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Governance Discourses Reflecting Tensions in a Multifunctional Land Use System in Decay; Tradition Versus Modernity in the Portuguese Montado

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Abstract: The montado is a silvo pastoral system, and the dominant land-use in the region of Alentejo (Portugal). It bears high nature, socio-economic, and landscape values, shaping the strong cultural identity of the region. Despite these values, it has been under decay over the last decades, indicating the inefficiency of current governance strategies. In this paper, we argue how three main discourses can be found that underpin different governance strategies in the montado: The heritage discourse, the modern production discourse, and the land stewardship discourse. These discourses frame farmers' decisions, though not always explicitly. The discourse analysis is grounded on an analysis of the relevant literature and research results from diverse projects, including an analysis of media representation of the montado since the 1990s, participatory observations, and 30 in-depth interviews with key stakeholders. Each of the three discourses identified are characterized in terms of key farming developments and defining elements, their time-scopes, the ways in which they are perceived by society, their measures of success, and underpinning institutions and power mechanisms. We argue that these discourses co-exist today, and this is a cause of increased tensions in montado governance strategies, hindering more effective and sustainable potential alternatives for the system.

Keywords: montado; silvo-pastoral system; multi-functionality; discourse; tension; governance; Portugal

1. Introduction

1.1. The Portuguese Montado: A Multi-Functional and Valuable Agro-Ecosystem

Multi-functional agro-ecosystems, including the Portuguese montado, are human-managed land systems that are at the foundation of multiple ecosystem services, including agricultural production, regulating bio-geochemical and ecosystem cycles and, ultimately, supporting human well-being [1]. However, in many cases, their inadequate governance constitutes a threat to achieving sustainability. Historically, agro-ecosystems have been considered in relation to 'natural' objects, like bio-diversity, soil, water, or air. However, the effects of social constructions, such as organization, concepts, research practices, and expert language, are increasingly acknowledged in their role for policies and decision-making [2]. This shifts the focus in agro-ecosystems towards improved disentanglement of the balance between their ecological and socio-economic aspects.

The montado silvo-pastoral agro-ecosystem illustrates this issue, as diverging and at times mutually incompatible governance models are promoted by different actors acting at the farm and landscape levels [3,4]. These governance models have different impacts on the balance of this complex silvo-pastoral system. The conundrum of governance models simultaneously in place for the montado must thus be considered as a key force driving its degradation, decreasing in extent, in environmental health, and in economic prospects [3,5–7]. To better disentangle current trends of change, novel approaches are needed that focus on the interplay between the wide, and yet mostly unveiled, range of driving forces influencing governance decisions in such complex land use systems [3,5], including also those related to the complex patterns of human behavior and ethical standards [8].

The montado covers an area of ~1,200,000 ha in southern and central Portugal, a relatively low extension when compared to the similar dehesa, which occupies ~3,000,000 ha in South-Western Spain (Figure 1). As with many other silvo-pastoral systems around the world, it is an emblematic land use system and a highly valued landscape, characterized by open canopy woodlands of cork (*Quercus suber*) and holm oaks (*Quercus ilex*), combined with natural or cultivated grassland in the undercover, and also at times with shrub species, such as *Cistus ladanifer*, *Rosmarinus*, and *Thymus Officinallis*, and other ligneous species characteristics of the Mediterranean context. Its spatial pattern and configuration are highly irregular, resulting in a diverse and fuzzy landscape (Figure 2) with positive implications for biodiversity [1] and also for the character and appreciation [9,10] and the functionalities [11,12] of the resulting complex landscapes.

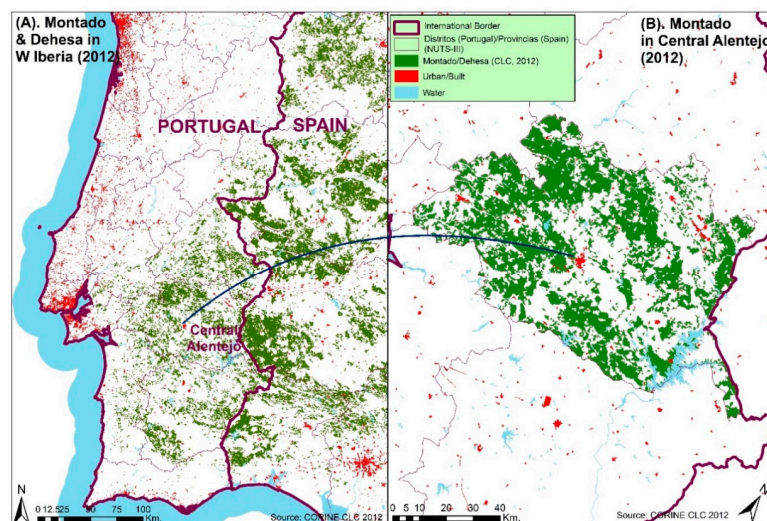


Figure 1. Distribution and fragmentation and patchiness of the area occupied by montado/dehesa in W Iberia (A) and by montado in Central Alentejo (B).



Figure 2. The montado landscape: fuzziness in the pattern and vertical structure of a high nature value farming system.

The undercover is used for extensive livestock grazing of cattle and sheep, and occasionally Iberian pork. Livestock range outdoors all year round [12]. The farm property structure is latifundia, with very large estates ranging between 200 and 2000 ha. These human shaped ecosystems present high levels of habitat heterogeneity [3]. This is due to the diversified species composition and tree cover density, in combination with the presence of an undercover mosaic of grasslands with dispersed or patchy shrubs.

Traditional agricultural crops, including wheat, barley, and oats, in the undercover are only marginally used in the montado nowadays. In their place, virtually only fodder crops are cultivated, especially in larger farm units where there may be farm plots with no tree cover that allow for cultivation, generally in a share not exceeding 20% of the farm area [5].

The state and preservation of the montado is a frequent focus of discussion in the European arenas where high nature value farming systems, along with their associated landscapes and cultural identities, are on the agenda [13,14]. These silvo-pastoral systems host to a large extent the cultural and natural values that European society most appreciates in rural landscapes and offering a balanced combination between farming, nature conservation, and rural heritage [15,16]. In effect, the montado is considered as one of the most iconic high nature value farming systems of Southern Europe [12,15], but also as a decaying one [17,18]. The oak trees are protected via national legislation (Lei 33/1996 de 17 de Agosto; Despacho 31745/2008 de 12 de Dezembro) and the montado itself is dominant in many protected areas, such as Natura 2000 sites and natural parks [12,15].

