



**UNIVERSIDADE DE LISBOA  
INSTITUTO SUPERIOR TÉCNICO**

**THE ROLE OF SOCIAL-ECOLOGICAL SYSTEMS AND INHERENT  
ECOSYSTEM SERVICES IN ATTRACTING SKILLED IN-MIGRANTS,  
INDUCING TRANSITIONS IN RURAL AREAS**

**Rute Correia Martins Cegonho**

**Supervisor: Doctor Maria do Rosário Sintra de Almeida Partidário**

**Thesis approved in public session to obtain the PhD Degree in Environmental  
Engineering**

**Jury final classification: Pass with Distinction**

**2019**

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## RESUMO

As áreas rurais têm recentemente passado por alterações nos seus sistemas socio-ecológicos (SSE) devido à chegada de novos atores provenientes de áreas urbanas. As mudanças consistem muitas vezes numa maior diversificação dos sistemas, atividades e capital social. Os serviços dos ecossistemas (SE) são neste contexto fatores de atração para novos atores, sendo que, a disponibilidade dos SE nestas mesmas áreas está dependente do aumento do capital social existente. Assim, o principal objetivo desta pesquisa é investigar se os SSE e os SE que lhes são inerentes estimulam a atração de pessoas e promovem transições para a sustentabilidade das áreas rurais, beneficiando da imigração qualificada no aumento do valor rural. Em Portugal, as estatísticas indicam que a população nas áreas rurais continua em declínio, o nível de habilitações literárias não aumenta e o desemprego sobe. No entanto, a literatura internacional aponta como caminho para a renovação das áreas rurais a atração de nova população. Esta investigação teve por base cinco atividades pesquisa: Análises de dados estatísticos; Revisão bibliográfica e documental; Análise de políticas Europeias e Municipais; Aplicação de inquéritos; e Revisão das iniciativas desencadeadas por imigrantes qualificados. Apesar da contínua tendência de urbanização, os resultados sugerem uma tendência crescente na procura dos SE nas áreas rurais europeias e as políticas de repovoamento realçam a necessidade de apoiar a integração de imigrantes nos novos locais. No caso português, parece existir uma evidente tendência de procura pelas áreas rurais, motivada predominantemente pelos SE. Neste contexto, os imigrantes são agentes de mudança nestes territórios, sendo responsáveis pela promoção de novos produtos e novos serviços e pela promoção do capital social. Os resultados revelam uma desadequação entre as políticas promovidas e as necessidades que os imigrantes qualificados apontam. A tese conclui que os imigrantes qualificados podem trazer benefícios e desencadear processos de transição para a sustentabilidade nos SSE se corretamente apoiados por políticas públicas e fornece recomendações relativamente à atração de novas pessoas para os SSE rurais. Da investigação resulta que as políticas públicas territoriais têm potencial para melhorar as condições para atrair imigrantes qualificados para as áreas rurais, aumentando assim o capital social essencial em transições sustentáveis dos SSE rurais.

**Palavras-Chave:** Sistemas Socio-Ecológicos, Serviços dos Ecossistemas, Capital social, Imigrantes qualificados, Transições rurais, Agentes de mudança



## **ABSTRACT**

A re-definition of rural social-ecological systems (SES) is underway in rural areas affected by in-migration with SES becoming more diverse in its activities and in its social capital. In this context, ecosystem services (ESS) may act as a pull driver for new people, while its delivery also depends on the increase of social capital in rural areas. The thesis investigates whether SES and inherent ESS, can stimulate attractiveness to rural areas and promote development, while also benefiting from incoming skilled in-migration. In Portugal, national indicators show a decrease in the rural population, qualification does not improve and unemployment increases. It is well acknowledged in the literature that to renew social systems in rural areas the attraction of new people is necessary. This research includes five main research activities: Data analysis; Literature and document review; public policy analysis; Inquiries; and review of initiatives.

Findings highlight that there is an increased demand for rural areas and a transition towards environmental services in rural areas and public policies for rural repopulation underline the need to support in-migrants integration.

In the Portuguese case, results show in-migration to rural areas by urban population is pulled by rural environmental qualities. They are agents of change, responsible for promoting new products and new services and enhancing social capital. As for municipal policies and the local authorities in the studied area, they hardly respond to skilled in-migrants needs. The thesis concludes that skilled in-migrants may bring benefits but also challenges in rural SES if well supported by public policies. From the research results, it is possible to argue that territorial public policies have the potential to enhance the conditions to attract skilled in-migrants to rural areas increasing the essential social capital for sustainable transitions towards enhanced rural SES.

**Keywords:** Social-Ecological Systems, Ecosystem Services, Social Capital, Skilled In-migrants, Rural Transitions, Agents of Change



## THANK YOU

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## THESIS ACRONYMS AND ABBREVIATIONS

CAP	Common agricultural policy
CICES	Common International Classification of Ecosystem Services
ESS	Ecosystem Services
EC	European Commission
EU	European Union
GIS	Geographic Information System(s)
ICT	Information and Communication Technologies
INE	National Statistics Institute
LAG	Local Action Group
MEA	Millennium Ecosystem Assessment Mapping
MMP	Municipal Master Plan
NRDP	National Rural Development Plan
OECD	Organisation for Economic Co-operation and Development
PSI	Public Services and Infrastructure
TEEB	The Economics of Ecosystems and Biodiversity United
SES	Social–ecological Systems
UN	United Nations United





# 1. INTRODUCTION

## 1.1 Rationales of the research: Relevance of the study

The attractiveness and added value of rural areas are the main motivations for the present research work. The SES value and its increasing attraction have been creating the conditions for emerging opportunities associated with SES and to ESS promotion.

But before discussing ongoing transitions in rural areas the term rural must be explored. This is quite a controversial term with no clear definition or consensus on the international level. Some of the most commonly used classification systems provide definitions that point to distinct areas which vary greatly in size. From a territorial perspective, frequently rural areas have been defined as reminiscent of the urban areas (Woods 2015). Other definitions relate rural areas to the functions they perform for urban society (as sources of food or provision of recreational amenities) (Woods 2015) and therefore they are also considered an important component of ecosystem services. Usually, definitions of rural areas depend on several geographical units. Both academics and governants use population size and density, land use, proximity to larger settlements and the presence of agriculture indicators for the definition of rural areas (Woods 2015).

With the aim of understanding demographic inflow, namely of middle-class urbanites, in these territories, the present research has investigated the in-migrant phenomena both worldwide and in Europe, specifically in Portugal where the case study is being developed. Although the present research accepts that there is no global or absolute definition of the concept, the perspective adopted in the context of this thesis, is strictly related to population size and the ability to provide ecosystem and ESS.

In recent years, in the developed world, a counter-flow of people has been occurring in many rural areas namely due to the capacity of ecosystems to provide ESS for human well-being. Consequently, a transition has been reported in changes of uses in rural areas, whereby a formerly dominant production function of those territories changed to a more complex and variable mix of production, consumption and protection (Pinto-Correia 2011; Holmes 2008). As acknowledged by Woods (2010) the regular use of rural space for leisure and recreation by urban population has been changing public perceptions of the world more developed countries (America, Europe, Australia and New Zealand) and, challenging the political primacy of agriculture.

However transitions in rural areas are broader than changes in land use functions, and a re-definition of social-ecological systems (SES) is also underway with SES becoming more diverse (Hedberg and Haandrikman 2014) in its activities and in its social systems (Phillips 2010), creating new opportunities that were less apparent before. In-migrants have been also responsible for

the commodification of the countryside contributing to these transitions. Thus, rural in-migration is an opportunity for the renewal of rural areas through the inflow of new ideas, influences and skills (ECORYS 2010). Issues linked to in-migration in rural areas have been explored through the lenses of counterurbanisation mostly by rural social scientists in English or Anglophone contexts where the phenomena gain more expression, but also in Greece and in Spain (Gkartzios 2013). From the perspective of counterurbanisation, almost four decades of research on the topic have focused on the characteristics of the locality, the motivation of the displacement and the diversity of people associated with counterurbanisation (Gkartzios 2013). Demographic changes in rural areas also have diverse implications for the rural population, to their daily routine and to the standard of living in these regions. SES components establish relationships with each other in different ways making it a complex system with many uncertainties (Folke et al. 2002). All these modifications may have as a consequence a better response adapting capacity of the SES, including when uncertainty is high (Folke et al. 2002).

Therefore, this thesis is grounded in the SES school of thought that argues that human systems and ecological systems are tightly and inextricably linked (Ostrom 2009). In current rural areas, SES is both a factor of development through the attraction ESS triggers, and can benefit from ongoing initiatives implemented by skilled in-migrants. Thus, social-ecological research is increasingly considered as a vital component in the research agenda related to sustainable resources use (Ostrom et al. 1999). For most ecosystems, human interactions, perceptions, and behaviours primarily determine their structure and function. Therefore, ecological systems are strongly influenced by human activities and also social systems dependent on resources and services provided by SES (Folke et al. 2002).

SES interactions also vary along rural-urban gradients as links between ecological and socioeconomic structures are established by different actors. The literature acknowledges that the arrival of skilled in-migrants in rural areas have intensified the rural-urban synergies. Widening the perspective from food production to other functions and services that agriculture provides to urban areas, there has been an increase in the provision of recreational services, but also through the creation of new social and organizational networks (Zasada 2012). Increased interaction between urban and rural areas have also been motivated by lifestyle and residential factors that occur both in urban and rural areas (Thulemark 2015). Urban areas represent important consumer markets where goods and services can be offered via the diversification of activities (Zasada and Piorr 2015) and skilled in-migrants with urban origins can better facilitate in bridging the need of both urban and rural areas.

Nevertheless, not all rural areas are able to benefit to the same extent from the opportunities that skilled in-migration offers, such as maintaining the population, the diversity of activities

(Wilson 2001), increased number of businesses or employment (Kalantaridis and Bika 2006). While parts of rural Europe are experiencing an influx of in-migration from urban areas, others are confronted with the threat of an imminent de-population (ESPON 2006). In this respect, it could be said that three types of rural areas coexist within the European Union (EU): marginal and isolated ones, still considered highly unattractive and with persisting demographic land abandonment and economic decline associated with environmental degradation (Verburg et al. 2013); secondly those with development dynamics defined by strong economic growth, social cohesion and environmental sustainability; and thirdly those under processes of land use intensification.

The different types of rural areas can also be observed in the factors that determine these situations and in the diverse territorial responses to the policies that affect them (Sánchez-Zamora, Gallardo-Cobos, and Ceña-Delgado 2014). Rural areas that have been through processes of counterurbanisation have developed, in some cases, economic growth, social cohesion and environmental quality (Sánchez-Zamora et al. 2014). The arrival of in-migrants in rural areas is also a way to increase the social capital in these areas and induce transitions in rural SES, addressing Ecosystem Services (ESS), and connecting to improved lifestyles (Barnes-Mauthe et al. 2015). ESS represent the direct and indirect benefits that people obtain from ecosystems (MEA 2005), and therefore they play an important bridging role in connecting human systems with ecological systems (Fischer et al. 2012; Martín-López et al. 2012). Furthermore, MEA (2005) also determines nature as an important contributor to human wellbeing as human welfare depends on whether these ESS improve or deteriorate (Costanza et al. 1997).

The old, and still, current mental disconnection of human progress and economic growth from the fundamental interactions with the biosphere has altered the long-term capacity of 'natural capital' to sustain societal developments (Folke et al. 2011). As argued by Folke et al. (2011), the separation of social and ecological systems has contributed and continues to contribute to a misfit between ecosystems and governance systems. An example of this separation is the process of land abandonment in Portugal due to the decline in employment in the agricultural sector, with the particular feature that it occurred later than in other countries in Europe. This had as a consequence less diversification of the SES and the decrease of the resilience of the system with the reduction of the delivery of the ESS (Aguar et al. 2009).

