Narrating abandoned land: Perceptions of natural forest regrowth in Southwestern Europe

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ABSTRACT

The abandonment of agricultural land leads to landscape changes in many parts of Europe, often followed by natural forest regrowth. These landscape changes have far-reaching social and ecological consequences. Our research addresses the question of how local actor groups involved in land management perceive natural forest regrowth on abandoned land. Based on 42 interviews with local actors, we analyse narratives on natural forest regrowth in four case studies, one in France and three in Spain. Across the case studies, we find three narratives: a rural fatalism narrative, a pro forest management narrative and a pro nature narrative, each with its own problem definitions and solution strategies on natural forest regrowth. Our analysis reveals regional nuances, which depend on land use characteristics that shape the perceptions of local actor groups. We conclude that natural forest regrowth holds different symbolic functions, ranging from lost territory to recovered land. Any assessment of trade-offs and opportunities needs to consider the local situation. Furthermore, management and governance approaches need to acknowledge different cultural beliefs, which shape the perception of actor groups.

1. Introduction

1.1. Background and research objectives

The abandonment of agricultural land has been a major trend in several European landscapes for decades (MacDonald et al., 2000; Keenleyside and Tucker., 2010; Estel et al., 2015). Studies say that by 2020 there will be 16 million ha of abandoned farmland in the EU (Keenleyside and Tucker., 2010). Drivers for land abandonment in Europe are related to geographic and ecological factors, such as decreasing soil fertility, exposition and site location, demographic and socio-economic factors, such as rural depopulation and market incentives (Gellrich, 2006; Pointereau et al., 2008), and European and national policy effects (Pointereau et al., 2008). These factors are interrelated and may mutually support or compensate for each other. Land abandonment occurs particularly in areas of low productive agriculture, such as mountain areas and areas with poor soils or rough climates (Keenleyside and Tucker., 2010). Extensively grazed areas are especially affected by abandonment (Keenleyside and Tucker., 2010). Abandonment is often followed by natural forest regrowth (NFR),

which can reach significant dimensions in parts of Europe, contributing to a general increase of forest area in Europe since the mid of the 20th century (Gold, 2003; Keenleyside and Tucker., 2010; San Roman Sanz et al., 2013).

NFR resulting from land abandonment can have far-reaching social and ecological consequences for habitats and species and the ecosystem services provided by the land, as well as for the local population and actors using and managing the land (see for instance Bauer et al., 2009; Bieling, 2013; Zavalloni et al., 2019). The specific consequences of NFR vary from case to case. For instance, the process can have varied impacts on biodiversity, so that overall conclusions about biodiversity impacts cannot be drawn (Plieninger et al., 2014). NFR may reduce landscape heterogeneity (Otero et al., 2015), resulting in a loss of open landscape species and/or a loss of cultural and aesthetic values (Soliva et al., 2008; Fernández-Giménez, 2015; van der Zanden et al., 2017). NFR can, however, have positive effects on woodland species (Smallbone et al., 2014) and improve the connectivity of woodland patches (Palmero-Iniesta et al., 2020). Furthermore, NFR may bear conservation opportunities regarding restoration attempts and rewilding (Proença et al., 2012; Pereira and Navarro, 2015; Carver,

2019).

NFR following land abandonment is a cross-cutting topic connected to agriculture, forestry, conservation and rural development, posing challenges and questions that concern various scientific disciplines. Drawing on a set of four case studies in Spain (3) and France (1), this paper focuses on the perceptions of NFR on abandoned land by different actors involved in or who have a stake in the management of the land. NFR connected to land abandonment is a major land use change factor in these two countries (Pointereau et al., 2008; Keenleyside and Tucker., 2010, Schnitzler and Génot., 2013). From 1990 to 2015 the forest area has increased by an annual average of annually by 0.66 % in France and 1.16 % in Spain (incl. afforestation, NFR and deforestation) (Forest Europe, 2015). Even though exact numbers about NFR are not available, studies on land use changes in Southwestern Europe show that NFR on abandoned land is decisive for the expansion of forest area (Gold, 2003; Pointereau et al., 2008).

Specifically, our research questions are:

1 How do local actors in the case study regions perceive NFR? (ch. 3.1)
  a What are the main problems addressed?
  b What are the main solution strategies to tackle those problems?
2 To what extent do narratives differ across case studies? (ch. 3.2)

By answering these questions, the paper aims to contribute to a better understanding of perceptions of NFR. Furthermore, we aim to contribute empirical data to the rich body of research on narrative analysis (cf. van Eeten, 2007).

1.2. State of research on societal perceptions of land abandonment and NFR

Societal perceptions of land abandonment have been studied in various parts of Europe. Perceptions are frequently linked to the societal consequences of land abandonment. Research shows that critical perceptions are frequent (see for instance Hunziker et al., 2008; Soliva et al., 2008; Aretano et al., 2013; Bieling, 2013; Zagaria et al., 2018). Case study research in six European countries finds that the local stakeholders often associate land abandonment with "agricultural decline and its negative consequences for livelihoods and rural viability" (Soliva et al., 2008:62). A case study in Portugal (van der Zanden et al., 2018) reports such negative perceptions by the local population. The emotional attachment to traditional and well-known landscapes plays an important role in these perceptions. Exploring the emotional and cultural dimension of landscape for stockbreeders in the Pyrenees, Fernández-Giménez (2015:29f) shows "the role of cultural landscapes in shaping individual identity". In Portugal, local actors express emotions such as "sadness" and "nostalgia" (van der Zanden et al., 2018:1514) when asked about land abandonment. Additionally, various studies address the loss of cultural heritage and human attributes of the landscape (Höchtl et al., 2005; Soliva et al., 2008).

Some studies indicate differences in perceptions among social groups. For instance, while local actors frequently perceive land abandonment rather negatively, visitors are more positive about the process (Höchtl et al., 2005, Hunziker et al. 2008). Differences in perceptions amongst different social groups are a prominent finding in the Swiss Alps studies of Soliva (2007) and Soliva and Hunziker., 2009. They identify four ideal type narratives on land abandonment, which imply underlying values and assumptions on landscape changes. Only one of them is positive towards land abandonment, while the others perceive it rather negatively:

- The wilderness narrative refers to an intrinsic value of nature, with the ideal that landscapes should develop naturally, in a mosaic-cycle, while focusing on process-oriented conservation strategies. Humans are not in an active role in this narrative but are seen in need to re-establish the connection to nature. This narrative is especially positively addressed by habitants that have recently moved into the investigated region (Soliva, 2007; Soliva and Hunziker., 2009).