1.2. Current Pressures and Risks in the Montado

Despite an acknowledgement of its multiple values, recent assessments have demonstrated that the total extension of the montado has been decreasing for the last 25 years, with 5000 hectares lost on average per year between 1990 and 2012 [17,18]. However, such a decline is not primarily due to decreases in the tree cover or to replacement of the silvo-pastoral system by other land use systems. Instead, it is ultimately driven by a reduction of natural tree regeneration. This process leads to a reduction in tree density, which in turn leads to larger openings in the montado land cover [18], thus leading the system towards progressive fragmentation and patchiness (Table 1). One might hypothesize how such a process of degradation may be driven by current governance regimes that do not support the reproduction of such a complex multi-functional land use [3].

Table 1. Quantitative/landscape indicators of increasing fragmentation and patchiness in the montado in Central Alentejo (in during the period between 1910 and 2006 (based on baseline data in [17])).

	1910	1960	1990	2006
Total area of montado (km²)	3152.95	4030.35	3544.15	3466.77
Relative area (% Central Alentejo)	43.60	55.81	49.16	47.68
Number of patches	116	208	248	306
Mean patch size (km²)	27.18	19.38	14.29	11.33
Variance (%)	5.54	4.41	3.71	3.35
Maximum patch size (km²)	1838.86	2496.06	2019.46	1987.46
Minimum patch size (hectares)	0.33	0.93	0.41	0.27

1.3. The Aim of This Paper

A clear need exists to complete the overall picture about the governance of the montado and thus also of its capacity to enhance its future sustainability [3]. In response to this, the aim of the paper is to explore the discourses that underpin different governance models for such a silvo-pastoral system, and to discuss how these discourses are framing and influencing decision-making by farmers and land managers, and also influencing the institutional arrangements in place.

An inquiry into the discourses that underpin a particular set of governance practices is central for the analysis of environmental sustainability and related opportunities for policy innovation in

the rural context [19–21]. Thus, we argue that such a discursive approach shall contribute to a better understanding of the current trends in complex and multi-functional land use systems, as exemplified through the montado case study, focusing on the role of decision-making as a key driver for sustainability.

A discourse can be defined as an entity of signs that assigns meaning to particular objects, subjects, and statements [22]. The emphasis on language as a world-making device implies a notion of power which is different from concrete and physical oppression; rather power is hereby seen as an abstract construction of reality focusing on the particular capabilities of the subjects. Thus, power grows from within and discourses do not act directly on our conduct, but rather guide such conduct by influencing possible outcomes [22].

Following the argumentative turn in policy and planning studies, several scholars have set out to explore the connection between governance and discourses [8,19]. This also reflects a change in the mode of governance, as learning and argumentation are increasingly replacing top-down modes of governance as central steering mechanisms in environmental governance [22]. Discourse analysis can be placed in the interpretative or social constructionist tradition in social sciences [20]. The explicit emphasis on language as a world-making device enables the formulation of questions concerning the genesis of the ideas, concepts, and categories through which meaning is given to social and physical phenomena, and therefore also produced and reproduced through a set of practices [20,23]. Therefore, under a 'Foucaultian' interpretation of discourse analysis, power does not have a visible face or a clear origin, but it is a process whereby certain outcomes gain preference over others. Such an interpretation of discourse analysis as a valid tool has successfully been applied to help unravel hidden relations of power and the complexity of decision-making processes in the analysis of policies related to forestry [24], environmental policy [21], food production [25], and more generally on improving the environmental conditions through more effective planning [21] (see also [21] for an overview). This makes discourse analysis of especial relevance for the analysis of governance in a system, the montado, where all of the aforementioned issues are mutually intertwined.

2. Methods

Discourses are thus regarded as important components of the governance process, since they provide a structure to knowledge and grant meaning to decisions, thereby underpinning the proliferation of a particular mode of agriculture [26]. By unfolding the diverse discourses in the montado, we will therefore explore the rationale that governs farmers' decision-making and examine how relevant governance decisions can be explained. Also, adopting a discursive approach will help us discern which elements of the system are prone to end up in conflict or in synergy with the remaining ones. Furthermore, it adds the social worldview component of decision-making to other perspectives already undertaken by other authors examining the montado, including: Landscape preferences [9,10]; governance and management regimes [15] and their relation to land-cover [3]; economic policies [27]; and tensions arising from public policy implementation [28].

All the former issues are placed at the core of the debate on the future trends and sustainability of the montado. Furthermore, a similar approach has already been chosen to help unravel the sustainability of decisions undertaken at the farmland and wider countryside [29] levels, and to re-examine the contested definitions of post-productivism [30] and empowerment and rurality [31]. These are all issues that have been already argued to pose key and largely unresolved challenges to the montado, and other multi-functional systems.

Thus, it seems sufficiently grounded that when analyzing land-use governance it is useful to explore the underlying discourses. These discourses define the statements that are considered legitimate about a given space or topic among a group of farmers and the wider network of technical, economical and policy actors. Hence, in relation to governance, the discourse can be seen as a set of socially accepted logical arguments that connect actions with values. Different governance systems therefore build on different fundamental values and it is the function of the discourse analysis to

elucidate differences amongst governance models. Discourse analysis can thus help unveil the tacit normative foundations and routines that are taken for granted on which the farming system is based, thus being an important analytical tool to unfold how these power relations play out in the case study setting [31]. Hence, discourse analysis problematizes the linguistic, identity, and knowledge basis of policy-making [19]. In order to perform an analysis of the governance discourses of the montado, we explored the argumentation that emerges when farmers and other relevant stakeholders describe and explain their individual conduct and decision-making.

In our research, our intention was therefore not to judge particular regimes of knowledge and truth, rather the ambition was to analyze how particular discourses give meaning to the decisions that are made by various actors. We therefore explored the discourses in the justifications that are provided in the different governance models currently encountered in the montado. To do this, we retroactively explored different sources of information collected over the past 10 years, which jointly provided us with a comprehensive insight into the governance discourses related to this particular land-use system and region. Such sources included:

- (a) A review of published and unpublished results from research projects developed by the authors over the last 10 years, where governance options and decision-making drivers have been explored [32,33]. A first research project in 2011 focused on landscape preferences in the Alentejo region, where the reasons for the stated preferences were also part of the questions. The total sample of individuals in the survey was $n = 1066$, and although farmers and land managers were only 20% of the total cohort of citizens interviewed, the analysis of the data collected demonstrated clearly the values they associate with the montado, a task particularly tough given the fuzziness in the system [34,35]. During research on farmers' attitudes and behaviors through a survey to 360 farmers in 2013 in the whole region of Alentejo, the interviewees were asked about their attitudes (what they value, what they find most important to preserve) towards the montado, and also how this influenced their management and governance options, e.g., their behavior. These data were analyzed in order to identify consistency and conflicts between attitudes and behaviors. These are aspects that have been thoroughly researched for many systems across the world [36–39] but that had not yet addressed in depth for the montado. More recently, in 2015, during a study aiming to identify relations between governance models and biodiversity outcomes in the montado, farmers were also asked about their representation of the system, and the content analysis of the interview responses led us to identify severe tensions between representations of the montado as strongly supported on the forestry component, and the management options highly focused on livestock. The most recent study, with a survey to 150 farmers applied in 2017 to 2018 (and therefore still unpublished results) under the SUFISA-Sustainable Finance for Sustainable Agriculture and Forestry H2020 research project (www.sufisa.eu). The survey focused on the institutional arrangements for the management and governance of the montado and was developed in combination with the analysis of the media presented in the following point. All the survey data were treated statistically and from the multiple analysis, different types of results emerged, which together contributed to help us identify which discourses emerge strongly when the montado is the focus.
- (b) An analysis of the media coverage of the montado since the 1990s, included in the SUFISA H2020 research project, approached the sustainability of the montado, among other case studies across Europe, from a farming systems perspective. This analysis consisted of a consultation of media sources referring to the montado in Portugal (Appendix A), which were published between 1992 (coinciding with the MacSharry Common Agricultural Policy (hereinafter, CAP) reform), and May 2006. We examined sources of information which were considered of direct relevance to obtain a clear overview of the public opinion about changes in the montado. To identify such sources, we consulted with the experts and key stakeholders with whom knowledge co-construction about sustainability for the montado was envisaged through individual interviews, advisory group meetings, focus groups, and participatory workshops (for more information on

how the analysis was conducted, including the selection of media, keywords, and techniques employed, as well as full sets of the results obtained, see [40]). The key entry points for the conceptual analysis comprised the transition (and co-existence) between modern farming/farmers as primary producers and services-oriented farming/farmers as land stewards. The analysis focused on a better understanding the key conditions and strategies driving changes in the main discourses found in the sector [40].

- (c) Participatory observation. This has been performed throughout participation along a 10 year period, via regular meetings organized by different actors in the sector, and where land owners and managers of the montado expressed their opinions. Lately, the participatory observation has been mainly conducted under the *Tertúlias do montado* [41], a participatory discussion forum organized at the University of Évora and open to all those interested in the montado, with monthly meetings being held since April 2016.
- (d) In total, 25 in-depth interviews to montado land-owners and managers, as well as other stakeholders involved in its governance (also within the SUFISA project, see Appendix B) were conducted with a wide range of actors, such as farmers, quality and trade agents, policy makers, industry representatives, rural development specialists, and nature conservationists [42]. Questions in these interviews (Appendix C) covered the knowledge, interests, and impressions of interviewees in relation to the conditions and strategies that influence the current state of the montado sector, and also encouraged them to challenge the underlying assumptions in the current discourses [42].

The identification of the three discourses proposed in this paper was reached through a heuristic comparison of the diverse statements expressed by different stakeholders, leading in a first step, to the generation of the different discourses as ideal types. These statements were then examined in relation to what current trends in social theory indicate [43] regarding three main aspects, namely: (a) How language is used to ‘construct’ any new ideas or interpret information; (b) looking for inconsistencies of meaning, via comparison of the assumptions they reveal; and (c) the related implications and any achievements made through each discourse.

3. Results

Interacting with multiple stakeholders, one consistent observation is that different actors, including different groups of farmers and land managers, reproduce different discourses. In turn, each discourse supports one specific governance model [26]. The interpretation of the statements by farmers and stakeholders has been summarized according to separate categories that classify each discourse, and that were obtained following the various steps and analyses described in the methods sections. Table 2 synthesizes the results obtained in the characterization of the discourses and how they were differentiated. The organization of the Table reflects the methodological options undertaken. According to the steps and sources described in the methods, the evidence gathered was analyzed and codified in a search for discourse descriptors, which are hereby synthesized along the rows. Each column provides the different dimensions which jointly configure one discourse. This table only provides an overview of what differentiates the discourses, when examined following a list of relevant criteria. The detailed characterization of each discourse follows in the text, with quoted statements demonstrating what has grounded the differentiation of each discourse.

3.1. The Heritage Farming Discourse

This discourse is the one with the longest historical trajectory. It is closely related with highly stratified and inflexible social structures in the region and with the large estate ownership by the well-established and wealthy families in the top of the regional social structure. The property rights and the governance of each farm are inherited from each generation to the next. Land-owners have

received their properties from their ancestors and they will be passed on to their children and the coming generations. Land is only sold in cases of financial *déroute*.

In Portugal, legally, it is not possible to divide land properties through succession, and the size of farm units has often increased through marriages within these large farming families.

First and foremost the montado is a legacy that needs to be preserved. (Farmer A)

This farm has been in the family for many generations. I have studied in Evora, agronomy, and I have worked in other farming businesses, but always helped in the house (the farm unit). At a given moment we decided, with my father, it was my time to work full time in the farm. (Farmer B)

This is a highly conservative and closed social group, which despite the modernization of social rules and the Revolution period in the 1970s, has kept its internal functioning quite unchanged and maintained land ownership. This land ownership structure, traditional extensive farming practices, silvo-pastoral landscapes, as well as the very large and whitewashed farm buildings, are still seen as the agricultural backbone of the landscape character in Alentejo—despite the modern intensive land uses emerging over the last decades (wine, intensive olive, horticulture) with a much higher financial turn-over and external visibility. Large farmers consider their land properties as part of their family heritage, thus being perceived as much more than mere production units.

Table 2. Main characteristics of the three dominant discourses in the montado today.