Apart from the well-known examples on the duality of land use functional change from production to consumption, little is known about the extent of modification in rural areas due to the arrival of skilled in-migrants. In Portugal, about half of the national territory is occupied by remote and marginal areas characterized by processes of ageing and population decline. Yet

there are environmental and cultural characteristics that society has increasingly come to appreciate. These characteristics motivate new demands and consumption on these territories (Soares da Silva et al. 2016), related among others to leisure, search of natural assets and wisdom of older generations that have contributed to the development of local economies in several regions (Baptista 2010) and that are already emerging in the Portuguese territory (Covas and Covas 2012). According to the same author this phenomenon is occurring between urban and periurban areas but also between urban and remote and deep rural areas. In recent years studies conducted in Portuguese rural areas report on ongoing transition that has been occurring between production and consumption values. In this context, Figueiredo (2003) pointed out the importance of environmental issues as a core subject in emerging paradigms while Batista (2006) addressed the diversity and multifunctionality of activities considering that we are no longer facing agrarian landscapes and Santos and Cunha (2007) focused on natural, cultural and economic elements as important factors to the development of rural areas.

Although most initiatives and projects conducted by local governments in Portugal are rather more directed at the provision of small industries and other urban commodities that generate immediate revenues (Baptista 2010) the transition from production to consumption has also been reflected in political measures (Silva and Figueiredo 2013). Nevertheless, already in 2009 Covas pointed out several reasons that constraint rural development being the most important related to public policies and the role of relevant stakeholders.

In this context, this research investigates whether SES, and inherent ecosystem services, can stimulate attractiveness to rural areas and promote development, while also benefit from incoming skilled migration boosting rural value. It is also an intention of this research to focus on the role of public policies in repopulation to support urban to rural migration.

## 1.2 Research context

### *1.2.1 The world and European demographic trends*

This section provides an overview of demographic trends in rural areas by examining changes in the world and European rural populations through data analysis. Demographic data presented was collected on the website of the UN<sup>1</sup>.

Rural population variation in developed countries from 1950 to 2010 was collected and analysed in the United Nations (UN) website population data, which is the longest data set available. As

---

<sup>1</sup> Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2010 Revision and World Urbanization Prospects: The 2011 Revision Sunday, June 08, 2014; 5:28:22 PM.

mentioned already, the adopted definition for rural population is based in the United Nations<sup>2</sup>. The rural population definition used by the UN is also followed by the World Bank that refers to people living in rural areas calculated as the difference between total population and urban population. Aggregation of urban and rural population may not add up to the total population because of different country coverages.

Globally, and since 2007, more people live in urban areas than in rural areas. By 2014, 54% of the world population lived in urban centres, whereas in 1950 only 30% of the world population was urban (UNDESA 2014).

While OECD (2010) and later Europe 2020 point out for a revitalization of rural areas, statistics show that during the last century population in rural areas around the world have shrunk impressively.

As illustrated in Figure 1 the world population has been continuously rising since 1950, and the same happens with the urban population. The rural population increased between 1950 and the 1990s, stabilizing from 1995 until 2005. Between 2005 and 2010 the urban population surpassed the rural population, accounting for more than half of the total world population. In Europe, the urban population has overtaken rural population before 1950 and continued increasing (Figure 2).

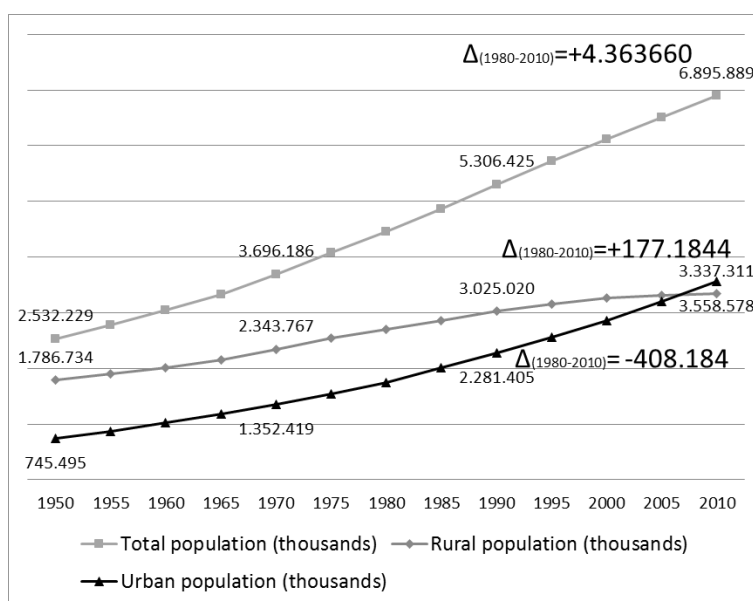


Figure 1 World Population (nº) (UN)

<sup>2</sup> Population living in areas classified as urban according to the criteria used by each area or country. Data refer to 1 July of the year indicated and are presented in thousands (UN).

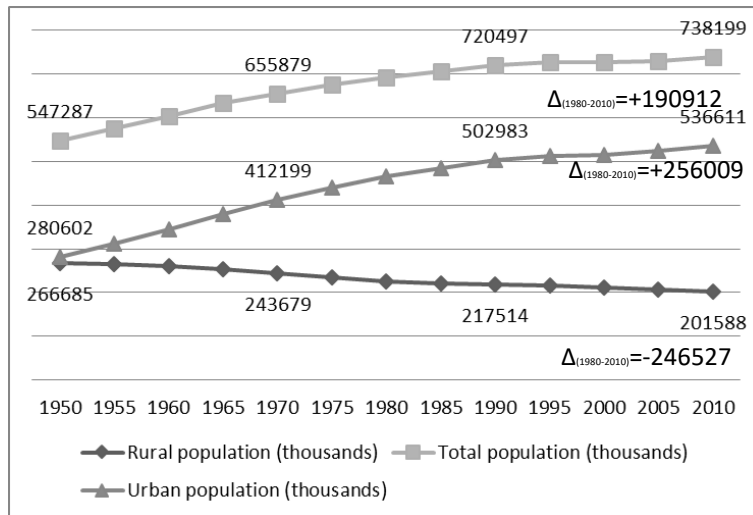


Figure 2 Europe Population (nº) (UN)

These data suggest that both the world and European urban population is expected to continue to be higher than the rural population. While global trends suggest the decrease of rural populations in developed countries, trends regarding rural population are uneven. Some rural areas appear to maintain their population, in some cases even showing signs of increase. In Canada, the data analysed shows that rural population grew between 1980 and 1990, had a slight decrease until 2000, and then continued to grow from then on (Figure 3). Also, Australia and New Zealand experienced slightly growing rural populations since 2005 (Figure 3). In Europe, most of the rural populations decreased, however between 1980 and 2010 the decrease was less intense than in the previous period (1950 to 1980). Actually, when looking at some individual European countries, the rural population exhibit a slight increase between 2000 and 2010, as it is the case of Italy, Spain and the United Kingdom (Figure 4).

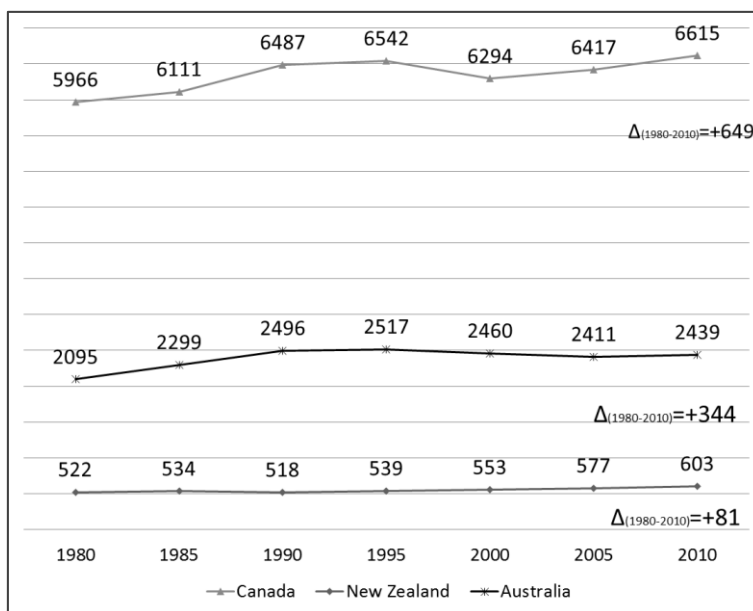
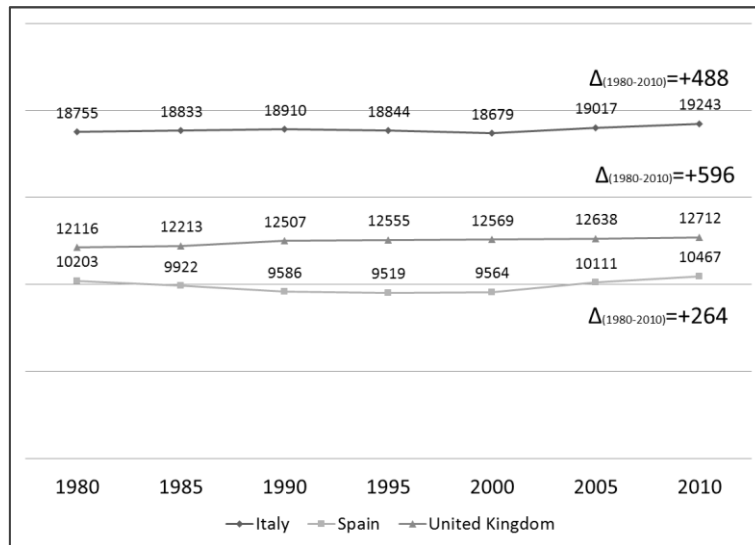
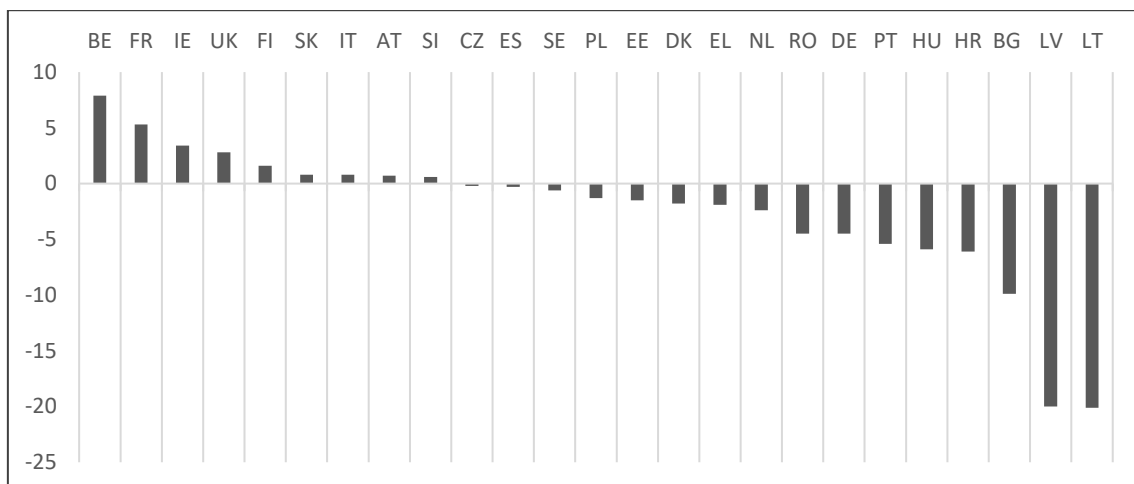


Figure 3 Rural population in Canada, New Zealand, and Australia from 1980-2010 (nº) (UN)



**Figure 4 European countries rural population increase from 1980-2010 (nº) (UN)**

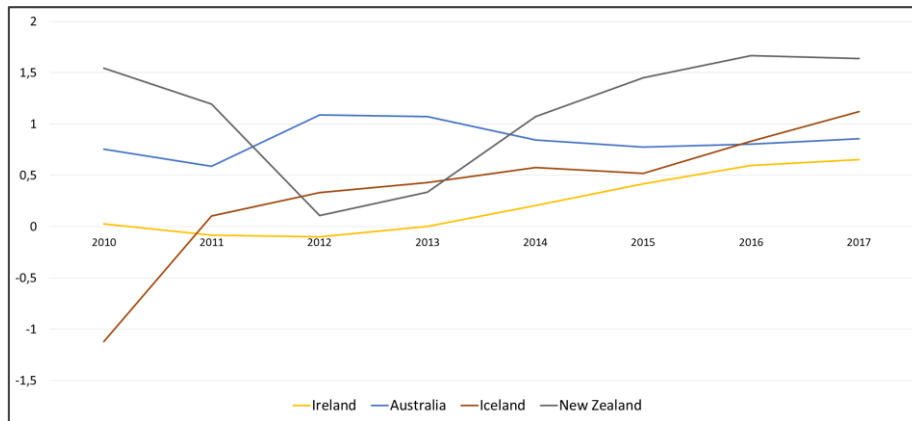
While not evident in the UN data, in 2011 some predominantly rural regions in Europe experienced growth, according to the European Union (2013a). Belgium and France were the countries exhibiting the largest growth rate (EC 2013a) (Figure 5).



