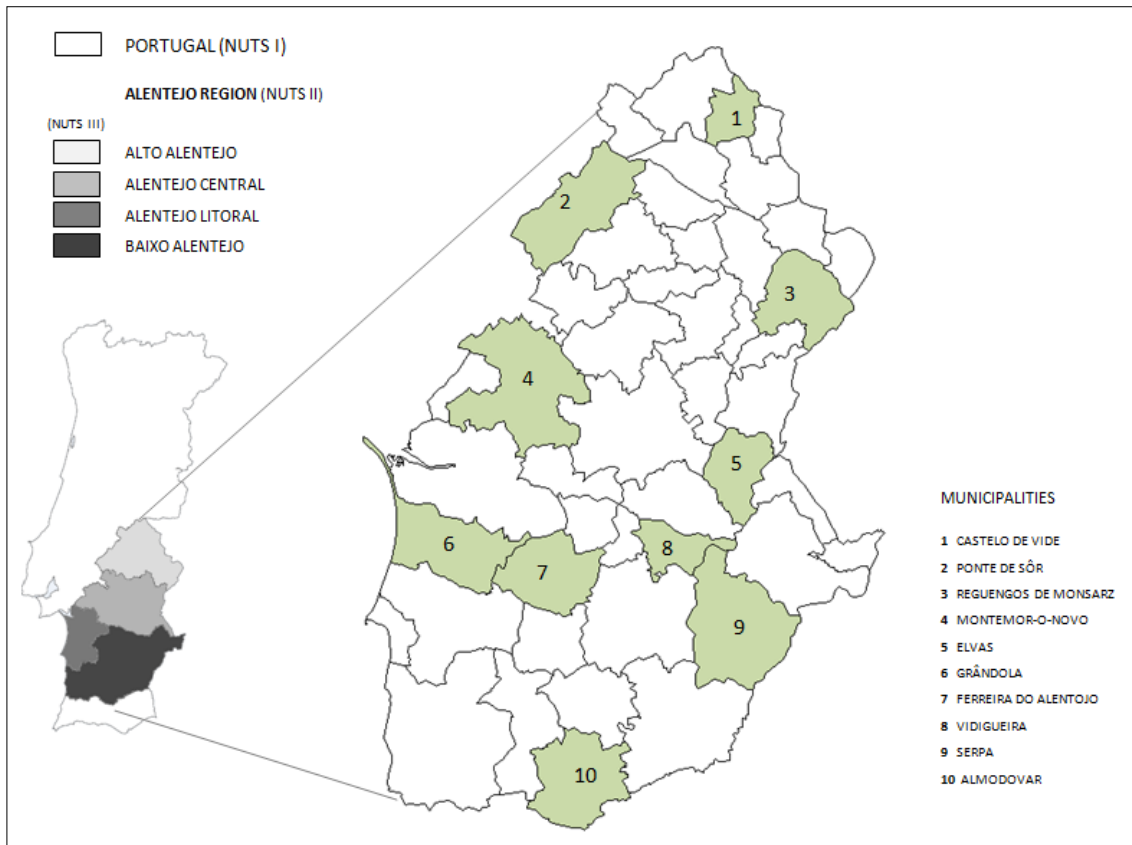
Figure 1 Study area – Ten municipalities in Alentejo Region (southern Portugal) selected for the interviewing process.

3.2. SAMPLE DESIGN

For the ROSA project the sample design took into account the diversity of landscape users in Alentejo, corresponding to the variety of ways people use landscape in this region. Eight user groups where distinguished. In all, 1066 personal interviews were carried out: inhabitants (*N=114*); new rural inhabitants (*N=133*); landowners (*N=206*); hunters (*N=204*); second residents (*N=74*); regular visitors (*N=117*); tourists (*N=104*) and eco-tourists (*N=114*).

For the present analysis, urban respondents were selected considering those who lived their childhood in an urban area (Europe NUTS III). In a sample of 308 questionnaires carried out to urban users it was possible to identify all eight user groups according to different activities they intent to develop, as described in Table 1. Several members of each of the sample groups were asked to answer a questionnaire according to their point of view according to the activity they represent. Considering that some of the respondents were able to represent several of the defined user groups, for example

being farmers and new rural inhabitants simultaneously, they were asked, before the individual interview, to choose the group they want to represent and answering the questionnaire according to that choice.

Table 1
User group characterization according to landscape functions.

USER GROUPS	DESCRIPTION	n
Inhabitants	Those who moved to the studied area as a child, not as a choice.	4
New rural inhabitants	People who move intentionally to the studied area.	92
Second residents	Those with a second residence in the studied area.	38
Landowners	People connected to land management who own, rent or use a certain area of land and whose management can rely on a variable number of functions (production, hunting, living, tourism, heritage, nature conservation, etc.)	23
Hunters	People that practice hunting activities in the studied area, and who have access to the land through membership in a municipal, associative and/or touristic hunting zones, as required for Portuguese law.	10
Regular visitors	People that visit Alentejo regularly (at least once in a year) by own like, family or friends.	43
Tourists	Those who visit Alentejo and experience landscape mainly through car travelling or organized bus tour focusing on visits of heritage monuments, gastronomy and cultural events.	67
Eco-tourists	People practicing natural outdoor recreation in the studied area, activities that imply a close relationship with nature (hiking,biking, etc)	31

3.3. SURVEY DESIGN

Though the survey (ANNEX I) has been designed under the scope of a wider project, this study only analyses data considered relevant according to the proposed aim. In this sense, data analyzed refer to respondent's socio-demographic background, their visions regarding rural landscapes and their preferred and disliked landscapes.

First, respondents were asked about their socio-demographic characteristics such as age, gender, education, place of childhood and current place of residence, profession or activity and connection to farming. Subsequently, they were asked to answer several questions in order to collect data on how respondents see rural landscapes and the role of farming and forestry activities in Alentejo: (1) why they like Alentejo region; (2) why farming and forestry are important activities in Alentejo and (3) which possible tendencies in Alentejo they prefer. Respondents were asked to choose, in each question, two sentences but part of them have only chosen one or even none according to what they considered to be relevant to express their opinion. In the third part respondents were asked to express their landscape preferences. Sixteen photographs corresponding to the dominant land cover classes in Alentejo region

(Figure 2) were used as visual stimuli in the survey, and from this set of photographs, respondents were asked to select the three most preferred and the three least preferred and to show the reasons for their choices through an open explanation. Each photograph represents a different land cover class according to CORINE Land Cover, except for the intensive olive grove that actually occupies a considerable area in the study area, according to the National Farm Survey 2009 (INE, 2011), and for this reason was considered representative of Alentejo region and included in the survey. Digital manipulation was used in all photographs in order to represent land covers easily recognized by respondents, by creating similar atmospheric conditions and eliminating all elements causing disturbance and deviating respondents attention (Barroso *et al.*, 2011).

Figure 2 Examples of photographs used during the interviewing process, representing different land cover classes characteristic from Alentejo region (A-Vineyards; B-Mosaic; C-Mixed forest; D-Traditional olive grove; E-High shrubs in forest land; F-Rice field).