- The modernisation narrative refers to a utilitarian anthropocentric nature concept, focusing on production purposes and the economic potential of nature and landscapes. Modernisation favours intensive, large-scale production in agriculture. This is particularly supported by farmers with large holdings (Soliva, 2007, Soliva and Hunziker., 2009).

- The subsistence narrative is also based on a utilitarian nature concept but criticises the capitalistic economic system. It favours instead an extensive subsistence agriculture independent from market pressures, which sustains the biodiversity and cultural richness of the landscape. This narrative is popular among people working in small-scale agriculture (Soliva, 2007, Soliva and Hunziker., 2009).

- The endogenous development narrative refers to diversity and sustainable rural development, focusing on the potential of the region, strengthening the "development from within" (Soliva, 2007:69) through various sectors and local participation. This narrative favours multifunctional agricultural practices with several land uses (Soliva, 2007; Soliva and Hunziker., 2009). It is especially prominent among people working on environmental and culture topics.

In most of these perception studies, NFR is addressed as one of the scenarios following land abandonment but is not in the specific focus. Hunziker et al. (2008) find that NFR is the most negatively viewed scenario by local inhabitants (see also Höchtl et al., 2005). Soliva et al. (2008) also find negative assessments of NFR following land abandonment and link this to an increasing risk of natural hazards (Soliva et al., 2008). Specifically, biomass accumulation increases risks of wildfire (Höchtl et al., 2005; Soliva et al., 2008; van der Zanden et al., 2018). Furthermore, the perceived loss of biodiversity value and the homogenisation of the landscape is a topic associated with NFR (Ruskule et al., 2013). At the large scale, NFR may result in whole landscape sceneries changing, thereby affecting aesthetic dimensions. In a case study in the Black Forest, locals describe that through NFR the landscape became "too dark and lacks scenic views" (Bieling, 2013:36).

While these findings present valuable insights into the closely connected perceptions of land abandonment and NFR, there is not much literature on how different societal groups perceive the opportunities and trade-offs of NFR in Europe (Hunziker et al., 2008; van der Zanden et al., 2018). Understanding these perceptions of NFR is crucial to support and set up management and governance strategies to deal with the phenomena of natural forest expansion in Europe in the upcoming decades. Our research addresses this gap and provides knowledge for different regions in Europe.

2. Methods

2.1. Narrative analysis

This paper uses narrative analysis to structure the presentation of perceptions. Analysing narratives is an often used approach in land use and environmental policy (Roe, 1994; McBeth et al., 2005; Winkel et al., 2017; Warner, 2019), but the approach has so far been applied less in landscape research (Soliva, 2007). Narratives are comprehensive stories told on an issue. They entail a problem definition and address who is held responsible to act, what are the solutions proposed, which rhetoric figures are used, and which aspects are excluded (Winkel et al., 2017). Narratives not only depict what has been said, they assume there is a deeper meaning behind the story told that connects to societal discourses or values (Yanow, 2000; Winkel et al., 2017). In this way narratives "offer a powerful tool to an analyst seeking a hermeneutic explanation" (Kaplan, 1993:172).

Table 1
Overview of interviews carried out between Sept. 2017 and March 2018.

Case study (administrative level), country	Number of interviews, reference code (date of generation)	Landscape and socio-economic characteristics
Alto Tajo region (AT), Spain	12, AT1–12 (Oct. 2017);	Rural, very remote and sparsely populated region; high percentage of large-scale abandoned agricultural land mainly due to loss of pastoralism where NFR occurs; ongoing abandonment and NFR
Barcelona Metropolitan Area (BCN), Spain	8, BCN1–8 (Oct. 2017–March 2018)	Urban, sub-urban region; small-scale patches of abandoned agricultural land mainly on formerly cultivated land where NFR occurs; partially ongoing abandonment and NFR
Catalan Pyrenees region (PYR), Spain	12, PYR1–12 (Jan.–Feb. 2018)	Rural mountain region; small and large-scale abandoned agricultural land mainly due to loss of pastoralism where NFR occurs; partially ongoing abandonment and NFR
Mont Ventoux/Luberon region (VAU), France	10, VAU1–10 (Sept. 2017)	Rural region with nearby urban agglomerations; small-scale abandoned agricultural land due to loss of pastoralism where NFR occurs; abandonment halted but NFR on already abandoned terrain ongoing

2.2. Selection of case studies

The analysis of narratives here builds upon data generated from four case studies in Spain and France. The research was carried out in the framework of the BiodivERsA SPONFOREST project, which investigates the ecology, genetics, landscape and societal dimensions of NFR in France and Spain. The case study selection was done in deliberation with the project consortium, also considering the research needs of other partners and disciplines. Out of the five project case studies, four were selected for the narrative analysis in this paper based on the criteria that the region includes abandoned agricultural land on which NFR occurred (or is occurring) in patches or whole stands. Table 1 presents the case studies and their characteristics, showing their wide range of socio-economic conditions: from the urban, densely populated case of the Barcelona Metropolitan Area (BCN) to the Vaucluse case study in the Mont Ventoux/Luberon region that is well connected to urban centres (VAU) to the remoter, mountain and rural cases in the Alto Tajo region (AT) and Catalan Pyrenees (PYR).

2.3. Selection of interviewees and data gathering

In each case study a set of complimentary local actors was selected for interviews. Interviewees were identified by purposeful sampling (Creswell, 2009). First, existing local contacts of the different research groups involved in SPONFOREST were consulted. The portfolio was then complimented through searching for relevant actors and institutions in the web. The interviewees were subsequently contacted via email and phone. This approach was combined with snowball sampling (ibid.), asking for suitable interviewees during the interviews and in informal conservations. The empirical data consists of 42 semi-structured interviews carried out between August 2017 and March 2018. Table 1 shows the case studies, the number of interviews and its numbering as it appears in the text, as well as related landscape and socio-economic characteristics. Interviews were conducted with local actors involved in the management of NFR on abandoned land. These included actors from forestry, the forest industry, governmental agencies, conservation, agriculture and tourism agencies. In each case study, at least one interviewee from each respective category was interviewed. These groups were approached to analyse the various perspectives of actors directly involved in the management of abandoned land and NFR. Interviews were conducted in Catalan, French and Spanish. They consisted of a set of open-ended questions about land management, the personal perceptions of trade-offs and opportunities through NFR, the management of NFR, and governance of NFR in the case study area. Interviewees also addressed the perceptions of other actors. The questions were adapted to case study specific characteristics, such as regarding the tree species, which establish naturally (see main interview guideline in appendix).