Montado	Heritage Farming	Modern Production Farming	Land Stewardship Farming
Developments in the Agricultural Sector	19th century and first half of the 20th. Strongly coupled with the close relationship between land ownership structure (<i>latifundia</i>) and the social structure in Alentejo (large land-owning families as social elite and landless workers with poor life conditions). Extensive and highly diversified farming in very large estates. Farming also as an instrument for preserving the social structure and the cultural heritage.	Started during the 1960s and 1970s of the 20th Century, with a break during the revolutionary period (1974–1975), and again rising following the integration of Portugal in the European Union. This discourse entails the modernization of agriculture, an increased mechanization and rationalization of farm work, which became less labor intensive and more mechanized. Investments in buildings, fencing, and irrigation.	Started following the agri-environmental stage of the CAP in 1992, but mainly after 2000. Awareness of nature relevance and societal expectations concerning the montado. Farming as an ecosystem services provider which needs to be paid for, as otherwise they will not be maintained.
Origin	The <i>latifundia</i> land structure, where large estates from the former religious orders were bought by middle and upper-class wealthy families during the 19th century.	Technology and mechanization capacities; models imported from other European countries. Increase in labor costs and less capacity to hire massive labor.	Environmental awareness. Agri-environmental discourse and payments. Economic constraints and requirement to find new income sources.
Central Concepts that Define the Discourse	Rural culture Land estate Mixed agro-silvo-pastoral system	Modernization Rationalization Specialization Income-based decisions	Nature conservation Market Environmental services Farming as nature keeper
Temporal Perspective	Generational perspective	Shorter-term perspective (financial gains)	Longer-term perspective (intergenerational)
How Is the Surrounding Society Perceived?	Farming is the backbone of regional society.	Hostile. Less labor availability, more demanding and less docile workers. Hostile dominance of communism in the regional politics.	As a market and as driver of supportive public policies.
Central Actors	Large land owners and their families.	EU support schemes and labor wages.	NGOs, Media, EU Agri-Environmental Schemes.
Institutional Underpinnings	Cultural and tourist sectors promoting the montado as a heritage asset of the Alentejo region but not clear supporting action or schemes and with no connection with CAP schemes or nature conservation policies.	EU CAP policies implemented through schemes at the national level with a sectoral view on production and with no systems perspective. Disconnection between CAP Pillar I and Pillar II goals and supporting schemes.	No clear message from state institutions No interaction between environment and production state actors.
Power Mechanisms	Land ownership and relation with landless workers. Maintenance of coherence between social structures and farming activities (excluding land concentration through marriage).	Land ownership. Large land-owners and their connections with institutional actors at national level (Ministry of Agriculture); income concentration.	International acknowledgment of the natural and cultural values of montado and international networking. Influence on the definition of state/EU payments schemes and control mechanisms.

When looking at this farm we could have two visions: fill it with cows and have the highest possible income, or take profit of a heritage which was there already, which was left to me by my predecessors,

and which I want to leave to my successors as something better than what I got, and also because I feel for it. I see farming partly as an economic activity, but mainly a passion. (Farmer A)

The role of the land owner is thus to keep this heritage, along with the maintenance of production practices and social norms. These concerns emphasize a clear understanding of the tasks and responsibilities of a land owner, and those of a land worker, how the land owner and the land worker should behave, how the land owner should handle the selling of key products (cork, wood, beef), etc. Land use practices and social practices seem to go hand in hand, guided by the sense of keeping traditions and preserving the family, but also by contributing to the maintenance of the regional heritage.

(. . .) in the old times there were many more people working in the montado with specialized skills. They knew what they were doing. Not now, and this is damaging the montado. 50 years ago the montado owners were people who had worked a lot to get to know their montado. (Farmer C)

In this discourse, a very important goal of the land owner is to keep the montado healthy, so as to pass it on to the coming generations. Thereby, intensification of production and overgrazing as a result of new economic conditions and support schemes are negatively perceived or perceived with a considerable degree of reservation. Investments in the montado, for any type of innovation, concerning structure, products, marketing, or the organization of labor, are not on the agenda either. The issue is not that innovation and investment are perceived as negative: They remain simply unseen or are miss-considered.

If we want to preserve the montado, we cannot do short-term accountability. We need always to think long-term. (Farmer D)

This discourse is also very often found underlying the national and international literature on the montado, when the system is presented and described for a wider readership. Besides its multifunctionality and uniqueness, the montado is presented as a very old system, rooted in Roman times, adapted to the natural constraints of the Alentejo region, and defining a way of life for the local population [12,15].

This unique landscape corresponds also to a unique land use system. The montado has been developed along time in Portugal, in order to improve the use and valorization of the limited resources in a region of Mediterranean climate and poor soils. Besides its intrinsic characteristics, this system is a source of learning and inspiration on sustainable and multifunctional agriculture and forestry models, which are aimed for today in the international sphere. (Green Book on the montado, a joint production of researchers and technicians) [12]

Together these forests and woodlands form a certain type of landscape that has evolved over centuries as a special mix of nature and nurture that is the very heart and soul of the Mediterranean region. Indeed, the sheer beauty, mystery and profound cultural significance of the cork oak and cork oak landscapes must not be overlooked at any point in our journey. [15]

3.2. The Modern Production Farming Discourse

It is a recent discourse, and the one linked with the trends for farming specialization and intensification, which has by large driven European agriculture change since the middle of the 20th century. It is linked with a strong belief in farm technology as a way to improve the performance of production factors, the farmer as an entrepreneur, and the farm business as an income driven activity.

The only thing that makes sense is to be full time farmer with the main goal to increase production. (Farmer E)

If it is a private property, there needs to be economic rationality. The economic perspective is fundamental. The environmental questions need to come after the economic ones. (Farmer F)

A key argument in this discourse is the need to increase profitability in the montado, reducing costs of production, and increasing productivity and the competitiveness of montado farms in an international context. A key step to achieve this has been the reduction of basic-skilled labor and the intensification of production: Specialization and concentration in one type of livestock, increased production through a higher grazing intensity, introduction of irrigated areas for intensive fodder production, and increased dependency on external fodder import.

The most important is to get money. Is to sell the beef at a good price so that we can face the expenses. Finally, I live on what? I live from veal beef and from subsidies. If they will go down I would need to set apart fertilization or other governance operations. (Farmer E)

I have been investing, now I have one pivot more for irrigation, so that I can produce enough feed for the animals. (Farmer F)

Official statistics and scientific literature both point out for the last few decades of the 20th and first decade and a half of the 21st century to a gradual concentration of the property in fewer hands, whilst the production of key commodities, such as beef meat and cork, has steadily increased [7]. This indicates a concentration of power and bargaining capacity within the market, granting larger family farms a competitive advantage. Whilst the need for financial and economic sustainability as well as resilience are frequently employed to underpin this second discourse, indeed, the view seems to be more on short-term (within this generation) profit gains and competitiveness in the current policy and financial framework.

This discourse is closely linked to the evolution of CAP measures and related payment schemes implemented in Portugal before pillar II emerged (1992). The pursuit of a productivist farming practice in the montado has been based on a double foundation: Whilst on the one hand it did aim at rationalizing agricultural practices and production through the adoption of market-based mechanisms and a neo-classical economic approach (laissez-faire) to decision-making, on the other hand, it did largely rely on publicly subsidized CAP-based payments to increase production. At the same time, power relations within this discourse have been applied to the construction of the policy mechanisms which favor an increased number of animals per area with little concern for the capacity of the area to feed these animals.