Montado was one of land cover classes included in the survey and respondents, who have chosen this land cover class as one of the most preferred, subsequently were asked to choose from a set of four photographs, representing different types of montado varying on tree densities and on the presence of shrubs (Figure 3), their preferred type of montado and to explain their choice.
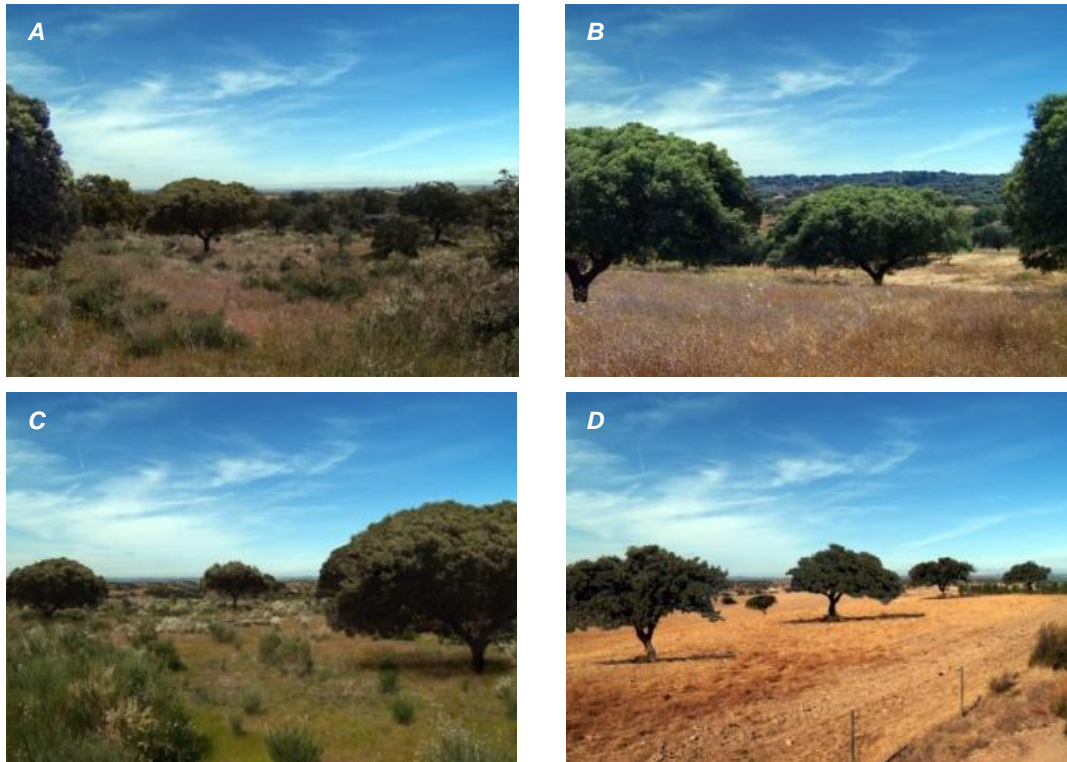
Figure 3 Photographs representing different types of montado, presented to respondents who have previously chosen montado as preferred photograph (A-Dense montado with shrubs; B-Dense montado with no shrubs; C-Open montado with shrubs, D-Open montado with no shrubs).

3.4. DATA ANALYSIS

Data were analyzed through two different approaches. First, was used a descriptive statistical analysis considering the questionnaires of all sample groups (inhabitants, new rural inhabitants, landowners, hunters, second residents, regular visitors, tourists and eco-tourists). This first approach is applied in order to obtain an overview on urban user's preferences able to be compared with previous findings that have resulted from studies comparing urban and rural users.

Subsequently it was used a multivariate analysis consisting of a multiple correspondence analysis (MCA) and then a cluster analysis to identify groups of users with similar behavior. These methods are considered appropriate to analyze categorized data, and for this reason are commonly used in questionnaire based data (Kristensen, 2003). In these approach data was analyzed considering questionnaires of all sample groups jointly and from the cluster analysis have resulted groups assembling respondents according to preference similarities with active variables defining the groups and illustrative variables illustrating the profile of each group. In this study the most preferred and less preferred photographs were used as active variables and connection to Alentejo (sample groups), personal characteristics, visions and reasons for the choice of photographs as illustrative variables.

4. RESULTS

The results of the survey are presented according to the methodology mentioned in the previous chapter. First the results of the descriptive statistical analysis used to analyze the groups considered in the sample, defined by their function, regarding their socio-demographic characterization, their landscape preferences and visions concerning rural landscapes, second the results of the MCA showing the output groups defined by behavior similarities.

4.1. WHAT LANDSCAPES DO THE DIFFERENT USER GROUPS PREFER?

Sample characterization

The sample used in this study, formed by all urban rooted respondents in the ROSA survey, was characterized, through a statistical descriptive analysis, in terms of socio-demographic characteristics (Table 2). The results show that the most part of respondents has high educational levels: 34 % finished high school and 54% have graduated in the university, the most significant of the respondents has between 41 and 65 years old. Concerning gender most part of respondents are female (56%). Regarding nationality the most significant part of respondents are Portuguese and within the foreign respondents tourists and new rural inhabitants are the most representative user groups (Figure 4).

Table 2
Frequencies of Socio-demographic characteristics of all respondents.

Gender		Age (years)		Education		Nationality	
Male	44%	Less than 25	5%	Elementary school	12%	Portuguese	63%
Female	56%	25 - 40	30%	High school	33%	Foreign	37%
		41 - 65	53%	University	55%		
		65 and above	12%				
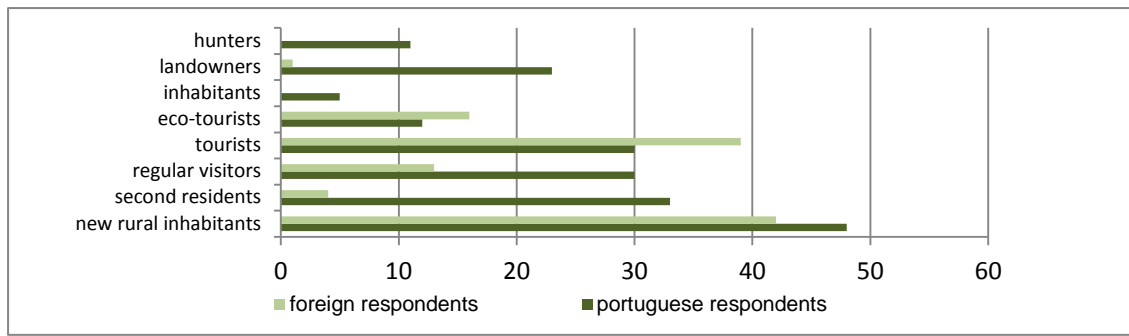
Figure 4 Frequencies of the nationality of respondents within each group of landscape users.

Landscape preferences

The results concerning landscape preferences (Table 3) show that the urban rooted most preferred photographs are *montado* (19%), mosaic (15%) and traditional olive grove (13%). New rural inhabitants displayed higher preference for *montado* and mosaic, eco-tourists, tourists, visitors and landowners prefer *montado*, the most preferred photograph within second residents is mosaic and inhabitants showed higher preference for traditional olive grove.

Table 3
Distribution of landscape preferences considering the most preferred photographs within user groups. (I – inhabitants; NR – neo-rurals; SR – second residents; L – landowners; H – hunters; V – regular visitors; T – tourists and ET – eco-tourists)

	All users	User groups							
		I	NR	SR	L	H	V	T	ET
	n=308	n=4	n=92	n=38	n=23	n=10	n=43	n=67	n=31
	%	%	%	%	%	%	%	%	%
Cereal	8	0	9	11	10	15	9	5	2
irrigated crops	4	0	4	5	7	3	4	3	2
rice fields	2	7	2	4	3	0	1	2	1
Vineyards	11	20	10	14	11	3	12	11	8
orchards	3	0	3	3	1	0	2	4	2
traditional olive grove	<u>13</u>	<u>27</u>	11	14	4	12	13	14	16
irrigated pasture	1	13	1	2	4	0	1	1	0
Mosaic	<u>15</u>	7	<u>20</u>	<u>17</u>	11	15	12	<u>15</u>	8
Montado	<u>19</u>	0	<u>20</u>	14	<u>28</u>	<u>21</u>	<u>18</u>	<u>16</u>	<u>23</u>
eucalyptus	1	0	1	3	0	0	0	3	1
pine forest	4	7	2	3	1	0	3	9	6
mixed forest	9	0	9	7	6	3	9	8	17
natural pasture	1	7	1	2	1	6	0	1	0
high shrubs	5	7	5	1	1	6	7	3	10
small shrubs	3	7	2	1	0	15	5	3	2
intensive olive grove	2	0	1	1	11	0	4	2	0

Regarding the least preferred photographs (Table 4), eucalyptus (16%), natural pasture (15%) and intensive olive grove (14%) were the most chosen among all users. Visitors and hunter's most chosen photograph was eucalyptus and intensive olive grove was the least preferred photograph among new rural inhabitants and eco-tourists. Inhabitants showed lower preference for eucalyptus and high shrubs in forest land, tourists and second residents most chosen was natural pasture and among landowners the less preferred was high shrubs in forest land.