**Figure 5 Crude rate of population change 2011 in rural regions (EU 2013a)**

Other studies have been done on the variation of the rural population, namely by Goss (2013), Brown and Fellow (2010) and Champion and Shepherd (2006). However results are not always aligned, and one of the reasons for this being the data set used or the definition of the rural area used, as different definitions generate a different number of “rural” people (Plessis et al. 2001). Yet, data on rural population published recently by the UN indicates again that the rural population is decreasing in most countries. Figure 6 shows the only countries in the world that witness rural population growth between 2015 and 2017.





**Figure 6 Rural population growth (annual %)**

It is, therefore, possible to confirm on the observed trend with respect to the rural population that it continues to decline, as only a few countries present a slight growth of rural population. These data suggest that in-migration to rural might play an important role in changing or at least attenuating demographic trend, with rural in-migration possibly making up for the increased share in the rural population according to the OECD (2006) and Baptista (2010).

### *1.2.2 European rural areas socio-economic data*

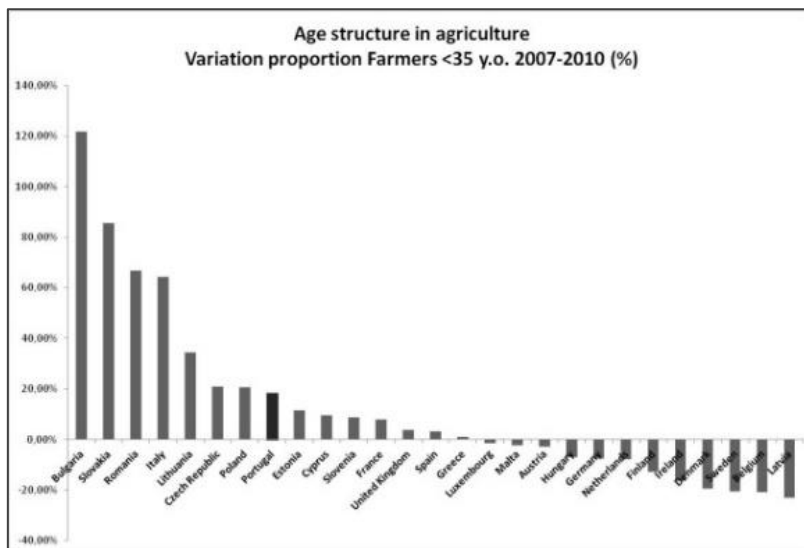
With new actors emerging on rural areas lead by amenities preferences, there is also the arrival with entrepreneurship, creativity and external linkages that can contribute to growth and renewal of rural areas. One of the aspects they value is a strong preference for less productive but more scenic lands (Sorice et al. 2014; Holmes 2008). Thus amenities in rural areas are evidently an important reason for some people to visit or live in rural areas placing increasing immaterial demands for the rural space is protection and conservation (Kuhmonen, Kuhmonen, and Luoto 2016). Rural areas have significant potential to meet the growing demand for the provision of rural amenities and tourism as an attractive place to live and work (EC 2010).

One example of diversification is the change regarding tourism infrastructures in rural areas: the large majority of European countries (27) increased their availability in a number of bed places in tourist accommodations between 2007 and 2012 (Figure 7). This activity is highly dependent on natural settings (EC, COMMISSION, and EC 2008). Furthermore, the share of the tertiary sector and new activities like manufacturing and food production and business services has grown (ECORYS 2010).



Figure 7 Bed places in tourist accommodations in rural areas 2007-2012

This diversification is also influenced by the farmers' characteristics (EC et al. 2008). Statistics show that almost 17% of rural population in EU is above the retirement age, and there are many more farmers in the higher than the lower age classes in the EU (EC 2013c). An ageing farm population has a negative effect on the economic performance of agriculture (Giannakis and Bruggeman 2015). However, between 2007 and 2010, there was a gradual increase in the proportion of young farmers (under 35 years old), namely in countries within the EU-19 such as Slovakia, Italy, Czech Republic and Portugal (Figure 8).



variation in employment structure, followed by the secondary and primary sector respectively. The increased importance of tertiary services in rural areas creates opportunities for in-migrants to move to rural communities (Nelson 2010). Also increases the demand for services and infrastructures to enable their success.

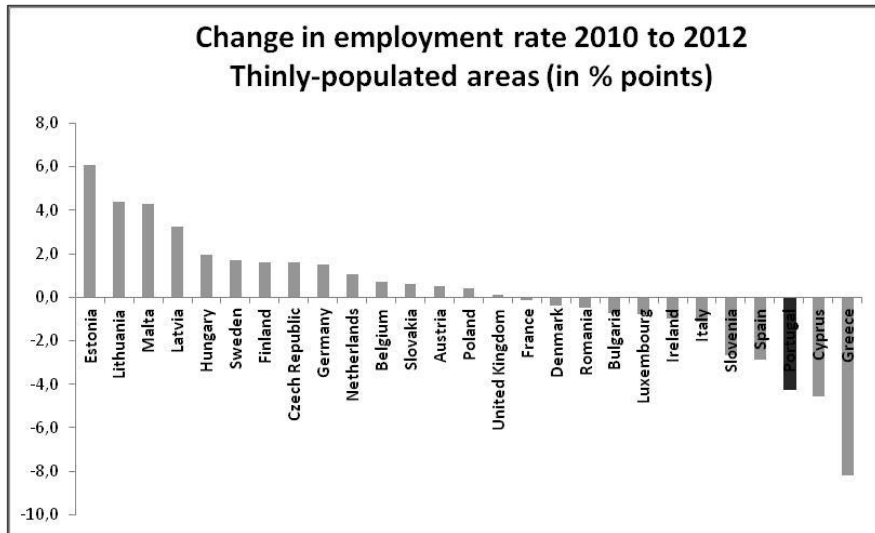


Figure 9 Change in employment rate 2010 to 2012 in thinly-populated areas (in % points)

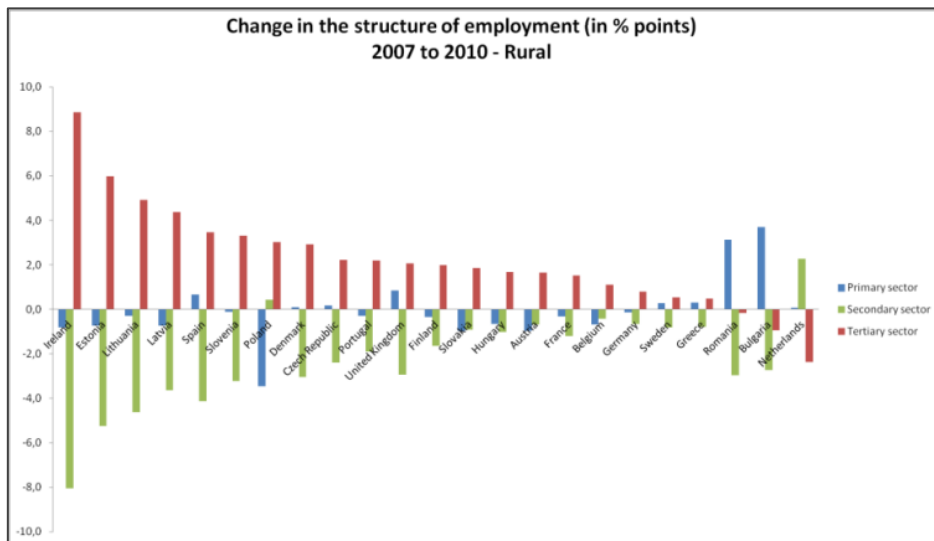


Figure 10 Changes in the structure of employment (in % points)

Pluriactivity is often taken as an indicator of the post-productivism transition because it represents a reduction in the farm family's reliance on the productive capacities of the farm (Argent 2002). Farmers with other gainful activity such as agri-tourism besides farming is increasingly a reality for 44% of EU-27 agricultural households and contribute significantly to the global income. Regarding organic farming, between 2006 and 2011, Italy, the Netherlands,

Hungary, Latvia and the UK remain stable, Greece and Portugal register a negative trend and all other EU countries showed an increase in their organic farming area.

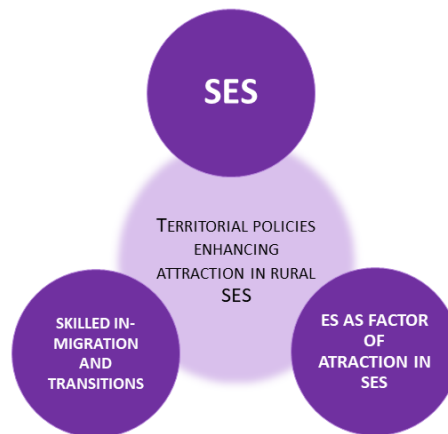
### 1.3 Outline of the Thesis

This thesis consists of nine chapters. After this introductory chapter, chapter 2 reviews the relevant literature on socio-ecological systems, ecosystem services and its link to wellbeing and social capital and transitions in rural areas triggered by skilled in-migrants. These concepts have been adopted as the main body of knowledge of the thesis. Chapter 3 elaborates on the scientific research methodology used in this thesis, including the research design where the methods and data collection are explained and the ethics are addressed. Chapter 4 presents the main existing world public policies and initiatives to attract the rural population and the main existing public policies for rural areas. Chapter 5 provides a qualitative public policy analysis (for national rural development programs in Europe and municipal master plans in Portugal) in order to investigate if public policies are leading sustainable transitions and attracting people in rural SES. Chapter 6 presents the results of the empirical qualitative and quantitative data on in-migration to low-density territories in Portugal. Chapter 7 includes the synthesis and discusses the findings, sets the arguments of the thesis. In the end, chapter 8 looks back at the initial research questions, and discuss how they have been answered during the course of this dissertation and offers the conclusions, contributions of the thesis and suggestions for future research. Chapter 9 includes all references cited in the manuscript.

## **2 THEORY SUPPORTING THE RESEARCH**

## 2.1 Research concepts

The theoretical support to the research on skilled in-migration in rural areas was provided by three scientific bodies of knowledge, notably social-ecological systems (SES), ecosystem services (ESS) and transitions theory to support skilled in-migrants effects on Rural SES (Figure 11). This chapter offers an overview of the state of the art concerning current knowledge in these three fields, based on a literature review.



**Figure 11 Theoretical basis of the research**

The chapter begins by broadly exploring the main guiding concepts of the research regarding SES and ESS, social capital, change agent, transition theory, and then addresses these fields from a perspective of in-migration, including the search for wellbeing through ecosystem services and the impact of in-migration on social-ecological systems, inducing transitions in rural areas.

