**UNIVERSIDADE DE ÉVORA**
**ESCOLA DE CIÊNCIAS E TECNOLOGIA**

**Mestrado em Ciências da Paisagem**
*Especialização Dinâmica e Gestão da Paisagem Rural*

**Dissertação**

# Assessing land management types in a transition theory perspective. Case study: Natura 2000 area in Southern Portugal.

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**Orientadora**:
Teresa Pinto-Correia

Julho 2011

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# PREFACE

> *"Theorising Transition has its origins an attempt to understand the emergent triumphalism and universalism of transition theory following the events of 1989. In particular we are interested in the limited theoretical explanation of those events and their consequences at the very time when western political economy, industrial geography and social theory were addressing questions of economic restructuring, globalisation and the changing geography of communities and regions, the recomposition of class identities, and the reworking of gender and ethnicity. (…) At the end of the twentieth century there is a need, then, for an alternative set of conceptual frameworks on transition to challenge the neo-liberal hegemony and account for the variety of strategies, techniques and effects that constitute transition-in-process – actually existing transition."* (Pickles and Smith, 1998)

Having the transition theory in mind as a theoretical base has proved to represent an inspiration for posing questions on how transition occurs in rural areas and how these strongly relate to the world events that unfolded in the post-communist Era. And as it inspires, the transition theory also reveals a complexity difficult to embrace. And so it is acknowledged that assessing transition even if limiting to the farm level, represents in itself a far complex theme to be aimed at a master dissertation. Having this strongly present, the attempt of the present work is to take literature as base for a test survey for land managers, whose thought and action might be stretching, more or less intentionally, from more productivist to more post-productivist. And as the title suggests, all done at the light of a so called transition theory, suggested by the authors Pickles and Smith (1998), who's work and more specifically the book entitled "Theorising Transition – The Political Economy of Post-Communism Transformations" would deserve a lot more attention that the one invested for the purpose of this work.

Under the notion that a transition might be happening, a lot of –isms and consequently post–isms have been used in literature, as fordism, modernism, liberalism, productivism and even consumerism (Wilson, 2007). The fact that the focus of the transition theory is in a political –ism (Post-Communism), has alerted me for the need to step back from the Mediterranean rural context in order to locate it in the big picture of worldwide transformations of political nature and that are affecting everything, and as everything concerns, the rural context that this work tries to focus on. It could be said that the post-communism Era gave place to a socialism or democratization Era in theory, but a liberalism and capitalism Era in practice. All the changes from globalization to market liberalization, and all the wide consequences of these giant concepts, produced nothing but solid foundations to what some authors refer to as the (neo-liberalist) Empire or the New World Order, acting behind the socialist and democratization shield or makeover. Some authors have even been calling this new order as the Integrated World Capitalism (IWC, a term suggested by Guattari and Negri, 1992 *in* Pickles and Smith, 1998), meaning the globalization of capital and the collapse of national development ideologies by the shift of decision making from state institutions to the G-8 (or G-20), the World Bank and the IMF [and the Bilderberg Group perhaps even controlling the previous ones]. Among some informal groups of discussion, this world powerful entity, acting at different scales, has been referred to as 'the system' or as 'they', as a result of a

generational culture in which literature and cinematographic iconic references like the *1984* (George Orwell, 1948), *Brave New World* (Aldous Huxley, 1932), the *Zeitgeist* trilogy (Peter Joseph, 2007-2011), and many others, have continuously influenced individual thought and action. In my case, this culture has strongly been responsible for the interest on studying themes as of the present work. And whatever the name of this world entity might be, the interest is in the resistance moves at the local level that emerge along with the unbalance created at the global level.

What is in fact at state is how people react to such overwhelming giants, and in this particular work, of all people, the ones managing the land. And of course the ones managing the land are in some degree dependent of the ones (including themselves) consuming, both in material and immaterial ways (food, landscape, raw materials, natural resources, identity, etc.), and affecting the system. These include policy makers, researchers, government members and all the other (all) that eat, drink and breath (live and/or survive) in any existent landscape. So to talk about transition in the rural areas, is to talk about world politics and society. As a probably optimistic hypothesis, some people are already finding ways and developing strategies in order to fight the Empire, or at least thinking about it and by doing so 'feeding' a potential trajectory for the future. These people could be considered post-socialism/capitalism/liberalism agents or new peasants (van der Ploeg, 2008), making way for a new Era to arise: perhaps sustainabilism (?) or autonomism (?), linked with multifunctionality and more importantly, embracing the local scale as an ideal and powerful context promoting the 'do it yourself' approach. This work aims at identify the differentiation within land management and land managers of a study area and contribute, even if very microscopically, to progressing in the understanding of rural transition.

***Identificação de tipos de gestão agrícola na perspectiva da teoria da transição. Caso de Estudo: Área da Rede Natura 2000 no Sul de Portugal.***

Resumo

As paisagens têm sido transformadas ao longo do tempo pelo Homem e, mais directamente pela gestão ao nível da exploração, por agricultores. Mudanças nas últimas décadas, desde a liberalização do mercado à procura pela sociedade de amenidades da paisagem, encontram o espaço rural num processo de transição com possíveis impactes na forma como compreendemos, gerimos e vivemos o espaço rural. Nesta mudança de paradigma, uma nova era poderá estar a emergir em diferentes tempos, espaços e contextos, com conceitos como a multifuncionalidade, pós-produtivismo e novas formas de ocupação, a dominar a arena teórica onde investigadores discutem sobre um conceito capaz de enquadrar esta mudança. Este estudo ambiciona espacializar esta transição, através da aplicação de inquéritos baseados em dimensões pós-produtivistas e produtivistas (Wilson, 2007), localizando os que gerem a terra, espectro multifuncional entre uma visão e acção mais ou menos produtivista, relacionando a distribuição com o padrão e carácter da paisagem.

***Assessing land management types in a transition theory perspective. Case study: Natura 2000 area in Southern Portugal.***

Abstract

Landscapes have been shaped throughout time by man and within man by farmers, with the direct impact on their management at the farm level. Changes in the last decades, from market liberalization to society demand for non-commodity functions in the landscape, find rural space in a transition process with possible impact on the way we understand, manage and live rural space. Within this paradigm shift, a new era might be arising at different time, space and context, with concepts like multifunctionality, post-productivism and new modes of occupancy dominating the theory arena where researchers discuss towards a concept able to frame this change. This study aims spatializing this transition through the application of a productivist and post-productivist dimensions (Wilson, 2007) based survey, built to locate land managers in a multifunctional spectrum bounded between a productivist and a post-productivist view and action, related or not with the landscape pattern and character.

## *Agradecimentos*

*Agradeço a todos os que participaram e ajudaram na realização deste trabalho:*

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# PART I. Introduction

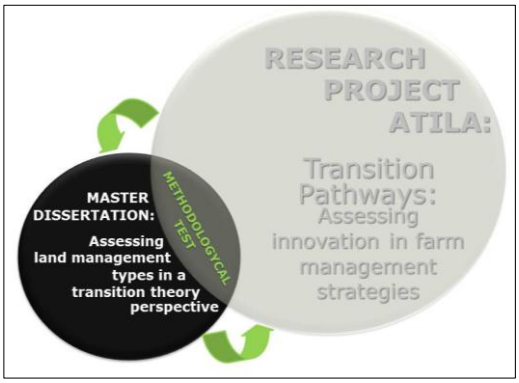
The main emphasis within this master dissertation is first the difficulties in conceptualizing the transition in rural space and in developing indicators for this transition at the farm and land manager level, especially considering that most literature on these subjects exists for Anglo-Saxon contexts and not for the Mediterranean context, as the present study area. The complexity under rural transition unfolds within multiple processes which, in some degree, influence land management at the farm and the land manager himself. And so the present work tries to progress in this, having in mind that time and space act as crucial explanatory variables within transition studies.

This first introduction intends to be a general introduction to the present work, which is structured in four parts: the objective of this work, the justification of the theme focused in the professional previous experience – "theme breeding", a first overview of the main concepts underlying rural transitions and the challenge of dealing with such complexity, and the study area.

### i. Objective: Assessing a land manager's typology

In the past, land management was centered in production, which in certain traditional and extensively farmed character areas allowed for the creation of quality landscapes; in the present, exactly because landscape change results of the interaction of different land managers and not just farmers, management itself became more heterogeneous and diversified, from the associated practices and motivations point of view. But will this diversification in land management express a transition from a more productivist to a more post-productivist action and thought? And will it reflect in a spatial distribution at the landscape level?

Assessing a land manager's typology and their expectations, in a globalization context, should allow better understanding of the transition occurring in rural areas and so, of the different phenomena associated to rural landscape dynamics and management. The present study intends to progress in a methodology for assessing land management types at different scales and in a transition theory perspective. And so, the objective is that this work can represent a step forward in this methodology development process through the application of a testing questionnaire in a smaller area, the Natura 2000 Monfurado area in the Montemor-o-Novo and Évora municipalities.




Being strongly related to the ATILA research project[1], the present work hopes to contribute as a methodological test (fig. 1) that can previously raise important questions to consider, stimulating discussion and therefore better results.

Figure 1 - Master Dissertation and Project ATILA objectives overlapped, resulting in a contribution – a methodological test. Arrows symbolize the motivation that Project ATILA represents to this work and how this work can contribute with a methodological test for the Project.

This first approach for the land management assessment is based on productivist and post-productivist dimensions developed by Wilson (2007). The author describes seven dimensions – 1. Agricultural policies; 2. Ideology; 3. Governance of rural spaces; 4. Food regimes and agro-commodity chains; 5. Agricultural production; 6. Farming Techniques; 7. Environmental impacts – each one with a variable number (1 to 9) of sub-dimensions for productivism and for post-productivism. As stated by Wilson (2007), there is a multifunctional transition going on in rural areas bonded in a spectrum from a more productivist to a more post-productivist view. In order to assess how this transition is occurring specifically in the Mediterranean context with all its specificities, represents the goal of the present study. The development of questionnaires based on these dimensions and survey application to a sample of 30 land managers in the Monfurado area are described on chapter II.

After this introduction a first draft version as base to a future paper is presented (part II), with the conventional organization of "Abstract with key-words, introduction, study area, methodology, results, discussion and conclusion". A general conclusion will follow (part III), focusing on results application in future research developments, the complexity of rural development and the personal research crossroads as an ultimate result of this work. References and annexes are presented in the end of the document.

### *ii. Theme "breeding"*

The master dissertation theme "Assessing land management types in a transition theory perspective. Case Study: a Natura 2000 area in Southern Portugal" emerged as the result of a multiplicity of aspects, linked with personal interests, as partly addressed in the *preface* part, and also to the research work and master program, which is next explained.

Research work and interest is very much connected with personal interests, but there is one central motivation when it comes to finding answers for *why things are the way they are*,

[1] Research Project PTDC/CS-GEO/110944/2009 financed by the Foundation for Science and Technology (*Fundação para a Ciência e a Tecnologia*, *FCT*).

which is the question that follows the previous - *what can it be done to improve the state of things?* In fact, research can have better utility for society if developed in a more applied way, addressing particular issues and problems, taking advantage of fundamental research as support for knowledge development.

Some authors have been stating that this knowledge generated has been somehow fragmented. Fragmentation as in opposite of coherence appears as a central issue and almost a symptom of lack of balance in the way communities exist and co-exist. Talking about fragmentation is talking about rural and urban culture, 'developed and third world countries', knowledge specialization, media information, natural habitats and resources, etc. And so the progressive specialization of science itself, resulted in a fragmentation of knowledge in the sense that it is possible to observe how the development of scientific knowledge and technology overlaps with progressive energy, environmental and social world crisis (Wakeford and Walters, 1995). So it all comes down to: Is science able to promote a better world? To have this in mind has allowed me to build up a line where the research efforts should be positioned, also to contradict this general tendency. After rooting internally this need, one is after exposed to the science *apparatus* of dependencies and rigidity, in which the research work becomes more a job than a deep interest for reality. As Lovelock (Wakeford and Walters, 1995) advocates, "there is an urgent need for more generalist scientists", referred by 'planetarium physics'. This notion has motivated me to understand the landscape architecture discipline where I first invested, as a first step towards a wider discipline that at least at this point, tries to incorporate the social sciences and agriculture, and that according to my specific interests, should better be called Landscape Philosophy, embracing so much more than the term architecture, focusing on land and people (on landscape as a whole).

The idea of a transition occurring in rural areas and the reaction of those managing the land, are for me two main interests that are perfectly joint together within the present theme. The transition because it imposes a reflection on time and space, on how men exists and has been related to its surrounding environment; and the land management issue because it refers to land with all its components and associations, sustaining life and therefore men. Regarding the transition, some dimensions could be mentioned, the planetary (the upcoming new astrological age) and the political (crisis showing dissatisfaction with inability of the present capitalist system in solving problems). In a certain and more general perspective, this last one could be conceived as determining most transitions in consuming habits, environment, food quality and security concerns, lifestyles, and many more. But are these in fact transitions or simple changes? This is also a major issue, to evaluate change at different scales, possibly determines the importance of a certain change and/or transition, if it is the case. If we think of the consequences of fire discovery, as explained by Edgar Morin in the '*Le paradigm perdu: la nature humaine'*, or the domestication of plants and animals, for example, we might doubt of the actual transition. On the other hand, we reinforce the idea of an actual transition, simply by considering the present political and environmental crisis and

the nuclear and genetic revolutions and consequences, but mainly by determining the scale in which changes take place. How farmers manage the land, or better called land managers by its actual heterogeneity (another change), can be a reflex of all these changes and to understand it is of extreme importance as they are the ones supplying food, environmental and cultural values. They are the ones directly managing landscapes and supporting society in their most basic and important needs.

In the work developed in the research team (Mediterranean ecosystems and landscapes) and the master program (Dynamics and Management of Rural Landscapes), the several experiences of field work allowing close contact with people, more or less directly connected to land management and in different contexts, was decisive for the questions arising and motivation along this whole process of research in general and dissertation in particular. The work environment in the research group, related to a very dynamic team with several graduate levels, ages, interests and disciplines, and the endless promoted discussion over scientific papers, research projects, methodologies, etc., along several trips for study area recognition, national and international conferences and many others, have strongly contributed to continued interest on the dynamics of rural landscape. Within the master program, the most relevant and important events and experiences were, the participation on the *Landscape Ambassador Program*[2], *Advanced PhD & Master course*[3], lectures from experts about the CAP and Mediterranean conditions and farming systems and several seminars organized by the Portuguese Society for Landscape Ecology (*APEP – Associação Portuguesa de Ecologia da Paisagem*).

Table A summarizes the main projects, research topics and study areas, in focus within the research group and master program studies. In fact, throughout time research questions have been shaped by the rhythm in which results are also accomplished and analyzed.

[2] Landscape Ambassador Program is an inter-disciplinary two week course created by a group of university teachers (the Periscape Group). Both students and professors are specialists in agronomy, landscape architecture, forestry, landscape ecology, geography and environmental engineering; coming from France, Hungary, Norway, Portugal, Slovenia and Sweden (Michelin *et al.,* 2008). Courses – January 2008: New insights for old rural landscapes: the multifunctionality challenge (Montemor-o-Novo, Portugal); and November 2008: The new rurality within a context of a long term change (Bräkneån River Valley, Sweden).

[3] Advanced PhD & Master course, jointly organized by Professor Yves Michelin (ENITA, France) and Professor Teresa Pinto-Correia (Univ. Évora, Portugal) - March 2010: Analyzing transition processes in rural landscapes: The farm system approach (Montemor-o-Novo, Portugal).

Table A - Timing, focus, topics and study areas regarding the work in or related with the several research projects; and master education components more relevant for the emergence of the present work. Changes happening in rural and peripheric areas (blue) relate to the increasing demand by society for landscape functions (green) and supply for these functions can depend on the different land management strategies at the farm level (orange).

| Research Projects & Master | Main Research Focus | Main Topics | Study area |
|---|---|---|---|
| IMPAZA (2006-2007) | Landscape Change | - Landscape dynamics<br>- Land abandonment | Municipality of Castelo de Vide in Alentejo Region |
| MURAL (2006-2009) | Landscape Public Demand | - Landscape preferences<br>- Farming systems | |
| ROSA (2009-2011) | | - Landscape social demand<br>- Land cover preferences | Alentejo Region (10 sample municipalities within the region including Montemor-o-Novo & Grândola) |
| Landscape Ambassador (2008) | | - New rurality (2008)<br>- Landscape Multifunctionality (2010) | - Bräkneån River Valley (Sweden)<br>- Montemor-o-Novo |
| FARM PATHS (2010-2012) | Landscape Management Types | - Agriculture trajectories<br>- Innovation | Study areas at the regional level within 6 European Countries |
| Advanced PhD & Master course (2010) | | - Transition Processes,<br>- Farming Systems approach | Montemor-o-Novo |
| **Master Dissertation (2011)** | | - Multifunctional transition (P/PP)<br>- Land management types | Monfurado Natura 2000 Site in Montemor-o-Novo & Évora municipalities |
| ATILA (2011-2013) | | - Land management typology<br>- Agricultural trajectories | 3 Municipalities (Montemor-o-Novo, Grândola & Odemira) within the Alentejo Region |

At this point, before characterizing the study area analyzed within this work, which is the Natura 2000 site of Monfurado, in Montemor-o-Novo's, the municipality of Castelo de Vide will be briefly mentioned as the first context studied and therefore where the first questions emerged and where the first attempt of identifying a land managers typology was done. After this example, another attempt already in the Monfurado area is explaned.

In the municipality of Castelo de Vide, processes of abandonment and counterurbanization occur in parallel as the area has a peripheric, harsh (biophysical conditions) and extensive (farming systems) character, providing interesting conditions from the amenities (non-production functions, like hunting, tourism, new housing, etc.) point of view. This potential exists and it's perceived by different user groups according to the function they look for, and so, as showed in fig. 2, different user groups prefer different landscapes (Pinto-Correia *et al.*, 2010b; Menezes et al., submitted in 2010).

Rock outcrops covering vast areas of Castelo de Vide's municipality, represent iconic landscape elements that perfectly illustrate this differentiation in terms of value given by the different groups. As an example, foreign visitors coming from the Netherlands, describe an idyllic and bucolic landscape strongly naturalized (Menezes *et al.,* submitted in 2010), viewing farmers more as a threat than as guardians of the countryside (Wilson, 2007); and farmers see in the rocks either their biggest nightmare when plowing the land, as sometimes the source of fresh green grass for cattle in the summer.

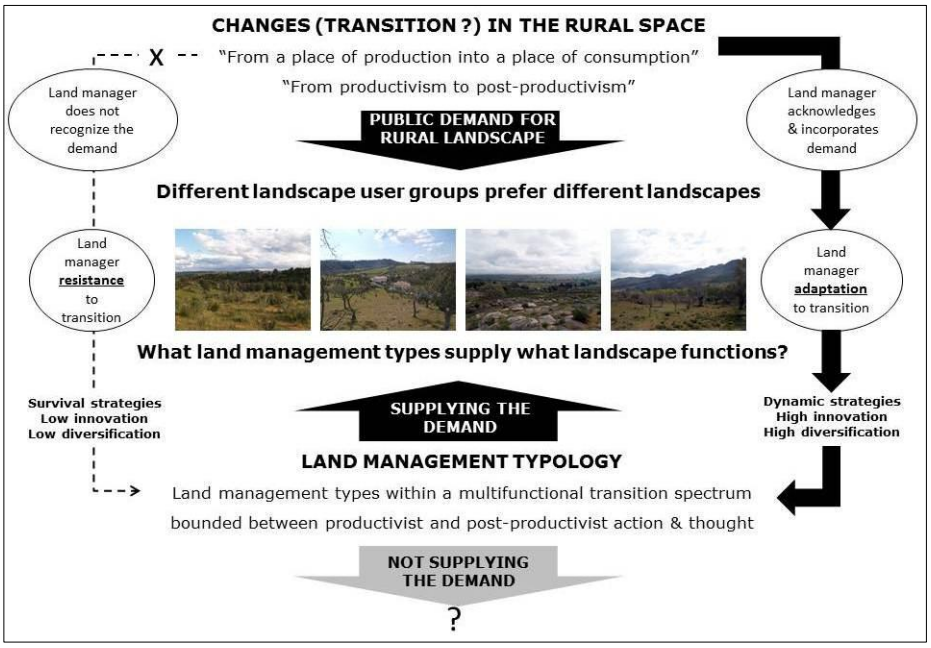



Figure 2- The cycle of demand for rural landscape and supply for landscape functions. Land managers can position themselves or not, following the public demand opportunity.

Although landscape demand has proved to be differentiated as illustrated above, linking the preferred landscapes with the land use and with management types has been less straight forward. Nevertheless, two attempts to identify land management types was undertaken by our team, based on ideal types[4] (Patton, 2002): one in Castelo de Vide's municipality, with satisfactory correlation with landscape character areas and other spatial indicators, like proximity to urban centers, as well as social-economic characterization aspects and future perspectives (fig. 2) (Barroso et al., 2010; Menezes et al., 2010); and another in the Monfurado area in Montemor-o-Novo, where the types identified showed no pattern of distribution (fig. 3) (Pinto-Correia et al., 2011).

The land management types defined in Castelo de Vide (fig. 3) were build up according to ideal types tried to follow some external and internal factors affecting the land manager decisions. Because farm characterization data used was collected in order to characterize the farms in four of the landscape character areas of the municipality and not specifically for

[4] Typologies built on ideal-types are based in distinctions that involve matters of degree and interpretation rather tan absolute distictions, looking for patterns, categories and themes (Patton, 2002).

assessing land management types, conclusions were possible to draw strongly based in in depth expert knowledge of the area.

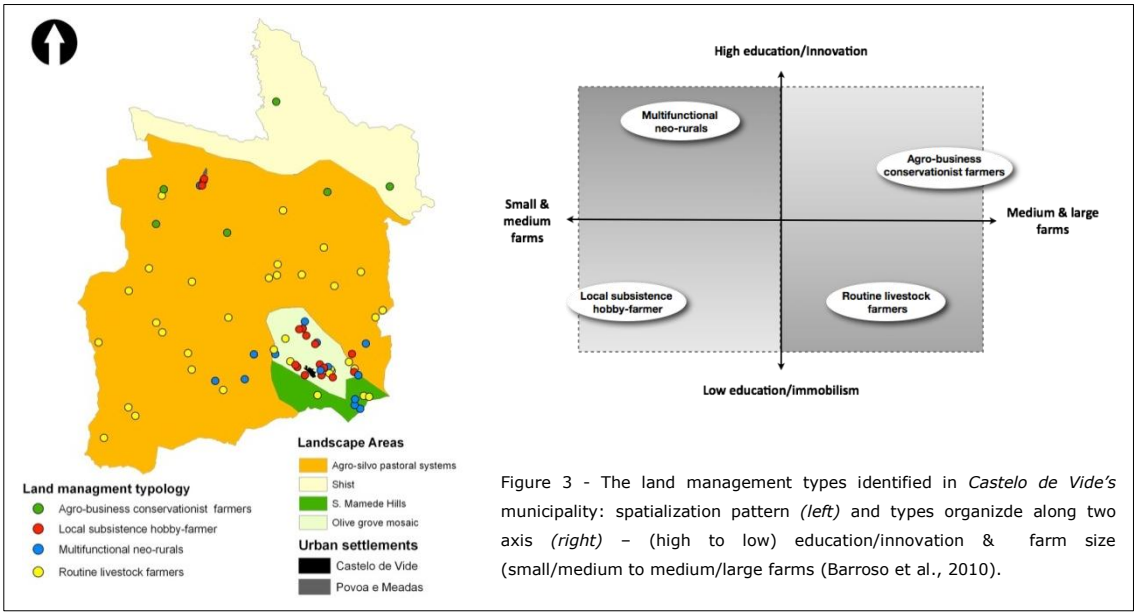



Figure 3 - The land management types identified in *Castelo de Vide's* municipality: spatialization pattern *(left)* and types organizde along two axis *(right)* – (high to low) education/innovation & farm size (small/medium to medium/large farms (Barroso et al., 2010).