2.4. Data analysis

The analysis follows the basic understanding of interpretive methodology (Yanow, 2000). This means that the qualitative analysis of the data is done based on words and their meaning in relation to the research questions. All interviews were recorded and fully transcribed. The transcripts were coded with MAXQDA, a programme for qualitative text analysis. The coding aimed to extract relevant text elements and to cluster them according to categories (Creswell, 2009; Flick, 2015). The first coding round was done deductively under thematic categories such as "NFR characteristics", "forestry and management", "agricultural practices", "policy and governance" and "ecosystem services obtained" to give an overview of the data. In a second round, the coding system was set up following the structure of narratives (cf. Winkel et al., 2017). The leading questions to the data were:

- What are the main problems ascribed to NFR on abandoned land?
- What are the described causes for the problem and who is responsible for the existence of the problem?
- What are the solution strategies and who is held responsible to act?

Narratives were built through clustering related codes in a manner that a consistent "story" containing problem definitions, causes, solution strategies and ascribed responsibilities was constructed (Winkel et al., 2017). Under these main codes, sub-codes were established inductively based on what was said in the interviews. For instance, under the main code "problems", sub-codes were added such as "structure of forestry and agriculture" (e.g. "centralised forest administration", "no economic interest in forest use"); "failing policies" (e.g. "local policies not well adjusted", "too protective nature policies"), and "negative associations with abandoned land" (e.g. "loss of cultural heritage", "forest fire risk", "increase wild animals"). This resulted in a detailed table with the different viewpoints on NFR that were subsequently summarised into coherent narratives, which could again be connected to different actor groups.

3. Results

The analysis reveals three narratives on land abandonment and NFR: rural fatalism, pro forest management and pro nature (ch. 3.1). Aside from the rural fatalism narrative, which was absent in the highly urbanised Barcelona case study, the three main narratives were identified in all the case studies, albeit with specific adaptations to the specific contexts (ch. 3.2). Table 2 gives an overview of the three narratives shared across the case studies.

3.1. Narratives on NFR

3.1.1. Rural fatalism

The main actors voicing this narrative are farmers, landowners and agricultural governmental agencies. Under this narrative, a utilitarian

Table 2
Overview of narratives.

	Rural fatalism narrative	Pro management narrative	Pro nature narrative Landscape conservation subnarrative Wilderness subnarrative
Problem definition	Landscapes should serve human needs; land abandonment represents lost territory	Nature needs innovative management approaches to make the best use of resources	The natural development of ecosystems has a value as such; intensification of forestry and agriculture harms the environment and biodiversity
	Increased risk of natural hazards is the main problem, above all forest fire	The lack of forest management in general and a weak forest sector with a lack of capacities is the key problem	(L) The loss of open landscapes and dependent species is a problem
	The achievements of local land management, which has created the landscapes, are neglected by those "from outside"	If spontaneous forests are managed, they may bear opportunities for forest resources in the future	(W) SFE may bear positive aspects in that ecosystems can develop naturally
Causes	There is a lack of financial support for preventing land abandonment through management	There is a lack of interest in the commercial use of forest products; local timber and biomass markets need support and investment instead of wood imports	The hierarchical control of forest management and the loss of ownership leads to bad or no forest management at all
	Local actors are powerless, and there is no hope to overcome the challenging situation in rural areas; the generational transition represents a challenge	Forestry subsidies are badly designed and used	Agricultural subsidies are badly designed, surpassing extensive small-scale farming
Solution strategies	Agriculture is needed to sustain or restore traditional landscapes	Forest management is needed to make use of forest resources, based in local chain of custody and added value products, and to reduce risks	Ecotourism is an important pillar of rural economy
	Adequate funding for this and fire management is needed	Forests need to be respected as property, inter alia to reduce conflicts with visitors	(L) Need to sustain or restore heterogenous mosaic landscape with extensive agriculture, with various uses coexisting
	Landowners need acknowledgment and appreciation for their work; policy making needs to consider local needs		(W) Natural development and rewilding bears opportunities to recover degraded land
Responsibility to act	Governmental actors	Forestry actors; governmental actors	Governmental actors; land users and managers
Main actors voicing the narrative	Farmers, landowners, governmental agencies (agriculture)	Forest owners, forest technicians, forest industry, local administration (forestry)	Environmental groups, tourism representatives

view of nature and the landscape is expressed. From this perspective, landscape is primarily the result of land use in a region, and the natural resources are there to be used sustainably. As a farmer in the Pyrenees expressed this: "We don't put the snow down because they [visitors] like to find snow, but it is a meteorological phenomenon which bears many problems for us. Or if there is a cow, it isn't a decorative element, but it is an animal of production" (PYR11). According to this view, visitors "romanticise" the landscape without seeing the work and livelihoods behind it (esp. PYR and VAU). For landowners and managers, this landscape is the place of their daily work. Consequently, the change from a cultivated landscape towards abandoned land is regarded by them as a problem. Abandoned land with NFR is frequently perceived as "lost territory" without any use.

NFR is further connected to risks under this narrative. One main perceived challenge is an increased risk of fires and a higher intensity of the fires (esp. AT) due to biomass accumulation: "The important thing is to clean it [NFR] up. If we don't do this, the Pyrenees will end in fire, it will end up burning. A dry year will come, a year of wind will come and depending on how it goes it will burn" (PYR9). This risk is seen as particularly significant when NFR happens nearby human settlements (especially PYR, VAU). The same holds true for potentially harmful animals (e.g. the wild boar), for which new forests provide habitat. Hence, this narrative sees NFR as a problem "since it's not going to be cleaned by the cattle or by the people. It's going to be dirtier, that's what abandonment is" (AT9). Related to this, actors supporting this narrative argue that NFR is also viewed negatively by the local population, who do not want abandoned land: "Almost everyone here sees it as a bad thing that the forest takes ground. Because people want more open spaces. They see it as a fire hazard that the forest reaches the village so much and they would prefer a more cultivated, more humanised landscape" (PYR9). NFR is seen here as symbolizing the marginalisation of the region and the loss of agriculture: the locals "view the forest like a reflexion of the rural abandonment. Therefore, they don't like that the forest colonises so much land" (PYR3). Additionally, landscape change

is seen critically from an aesthetic viewpoint. The familiar and desired landscape disappears: "What we used to know our whole life disappears" (AT7). In line with this, some actors argue that the negative perception of NFR is particularly prominent amongst the elder generation, while the younger generation are used to NFR.