For the future I would have as much livestock as the CAP will allow me to. Today I have the maximum I am allowed to, in order to receive the premium. I cannot have more because they control how much I have. But if you have invested, you also need to increase the rate of livestock heads per hectare, in order to cover the expenses. (Farmer G)

Support for animal production has so far been kept as a coupled payment (payment dependent on production quantities), and heavily focused on cattle production, rather than the production of sheep or Iberian pig (not subsidized), which were previously more frequent in the montado. Sheep are less demanding in fodder and have a lesser impact on the soil, are better adapted to an extensive governance model which relies on grazing in natural pastures, and thus require very little investment in pasture improvement or fodder production. Cattle mean higher productivity but are more demanding in terms of fodder intake and have greater impacts on the soil and tree roots. Increased head payments for cattle, while sheep payments have been maintained quite low, resulted in a fast increase in the number of cattle heads and a decrease in sheep, overall, in the region.

The montado is under severe pressure. There is too much cattle. As I also have. It is obvious. I have cork every 9 years, and cattle for veal beef every year, and the cattle yield a very good income while the cork does not. (Farmer E)

There should be other type of subsidies. There are no support payments if we want to install new buildings for the sheep, and with no stables the sheep cannot stand the winter. If there were more targeted subsidies, more people would go for sheep. (Farmer H)

This is a discourse which is still largely active, particularly among larger land owners, with stronger lobbying capacity, and also the possibility to access new international markets for the export and trading of meat, cork, and other produces. Although neighboring Spain has traditionally been the main market for many such export-oriented products, recently, other markets are slowly emerging, such as the Middle East and Magreb for cattle meat and France, Germany, and other European markets for cork. These are thus also the owners with stronger neo-liberal convictions, who strongly depend on CAP payments but also have a strong belief in market mechanisms and property rights.

I do not want anyone to say what I can do or not do in my land. (Farmer E)

In the realm of this discourse, the farm is portrayed as an economic unit of production with its growth and potential expansion perceived as the ultimate governance goal. Additionally, according to the economic neoclassical logic adopted, there is the conviction that it will directly benefit the regional and local economies, ultimately facilitating the resilience of the montado in a context of competing land uses (e.g., intensive olive oil production, rapidly growing in the context of the Alentejo) and markets. This is a discourse whereby the environmental and social components of sustainability are understood as economic externalities, thus placing market forces at the core of any strategic solutions.

Conversely, any other policy options, such as agri-environmental schemes and rural development programs linked to CAP's pillar II, are considered mostly inefficient and of little use by those within this second discursive framework. In addition to supporting the perceptions and opinions that are held by a majority of montado land owners, the discourse underpinning modern production farming also vastly permeates the policy arena, at least at the national and international levels. According to our findings in the media, this is currently a context in which neo-classical economic arguments are most frequently held in support of current directions in the sector towards market-oriented growth and intensification.

Furthermore, improvements in technology and mechanization are defended in the media as the only ways to improve the conditions of rural labor whilst promoting national and regional modernization, and therefore as the only pathway towards development. According to this view, environmental externalities are negligible and therefore do not justify questioning the multiple advantages brought in by technologically-induced growth.

Happily what has happened to our agriculture over the past 40 years is that it got modernized via utilization of agricultural machinery, namely tractors. This ended ploughing with oxen, which led to the end of fairs where such animals were traded. This ended with the circulation of oxen along the roads in rural areas. This was a step that rendered our farms in Portugal more productive and agricultural labor less painful. (Regional online magazine: <http://www.reconquista.pt/articles/ideias-e-factos--2>)

In the same light of modernization as a process that is intimately related to development and growth, statements are found in the media using clear elements of the Modern Production Farming discourse to sustain the bounties and advantages of current public funding policies and programs. This new public policy measure is underpinned by a budgetary assignment of 6 million Euros and its main objective is reinforcing the production capacity of smaller and medium enterprises from the forestry and agro-forestry sectors, as well as the modernization of the entrepreneur fabric of the sector and region. (Economy newspaper: http://www.jornaldenegocios.pt/empresas/agricultura_e_pescas/detalhe/governo_abre_candidaturas_para_apoios_de_6_milhoes_a_floresta.html)

Last, in the same line linking of modernization to increased public and private investment in technologies, the recent process of intensification of the production system is reported in the media in light of its contribution to the economy. Despite being published in media with very different ideological and economic leanings, different articles report the advantages of increased investment for intensification, via irrigation, to enhance productivity and financial surplus in the montado that might ultimately drive economic growth and regional economic development.

500 Hectares of irrigated montado this year (...) The president of the firm, António Rios Amorim, admits that irrigation is a priority of the firm to increase financial returns of those who invest in Cork Oak montado. (Daily national newspaper: <https://www.publico.pt/2016/10/03/economia/noticia/corticeira-amorim-avanca-com-500-hectares-de-montado-de-regadio-este-ano-1746011>)

3.3. The Land Stewardship Discourse

This is the most recent discourse, emerging from an overall growing environmental awareness in Portuguese society since the 1980s. This awareness is related to international movements and concerns, and particularly brought to the arena by the integration of Portugal in the European Union and the increasing agri-environmental rhetoric in the early 1990s.

Progressively, the nature interest of the montado has been studied and brought to the public, raising societal expectation in other fields besides the cultural and heritage domain. The agri-environmental schemes and related payments, along with the economic constraints felt by farmers in their traditional farm governance schemes and thus the need to find alternative income sources to sustain the montado farms, led to a new discourse. This discourse is focused on multi-functionality of the montado, and on the montado farming as ecosystem services provider, which guarantee a service to society and thus needs to be paid for by society.

We cannot see the montado just as trees. It has to be considered as an ecosystem, turning around the montado trees. Everything is connected. We need to get income from other parts of the system, besides the trees. I am diversifying and thus also complementing my income. (Farmer D)

Such environmental goods are produced yet difficult to quantify and are presented as positive externalities that are sufficiently valuable and of interest to humanity as a whole. (Webpage of a Conservation NGO: <http://www.quercus.pt/artigos-floresta/2411-a-importancia-dos-montados-de-sobro-em-Portugal>)

The interests and strategies for nature conservation to a large extent coincide with the concerns for the forestry component of the montado and a governance model which preserves the tree cover. Thus, this discourse is reinforced from different sectors and with different targets.