The land manager types identified in the *Monfurado* area, that are next explained, were also built through the ideal types and also using previous information of inquires done to land managers (Advanced PhD & Master course in Montemor-o-Novo, 2010 data and student's works, Silva, 2008).

Four main types were identified (fig. 4), based on the landscape functions (biodiversity/conservation, hunting, mushroom and asparagus picking, leisure, quality of life, identity) incorporated in the farm management and level of awareness considering the same functions: *not aware* land managers - no awareness of provision public goods and services; *specialized* land managers - awareness of public goods and services but not reflected in practice; *multifunctional* land managers - awareness and practices according or intentions in short term; and *conventional* land managers - no awareness but practices according (Pinto-Correia *et al*., 2011).

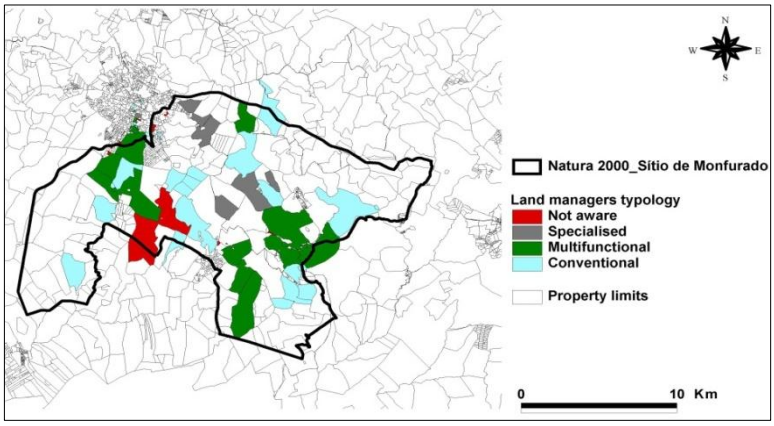



Figure 4 - Distribution of the holdings in the study area, according to land managers types (Pinto-Correia *et al.,* 2011).

"The map on fig. 4 shows the distribution of the four types of holdings, according to the type of land owner, in the study area. Also here the area is represented, through the size of the holding. As it can be seen in the map, there is not really a clear spatial pattern of holdings according to their type, and in fact they are rather much mixed up in the area. A possible explanation for this lack of spatial definition lies in the fact that, within each landscape area, the large scale and the small scale landscape pattern, there are relatively similar characteristics in terms of land use system and related landscape. Thus, the conditions for non-commodity functions are similar. Only the attitude of the land owner, who depends more on individual characteristics, seems to be relevant here." (Pinto-Correia *et al.,* 2011)

These two last examples, from Castelo de Vide and Monfurado, tell us that from general farm characterization data, results can be conclusive when tuned with in-depth expert knowledge. Taking these experiences in consideration has however reinforced the need for a more automatic methodology to assess land management types and therefore to more easily reproduce in other contexts.

### *iii. Rural Transition: a Research Challenge*

In both previous experiments in assessing land management types (Barroso et al., 2010; Menezes et al., 2010; Pinto-Correia et al., 2011), the need for improving the methodology used was strongly discussed in order to more easily reproduce land management assessment studies in other areas and considering the start of the Project ATILA (table A).

In order to assess a land management typology in a rural transition possibility context, a wide literature review was made on this matter as well as several meetings with landscape research experts[5].

Agriculture and rural change has been on the focus of a multidisciplinary conceptualizing debate over the last decades. In the process, concepts like multifunctionality and post-productivism have arisen in an attempt to frame theoretically the ongoing change. The notion of transition in association to this change seems to imply that a new era is upon rural areas revealing a shift in the actual paradigm. But how can transition be recognized? According to the Oxford dictionary (Oxford University Press, 2011) it is the process or a period of changing from one state or condition to another. But if transition can be said to be the evolution from one state to the other, implying a shift, how it is possible to recognize changes in such magnitude that indeed mean a transition? Some authors, when focusing on the post-productivism debate, refer that little has been said about the magnitude of change required to justify the use of the term – "perhaps a radical change would be sufficient, while an incremental one would not" (Mather *at al.,* 2006).

[5] Meetings within the *Dynamo Rural Landscape Research Group*: dynamo08.wordpress.com

Along the present work, no attempt to reach a precise data to a supposed post-productivist period has been made. In fact, the effort made was rather to focus in the several important dates as present in the literature about this subject, in order to reflect upon the time scope that could be in line with the transition occurring. And so, one of the major events with great impacts in world economy were the oil crisis in the 70's (1970, 1973 and 1979), where the embargo of petroleum by the exporter countries lead to recession in the United States and Europe (Simmons, 2005). This discussion about these crisis initiated a larger discussion on the Peak Oil, introducing the notion of a world transition beyond the Peak Oil, calling it the post-Saudi oil era which is an era for new forms of energy making way to the emergence of a more enlightened and sustainable global society (Simmons, 2005). Would the recessions in the US and Europe, be a major contribution in the world market liberalization and transition from a communist to a post-communist and capitalist era? Did these oil shocks worked as sismic waves before a bigger 'earthquake', for the world consequences it implied? Which event, the oil crisis throughout the 70's or the fall of communism towards capitalism, could be said to have more widespread consequences in world economy and societies? And therefore be the true foundation of subsequent changes or transition, as the ones that are here analyzed? As the goal of this work is mainly to focus on rural transition based on Wilson's (2007) work, transition theory as described by Pickles and Smith (1998) will be mentioned, along with references to the oil shocks. In terms of a birthdate for post-productivism, one can reflect on its several dimensions which link to different but interconnected time events. And so, it could be argued that the shift in the policies in 1992 followed other several shifts in global markets which, as recessions acted on food and energy supply. The time scope for post-productivism appears than to be a long process from the 70's to the 90's or even until nowadays, if considering the different contexts. It seems of particular importance to, at this time, reflect on the fact that the great majority of literature referring to a supposed transition are Anglo-Saxon and not Mediterranean, and therefore an effort to review data able to establish a time scope for post-productivism in Mediterranean, should be of great interest in the future.

The transition theory, as enunciated by Wilson (2007), focus the major ideological/discursive shift in the geopolitical relations worldwide after the 1989 events (Pickles and Smith, 1998), as its impacts on politics, technology and society in general, have indeed lead to (or mirrors) the transition talked about within the rural development and agricultural research sphere. Wilson (2007) reflects on the revolutionary changes that occurred in agriculture from the invention of the plough (about 3000 years ago) to the mechanization (from the early 19$^{th}$ century) and the increasing globalized nature of agro-commodity chains, resulting in an industrialized agriculture. Besides this major transformations in agriculture, "some researchers are arguing that these processes pale into insignificance when compared with changes that have occurred since the Second World War, and that the developments over the past 50 years have been more dramatic and far-reaching than anything that affected agricultural production in previous millennia" (Mannion, 1995 *in* Wilson, 2007).

When dealing with so many views, concepts and studies along the literature review, the idea that this subject of transition occurring in rural areas is very complex became even more present. Following van der Ploeg and Marsden (2008) work *The Unfolding Webs* "a review of the literature over the past years shows the burgeoning use of the term 'network' as a metaphor for analyzing and interpreting processes and activities occurring in rural space"; the rural web is what is grounding and driving rural development as it is "a complex set of internally and externally generated interrelationships that shape the relative attractiveness of rural spaces, economically, socially, culturally and environmentally". All these dimensions that compose the rural web show its complexity and its dynamic, and perhaps the web could serve as an equally good model for explaining how rural transition is grounded and driven by. Using these metaphors of networks and webs, it can be argued that rural transition itself embraces crossroads of distinct natures and is therefore 'standing' in a multiple crossroads of its own. As stated by Marsden (2003 *in* Wilson, 2007) "to say that the nature of agriculture, and its role in rural development is at something of a crossroads is both to understate and to reaffirm many of the debates that have been articulated in both academic and policy-making circles for more than a decade". Fig. 5 below tries to represent some of the crossroads that have been dealt with in the research work and helps to think about the different levels of decision and demand reflected and/or contributing to the transition taking place. For all the dimensions explored in figure 5, the goal was to represent different components relevant to each dimension. And so, the arrows coming out of each sphere representing a dimension (public demand, European policies, land management and conceptualizing transition) intend to represent possibilities regarding each dimension, rather that axis referring to opposite concepts. As an example, looking at the 'conceptualizing transition' dimension, several concepts as repeasantization, multifunctionality and post-productivism, have been used in conceptualizing rural transition, which are interlinked, not considered opposites in anyway, but even overlapped in some degree. This 'conceptualizing transition' is further explained below.

Both *public demand* and *European policies crossroads* refer to changes within society, either directly, through the demand of landscape functions besides agriculture (production, food security, quality products; identity; quality of life, leisure, housing and recreation – hunting, tourism; nature conservation and management of natural resources) as indirectly by their representation by the public policies in place, which from strictly supporting production has broaden its focus towards landscape, environment and rural development.

And so land managers stand in their own land management crossroads, dealing with public interests and policies support, under a specific ideology and personal/family interests. The fact that this last component of ideology and family interests has not been represented in a crossroads, reflect some weakness present in this work and previous ones, as personal motivations are only possible to address with collaboration with social sciences experts. This issue until somehow overlooked until now aims being finally tackled within the ATILA Project, counting with the participation of an interdisciplinary team. According to external and

internal factors, land managers are expected to take different land management paths (routine, maintenance, immobilism, innovation, diversification, specialization, multifunctionality, etc.).

Taking in consideration the public demand, the European policies, the personal ideology and motivations, land managers will position themselves in the land management crossroads, reconnecting farming again to society, nature and the interests and prospects of the direct producers (van der Ploeg, 2008). At the same time, within the research arena, efforts for conceptualizing rural changes reflecting these, place researchers also in a crossroad, of a conceptual nature.

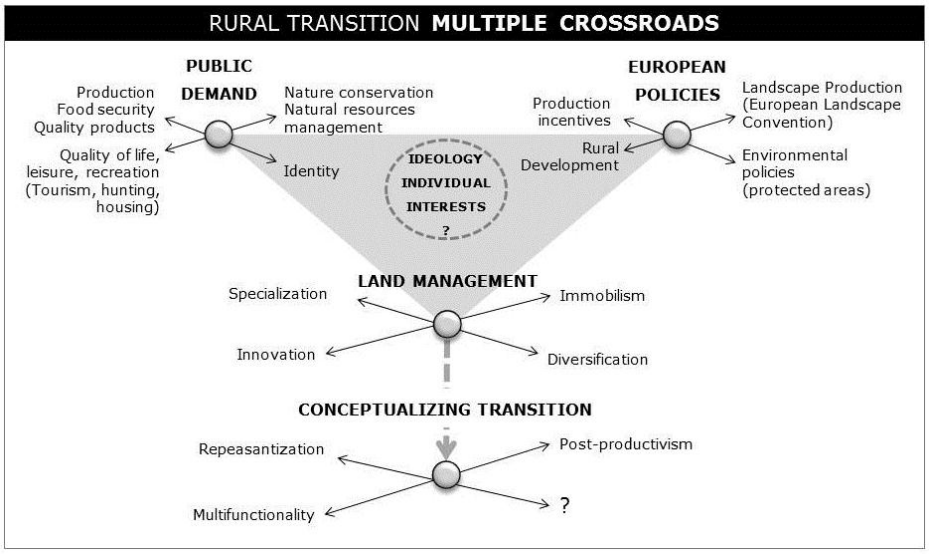



Figure 5 - Rural Transition Multiple Crossroads of three different main natures: a Public Demand nature, focused on the differentiated demand of goods and services by society; a Research nature, reflecting some of the different changes, in particular the public demand.

The conceptual crossroad (fig. 5):

- According to van der Ploeg (2008) and other authors [(Ploeg and Rooij, 1999; Ploeg *et al.,* 2000; Prodi, 2004; Johnson, 2004; Pérez-Vitoria, 2005; Hervieu, 2005; Sevilha Guzman, 2006, 2007; Valentini, 2006; Ventura and Milone, 2007) *in* van der Ploeg, 2008] "European farming is experiencing a far-reaching, complex and, as yet, unfinished process of transition that is unfolding along different dimensions", referring to this transition as *repeasantization*, translating in a "struggle for autonomy in a world strongly and increasingly characterized by dependency patterns and processes of marginalization and deprivation" (van der Ploeg, 2008).

- "Multifunctionality has been introduced in recent years at different occasions as a leading principle and new paradigm for the future development of agriculture and rural areas" (Durand and van Huylenbroek, 2003). However it is a concept still mainly understood as a policy-led process describing current agricultural trends, rather than as a concept explaining agricultural change (Wilson, 2007). Multifunctionality may be useful from the land management point of view, but it fails

when dealing with the increasing social demand, where the concept of landscape multifunctionality seems to better conceptualize this public demand (Pinto-Correia, 2010b). In fact multifunctionality can be assessed at the farm level, supplying functions, but the demand exists at the landscape level and therefore landscape multifunctionality seem to grasp more efficiently the changes occurring in the rural (Pinto-Correia, 2010b). By some authors, the ambiguities under the concept of multifunctionality mean that it is a concept too abstract to be useful (Mather *et al.,* 2006; Hytönen, 1995 *in* Mather *et al.,* 2006), and therefore it is not an obvious improvement to post-productivism (Mather *et al.,* 2006). Anyway, it is also emphasized that "the concept of multifunctionality is still being formed (Delgado *et al.,* 2003 *in* Wilson, 2007).

- Post-productivism is said to be, currently the only overarching conceptualization of the rural transition (Holmes, 2006). However, "many studies have highlighted that there is little evidence to support the notion of a transition towards post-productivism" (Wilson, 2007), even consider the concept to be a myth (Morris and Evans*,* 1999 *in* Mather *et al.*, 2006), a distraction from developing theoretically informed perspectives on agriculture (Evans *et al.,* 2002 *in* Mather *et al.*, 2006), or "a theoretical construct in the minds of academics, rather than an expression of reality on the ground (Wilson, 2004 *in* Mather *et al.*, 2006). Some authors see the use of post-productivism appropriate to the extent of productivist policies clear reduction on the emphasis on production (Mather *et al.,* 2006). And other go beyond stating that "the most powerful theoretical concept to emerge has been the notion that modern agriculture has moved from a *productivist* to a *post-productivist* era [(Cloke and Goodwin, 1992; Marsden *et al.,* 1993) *in* Wilson, 2007].

- Holmes (2006) poses the question: "Alternative concepts: post-productivism or multifunctionality?" and proposes an alternative concept *Multifunctional Rural Transition* (Holmes, 2002), which involves "a radical re-ordering in the three basic purposes underlying human use of rural space, namely *production, consumption and protection*". According to Wilson (2007), the notion of multifunctionality will only "beginning to make sense and, eventually, became a robust and tangible normative concept to be used by decision-makers at various spatial scales", when conceptualized "as a transitional process of agriculture/rural change embedded in a spectrum bounded by *productivist* and *non-productivist* actor spaces.

If the debate has produced a strong theoretical base, it hasn't however been able to progress in the assessment in space, of this transition. Nor it has brought light over the context differences where the rural transition might take place, and how decisive these can be in dealing with the transition in the future. The UK centralism in the post-productivism discussion has been referred (Roche, 2005 *in* Mather *et al.,* 2006), either because of its representativeness in the post-productivist transition as because of failure (Mather *et al.,*

2006). Nevertheless the historical and political conditions make the case of the UK an exceptional case where historical and political events (Mather *et al.,* 2006; Wilson, 2007) have caused a clearer shift from productivism to post-productivism in relation to other areas.

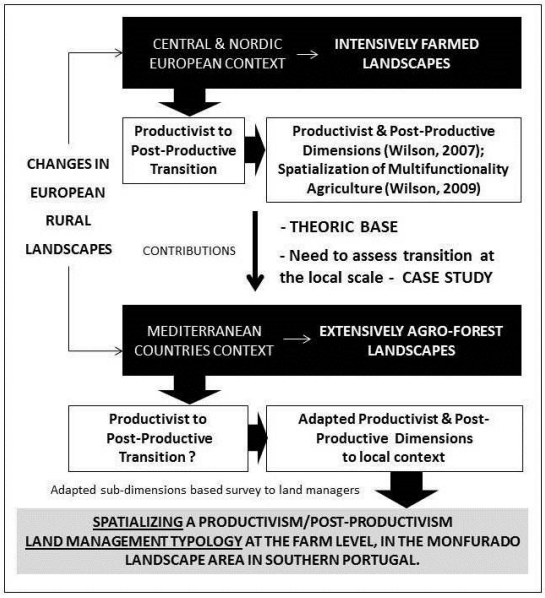



Figure 6 - Wilson (2007) work contribution for the present study: dimensions for productivist and post-productivist action and thought; and need for spatialization.

Due to the specificity of the Mediterranean areas and differences in time, regarding historical and political events, and in space, regarding the underlying fuzziness associated to the Mediterranean agro-forestry systems (Pinto-Correia *et al.,* 2010a), an attempt to assess management types within the multifunctional transition bounded between productivism and post-productivism is here aimed, with this work (fig. 6).

The fact that there is a clear "distinction between the large scale and highly productive farming of the north-western Europe and the small-scale, less efficient farming of Southern Europe" (Potter, 1997 *in* Caraveli, 2000) and that processes of intensification and extensification had different timings and has different consequences, gives this work the interesting challenge to start approaching the transition in these contexts. For this purpose, Wilson's dimensions for productivism and post-productivism, in a multifunctional transition logic, represent the main theoric contribution to the present study, as well as the need for spatialization (fig. 6), as "'post-productivism' has been defined more clearly in the realm of socio-political or welfare theory than in relation to land use" and therefore the spatial dimensions and dynamics represent one of the biggest challenges of the concept (Mather *et al.,* 2006). As stated by Wilson (2001 *in* Wilson, 2007) "there is an urgency…to develop a conceptual framework for the understanding of post-productivist agricultural regimes that can also be applied in specific [Southern] contexts". Also the perspective of individuals and their actions have been neglected within the conceptualizations of the productivist and post-productivist transition, mainly focused on specific actor groups (policy makers) or larger structural entities (the state), since data collection is more tangible and less complex methodologies (easy collectable data on policy change) than on field questionnaire application, which reinforces the value of this work (Wilson, 2007).

### *Productivism & Post-Productivism*

Previously in this work an attempt was made to expose evidence for the acceptance or criticisms of the several concepts, and also post-productivism. Here the main characteristics from both productivist and post-productivist action and thought intend to be further explained and summarized (table B), as these represent the methodological base of the present work.

Table B - Some productivism and post-productivism main characteristics according to Wilson (2007).

| | **Productivism (Wilson, 2007: chapter 5)** | **Post-productivism (Wilson, 2007: chapter 6)** |
|---|---|---|
| Time scope | - From the Second Word War (1945) to the mid-1980's<br>- End: 1992 CAP reforms; far from over yet | - Beginning: 1970's until now and likely to continue… |
| Primary focus | - Increase productivity<br>- Output<br>- Maximization of food production<br>- National self-sufficiency | - Move away from the traditional model of high input;<br>- Security of national food supply;<br>- Aesthetic character of the agricultural landscape;<br>- Sustainable food production (production with increasing social and environmental concerns); |
| Decisive events | - Shortages after the Second World War | - Migration of the middle classes into the countryside (changes in perceptions and attitudes about the 'rural' and the 'countryside idyll');<br>- Oil shocks in 1973 and 1979;<br>- Fall of communism in 1989;<br>- Bovine spongiform encephalopathy (BSE) |
| Production Key-words/expressions: | Industrial, intensive farming techniques, biochemical inputs, modernization, concentration, intensification, high quantity production, mechanization, rural = agriculture, property rights, decline in agricultural labor. | Extensification, diversification, high quality production, organic farming, environmental protection; loss of security of property rights; loss of central position of agriculture in society; contested countrysides; pluriactivity; dispersion; reduction or total abandonment of biochemicals; integrated production. |
| Institutional role and structures | Production strongly supported by state (European – rural policies; Ministry of Agriculture, financial institutions, farmer's unions, etc.) (price guarantees, protectionism) – farm subsidies; CAP until early 1980's focused in increasing agriculture production and encouraging agricultural intensification; limited environmental regulation of harmful agricultural practices, exclusion of nature conservation actors from decision making; farmers on the 'treadmill' – loss of control over farm business decisions. | Greening of agricultural policy discourses (after 1985); attempt to deliver other environmental and consumer-based benefits, besides production; support towards restrains on productivity; gradual withdrawal of state support for farming (Single Farm Payments - *RPU*); EU and national documents on environment and sustainable development (LEADER Programs, etc.); reduced state subsidies; increasing planning regulations for agriculture; encouragement for environmental friendly farming; emergence of new organizations – new social movements; state support converted into state as a facilitator and coordinator. |
| Environment and Landscape | Use of farmland to its full potential; nature destructive; rapid disappearance of hedgerows; field enlargement; further removal of origin of tree cover; impacts on soils – pollution, erosion. | Increasing criticism of agricultural impacts on the landscape; landscape as a place of consumption; increasing criticisms on genetically modified crops; re-establishment of lost or damaged habitats. |
| Concepts/terms associated | Modernism; Fordism (high quantities of food with low quality); Atlanticist Food Order (mass consumption of agricultural commodities dominated by the US); rationalization; liberalism; consumerism; scientification; commodification; technologification and globalization. | Post-Modernist; Post-Fordism; Deagrarianisation; Counterurbanization (urban/rural migration for lifestyle, environmental and security reasons); Multifunctionality; Post-industrial societies; sustainability; innovation; re-regionalization of governance of rural areas; local knowledge; empowerment of local stakeholders. |
| Relevant groups and new roles | Local farmers, Large agri-businesses (corporations and multinationals involvement) often poorly rooted in local rural communities | New comers/neo-rurals, part-time farmers, middle class urban population, nature conservationists, non-agricultural entrepreneurs, participation of previously marginalized groups – women, immigrants and native people; encouragement for farmers to be leisure providers, nature conservers and public custodians of the countryside. |

| | | |
|---|---|---|
| Markets/commercialization/ Consume | Increasing 'Food Miles' (distance that food has to travel to reach consumers), loss of consumer knowledge about production and origin of production, low food quality | Increasing criticism of agricultural impacts on the landscape and public health (animal epidemics like BSE); *vente direct*; quality products; food safety; demand for protected designation of origin; farmers markets; clear food labels; criticisms on multinationals (e.g. Monsanto); short supply chains. |

For full visualization of sub-dimensions within the seven dimensions for productivism and post-productivism – 1. Agricultural policies; 2. Ideology; 3. Governance of rural spaces; 4. Food regimes and agro-commodity chains; 5. Agricultural production; 6. Farming techniques; and 7. Environmental impacts - please see ANEXE 1.