As causes of the problems, actors highlight the difficult economic situation in the case study regions (esp. AT, PYR). There are few economic perspectives for the local population, especially for those working in the primary sector. The generational transition away from primary production is seen as challenging for farmers, since young people do not want to take over the work. Actors express feelings of powerlessness. Those with power would take advantage of the marginalised position of local actors, such as farmers, as expressed in the following quote: "let's cut [the money from] the weakest who don't protest. Who are the weakest who don't protest? Those in the Alto Tajo, who nobody knows" (AT9). Related to this, there is a perceived lack of appreciation and acknowledgement of the work of local land managers, who have managed the land for centuries and have maintained a cultivated landscape despite challenges (AT, PYR, VAU). The different worldviews of urban and rural populations are described as a key challenge in the rural transformation process (AT, PYR, VAU).

A shared perception is that policies and decisions are made by "outsiders" in the cities, far away from the local conditions, who do not know what is locally suitable. The rural people feel overlooked by and distanced from the (urbanised) political class: "That illustrates also a great characteristic of the French forest, that in Paris or Nancy they do not understand and they do not know how to manage the Mediterranean forest, it's really two different ecosystems and two different value chains and different issue" (VAU1). The people "from the cities" are also associated with conservation policy, which is seen as: "the policy of the cities, it is not the policy of the rural people" (PYR9). In line with this, overly protective conservation policies are described as burdensome and are criticised content-wise. For instance, in the Alto Tajo region, conservation policies that protect the formerly endangered

Spanish Juniper would lead to a huge colonisation by Juniper on former agricultural land. In the Pyrenees, the return of the brown bear and wolf, promoted by conservation projects, is criticised by land managers and owners. As described by one interviewee, the bear would come back with all the problems and conflicts that were resolved when it had disappeared.

A topic highlighted in the Alto Tajo region and the Pyrenees is the lack of financial means to support local traditional agriculture and to undertake any forestry measures – clearing for fire prevention and forest use. Small-scale farmers on marginal lands are highly dependent on financial subsidies for economic viability. Silvo-pastoral systems are the traditional cattle management system in the Mediterranean region and the Alto Tajo region, contributing to the familiar agricultural landscapes. Under the EU Common Agricultural Policy (CAP), however, silvo-pastoral systems are often not covered, since they would only apply to agricultural land with less than 15 % tree coverage. Furthermore, the high bureaucratic burden of obtaining CAP subsidies is highlighted.

Solutions presented under the rural fatalism narrative focus on fighting NFR and recovering lost territory. Agricultural management is needed to sustain cultivated landscapes and to prevent or revert land abandonment: "don't leave the territory and then lose it, but recover the territory and what was before, how they managed it before" (PYR9). This interviewee adds that recovering all abandoned land "is impossible, but some parts of the territory we need to recover. Management is needed" (PYR9). To achieve this, financial means and adequate investment are needed in the given region to support traditional agricultural practices and to use forest management for fire prevention. In some cases, landscape recovery has proven to be possible on a smallscale, but only with substantial financial incentive. An example is subsidised sheep herding in Vaucluse, a traditional practice that almost disappeared due to low profitability. Furthermore, economic returns from Non-Timber Forest Products (NTFPs) – especially hunting, mushroom and truffle picking – would help the primary sector. This is especially highlighted in Vaucluse, where hunting is mentioned as the most important forest use in economic terms (also AT). However, all NTFPs would need economic compensation, which is not yet the case for mushroom picking.

Core to any solution under this narrative is the need to appreciate the farmers and the rural population. Farmers are described as promoters of the landscape: "behind those landscapes – the farmer's hand, cleanliness, fields, green, the cared green in contrast with the forests (…). We, the farmers, are the promoters of the Pyrenees" (PYR9). Thus, people need to acknowledge that and pay attention to the local knowledge of farmers: "It is much more valuable to accompany a farmer one morning, listening to his experiences and his issues; […] these are the issues that we are forgetting about" (PYR9). The argument from this narrative is that acknowledging the tacit knowledge of local landowners and managers would support decision making on policies, which should be based on local needs.

3.1.2. Pro forest management

The main actors voicing this narrative are forest managers and owners and local forestry governmental agencies. The pro forest management narrative expresses a utilitarian view of nature. The main focus is on using the emerging forests, instead of fighting them back. According to the proponents of this narrative, forests need to be managed to make them desirable forests, to use their resources, and to reduce risks. The main problem addressed under this narrative is a lack of forest management.

Actors argue that the weak forest sector is an important issue that needs to be tackled. The pro forest management narrative addresses the lack of capacities – financial means and workers – to implement forest management at private and public levels. This is linked to the fact that forestry measures often do not pay off economically due to poor or non-existent local wood markets and low wood prices, compared to the high

costs for extracting wood from the forest (esp. AT, BCN, PYR). Since there are no economic incentives to use the forest resources, there is no management. A related problem addressed is the lack of interest in the commercial use of forest. Reasons mentioned for this vary depending on the region: a difficult generational transition (AT, VAU), low profitability (AT, BCN, PYR), and little economic incentives (AT, BCN, PYR, VAU). For example, in Catalonia (BCN, PYR) the forest industry has been confronted with high costs of extracting wood and products with little added value (pallets, biomass). Another highlighted problem is that forests are often not considered as private property by the public, which causes problems in areas with high recreational use, as visitors tend to object to forest management measures. Related to this, some interviewees mention that there is no economic reward for the cultural ecosystem services (esp. recreation) provided by foresters.

Regarding abandoned land, actors point to the fact that NFR is usually not managed and hence considered "bad forest". If managed, NFR would bear opportunities for additional natural resource use. NFR is described in more neutral terms under this narrative, in a sense that the future outcome remains to be seen: "we don't know if it will be better or worse, but we are certainly not used to it" (AT7). Unmanaged areas of NFR are described as fragile stands – not yet mature, too dense and with little biodiversity. As described by one interviewee, these forests are not wanted: "[Naturally grown forest] is not the forest we wanted, it's the forest product of abandonment. Therefore, it is an unstructured forest, a forest where no measures have been realised, and without plans to do so. It is a wild, but not mature forest" (PYR6). The main threat of unmanaged forests, particularly areas of NFR, would be forest fires due to biomass accumulation. High efforts and capacities need to go into fire management for managers and owners. Wind and snow damage also play a role (PYR, AT, VAU). The fact that NFR colonises areas nearby settlements, increasing both the ignition and damage potential, was also mentioned under this narrative (esp. BCN, PYR, VAU). This leads to additional challenges and efforts for forest owners and managers.