Table 4

Distribution of landscape preferences considering the most disliked photographs within user groups. (I – inhabitants; NR – neo-rurals; SR – second residents; L – landowners; H – hunters; V – regular visitors; T – tourists and ET – eco-tourists)

	All users	User groups							
		I	NR	SR	L	H	V	T	ET
	n=308	n=4	n=92	n=38	n=23	n=10	n=43	n=67	n=31
	%	%	%	%	%	%	%	%	%
cereal	6	0	4	5	6	0	6	10	10
irrigated crops	6	13	7	7	3	3	6	7	7
rice fields	5	7	7	7	3	3	5	4	3
vineyards	1	0	2	3	1	3	1	1	0
orchards	1	0	0	1	0	0	2	1	1
traditional olive grove	2	0	3	2	3	0	1	1	0
irrigated pasture	5	0	3	3	4	3	2	8	15
mosaic	2	0	1	1	1	3	3	2	5
montado	*1*	0	1	1	1	0	2	0	0
eucalyptus	<u>16</u>	<u>20</u>	16	17	16	<u>25</u>	<u>22</u>	9	14
pine forest	7	7	7	6	9	22	6	5	3
mixed forest	1	0	1	3	3	0	1	1	0
natural pasture	<u>15</u>	13	13	<u>19</u>	9	6	12	<u>21</u>	16
high shrubs	9	<u>20</u>	8	9	<u>24</u>	13	8	6	2
small shrubs	9	13	8	11	9	9	8	10	3
intensive olive grove	<u>14</u>	7	<u>17</u>	5	6	9	17	14	<u>20</u>

Reasons in the basis of preferences

After choosing the three preferred and disliked photos respondents were asked to justify their choices through an open explanation. Answers were subsequently categorized in seven classes: aesthetic appreciation, identity, socio-economic aspects, nature, environmental quality, suitability for amenities and other aspects. Results considering all respondents reasons, presented in Table 5, show that the most

mentioned reasons underlying the preferred photographs were related to aesthetic appreciation (37,3%). Respondents explained their choices by highlighting the attractiveness of landscapes, its colors or simply referring to them as "beautiful landscapes". The second most used reason was identity (21.9%), with respondents pointing out the authenticity and representativeness of landscapes or personal experiences and affective connections to specific landscapes. Regarding the disliked photographs the most frequently referred reasons were related to environmental quality (37%), such as the risk of fire, overexploitation of water resources or soils degradation, followed by aesthetic appreciation (29,3%).

Table 5
Explanation reasons underlying the preferred and disliked photographs of all urban respondents.

	Preferred photos		Disliked photos	
	n	%	*n*	%
aesthetic appreciation	<u>427</u>	<u>37.3</u>	305	29.3
identity	251	21.9	134	12.9
socio-economic aspects	167	14.6	131	12.6
nature	116	10.1	48	4.6
environmental quality	81	7.1	<u>386</u>	<u>37.0</u>
amenities	87	7.6	24	2.3
other reasons	17	1.5	14	1.3

n– Number of answers

Urban user's visions

A frequencies analysis was used to understand how do urban rooted see rural landscapes and the role of farming in the dynamics of rural space in Alentejo (Table 6). Nature (32%) was the most chosen reason explaining why respondents like the countryside in Alentejo, and choices were similar within all user groups except for eco-tourists that have chosen views, colors and odors in first place. Concerning the role of farming and forestry, opinions are diversified though with similar distribution. Respondents consider that farming and forestry are important mainly for nature protection (25%), for its productive function (24%) and to keep the characteristic knowledge, manners and practices (23%). Among user groups results vary. Protection aspects were the most chosen by eco-tourists and landowners (34%), tourists have chosen *Keep the characteristic knowledge, manners and practices* in first place (28%)

and second residents most chosen answers were *Protect soils, water, animal and vegetal diversity* (27%) and *Maintain the population* (26%).

From the five possible tendencies regarding landscape in Alentejo, suggested in the questionnaire, urban rooted showed higher preference for *More farming activity* (32%), *More wild animal and plant protection* (29%) and *More leisure and tourism activities* (28%). Generally, these three tendencies were the most chosen among user groups, with some variance among tourists and eco-tourists preferring in first place, and with high relevance, *More wild animal and plant protection* (34% and 39%) and with *More farming activities* being the most preferred among farmers (46%) and hunters (41%).

Table 6
Visions concerning rural landscapes in Alentejo region. Frequencies analysis of the chosen sentences within each user group.

	All users	User groups							
		I	NR	L	H	SR	V	T	ET
	(%)					(%)			
I like the countryside in Alentejo because of:									
Nature	32	38	32	36	36	36	30	31	30
The way of Alentejo people	20	0	20	14	27	24	21	19	20
The views, colors and odors	24	25	26	16	14	26	18	26	32
The white houses on the hills, other rural buildings	15	13	16	5	14	9	18	16	18
Agriculture	9	25	6	30	9	5	12	7	0
Farming and Forestry activities are important in Alentejo to:									
Keep the characteristic knowledge, manners and practices	23	25	24	11	19	18	23	28	22
Maintain the population	19	25	16	23	24	26	22	14	16
Produce food and fiber	24	25	24	25	24	23	24	25	22
Protect soils, water, animal and vegetal diversity	25	25	25	32	24	27	23	21	34
Keep the countryside as it looks today	9	0	10	9	10	6	7	12	6
From the possible tendencies in Alentejo, which of these please you more?									
More scattered houses around the settlements	9	0	8	5	5	8	6	12	14
More leisure and tourism activities	28	50	32	20	27	32	29	25	22
More hunting activity	2	0	1	7	9	3	3	0	2
More wild animal and plant protection	29	13	30	22	18	23	30	34	39
More farming activity	32	38	30	46	41	35	32	29	22

4.2. HOW ARE PREFERENCES GROUPED AMONG THE VARIOUS USER GROUPS?

All the inquiry data was also subject to a multiple correspondence analysis. In this analysis respondents were organized in groups according to preferences similarities. The dendrogram resulting from this analysis (Figure 5) shows different levels in which groups were distinguished. Before describing the output groups, and to better understand and define each group of the MCA, groups composition is presented on Table 7.

Table 7
Number of respondents composing each output group according to the multiple correspondence analysis results. (NR – neo-rurals; SR – second residents; V – regular visitors; T – tourists; ET – eco-tourists; I – inhabitants; H – hunters; L – landowners).

|	All users	User groups							
		I	NR	SR	L	H	V	T	ET
	n = 308	n = 4	n = 92	n = 38	n = 23	n = 10	n = 43	n = 67	n = 31
Managed landscape interested									
Intensive mosaic interested	51	0	13	8	5	1	8	14	2
Intensive olive grove supporters	14	0	7	2	2	0	1	2	0
Traditional farming interested	108	2	34	18	13	4	15	16	6
Natural landscape interested									
Extensive farming recreationists	32	1	8	3	0	5	6	6	3
Nature conservation concerned	103	1	30	7	3	0	13	29	20