## 2.2 Social-ecological systems and ESS

### 2.2.1 *Understanding Social-ecological systems and ESS*

During decades conservationists treated humans and nature as separate entities, arguing that certain ecosystems have the capacity for self-reorganization which may be disturbed by the human presence and activities. Yet, this approach to conservation management tends to fail in the longer term (Holling and Meffe 1996). This thesis is placed in another school of thought, the one that argues that human systems and ecological systems are viewed as being tightly and inextricably linked (Ostrom 2009) in a Social-ecological System (SES) where humans are part of nature. To understand the dynamics of the ecosystem and its ability to generate ecosystem services one must consider the human dimension, as nature provides the biophysical base and ecosystem services for the social and economic development of society.

Other terms used to denote such systems are “socio-ecological system” (Gallopín 1991) and coupled human-environmental system (Turner et al. 2003). The terms “socio-ecological system”, and “social-ecological system” used synonymously have emerged to address this complexity and integrate social and ecological aspects.

The SES concept embraces the referred paradigm, where human and nature interact in a system, for understanding ecosystem responses to human actions through the use of multiple spatial and temporal levels (Levin 1998; Ostrom 2009) and it can be simply defined by the relationship between humans and nature (Berkes et al. 2004). The SES can be specified for any scale from the local community and its surrounding environment to the global system constituted. According to Ostrom (2009) “all humanly used resources are embedded in complex SES are coupled, inseparable system of human beings and nature (...) composed of multiple subsystems and internal variables within these subsystems at multiple levels”. Ostrom (2009) defines complex SES subsystems and exemplifies them as including resource systems (a forest), resource units (the trees), users (loggers), and governance systems (organizations and rules that govern forestry). All subsystems interact, such that the ecosystem provides services to humans, but humans intervene on the ecosystem in different ways (Schouten, Van der Heide, and Heijaman 2009) both positively and negatively. Fundamental to the SES is the assumption that humans can make conscious choices as individuals or as members of collaborative groups, and that these individual and collective choices can, at least potentially, make a significant difference in outcomes (McGinnis and Ostrom 2014).

To deal with the complex nature of social-ecological systems, some scholars have advocated the adaptive management approach (Holling 1978; Walters et al. 1986), linking the concepts of adaptive capacity (focusing on the capacity of people to contribute to SES change) and governance (as its arrangements can enhance or inhibit transformations). SES adaptation refers to the ability of a system to adjust to changing internal demands and external circumstances (Carpenter and Brock 2008). This capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks was called resilience (Holling 1973; Walker et al. 2004). In the context of social-ecological systems resilience is linked to the degree to which the system expresses the capacity for learning and adaptation (Carpenter 2011; Berkes et al. 2004).

SES may go through different types of disturbances such as natural disturbances (e.g. fire, floods) or abrupt changes in regulations and world market shifts (Janssen and Osnas 2005). When SES are exposed to sudden shifts that can present serious problems to the resilience of the system (Schouten et al. 2009), increasing adaptability at least to known or expected shocks may help the system to be prepared to a new regime of shocks, albeit less resilient to unknown shocks

(Walker et al. 2006). It has been found that the more diverse the SES the better is its response adapting capacity, including when uncertainty is high (Folke et al. 2002). Additionally, disturbances in one system of resilience can affect the resilience in other systems (Schouten 2013). In a social-ecological system with high adaptive capacity, human actors have the ability to sustain the combined system of humans and nature in a desirable state, along with a desirable trajectory, in response to changing conditions and disturbance events (Carpenter et al. 2001). Also, the capacity of social-ecological systems to sustain natural capital and ecosystem services is more likely to support development pathways in changing environments where uncertainty and surprise prevail (Folke et al. 2014).

In an SES, ecological subsystems such as a resource system interacts with resource users and their governance systems to generate outcomes at the SES level (Ostrom 2009). The outputs of the ecological subsystem (and their values) which are their resources, can be better understood through the adoption of the concept of ecosystem services (ESS) developed in the late 1990s (Costanza et al. 1997) (Figure 12).

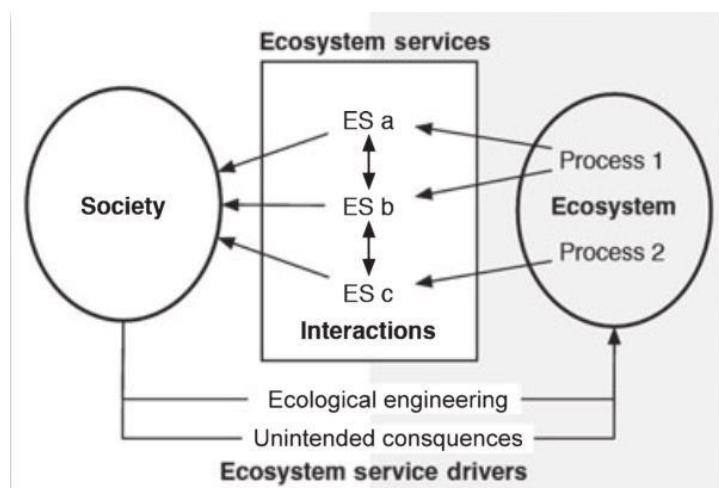


Figure 12 Relation between Social and Ecological systems and ESS (Bennett, Peterson, and Gordon 2009)

The definition of ESS goes back to 1997: “Ecosystem services are the benefits human populations derive, directly or indirectly, from ecosystem functions” (Costanza et al. 1997).

There is no universally acceptable definition for the term ESS, according to Costanza (2008) the definition will remain “appropriately vague” and should be used according to the research context. In 2001, the United Nations (UN) launched the Millennium Ecosystem Assessment (MEA) a major study to assess the status of the world’s ecosystems and the services they provide (MEA 2005). Since then the concept of ESS has become a key topic of study and policy. For the MEA (2005) “Ecosystem Services are the benefits humans receive from ecosystems”. Ecosystems can be found at different spatial scales and are produced mainly in the managed ecosystems



(e.g. agricultural or forest ecosystems). The MEA (2005b) structured ESS in four major categories: provisioning, regulating, cultural, and supporting services:

- *Provisioning services* are physical products such as food, fibre, and fuels;
- *Regulating services* are the processes that happen in nature e.g. water cleansing, nutrient filtration, climate regulation;
- *Cultural services* are intangible services such as aesthetics, sense of place, religious worship, but also direct uses as recreation, ecotourism, scientific value, and education;
- *Supporting services* are all the underlying, long-term processes in nature: Net primary products, nutrient cycles, soil formation, and climate stability that secure the provision of the direct services to humans.

Following the MEA study, two other widely used international classification systems were developed: the one by the Economics of Ecosystems and Biodiversity initiative (TEEB) and the Common International Classification of Ecosystem Services (Dendoncker et al. 2013). The different studies had different purposes for using the term: MEA aimed to communicate general findings, TEEB focused on economic valuation of ecosystem services and CICES aims to develop an ecosystem accounting approach. This difference in aims has led to subtly adapted definitions. TEEB (2010) defines ESS as “*The direct and indirect contributions of ecosystems to human well-being*”. TEEB (2010) introduced habitat services in their classification that include lifecycle maintenance (e.g. nursery for migratory species) and gene pool protection (e.g. maintenance of genetic diversity) and are crucial for the world’s biodiversity and, consequently, most ecosystem services. The other three broad categories of the MEA (2005) have been retained (Figure 13).

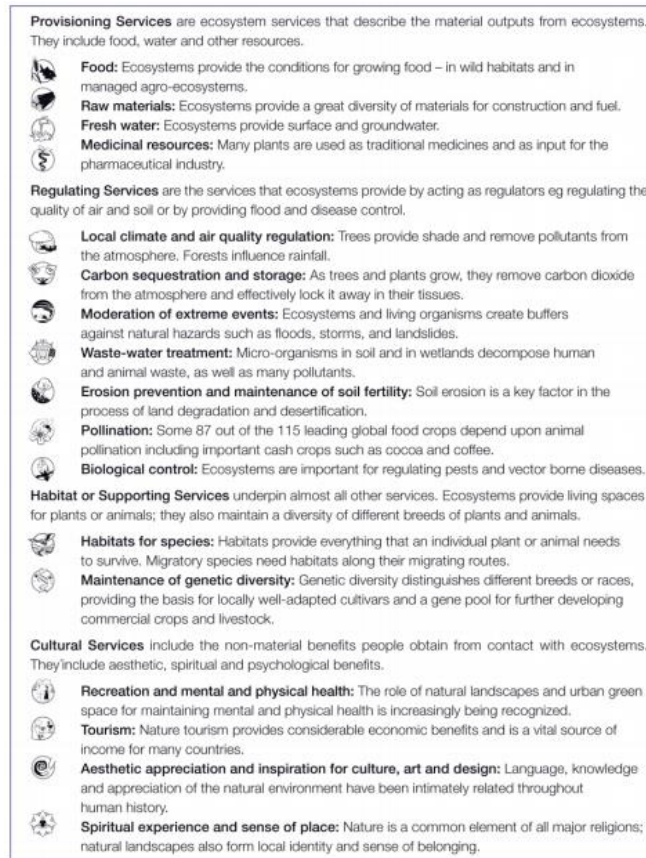
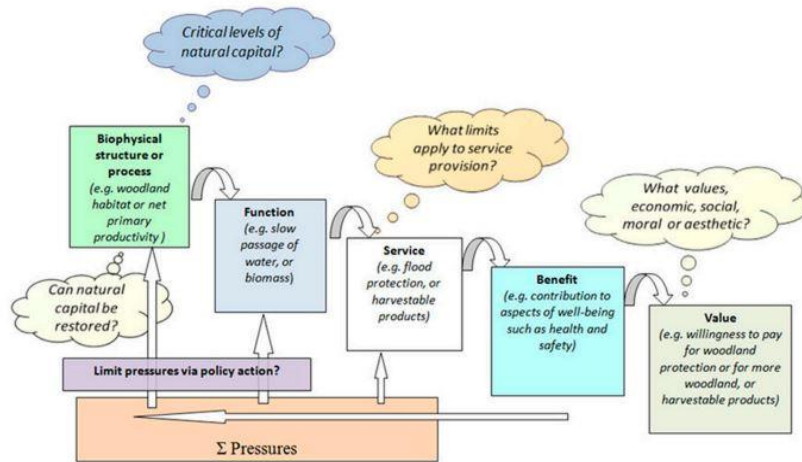


Figure 13 TEEB Framework (TEEB 2010)

As for Common International Classification of Ecosystem Services (CICES), it does not cover supporting services originally defined in the MEA, arguing that it would be best to deal with them in environmental accounts in other ways since they are indirectly consumed (Dendoncker et al. 2013). The aim of CICES is not to replace other classifications of ESS but to enable people to move more easily between them. In CICES provisioning and cultural services are given the same definition as within the MEA. The regulating and maintenance service category includes services such as soil formation, originally included as supporting services by the MEA because these are often only indirectly consumed or used (Maes 2013).

In scientific literature, usually, a distinction is made between ecosystem functions and services. The ecosystem has functions that are important for maintaining self-regulating ecosystems (for biodiversity's own sake). These ecosystem functions can be described as "an intrinsic ecosystem characteristic related to the set of conditions and processes whereby an ecosystem maintains its integrity (such as primary productivity, food chain, biogeochemical cycles)" (MEA 2005, pp.210). As for Ecosystem Services, they are the benefits (in terms of human well-being) derived from the ecosystems. The fact that there is no direct link between ecosystem functions and people represents one of the major challenges for addressing the social-ecological nature of ESS. Yet, until ESS generate gains in human well-being several processes within the resource system

occur. In this context, Young and Potschin (2010) presented the ESS cascade a scheme to allocate and define the basic elements of ESS generation and delivery. The Cascade Model debated by others (Groot et al. 2010) and later in 2011 adopted by the same authors, describes ESS as a rather linear flow from ecosystems to humans. It relates to biophysical structures, ecosystem functions, ecosystem services, benefits that human gain from ecosystems and value (Figure 14).