### iv. The study area

The case study area is the Natura 2000 Site of Monfurado, part of the Portuguese Natura 2000 sites, included in the municipalities of Montemor-o-Novo and Évora (fig. 7). Surrounded by the Alentejo peneplain, the Monfurado site is characterized by a slightly more pronounced morphology (Monfurado Hills), attaining 400 m high (Pinto-Correia et al., 2011), and therefore allowing the existence of a microclimate, since being the first orographic obstacle facing the air coming from the south, provide a higher precipitation than usually expected in Alentejo (900mm) (Silva, 2008).

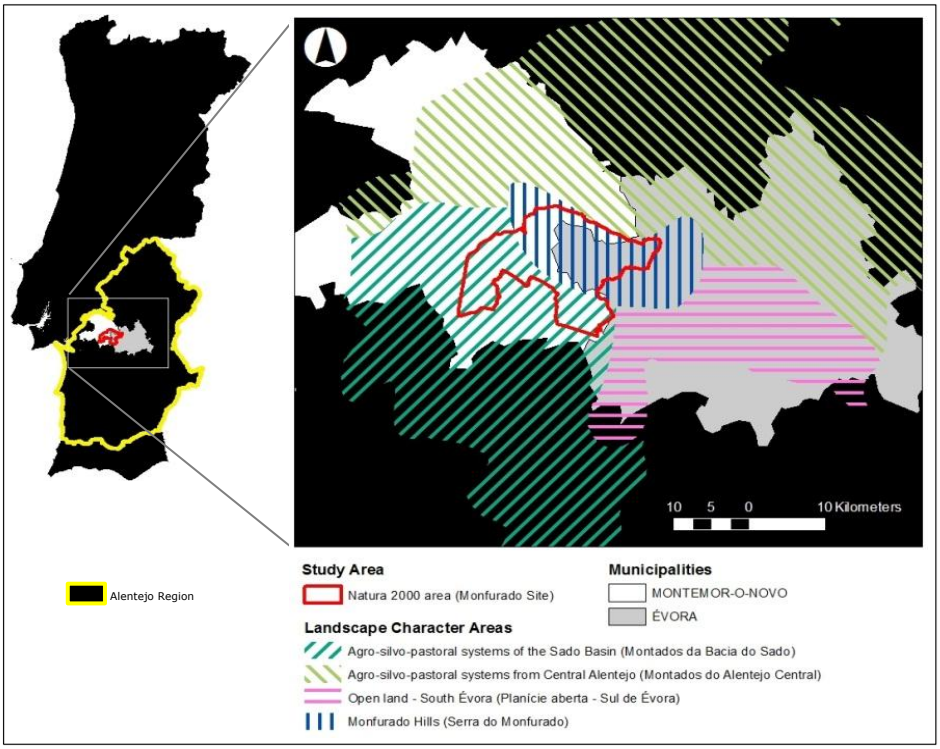



Figure 7 - Location of the study area: The Natura 2000 area - *Monfurado* Site, within Portugal, the Alentejo Region and the municipalities reached by the site. The striped areas represent the landscape character areas defined at the national level (Abreu et al., 2004).

Within the site, where the biogeographic characteristics are clearly Mediterranean, there is a complex landscape pattern, dominated by forests and silvo-pastoral systems with a tree

cover composed of oaks (with dominance of Q. suber and Q. rotundifolia, and some residual patches of Q. pyrenaica), as well as some open grass and cultivation patches in the more plain areas, and galleries of riparian vegetation along waterlines (Pinto-Correia *et al.,* 2011).

The study area occupies 23957 hectares (ICNB, n/d) and has the Almansor river and the national road from Montemor-o-Novo city to Évora city as the northern limit; the road from the city of Montemor-o-Novo to the village of São Cristóvão, one of the Montemor-o-Novo parishes, as the western limit; the villages of Escoural and Casa Branca, belonging to the Montemor-o-Novo parish of Santiago do Escoural, as the southern limits; and the village of Guadalupe, in the Évora municipality, as the eastern limit.

Two main land use systems prevail in the area (figs. 8 and 9), the mosaic area with olive groves and the *montado* with interesting contrasts in texture, colors and landscape shape. The *montado* is settled in poorer soils, waved land form and with large farms where the undercover are grazing areas and also crops mainly for cattle production in an extensive mode. The olive groves mosaic is included in a policultural area of vegetable gardens and orchards, resulting in a very diversified landscape, settled in more fertile soils in the valleys, with small farms where the activity is for auto-consume and supplying the local market, producing mostly olive oil and sheep for meat. In either of the two main farming systems areas, vineyards have been introduced as the income is much higher as also happens with the increasing eucalyptus plantations mostly in the montado area.

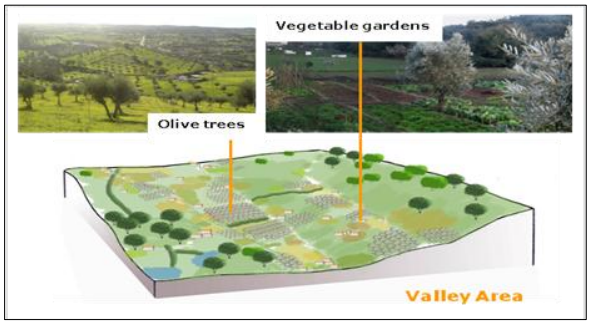



Figure 8 - Farming systems and land use in the olive grove mosaic area, with grazing in the undercover and vegetable gardens, around the city of Montemor-o-Novo, designated Valley Area (MEL-Landscape Group, 2008).

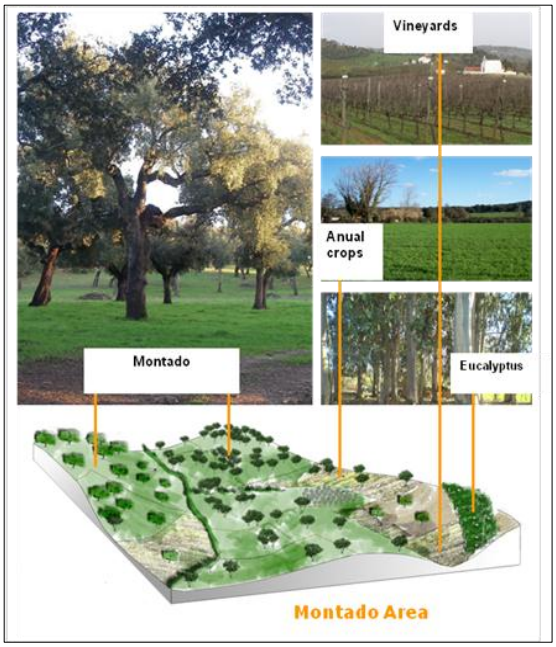



Figure 9 - Farming systems and land use in the *Montado* area, mainly dominated by agro-forestry areas of *montado* and some fast growing species in forestry plantations (eucalyptus) and vineyards (MEL-Landscape Group, 2008).

The valley area was identified as the area closer to the town of Montemor-o-Novo, where a small scaled farming dominates the landscape. Within this small scale farming area, two strategies coexist: one by the traditional and local farmers was identified as mainly to live, or at least to eat products from their own land, maximizing self-consumption productions (such as vegetables, poultry and sheep meat); the other by non-farmer inhabitants, who aim is to live in the countryside but because they don't have any farming background, they often have agreements with local neighbors to help them maintaining their land (olive groves and pastures) (MEL-Landscape Group, 2008). The *Montado* area represents the large properties dominated by the *montado* system, where land managers are mainly focused in production income (meat production and cork), promoting sometimes recreational activities (MEL-Landscape Group, 2008).

Considering the *montado* areas and a*ccording* to Pinto-Correia *et al.,* 2011:

> "All components of the system are inter-related, and the balance of the *Montado* demands a careful management, so that both the trees and the soils are kept in good conditions (Pinto-Correia and Ribeiro, 2011). Threats to the balance of the system may be: 1) an over exploitation of the trees, for instance cork harvest and pruning for charcoal production, that will damage the trees; 2) over grazing and mechanised ploughing in the undercover, that may hinder trees regeneration, so that the long term tree cover is not guaranteed; 3) mechanized and deep ploughing also affects the root system and weakens the trees; 4) over grazing may result in a compaction of the soil and higher erosion risks; 5) extensification of use may result in shrub encroachment and a closing of the forest (Pinto-Correia and Mascarenhas 1999; Pinto-Correia 2000). Actually cultivation tends to disappear under the trees, and the undercover is progressively solely used for grazing, in changing intensities."

The study area is covered by High Nature Value Farming classification. The term High Nature Value (HNV) farming is used to describe broad types of farming that, because of their characteristics, are inherently high in biodiversity (Beaufoy and Marsden, n/d). Currently, other types of public goods, as landscape quality and identity support, are being considered and so the concept is getting broader (Pinto-Correia et al., 2011). Typical high nature value farmland areas are extensively grazed uplands, alpine meadows and pasture, steppic areas in eastern and southern Europe and dehesas and montados in Spain and Portugal (Paracchini *et al.,* 2008). The HNV farmland methodology distinguishes three types of HNV farmland: Type 1: farmland with a high proportion of semi-natural vegetation; Type 2: farmland with a mosaic of low intensity agriculture and natural and structural elements; and Type 3: farmland supporting rare species or a high proportion of European or world populations (Pinto-Correia et al., 2011). The present land use systems in the study area have characteristics of High Nature Value farming systems, both of Type 1 and of Type 2 [(Andersen et al 2003; Beaufoy and Cooper 2008) *in Pinto-Correia et al., 2011*] (table C):

Table C - Main characteristics of types 1 and 2 from the High Nature Value farming systems (table information from Pinto-Correia *et al.,* 2011).

| | High Nature Value farming systems Type 1 | High Nature Value farming systems Type 2 |
|---|---|---|
| Dominance within study area | It represents the largest part of Monfurado site, excluding surrounding areas of small towns and villages. | In Monfurado, it can be found in the surrounding area of small towns and villages. |
| Property size | Large scale properties (*latifundia*: > 100 ha/ farm unit) | Mosaic of small scale olive groves (*minifundia*: < 20 ha/ farm unit) |
| Farming system | - Agro-silvo pastoral system = savannah like open forest designed as Montado (equivalent to Dehesa in Spain).<br>Cover: cork and holm oaks, maintained through natural and sometimes artificial regeneration.<br>Undercover: rotation of cultivation, fallow and grazing (extensively used grazing areas, both in open permanent and natural pastures). | - Olive groves<br>Cover: olive trees disposed in irregular patterns with no irrigation.<br>Undercover: grazing in between the trees<br>- Vegetable gardens |
| Biodiversity/ nature conservation | The *Montado* is an adaptation of the original ecosystem, and has evolved by the progressive cleaning of the previously existing *maquis*, providing a mixture of patches (trees, grass, shrubs with mainly natural vegetation) and therefore creating ideal conditions for many animal species. | This small scale rich mosaic, include rich plant communities, support a high number of animal species, and result in specific mosaic landscapes (Pinto-Correia and Ribeiro, 2011). |
| Multifunctionality | It is a very specific landscape, which supports a combination of multiple functions, as nature conservation, hunting, recreation, aesthetic appreciation, cultural identiy (Surová and Pinto-Correia 2009). | Multiple functions are combined: production, even if often for self-consumption and not for the market; new housing in increasingly considered attractive residential areas - use of small plots as living place for urban people; leisure and recreation activities (Pinto-Correia et al 2010b). |

Both the olive grove and montado areas, which have been managed in a traditional way, maintaining this high values for nature conservation, recreational and production, represent farming systems that are changing already because of its lack of competitiveness in the world market. However the transitional character of changes occurring, position this farming systems at the hands of several land managers that can act in different ways, as this present work tries to address.

# PART II. First draft for paper

## How are "farmers" adapting in southern Portugal? Assessing land management typologies in a transition theory perspective.

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**Abstract**

Agriculture is, as the main user of rural land, responsible for the different ways through which landscapes are made and maintained (van der Ploeg, 2008). European rural landscapes face today several changes from market liberalization and price instability to energetic crisis, food quality and security, etc. Rural landscapes in the Mediterranean peripheral Region of Alentejo (Southern Portugal) mainly managed under extensive farming systems are especially vulnerable to this global scenario, as farms traditionally base their income on production functions, unable to be competitive in this world market with the *commodities* they provide. These landscapes face severe threats of simplification and abandonment. But because of their extensive character and specific features, these landscapes maintain environmental and cultural values progressively demanded by society for *non-commodity* functions like leisure, nature conservation and identity. An increasing group of land managers (including full-time and part-time farmers, hobby farmers, business man or simply new residents) is emerging in these attractive areas giving expression to what some authors call the multifunctional transition bounded between a more productivist (associated to more intensive systems not favoring non-productive functions) and more post-productivist management (associated to more extensive and integrated systems, promoting environmental quality as the base for other non-commodity functions); or both, as they can overlap in time, space and structure. So, how are land managers adapting to society's demand and global changes? How can land management in these peripheral landscapes better adapt to the new requirements and survive in a globalized world economy? What are the local requirements for these new management strategies and forms to survive? In this paper we intend to assess the different land management types in a protected area where the new functions related to the provision of public goods have already some expression, possibly motivating land managers to adapt in different ways. The typology is anchored on the transition theory perspective and aims at identifying the possible types emerging and their spatialization pattern in a Mediterranean context.

Key words: multifunctional transition, productivism, post-productivism, farm typology.

## 1. Introduction

In this following introduction, some aspects already referred in the previous general introduction are summarized with the purpose of representing the most relevant in order to introduce in the paper to be.

### *1.1. Rural Transition: Evidences and definitions*

Over the last decades the rural world has witnessed profound changes: in food and fibre production, within global agriculture (Wilson, 2007: p. 3); in rural development processes (Marsden & van der Ploeg, 2008: p. 225); in the demand for new uses of landscape such as hunting, leisure, recreation, quality of life (Surová and Pinto-Correia, 2008). Within the scholar main stream point of view, there is in fact an ongoing transition process taking place in rural areas, that could even represent the emergence of a new agricultural regime with much wider purposes, including the 'production' of nature and new spaces of leisure (Braun and Castree, 1998 *in* Wilson, 2007: p.2).

There can be seen several evidences of the transition occurring:

- The change in relative emphasis from commodity to non-commodity outputs from maximizing production of material goods to broader objectives (Mather *et al.,* 2006) – "while agriculture is, in many areas, a declining activity, rural tourism, rural housing and rural sports have become, in many places, important elements of the regional rural economy" (van der Ploeg *et al., 2008 - book*). And so, the restructuring of the rural areas changing from being places of production to being places of consumption (Marsden *et al.,* 1993 *in Ventura et al.,* 2008) and protection (Holmes, 2006).
- Counter-urbanization, after massive rural exodus and sometimes eroding the rural (van der Ploeg *et al., 2008*), represent also a shift on how the rural is valued among society.
- Change in the nature of the actors in the rural world, in particular those closer related to the actual land management – "modern farmer is progressively seen as a person who is much an environmental manager as a producer of food and fibre" (Marsden, 1999 *in* Wilson, 2007: p.2). The head of the agricultural holding is no longer the farmer alone, but the business manager, the rural entrepreneur (van der Ploeg *et al.,* 2009), or even the 'lifestyle' farmer [or hobby farmer], likely to be less concerned with production of commodities than with consumption of amenity in the countryside (Mather *et al.,* 2006).

By a transition it is used the geopolitical focused definition based on the end of a "two-world" order and the consolidation of a "New World Order" [from communism to

capitalism/socialism] based on the neo-liberal hegemony (Pickles and Smith, 1998), also referred as an "Era of Empire and Globalization" (van der Ploeg, 2008) and of course representing one of the major events since the first oil shocks of the 70's, that first introduced instability in world economy and therefore opened the possibilities for change, making way to a possible transition. In this sense, transition is not a one-way process of change from one hegemonic system to another, rather it constitutes a complex reworking process (Pickles and Smith, 1998).

Throughout the present article, farming will be used in its broadest sense including forestry, as evidence of transition in the latter had also expression in the UK (Mather *et al.,* 2006) and other contexts from central and northern Europe. This option has particular meaning due to the character of the study area, where farming and forestry are hand in hand within the typical and dominant extensive agro-forestry systems.

### *1.2. Conceptualizing Transition: review of possibilities emerging in the research arena*

Many have been the authors confirming and trying to conceptualize the profound changes taking place in agricultural/rural arenas at local, national and global scales (Wilson, 2007: pp. 4). The existent consensus within scholars in accepting the transition process occurring, does not exist however when conceptualizing it.

*Multifunctionality, Post-Productivism & The Rural Web*

Multifunctionality increasingly becoming a major framework for the debates on European agriculture and its future development (OECD, 2000; Durand and van Huylenbroeck, 2003).
It does "not only implies redefining the many functions of agriculture, it also implies a material transformation of agriculture itself (…) (re-)linking agriculture to society at large through a far wider range of interrelations" (van der Ploeg, 2009). Criticisms on multifunctionality refer to it as suffering from ambiguities (Mather *et al.,* 2006) being too abstract to be useful (Hytönen, 1995 *in* Mather *et al.,* 2006). According to Wilson (2007: p.1) conceptualizing "multifunctionality as a transitional process of agricultural/rural change embedded in a spectrum bounded by *productivist* and *non-productivist* actor space" is how multifunctionality can makes sense.

First references to the concept of post-productivism, in the early 1990s (Shucksmith, 1993 and Ward, 1993; *in* Mather *et al.,* 2006) were apparently accepted relating to a post-productivist countryside (Halfacree, 1997, 1999, Marsden, 1998, Wilson, 1997; *in* Mather *et al.,* 2006). In the meantime, post-productivism meaning has been described from a myth (Morris and Evans, 1999 *in* Mather *et al.,* 2006) as productivism is far from dead in the farmers minds (Walford, 2003), a theoretical construct in the minds of academics (Wilson, 2004), a distraction from developing theoretically informed perspectives on agriculture

(Evans *et al.,* 2002 *in* to a Mather *et al.,* 2006); to an appropriate concept when dealing with the policy change, a shift in emphasis and not an absolute change, concluding in the end that is neither a concept to accept or dismiss (Mather *et al.,* 2006).

Many critics have been arising to the concept of Post-productivism, due to its incapability of accounting for the spatial dimensions and complexities of contemporary agricultural restructuring and the lack of widespread evidence within the farming community of UK, let alone elsewhere (Wilson, 2001, Evans *et al.,* 2002 and Morris and Evans, 1999; *in* Walford, 2003; Wilson and Rigg, 2003 *in* Mather *et al.,* 2006; Wilson and Rigg, 2003).

Networks facilitate the understanding of the motivations for individual and collective action, where individuals build their identity through actively re-combining specific principles, visions, norms, cognitive schemes and rules for distribution (Ventura *et al.,* 2008). Farmers transfer meanings from one domain to another and simultaneously manage different value systems (van der Ploeg, 1994 *in* Ventura *et al.,* 2008). In fact the notion of rediscovering the complexity for understanding rural development can also apply to the need to understand transition and the trajectories taking place. Therefore "the network approach can [also] be extremely useful studying socio-economic changes and their associated development trajectories" (Murdoch, 2000 *in* Ventura *et al.,* 2008). The web, more specifically, represents an analytical tool to assess complexity of actors activities when constructing development trajectories (van der Ploeg *et al.,* 2008) and land managers can represent the so called 'spiders' within the rural development web.

### *1.3. Aiming at a Land management typology*

In the EU countries farmers have developed alternative approaches of land managing, either as a response to the policy incentives or by their own perception of how to survive the crisis (Marsden *et al.,* 1986 *in* Walford, 2003). As land management typologies "refer to a stratification of farms that is homogeneous according to specific criteria such as environmental performance and land management practices (Andersen et. al., 2007)" (Barroso, 2011); they "provide a broad indication of the variations in the characteristics of landowners and land management and are therefore important for targeted policy and program formation in natural resource management (Bonhet, 2008)" (Barroso, 2011).

In previous studies, where general farm and farmer characterization data was used to assess a typology, results revealed the lack of crucial information for the effective positioning of farmers within a productivist to post-productivist spectrum. Therefore, the need for developing a productivist to post-productivist focus based survey was recognized and intended to be applied within the present work. Through the analysis undertaken, farm management and farmers personal characterization will be analyzed following Wilson's work (2007), positioning farmers within a multifunctional spectrum bounded between a more

productivist and a more post-productivist view. Also to apply this survey in a 'Southern' and 'Mediterranean' context following the fact that reconceptualization of the role of agriculture must account and reflect, the large heterogeneity of Europe's rural regions, allowing for adequate inputs on the processes of policy formulation and implementation (van der Ploeg *et al.,* 2008).

## 2. Methodology

### *2.1. A Natura 2000 area in Southern Portugal: Monfurado Site*

The Monfurado Natura 2000 area, part in the municipality of Montemor-o-Novo and part in the municipality of Évora, was chosen for study area, since it represents already an area where demand for other functions (nature conservation, new and 2nd housing, leisure and recreation) exists and where many people from outside, namely Lisbon, have been moving to (Pinto-Correia et al., 2011; Silva, 2008). The selection of the study area was also done due to an extended experience and knowledge by the research team about the area and existent contacts. The Monfurado site includes a total of 23957 hectares, reaches 400 metres in altitude and 900 mm of precipitation (Pinto-Correia et al., 2011; Silva, 2008), providing a microclimate to the area when compared to the region of Alentejo, giving place to a rich area from the biodiversity and landscape point of view. Landscape character is mainly dependent on the two main farming systems present, both of high nature value: an olive groves mosaic in a small scaled property, mixed with vegetable gardens and orchards, placed near urban centers with increasing interest for new housing for urban dwellers; and an agro-forestry system (montado; dehesa in spain) in larger properties, with oak tree cover overlapped with grazing areas with more or less shrub areas and sometimes crops, mainly focused on livestock production.

### *2.2. Building a Productivist & Post-Productivist dimensions based survey*

The indicators framework proposed by Wilson (2007) were adopted according to literature review and expert discussion meetings. The seven dimensions for productivism and post-productivism – 1. Agricultural policies; 2. Ideology; 3. Governance; 4. Food regimes; 5. Agricultural production; 6. Farming techniques; 7. Environmental impacts - (Wilson, 2001 *in* Wilson, 2007; Mather et al., 2006) were used, aiming at the development of a questionnaire for land managers based on this dimensions.