n = number of respondents
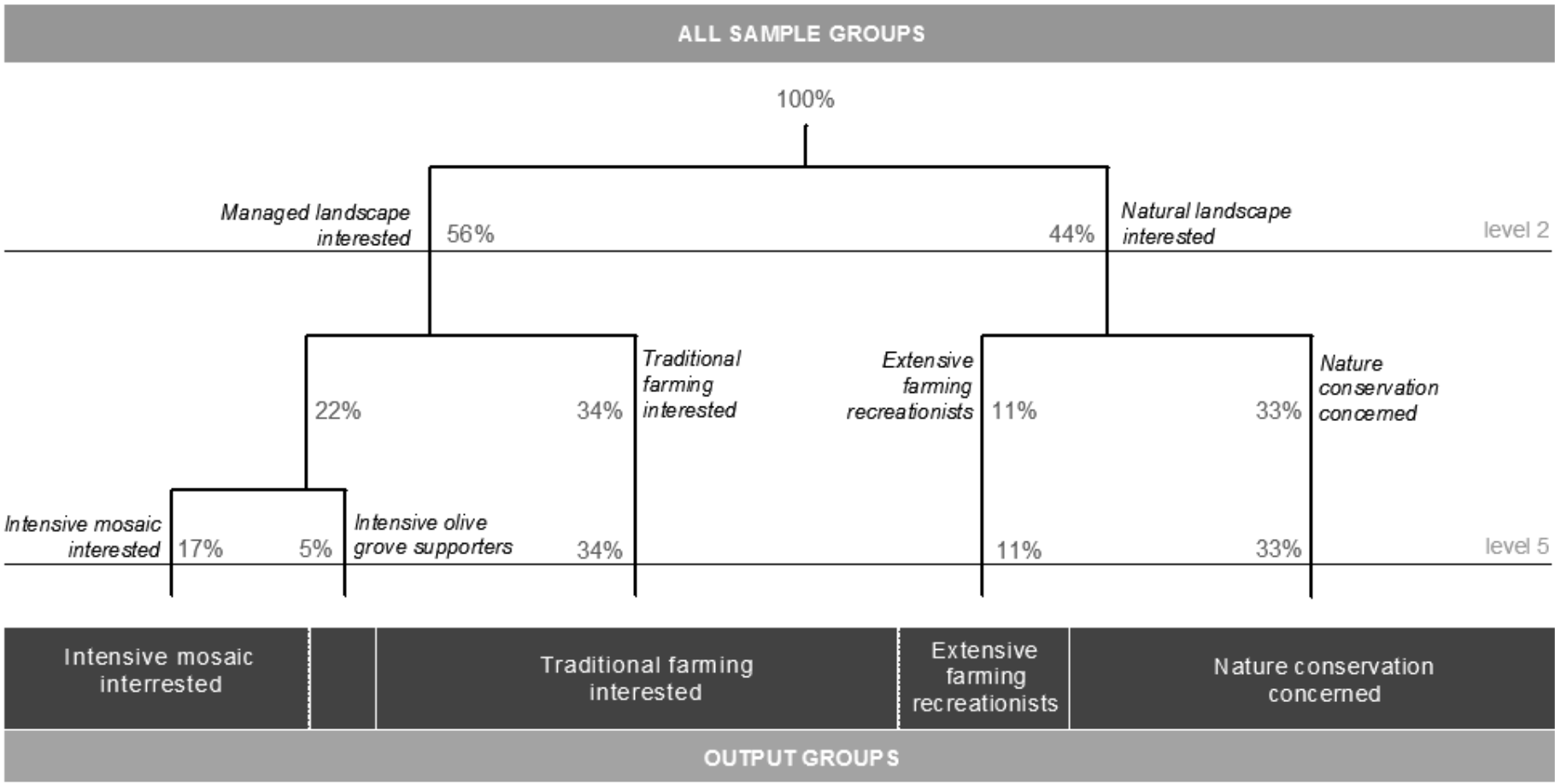
Figure 5 Dendrogram resulting from the MCA showing the organization of respondents according to their preferences.

Output group's description

Respondents included in each level of the dendrogram are subdivided, in the following levels, according to characteristics and responses similarities. The profile of each output group is defined by the illustrative variables and is based on the most relevant characteristics considering the significance levels (ANNEX II).

In level 2, there are two major groups of users: *Managed landscape interested* and *Natural landscape interested*.

— **MANAGED LANDCAPES INTERESTED** (56%) display higher preference for land covers that they most associate with farming, such as irrigated pasture, intensive olive grove, cereal or vineyards, and related to these preferences are socioeconomic factors, identity and aesthetic appreciation. These respondents show less preference for land covers with more extensive uses such as shrubs, natural pasture, traditional olive grove and mixed forest and the most relevant reasons when showing the less preferred landscapes are environmental quality, socioeconomic factors, identity and aesthetic appreciation. Portuguese nationality and place of childhood in Portuguese metropolitan areas are the most representative social characteristics in this group. Landowners and second residents are the most relevant user groups. These respondents like Alentejo for agriculture and this activity is also the tendency they prefer in this region.

— **NATURAL LANDSCAPES INTERESTED** (44%) show higher preference for landscapes with more extensive uses, such as mixed forest, shrubs, *montado* and olive groves, and the most relevant reasons are related to aesthetic appreciation and nature. They displayed lower preference for intensive olive grove, irrigated cultures and cereal mainly for reasons related to environmental quality, aesthetic appreciation and nature. The most representative characteristics of the respondents included in this group are foreign nationality, place of childhood and current residence and they have no connection to farming. Eco-tourists are the most relevant user group defining the *Natural landscapes interested*.

In more detail these two large groups can be divided according to level 5 of the dendrogram.

Manage landscape interested:
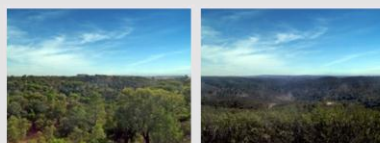
— ***Intensive mosaic interested*** (17%) are those who prefer the land cover classes usually associated to the traditional mosaic but in this case, by choosing specifically each one of those land covers – irrigated cultures, pine forest, vineyards and orchards, these preferences show the preference for a more intensive use. The preference for these land covers is related mainly to aesthetic and socio-economic aspects. These respondents show less preference for land covers showing a more extensive use, such as shrubs, *montado*, mixed forest and natural pasture, and in the basis of these choices are mainly aesthetic aspects. These respondents lived their childhood and currently live in an urban area and the tendency they most prefer for Alentejo region is more houses around the existing settlements.

— ***Intensive olive grove supporters*** (5%) prefer intensive olive grove mainly for aesthetic aspects. This group displayed lower preference for traditional olive grove and cereal and these choices are based mainly in aesthetic, socio-economic and environmental aspects. It shows that these respondents support the intensive use of the olive grove and not the traditional for its potential for production. This group of respondents is not representative in the sample since this class only includes 5% of respondents.

— ***Traditional farming interested*** (34%) is a group formed by respondents that prefer land cover classes usually associated to traditional farming - cereal, mosaic, natural pasture and *montado,* focusing on identity, and environmental quality. Based on identity and socio-economic aspects these respondents show less preference for eucalyptus, high shrubs and pine forest. These users are characterized by having Portuguese nationality and place of childhood in Portuguese metropolitan areas and also for having a connection to farming. They consider that farming and forestry are important to keep the characteristic knowledge, manners and practices and more farming is the tendency they prefer the most in Alentejo.

Natural landscape interested:

— **Extensive farming recreationists** (11%) are those who prefer land cover classes related to extensive farming such as small shrubs in farming land and display less preference for vineyards and irrigated cultures (more intensive farming). The reasons in the basis of their preferences are related mainly to the functionality of these landscapes for amenities. These users have a utilitarian vision of landscape since they focus their preferences on the activities they intent to carry out, mostly related to amenities. The most relevant characteristic of these respondents is the connection to farming, but not being farmers (family manages or have managed a farm).

— **Nature conservation concerned** (33%) prefer land cover classes representing more extensive use patterns, such as mixed forest, high shrubs in forest land and *montado*, mostly for aesthetic appreciation and for aspects related to nature. These users show less preference for irrigated pastures, cereal, irrigated cultures, rice fields and intensive olive grove, and environmental quality is the most relevant reason for these choices. The tendency they prefer in Alentejo is more nature conservation and in their opinion farming and forestry are important activities to keep the countryside as it looks today. Foreign nationality is a very relevant aspect defining this group and eco-tourists are the most significant user group.

Presented in Figure 6 is an overview of the main aspects underlying urban user's preferred landscapes, allowing a comparison across the resulting groups of the MCA, to better understand the main aspects that differentiate the groups and their preferences, namely, user's characteristics, reasons in the basis of preferences and related activities.