As indicated above, wood markets on a global and local scale are mentioned as causes of a weak forest sector. The low wood prices and the low profitability of forest management are especially highlighted in the Spanish case studies. Related to this, the lack of political support for forestry use and management, and badly designed subsidies, are seen as problems in all cases, hinting to a lack of financial means to implement forest management well. While more investment into the local forest sector is demanded for, some interviewees describe the "culture of subsidies" in agriculture and forestry as an important cause of the problem. They argue that people would become "lazy" and would no longer be innovative (AT, PYR): "You neither get paid for being productive nor do you get paid for being innovative or anything. They give you money so that you can cover your expenses and do what you've done all your life. No one becomes rich, poor neither, and you keep going. If the people who are now in charge of the farms are 50–60 years old, why should they innovate if they have 5 years left to retire?" (PYR7).

Under this narrative, forest management is promoted to provide various services and products to society and the markets, and hence also to use potential resources of NFR. According to this view, forest management should be implemented wherever possible. The use of provisioning ecosystem services such as wood, biomass and NTFPs are specifically emphasised (AT, PYR, VAU), also to boost the local forest economy. Policy initiatives should consequently focus on the "dynamisation" of the local forest sector. This means there is a need to promote forest products, woody biomass for energy (only AT and PYR), NTFPs and their economic use, and new wood markets such as construction. As an example, some interviewees address the idea to form local business groups and institutions at the municipal level, instead of the centralised forest administration (PYR, VAU). Subsidies need to be temporary with the aim to make the system self-sustaining (PYR). Furthermore, the need for local supply chains for added value wood

products is emphasised (PYR, VAU).

The pro management narrative also highlights the societal services that forest managers and owners provide related to recreation and tourism. Erosion control is mentioned as a positive benefit from NFR (AT, VAU). Although tourism is seen as a pillar of rural development, potential conflicts for landowners and managers are stressed, not only with visitors but also with municipalities (BCN, PYR, VAU). Related to this, the need to understand and respect forests as property (as opposed to a common good) is highlighted (esp. BCN, PYR), and even the need to regulate forest access is mentioned to prevent damages through excessive recreational use (BCN). Furthermore, tourism is mentioned as a justification for economic compensations for landowners and managers for providing and taking care of the landscape. Regarding conservation, one interviewee exemplarily made clear that compensations for owners are necessary: "The formula for not exceeding ourselves in this protectionist eagerness that societies are acquiring is to economically value the limitation that you produce. That is to say, whoever wants to make a network of freely evolving forests has to value it economically and has to pay for it to the affected property, because you are limiting a basic property right" (PYR6).

Summing up, the pro management narrative argues that NFR bears opportunities, but only if the area can be managed. As local people tend to think that NFR carries risks and dangers (AT, PYR, VAU), this narrative aims to change those concerns into a vision that the new forest can bring new resources. As one representative in the Pyrenees points out, forest resources are the only opportunity they have, and hence need to be used: "Only forestry, in the broadest sense, [remains]: hunting, mushrooms, public use of the forest; [...] as a forest worker, I see it as an opportunity for those villages who were no longer doing anything on the land, and who have a lot of land; and for the country, because we import a lot of wood and a lot of energy, so it is strategic to have that forest well managed" (PYR6).

3.1.3. Pro nature narrative

The main actors voicing this narrative are environmental groups and tourism representatives. Two subnarratives are presented under the pro nature narrative: landscape conservation and wilderness. Under the landscape conservation subnarrative, actors highlight risks for the loss of species and habitats of open grassland. Furthermore, the change of landscape due to land abandonment is described as a challenge that needs to be tackled to sustain extensive agricultural practices. Actors point to the homogenisation of landscapes due to the loss of the mosaic landscape with various habitats and open areas. Regarding the expansion of Atlas Cedar in Vaucluse, one actor states that NFR is "the standardisation of the landscape, of the forest as such, because it tends to dominate the other species, to expand, and then the management that is practiced favours it even more [...]. We are moving towards a general loss of biodiversity and rather a willingness to let it [Cedar] spread" (VAU5). Under the wilderness sub-narrative some see opportunities related to ecological benefits, such as rewilding and ecological restoration. Actors argue that the question of habitats depends on the question which species should be favoured. Through NFR open landscape species get lost whereas forest dependent species may benefit (AT, PYR). Additionally, the natural development of ecosystems is viewed positively (AT, PYR).

Both pro-nature subnarratives have in common that overly intense agriculture and forestry practices are seen as problematic. Additionally, a loss of connection to nature and of spiritual landscape values in the population, especially the younger generation, is highlighted (AT, PYR). The pro-nature narrative argues that such connections are needed: "for us it is very important that as a society we have a relation with this ecosystem, of which we are part" (PYR1).

Similar to the other narratives, badly designed CAP subsidies are mentioned by some as causes to the loss of small-scale agriculture. The CAP would favour big farms and those who have money, and hence extensive agriculture would be replaced by intensive farming elsewhere

(AT, PYR). Additionally, the hierarchical administration related to land management is criticised, highlighting the loss of communal rights over the land (esp. AT and VAU). For example, in the Alto Tajo region: "the decision centres, they're not here in the territory, they're not here. [...] If you can no longer decide about what you have here and how to do things, you have a problem, of democracy, of management; of governance, above all" (AT1). This situation demotivates locals to work with the landscape. A similar challenge is addressed in Vaucluse, where the decision to build a biomass power plant was described as being taken without involving local people – despite having potentially significant impacts on land use options. In Catalonia (BCN, PYR), the lack of a long-term vision in local forest policies is highlighted, as well as a lack of a shared landscape vision among different policy sectors, which makes policy obsolete: "here it has never been thought in the long term, never. Therefore, a forestry policy that has not been thought through with the agreement of all political formations, in the long term, is of no use at all" (PYR5).