A process of reorganization of the sub-dimensions within each of the seven dimensions – a) categorization, b) context and survey experience based selection, c) polarization - was undertaken in order to be able to convert the original dimensions in questions possible to formulate in the study area context and at the farm level:

a) The totality of the sub-dimensions were categorized in two main groups depending if they concerned practical issues or actions (what the land manager does) – *behaviors*; or if they concerned thoughts, beliefs or ideas (what the land manager thinks) – *attitudes* (Gordon *et al.,* 2008; Bagozzi, 1981 *in* Gordon *et al.,* 2008; Willock, 1999).

b) The sub-dimensions not applicable to the land managers and farms in the study area context were modified and sometimes merged to fit the context in question; when modifying or merging was not possible, the sub-dimensions were eliminated. This happened mostly with the sub-dimensions related to decision making at upper scales then the farm scale, and therefore not for the land manager to reply on, and in the case of very specific sub-dimensions related with the northern and central European context, not relevant or even inexistent in the study area context.

c) In all the seven dimensions, the original number of sub-dimensions for productivism was different from the number of sub-dimensions for post-productivism. Therefore some sub-dimensions of productivism had no correspondent sub-dimension for post-productivism, and some sub-dimensions for post-productivism had no correspondent sub-dimension for productivism. In order to make the sub-dimensions a clear base for the formulation of questions, an effort to homogenize both P and PP sub-dimensions within each dimension was made through the polarization of all sub-dimensions (table D).

Table D - Polarization result of the sub-dimensions for productivism and post-productivism in order to homogenize in a question formulation format that positions land managers in the multifunctional spectrum bounded between productivism and post-productivism. Proportion between the initial and final number of sub-dimensions was not accomplished since the selection criteria was to select the ones adjusted to the study area context, as well as avoid repetition, since many of the original sub-dimensions were quite similar, only to differ in non-relevant details for the study area in question.

| Dimensions | Number of the original Productivist (P) & Post-productivist (PP) sub-dimensions (Wilson, 2007) | Re-organized, polarized Productivist (P) & Post-productivist (PP) sub-dimensions | |
|---|---|---|---|
| 1. Agricultural Policies | 8 P<br>9 PP | **5 P/ PP** | 1. Strong/Reduced financial state support. (B)<br>2. More/Less faith in the ability of state to regenerate agriculture. (A)<br>3. Strong/Reduced financial state support for production only. (B)<br>4. More/Less security of property rights. (A)<br>5. More/Less planning control over agricultural activity. (A) |
| 2. Ideology | 8 P<br>9 PP | **3 P/ PP** | 6. More/Less importance of agriculture in rural areas. (A)<br>7. Positive/Negative impact of farmers in the rural landscape. (A)<br>8. Idyllic landscape more/less connected to farming. (A) |
| 3. Governance of rural spaces | 3 P<br>5 PP | **3 P/ PP** | 9. More/less marginalization of nature conservation interests. (A/B)<br>10. Positive/Negative impact of newcomers (urbans) in rural landscape. (A)<br>11. More/less recognition of increasing demands of rural spaces. (A/B) |
| 4. Food | 2 P | **3** | 12. More/less support of Fordist regime through product selling. (B) |

| | | | |
|---|---|---|---|
| | regimes and agro-commodity chains | 5 PP | **P/PP** | 13. More/less support of Fordist regime through product consuming. (B)<br>14. More/less critique of market liberalization. (A) |
| 5. | Agricultural production | 9 P<br>7 PP | **6 P/PP** | 15. More/less emphasis on securing national self-sufficiency for agricultural commodities. (A)<br>16. More/Less intensive cultures. (B)<br>17. More/less surplus production. (B)<br>18. More/less specialization. (B)<br>19. More/less farm animals (normal heads). (B)<br>20. More/less activities/functions in the farm besides farming. (B) |
| 6. | Farming Techniques | 3 P<br>4 PP | **4 P/PP** | 21. More/less use of farm machines. (B)<br>22. Strong/reduced labor inputs (work force). (B)<br>23. More/less use of biochemicals in the farm. (B)<br>24. Replacing/not replacing physical inputs on farms with knowledge inputs. (-) |
| 7. | Environmental impacts | 1 P<br>2 PP | **2 P/PP** | 25. More/less collaboration with nature conservation projects and representants. (A/B)<br>26. More/less efforts to re-establish lost or damaged habitats (B) |

After the sub-dimension re-organization process was complete, the base for the formulation of questions was created for building up a questionnaire. The questionnaire design process was followed by and discussed with several expert researchers of natural and social sciences. The questionnaire was formed by three main groups: 1. Personal characterization (nationality, place of childhood, professional state and area of activity, educational level and agricultural training or studies, gender and age); 2. Open questions [providing the respondents with the opportunity to make more general comments (Sharpley and Vass, 2006) and register important details for further refinement in the methodology] covering farm and farm management characterization (land cover and land use, soil mobilization, irrigation, agro-chemicals, special mode of production – organic/integrated, use of genetically modified seeds, ranking of income associated to farm products, multifunctionality – promotion of functions besides farming, livestock, subsidies, commercialization, personal consume, water lines management, hedges partitioning, residential preferences and future projects for the farm; 3. Lickert scale sentences focusing mainly on the attitudes towards the state financial control, agricultural role, property rights, rural ideal, multifunctionality, study area potential acknowledgement, rural urbanization, nature conservation in management and collaboration with nature conservation agents.

All questions were formulated so that answers could be positioned within a scale from -2 (more post-productivism) and 2 (more productivist), which was based on: literature regarding the method itself (Gómez-Limón *et al.,* 2007) as regarding to each assumption made in scaling each answer (table E); on the expert meeting and consultations; and previous work and experience of the team in the area. For all the questions, position of answers within the scale from -2(PP) to 2 (P) were re-defined and adjusted after the survey application, having access to the universe of possible answers and therefore making this

process more effective. Table E expresses how the open questions were organized in the -2(PP) to 2(P) scaled answers. Table F expresses how the Lickert scale sentences were organized in the -2(PP) to 2(P) scaled answers. The Lickert-scale sentences were built up according to the following: sentences were extreme in order to make the respondent react to them and position himself within the scale; sentences had similar composition; sentences were all built in a positive way. All sentences were discussed within the research discussion group and revised in the end by a social sciences experienced researcher. The aspects to be measured were defined in order to be as simple as possible so that the position on the scale would be easily justified.

Table E - Survey open questions correspondence with aspects to be measured, the dimension they refer to, the scaling from -2 (post-productivism) and 2 (productivism) process and references from literature.

| Dimension it refers to | Aspect to be measured | Scale from post-productivism (-2) to productivism (2): Land managers who... | | | | | Literature |
|---|---|---|---|---|---|---|---|
| | | -2 | -1 | 0 | 1 | 2 | |
| 5. Agricultural production | Productive area (Farm size, area owned and rented) | don't manage their land, renting it to others | manage part of their own land, but still rent some of the land to others | manage only their own land | have land of their own and rent more land from others | don't have land of their own, rent all the land from others | Silva, 2008; Ilbery et al., 2010; (Lobley and Potter, 2004; Hodge and Ortiz-Miranda, 2007) *in* Ilbery et al., 2010; Walford, 2003. |
| | Land cover diversification | have more than four land cover classes | have four land cover classes | have three land cover classes | have two land cover classes | have one land cover class | Wilson, 2007; Walford, 2003. |
| | Montado intensification / extensification | montado, no grazing or crops, nor tree production (abandoned) | montado, with no crops or grazing, just for tree production (cork extraction) | montado with a mix of shrubs & natural pasture; does not have montado | montado with a mixture of natural and/or seeded pastures | montado with improved pastures and crops | Pinto-Correia, 1993; Lowe *et al.,* 1993 *in* Wilson, 2007; OECD, 1997 *in* Caraveli, 2000; Caraveli, 2000; Surová and Pinto-Correia, 2008; Pinto-Correia and Mascarenhas, 1999 |
| | Olive grove intensification / extensification | traditional olive grove (irregular tree density) (abandoned) | traditional olive grove only using the pastures underneath | organic traditional olive grove (olive harvest, grazing, 100 trees/ ha) or don't have olive groves | integrated olive grove (grazing, 200 to 340 trees/ha) | irrigated plantation of olive trees (mechanical harvesting, no grazing, 1000 trees/ha) | Guzman Alvarez, 1999 *in* Loumou & Giourga (2003); Loumou & Giourga (2003); DGADR (2010); Fleskens et al. (2009) |
| 5. Agricultural production<br>6. Farming Techniques | Production mode[6] | certified organic production | non certified organic production but in practices according | integrated production | no special mode of production | no special mode of production, more intensive than the previous | Wilson, 2007; (Warld, 1993; Ilbery and Bowler, 1998) *in* Wilson, 2007; OECD, 1997 *in* Caraveli, 2000; Caraveli, 2000; Marsden, 2008 |
| 5. Agricultural production<br>4. Food regimes and agro-commodity chains | Product specialization vs diversification (within production) | more than 3 products | 3 products | 2 products | 2 products (one representing no more than 80% on the farm income) | only one product | Wilson, 2007; Saraceno, 1994 *in* Caraveli, 2000 |
| 3. Governance of rural spaces<br>5. Agricultural production | Multifunctionality – Hunting | direct payment | indirect payment | without direct or indirect payment; don't have hunting reserves | has hunting reserve in the farm area but wished the activity didn't take place there | prevents the hunting activity by a legal status (non-hunting area, area free of hunting) | Surová and Pinto-Correia, 2008; Expert knowledge, previous experience from research team work and projects and present study field work (survey application) |
| | Multifunctionality –Tourism | tourism activity as the main source of income (50% of the total income) | tourism activity between 25% and 50% of the total farm income | tourism activity less than 25% of the total farm income | no tourism activity but would like to, or thought about it for the future | No tourism activity | Evans and Ilbery, 1992 *in* Sharpley and Vass, 2006; Sharpley and Vass, 2006; Present study field work (survey application) |
| | Multifunctionality – Housing | live in the farm, don't manage the land around the house, renting or lending it to others | live in the farm and manage the farm even if it is on part-time basis, would not live anywhere else | do not live in the farm because of family logistics, but would like to | do not live in the farm but would like to, in order to better control the management of the farm | do not live neither desire to live in the farm and see the farm mainly as a working space | Van der Ploeg, 2008 |
| | Multifunctionality – walking paths, visits | organizes or promotes, receiving direct or indirect income | incentive but does not intend to receive money for it | does not incentive or favor; farm size not adapted or interesting | don't like having people walking around the farm, but do not prevent it | don't want and don't allow visitors to enter the farm | Present study field work (survey application); Sharpley and Vass, 2006 |
| | Multifunctionality – Bee-keeping | manage directly the bee-keeping activity, taking profit from it | manage directly or gives incentive for others to do so - informal indirect return | don't have and never thought of having, not much interest in it | don't like it, neither see interest for the future; allows other to do it, | do not want themselves and don't allow for others to explore it | Surová and Pinto-Correia, 2008; Present study field work (survey application) |

[6] *Production mode* aspect is directly linked to organic farming, integrated production, traditional or more intensive production methods with generalized use of biochemicals. The aspects of irrigation, use of biochemicals and mechanization/soil mobilization should be considered separatly but due to lack of data to correctly positionate answers along the P/PP scale (according to agrarian experts) their were used as associated aspects to the *production mode.*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | when they ask | | |
| 5. Agricultural production | Livestock Unit (LU) (*Cabeças normais –CN*) | no livestock | all livestock in extensive regime with 1,4 LU or less /ha | extensive and semi-extensive (1,5 to 2,8 LU /ha) regime; no livestock in intensive regime | have part of their livestock in intensive regime with more than 2,8 LU /ha | have all their livestock in intensive regime with 2,8 LU or more /ha | Zalidis et al., 2002; Soares *et al.,* n/d; Decreto-Lei nº 214/2008; Present study field work (survey application) |
| | Self-sufficiency in livestock fodder | guarantee all food for animals within the farm | guarantee more than 50% of the food for the animals within the farm | guarantee 50% of the food for the animals within the farm or do not have animals | Buy more than 50% of the food for the animals outside the farm | buy all food for animals outside the farm | Van der Ploeg, 2008; Wilson, 2007; Expert knowledge (meetings) |
| 1. Agricultural policies | Subsidy quality (CAP Pillar 1 or 2) | do not receive subsidies | only subsidies from CAP pillar 2 | More subsidies from CAP pillar 2 then 1 | More subsidies from CAP pillar 1 than 2 | receive only subsidies from CAP pillar 1 | Ilbery et al., 2010; Present study field work (survey application); Expert knowledge (meetings) |
| | Subsidy proportion within total income | subsidy proportion in total income: 0% | subsidy proportion in total income: 0 to 25% | subsidy proportion in total income: 26 to 50% | subsidy proportion in total income: 51 to 75% | subsidy proportion in total income: > 75% | Wilson, 2007; Expert knowledge (meetings) |
| 4. Food regimes and agro-commodity chains | Product commercializatio n | don't sell their products | most products sold in local markets, stores and associations | most products sold to intermediaries and buyers (regional and national level) | any product sold in big chain supermarkets (national and multinational) | part of their products sold abroad (export) | Wilson, 2007 |
| | Consumption | consume aprox. all food from their farm | consume around 75% of the food from the farm | consume around 50% of the food from the farm | consume around 25% of the food from the farm | don't consume anything coming from their farm | Van der Ploeg, 2008 |
| 7. Environmental impacts | Water line management | with nature conservation and biodiversity in mind | with some environmental concerns | do not have water lines in their property | no action towards water line management | Clean vegetation often, no reference of environmental issues | Expert knowledge, experience from past and present field work in the study area |
| | Hedgerows | have and maintain | have productive hedgerows | do not have but would like to | don't have and never thought on this matter | don't have and do not see the point (maximize productive area) | Schmitz et al., 2007; Groot *et al.,* 2010; Present study field work (survey application) |
| All dimensions | future perspective (Immobilism versus Innovation) | ideas for the future about non-productive activities (great dimension/ investment) | ideas about non-productive activities (smaller dimension) | want to maintain in the sense of continuing a positive project | hope to maintain in the sense of surviving in the present conditions | see no future in agriculture and see no possible options to continue | Wilson, 2007; Expert knowledge, previous experience from research team work and projects and present study field work (survey application) |

Table F - Survey Lickert-scale sentences correspondence with the dimension they refer to, the scaling from -2 (post-productivism) and 2 (productivism) and references from literature.

| Sentences | Lickert scale | Literature | Polarized sub-dimensions it refers to | Dimension it refers to |
|---|---|---|---|---|
| The state has the ability to regenerate agriculture. | -2 – Totally agree<br>-1 – Agree<br>0 – Do not agree or disagree, I don't know<br>1 – Disagree<br>2 – Totally disagree | - Wilson, 2007 | 2. | 1. Agricultural Policies |
| The end of direct subsidies to production in very good for the agricultural sector. | | - Caraveli, 2000 | 3. | 1. Agricultural Policies |
| Agriculture has a central role in rural areas. | | - Wilson, 2007 | 6. | 2. Ideology |
| Farmers should have total freedom to manage the land as they please. | | - Wilson, 2007 | 4. and 5. | 1. Agricultural Policies |
| My countryside idyll is an open area free of shrubs, with farming producing at its maximum. | | - Egoz et al., 2001 *in* Wilson, 2007<br>- (Halfacree, 1997; Halfacree and Boyle, 1998) *in* Wilson, 2007 | 7. and 8. | 2. Ideology |
| Agriculture and forestry priority should be producing food and fiber. | | - Wilson, 2007<br>- Expert knowledge, previous experience from research team work and projects | 15 and 20 | 5. Agricultural Production |
| Agriculture and forestry priority should be providing leisure and tourism areas. | | - Sharpley and Vass, 2006<br>- - Expert knowledge, previous experience from research team work and projects | 11 | 3. Governance of rural spaces |
| Agriculture and forestry priority should be protecting soils, water, and animal and plant diversity. | | - Expert knowledge, previous experience from research team work and projects | 9, 11, 15, 20 | 3. Governance of rural spaces<br>5. Agricultural Production |
| The *Monfurado* area is an ideal place for nature tourism and leisure activities. | | - Pinto-Correia et al., 2011<br>- Expert knowledge, previous experience from research team work and projects | 11, 15, 20 | 3. Governance of rural spaces<br>5. Agricultural Production |
| The increasing interest and settlement of outsiders (urban people) in this area is very positive. | | - Halfacree, 1997 in Wilson, 2007 | 10 | 3. Governance of rural spaces |
| The farm management I do would be the same if it was in any other place that not *Monfurado*. | | - Wilson, 1996 in Wilson, 2007<br>- Pinto-Correia *et al.,* 2011 | 11, 26 | 3. Governance of rural spaces<br>7. Environmental impacts |
| In the farm management I consider nature conservation very much. | | - Wilson, 1996 *in* Wilson, 2007<br>- Morris and Winter, 1999 in Wilson, 2007 | 9, 20, 25 and 26 | 3. Governance of rural spaces<br>5. Agricultural Production<br>7. Environmental impacts |
| Farmers should collaborate with nature conservation agents, allowing total access to my property. | | - Hart and Wilson in Wilson, 2007 | 9, 11, 25 and 26 | 3. Governance of rural spaces<br>7. Environmental impacts |

The number of questions made to land managers referring to each dimension is different. Meaning that in terms of coverage, each question can fulfill from one to several dimensions, and therefore in the end, the proportion of the dimensions reflected in the questionnaire would be as showed in fig. 10.

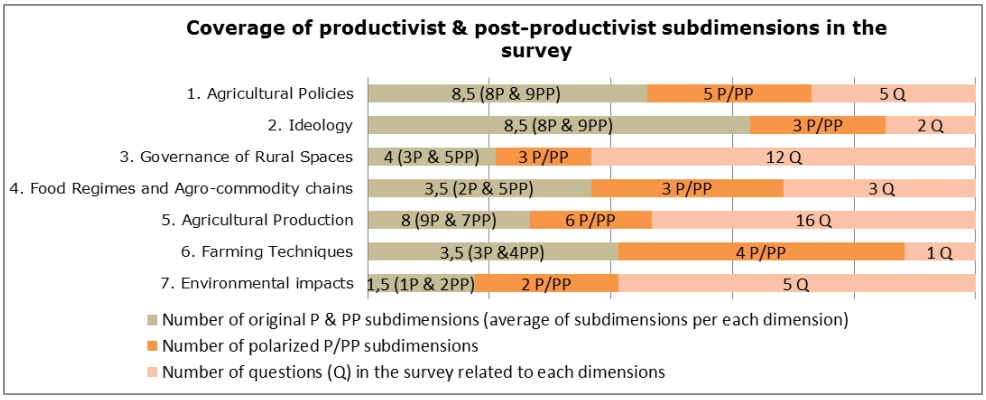


Figure 10 – Comparison between number of original post-productivism and productivism subdimensions (brown) with the polarized sub-dimensions (dark orange) and the number of related questions to each subdimensions, in the questionnaire applied to the land managers (light orange).

Analyzing fig. 10, both brown and dark orange bars correspond, respectively, to columns 1 and 2 from table D, and intend to present how the original sub-dimensions proposed by Wilson (2007) have been converted into sub-dimensions possible to use (polarized dimensions) at the context of the study area and farm scale. The light orange bars represent the number of questions (both open questions - behaviors and Lickert-scale sentences – attitudes) present in the survey and that were the result of the conversion of the polarized sub-dimensions to questions and sentences possible to apply to a diversify sample of land managers, with different ages and education levels. Number of questions related to each dimension can be higher or lower compared to the polarized sub-dimensions. Sometimes there was the need to eliminate polarized sub-dimensions not possible to convert in questions or sentences or fuse two polarized sub-dimensions in one, by its similarity. And sometimes polarized sub-dimensions needed to unfold in several questions (one polarized sub-dimension about activities in the farm, multifunctionality, had to unfold in bee-keeping, tourism, hunting, etc.).

Reasons for a more accurate coverage of the dimensions in the survey applied are further explained in the discussion.

### 2.3. Survey sampling & application

The aim was to build a minimum sample (n=30) in order to draw conclusions (Patton, 2002), and therefore to serve as the intended methodological test. A snowball or chain sampling was developed, based on available contacts from previous work in the area, who would

sometimes supply other acquainted contacts and so on (Patton, 2002). Some contacts were also given by the Montemor-o-Novo livestock producers association (*Apormor*). Questionnaires were made in a face-to-face basis, generally with previous telephone contact with brief explanation of the objective of the work and time necessary to the survey application (20 min). Most questionnaires were made within the farm, and some in the town of Montemor-o-Novo and sometimes Évora.

### 2.4. Data analysis

A first typology was built on ideal types, involving interpretation of data - looking for patterns, categories and themes - rather than absolute distinctions (Patton, 2002) and linkage to the previous work on land management typologies developed. The direct and personal contact with the people under study, most times in their own environment and many times already familiar from previous studies in the area, allowed for adding depth, detail and meaning to the data (Patton, 2002). This analysis intended to allow comparisons with the results of the second phase of analysis, and because ideal types have been used with success in other studies, to better interpret results of the second phase.

A second phase in assessing a land management typology was done by adding the values from the scaled, from post-productivist (-2) to productivist (2), answers land managers throughout the survey, in order to reach specific value for each land manager. Within this analysis, open questions related to behaviors were separated from the Lickert sentences question related to attitudes, in order to classify land managers within a productivist and/or post productivist action and thought. This value adding analysis of scaled (between -2 and 2) answers was compared and then stratified according to the ideal types previously defined.

## 3. Results

Results are very interesting in terms of land management and managers types, when comparing both methods to assess a typology. However, in terms of the emergence of a distribution spacial pattern within the study area, results were less straight forward, which is further addressed in the discussion part.

### *3.1. Land managers characterization*

The total area integrated by the sampled land managers is, according to the number of hectares stated by each respondent 8674.1, and according to the area calculation of the areas indicated by the respondents in the cadaster map, 7784.3; covering an average of 34% of the total study area. The majority of land managers surveyed within the study area manage areas from 101 to 500 hectares, and within this farm size class is also where more

tenant land managers are (fig. 11). Within the land managers dealing with larger areas than 500 hectares (going within the present sample until 1130 hectares), the number of tenant land managers is higher than the number of owners.

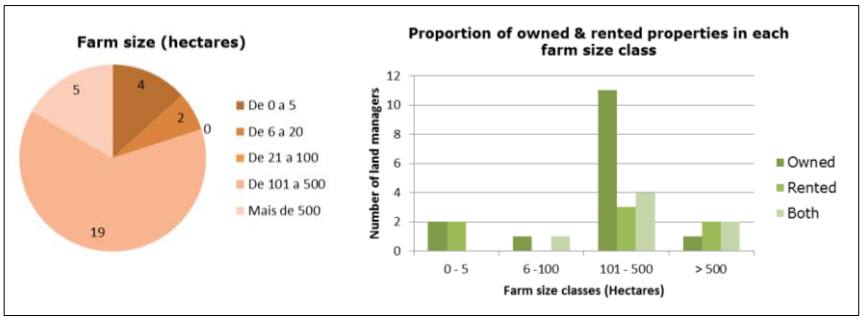


Figure 11 – Graphs showing farm size distribution among sample (pie chart in orange) and proportion of owned and rented properties in each farm class (bar chart in green).