Figure 6 Summary of urban user's landscape preferences and the main characteristics differentiating each group's preferences.

5. DISCUSSION

5.1. WHICH LANDSCAPES DO URBAN USERS PREFER?

In a first analysis, and considering all sample groups, results show that residence and recreational activities are the most significant within urban users. Considering those who chose to live in Alentejo, besides permanent residents (interviewed as new rural inhabitants) and part-time residents (second residence owners), there are urban users, though they are not significant in the sample, that have chosen to move into Alentejo with the main purpose of being farmers (land owners).

The expressed preferences show that preferred landscapes among urban users are those reflecting traditional farming uses. The most preferred photographs represent the most typical land covers in Alentejo region (*montado* – agro-silvo-pastoral systems; mosaic – small scale farming and traditional olive grove) and the results regarding the least preferred photographs reinforce the idea of the urban user's interest in traditional farming uses. Eucalyptus is mostly seen as an invasive species affecting traditional uses in Alentejo, natural pasture is an extensive use with low management and several times associated to land abandonment and olive grove under an intensive use was also one of the least preferred land covers, commonly associated with its strong environmental impact.

Regarding the reasons in the basis of those preferences, and considering the entire sample of urban users, aesthetic appreciation and environmental quality were found to be the most significant aspects. First, these results confirm that, as has been already stated by several authors (Figueiredo, 2000; Van Dam *et al.*, 2002), aesthetic appreciation is closely related to recreational activities, one of the main purposes of urban users to visit this region. Second, results are consistent with the idea that urban user's visions concerning rural landscapes reflect, in a general way, more *eco-centric values* (Van den Berg, 1989). However, and as stated by Kaltenborn and Bjerke (2002), *preferences for farm landscapes may reflect the utilitarian aspects of an anthropocentric value orientation*. In this sense, results in this study suggest that urban user's preferences and respective reasons underlying them reflect a multifunctional perspective over rural landscapes.

The main reason pointed out by respondents explaining why they like Alentejo was nature (plants, wild animals, rocks, clean water, etc.), showing coherence with the reasons underlying preferences. For urban users farming and forestry are important activities in Alentejo region for three main reasons. First to protect soil, water, animal and vegetal diversity, second to produce food and fiber and third to keep the characteristic knowledge, manners and practices. These choices show that nature protection, the productive function and the maintenance of an identity are considered, by these users, relevant aspects. First, these results suggest that, though protection values (protect soil, water, animal and vegetal diversity) were frequently associated to urban users (Van den Berg, 1989), production values are also determinant when it comes to express landscape preferences. Second, these results confirm that, as Claval (2005) has stated, local traditions, expressing an identity, can be seen as a reference for those who want to settle on rural areas or to use them as recreational spaces.

Considering urban user's visions over future scenarios in Alentejo region the most mentioned tendencies, with similar frequencies distribution, were more farming activity, more wild animal and plant protection and more leisure and tourism activities. These results reflect urban user's interest in the multiple functions rural landscapes can provide, and not limiting their focus on consumption activities.

5.2. WHAT DETERMINES VARIANCE ON LANDSCAPE PREFERENCES?

After this wider approach on urban user's preferences, a deeper analysis can be carried out. Preferences for natural landscapes have been found, in previous, to vary with age, with elderly people displaying higher preference for managed landscapes (Strumse, 1996; Van den Berg et al., 1998). This may reflect, as suggested by Van den Berg and Koole (2006), generational differences in culture and upbringing. Educational levels have also been found to influence landscape preferences, for example, Van den Berg (1999) found that people with high education levels display strong preferences for natural landscapes with a low degree of human influence. Concerning these two variables, age and educational level, results in the present study diverge from what would be expected according to those previous findings and age and educational levels were then found to have no influence on landscape preferences among urban users. In the present study results show that urban users are in general elderly people and have high educational levels and regarding landscape preferences results show that among

urban users preferences are, almost equally, distributed between natural (44%) and humanized landscapes (56%). The reason explaining variance on preferences may be related to nationality of respondents, being this variable the most significant defining those different groups. Both frequencies analysis and MCA show that respondents included on *Managed landscape interested* group are mainly Portuguese and those forming *Natural landscape interested* group are for the most part Foreigners. Portuguese users are familiar with Mediterranean farming systems and for them rural landscape and agriculture are closely connected, and for this reason they highlighted identity as a reason for preferences. Foreigners, not being familiar with Mediterranean farming systems, in particular users from Northern Europe, tend to look for landscapes they prefer in their home country and consequently they displayed higher preferences for natural landscapes. Cultural differences concerning landscape and nature may be in the basis of these divergences.

A significant group of respondents displayed higher preferences for humanized landscapes even when the purpose is related to consumption activities (leisure and residence). Those who form the *Managed landscape interested* group stressed the socio-economic aspects of their preferred and disliked landscapes, showing that economic development and the productive dimension of farming influence their choices and that recreational function of rural landscape (their main purpose) depends on those aspects. Respondents within the *Natural landscape interested* group consider that alongside with the aesthetic appreciation and the capacity of these landscapes to provide recreational functions, environment and nature are important aspects that influence their opinions when it comes to express landscape preferences. Those aspects that differentiate these two major groups influence their choices and, consequently, their interest in specific landscapes to develop recreational activities and as place of new residence.

5.3. HOW ARE PREFERENCES RELATED TO FUNCTIONS?

The MCA was used in order to organize respondents according to preference similarities and the resulting groups show that differences on landscape preferences are closely connected to a utilitarian perspective over landscape, showing consistence with previous studies (Surova and Pinto-Correia, 2008; Barroso *et al.*, 2011). The most

significant part of the interviewed users is related to recreation activities and residence and these two types of activities reflect divergences on landscape preferences.

New rural inhabitants represent 30% of the sample used in this study. They are the most significant user group representing those who choose to live in Alentejo. These users, as showed in the frequencies analysis, displayed higher preferences for mosaic and montado, land cover classes related to traditional farming. Results also demonstrate that new rural inhabitants have different visions concerning rural landscapes and their preferences reflect those visions. Being distributed for all output groups resulting from the MCA, new rural inhabitants have a more evident influence on two of those groups – *Traditional Farming Interested* and *Nature Conservation Concerned*.

The expressed preferences of those who form the *Traditional Farming Interested* reflect a high interest on traditional farming with focus on identity, environmental quality and socio-economic aspects. Respondents included in *Nature Conservation Concerned* group have chosen land cover classes representing more extensive uses and these preferences are closely related to aesthetic appreciation, nature and environmental quality. Besides the influence of nationality, mentioned above, these contrasts on preferences may be related to respondent's connection to farming. Most part of urban respondents has no close connection to farming, except for those categorized as farmers that have recently moved to Alentejo with the main purpose of being land managers. New rural inhabitants included in *Traditional Farming Interested* group, not being land managers, hypothetically they have an earlier relation with farming as the result of moving to Alentejo or they only see this activity mainly as part of a "rural idyll" (Van Dam *et al.*, 2002; Bell, 2006). But the fact is that they look for managed landscapes especially those relating to traditional farming uses. In this sense, connection to farming may also be a differentiation factor on preferences. Concerning this variable, results are consistent with those presented by Van den Berg and Koole (2006). Farmers prefer managed landscapes and non-farmers prefer wild landscapes. In this study, despite the fact that farmers are not a significant group, most part of them are include in *Traditional Farming Interested* group, which suggests that a significant part of new rural inhabitants that move from urban areas to Alentejo region display high interest on farming, clearly reflected on preferences.

New rural inhabitants included in *Nature Conservation Concerned* group have no connection to farming, as the results of frequencies analysis and MCA demonstrate, and the absence of familiarity with Mediterranean farming systems is reflected on their visions and preferences. In this case, land cover classes under more extensive uses reflect a higher suitability for amenity activities required by these users.