To mobilize the soil, it is good, but we need to take care of the trees, to plough, but pay attention to the trees. (Farmer I)

(...) is a forest which can be diversified. It is very different from specialized forests. And this creates an unique biodiversity, isn't it? (Farmer J)

The cattle have an impact on the trees, yes. They eat the trees, eat the leaves, they scratch themselves, damage the branches ... the worst thing for the trees is cattle. We need to be careful with the number of cattle heads, in relation to the density of trees. (Farmer L)

Not only individual farmers, but more importantly, unions and lobbies relevant at the national level, such as the AJAP (Association of Young Farmers of Portugal), defend the importance of a transition to more environmentally friendly policy frameworks which would clearly favor agro-forestry systems, of which the montado is the most significant in the Portuguese context.

Following the latest PAC directions, and given the agro-forestry natural vocation of our soils, it is deemed urgent to implement a novel forestry policy that manages to minimize any negative effects arising from PAC. In many regions, agro-forestry and forestry should substitute mono-culture agricultural activities in creating new job posts and added value, with especially advantageous conditions for the environment. (AJAP homepage: http://www.ajap.pt/index.php?option=com_content&view=article&id=26)

Within this discourse, not only is the social and ecological efficiency of the montado argued, but also, importantly, the fragility of the system, which needs continuous human intervention through

adequate land stewardship to secure the sustainability and future continuity of the system as a whole. Opinions based on long-term practice experiences, such as the one in the following quote, are, however, still uncommon in the montado farming community, and they are indeed scarcely represented in the national and regional media. However, it is clear that these isolated opinions are not only favorable to an ecologically informed agricultural and farming system that has adopted the land stewardship discourse, but they are also deeply opposed to “industrial agriculture” and its underpinning discourse of economic growth and technological development.

This would be a project that will grant visitors with the discovery and interpretation of local resources and landscapes. The montado is the thread running through dreams, sights and tastes that are vital to the development of local economies and revitalization of the rural world. (Online farming business newspaper: (<http://www.agronegocios.eu/noticias/portel-a-descoberta-do-montado-e-das-paisagens491do-sul/>))

The views linked to the land stewardship discourse are also embraced by industry, government, and other actors informed by neo-classical and growth objectives. In this case, the media sources examined indicate the potential economic advantages to be gained by shifting towards a stewardship position where the preservation of multiple qualities of the system is the main governance goal.

Last, a series of views also appear in the media where climate change is presented as a key condition defining governance options, and ultimately justifying more sustainable alternatives for the montado.

4. Discussion

The three discourses that emerge from the analysis of the montado highlight how different farmers and other actors have conflicting understandings of the nature of the montado production system. This has allowed us to (a) increase our understanding of the different social constructions of the montado, (b) assess the implications of such different constructions, and (c) identify the governance challenges deriving from these constructions. In the following sub-sections, we discuss each of these points.

4.1. Different Social Constructions of the Montado

Within each of the three discourses identified, a particular version of the montado is constructed. Each version is underpinned by a specific perspective on the conditions for agricultural development in the region and prescribe specific governance practices, which are often mutually incompatible. These practices can be conflicting between discourses. For example, under the heritage discourse, the montado is presented as a set of agriculture and forestry practices and as a unique cultural landscape emphasizing heritage. In contrast, in the discourse that currently dominates both in the media and policy realms, the modern production farming discourse, the montado is constructed as a production system to be modernized and intensified, with potential for income generation for the land owners' benefit. The view of the montado focuses on each component separately and conceives the farm system strictly in relation to external financial factors (markets, marketing, payment schemes), thus neglecting the internal complexity of the system. Last, the land stewardship discourse constructs the montado as a forestry-based nature-conservation system, which guarantees the environmental balance in the region.

Further, the three discourses have different roots and are anchored on different scales. Whilst the heritage discourse seems to be anchored on a regional tradition and community sphere, the modern production discourse strongly draws support from the fact that it tightly aligned with the dominating productivist paradigms [30] that prevail in agricultural circles at the national level. In contrast, the stewardship discourse is promoted from a top-down perspective, aligning better with the international sphere, and with the global society's environmental concerns and policy goals at the European and global level as important drivers [44,45]. This scalar differentiation also contributes to explain the different perceptions of each discourse by diverse social collectives acting at different levels. Examples of this include policy makers acting at the regional scales versus farm managers acting at the farm scale,

and conservation agents acting at the landscape or ecosystem scales, and thus favoring the governance options that best align with their own individual governance levels.

4.2. Implications of the Different Discursive Constructions of the Montado

Under each discourse, what is expected from a “good farmer” depends much on the discursive framing of the practice [46]. In this interplay between different social perceptions and understandings, the dominant discourse among farmers in the social circles where most farmers are embedded, is the modern production farming discourse. This discourse is increasingly marginalizing the other two discursive positions. This is reflected within the farming community but also in the definition of public policies, in particular the Portuguese implementation of the Common Agricultural Policy (CAP) of the European Union [28]. This trend is associated with prevailing power relations in the farming community, with a strong support from the larger national farmers’ unions and with such positions also held by key public institutions.

This is reflected in a push towards intensification of the system and a simplification of its complexity, with a focus on beef production as the most important outcome of the system. In effect, this leads to a rapid degradation of the system’s capacity to provide sustainable grazing practices [47,48], multi-functionality [49,50], and the related delivery of ecosystem services [51,52], including those related to the cultural values of rural and historical Mediterranean landscapes [53,54].

Indeed, the modern production discourse represents a step backwards in integrative farm governance, especially in relation to the farmer’s capacity to deal with complexity, a capacity that montado land owners have developed over generations [9–11] but that is now in peril of being permanently lost.

The stewardship discourse is new and anchored on society expectations at a broader scale. Nevertheless, numerous administrative and financial barriers related to the bureaucratic and centralized functioning of Portuguese public administration [17,28] hamper the operationalization of any novel ideas related to nature and landscape conservation, making it difficult for farmers to embrace their role as land stewards, thereby limiting the uptake of landscape conservation practices. This is despite many farmers potentially perceiving this as an important role for them to fulfil over longer-term future timescales, focusing their decisions on securing the well-being of future generations. This is indeed by far the closest to the sustainability principles and ideas that may have been identified among farmers’ attitudes and aspirations in the montado. Still, concerns about the economic viability of farm units, which are strongly dominant in the modern production discourse, also create barriers towards the adoption of any novel governance paradigms. These novel governance frameworks are not based on the core ideas of productivist agriculture and therefore appear as impractical to many farmers, although they would likely adopt them if they felt they could contribute to their financial sustainability. In other cases, the limitations to follow a land stewardship paradigm emerge from the perceived conflicts with dominant traditions, not just among farmers but also within the wider regional farming social fabric.