**Figure 14** The ecosystem service cascade model (Potschin and Haines-Young 2011)

As humans are affected and depend on ESS by the malfunctioning of ecosystem services through feedback mechanisms between the biophysical and socio-economic characteristics of the SES. For instance, human transformation of land uses, has led to the loss and abandonment of most intangible ecosystem services, those related to regulation services and ecological processes but also cultural, such as local identity, traditional knowledge and spiritual enrichment (Slomp et al. 2012). This way we can observe a relationship between SES and ESS whereby any change in ESS will influence SES, and the same otherwise.

Following this line of thought, the following sub-chapter explores interactions in SES and opportunities in changing dynamics in rural areas including the potential synergies between social and natural systems, thus addressing ESS and its link to human well-being.

### 2.2.2 Links between ecosystem services and human well-being

The assessment of nature's benefits through goods and services is a concise way of disseminating the importance of natural capital and is winning more relevance as it relates the state of the ecosystems to human well-being (Norgaard 2010; Chan et al. 2012).

Every ecosystem provides essential services and goods, contributing to the satisfaction of human needs, changes in well-being and delivering irreplaceable support functions on which human life relies (Costanza et al. 1997; Boyd and Banzhaf 2007). Likewise ESS, as defined by the

MEA (2005), determines nature as an important contributor to human wellbeing (Carpenter et al., 2009; MEA 2005) thus human welfare depends on whether these services improve or deteriorate (Costanza et al. 1998), which may lead to impacts of biodiversity loss on well-being uneven across communities, affecting those who depend most on environmental resources (Haines-Young 2015). Regarding biodiversity, it provides additional benefits to human health via a variety of pathways beyond its oft-cited roles in the provisioning of food and raw materials to support human life (Sandifer et al. 2015).

The MEA advances with a systematic synthesis of the links between ESS and human well-being (MEA 2005). Provisioning, regulating and cultural ecosystem services were directly linked to four constituents of well-being, namely security, the basic material for a good life, health and good social relations (Figure 15). For example, ecosystem services contribute to spiritual well-being, through their cultural or religious significance or the opportunities they provide for recreation or the enjoyment of nature (Haines-Young 2015). Thus, these four constituents support and enhance the fifth constituent of well-being: freedom of choice and action (MEA 2005).

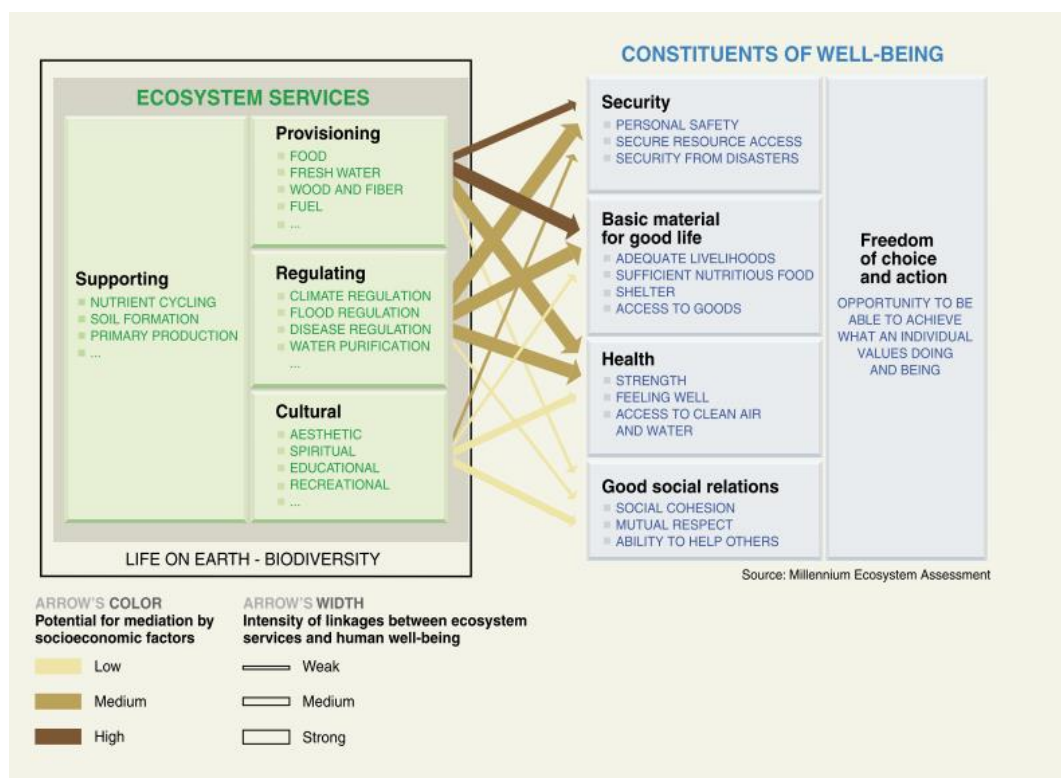
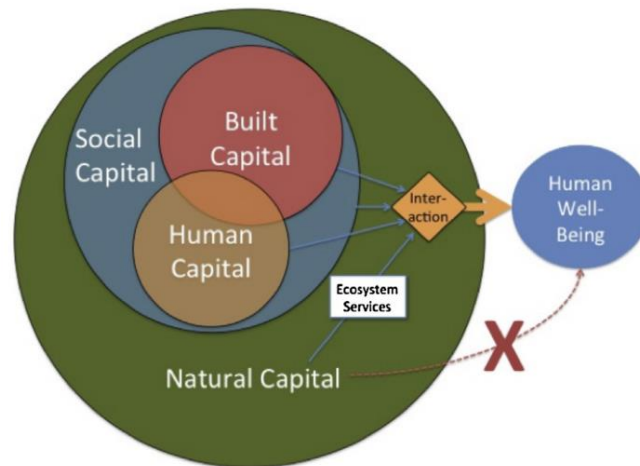


Figure 15 Linkages between Ecosystem Services and Human Well-being (MEA 2005)

Yet, the constituents of well-being outlined by the MEA are not the only way to define human well-being, which is a highly context-dependent and multi-faceted concept and is influenced by many different factors (environmental and other) (Summers et al. 2012). Furthermore, as mentioned by (Moscardo et al. 2013) well-being depends on multiple forms of capital. The following chapter explores the relationship between social capital and SES.

### 2.2.3 The importance of social capital in SES

As described above human and ecological systems are intrinsically linked. Accordingly, ecosystems cannot provide any benefits to people without the presence of people (human capital), their communities (social capital), and their built environment (built capital) (Costanza et al. 2014) (Figure 16). According to Costanza et al. (2014), there is no direct connection between human well-being and natural capital: ESS can only provide benefits through the interaction between the four forms of capital.



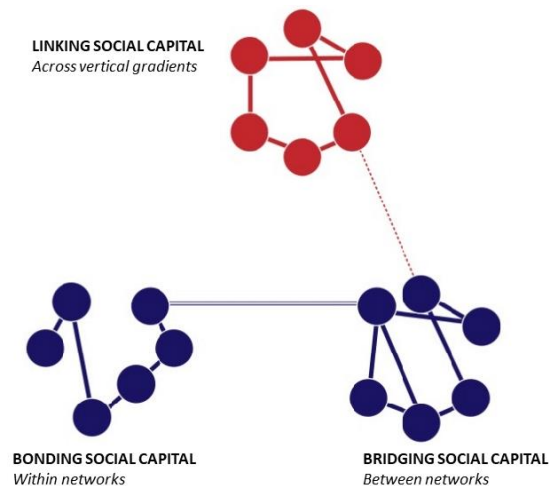
**Figure 16 Interaction between the different forms of capital, ESS and human well-being (Costanza et al. 2014)**

Thus, multiple forms of capital interact to generate goods and services (Guerry et al. 2015). According to the research by Mulder et al. (2006) on the status of four basic types of capital (built, human, social, and natural) it is possible to achieve a high (and probably more sustainable) quality of life while consuming at rates much less than the U.S. average. This study underlined the need to have balanced contributions from built, human, social and natural capital.

Concerning its role, human and social capital are clearly fundamental components of human well-being that both affect and are affected by ecosystem change (Barnes-Mauthe et al. 2015). Though the contribution of social capital towards the effective management of resources is well established, only thin literature exists linking its intrinsic value to natural ecosystems. The modification of the population in depopulating areas affects the opportunity, motivation, and ability that are required for the production of social capital (Meijer and Syssner 2017). The same author mentions that depopulation leads to more than a few losses, namely at the local level, such as social and cultural resources, and also influences the performance of a locality as there are less of capable inhabitants, lack of entrepreneurship and low levels of innovation and intellectual engagement.

The concept of social capital encompasses a broad spectrum of definitions, theories and concepts. Social capital can refer to informal networks that enable people to act collectively (Meijer and Sysner 2017). Social capital can also be described as the quantity and quality of social resources (e.g. membership in groups, social relations, networks, and access to wider institutions in a community) (Garrett and Frankenberger 1999). Ostrom (2000) defines social capital as the enduring connections of networks, reciprocity and social norms that exist among a group of social actors. Social capital among actors can be important in social-ecological systems because those with a greater extensity (or diversity) of ties and advantageous network positions can have considerable advantages in terms of extracting ecological resources and influencing their management (Barnes-Mauthe et al. 2014).

Social capital can facilitate social mobility and provide access to resources, e.g., employment and education (Barnes-Mauthe et al. 2014). Social capital is generally divided into three forms: bonding, bridging and linking social capital (Figure 17).



**Figure 17 Diagram of Bonding, Bridging and Linking social capital** (Aldrich 2012)

Originally, Putnam (2001) distinguished bonding and bridging social capital. Bonding refers to the strengthening of (homogeneous) ties with likeminded people within a community, whereas bridging refers to the inclusion of other, more distanced (heterogeneous) minds. Woolcock (2001) identified a third form of ties, linking social capital, that describes the ability of communities to engage vertically with external organizations, either to influence policies or to draw upon resources. Linking social capital is different from bonding and bridging social capital as it involves hierarchical relations between groups that have different power positions (Tisenkopfs et al. 2008). Woolcock (2001) explains this process as the effort of already well-connected groups to get ahead by seeking access to key actors at a higher tier that have access to resources and formal decision-makers. The capacity to leverage resources, ideas and information from formal institutions beyond the community is a key function of linking social

capital. In the literature linking social capital is often described as an attribute of local communities: they reach out to higher tiers of e.g. governmental stakeholders. Gallent (2013) also pays attention to linking social capital outperformed by governmental networks, like municipalities, to engage with stakeholders at the local community level. Gallent (2013) concludes that intermediaries, external or internal to local government play a crucial role in overcoming the divide between communities and local governments. Different proportions of bonding, bridging and linking social capital create different outcomes as they complement or conflict with each other. Both strong internally organised communities and communities with a strong external focus establish successful projects (Meijer and Syssner 2017). Conversely, the lack of both bonding and bridging social capital is associated with failure: the absence of realised planning initiatives (Tisenkopfs, Lace, and Mierina 2008). The proportion of bonding or bridging capital affects the performance of linking social capital. The presence of strong bonding social capital can hamper linking to external organisations for support: the internal focus excludes the involvement of outsiders, but also make communities self-sufficient (Meijer and Syssner 2017). Alternatively, weak bonding and strong bridging ties may create opportunities to link to other stakeholders with backgrounds that are more diverse, information, knowledge and resources. Therefore, strong bridging capital empowers actors to reach out to other (e.g. governmental) networks. However, these efforts are not always appreciated by the inner community and can lead to (further) fragmentation of weakly bonded communities (Holman and Rydin 2013; Tisenkopfs et al. 2008). According to Barnes-Mauthe et al. (2015), there is critical feedback between social capital and ecosystem services as they influence one another when one of the components of the social-ecological system changes. For example, social capital has been used to assess rural community collective action, to improve understanding agricultural innovation, to help design integrative and decentralized policy frameworks or to enhance collaborative governance (Saint Ville et al. 2016). According to Li et al. (2016), social capital can serve as a platform for collaboration and interplay with different external actors and sectors.

As argued by Putnam (2001) social capital is understood in terms of trust-based “networks of civic engagement”. Also in low-density areas or even depopulation areas, the interactions between different actors could result in several benefits (Meijer and Syssner 2017).