Results of the frequencies analysis show that montado is the most chosen photograph among all tourists and visitors. Considering that these users are closely connected to recreational purposes results suggest that this traditional land use system has a high potential to respond to a recreational demand, confirming findings in previous studies focusing on the Mediterranean region (Surova and Pinto-Correia, 2008). Yet results revealed differences related to the type of activity these users practice in the landscape. Eco-tourists main purpose is to practice natural outdoor recreation, activities that imply a close relationship with nature, and preferences are consistent with this purpose. These users prefer landscapes under a more extensive use, such as mixed forest or high shrubs in forest land, and as revealed by MCA results, eco-tourists prefer montado with high tree density and with shrubs. In the basis of preferences are mainly environmental quality and aesthetic appreciation, showing that besides their recreational intent these users have a strong engagement with environmental values.

Tourists, being those interested in visits of heritage monuments, gastronomy and cultural events, and regular visitors are, according MCA results, distributed through the three most significant output groups – *Intensive mosaic interested, Traditional farming interested and Nature conservation concerned.* A part of tourists and visitors, preferring managed landscapes, showed higher preferences for more intensive uses. Respondents forming the *Intensive mosaic interested,* mainly users with current urban residence, had based their preferences in aesthetic appreciation and socio-economic aspects, reflecting their interest, or perhaps concern, on farming economical development. Results concerning tourists and visitors reflect more disperse preferences contrarily to eco-tourists, land owners or even new rural resident's well defined and easily identified preferences.

Second residents represent a middle ground between residential and recreational activities (Vepsalainen and Pitkanen, 2010), considering that they do not live permanently in this region and that recreation is not the only purpose for them to visit Alentejo. Furthermore there is no enough information on the motivations of these users

to have a second home and on the time they spend there, in order to assess whether they consider their second home as a place of living or a weekend recreational place. The most significant part of Second residents is included in the *Traditional Farming Interested* group that clearly pointed Identity as one of the most important reasons for their preferred landscapes. Regarding their preferences, cultivated landscapes were the most chosen contrasting with findings in previous studies, namely the study undertaken by Vepsalainen and Pitkanen (2010) that concluded that elements of agricultural landscape had a less significant role in the Finish second home owners. This divergence in results may be related to respondent's familiarity with specific farming systems and to a cultural context that, in Northern Europe, probably promotes a strong engagement with nature and in Mediterranean regions provides a strong sense of identity concerning traditional farming.

Findings for the Mediterranean areas have shown that agricultural landscapes constitute an important component of society's aesthetic utility function (Sayadi *et al.*, 2009) and results in the present study reveal coherence with those findings. The variables defining the resulting groups, assembling respondents by preference similarities, show that farming and forestry play an important role on landscape preferences among urban users, with special emphasis on farming activities. Though results demonstrate a clear difference between preferences for managed and natural landscapes, both groups expressed higher preferences for land cover classes relating to farming uses. Users preferring managed landscapes, those included in *Intensive mosaic interested, Intensive olive grove supporters* and *Traditional farming interested* groups*,* clearly reveal strong preference for farming uses, both traditional (*Traditional farming interested*) and intensive uses (*Intensive mosaic interested* and *Intensive olive grove supporters*). Those who prefer natural landscapes (*Extensive farming recreationists* and *Nature conservation concerned*) have chosen land cover classes reflecting more extensive uses, though related to farming, with higher relevance for *Extensive farming recreationists* group that displayed strong preferences for a specific land cover class (small shrubs in farming land) suggesting that the amenity activities they intent to develop depend on the existence of specific farming uses.

Being farming, in this study, a high significant factor on the basis of urban user's preferences, resulting from the urban users high interest in landscape amenities resulting from farming uses, as Zasada (2011) has stated, groups differentiate mainly by user's visions and values, as shown in Figure 7. Though urban users have been

asked for their preferences mainly as consumers, production and protection values have been found to have a strong influence on the expressed preferences.
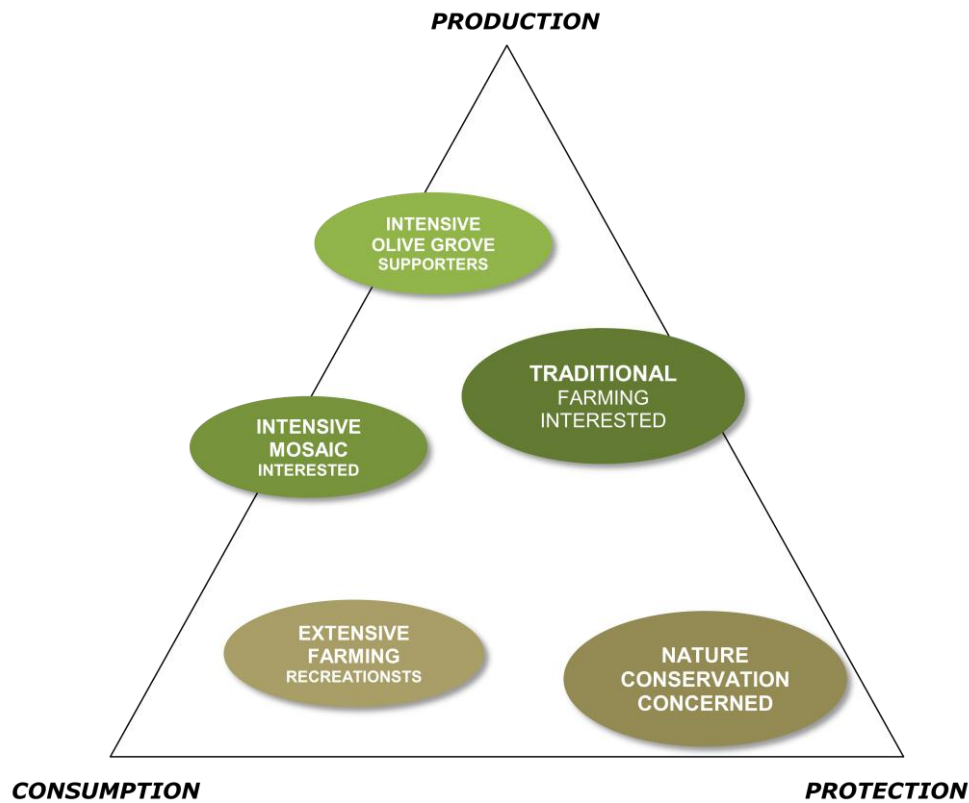
Figure 7 Differentiation of urban user's landscape preferences according to the balance between Consumption, Production and Protection values (adapted from Holmes, 2006)

Besides the identification of clear preference patterns, provided by the MCA and cluster analysis, it is also possible to identify the main characteristics differentiating urban users and relate them to those patterns. As shown in Figure 8, nationality is the socio-demographic characteristic, in this study, that most influences landscape preferences and underlying these differences are the variance in the relative significance of Consumption, Production and Protection values. This variance may be the result of the different cultural contexts characterizing these users, mainly in what concerns to connection to nature and the engagement with protection values, once they are the most significant aspects defining the most considerable part of foreign users. Utilitarian perspective is also an evident aspect underlying the variance on preferences. Taking in