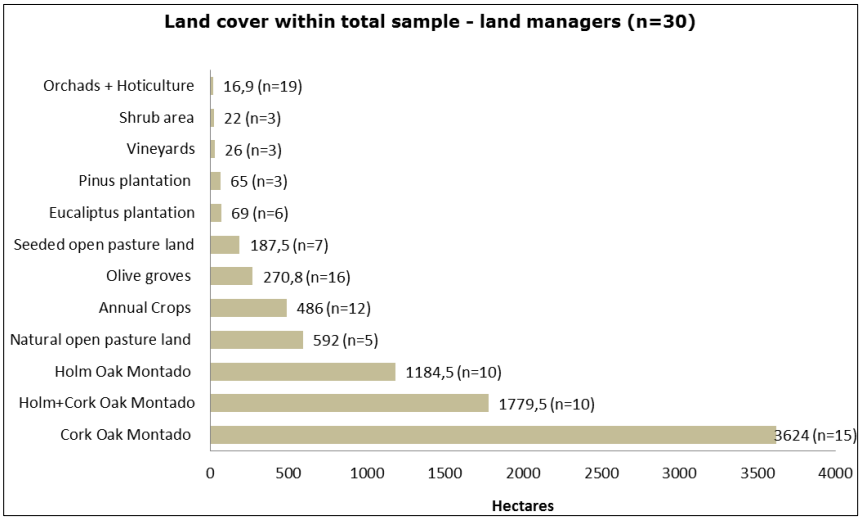


Figure 12 – Land cover within the sample of land managers and number of landmanagers managing each land cover class.

Considering the land cover covered by the sampled land managers (fig. 12), the cork oak montado is the most dominant (3624 ha, n=15), followed by the mixed (1779,5 ha) and holm oak (1184,5 ha) montado, and it represents a system managed by half of the respondents.

Although the area covered by olive groves within the sample is only 270.8 ha, it also represents a system managed by half of the respondents (n=16), within which 13 also have montado of some kind in the property they manage.

The majority of land managers (n=19) have a vegetable garden with fruit trees and horticulture, but from these only three manage these areas with an economical purpose, the rest just do it for subsistence or complementary reasons.

In terms of personal characterization, most farmers have Portuguese nationality (only 2 foreigners) and spent their childhood in rural areas (19/30), within the municipalities of Montemor-o-Novo and Évora. However, a large and increasing number of land managers have urban background (9/30), with their upbringing in the Lisbon area and surroundings

(5/30) and some of them still living there, spending either the week or weekend at the farm.

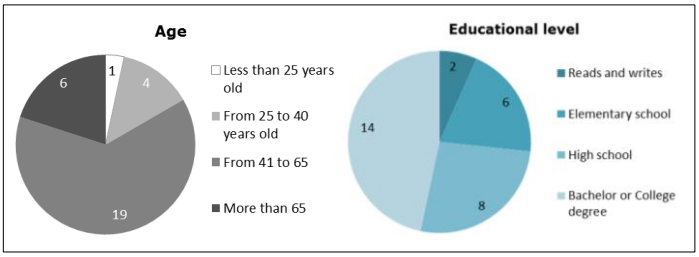


Figure 13 – Distribution of land managers within the simple, according to age and educational level.

Most farmers are between 41 and 65 years old (19/30) and surprisingly have higher education (14/30).

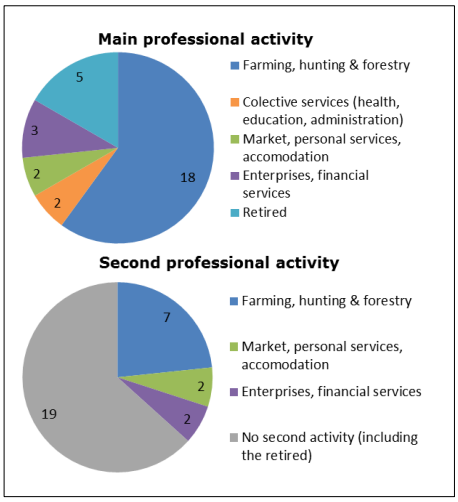


Figure 14 – Land managers distribution according to their main professional activity and second profesional activity.

Most respondents are employed in agriculture (18/30) and not have any second activity (19/30). However, almost half of the land managers have a main professional activity in other areas and some are already retired but still farming, either in their own land or also renting (fig. 13).

### *3.2. Land management types*

#### *Ideal types*

In this first phase, the types were identified according to information from the survey (tables G and H) and by close observation in the field combined with in-depth knowledge of the area. The main aspects considered were: personal characterization aspects, intensification (presence of intensive pig production units, presence of intensive cultures like vineyards, eucalyptus and intensive olive groves, and stock rate - livestock density based on livestock units per hectare); multifunctionality (table G); future perspectives (innovation - ideas for future investments for production and for other functions besides production, immobilism – maintenance of things as they are); and farm size linked with farming system (Olive grove mosaic area and montado area). Table H shows the weight of each of these main aspects in each ideal land management type.

Table G – Aspects considered in the identification and characterization of land management ideal types, within each amenity functions promoted or desired in the farm.

| MULTIFUNCTIONALITY WITHIN THE FARM | |
|---|---|
| Bee-keeping | ▪ Activity directly managed by the land manager or other person that requested to do so;<br>▪ Activity nonexistent but availability by the land manager to do it himself in the future or hand over to someone else by request;<br>▪ Activity nonexistent and not desired for the future. |
| Tourism | ▪ Activity existent;<br>▪ Activity nonexistent but desired for the future;<br>▪ Activity nonexistent and not desired for the future. |
| Hunting | ▪ Presence of hunting reserve with direct or indirect payment;<br>▪ Legal status for no hunting due to non-productive reasons (animal welfare, problems with hunters, leisure and living in the area). |
| Walking paths, visits | ▪ Interest in receiving and organizing visits;<br>▪ No interest in organizing but willingness to help visitors and eco-tourists passing by, not opposing to have people in the property;<br>▪ Opposing to have people in the property, sometimes allowing organized visits by request. |
| Family leisure | ▪ The farm as a permanent place of leisure activities for the land manager and family (including maintenance of vegetable gardens for family consumption);<br>▪ The farm as a place for leisure activities in weekends and holidays;<br>▪ The farm as a place of work, mainly. |
| Housing | ▪ Land managers living in the farm as a lifestyle, because they like the rural better than the urban;<br>▪ Land managers not living in the farm only due to family logistics (kids in school, etc.);<br>▪ Land managers not living or desiring to live in the farm. |
| Nature conservation | ▪ In every gesture or by mode or production (organic), with concern over maintaining hedgerows and participating in nature conservation projects;<br>▪ In some actions;<br>▪ In no particular action (aspect not rationally considered) |
| Consume from farm production | ▪ Valuing own products by consuming them;<br>▪ Not consuming products from the farm. |

Table H – Weight of amenity function in each land management ideal type. The higher number of crosses mean a higher weight for post productivist action and thought: higher diversity of activities in the farm, lower intensification and higher innovation

| | IDEAL TYPES | | | | |
|---|---|---|---|---|---|
| **MULTIFUNCTIONALITY WITHIN THE FARM** | Organic Living Land Managers | Quality-Innovation Land Managers | Local Subsistence Hobby-Farmers | Traditional Livestock Farmers | Agri-Business Land Managers |
| Bee-keeping | xx | xxx | x | xx | x |
| Tourism | x | xxx | x | x | xx |
| Hunting | x | xx | x | xx | xxx |
| Walking paths, visits | xx | xx | x | xx | x |
| Family leisure | xxx | xx | xx | x | xx |
| Housing | xxx | xx | x | x | x |
| Nature conservation | xxx | xxx | x | xx | xx |
| Consume from farm production | xxx | xxx | xxx | xx | x |
| **INTENSIFICATION** | LU / hectare = 2,13 (xxx) | LU / hectare = 3,56 (xx) | LU / hectare = 0,43(xxx) | LU / hectare = 4,67 (xx) | LU / hectare = 11,99 (-) |
| **FUTURE PERSPECTIVES** | different ideas for the future (xxx) | innovation or ideas for innovation (xxx) | maintaining (survival of agriculture as complement to family) (x) | maintaining (survival of agriculture as an economic activity) (x) | maintaining (income and productivity perspective) (xx) |
| **POSITION WITHIN THE POST-PRODUCTIVIST AXIS** | High multifunctionality<br>Low intensity<br>High innovation | High multifunctionality<br>Low intensity<br>High innovation | Low multifunctionality<br>Low intensity<br>Low innovation | Medium multifunctionality<br>Medium intensity<br>Low innovation | Medium multifunctionality<br>High intensity<br>Medium innovation |

Five land management types were identified (fig. 15): the *Organic Living Land Managers;* the *Quality-Innovation Land Managers*; the *Local Subsistence Hobby-Farmers*; the *Traditional Livestock Farmers*; and the *Agri-Business Land Managers* – according to the combination of farm size, intensification, multifunctionality, future perspectives (table H) and personal characterization.

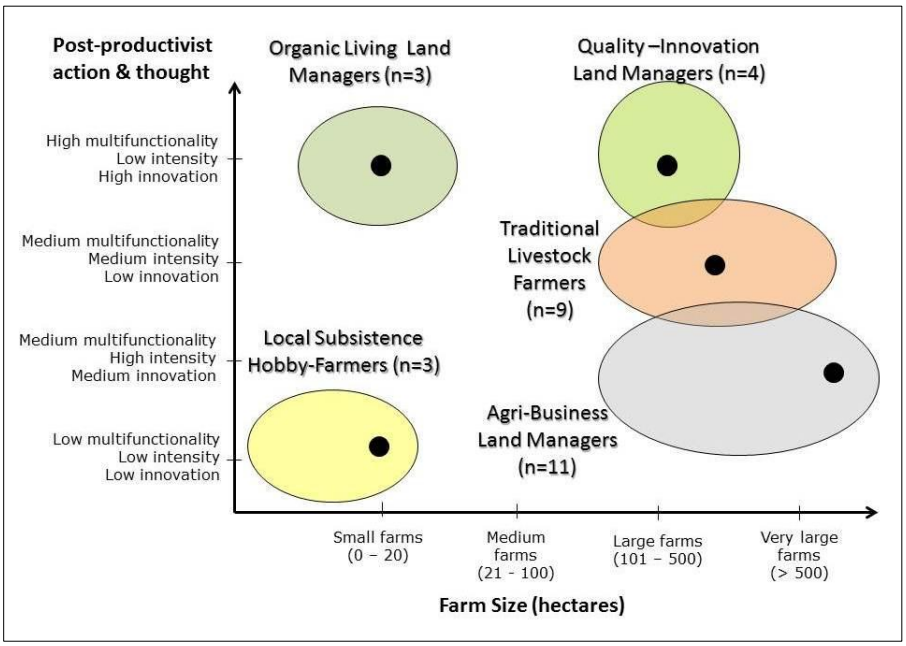


Figure 15 – Land managers Typology – Organic Living Land Managers; Quality-Innovation Land Managers, Local Subsistence Hobby-Farmers, Traditional Livestock Farmers, Agri-Business Land Managers - distribution along the two axis of *Post-productivist action and thought* (including levels of multifunctionality (bee-keeping, tourism, hunting, walking paths and visits, family leisure, housing, nature conservation, consume from farm production); *intensity* (livestock units per hectare and intensive cultures; and future perspectives.

Land managers ideal types:

The *Organic Living Land Managers* (n=3) type include people living in small farms near the town of Montemor-o-Novo (olive grove mosaic), locals, outsiders or with outside experience, all in the 41 to 65 year old age class and with high school or college education. This type represents people for whom the farm is both their living and working place, living with their families and enjoying the farm as a place for leisure activities for their own and generally open at receiving visitors. Since people within this type haven't been farming all their lives and/or having other occupation and income from other areas, they are better qualified as land managers and not farmers. For these land managers, the organic farming is a reflex of their concerns over the environment and public health, as they consume everything that comes from the farm (horticulture products, olive oil, sheep) orienting the land management in the farm towards their well-being and therefore as a lifestyle, but also selling in the local market and other stores. The fact that they have small farms doesn't always allow for promoting much more functions besides farming, however they diversify very much within farming and promote bee-keeping and nature conservation very much, also with future perspectives on tourism possibilities or expanding horticulture, with a strong sense of returning to nature driving their actions in the farm.

The *Quality-Innovation Land Managers* (n=4) type includes people managing large farms (owned or rented, spread along all the montado area), many with urban background, higher education and from 41 to more than 65 years old. These are also land managers (and not farmers) as the majority also has professional activities in other areas, combining external income to the one from the farm. These land managers promote organic farming (quality meat), even if not certified, being very confident of the quality products there are providing, valuing as well the landscape where they are, for its scenic and nature conservation richness, and therefore even if the majority do not live in the farms for logistics matters, they would if they could. They all have defined and innovating ideas for the future but in different areas, from nature conservation aspects (regeneration of the montado) to tourism possibilities and local commercialization dynamics. Because they manage large areas, they are able to promote more functions than the previous ones (bee-keeping, hunting, tourism, etc.).

The *Local Subsistence Hobby-Farmers* (n=3) type includes small farmers, located around urban centers (town of Montemor-o-Novo, villages in the study area), with ages around 65 years old and with basic or no education. Some own land and rent some more and others use land spared by acquainted larger farmers of the area. Mostly are retired, and keep farming because they farmed all their lives and see it as a way to complement their income and as a healthy occupation for their minds, as they enjoy it as a leisure activity. As most of these are elderly farmers, their perspectives are to maintain farming in a survival strategy, focusing on the production of food (mainly horticulture, fruit trees, some sheep, poultry, etc.), with no capacity or interest for innovation or multifunctionality. Even so, some promote bee-keeping in other properties, as it is a very usual practice in this area.

The *Traditional Livestock Farmers* (n=9) type includes the majority of the sample and represents the local and active farmers focused on livestock production (mainly meat cows). They have rural background, basic to high school education, between 25 and 65 years old and most of them have farming as their only and main professional activity. The farms they manage are large to very large, spread in the montado area, and many times rented. Although they maintain an extensive mode of production, there is a tendency for intensification of the montado, with the increase of livestock density and the combination of crops to the pasture areas in the undercover, with negative consequences to soil conservation and montado regeneration. Although their main focus in on livestock production, with no intentions of diversifying of investing in other functions besides production, they promote hunting in an indirect payment basis, allow for other to do bee-keeping in their land and don't mind visitors walking in the property. Their perspective for the future in basically to maintain things as they are, with a strong pessimistic view over farming activity and the eminent end of direct to production subsidies.

The *Agri-Business Land Managers* (n=11) type include business man managing the land individually or in representation of a business society or enterprise, whose properties are spread along the montado area. These are land managers mainly with urban background,

higher education and farming education, with ages between 25 and more than 65 years old and not living nor having desire to live in the property, in fact the majority live in Lisbon and surroundings or in the town of Montemor-o-Novo. These land managers promote high diversification and innovation in terms of land cover (with montado, eucalyptus, vineyards, one case of an intensive olive grove, one case of GM corn crop, etc.) and animal production (extensive livestock production, sometimes with genetic assisted breeding of cows and industrial pig production), but with higher intensification in production than the previous ones. They also promote hunting activities and bee-keeping, managed mainly by others, and enjoy the farm for recreational purposes for them and their families, mostly in the weekends and holidays. However most of them are strongly against having visitors in the property, only allowing the entrance of organized and sporadic groups. The futures perspectives are and towards maintaining and/or maximizing profits.

Having in mind the characterization of each group but also the reduced number of respondents within each type described above, an effort for simplifying this typology by clustering similar groups, based in trajectory tendency, was undertaken resulting in three main types:

- Type 1 (n=7) – Quality Living Land Managers: The *organic living land managers* and the *quality-innovation land managers* were joint together becoming a type of different farm size areas, from very small to large, maintaining a similar profile from the land manager (rather than farmer) concept point of view. All these land managers are joined by a common idea of providing quality products under a multifunctional trajectory, which unfolding is differentiated, depending fundamentally of the physical conditions in the farm (farming system linked with the olive grove mosaic area or montado area, farm size).
- Type 2 (n=12) – Local Traditional Farmers: The *traditional livestock farmers* and the *local subsistence hobby-farmers* were joint together for they share a very traditionalist and rural background, positioning them in a survival and pessimist trajectory (immobilism). The main differentiation within this group is, as it happens in type 1, the farming system and farm size and also the professionally active and retired condition correlated with the age. Concerning external activities to farming, both groups lean to those traditional activities as bee-keeping and hunting, not considering others.
- Type 3 (n=11) – Agri-Business Land Managers: The *agri-business land managers* maintain its characteristics as described above and number of respondents. It is a consistent group, very profit oriented, focused on production but within a diversification and innovation trajectory.

These three types resultant from the clustering of ideal types (first phase of analysis), will be further compared with the results from the second phase that follows next.

***Productivist & Post-productivist action & thought types***

In a second phase of analysis, the focus was on the scaled answers (from -2, meaning more post-productivist and 2, meaning more productivist) from each land manager, of both behaviors (open questions) and attitudes (Lickert-scale sentences), not taking in consideration non scalable aspects like the personal characterization.

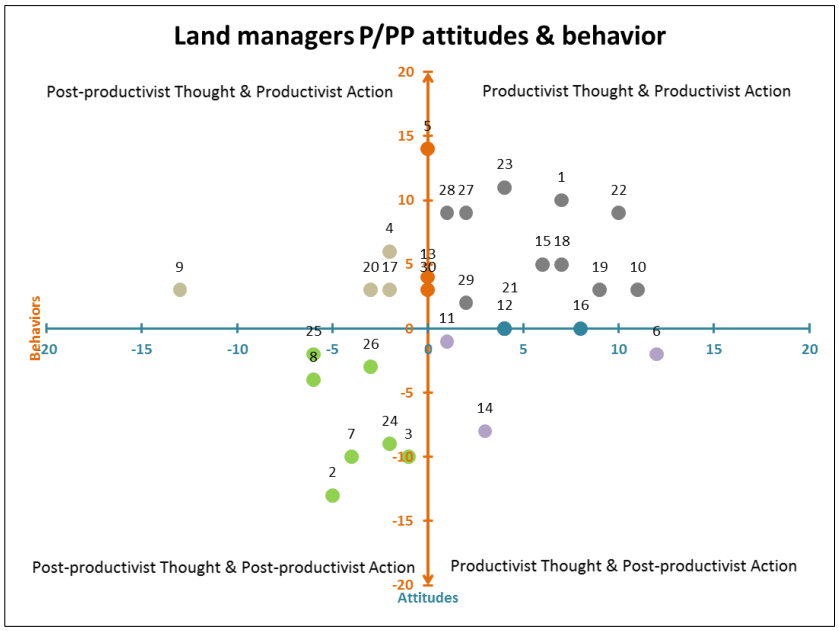


Figure 16 – Location of land managers within the two axis of attitudes and behaviors, as a result of the sum of values given (according to the post productivist to productivist scale, from -2 to 2) for each answer of each land manager, in the open questions (behaviors) and Lickert scale sentences (attitudes). Six groups result according to the colors in the graph and according to their productivist (P) and post-productivist (PP) action and thought: PP thought & P action (light grey); P thought & action (dark grey); PP thought & action (green); P thought & PP action (purple); inbetween P/PP thought & P action; P thought & inbetween P/PP action.

The results from the sum of values within the post-productivist (-2) to productivist (2) scale, for each land managers were distributed along two axes of attitudes (horizontal axe of xx - Lickert-scale sentences) and behaviors (vertical axe of yy - open questions), as showed in fig. 16 above. The axis originates four squared areas, in which land managers are distributed, plus some located on the axis. It is important to stress that these groups don't represent necessarily types, due to the reduced number of respondents, and therefore a typology cannot yet be outlined. However, some groups appear in reasonably numbers and more consistent, which correspond to the most extreme groups. A group characterization will now follow, based on fig. 16, with a clustering of groups in mind, in order to reach more consistent types and finally a typology.

- Productivist thought & action (fig.16, dark grey, n=10): This group joins land managers land managers from both very small to very large areas, half with high education and half with basic to very low education and the majority from the town of Montemor-o-Novo, living also in Montemor town or villages around, preferring the conditions of the urban centers than living in the farm. Within this group lay the land managers with more intensive practices (higher stocking rates as in pig factories for instance, more complex and water spending irrigation schemes, biochemicals for cleaning water line vegetation, etc.) and cultures (vineyards, eucalyptus plantations, intensive olive grove). Regarding multifunctionality, all respondents in this group had no tourism activities or interest to do

so in the future. The majority had also no interest in bee-keeping and no interest in the farm as a leisure space for themselves and families.

- Post-productivist thought & action (fig. 16, green, n=7): This group joins also land managers from both very small to very large areas, the majority with higher education and from outside or with outside experience. Within this group, there is the common contribution for nature conservation, either because of the organic production practice and/or the very extensive regime. All land managers here promote a high level of multifunctionality, oriented to tourism and/or combining the organic farming with quality life functions; and high level of innovation, with local food commercialization initiatives (quality meat local store and home delivery, horticulture baskets, new food products), tourism projects and initiatives and natural resources management (natural fences, rain water containing for irrigation, cork oak regeneration, species plantation in water lines and nature conservation projects).

Within the *post-productivist thought & productivist action group* (fig. 16, light grey, n=4), are those land managers whose land management is still very production focused, but that recognize the area potential for promoting other functions beside production, like tourism activities and nature conservation and would like or have thought about orienting their management towards these amenity functions. All land managers in this group manage a mixture of more intensive areas (two have intensive pig farms, irrigated crops) mixed with montado areas, from where one (n$^{er}$ 9) distances more from the rest by the innovation in assuring montado regeneration and project for converting to organic farming (trajectory towards the *post-productivist action*); The other three do not have so defined ideas on how to diversify in the near future and have also some obstacles or issues related to property rights, farm characteristics and concerns about profit (with few details detaching them from the *productivist thought*).

The *inbetween productivist and post-productivist thought and productivist action* group (fig. 16, orange, n=3), are those land managers very focused on production with some awareness regarding multifunctionality and nature conservation, with interest in bee-keeping activities, hunting and rural living quality, but not enough knowledge for a real post-productivist thought. These are traditional farmers who intend to maintain above all, with no interest for changing or widening their focus, managing under a survival strategy. So in fact, these land managers lean towards a more productivist thought trajectory.