The landscape conservation subnarrative focuses on the need to sustain heterogenous landscapes with extensive agriculture. Thus, solution strategies should focus on fighting NFR and strengthening measures for extensive small-scale agriculture. In contrast, the wilderness subnarrative sees a potential for rewilding on abandoned land. In accordance with the idea of wilderness, some describe the natural development of ecosystems as bearing potentials from an ecological viewpoint, "recovering" degraded agricultural land. New forest types could develop, and interesting landscapes could be created. Also, more fauna would appear. The restorative character of NFR is highlighted: "with this recovery, with this abandonment, the forest has recovered parts of the territory [...]. Therefore, these forests can progressively become forests with much more splendour, with much more complexity. And in other parts, with a lot of wood production capacity, looking for a balance between which areas could be left to natural dynamics or for landscape or for health and welfare uses "(PYR8). In the Alto Tajo region, Juniper is described as a positive example since it could regenerate, from being almost extinct to establishing itself on a large territory of abandoned land.

While both subnarratives highlight ecotourism as an important and welcome pillar of the rural economy, the wilderness subnarrative has a stronger focus. The landscape conservation subnarrative refers to the demand for traditional land uses with its historic mosaic landscape, which is desirable to visitors (BCN, VAU, BCN). Under the wilderness subnarrative, wild and reforested landscapes are considered attractive for nature tourism. Furthermore, the therapeutic and educational value of the forest and landscape are highlighted (AT, PYR). Both subnarratives address the need to economically value ecosystem services so that forest owners can value these "new" forest as income opportunity. Actors specifically mention the need for economic income for owners from touristic and recreational use (BCN, PYR, VAU; both subnarratives) and economic incentives for carbon sequestration (AT, PYR; wilderness subnarrative).

Finally, both sub-narratives address the increased fire risk through NFR pointing to the need for an appropriate prevention management depending on the site conditions, even if the aim is a natural development of ecosystems (AT, BCN, PYR). Especially in the Barcelona case study, fire plays an important role, as the city and forests are interwoven. Nevertheless, under the nature narratives actors also emphasise the importance of the forest surrounding the city as a "green lung" of Barcelona.

3.2. Regional nuances

When comparing the narratives across the case studies (research question 2), we find each region highlights different topics related to NFR. Furthermore, the narratives are not equally present in all cases. Table 3 gives an overview of the regional nuances in each case study with the topics, which were highlighted under the respective narrative.

Table 3

Overview of regional nuances. The table shows the characteristics of each narrative between case studies. The labels "present", "present to some extent" and "absent" indicate how visible the narrative was in our data in the respective case studies. Present means that the narrative was a common view in our interviews; present to some extent means that a few actors raised this narrative; absent means no actor raised (parts of) this narrative.

Narratives	Alto Tajo region	Barcelona Metropolitan Area	Catalan Pyrenees region	Luberon/Mt. Ventoux region
Rural fatalism	Present Focus on hopelessness of the region and lack of any economic opportunity - NFR just on top of this as additional problem Focus on the disregard of the farmers work from outside	Absent	Present Focus on the problematic economic situation of rural farmers and landowners, and the disregard of their work from outside Conflicts through tourism highlighted	Present to some extent Focus on demographic trends and the loss of traditional land use, both in agriculture and forestry
Pro forest management	Present to some extent Focus on the low importance of the wood market, on the centralised administration and lack of capacities for forest management	Present Focus on recreational needs and fire management, but almost no use of wood products Pressure from urban surrounding and conflicts through tourism highlighted	Present Focus on the need to strengthen local wood markets and the economic valorisation of NTFPs Demand for a long-term vision in forest planning	Present Focus on the importance of increasing added value of wood products and local wood chains Focus on a diverse market for quality timber, not for biomass, which is seen as detrimental Increasing problems with "neo-rural" population and conflicts through tourism highlighted Focus on cooperation with the local nature NGOs regarding conservation issues
Pro nature	Present Focus on the potential of ecotourism Focus on the need to valorise and sustain cultural ecosystem services Critique towards centralised administrations	Present to some extent Focus on recreational needs and sustaining heterogenous landscape Pressure from urban surrounding is highlighted	Present Focus on preserving/ restoring old land uses (grazing, mosaic landscapes) Depending on the region, rewilding initiatives under way	Present Focus on ecotourism Focus on preserving/ restoring old land uses (grazing, mosaic landscapes) Focus on cooperation with the state forest agency regarding forest management

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4. Discussion

4.1. Method reflection

A difficulty we faced in the data gathering and analysis process was the distinction between the different stages of abandoned land becoming a forest. In practice, interviewees did not separate between land abandonment and NFR. When asked about NFR, answers were often about land abandonment in general. Consequently, when developing the narratives based on the data, the decision was taken to integrate land abandonment and NFR, as both processes cannot be viewed separately from each other in the interview data. Additionally, NFR exists at very different stages even within a studies region; these differences may shape individual perceptions. In sum, however, we believe that our study based on 42 interviews delivers an insightful overview on how general opportunities and trade-offs of NFR as well as bigger questions related to this land use change are narrated and perceived by local actors. Yet, our dataset is not big enough for detailed further analysis, e.g. relating to different stages of a natural succession process. Further methods would need to be applied to fine-tune the analysis, e.g. also through studies with a long-term historic perspective.

4.2. Discussion of results

4.2.1. Perceptions of NFR

The starting point of this research is to contribute to a better understanding of the perceptions of involved groups about the trade-offs and opportunities of NFR. When comparing our results with previous research on land abandonment and NFR, some findings are confirmed and some new aspects arise. The three identified narratives partly mirror similar findings in other analyses of perceptions on land abandonment in Europe (Elands and Wiersum., 2001; Soliva, 2007; Bauer et al., 2009; López-i-Gelats et al., 2009; Soliva and Hunziker., 2009). With our research, we provide a detailed overview of perceptions of NFR resulting from land abandonment. Furthermore, we have gained some clarity about perceived trade-offs and synergies that develop between the narratives, and hence also between different actor groups involved in the management of the land, particularly agriculture, forestry and conservation actors.

Regarding problem perceptions, past research suggests that local people are very critical towards NFR on abandoned land (e.g. Hunziker et al., 2008). This negative perception of NFR is directly linked to local people's attachment to the landscape and its historical use (cf. Fernández-Giménez, 2015; van der Zanden et al., 2018). Such a perspective is also prominent in our case studies. Particularly under the rural fatalism narrative, NFR is perceived pessimistically, representing the perishing of marginalised rural regions. Our data further shows that farmers are mainly concerned with keeping agriculture alive, to not lose productive land, and forest managers are mainly concerned with strengthening forest management. Thus, trade-offs related to NFR are often seen in line with the involved land use, hence the actors' primary interest in the land.