consideration the different functions these users represent: visiting, cultural tourism, eco-tourism and residence, it is evident a relation between these functions and the expressed preferences, as previous studies on landscape preferences have demonstrated (Surova and Pinto-Correia, 2008; Barroso *et al.*, 2011).
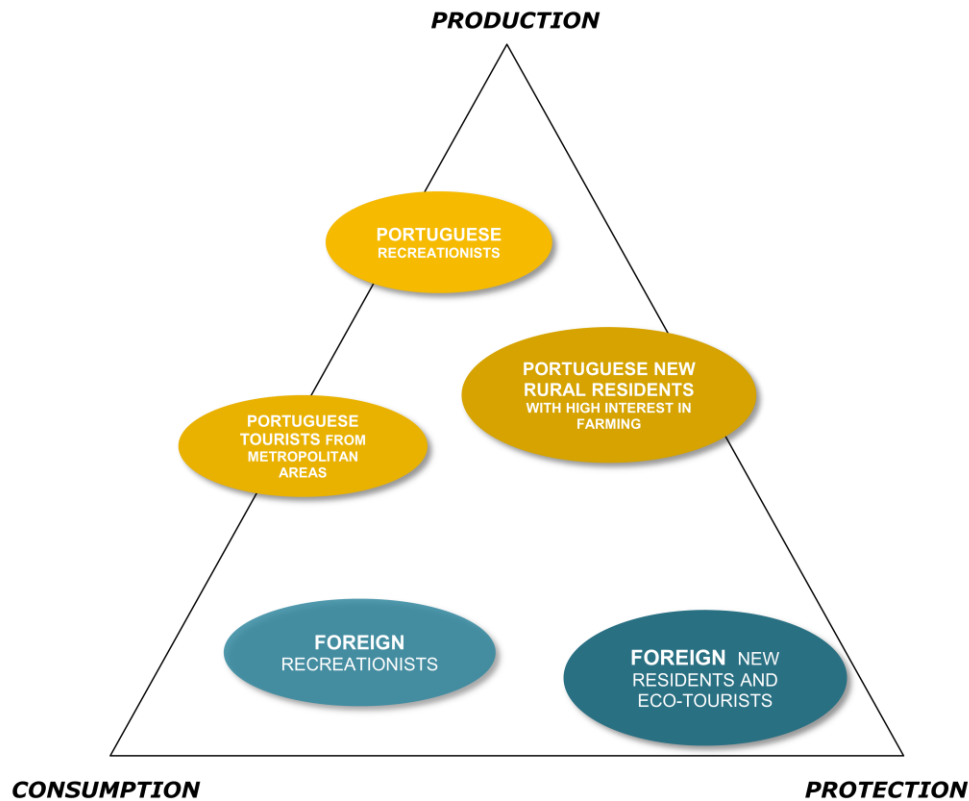

Figure 8 Differentiation on urban user's main characteristics according to the balance between Consumption, Production and Protection values (adapted from Holmes, 2006)

6. Conclusion

The aim of this study was to identify landscape preferences among urban users and to relate possible variances on preferences with functions and visions concerning rural landscapes. In this sense, some concluding remarks can be pointed out, namely concerning to what determines landscape preferences.

In this study, the groups resulting from the multiple correspondence analyses allowed a clear understanding on variation of landscape preferences among urban users, and the results suggest that MCA and cluster analysis provide a relevant tool for identifying landscape preferences based on categorical data.

It is relevant to highlight that in this study farming has been found to have a strong influence on preferences across all groups. Despite farming being a determinant aspect underlying preferences there is an evident variance. As was expected, considering previous research, the utilitarian aspect has been found to be a strong predictor on landscape preferences. Results in this study demonstrate that landscape preferences are clearly differentiated accordingly with functions urban users represent (recreation, tourism and residence). Although previous studies often focused on age and educational level as explanations for different landscape preferences, the results in present study suggest that urban user's nationality and connection to farming provide stronger meaningful predictors of landscape preferences.

Nationality has been found to be a relevant characteristic differentiating those who prefer natural or managed landscapes, however further research might be necessary concerning the influence of urban user's nationality on landscape preferences, for example through comparisons across countries, to possibly verify which aspects of cultural context determine this variance. Regarding connection to farming, though not being a strong connection due to user's urban background, results in this study show that there is a high interest on farming activities among new rural inhabitants. And even though these new comers are commonly associated with amenity activities (new residence, tourism and recreation) based on a rural idyll, there is an emergent interest in moving to rural areas with the purpose of being farmers, suggesting that the growing demand of urban users for rural landscapes may also include a new purpose closely related with agricultural activities.

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ANNEXES

ANNEX I

Survey used in the interviewing process of the ROSA Project.

Instituto de Ciências Agrárias e Ambientais Mediterrânicas - Grupo de Investigação em Ecossistemas e Paisagens Mediterrânicas

Institute of Mediterranean Agricultural and Environmental Sciences - Research Group on Mediterranean Ecosystems and Landscapes

SURVEY ON MULTIFUNCTIONALITY OF RURAL SPACE

Research Project ROSA – Contributions for the identification of the social search of Alentejo landscapes.

Inquiry n^er	Place of inquiry application:	
Time of inquiry:	Starting time:	Ending time:

1. RELATION WITH THE ALENTEJO REGION			Cod.
1.1. Inhabitant □			
1.2. Neo-Rural inhabitant □			
1.3. Landowner □			
1.4. Hunter □	1.4.1. Type of hunting:	1.4.1.1. Big game □ 1.4.1.2. Small game □	
	1.4.2. Type of hunting reserve:	1.4.2.1. Touristic □ 1.4.2.2. Associative □ 1.4.2.3. Municipal □	
1.5. Person with 2nd residence □			
1.6. Regular visitant □	1.6.1. What is your main motivation for being interested in the Alentejo Region?	1.6.1.1. By own like □ 1.6.1.2. Family/friends □ 1.6.1.3. Other □ ………………………….	
1.7. Tourist □	1.7.1. Type of Tourism:	1.7.1.1. Individual / Private group □ 1.7.1.2. Organized group □	
1.8. Eco-Tourist □	1.8.1. Type of Eco-tourism:	1.8.1.1. Trekking (by foot) □ 1.8.1.2. Bicycle riding □ 1.8.1.3. Horse riding □ 1.8.1.4. Other □ ………………...............	

2. SOCIAL CHARACTERIZATION AND GEOGRAPHICAL INSERTION OF THE INQUIRED			Cod.
2.1. Nationality		2.1. 1. Portuguese □	
		2.1.2. Other □ ………………………………………………	
2.2. In which kind of place (municipality) did you spent your childhood? (more urban/rural)		2.2.1. Municipality/*place* ……………………………………………… 2.2.1.1. Head municipality town /*urban* or other town □ 2.2.1.2. Rest of municipality /*rural* □	
2.3. Do you have any connection to farming?	2.3.1. Yes □	2.3.1.1. Family manages or managed a farm □ 2.3.1.2. Part-time farmer □ 2.3.1.3. Full-time farmer □ 2.3.1.4. Other □ ………………………………………………….	
		2.3.1.5. Property area (hectares)……………………………	
	2.3.2. No □		
2.4. Place of residence	Permanent residence	2.4.1. Municipality ……………………………… 2.4.2.1. Head municipality town or other town □ 2.4.2.2. Rest of municipality □	
	Second residence	2.4.3. Municipality ……………………………… 2.4.4.1. Head municipality town or other town □ 2.4.4.2. Rest of municipality □	
2.5. If your residence is outside the Alentejo Region, how often do you come to Alentejo (for your activity)?		2.5.1. One time or more per month □ 2.5.2. One time or more per year □ 2.5.3. Rarely □	
2.6. Profession or activity	2.6.1. Current situation	2.6.1.1. Active □ 2.6.1.2. Unemployed □ 2.6.1.3. Student □ 2.6.1.4. Retired □	
	2.6.2. Field of activity	2.6.2.1. Agriculture, hunting and forestry □ 2.6.2.2. Construction and industry □ 2.6.2.3. Market, personal services, hotellery and catering □ 2.6.2.4. Private services (banks, etc.) □ 2.6.2.5. Public general services (health, education, administration, etc.) □	
2.7. School education level	(Frequência do ensino é o mais importante. Básico inclui quarta classe antiga completa)	2.7.1. Does not read or write □ 2.7.2. Reads and writes □ 2.7.3. Elementary school □ 2.7.4. High school □ 2.7.5. Undergraduate, graduate □	
2.8. Gender		2.8.1. Feminine □ 2.8.2. Masculine □	
2.9. Birth year:		2.9.1. Less then 25 years old(> 1985) □ 2.9.2. 25 to 40 years old (1985-1970) □ 2.9.3. 41 to 65 years old (1969-1945) □ 2.9.4. More then 65 years old (< 1945) □	