The *productivist thought & post-productivist action* group (fig. 16, purple, n=3) is very curious because it joins those land managers who extensify and diversify very much, having however the presence of small areas under higher intensification (eucalyptus plantation, vineyards and horticulture production with biochemical use). The fact that they extensify and diversify is close related to the physical conditions that exist in the farm and personal capacities (age, economic condition). So these are land managers who deal with several

limitations in their management but who would rather intensify and focus more on production if they could. These defend a more productivist action and therefore define this as their trajectory for the future, intensifying when it's possible. Very similar to these are the land managers (all women) with *productivist thought and inbetween productivist & post-productivist action* (fig. 16, blue, n=3), who manage the land very focused on livestock in a traditional mode but still diversifying either in tourism or life quality and valuing the farm as a family leisure area.

Table I below, explains clustering of groups according to group characterization above and in figure 17 we can see the 3 clustered groups (land management typology).

Table I – Respondents within each group as presented in figure 16 (first and second column) are reorganized in clusters (third column) by similarity in their trajectory, resulting in three land management types (fourth column): the *Business Farms with Intensification* type (joining 10 land managers from the dark grey group, 3 from the light grey group and 3 from the orange group, n=16), the *Innovating for Quality and Multifunctionality* type (joining 7 land managers from the green group and 1 from the light grey group, n=8) and the *Traditional Farms with Diversification* type (joining 3 land managers from the blue group and 3 from the purple group, n=6).

| Group | Respondent N$^{er}$ & Coordinates (Fig. 16) | Clustered groups | Typology (3 types) |
|---|---|---|---|
| Inbetween P/PP Thought & P Action (n=3) | 5 (0,14); 13 (0,4); 30 (0,3). | x | x |
| P Thought & Inbetween P/PP Action (n=3) | 12 (4,0); 16 (8,0); 21 (4,0). | x | x |
| PP Thought & P Action (n=4) | 4 (-2,6); 9 (-13,3); 17 (-2,3); 20 (-3,3). | x | x |
| P Thought & Action (n=10) | 1 (7,10); 10 (11,3); 15 (6,5); 18 (7,5); 19 (9,3); 22 (10,9); 23 (4,11); 27 (2,9); 28 (1,9); 29 (2,2). | + 4 (-2,6); 17 (-2,3); 20 (-3,3) + 5 (0,14); 13 (0,4); 30 (0,3) | **Business Farms with Intensification (n=16)** |
| PP Thought & Action (n=7) | 2 (-5,-13); 3 (-1,-10); 7 (-4,-10); 8 (-6,-4); 24 (-2,-9); 25 (-6,-2); 26 (-3,-3). | + 9 (-13,3) | **Innovating for Quality & Multifunctionality (n=8)** |
| P Thought & PP Action (n=3) | 6 (12,-2); 11 (1,-1); 14 (3,-8). | x | x |
| P Thought & P intention | x | 6 (12,-2); 11 (1,-1); 14 (3,-8) 12 (4,0); 16 (8,0); 21 (4,0) | **Traditional Farms with Diversification (n=6)** |

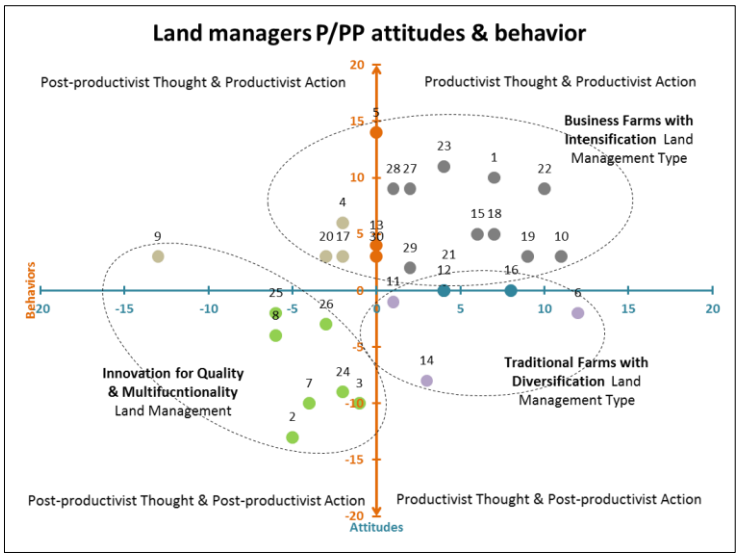


Figure 17 – Clustering of the five initial groups (dark grey, light grey, green, orange, blue and purple) resultant from the scaled land managers answers from productivist and post-productivist action and thought, into three main groups which represent three land management types and therefore a typology.

Considering both phases of data analysis, some relations can be found between the ***ideal types*** and the ***productivist & post-productivist action & thought types***: *ideal type 1 (quality life land managers)* show strong relation with the *PP/P type A (innovating for quality & multifunctionality)*, being composed in majority by the same land managers; as for *ideal types 2 and 3* (*local traditional farmers* and *agri-business land managers*), land managers

divide between the the *P/PP type B (traditional farmes with diversification)* and the *P/PP type C (business farms with intensification)*, as illustrated in figure 18.

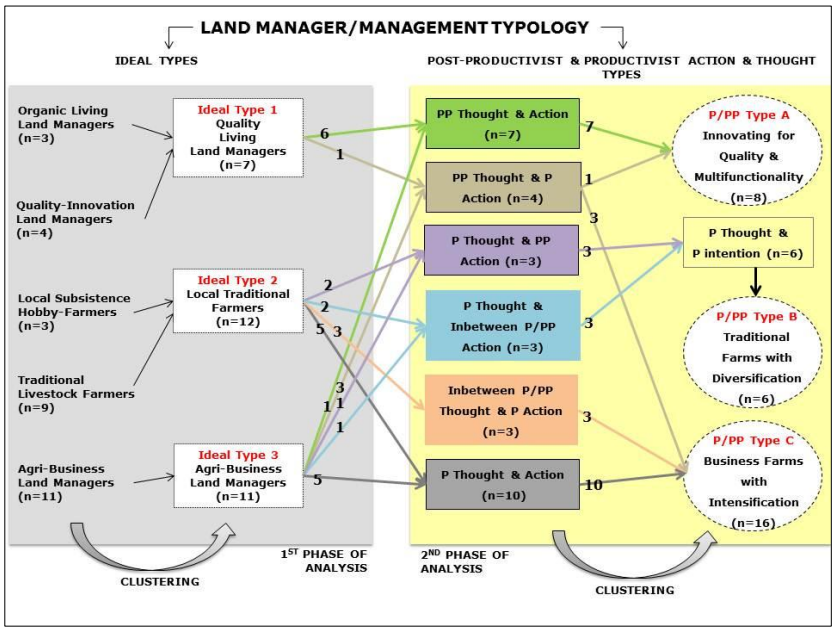


Figure 18 - Comparisson between the first and second phases of analysis: Ideal types and Post-Productivist & Productivist Action & Thought. Within each phase of analysis a first number of groups emerged (5 in the first phase; 6 in the second phase) to be after clustered in less but more consistent types (3 types in each phase). Numbers close to the arrows mean the number of land managers coming out of one group to join another.

### *3.3.* Land management *spatialization*

After identifying land management types through two different analysis, resulting in three ideal types and three productivist & post-productivist action & thought types, with existent correlation between both approaches, follows the spatialization of all the six types identified, in order to understand if the typology obeys to a spatial pattern whatsoever.

Figures 19 show how the areas included in each *land management ideal type* and *land management productivist and post-productivist action & thought type* are distributed within the study area in order to identify the distribution pattern linking with the landscape character areas, proximity to urban centers and land cover.

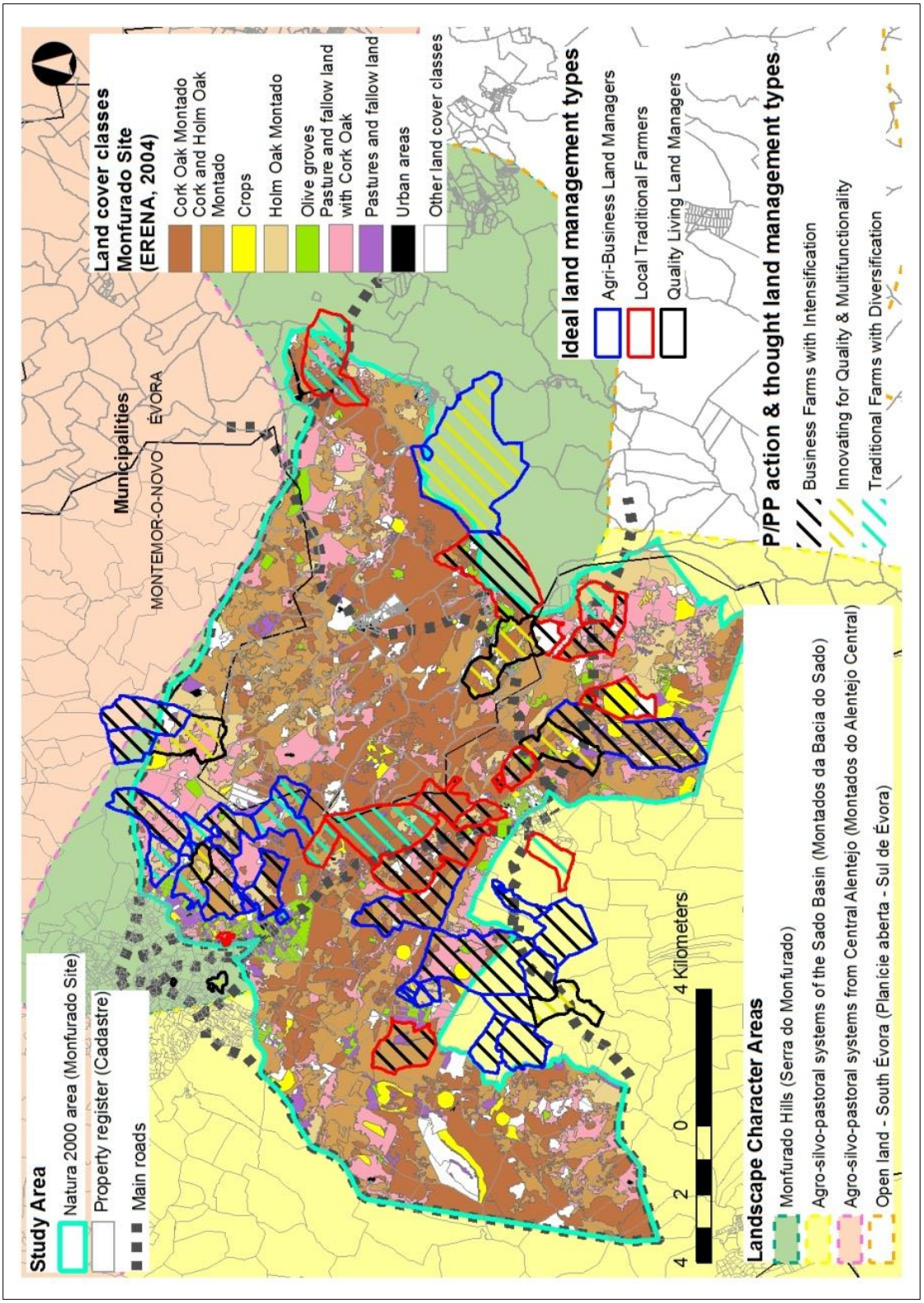


Figure 19 - Location of the areas managed by each land manager surveyed in the study area (Monfurado Site), by the two typologies identifyed – ideal and according to the typology with the three ideal types (Quality Living Land Managers, Local Traditional Farmers and Agri-business Land Managers) defined.

The map on figure 19 shows if a spatial pattern emerges from the land managers distribution, according to each typology identified. At a first glance no pattern seems to emerge from land managers' distribution, either considering the landscape character areas, land cover or proximity to urban centers. Focusing on the *ideal type quality living land managers* and the *innovating for quality and multifunctionality* (fig 19 – areas with black limit and yellow stripes filling), as the most consistent group within both typologies, it is possible to verify that these exist in the medium and small farm sizes. In terms of landscape character areas and land cover, they appear spread over the area, with the smaller close to Montemor-o-Novo town (mosaic olive grove), while the rest have a mix of montado and pasture and fallow land, not much different from the land cover identified in the other types from both typologies. Considering the changes and shifts of land managers between both typologies, the map can well illustrate that the *quality living land managers* and the *innovating for quality and multifunctionality* are almost in totality overlapped, while in the spatialization of the other types is fuzzier. The majority of *agri-business land managers* overlap with the *business farms with intensification* (fig 19 – areas with blue limit and black stripes filling), however there is also a shift of many *local traditional farmers* to the *business farms with intensification* (fig 19 – areas with red limit and black stripes filling).

## 4. Discussion

### *4.1. Land managers characterization and survey application*

The sample achieved, although of minimum number (n=30) (Patton, 2002), covered one third of the total study area (8674,1 ha in 23957 ha). However a low representativeness of the land managers (706 in the municipality of Montemor-o-Novo, INE, 2010) is obvious, which was not possible to increase due to lack of time and financing. Having this in mind, this work was intended as a test to be useful in following works where sampling can be representative. Within the large and very large holdings a pattern of answers emerged along the field work, what did not happen within the small farms, indicating that a higher number of inquiries should be aimed at in the future, also stratifying by size, landscape character areas or others relevant.

Concerning sample characterization. More than one third of the land managers (n=12) have their main professional activity in other areas (services), managing the farm as a second activity. The very high number of land managers with high educational level also fits the stats from the municipality of Montemor-o-Novo, which is the municipality with the highest rate of farmers with college degree (INE, 2010).

One of the main challenges of this work has been the adaptation of the post-productivist and productivist sub-dimensions to the present context of study and after conversion in questions possible to be questioned in an understandable way in order to be applied to a rather

heterogenic sample of land managers, from the age and educational level point of view. Within this particular challenge, many were the difficulties, for instance in quantifying, in an approximately percentage, the subsidies in relation to total income and the farm product consume in the family total consume. Concerning the land cover in the farm, the difficulties were in the specification for montado and olive grove density of trees, presence of shrubs and grazing areas, which are very much connected to the concept of fuzziness associated to the Mediterranean agro-forestry systems (Pinto-Correia *et al.,* 2010a); and the discrimination of all land cover and use within the farm including non-productive or with no direct profit areas (like vegetable gardens for self-consumption), as well as recreational or self-consumption animals. Also the ambiguous notion of nature conservation and contribution for it, was particularly difficult to address in a systematic way, in the particular sense of water lines and hedgerows management as in general terms. In order to correctly spatialize farms in the study area, the property register (cadaster) was printed and used in the field work and land managers were asked to identify the area(s) under their management, which was also a very difficult process, considering the land managers different ages and ease with maps.

### *4.2. A land managers / management typology*

Results confirm that "farming practices take different forms as they are molded according to different farming styles" (van der Ploeg, 1994, 2003 *in* Ventura *et al.,* 2008); and "each style is part of a specific socio-technological network, with its own physical, informational and symbolic flows" (Ventura *et al.,* 2008).

The ideal land management types were build up following a previous experience and results in other projects in order to compare and validate the productivist & post-productivist dimensions survey based methodology. Ideal types were achieved in two phases, a first one more refined, originating 5 groups, and a second one achieved through the clustering by similarity, of these 5 groups in 3 final ideal types for the Monfurado area. These types are very consistent concerning the in-depth knowledge of the area, with strong weight of the personal characterization, ideas for the future and observation in field work. When comparing the P/PP types achieved in a more automatic way, focused on the behaviors and attitudes of the respondents and less in personal characterization and on field work observations, it is interesting to notice some fuzziness regarding the more business or more traditionalist notions within the several types achieved. This is extremely important in order to understand how different may the types come up, depending on the variables used and its correspondent weight.

Taking in consideration that both behaviors and attitudes were addressed in the identification of land management types, the results in terms of types is either revealed in the form of land managers as in land management. The given names for the types identified include

words that reflect exactly this, indicating one or more important and dominant characteristics within a specific type, which can refer to a behavior or an attitude, or even both. For instance *Quality* appears in both the ideal as P/PP types (which in this case are very much coincident), expressing those land managers that work in the farm with the sense of providing products that themselves appreciate, not only because of their producer responsibility before the consumer, as for the food security of his own family. *Quality* is both related with a land managers way of thinking and several options in the farming techniques and agricultural production, referring to land management. *Living* indicates a main and strong interest in the land which is more connected to a lifestyle, being also a characteristic of personal nature, and therefore linked with the land manager. The distinction between calling some types 'land managers' and some types 'farmers' has to do with the broader view and interest in the land by land managers, who are not traditional farmers, and who should more appropriately be called as land managers.

The need to cluster the initial five ideal types into three was mainly because of the reduced sample, avoiding groups with very few individuals. Clustering was made focusing on innovation and multifunctionality ability, rather than farm size or socio-economic and personal characteristics. Clustering as a process itself, allowed to understand that a variety of groups can occur depending on the variables used which therefore depend on the objective, which in this case was the multifunctionality transition bounded by post-productivist & productivist action & thought.

In terms of rural development, the types identified seem to contribute in different ways. The ideal type of the Agri-business land managers, being the type where larger holdings are managed, are also the ones receiving a bigger slide in terms of subsidies. However their connection with the local context in somehow weak (most of them still live in urban centers and most of them are against having people using the land for visiting, walking, hunting) and so they divert direct and agro-environmental payments towards the cities, showing again how the implementation of rural development strategies based on multifunctionality have been frustrated (van der Ploeg *et al.,* 2008). Land managers within the Agri-business fit in the group with awareness towards the new demands, multifunctionality, environment, etc., but with practices under an intensification and resource maximization, therefore not according to the level of knowledge (Pinto-Correia *et al.,* 2011). This has revealed to be an important group to focus on in the future, as they have under its management large areas and at the same type detain some investment possibilities and innovation capacity. This innovation is however at the service of a corporatist and enterprise logic (Wilson, 2007) instead of a rural development one. The fact that in terms of rural development this group is an important one to analyze, stresses the value of the ideal types which by including more variables, allow to relate with broader rural development issues than focusing on the bahaviors and attitudes towards and from the farm.

The very interesting results are with no doubt, the fact that both the typologies identified, have a strong relation between them, in some cases overlapping. And so, the simple sum of the values from the scaled (between post-productivism -2 and productivism 2) answers match or links with the previously defined ideal groups. One important aspect is how the two groups of denominated farmers (the 'local subsistence hobby-farmers' and the 'traditional livestock farmers'), who later became the 'local traditional ideal types' have been previously associated with low awareness considering the new demands and space specificity, but appear within the attitude/behavior axis in the post-productivist thought (fig. 16). In fact, answers from both of these groups within the lickert scale point to a very balanced understanding of how the rural areas should be, with high concerns on the several traditional activities like hunting, bee-keeping, interest as in pride that outsiders come and visit the farm and with high concerns over a concept of nature conservation, which may differ from the one aimed at asking through the survey.

Another interesting aspect is that when considering only the farming practices, a much bigger and more homogeneous group of land managers would result in this area. In the study area, at the present time, there are very similar farming practices among certain types, as among the quality-innovation land managers and the traditional livestock farmers, however the so called specific socio-technological network, gives place to the differentiation within different types. This means that bigger emphasis must be place in the justifications for the farming technique or other management option, rather than just to identify the action itself, as differentiation in terms of trajectory depends on it.

### *4.3. Land managers spatialization*

In terms of spatialization, results point towards two differentiated groups in terms of landscape character, mainly related to farm size, land cover and proximity to urban centers. Two of the five first achieved ideal types, the 'organic living land managers' and 'local subsistence hobby-farmers', are concentrated in small farms around main and secondary urban centers (Pinto-Correia *et al.,* 2010a) in the study area, managing a mosaic of olive groves combined with a variation of horticulture, orchards and small patches of other cultures like vineyards and crops; and the three other types identified (the 'quality-innovation land managers', the 'traditional livestock farmers' and the 'agri-business land managers'), are concentrated in large and very large areas spread along the rest of the study area mainly dominated with the montado agro-forestry system (fig. 19). After clustering the five ideal type groups, a more dispersed spatial pattern is observed.

In order to explain the differentiation of the ideal types identified, other factors besides the physical characteristics of the area and farming systems need to be taken in consideration, as they are not directly visible in space. These can be aspects of personal characterization, multifunctionality awareness and justification for the practices in place, related with complex

ideology aspects. The next figure (fig. 19) tries to relate differences and similarities within the five types identified. Within the total sample two main 'branches' can be differentiated. The first one of farmers, with rural background, lower education, low awareness regarding multifunctionality, managing under a survival strategy and immobilism; this group is further divided in the 'traditional livestock farmers' and the 'local subsistence hobby-farmers', where the farm size and landscape area (montado area /olive grove mosaic) are the main factors for distiction between groups. The second branch represent the land managers with urban upbringing and/or living, higher level of education, higher awareness regarding multifunctionality, managing in a diversification strategy and innovating; this group is further divided base don the nature conservation care and intensification, resulting respectively the 'organic living land managers' and the 'quality-innovation land managers' to one side (distinguished by farm size and landscape area), and the 'agri-business land managers' to the other. The dashed elipses represent the clustered groups later defined.

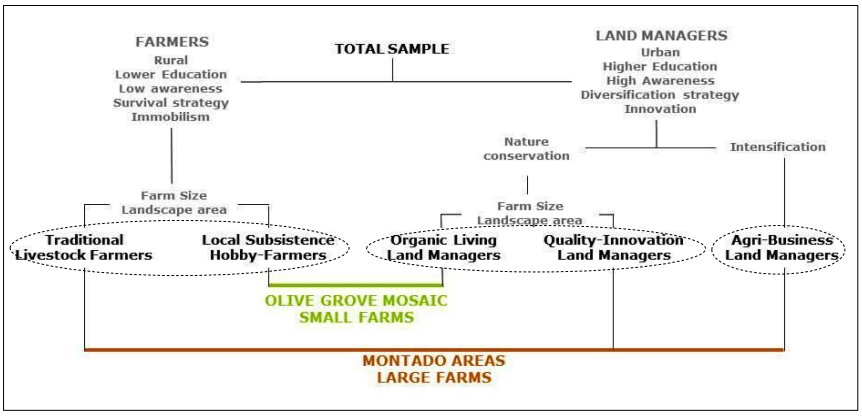


Figure 20 – Respondents organized according to similarity in thought, action and personal profile.

Concerning the P/PP action & thought land management types, spatialization as visible on the map of fig. 19, shows no patthern whatsoever, highlighting once more the need for addressing the personal motivations dimension as perhaps a more decisive than the physical conditions and landscape character where farms are framed. Land managers related to the 'quality' aspect, behave in similar way either managing in the olive grove mosaic area or the montado area, showing that their strong ideology and search for a living place with quality life and food, is what drives their management.

## *5.* Conclusion

Accepting that the land management trajectories encapsulate more complex factors and the need for more complex methodologies, than the ones covered by the productivism and post-productivism dimensions, opens and reinforces the continuing struggle for research in understanding and conceptualizing rural transition. What is needed is a new theory of rural

development that integrated social and spatial approaches (Van der Ploeg and Marsden, 2008). The several dimensions to consider when assessing land management typologies can be compared to the web dimensions (van der Ploeg *et al.,* 2008), in the sense that although they can be distinguished from each other (theoretically), they cannot be separated from each other when studying agricultural trajectories.