Regarding perceived opportunities for NFR, we find these under the pro forest management and pro nature narrative. The rural fatalism narrative, in contrast, sees forest removal and the reinstallation of agriculture replacement as the best solution; however, it expresses little confidence that this is possible. Instead, it considers subsidies as the only possibility to keep agriculture alive. Fernández-Giménez (2015:29) shows for the Central Pyrenees "the necessity of subsidies if herding is to continue as a way of life, land use and occupation". This resonates well with our findings.

The potential of the new forests as a resource is highlighted especially under the pro forest management narrative. Our data suggests that NFR presents new resources for forestry, if managed in an economically feasible way. Furthermore, in Vaucluse and in the Pyrenees, foresters point to the potential importance of NFR to support the local wood market, instead of importing wood from elsewhere, and to support the local job market. Taking advantage of this, however, requires taking into account the socio-economic possibilities given in a region, as well as gaining the support of local people and policies. In comparison to research on land abandonment, such as by Soliva (2007) (see ch. 1.2), we therefore see a more positive picture of land abandonment connected to NFR, as actors can connect the decline of agriculture to a potential rise of forestry.

The potential of rewilding through land abandonment is stressed under the wilderness subnarrative. This is especially true for rewilding efforts promoting large carnivores in the Pyrenees and ecotourism intentions in the Alto Tajo region and the Pyrenees. The subnarrative resembles the positive perception of passive rewilding through NFR by conservation scholars (cf. Proença et al., 2012; Pereira and Navarro, 2015; Carver, 2019). However, conservation actors in our data frequently highlight the need for sustaining open landscape habitats and hence fighting NFR, at least to some extent. That is, actors under the landscape conservation subnarrative set a focus on the trade-off of losing the heterogenous landscape through land abandonment. This indicates that while in academia the rewilding idea is becoming more prominent, at the local scale scepticism and critique by those directly involved in landscape management frequently outweigh the perceived potential, partly even in conservation. Considering the changing role of rural zones from being predominantly places of primary production towards (also) being places of recreation and tourism (Buijs et al., 2006), and current EU policy initiatives on forest restoration in Europe (European Commission, 2020), rewilding through NFR could become more acknowledged as an important management approach.

When comparing the compatibility of the three narratives, we find conflicting as well as compatible elements. For instance, the pro forest management, the rural fatalism narrative and the cultural landscape subnarrative aim for managing the land wherever possible. These three (sub)narratives share the perception that non-management is a problem but suggest different strategies of how to manage the land (focusing on agriculture, forestry or landscape conservation), which are partially conflicting with each other. They stand in contrast to the wilderness subnarrative, which is the only narrative that values the natural development of the naturally grown forests per se (cf. narratives on land abandonment in ch. 1.2). The fire risk and necessary prevention measures, however, are a unifying element in the Spanish cases, as it was addressed under all narratives, although to different extents. Furthermore, both the landscape conservation subnarrative and the rural fatalism narrative emphasise the importance of extensive small-scale agriculture for sustaining cultural landscapes, which is, however, not emphasised in the pro-forest and the wilderness narratives. These elements of consent and dissent connecting to problem perceptions and solution strategies across the narratives might be a basis for negotiating future land use and conservation strategies on the ground.

When it comes to regional differences, we see that some characteristics of the case studies particularly shape the perceptions of land abandonment by different actor groups. First, the importance of different land uses – especially agriculture, forestry and tourism – may shape whether actors perceive NFR positively. For instance, in the Alto Tajo region, the forest sector is described as being of low economic importance; consequently, actors barely talk about the potential to use the new forest resources. In contrast, in the Pyrenees and Vaucluse, where forestry is more important, the potential for this land use option is more frequently emphasised. In the Alto Tajo region, local people are frustrated about the overall poor socio-economic situation, and consider NFR to just be a visible sign of the overall rural decline. In the Barcelona case, NFR is connected to fire risk, but there is also a shared perception that the previous expansion is welcome as a "green lung" of the city that provides recreational area. These differences between urbanised Barcelona and rural Alto Tajo may indicate a larger pattern regarding perceptions being influenced by the degree of urbanisation. While in the urban Barcelona case the management of urban societal

needs and demands are emphasised, namely recreation and fire prevention, in the rural cases perceptions of the local forest and agriculture sectors are more dominant. Moreover, interviewees in the Barcelona and Vaucluse case studies highlight that the urban population often rejects forest management, which is not the case for the rural areas.

It is not only socio-economic characteristics of a region that can influence perceptions of NFR, but also ecological and biophysical ones – e.g. the forest cover, forest types and topography. In Vaucluse, Atlas Cedar is a welcome tree species for foresters; its natural expansion is widely viewed positively under the pro forest management narrative. In contrast, in the Alto Tajo Region, Spanish Juniper is not considered useful for any land use and hence its natural expansion is viewed negatively by farmers and foresters.

An interesting question that arises from our data is how perceptions of actors change over time. This relates to changing socio-economic patterns, landscape use and ecological characteristics of the landscape. For instance, interviewees mention that the younger generations are more familiar with the visual dimension of NFR and abandoned land and that fewer young people work in the primary sector. At the same time, as a naturally regrown forest becomes older, it might be seen as a "natural" forest landscape by future generations, without being a symbol of rural decline. These considerations go beyond the scope of our data.

Furthermore, our findings show that climate change is almost entirely excluded from the narratives. While some mention the potential of carbon sequestration through NFR, there is no further link made to climate change and land use under any of the narratives. Given the fact that climate change has huge impacts on land use in Southwestern Europe already today, for instance connected to fire risk (Rego et al., 2018), this is a striking omission.

4.2.2. Cultures of abandonment

As we have pointed out above, despite regional nuances, we have identified strikingly similar narrative patterns across all four cases. This raises the question in how far major cultural patterns of society–nature interrelations may underly the distinct social perceptions and related narratives of NFR. One interesting analogy can be made to the cultural biases suggested in the "Cultural Theory" as presented by Thompson et al., 1990. The Cultural Theory approach refers to four different "ways of life", which are assessed by "cultural biases" of actors – shared values and norms – and their "social relations". The four cultural biases – individualism, hierarchism, egalitarianism and fatalism – shape people's relation to nature and nature policy (ibid.). Elements of these are reflected in our findings. First, the rural fatalism narrative correlates well with the fatalist cultural bias. Fatalists are described as perceiving themselves as coerced and controlled by others, resulting in a passive attitude and overall pessimism. This bias has been connected to farmers in other cases as well, in relation to the loss of economic and political importance in land management decisions (Kim, 2003). Second, the pro forest management narrative largely resembles an individualist cultural bias. At the core is a belief that the new forest resources should be used, and that self-sustaining approaches need to be found to generate value with the new forests for society. Third, the wilderness sub-narrative relates to an egalitarian cultural bias, emphasizing the value of untouched nature that needs space to develop without human interference. Finally, elements of a hierarchism culture can be found in the landscape conservation subnarrative and the pro-forest management narrative relating to the necessity of proper management of landscapes and forests. Such elements are also found under the rural fatalism narrative regarding agricultural land uses. Nevertheless, this culture is less prominent in our data, being based on interviews at the local level. It would be interesting to resume the empirical analysis at the level of governmental bodies and bureaucracies, were presumably this narrative is most strongly rooted (Sotirov and Winkel, 2016).