3. REFERENCE LANDSCAPES	
3.1.1. If you had to take a picture anywhere in Alentejo, to send someone abroad (to show the region), **WHERE** or **TO WHAT** would you take it?	**Cod.**
3.1.2. WHY	**Cod.**
3.2.1. If you had to take a picture anywhere in Alentejo, of something negative or problematic, **WHERE** or **TO WHAT** would you take it?	**Cod.**
3.2.2. WHY	**Cod.**

4. SENTENCES	
4.1. I like the countryside in Alentejo because of (choose 2):	**Cod.**
4.1.1. <u>**Nature** (plants, wild animals, rocks, clean water, etc.)</u> □	
4.1.2. <u>**The way of Alentejo people**</u> □	
4.1.3. <u>**The views, colors and odors**</u> □	
4.1.4. <u>**The white houses on the hills (*montes*) and other rural buildings**</u> □	
4.1.5. <u>**Agriculture**</u> □	
4.2. Farming and Forestry activities in Alentejo, are important to (choose 2):	**Cod.**
4.2.1. <u>**Keep the characteristic knowledge, manners and practices of the region**</u> □	
4.2.2. <u>**Maintain the population**</u> □	
4.2.3. <u>**Produce food and fiber**</u> □	
4.2.4. <u>**Protect soils, water, animal and vegetal diversity**</u> □	
4.2.5. <u>**Keep the countryside as it looks today**</u> □	
4.3. From the possible tendencies in Alentejo, which of these please you more? (choose 2)	**Cod.**
4.3.1. More <u>**scattered housed around the towns and villages**</u> □	
4.3.2. More <u>**leisure and tourism activities**</u> □	
4.3.3. More <u>**hunting activities**</u> □	
4.3.4. More <u>**wild animal and plant protection**</u> □	
4.3.5. More <u>**farming activity**</u> □	
4.4. From the possible tendencies in Alentejo (related with farming and forestry), which of these please you more? (choose 2)	**Cod.**
4.4.1. More <u>**irrigated and specialized farming**</u> □	
4.4.2. More <u>**pine tree plantation**</u> □	
4.4.3. More <u>**vegetation** in the ***Montado*** * </u> □	
4.4.4. More <u>**animals**</u> and <u>**grazing areas/pastures**</u> □	
4.4.5. More ***Montado* * **<u>** and other characteristic systems of Alentejo**</u> □	

* *Montado* – Mediterranean traditional system (open forest) based on an ancient trinity of components: trees (cork and Holm oaks mainly), pastures and crops.

5. PREFERENCES

5. Having in mind the group you are being questioned for (hunters, inhabitants, farmers, tourists, etc), choose among the 16 available photos, the **three photos** that show the land cover type **you like best** AND the **three photos** that show the land cover type **you like less**. AND WHY?

5.1.1. COd. 3 Photos **BEST**	5.1.2. WHY	Cod.

5.2.1. Cod. 3 Photos **LESS**	5.2.2. WHY	Cod.

5.3 (*In the case you chose the montado (n^{er} 9) as favorite*) – Which type of *montado* you like best?

5.3.1. Cod. Photos	5.3.2. WHY	Cod.

6. COMPOSITION

6.1. Chose a photo (within the initial 16) for each plot in the figure, allowing yourself to repeat each one, as many times possible, in order to build up your favorite composition.

Position in Figure	6.1.1.Cod. Photo	6.1.2. WHY	Cod.
1			
2			
3			
4			
5			

Observations / Comments:

Do you have any interest in receiving news about this Project in the future? If so, please let us know your:

Name: _____

Contact (e-mail): _____

ANNEX II

Description of the output groups resulting from the MCA . Reasons for the chosen photographs: A –amenities; AA – aesthetic appreciation; EQ – environmental quality; I – identity; N – nature; SE – socioeconomic aspects). (VT) – Valor test. (LS) - Levels of significance: (*) < 0.05; (**) < 0.01; (***) < 0.001).

preferred photos and reasons

intensive mosaic interested (17%)			intensive olive grove supporters (5%)			traditional farming interested (34%)			extensive farming recreationists (11%)			nature conservation concerned (33%)		
variables	VT	LS	variables	VT	LS	variables	VT	LS	variables	VT	LS	variables	VT	LS
irrigated culture	9.37	***	intensive olive grove	3.64	***	cereal	5.74	***	low shrubs	10.64	***	mixed forest	6.66	***
SE	5.69	***	SE	3.18	**	I	3.76	***	N	5.71	***	AA	4.39	***
I	3.20	**	AA	2.10	*	AA	3.34	***	A	4.80	***	N	2.83	**
EQ	2.63	**	irrigated pasture			SE	3.31	***	AA	3.60	***	SE	2.12	*
AA	3.55	***	AA	2.43	**	mosaic	4.36	***	I	3.08	**	high shrubs	6.33	***
pine forest	4.08	***	pine forests			natural pasture	2.92	**	EQ	2.31	*	AA	3.71	***
SE	3.71	***	AA	2.06	*	olive grove			olive grove			N	2.41	**
AA	2.75	**				I	2.86	**	A	2.13	*	I	2.12	*
vineyards	4.04	***							montado			montado	4.44	***
orchards	2.63	**							A	2.13	*	AA	2.91	**
A	2.16	*										N	2.73	**
												dense montado with shrubs	4.44	***
												AA	2.86	**
												open montado with shrubs	3.44	***
												N	2.30	*
												olive grove	2.39	**
												AA	3.13	**

disliked photos and reasons

intensive mosaic interested			intensive olive grove supporters			traditional farming interested			extensive farming recreationists			nature conservation concerned		
variables	VT	LS	variables	VT	LS	variables	VT	LS	variables	VT	LS	variables	VT	LS
low shrubs	7.52	***	olive grove	10.15	***	eucalyptus	8.91	***	vineyards	6.92	***	irrigated pasture	5.48	***
AA	4.08	***	EQ	6.42	***	EQ	4.46	***	AA	3.72	***	AA	3.06	**
EQ	3.96	***	SE	4.55	***	I	3.29	***	EQ	2.67	**	EQ	2.75	**
SE	3.74	***	AA	3.79	***	AA	2.83	**	I	2.31	*	I	2.26	*
montado	4.58	***	cereal	2.54	**	SE	2.32	*	pine forest			cereal	5.11	***
AA	2.63	**	EQ	3.11	**	high shrubs	6.38	***	A	3.08	**	AA	3.26	**
mixed forest	4.10	***	SE	2.29	*	EQ	3.92	***	EQ	2.75	**	EQ	2.76	**
AA	3.71	***	high shrubs			SE	3.34	***	eucalyptus			irrigated culture	4.55	***
I	2.16	*	AA	2.33	*	pine forest	2.86	**	A	3.08	**	I	2.44	**
natural pasture	3.55	***				I	2.32	*	irrigated culture	2.04	*	rice fields	4.53	***
AA	2.01	*				low shrubs			A	2.31	*	EQ	2.44	**
						I	2.39	**				AA	2.15	*
						N	2.18	*				intensive olive grove	4.09	***
						dense montado with shrubs	2.34	*				EQ	3.18	**
												natural pasture		
												EQ	2.26	*

other significant characteristics

intensive mosaic interested			intensive olive grove supporters			traditional farming interested			extensive farming recreationists			nature conservation concerned		
preferred tendency - more scattered houses around dettlements	2.24	*				portuguese nationlaity	5.38	***	relationship with Alentejo - hunter	2.96	**	foreign place of childhood	5.09	***
						place of childhood in portuguese metropolitan areas	3.12	**	connected to farming not being farmers	2.24	*	foreign nationality	4.97	***
						preferred tendency - more hunting	2.92	**				foreign current place of residence	4.27	***
						preferred tendency - more farming	2.29	*				relationship with Alentejo - ecotourist	3.55	***
						connected to farming being farmers	2.34	*				no connection with farming	2.02	*
						relationship with Alentejo - land owner	2.22	*				preferred tendency - more nature protection	3.08	**
						farming and forestry are important to Keep the characteristic knowledge, manners and practices	2.00	*				farming and forest are important to keep countryside as it looks today	2.88	**