This work has showed the need to embrace or rediscover complexity when assessing agricultural trajectories and so, consequently, highlights the need to develop new forms of professional knowledge (Ventura *et al.,* 2008). This increasing recognition of the complexity should be accompanied by the adoption of a more multidisciplinary, holistic approaches, as within this work and the previous attempts to identify a land management, contributions from the agricultural and social sciences in particular have been missed and of extreme importance for achieving more consistent results.

Studying land management and land managers is of crucial importance for understanding how can rural areas count on in order to revitalize. "Rural areas do not restructure themselves and move towards sustainability in the same way or at the same speed" (Ventura *et al.,* 2008). And so, land managers innovating already and 'unfolding in the rural development web' can influence progressive unfolding, along with policy change and socio-economic crisis, by other actors unfolding at a slower rhythm or not unfolding at all. This means that when a large number of innovative initiatives exist in a certain area, they are first isolated and can then be organized within a group, in a way they can influence the local level unfolding rural development itself. What mechanism lies under innovative initiatives acting on other actors unfolding at a slower rhythm or not unfolding at all, is of great interest as it represents the first step towards the organized initiatives level, which then can influence higher levels. Specific studies to address these groups and the innovation and networks they create, should represent a future priority.

# PART III. General conclusion

At this point, conclusions will focus on future applications and conceptualization of rural transition as it turned out to be an even bigger challenge than before starting this work, showing that the complexity of rural transition is far from analyzed and discussed. It is important to refer that concerning the paper, and in particular the paper discussion and conclusion, efforts should for certain be made in improving considerably its quality and clarity, as only through an effective revision should it be possible to publish.

## v. Future application and developments

Considering the methodology followed, the application of the productivist and post-productivist polarized sub-dimensions based survey, was able to establish a starting platform for the discussion and further improvement of the methodology to assess transition at the farm scale, in extensive Mediterranean systems as the present case. Going through the questionnaire step by step, it is possible to identify several situations regarding the effectiveness of the questions themselves (the way respondents could understand what was asked for). Some examples are next described in order to alert for inquiry building in the future:

- When asking about the land cover and use in the farm, many times the replies are confusing since the distinction between a montado area and an open area with some trees (not enough tree cover to be considered montado) is difficult for the land owner to make. So, although the most emblematic system of the study area and surroundings is in fact the *montado*, which is an agro-silvo-pastoral system with a trinity of components (tree cover & shrub areas – grazing areas – crops), people find it difficult to precise from what number of trees it can indeed an area be categorized under *montado.* This issue is more evident when talking with land managers, since a certain degree of precision in the farming systems details is needed, than in the previous experience from other research projects, when showing photographs to landscape users who would clearly identify the *montado* land cover in a more generalized way[7]. Shrub areas which frequently compose the montado systems represent also as the tree cover density, a difficult aspect to precise and an important feature in the preferences for different landscape functions, intensity of grazing and soil condition, and biodiversity. The value of the shrub areas is often overlooked and often associated with land abandonment by the inquired land managers, meaning that it is difficult to precise the shrub area also because it is more or less mixed within grazing areas.

[7] Pinto-Correia *et al.* (2010ª)

- Still regarding the land cover in the farm, it is important for the diversification point of view, to register all the land cover types and uses in the farm. However, in the case of medium to very large farms (more than 300 hectares), land managers many times exclude automatically small areas (less than 5 hectares) of orchards, vegetable growing and even olive groves, when they don't receive any direct income from. Also concerning the number of animals, land managers tend to forget the ones kept for leisure activities (horses, donkeys, ponies) and auto-consumption (chickens, ducks, pigs and sometimes sheep).

- The use of genetically modified crops (seeds) can be of some difficulty as it refers to a rather unknown concept by most local and elderly farmers and it is frequently confused with the more common use of improved seeds. Questioning land managers about their income represents a difficult task as also the positioning of the subsidy slice in the total income.

- In relation to nature conservation related questions, the respondents are most times confident with their high contribution for nature conservation, whatever are the techniques of soil mobilization, chemical inputs and number of animals per hectare. Regarding hedgerows presence and maintenance, more simple and clear should be used, like tree or shrub lines along roads and paths, with or without productive, ornamental or protection function. Asking if land managers see some kind of advantage in tree and shrub alignments or if they would like to have or maintain these alignments is often more fruitful than simply asking for its presence or not.

- As an overview of the Lickert scale sentences and its success in addressing the proposed aspect to be measured, within the productivist and post-productivist logic, most sentences are fully understood by the respondents with the exception of four within the 13 sentences, about the "ability of the state to regenerate agriculture" (generally they think the state is the only entity with the ability for it, however they do not trust or believe it will happen), "the end of direct to production subsidies" (land managers would prefer managing the farm with no subsidies but with the condition of occurring market changes - rise of prices or control over importations) and "the fact they would manage in the same way even if the farm was located in other area that not Monfurado" (for the question of the nature conservation status of the area being a limitation for management is not clear enough in the sentence itself).

This work focused mainly in the present time, with very few questions within the survey referring to future perspectives, and so *time* was not taken in consideration. The results show that a sense of trajectory can be sometimes outlined, but in a superficial way. So although finding land management trajectories was not an objective here, it should be strongly considered in following projects on this matter.

Time is also important when history facts are concerned, in relation to the different contexts where transition to post-productivism may occur. Along this work, a good historical revision of the main events in Portugal and Alentejo Region (from the wheat campaign, to the non-existence of a truly industrialization comparing to the northern European countries, from the agrarian reform to land abandonment, …), that could mean a more productivist or/and post-productivist actions and thought, from land managers, to policies and society, has not been done within this work. This revision would be very interesting to compare with the wide literature about rural transitions in other contexts and probably better understand the land management types that resulted from this specific analysis. The landscape characteristics as the other very important dimensions both as a reason and reflection of these events have been deficiently addressed here in this work. In fact, when testing land managers attitudes and behaviors in a rural transition perspective, in a rather homogeneous study area as it is the Monfurado Site, one can realize that results in terms of types with different positions within the so called multifunctional spectrum are poor and extremely relative. And so productivism and post-productivism action and thought identified within each types identified in this work, are also rather homogeneous when compared with other areas. The major challenge ahead is to identify and characterize land management and/or land managers in different municipalities of one same region, as the next figure tries to illustrate, with all the diversity it implies and methodological questions in terms of survey building and application.

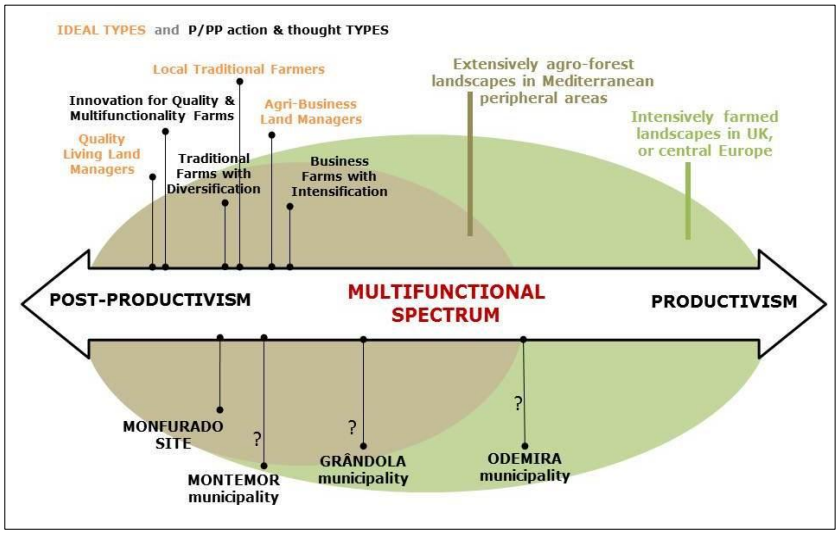


Figure 21 – The Multifunctional Spectrum bounded between post-productivism and productivism focusing on the contextual differences between the extensively agro-forest landscapes in Mediterranean áreas and the intensively farmed landscapes in UK or central Europe and then also within the mediterranean context, in order to illustrate for the relativeness of these concepts and their application in the future.

Differentiation in time and space, historical events and landscapes, strongly refer to what Wilson (2007) called the post-productivism *fallacies*, underlying that productivism and post-productivism exist in parallel, in time and space. Post-productivism should be nothing but an increase concern on the non-productive landscape functions, which is still (and likely to continue) disassociated from production itself. This has been clearly showed by the results of this work, which point towards an increasing in the sustainability of the farm, hand in hand

with the multifunctional one. If it is true that some land managers diversify outside farming, with tourism, hunting and other activities, it is also the case of land managers increasing the sustainability in the farm by adopting organic farming or water saving techniques for irrigation in vegetable growing areas. Based on these findings, it might be the case that a sustainability transition is more likely to be occurring in certain areas than a multifunctional one.

Taking in consideration that land managers in this context are still very much focused on production, it could be argued that the multifunctionality occurs mainly within production, which can be far from a truly multifunctionality transition. And so land managers, by increasing the multifunctionality within production are in fact promoting their autonomy as producers and independence as inhabitants, towards 'autonomism' or 'repeasantization' (fig. 22). The next figure illustrates how transition concepts can be articulated, from the political to the consumption and social points of view.

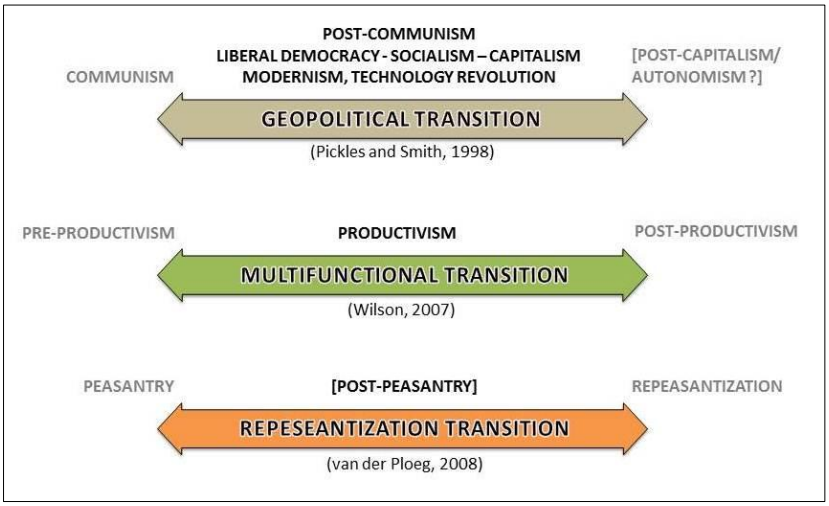


Figure 22 – Spectra of different but overlapped and interdependent natures. The geopolitical transition marked with the end of the communist bloc, promoting an articulated settlement of a capitalism Era, making way for market liberalization, industrialization, productivism and peasants destitution (post-peasantry); followed by a period under discussion and associated to post-productivism, repesantization and/or autonomism.

Ultimately, this work has allowed rooting and finally accepting complexity at two different and crucial aspects: the one inherent to the conceptualization of rural transition and the one inherent to motivations for land management decision at the farm level. As a consequence, this work has on one hand alerted for upcoming challenges in identifying land management strategies in an upper scale, but more importantly it has allowed to re-direct a personal research interest towards land managers motivations (in particular in organic farming), innovation at the farm level, alternative lifestyles and agriculture as a resistant strategy for autonomy and 'fighting the empire' (van der Ploeg, 2008), placing efforts in exploring the qualitative analysis (combining it with quantitative analysis), whose richness and difficulty were discovered through Patton's (2000) inspiring work.

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# Annexes

1. Dimensions and sub-dimensions for productivism and post-productivism (Wilson, 2007: pp. 80-112, chapters 5 and 6)

| DIMENSIONS | SUB-DIMENSIONS |
|---|---|
| 1. Agricultural Policies | **Sub-Dimensions P** |
| | 1.1P. Strong financial state support |
| | 1.2P. Conservative faith placed in ability of state to plan and orchestrate agricultural regeneration |
| | 1.3P. Encouragement to farmers to expand food production |
| | 1.4P. Government intervention |
| | 1.5P. Protectionism |
| | 1.6P. Price guarantees/financial security for farmers |
| | 1.7P. Agriculture largely exempt from planning controls |
| | 1.8P. Security of property rights/land use rights |
| | **Sub-Dimensions PP** |
| | 1.1.PP. Reduced financial state support; move away from state-sustained production model |
| | 1.2.PP.Demise of state-supported model of agricultural development which placed overriding priority on production of food |
| | 1.3.PP.New forms of rural governance |
| | 1.4.PP. Enhancement of local planning controls |
| | 1.5.PP. Encouragement of environmental friendly farming; Greening of environmental policy |
| | 1.6.PP. Increased regulation of agricultural practices through voluntary agri-environmental policies |
| | 1.7.PP. Move away from price guarantees; decoupling |
| | 1.8. PP. Increasing planning regulations for agriculture |
| | 1.9.PP. Loss of security of property rights |
| 2. Ideology | **Sub-Dimensions P** |
| | 2.1.P. Central hegemonic position of agriculture in society |
| | 2.2.P. Ideological security |
| | 2.3.P. Agricultural fundamentalism rooted in memories of wartime hardships |
| | 2.4.P. Agricultural exceptionalism |
| | 2.5.P. Belief in farmers as best protectors of countryside |
| | 2.6.P. Countryside idyll ethos/rural idyll |
| | 2.7.P. Main threats to countryside perceived to be urabn and industrial development |
| | 2.8.P. "Rural" defined in terms of agriculture |
| | **Sub-Dimensions PP** |
| | 2.1.PP. Loss of central position of agriculture in society. |
| | 2.2.PP. Move away from agricultural fundamentalism and agricultural exceptionalism. |
| | 2.3.PP. Loss of ideological and economic sense of security; Farmers branded as destroyers of countryside. |
| | 2.4.PP. Changing attitudes of public towards agriculture; agriculture as villain. |
| | 2.5.PP. Changing social/media representations of the rural. |
| | 2.6.PP. Changing notions of countryside idyll; Contested countrysides. |
| | 2.7.PP. Main threats to countryside perceived to be agriculture itself. |
| | 2.8.PP. Loss of security of property rights. |

| | |
|---|---|
| | 2.9.PP. "Rural" increasingly separated from agriculture; new social representations of the rural. |
| **3. Governance of rural spaces** | **Sub-Dimensions P** |
| | 3.1.P. Agricultural policy community small but powerful, tight-knit and with great internal strength. |
| | 3.2.P. "Corporate" relationship between agricultural ministries and farming lobby. |
| | 3.3.P. Relative marginalization of conservation lobby at fringes of policy making core. |
| | **Sub-Dimensions PP** |
| | 3.1.PP. Agricultural policy community widened; inclusion of formerly marginal actors at the core of policy making process. |
| | 3.2.PP. Weakening of corporate relationship between agricultural ministries and farming lobby. |
| | 3.3.PP. Changing power structures in agricultural lobby. |
| | 3.4.PP. Counterurbanization and social and economic restructuring of the countryside. |
| | 3.5.PP. Increasing demands of rural spaces of reconstituted "urban" capitals through new manufacturing and service industries. |
| **4. Food regimes and agro-commodity chains** | **Sub-Dimensions P** |
| | 4.1.P. Atlanticist Food Order dominated by USA. |
| | 4.2.P. Fordist regime. |
| | **Sub-Dimensions PP** |
| | 4.1.P.P. Challenge to the Atlanticist Food Order. |
| | 4.2.P.P. Post-Fordist agricultural regime; non-standardized demand for goods and services; vertically disaggregated production. |
| | 4.3.P.P. Critique of protectionism; free market liberalization; free trade. |
| | 4.4.P.P. Increased market uncertainty. |
| | 4.5.P.P. Changing consumer behavior. |
| **5. Agricultural production** | **Sub-Dimensions P** |
| | 5.1.P. Industrialization. |
| | 5.2.P. Commercialization. |
| | 5.3.P. Securing national self-sufficiency for agricultural commodities. |
| | 5.4.P. Intensification. |
| | 5.5.P. Surplus production. |
| | 5.6.P. Specialization. |
| | 5.7.P. Concentration. |
| | 5.8.P. Increase in corporate involvement. |
| | 5.9.P. Farmers caught in agricultural 'treadmill'. |
| | **Sub-Dimensions PP** |
| | 5.1.P.P. Critique of industrialization, commercialization and commoditization of agriculture; critique of corporate involvement. |
| | 5.2.P.P. Less emphasis on securing national self-sufficiency for agricultural commodities. |
| | 5.3.P.P. Extensification. |
| | 5.4.P.P. Dispersion. |
| | 5.5.P.P. Diversification; pluriactivity. |
| | 5.6.P.P. Farmers wishing to leave agricultural 'treadmill'. |
| | 5.7.P.P. Move from agricultural production to consumption of countryside. |
| **6. Farming techniques** | **Sub-Dimensions P** |
| | 6.1.P. Increased mechanization. |
| | 6.2.P. Decline in labor inputs. |
| | 6.3.P. Increased use of biochemical inputs. |
| | **Sub-Dimensions PP** |

| | |
|---|---|
| | 6.1.P.P. Reduced intensity of farming. |
| | 6.2.P.P. Reduced use or total abandonment of biochemical inputs. |
| | 6.3.P.P. Shift towards sustainable agriculture. |
| | 6.4.P.P. Replacing physical inputs on farms with knowledge inputs. |
| **7. Environmental impacts** | **Sub-Dimensions P** |
| | 7.1.P. Increased incompatibility with environmental conservation. |
| | **Sub-Dimensions PP** |
| | 7.1.P.P. Move towards environmental conservation on farms; critique of notion of production maximization. |
| | 7.1.P.P. Re-establishment of lost or damaged habitats. |

2. Extended Table E - Survey open questions correspondence with aspects to be measured, the dimension they refer to, the scaling from -2 (post-productivism) and 2 (productivism) process and references from literature.

| Questions | Aspect to be measured | Scaled answer: -2 more post-productivist to 2 more productivist | Literature | Dimension it refers to |
|---|---|---|---|---|
| Farm size (area owned and rented) (question 2.1.) | Effort for increasing productive area | **Land managers who:** don't manage their land, renting it to others are more post-productivists (-2); manage part of their own land, but still rent some of the land to others, are moderately post-productivists (-1); manage only their own land can be either post-productivist or productivist so assume neutral position in the scale (0); have land of their own and increase the area they manage by renting more land from others (manage more area than the one they have), are moderately productivist (1); don't have land of their own, rent the totality of the land from others, are more productivist (2). | - Silva, 2008<br>- Ilbery et al., 2010<br>- (Lobley and Potter, 2004; Hodge and Ortiz-Miranda, 2007) *in* Ilbery et al., 2010<br>- Walford, 2003 | 5. Agricultural production |
| Land cover and land use (question 2.2.) | Land cover diversification | **Land managers who:** have more than four land cover classes in the land they manage, diversify more and therefore are more post-productivists (-2); have four land cover classes in the land they manage, diversify moderately and are therefore moderately post-productivists (-1); have three land cover classes in the land they manage, are in-between moderately post-productivists and moderately productivist (0); have two land cover classes in the land they manage, have low diversification in the land and are therefore moderately productivist (1); have one land cover class in the land they manage, have low diversification in the land, promote monoculture and are therefore, more productivist (2). | - Wilson, 2007<br>- Walford, 2003 | 5. Agricultural production |
| Land cover and land use, farming practices and techniques (question 2.2. and 2.3.) | Montado intensification/extensification | **Land managers who:** maintain a very dense montado with undercover vegetation increased, promoting natural regeneration and succession (*maquis*), with no grazing or crops and often not even tree production, extensifying very much and sometimes abandoning, are more post-productivist (-2); maintain a very dense montado, with no crops or grazing, just for tree production (cork extraction) (-1); maintain a montado with a mixture of shrub areas and natural pasture or does not have montado, are in-between moderately post-productivist and moderately productivist (0); maintain a montado with a mixture of natural and/or seeded pastures, are moderately productivist (1); maintain an open and clean montado with improved pastures and crops, sometimes damaging trees and not assuring regeneration, promote a higher intensification in the montado and are therefore more productivist (2). | - Pinto-Correia, 1993<br>- Lowe *et al.,* 1993 *in* Wilson, 2007<br>- OECD, 1997 *in* Caraveli, 2000<br>- Caraveli, 2000<br>- Surová and Pinto-Correia, 2008<br>- Pinto-Correia and Mascarenhas, 1999 | 5. Agricultural production |
| | Olive grove intensification/extensification | **Land managers who:** have a traditional olive grove (irregular tree density) in a process of abandonment, not harvesting it, neither using the undercover for grazing, are favoring 'olive grove forests' and so favoring certain species and preventing soil erosion, are therefore more post-productivists (-2); have a traditional olive grove using only the pastures underneath, are moderately post-productivists (-1); have a traditional olive grove maintained under traditional or organic production, harvesting it and using the undercover for grazing and with a density of tress around 100 per hectare or do not have olive groves, are in-between moderately post-productivists and moderately productivist (0); have olive groves in integrated production mode attending to its requirements (density of trees between 200 and 340, varieties traditionally cultivated in the region, minimum soil mobilization, inter-row cover maintenance, etc.), with grazing, are moderately productivist (1); have irrigated plantation of olive trees, with more olive groves are therefore have irrigated plantation of olive trees, with a tree cover of more than 1000 trees per hectare (super-intensive production), with no possibility to explore the undercover and with mechanical harvesting, are more productivist (2). | Guzman Alvarez, 1999 *in* Loumou & Giourga (2003)<br>Loumou & Giourga (2003)<br>DGADR (2010)<br>Fleskens et al. (2009) | 5. Agricultural production |
| | Production | **Land managers who:** have a certified organic production are more post-productivists (-2); | - Wilson, 2007 | 5. Agricultural |