Some farmers, however, have managed to tackle such difficulties by referring to the competitive advantages that might be brought up by embracing the diverse operational tools associated with the stewardship discourse. Examples of such tools include ecological and organic certification, both of which result in higher prices for their produce in the market. In addition, some more innovative cases have also emerged, with the provision of multiple ecosystem services underpinning the discourse to shift towards a model based on corporate, social, and environmental sustainability over the financial interpretation of sustainability that underpins modern production farming. However, the recent emergence of this wider sustainability framework now largely underpinning rural policy and governance [28] has been hampered by the lack of clear messages from the governing authorities on the advantages inherent to stewardship positions and attitudes. In addition, the absence of past references and good case study examples of success in montados and other similarly complex multi-functional farming systems may have influenced such conservative attitudes.

In the Portuguese society, environmental concerns and nature protection goals have emerged later than in many other European countries [50]. Within the agricultural sector, these concerns have largely been influenced by various European strategies and policies [28]. The list of EU policies both influencing and reflecting changes in the montado discourses necessarily includes the various CAP reforms following the McSharry one in 1992, and the various agri-environmental schemes and programs implemented after 2000. Although environmental stewardship is clearly a rising discourse in the context of the montado in Alentejo, and is widely promoted in the media, it is still mostly prevalent at the national and international policy scales, and is yet scarcely expressed in the policy tools acting at the farm level [42].

Furthermore, the stewardship discourse is still largely restricted to those regional to local policy institutions, which deal with policy challenges traditionally perceived as conflicting with agriculture, namely nature conservation and protection, and also others with an integrated territorial focus, such as landscape and regional planning or tourism [28]. Indeed, it is a discourse that has, hitherto, scarcely permeated into the regional farmer's mindset.

4.3. Resulting Governance Challenges

Based on our findings, we argue that shifting the various policies supporting production systems may not suffice, as the entire context of the farmers is organized around a particular governance discourse. Hence, the various institutional and governance actors and institutions around farmers (such as abattoirs, markets, and traders) that underpin productivist practices also need to be remodeled. Furthermore, for many of these supporting actors, shifting their practices is difficult and costly because the discourse is also embedded in the corporate mind-sets and operational patterns of companies, as reflected in the skills of employees or in corporate objectives. National and international experts within the environment and heritage domains have widely advocated for a shift in the current productivist policies towards the creation of conditions that maintain traditional and high nature value farming systems [13,15]. Nonetheless, it is also widely accepted by policy and market agents that the urgency to sustain traditional extensive systems should not undermine the potential for Portugal to increase food production. This results in the also widely acknowledged opinion that space and scope should exist for both intensive/specialized and extensive/high nature value production systems to co-exist.

In general, it is clear that each discourse justifies a specific governance strategy. Such a complex interplay of drivers and discourses means there are still many pending challenges inherent in the move towards integrative and adaptive governance of the montado. None of the three dominating discourses are coherently reproducing the montado system within the present market and policy conditions. Furthermore, none of these discourses address the full complexity of the system nor are they able to propose a valid strategy to secure the future reproduction of the system. Therefore, there is no simple positioning for farmers to take, in order to secure long-term sustainability. Montado farmers, along with other key stakeholders, are thus caught in a conflict of values that is underpinned by the co-existence of different discourses, without being fully aware of these ambivalences.

A crucial level of complexity lies with the farmer. In our experience, farmers often set their engagement with the montado primarily in one or the other discourse, but sometimes across all three of them, and most often without being aware of the inherent contradictions. Farmers are thus not just reproducing one discourse, they are often drawing on two or all of them. The resulting contradictions may ultimately hamper the coherence of the governance strategies in place. This may have an influence on the increasing fragility of the montado as a whole. Ultimately, a farmer may opt to reproduce one dominant discourse and thus contribute to a consistent narrative. Nonetheless, these farmers may be identified as marginal, consequently creating barriers against the construction of possible integrative strategies expressed in new governance models.

Lastly, the implications of the discourses unveiled for devising more sustainable governance options for the future of the montado will need to be further examined under the lens of projected climate and land use changes for the Mediterranean [49,54]. As already indicated, montado and

similar multi-functional agro-ecosystems, especially but not only [55] in the Mediterranean [56], are most frequently embedded in heterogeneous landscapes, which are affected by climatic changes and human-related drivers, underpinned by individual options and preferences [57]. These complex trajectories of change will likely end up harming biodiversity and ecosystem services provision. In particular it seems self-evident that the future continuation of the current imbalance of the diverse discourses in place shall result in a poor capacity of the montado and similar multi-functional systems to adapt to the challenges posed by both climate and land-use changes. Thus, unless further efforts are put in place to shift the current range of governance discourses, any management models aimed towards increasing the sustainability of the system may ultimately become useless.

5. Conclusions

The analysis undertaken identified and examined the three main discourses that currently co-exist on the governance the montado, each one having at its core one of the three fundamental aspects of the social reproduction of this silvo-pastoral system: The historical and heritage value, the production role, and the environmental benefits. These discourses have different origins and scales of representations—and partly due to that, they appear as mutually incompatible when not directly contradictory. By adopting a discourse analysis perspective, we revealed a novel perspective on the background of factors that uphold current governance practices, thus contributing to a better understanding of the contradictions found among the aims stated by farmers and also among these and their practices. Findings in this paper thus complement another analysis of the effects of public policies already carried out in the montado [28] and provide a more complete picture of the multiple drivers that underpin decision-making and governance strategies across diverse spatial-temporal scales and institutional levels [15].

Our analysis shows that the current governance practices are unable to preserve the multifunctionality of the montado. If the sustainability of this system is to remain at the core of decisions, novel strategies need to be put in place, at different scales. From an economic and organizational standpoint, novel governance strategies need to draw on different support systems to develop new discourse that can encompass all these different aspects and at the same time are culturally acceptable by the farming communities and embedded within all actors that influence farmers' decision-making. This may support the required self-fulfillment and gratification of farmers, which is essential to transition into more sustainable practices [49].

Furthermore, the absence of a clear positioning is constantly emerging at different levels of decision-making, ranging from the farm to the regional and national administration, and even affecting negotiations with Brussels, thus potentially hampering the design of adequate support policy mechanisms [28]. This is grounded in the different origins and contributions of the three discourses (Table 2) but remains largely non-explicit to policy makers and other agents (e.g., market operators) making decisions at the highest levels. Thus, with time, many public policy tools with impact on these complex farming systems may have led to contradictory practices at the farm level, driving the degradation of their main ecological, cultural, and land-use components [53].