Adler and Kwon (2002) define three basic ingredients for the production of social capital: opportunity, motivation, and ability. Firstly, as mentioned above, an existing network of actors and social ties creates the opportunity for social capital. Secondly, actors must be motivated to use those ties for collective action. Thirdly, actors must have the collective ability to leverage social ties toward purposeful action.

Nevertheless, several recent notable examples document how changes in ESS flows (even if not labelled as such) and the management of ecosystems can affect social capital. One of the critical problems of rural areas is the loss of human capital. Local ecological knowledge is lost as rural people move to cities and become disconnected from the cultures in which the knowledge is embedded. In this context, the literature suggests that social capital is a necessary factor for the long-standing impact of physical and human capital (Ostrom 1995). Thus, the presence of skilled in-migrants enables the creation of social capital (Kilpatrick et al. 2011). Various scholars have argued that social capital helps in accessing other forms of capital, such as human capital or natural capital (Coleman 1988; Jackson et al. 2012).

## 2.3 ESS in motivations for rural in-migration

### 2.3.1 Types of in-migration to rural areas

The review of rural in-migration literature shows that terms such as *amenity migration*, *back-to-the-land*, *lifestyle migration*, *commercial counterurbanisation* among others, have been used as a way to describe the influx of population from middle-class with urban origin to rural areas. These terms are usually linked to the motivations associated with migration and can be found in studies developed all over the world (Table 1).

**Table 1 Main terms to designate in-migration to rural areas and authors**

Designation	Main motivation	Authors	Country <sup>3</sup>
Amenity migration	High amenity places	(Abrams and Bliss 2013)	US
		(Argent et al. 2007)	AU
		(Moss 2006)	US
Back-to-the-land	Agrarian functions and landscape and proximity to nature	(Halfacree 2000)	UK
		(Wilbur 2013)	IT
Lifestyle migrants	Different lifestyles	(O'Reilly and Benson 2009)	US
		(Eimermann 2013)	SE
		(Huete, Mantecón, and Estévez 2013)	ES
Commercial Counterurbanization	Creation of own business in rural areas	(Bosworth 2010)	UK
Crisis counterurbanisation	Economic crisis	(Gkartzios 2013)	GR

Besides the attraction influenced by the characteristics of the local environment (ecosystem and its services, amenities) and its relevance on peoples lifestyles other motivations have been explored in the literature. According to Anthopoulou et al. (2017) an initial phase of counterurbanisation was motivated by aspirations for better conditions of life and work yet, more recently counterurbanisation has been reinforced by the pressure of the economic crisis

<sup>3</sup> where the case study was applied



the expectation of securing a livelihood from farming in its more traditional or more entrepreneurial manifestations (i.e employment/economic motivations). This new urban-rural population movement influenced by the economic crisis is also changing the role of rural areas by making them shelters for 'urban refugees' (Gkartzios 2013). In Greece, a study conducted among citizens of the two largest Greek towns showed the interest of more than half of young people and unemployed urban residents to move to rural areas and interest in agriculture-related occupations (Gkartzios and Scott 2015). Linking counterurbanisation to entrepreneurship, Bosworth (2010) coins the term 'commercial counterurbanisation', meaning the growth of rural economies encouraged by in-migration.

Like this, rural in-migration by middle-class urbanites has been reported for over three decades in several parts of the world. Counterurbanization, the concept related to the arrival of new actors in rural areas, is being discussed in the literature for almost 20 years (Champion and Shepherd 2006; Dahms and McComb 1999; Mitchell 2004).

Counterurbanization was first defined by Berry (1976) as "*a process of population deconcentration; it implies a movement from a state of more concentration to a state of less concentration*". The same author added the movement of people from urban to rural areas is termed Counterurbanization, Return Migration, or Urban-Rural Migration. This definition was the origin of many different interpretations as noted by Mitchell (2004). Counterurbanization theory has drawn mostly on English and Anglophone contexts (Brown and Fellow 2010). For Fielding (1982) "Counterurbanization is a process in which population change through population size is inversely related to settlement size". For Champion et al. (1989) Counterurbanization occurs when smaller places are growing faster than larger ones. And for Dahms and McComb (1999) Counterurbanization is the redistribution of population from urban to rural areas and population movement from larger cities to smaller towns. For includes increasing residential mobility, countryside lifestyle preferences, and the involvement of highly educated, qualified and middle-class in-migrants.

According to Mitchell (2004), Counterurbanization such a movement cannot be considered homogeneous but may vary in terms of both the destination of migrant households and the motivations driving relocation. Therefore, Mitchell (2004) proposed its categorization in three sub-forms:

- *ex-urbanisation - motivated to live in the countryside (near the urban centres) but highly connected to the city with a daily commute to work patterns;*
- *displaced-urbanisation - motivated by the need for new employment, lower costs of living and/or available housing;*
- *anti-urbanisation – motivated by life out of the metropolitan setting.*

Counterurbanization is believed to lead to the gentrification and/or the revitalization of rural communities (Argent et al. 2009). Therefore, rural in-migration is important in defining a characteristic of rural gentrification although other factors lead to this phenomenon (Stockdale 2010). The term rural gentrification is linked to its urban counterpart gentrification, first defined by Glass (1964) as a process of renewal and rebuilding of a working-class neighbourhood by middle-class incomers (in Smith 2002). For Phillips (2010) rural gentrification implies a movement of capital, change in occupation and change in lifestyles. Nelson et al. (2010) describe rural gentrification as a process of change and social recomposition.

Darling (2005), regarding rural gentrification in the UK, identified four primary issues: shifts in the class structure of rural areas; shifts in the rural capital accumulation process; shifts in the composition of the rural British housing stock; post-productivist rural transitions. This process can be both positive and negative depending on the rural context. Rural gentrifiers appear to be attracted to rural destinations by what they believe rural living will provide (Nelson et al. 2010). Mobility patterns are also considered to play an important role as facilitators of Counterurbanization and rural gentrification. These are dependent on immobile infrastructures (e.g., roads, fibre-optic cabling, etc.) that enable the migration process (Sheller and Urry 2006), allowing people to move to rural areas without losing access to the cities jobs and services. The advances in telecommunications technologies have also helped to enable relocation (Kalantaridis and Bika 2006) due to the possibilities to telecommute from rural residences, particularly among freelance workers.

A vast majority of the research on in-migration to rural areas studied internal (within a country) forms of migration, with just a few studies considering both internal and international migration (beyond the national border) (Mitchell 2004). For example, Grimsrud (2011) argued that population losses in rural areas have decreased over time thanks to growth in the number of (international) in-migrants.

In this respect, less research has been made in southern Europe (Paniagua 2002b). Due to its different characteristics compared to northern Europe's countryside, Paniagua (2008) highlights the importance of questioning the value of in-migrants in the south of Europe areas. Escribano (2007) questions the experience of counterurbanization for in-migration to rural Navarre (Northern Spain).

In Portugal, urban to rural in-migration when compared with other Western European countries has relatively small expression. Consequences are still unknown and therefore difficult to compare with international cases, particularly in terms of rural intervention driven by rising consumption demands (Figueiredo et al. 2003). Within the Portuguese context, rural in-migration has been explored from different perspectives. While Pinto (2015) investigated the

impacts that "neo-rural" have in the Douro river valley (North of Portugal). Pinto (2015) concludes that "neo-rurals" are entrepreneurs placing the main emphasis in tourism and agriculture in which organic farming (an alternative agricultural system) stands out. The same study refers that they value the territory and make it more attractive by creating new economic, sociodemographic and cultural dynamics. Torkington (2012) studied the growing social phenomenon of lifestyle migration from the north to the south of Europe, namely the growing numbers of northern European lifestyle migrants (predominantly British) during the past two decades in Algarve. More recently in 2014, Leal characterized initiatives closer to radical ruralities (Halfacree 2007) associated with alternative ways of connecting (and not separating) nature and culture and its implications for spatial planning. The study concluded that the rigidity of the territorial management planning namely the definition of the forms of land use occupation is not adapted to the ongoing transitions in rural areas (Leal 2014). Related to tourism-based activities Cunha (2016) contribute to a better understanding of "lifestyle" entrepreneurs, their profile, their motivations and their business management practices in rural Portuguese areas. While in the arts field Guimarães and Neves (2013) investigated ways of promoting artistic community development work in communities that are experiencing a loss of population.

### *2.3.2 The relevance of ESS in skilled in-migration in rural areas*

Ecosystems characteristics such as climate and its services such as scenery and tourism potential were already mentioned in 1954 as drivers of population growth in the States of Florida, Arizona and California in the United States (Ullman 1954). That was the first time in American history that pleasant living conditions (amenities), and not only the usual economic advantages, were mentioned as motivations generating a migration and significant population increase (Ullman 1954). At the local scale, particular value is given to local identity associated with natural heritage included in the wider category of cultural services (Hein et al. 2006).

The balance between economic and non-economic motivations is in line with the idea of jobs following people rather than people following jobs (Thulemark 2011; Scorsone et al. 2001). People's motivations for migration to rural areas, in general, include reasons related to better "quality of life" such as housing facilities, the rural idyll (Stockdale and Catney 2014). Ecosystems based motivations are a unique feature of pro-rural migration (Mitchell et al. 2004) particularly when people prefer natural to build environments (Groot and Ramakrishnan 2006; Berto 2014; De Vries et al. 2003).

Natural landscapes and its intangible features (peaceful, quiet, safe or friendly places) also play an increasingly important role in the migration decision of urban out-migrants (Mitchell et al.

2004; Silva and Figueiredo 2013). Within the motivations to move from an urban to a rural setting, the majority of in-migrants include non-economic reasons, and very frequently, these motivations are related to ESS such as amenities, rural lifestyle (peaceful settings) and contact with nature.

These ESS motivations are recognized through the lens of migration processes, especially urban to rural migration. But these are complex processes that cannot be limited to one causal factor only, for Bijker et al. (2012) people can have more than one motivation for moving to a specific rural area. Nevertheless, authors are divided in relation to a dominant cause. The influence of ecosystem characteristics on in-migration process was already reflected in Mitchell (2004) three sub-forms of counterurbanisation categories: displaced-urbanisation, anti-urbanisation and ex-urbanisation. The last two are led by the quality of life and amenities. From the anti-urbanization type Mitchell (2004) distinguishes three groups: a social movement which involves the search for a radically different way of life, oriented towards the search for self-sufficiency (back to the land movement); populations of working age who seek to improve their quality of life by moving their residence and work to a less concentrated context and the migration of retirees attracted by rural amenities in low density areas.

As described above types of in-migration to rural areas have been named differently according to its ESS motivations: back-to-the-land movement, lifestyle-migrants or amenity migrants.

All these terms describe the influx of population to rural areas as illustrated by several case studies in the literature, namely from Sweden (Pettersson 2001), the Netherlands (Bijker et al. 2012) or New Zealand (Thulemark 2015). Better quality of life, or new lifestyles, related to the biophysical conditions in destination places is also an important motivation mentioned by affluent individuals of all ages (Benson and O'Reilly 2009). ESS has also been associated with a change in the demand for rural property (Mitchell et al. 2004; Scott et al. 2011). Lifestyle motivations for owning rural land are almost universally acknowledged and refers to the transition in ownership in rural land shifted from an agricultural production orientation to a preference for natural and cultural amenities (Sorice et al. 2014). In relation to the rural settings amenities, the term "lifestyle" covers a diverse range of aspects, including peace and quiet, freedom from restrictions, recreation, enjoyment, a good place to raise children (Pannell and Wilkinson 2009). Also, there is the case in the literature that emphasize the importance of rural amenities in urban to rural migration. Rural areas that are rich in amenities are considered more attractive than those more dependent on intensive agriculture or other extractive pursuits (Brown and Fellow 2010). Quite a few areas exhibiting rich in amenities have experienced population growth in recent decades (Krannich et al. 2011). As an example, the studies of Prados (2005) show that the municipalities with natural parks in Andalucía have recorded an increase

in population since 1981. The described amenity services depend especially on support and regulation ESS (De Groot 2006), also mentioned as the main motifs in lifestyle-oriented landowners for purchasing land (Sorice et al. 2014). Rural amenities also seem to play an important role in business locations (Herslund 2012), such as tourism-related business and increase of in-migrating entrepreneurs (Thulemark 2015). Amenity benefits can be derived from natural areas and resources which include opportunities for green exercise, visual amenity, mental or psychological well-being, the source of inspiration, wildlife viewing, ecological education opportunities, etc. The MEA (2005) refers to all these types of benefits as the cultural services provided by ecosystems (Gibbons et al. 2011).