| | | | | |
|---|---|---|---|---|
| | mode[8] | have non certified organic production but in practice manage in a very close mode to organic, are moderately post-productivists (-1); have an integrated production, are considered in-between moderately post-productivists and moderately productivist (0); do not have any special mode of production, are moderately productivist (1); do not have any special mode of production and have more intensive irrigation methods and/or more use of biochemicals and/or more mechanization and/or use of GM crops, are more productivist (2). | - (Warld, 1993; Ilbery and Bowler, 1998) *in* Wilson, 2007<br>- OECD, 1997 *in* Caraveli, 2000<br>- Caraveli, 2000<br>- Marsden, 2008 | production<br>6.Farming Techniques |
| Product income (question 2.4.) | Product specialization vs diversification (within production) | **Land managers who:** have more than 3 products coming out of the farm, diversify very much as a way to be less vulnerable to changes, and so are more post-productivists (-2); have 3 products coming out of the farm, are considered moderately post-productivists (-1); have 2 products coming out of the farm are considered in-between moderately post-productivists and moderately productivist (0); have 2 products (one of them representing no more than 80% on the farm income), are moderately productivist (1); have only one product (representing 100% of the farm income), are more specialized and more vulnerable to market and climate change, so therefore are more productivist (2). | - Wilson, 2007<br>- Saraceno, 1994 *in* Caraveli, 2000 | 5. Agricultural production<br>4. Food regimes and agro-commodity chains |
| Multifunctionality (question 2.5.) | Multifunctionality – Hunting | **Land managers who:** promote the hunting activity through the direct management of a touristic association or rent the rights of hunting management to an association, receiving direct payment, are increasing their farming income with an activity which is not farming, and are therefore more post-productivists (-2); have in their land a hunting association from which they receive the right to hunt or other indirect payment, like a piece of game once in a while, are already taking advantage of the potential of their land for hunting, even if are not yet able to increase their income because of it, are moderately post-productivists (-1); Do not have hunting reserves in the farm or have but without any profit whatsoever (direct or indirect), are in-between moderately post-productivists and moderately productivist (0); has hunting reserve in the farm area but wished the activity didn't take place there, are moderately productivist (1); prevents the hunting activity by legally stating the farm area as non-hunting area due to the presence of grazing animals (*aparcamento de gado*) or as area free of hunting for nature conservation and/or security concerns (*área de não caça*), and so where by law it isn't possible to hunt, are therefore more productivist (2). | - Surová and Pinto-Correia, 2008<br>- Expert knowledge, previous experience from research team work and projects and present study field work (survey application) | 3. Governance of rural spaces<br>5. Agricultural production |
| | Multifunctionality – Tourism | **Land managers who:** have a tourism activity as the main source of income, representing more than 50% of the total income of the farm, are more post-productivists (-2); have a tourism activity, representing between 25% and 50% of the total farm income, are considered moderately post-productivists (-1); have a tourism activity, representing less than 25% of the total farm income, are in-between moderately post-productivists and moderately productivist (0); do not have a tourism activity but would like to or have thought about it for the future, recognize the potential of the area for tourism but haven't been able to invest towards that goal, are moderately productivist (1); do not have any income from the tourism activity, are more productivist (2). | - Evans and Ilbery, 1992 *in* Sharpley and Vass, 2006<br>- Sharpley and Vass, 2006<br>- Present study field work (survey application) | 3. Governance of rural spaces<br>5. Agricultural production |
| Ideal place of living (question 2.14.) | Multifunctionality – Housing | **Land managers who:** live in the farm and do not manage the land around the house, renting or lending it to others, are more post-productivists (-2); live in the farm and manage the farm even if it is on part-time basis, would not live anywhere else, are considered moderately post-productivists (-1); do not live in the farm mainly because of family logistics, but would very much like to live because they like it better, are in-between moderately post-productivists and moderately productivist (0); do not live in the farm but would like to, in order to better control the management of the farm, are moderately productivist (1); do not live neither desire to live in the farm and see the farm mainly as a working space, are more productivist (2). | - Van der Ploeg, 2008 | 3. Governance of rural spaces<br>5. Agricultural production |
| Multifunctionality (question 2.5.)[9] | Multifunctionality – walking paths, visits (activities not implying redraw of natural resources) | **Land managers who:** organize or promote visits to the farm, receiving direct or indirect income, are more post-productivists (-2); incentive this kind of activities but does not intend to receive money for it, are considered moderately post-productivists (-1); don't oppose or favor people walking around or the farm size is not adapted or interesting for this kind of activity, are in-between moderately post-productivists and moderately productivist (0); don't appreciate very much having people walking around the farm, but does not act in the sense of preventing this from happening, are moderately productivist (1); don't want and don't allow for hikers or other visitors to enter the farm, sometimes even preventing access to public areas like archeological sites or water lines, are more productivist (2). | - Present study field work (survey application)<br>- Sharpley and Vass, 2006 | 3. Governance of rural spaces<br>5. Agricultural production |
| | Multifunctionality – Bee-keeping | **Land managers who:** manage directly the bee-keeping activity, and take profit from it, are more post-productivists (-2); manage directly or gives incentive for others to bee-keep in their farm, having than an informal indirect return – honey, because it is an activity they like, are considered moderately post-productivists (-1); don't have bee-keeping in their farm and never thought of having, show not much interest in it, are in-between moderately post-productivists and moderately productivist (0); don't like the activity of bee-keeping, neither see interest for the future but still allow for other to do it, when they ask, are moderately productivist (1); do not want bee-keeping themselves and also don't allow for other to explore it in the farm, are more productivist (2). | - Surová and Pinto-Correia, 2008<br>- Present study field work (survey application) | 3. Governance of rural spaces<br>5. Agricultural production |
| (question | Livestock | **Land managers who:** have no livestock, are more post-productivists (-2); have all livestock | - Zalidis et al., 2002 | 5. Agricultural |

[8] *Production mode* aspect is directly linked to organic farming, integrated production, traditional or more intensive production methods with generalized use of biochemicals. The aspects of irrigation, use of biochemicals and mechanization/soil mobilization should be considered separatly but due to lack of data to correctly positionate answers along the P/PP scale (according to agrarian experts) their were used as associated aspects to the *production mode.*

[9] The multifunctionality question also included nature conservation actions and/or contribution in farm management. However data collected was unable to be categorized along the scale, as further explained in the discussion of the results.

| | | | | |
|---|---|---|---|---|
| 2.6.) | Unit (LU) (*Cabeças normais – CN*) | in extensive regime between 1,4 LU or less per hectare, are considered moderately post-productivists (-1); have a mix of extensive and semi-extensive (between 1,5 and 2,8 LU per hectare) regime livestock and no livestock in intensive regime, are in-between moderately post-productivists and moderately productivist (0); have part of their livestock in intensive regime with more than 2,8 LU per hectare, are moderately productivist (1); have all their livestock in intensive regime with 2,8 LU or more per hectare, are more productivist (2). | - Soares *et al.*, n/d<br>- Decreto-Lei nº 214/2008<br>- Present study field work (survey application) | production |
| (question 2.7.) | Self-sufficiency in livestock fodder | **Land managers who:** guarantee all food for animals within the farm, are more post-productivists (-2); guarantee the majority (more than 50%) of the food for the animals within the farm, are considered moderately post-productivists (-1); guarantee 50% of the food for the animals within the farm or do not have animals, are in-between moderately post-productivists and moderately productivist (0); buy the majority (more than 50%) of the food for the animals outside the farm, are moderately productivist (1); buy all food for animals outside the farm, are more productivist (2). | - Van der Ploeg, 2008<br>- Wilson, 2007<br>- Expert knowledge (meetings) | |
| (question 2.8.) | Subsidy quality (CAP Pillar 1 or 2) | **Land managers who:** Do not receive subsidies, are more post-productivists (-2); receive only subsidies from CAPs pillar 2 (agro-environmentals, protected areas, etc.), and none from pillar 1, are considered moderately post-productivists (-1); receive subsidies from both pillar 1 and 2, are in-between moderately post-productivists and moderately productivist (0); receive subsidies from CAPs pillar 1 (cattle, sheep, olive groves, olive oil, etc.) and none from pillar 2, are moderately productivist (1); receive only subsidies from CAPs pillar 1 (cattle, sheep, olive groves, olive oil, etc.), are more productivist (2). | - Ilbery et al., 2010<br>- Present study field work (survey application)<br>- Expert knowledge (meetings) | 1. Agricultural policies |
| (question 2.9.) | Subsidy proportion within total income | **Land managers for whom:** the subsidy proportion in total income is 0%, are more post-productivists (-2); the subsidy proportion in total income is between 0 and 25%, are considered moderately post-productivists (-1); the subsidy proportion in total income is between 26 and 50%, are in-between moderately post-productivists and moderately productivist (0); the subsidy proportion in total income is between 51 and 75%, are moderately productivist (1); the subsidy proportion in total income is more than 75%, are more productivist (2). | - Wilson, 2007<br>- Expert knowledge (meetings) | |
| (question 2.10.) | Product commercialization ('Food miles'/local and regional development) | **Land managers who:** generally don't sell their products (family consume only or providing/selling for neighbors, etc.), are more post-productivists (-2); sell most of their products in local markets, stores and associations, are considered moderately post-productivists (-1); sell most of their products to intermediaries and buyers at the regional and national level, are in-between moderately post-productivists and moderately productivist (0); sell any of their products in big chain supermarkets (national and multinational), are moderately productivist (1); sell part of their products abroad (export), are more productivist (2). | - Wilson, 2007 | 4. Food regimes and agro-commodity chains |
| (question 2.11.) | Consumption | **Land managers who:** Consume, themselves and respective families, approximately the totality of food from their farm, are self-sufficient and are therefore more post-productivists (-2); consume around 75% of the food from the farm, are moderately post-productivists (-1); consume around 50% of the food from the farm, are in-between moderately post-productivists and moderately productivist (0); consume around 25% of the food from the farm, are moderately productivist (1); Don't consume anything coming from their own farm, are completely dependent on food produced outside his farm, and so are more productivist (2). | - Van der Ploeg, 2008 | 4. Food regimes and agro-commodity chains |
| (question 2.12.) | Water line management | **Land managers who:** manage water lines with nature conservation and biodiversity in mind, doing water line recovery actions as plantation of species and others, are more post-productivists (-2); manage water lines with some environmental concerns (less than the previous) are moderately post-productivists (-1); do not have water lines in their property, are in-between moderately post-productivists and moderately productivist (0); don't do any action towards water line management, are moderately productivist (1); Cut water line vegetation frequently and make no reference of environmental issues, are more productivist (2). | - Expert knowledge, experience from past and present field work in the study area | 7. Environmental impacts |
| (question 2.13) | Hedgerows | **Land managers who:** have and maintain hedgerows in their properties, are more post-productivists (-2); have productive hedgerows, are moderately post-productivists (-1); do not have but would like to, recognize the value of hedgerows are in-between moderately post-productivists and moderately productivist (0); don't have hedgerows and never thought on this matter, are moderately productivist (1); don't have and do not see the point, maximize productive area, and are therefore more productivist (2). | - Schmitz et al., 2007<br>- Groot *et al.,* 2010<br>- Present study field work (survey application) | 7. Environmental impacts |
| (question 2.15) | Future perspective (Immobilism versus Innovation) | **Land managers who:** have ideas for the future related to non-productive activities and of great dimension/investment, are more post-productivists (-2); have ideas for the future related to non-productive activities and of smaller dimension, are moderately post-productivists (-1); want to maintain in the sense of continuing a positive project, are in-between moderately post-productivists and moderately productivist (0); hope to be able to maintain in the sense of surviving in the present conditions, are moderately productivist (1); see no future in agriculture and see no possible options to continue, and so are more productivist (2). | - Wilson, 2007<br>- Expert knowledge, previous experience from research team work and projects and present study field work (survey application) | All dimensions |

3. Typologies identified (*ideal land management types* and *productivist/post-productivist action & thought land management types*) in two types of cartographic information: landscape character areas (Abreu *et al.,* 2004) and land cover for the Monfurado Site (ERENA, 2004) (total of 4 maps).

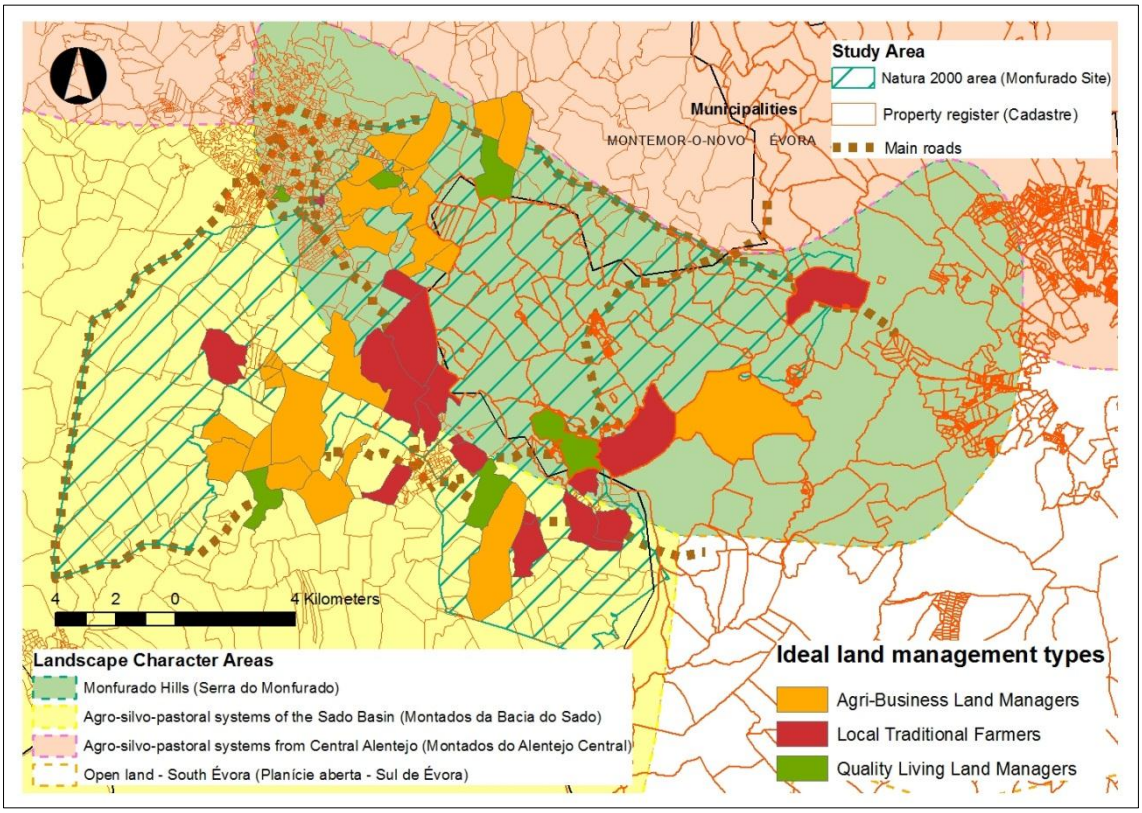


Figure 23 – Ideal land management types distribution in the study area, overlapped with the landscape character areas.

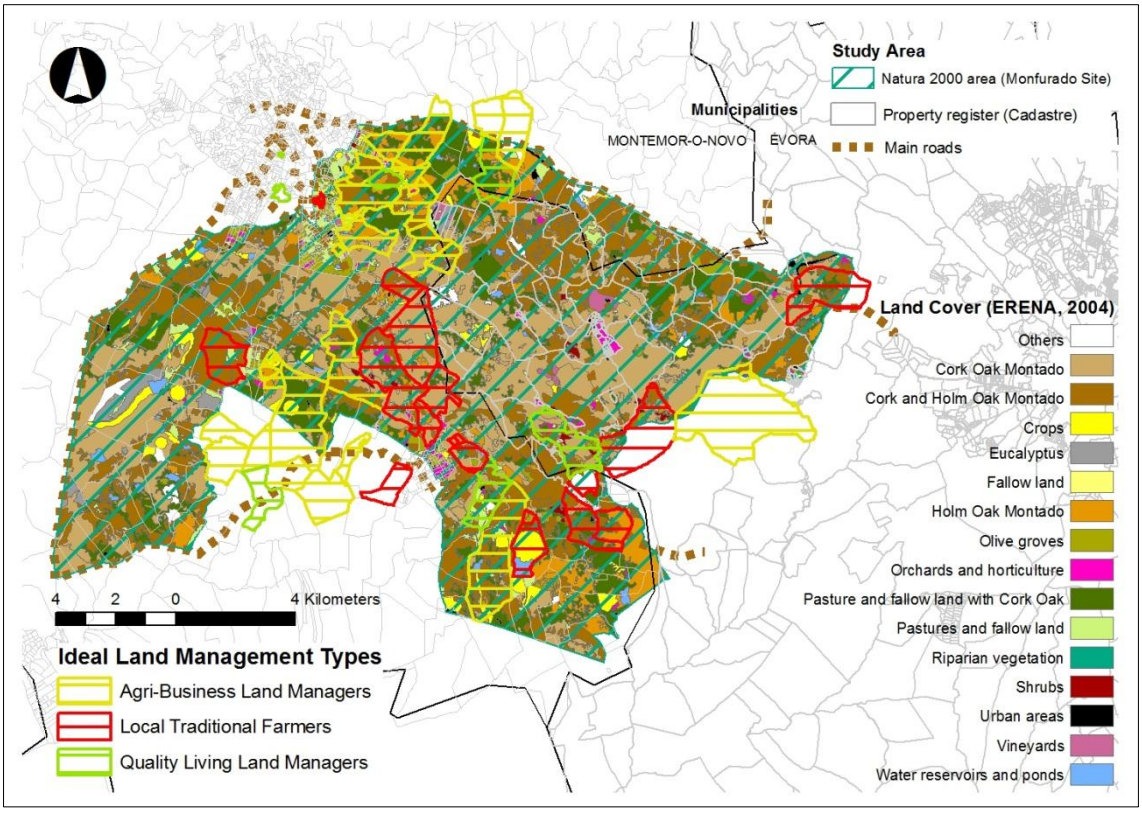


Figure 24 - Ideal land management types distribution in the study area, overlapped with the land cover.

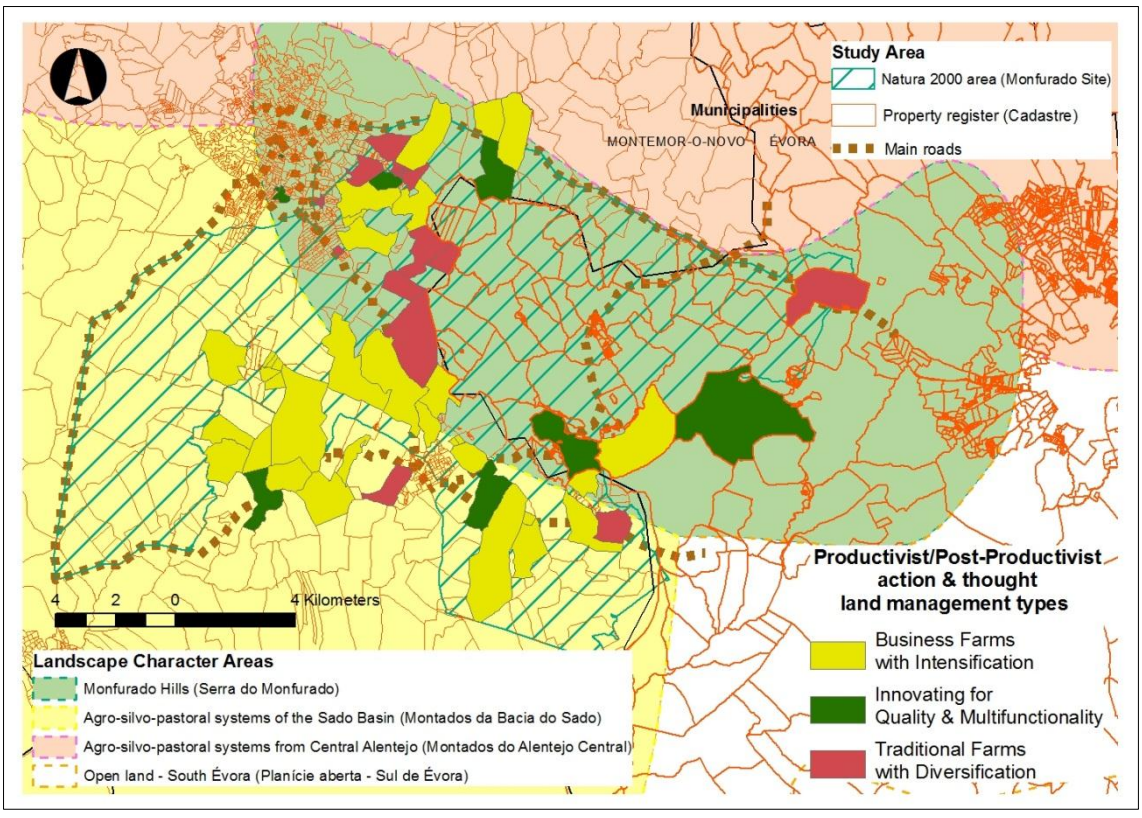


Figure 25 – Productivist/Post-Productivist action & thought land management types distribution in the study area, overlapped with the landscape character areas.

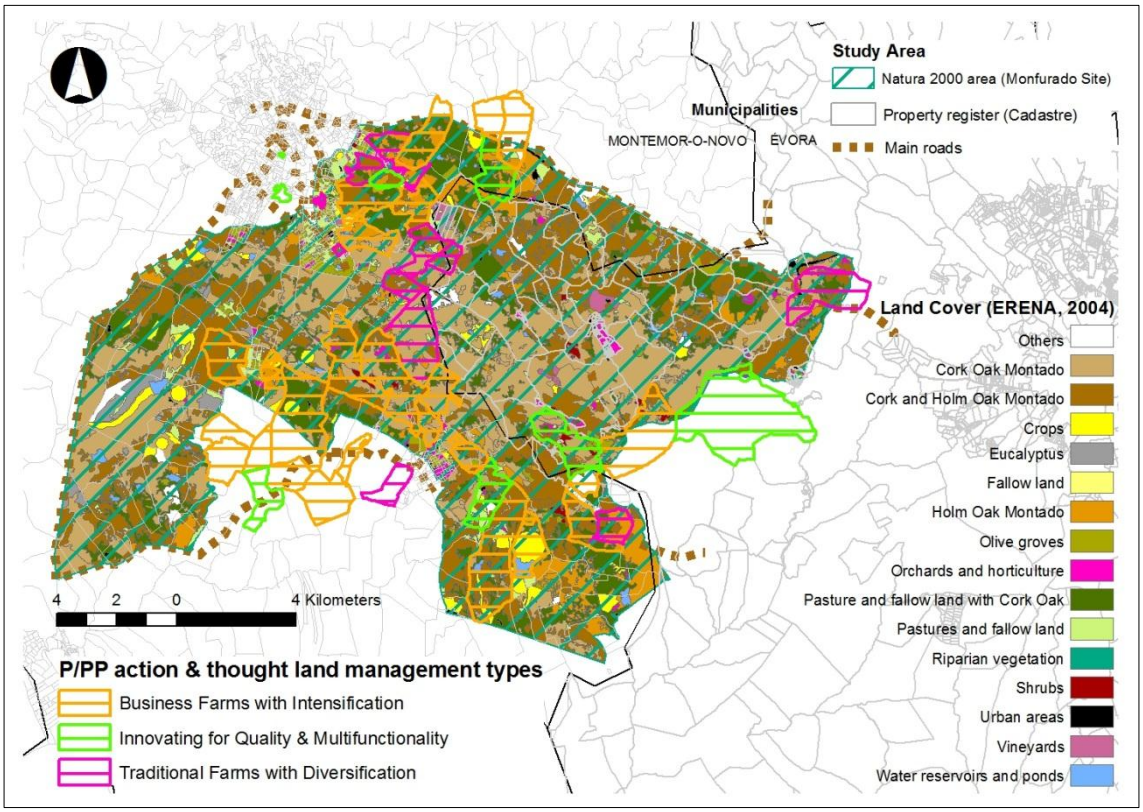


Figure 26 - Productivist/Post-Productivist action & thought land management types distribution in the study area, overlapped with the land cover.