Resulting from our discourse analysis, we have shown how an identity crisis in the farming community is also a widely and previously unrecognized problem of the montado decay and related degradation. This is justified by the fact that a number of different, and largely incompatible, visions for the future of this farming system currently co-exist. In this paper, we elucidated the different discourses and value conflicts that are found in the governance of the montado production system. Hence, this paper builds on the existing research of the montado production system by adding a discursive dimension that emphasizes the ways in which different actors frame their decision-making options concerning the montado production system. This may hopefully pave the way for the development of novel governance systems that are able to reproduce the montado system in a more sustainable way. Also, it may also serve as an inspiration for a similar reframing of the environmental degradation in other complex and multi-functional farming systems where prevailing trends towards globalization

and intensification hampers their future sustainability [11,13,50], especially in view of current scenarios of climate and land use changes, which are largely acute across the Mediterranean context [56].

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Appendix A

Table A1. Sources of Information employed in the analysis of representation of discourses about the montado in media sources (www.sufisa.eu).

Type of Source	Source	Types of Information
Internet	Associação de Criadores de Bovinos de Raça Alentejana	Facts + Opinions
Internet	Associação de Criadores de Bovinos de Raça Mertolenga	Facts + Opinions
Internet	AJASUL—Associação de Jovens Agricultores do Sul	Facts + Opinions
Internet	CAP—Confederação dos Agricultores de Portugal	Facts + Opinions
Internet	CNA—Confederação Nacional da Agricultura	Facts + Opinions
Internet	Direcção Regional de Agricultura e Pescas do Alentejo (DRAPAL)	Mainly Facts
Internet	CONFAGRI—Confederação Nacional das Cooperativas Agrícolas e do Crédito Agrícola de Portugal	Facts + Opinions
Internet	Agroportal	Facts + Factoids + Opinions
Specialized Journals	A voz do campo	Facts + Factoids + Opinions
Specialized Journals	Vida Rural—Revista Profissional de Agronegócios	Facts + Factoids + Opinions
Specialized Journals	Agrotec, Revista Técnico-Científica Agrícola	Facts + Factoids + Opinions
Specialized Journals	Diário Digital Agrário	Facts + Factoids + Opinions
Specialized Journals	CA Revista	Facts + Factoids + Opinions
Newspapers	Diário de Notícias	Factoids + Opinions
Newspapers	Diário Económico	Factoids + Opinions
Newspapers	Diário do Sul	Factoids + Opinions
Newspapers	Correio Da Manhã	Factoids + Opinions
Professional (newsletters)	Boletim da Associação de Criadores de Bovino Mertolengo	Facts + Opinions
Professional (newsletters)	Revista do Agricultor	Facts + Opinions

Appendix B

Table A2. Details of montado experts interviewed in the context of the SUFISA (www.sufisa.eu) project.

Expert	Entity	Sector	Location	Date of Interview
1	CCDR	Public sector/Regional Development	Évora	09/09/2016
2	Solar de Giesteira	Farming	Montemor-o-Novo	12/10/2016
3	APORMOR	Producers Association/	Montemor-o-Novo	14/06/2016
4	Herdade do Freixo do Meio	Farming/Environmental Education/NGOs	Montemor-o_novo	20/10/2016
5	Monte das Oliveiras/Politécnico de Santarem	Farming/Higher Education	Arraiolos/Montemor Km 98	13/09/2016
6	Companhia Agricola de Barrosinha/Politécnico de Santarem	Farm Governance/Higher Education	Alcácer do Sal	12/09/2016
7	Agricert	Food Quality/Certification	Beja	14/09/2016
8	ELIPEC	Producers Association	Elvas	19/09/2016
9	ICAAM-Universidade de Évora	Research/Higher Education	Mitra-Évora	08/09/2016
10	Associação de criadores de Bovinos Mertolengos	Producers Association	Évora	13/09/2016

Appendix C. Questions in the SUFISA Questionnaire with Experts

Template of the questionnaire utilized in the expert interviews for the Portuguese case studies: Beef production in extensive montado silvo-pastoral systems (Central Portugal), and intensive and super-intensive olive oil production.

Name of Specialist:

Sector/Institution

Name of the Interviewer:

Date, Place and Signature:

Section 1. Contextual Information

- (i) Can you briefly describe your interest/work in relation to the production of beef in extensive Mounted/intensive olive oil production systems?
- (ii) Are you related, in person or within your institution, with market and regulatory issues? [For example, as market analyst, farm advisor, producer, regulator, funding institution]

Section 2. Key Questions of the Market and Production Chain

- (i) What do you consider the main issues/challenges facing the market at the moment and why?
- (ii) What are the main strengths and weaknesses of the sector in terms of (financial, environmental and social) sustainability of agricultural holdings?
 - Strengths:
 - Weaknesses:
- (iii) How do you describe in general terms the sector in your county (number of producers, size of holdings, family or non-family, etc.)?

Section 3. Policy and Regulatory Conditions Influencing Production.

- (i) Can you identify the fundamental legislation nowadays?

- What impact does this legislation have on producers? (Conditions and Strategies)
 - Is this impact differentiated according to the structural diversity of the holdings?
 - Can you identify adaptation strategies that are more successful than others?
- (ii) Can you identify the key policies for the sector?
- What impact do they have on producers?
 - How are producers responding/reacting to these policies/strategies? What is the role of structural diversity?
 - Can you identify some approaches or adaptation strategies of producers who are more successful than others?

Section 4. Access to Markets, Standards, and Financial Markets for Production

- (i) What are the key markets?
- (ii) What are the main issues of market access?
- (iii) How do producers respond to market access issues? What is the role of structural diversity?
- (iv) Describe the importance of quality standards? What are the key rules? What impact do they have on producers' strategies?
- (v) (a) What role do financial markets play? (Impact on sales, prices, access to supply chains, level of risk involved, etc.). (b) What about access to credit? (access to credit from producers, types of loans, etc.) (c) What about the investment/capitalization? (issues, instruments, strategies)?
- (vi) Other problems relating to market access

Section 5. Other Relevant Questions

- (i) What are the main new market opportunities?
- What is your opinion about the new market niches (gourmet/innovative products)?
 - What is your attitude toward product and/or process innovation?
- (ii) At the level of "quality control" and "product certification", what constraints/constraints does the industry suffer from the implementation of these practices?
- (iii) At the level of "environmental practices", what constraints/limitations does the application of these practices cause in the productive sector?

Section 6. The Future

What do you expect to happen in the beef/olive oil sector in the future of the region?

Section 7. Final Comments

Is there anything you want to add that you feel we have not yet addressed in the interview?

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