Both opportunities associated with the amenity-based development and shifts in public values and priorities regarding resource use and environmental conditions have the potential to foster resource protection and more careful consideration of land and resource use priorities (Krannich et al. 2011).

## 2.4 Transition theory applied to rural SES

Transition theory is useful to conceptualize the reported ongoing changes in rural areas. Transition theory attempts to better understand the behaviour of complex systems that run through cycles of relatively long periods of equilibrium, order, and stability interspersed with short periods of instability and chaos (Grin et al. 2010). The central assumption is that societal structures go through long periods of relative stability and optimization that are followed by relatively short periods of structural change (Loorbach et al. 2009). The emergence of specific novelties and the formation of new macro references relating to the socio-technical landscape determine the opportunities for developing new socio-technical regimes (Dilacovo et al. 2014). These changes are related to the novelties in production, consumption, learning processes, networks established and struggle against existing regimes on multiple dimensions. According to Wilson (2012) transition theory has been used as a theoretical approach to understanding societal change in diverse fields such as socio-technological transitions and policy change (Rotmans and Loorbach 2009 ; Geels 2011), rural transitions (Wilson 2007), sustainability transitions (Shove and Walker 2007).

The concept of transition was introduced in environmental policies in the Netherlands in the 2000s and was initially inspired by the environmental crises and energy supply problems. The notion of transition is firmly rooted in traditions of system thinking (Shove and Walker 2007). Transitions can be seen as long-term (25-50 years) changes, among other factors of actor's behaviours. Besides environmental policies, other initiatives such as transition platforms

grounded in academic concepts also emerge working towards a more sustainable future. From the Dutch school also derived concepts such as transition management (TM), strategic niche management (SNM), technological innovation systems (TIS), and the multi-level perspective (MLP). These are the approaches that feature most strongly in the study of sustainability-related transitions (Markard et al. 2012).

TM adopts a multi-stakeholder and a co-evolutionary idea for change (Rotmans and Loorbach 2009). According to the same authors the theoretical principles of transition management area: 1) creating space for niches in so-called transition arenas 2) focus on frontrunners with peculiar competencies and qualities: creative minds, strategists, and visionaries; 3) guided variation and selection; 4) radical change in incremental steps, that the system heads in a new direction toward new attractors, but in small steps; 5) empowering niches; 6) anticipation of future trends and developments. TM occurs in the transitions arenas, which are virtual network and an experimental space in which the actors involved use social learning processes to acquire new knowledge and understanding that leads to a new perspective on a transition issue (Rotmans and Loorbach 2009). The idea behind TM is to create a societal movement through new coalitions, partnerships, and networks around arenas that allow for building up continuous pressure on the political and market arena to safeguard the long-term orientation and goals of the transition process (Rotmans and Loorbach 2009).

Within transition theory, one of the main analytical frameworks the Multi-Level Perspective (MLP) by Geels (2011) which distinguishes between the macro level of the sociotechnical landscape, the meso level regime and the micro level niche. The key idea is that change takes place through processes of co-evolution and mutual adaptation within and between these layers (Shove and Walker 2007). Table 2 presents a summary of the three levels according to (Geels 2011).

**Table 2 Summary of the MLP (Geels, 2011)**

Levels	Description
<b>Landscape</b>	The external structure defined as the geographic position of the land, climate, available resources, political constellations, economic cycles, and broad societal trend
<b>Regime</b>	Dominant rule sets that enable and constrain activities within communities. A regime can be understood as a particular set of practices, rules and shared assumptions, which dominate the system and its actors (Rotmans et al. 2001).
<b>Niche</b>	Protected spaces that act as ‘incubation rooms’ in which new practices can develop resistance from prevailing regimes.

Levels	Description
	<p>Niche level provides important locations for developing learning processes. Innovation and alternatives, both social and technological, tend to emerge from this level (Bergman, Whitmarsh, and Köhler 2007). Niches become 'working' configurations that shape the regimes and landscapes they sustain and that are in turn sustained by them (Shove and Walker 2007). Niches of new coalitions and initiatives can be found in both the government and the citizen's side (Loorbach and Derk 2017).</p>

The MLP provides a logical framework that links local scale activities to systemic change and broader macro-level framings and paradigms. Within MLP niches are critical, although their successful development does not guarantee a condition for the transition to occur. Fast and radical changes are rare and require particular circumstances, such as catastrophic events (Gottschick 2014). Historical studies have shown that transitions only come about when developments at all three levels link up and reinforce each other (Geels 2005). Therefore, the form and direction of a transition are dependent upon the nature of the relationship and interaction between niche-innovations and landscape pressure on the regime (reinforcing or disruptive). Building social networks and learning processes are key to niche internal development and up-scaling (Wieczorek, Raven, and Verbong 2010). In relation to rural development, learning processes depend on several factors, such as the individual perspective, set of values and attitude of each agent (Esparcia 2014).

When we apply the niche concept to rural contexts, we observe that the arrival to a rural location of skilled in-migrants, with different backgrounds and skills, most often result in the creation of niches that may change existing settings. Elements through their interaction, within a system, co-evolve with each other and with their environment, new structures and novelties emerge and new configurations appear through self-organization (Loorbach et al. 2009).

In the context of transitions in rural areas, Darling (2005) highlighted shifts are related to the rural class structure, post-productivist rural capital accumulation process, rural housing composition, and agents of rural change. Understand the transitions associated to the commodification of rural SES (Holmes 2008) in which rural space tend to fulfil new lifestyles, environmental and aesthetic priorities beyond the traditional ends of resource production calls for the concept of change agent crucial in the ecosystem services delivery and people's quality of life. In literature, we have found different designations for the individuals that drive changes such as change agent, engaged citizen or frontrunner. In the present research, we will adopt the term change agent to designate actors who exert their individual agency to innovate and create

sustainability (Rossi, Brown, and Baas 2000). A change agent often has to work to overcome gaps and mismatches among societal perspectives that operate across disciplines and dimensions (Westley, Patton, and Zimmerman 2006). Similarly, according to Frantzeskaki et al., (2018) this individuals can play a leading role in influencing sustainability transitions through their ideas, practices, and networks. This means that they had to familiarize themselves with a range of ways in which the world is structured by different societal actors (Westley et al. 2002; Moore and Westley 2011). Furthermore, the change agent implements new products, innovation and product marketing orienting the sustainability agenda (Rossi et al. 2000).

## 2.5 Transitions triggered by skilled in-migrants in rural SES

According to (Wilbur 2014) though post-productivism and counterurbanization are rarely linked explicitly research under the term of rural transitions or post-productivist transitions has been focus primarily on changes in the ownership driven by amenity migration, use and governance of rural lands as well as in the composition and socioeconomic dynamics of rural communities and spatial heterogeneity (Holmes and Argent 2016). The post-productivist transition is related primarily with changes in agricultural and increase support for agri-environmental activities, combined with an actor-oriented component in which class-based “rural idylls” motivate urban to rural migration as a means of taking advantage of more flexible livelihood opportunities (Wilson 2001).

Thus, transitions in rural areas are broader than changes in land use functions, and a re-definition of social-ecological systems (SES) is also underway with SES becoming more diverse (Hedberg and Haandrikman 2014) in its activities and in its social systems (Phillips 2010), creating new opportunities that were less apparent before. Previous research in the field has highlighted opportunities from counterurbanization for economic development (Bosworth and Atterton 2012; Mitchell and Madden 2014). Social diversification is one of the features in urban to rural migration. In-migrants are known to play crucial roles in rural development by bringing in social capital, entrepreneurship, and renewed impetus to the area in the form of ideas, new knowledge and fresh enthusiasm (Stockdale 2006). Bosworth and Willett (2011) observed that in-migrants tend to bring new skills and extensive networks contributing to the increase of human and social capital at the community level, facilitating social mobility and providing more access to resources and services, e.g., employment and education. Gallent (2014) argues that the research agenda should focus on the role of new consumers of rural space in accelerating the accumulation of social capital through the creation of network and bridges, to extra-local resources. As human action alters ecosystem support not only locally and regionally but also



globally, if globalization operates disconnected from the biosphere it may undermine the capacity of the life-supporting ecosystems to sustain such adaptations and transformations (Folke et al. 2011). Therefore, knowledge of social and cultural systems are essential for proper understanding changes in biological systems, monitoring biodiversity and habitat fragmentation, development and implementation of resource management strategies, and an appreciation of how non-human biophysical elements of the ecosystem influence human attitudes, behaviors, and social structures (Krannich et al. 2011).

According to Prados (2005), studying the Spanish context, in-migrants change the socio-demographic composition and the professional structure of the population. Also, in Australia, a study observed that in-migrants redefining rural spaces are from higher socio-economic backgrounds (Argent et al. 2009). Kilpatrick *et al.* (2011) observed the need to know how the local community operates, and who are the community leaders, as in some cases the later is critical in making the link between rural in-migrants and the community. Often new residents, as strangers, may be seen as a threat since, according to Byles-Drage (2009), this may mean future share of power. However, this interaction between newcomers and local population may also stimulate the later to become more entrepreneurial (Akgün et al. 2011).

The other perspective on rural in-migration with relevance to SES relates to the important redefinition in land management, embracing a full range of production, lifestyle and amenity values and, as mentioned before, a transition of rural landscapes from production to consumption (Holmes 2008). Woods (2010) recognized that the consumption economy is now at least as important as the productive economy in sustaining rural livelihoods. Multi-purpose businesses are set up and create the opportunity of delivering products and services such as the protection of local natural landscapes, the creation of new high-quality and regionally-specific products, the development of rural tourism and organic agriculture (Patarchanova 2012). The same author refers that renewable natural resources are used and new markets developed by the landowners, however not clear whether these actions have positive or negative impacts on land management (Cooke 2012).

Some examples follow to illustrate what has been described. In Cumbria, in-migrants increased significantly the number of businesses offering employment and opportunities to other rural inhabitants (Kalantaridis and Bika 2006). For Sorice et al. (2014) the presence of the lifestyle landowner (in-migrants) implies a change of culture, which may act as a slow variable in the SES that drive ecological change. Likewise, Cooke (2012) argues that lifestyle landowners are actively shaping ecological systems destination. A study in Scotland observed that immigration to rural areas makes a substantial contribution to job growth and rural labour markets (Stockdale and Short 2000) both for in-migrants and for others living in the rural community (Stockdale et al.

2000). A study done in Sweden concluded that new entrepreneurs chose to live in the countryside to create their own business and be self-employed (Haraldson 2006).

Studies show that not only are in-migrants able to establish businesses, generate new income and create more jobs, but they are also able to build connections beyond local rural communities (Bosworth 2010). Similarly, in-migrants often have closer relationships with national and international sources of information and knowledge providing an important link between local economies and global processes (Krannich et al. 2011; Herslund 2012) stimulating new knowledge, and dynamics, within the traditional communities. Rural migration tends to maintain a certain level of knowledge and services provision, both in the public and private sector, by stimulating services demand (Stockdale 2006; Nadler 2012).

However, if rural areas are not prepared for such demand this may come as a negative consequence for rural communities, with potential consequences for SES. For example, the cases in England and Spain (Solana-Solana 2010) reveal that rural in-migration increased demand may lead to a rise in housing prices provided its low supply (Stockdale et al. 2000). Indeed locals may attribute the increased housing costs and disturbance in social cohesion to newcomers (Wilbur 2012). Yet, reported as positive outcomes of population shifts in rural areas, in-migrants influence residents' sense of place and social cohesion within a community (Slemp et al. 2012).