Summing up, in line with the Cultural Theory approach, the identified narratives may represent "cultures of abandonment" or "land use transition" that encompass different problem perceptions, distinct visions for how to deal with the problems, and different ideas on who is mainly responsible for solving these problems. Notably, the rural fatalist narrative largely fails to provide a solution strategy that goes beyond the status quo, while the pro forest management and pro nature narratives provide distinct solution strategies in line with their respective cultural biases.

This finding of our paper is of high relevance for dealing with the issue of land abandonment in policy and management. Acknowledging the presence of strikingly different narratives, and assuming they are connected to similarly different cultural "worldviews" of the land, means that policy and management approaches need to consider culturally rooted biases when dealing with future land management, including the trade-offs and diverging solution strategies that arise from these biases. In line with Thompson (2003), this may call for "clumsy institutions", i.e. institutions and policies that are responsive to and are able to incorporate elements from all narratives and cultural biases present in the landscape, instead of giving "elegant" preference to only one way of thinking. Such approaches may focus on potential compatibilities and shared perceptions across actor groups, as well as develop spatially diverging management and conservation strategies, finding different management objectives for different sites.

5. Conclusions

Land use patterns in Europe underly continuous change, as do socio-economic drivers determining land use options. This paper shows that NFR on abandoned land, which is widespread in some European regions, is a land use transition process that can mean different things to different societal groups. The different symbolic functions NFR can entail are striking, ranging from a symbol of rural decline to a sign of recovery of the land. Given the extent of land abandonment in France and Spain and beyond, people will need to live with these changes as many have been doing for decades already. Any assessment of specific opportunities and trade-offs needs to consider the local conditions and the different culturally biased perceptions expressed about NFR. Furthermore, future land use governance and management approaches need to acknowledge the presence of these distinct cultural beliefs without giving ex ante priority to only one vision, and need to consider different visions for NFR depending on the context.

Future research may investigate further how the narrative patterns found in our cases can be identified in other settings in Europe, as the reviewed literature indicates. Furthermore, it would be very interesting to address the mentioned temporal dimension land use change and related, presumably shifting, perceptions of land use change over time, including across generations (Soliva et al., 2010). Finally, connecting empirical social science research on perceptions with natural science research on NFR dynamics and implications might be promising. Inter- and transdisciplinary research approaches involving distinct stakeholder groups and citizens may focus on how different problem perceptions and solution strategies can be integrated at the local scale, and how integrated visions of landscape management can be developed.

Author contributions

Use this form to specify the contribution of each author of your manuscript. A distinction is made between five types of contributions: Conceived and designed the analysis; Collected the data; Contributed data or analysis tools; Performed the analysis; Wrote the paper.

For each author of your manuscript, please indicate the types of contributions the author has made. An author may have made more than one type of contribution. Optionally, for each contribution type, you may specify the contribution of an author in more detail by providing a one-sentence statement in which the contribution is summarized. In the case of an author who contributed to performing the analysis, the author's contribution for instance could be specified in more

detail as 'Performed the computer simulations', 'Performed the statistical analysis', or 'Performed the text mining analysis'.

If an author has made a contribution that is not covered by the five pre-defined contribution types, then please choose 'Other contribution' and provide a one-sentence statement summarizing the author's contribution.

Theresa Frei: Conceived and designed the analysis, Collected the data, Performed the analysis, Wrote the paper.

Jakob Derks: Collected the data, Performed the analysis, Other contribution.

Carmen Rodríguez Fernández-Blanco: Collected the data, Performed the analysis, Other contribution.

Georg Winkel: Conceived and designed the analysis, Wrote the paper, Other contribution.

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Appendix

Interview guideline - English version
Alto Tajo region

Introduction

1. Could you explain a little bit about your position in [the organization] and your relationship with the forest and forest management?

2. How is [your organisation/business…] involved in forest management and use in the Alto Tajo region and what are your main interests?

3. What could you tell me about the importance of the forest for the society in the Alto Tajo region?

Forest management and forestry sector

4. What is the importance of the forest sector in the Alto Tajo region? What are the most influential factors on the importance of the forest sector?

5. What are the most influential factors on the type of management that is done in the forests of the Alto Tajo Region?

6. What is the process of land abandonment that is occurring/has occurred in the Alto Tajo region? How does it relate to current forest management?

Natural Forest Regrowth (NFR)

7. What would you say are the most important benefits of the new forests that colonize the abandoned lands?

a In relation to the different timber and non-timber products.
b In relation to societal and cultural aspects.
c In relation to ecological aspects.

8. What do you consider to be the most important problems arising from the spontaneous growth of forest stands? Or that could become a problem in the future?

d In relation to the different timber and non-timber products.
e In relation to societal and cultural aspects.
f In relation to ecological aspects

9. How are NFR areas managed and used? Who uses them?

10. How is the management carried out in the NFR areas [ask specifically: Spanish Juniper areas]? What are the factors that most influence the type of management carried out in the new forest areas of the Alto Tajo region?

11. What do you consider to be the most important conflicts of interest deriving from the uses and management of abandoned land and the new forest masses that grow on them?

Vision

12. What is your vision of territorial management in the [case study] region and which actors would/play an important role?

Policies

What are the effects of different policies on the use and management of abandoned lands in the case study region?

a Nature and biodiversity conservation policies (Natura 2000 Network, Renaturation/Rewilding, …)
b Agricultural and rural development policies (CAP, Rural Development Plan,…)
c Renewable energy policies
d Other policies?

14. Are there any of these policies that you think should be reformulated? How? Is there any other that does not exist, but should, in your opinion?

Final questions

- In relation to this topic, is there anything that did not appear during the interview, but that is important?
- In relation to this topic, do you know of any other person or institution with whom it would be interesting for me to get in touch? (Public/private…).
- Is there any literature or documentation I can consult on the subject?

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