Nature is becoming more and more perceived as a source of benefits to society, namely through its ESS (MEA 2005), but none of these has yet been sufficiently examined in the current literature. As shown many scholars refer to ESS as an important motivation in rural in-migration but few discuss the role that ESS play in attracting people to rural areas, while not much is yet known about the potentially transitions in SES that in-migrants may trigger. Literature concerning in-migration is centred on counterurbanization, while it is also important to understand to what extent existing social and ecological systems can attract new actors and promote sustainable social-ecological transitions.

Changes within a community through a process of collective learning are probably one of the biggest challenges for each rural community. They include changes in the way of thinking and acting. One of the most appropriate approaches for these changes is to undertake an assessment of those groups within a community that brings different community vision. Positive results of these visions can lead to a higher level of confidence in the local community as regards the performance of new development paths (Milic 2017).

Patterns of use, technology, and resource demand can elicit feedbacks between communities and their resources contributing to the re-definition of SES while unpredicted outcomes may emerge (Alessa et al. 2008). As mentioned previously, SES are driven by feedback between

resources, actors, and institutions at and across multiple scales (Uter et al. 2011) and in-migrants in rural areas are fundamental to enhance the capacity for SES to supply ESS, including aesthetic attractiveness and cultural values (Bunce et al., 2001). Attraction driven by consumption, leisure or tourism yet this is only possible if people continue to manage ecosystems, as conservation and the protection of biodiversity is a key aspect for human well-being (Rescia et al. 2010).

## 2.6 Chapter summary

The review of the current body of knowledge on SES, ESS, Human well-being, Social Capital and Transitions in rural SES disclosures key findings that frame this research, informing the research and enabling addressing the research question.

The findings are as follows:

- Human systems and ecological systems are viewed as being tightly and inextricably linked (Ostrom 2009);
- The more diverse is the SES the better is its response capacity when uncertainty is high (Folke et al. 2002);
- “Ecosystem Services are the benefits humans receive from ecosystems”(MEA,2005);
- An ESS is only a service if a human beneficiary can be identified and ‘intermediate ecosystem structures and functions’ give rise to ESS (Potschin and Haines-Young 2011);
- ESS is an important contributor to human wellbeing (Carpenter et al. 2009; MEA 2005) and human welfare depends on whether ESS improve or deteriorate (Costanza et al. 1998);
- Ecosystems cannot provide any benefits to people without the presence of people (human capital), their communities (social capital), and their built environment (built capital) (Costanza et al. 2014);
- The ability to develop social capital is lower in depopulating areas (Meijer and Sysner 2017);
- Rural areas that are rich in amenities are considered more attractive than those more dependent on intensive agriculture or other extractive pursuits (Brown and Fellow 2010);
- Ecosystems based motivations are a unique feature of pro-rural migration (Mitchell et al. 2004) particularly when people prefer natural to build environments (Groot and Ramakrishnan 2006; Berto 2014; De Vries et al. 2003);

- Rural in-migration has led to a redefinition in land management, embracing a full range of production, lifestyle and amenity values and transition of rural landscapes from production to consumption (Holmes 2008);
- Bosworth and Willett (2011) observed that in-migrants tend to bring new skills and extensive networks contributing to the increase of human and social capital at the community level, facilitating social mobility and providing more access to resources and services, e.g., employment and education;
- Understand the transitions associated to the commodification of rural SES (Holmes 2008) from the perspective of skilled in-migrants calls for the concept of change agent crucial in the ecosystem services delivery and people's quality of life;
- The change agent implement new products, innovation and product marketing they implement orient the sustainability agenda (Rossi et al. 2000);
- SES are driven by feedback between resources, actors, and institutions at and across multiple scales (Uter et al. 2011). These newcomers are fundamental to enhance the capacity for SES to supply ecosystem services, including aesthetic attractiveness and cultural values (Bunce et al. 2001).

In conclusion, adopting social-ecological approaches to deal with the influence of in-migrants on local social and ecological systems appear to enable the identification of constraints and opportunities that can shape the interactions. In this context, it is important to explore how an integrated social-ecological perspective can help enhance the connection between people and natural resources.

### **3 RESEARCH METHODOLOGY**

### 3.1 Introduction

This chapter elaborates on the research methodology used in the thesis. The chapter starts with an overview of the research design after which the methodological approach used to answer the research questions. It follows a mixed methodology based on a combination of different research methods. The last part offers a discussion of the ethical issues involved in the thesis.

This chapter presents the interpretative-constructive paradigm through which the research methodology is built while engaging a multi-purpose (exploratory and explanatory) and multi-perspective (inductive and deductive) approaches.

### 3.2 Research design

The main guiding concepts of the present research are SES and ESS, social capital, change agent, transition theory applied to rural areas, and then addresses these fields from a perspective of in-migration, including the search for wellbeing through ecosystem services and the impact of in-migration on social-ecological systems, inducing transitions in rural areas. As described in chapter 1 the research objective of this thesis is to investigate whether socio-ecological systems (SES) and inherent ecosystem services (ESS) stimulate attractiveness and promote transitions for sustainability in rural areas, benefiting from incoming skilled in-migrants boosting rural value. The research questions that guided this thesis are as follows:

- RQ 1 - Are ESS playing a role in attracting skilled in-migrants to rural SES?
- RQ 2 - What benefits and challenges skilled in-migrants enable in rural SES?
- RQ 3 - Are policy-making and planning instruments leading sustainable transitions and attracting people in rural SES?

In order to give direction to this study, the research process “onion” of Saunders et al. (2003:83) was adopted. This six layers onion method detailed in Saunders et al. (2009) is helpful to illustrate the range of choices, paradigms, strategies and steps followed by the researcher during the research process (Figure 18). The six layers refer to: (i) the scientific philosophy, (ii) the research approach, (iii) the research strategy, (iv) the choice made, (v) the time horizon adopted and (vi) the used techniques and procedures.

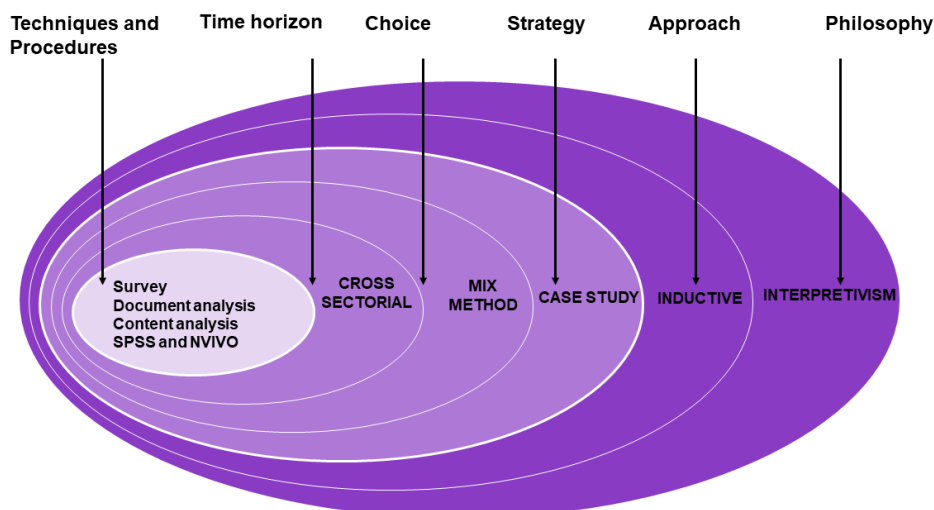


Figure 18 The PhD research 'onion' (Adapted from Saunders et al. 2009)

The *philosophical* perspective of this research is characterized by the research epistemology, ontology and paradigm. A paradigm is the basic belief system or worldview that guides the investigator, not only in the choice of the research method but through ontological and epistemological fundamental ways (Guba and Lincoln 1994).

This thesis adopts an **interpretivist** approach to the research. The researchers enter the social world of the research subjects and understand their world from their point of view (Saunders et al. 2009). By adopting an interpretivist epistemology the researcher is also the **qualitative** researcher, the reality is a social construct, which is a **subjective** ontology. Understanding a social phenomenon is inevitably linked to the meanings and reasons human actors attach to their activities which quantitative research often fails to capture. To collect data from the context within which participants experience the problem being researched, the researcher relies mainly on qualitative methods. In this thesis, quantitative data analysis was used solely to frame the research problem. Therefore, the research *approach* in this investigation is inductive because it involves mostly the collection of qualitative data.

Regarding the *research strategy* that is “the plan of how the researcher will go about answering the research questions” (Saunders et al. 2009), it follows a **case study approach** (Yin 1994). As case studies are appropriate for the investigation of contemporary events and, especially, when relevant behaviours cannot be manipulated (Yin 2016), the phenomenon of skilled in-migrants to low-density territories in Portugal was selected as a case study. More information on the Portuguese profile of low-density territories is provided later in this chapter.

According to Saunders et al. (2009), the research can be a “snapshot”, taken at a particular time, also called **cross-sectional**. According to Saunders et al. (2009) research projects undertaken for

academic degrees such as doctoral degrees are necessarily time constrained. As for the data collection was done through literature review, exploratory questionnaire, in-depth interviews and document analysis. Employing such multiple methods allows triangulation of sources information (from different places and people) (Guba and Lincoln 1994, p. 722). Triangulation is fundamental as a strategy for validating findings and it can be achieved by examining the same phenomenon under study using two or more independent sources of data (Saunders et al. 2009) and to increase the credibility and trustworthiness of the investigation.

The multiple methods are directly related to the different research questions as formulated in the introduction (Table 3).

**Table 3 Overview of research questions in relation to research methods and chapters**

RQ	METHODS			CHAPTERS
Are ESS playing a role in attracting skilled in-migrants to rural SES?	Literature review	Questionnaires and interviews		Chapter 2, 6, 7
What benefits and challenges skilled in-migrants enable in rural SES?				Chapter 2, 6, 7
Are policy-making and planning instruments leading sustainable transitions and attracting people in rural SES?			Public policies analysis	Chapter 2,5, 7

In order to most appropriately operationalize the research questions, different techniques and procedures were used along the research.

**Data analysis** was used to contextualize the research problem attempting to respond to the question of whether the rural population has been growing in certain parts of the world. An exploratory study was done on demographic data from UN source to seek evidence on this trend.

A **literature review** of published scientific articles in peer review journals and book chapters endorses the existing literature available on the research problem, particularly looking into the main theoretical pillars of the present research: rural social-ecological systems; skilled in-migrants and induced transitions in rural social-ecological systems. The purpose is to understand the state of play in rural in-migration and relationship to SES. A research was conducted on the



Web of knowledge using the following keywords through the snowball technique: counterurbanization, rural in-migration, SES and rural transitions.

The research uses the method of **public policy document analysis** to understand and explore how public policy instruments are stimulating population attraction to rural areas, as well, as if public policies support the opportunities created by sustainable transitions skilled in-migrants generate. Secondly, the study uses **questionnaires applied to in-migrants** to identify of the importance of ESS on the attraction of in-migrants to rural areas in Portugal. Thirdly, **semi-structured interviews** were done both to in-migrants and to municipal stakeholders to increase understanding on the topics previously covered by the questionnaire.

This work was followed by the systematization, treatment and analysis of the information collected, which was complemented by **social media data collection**. Indeed there are current studies that point out if a researcher wants to obtain a global view of society, it is necessary to study behaviour on the Internet in a way analogous to that presented to us, with particular attention to the collection of data (Omena and Rosa 2015). For this, the main online information source was social networking websites such as Facebook where existing initiatives developments enabled by the skilled in-migrants previously interviewed are posted.

Figure 19 shows the four iterations of data collection and analysis and its scope of action: international and European, national, regional, municipal. A detailed explanation of the methods and procedures used will be presented in each chapter of the empirical analysis.

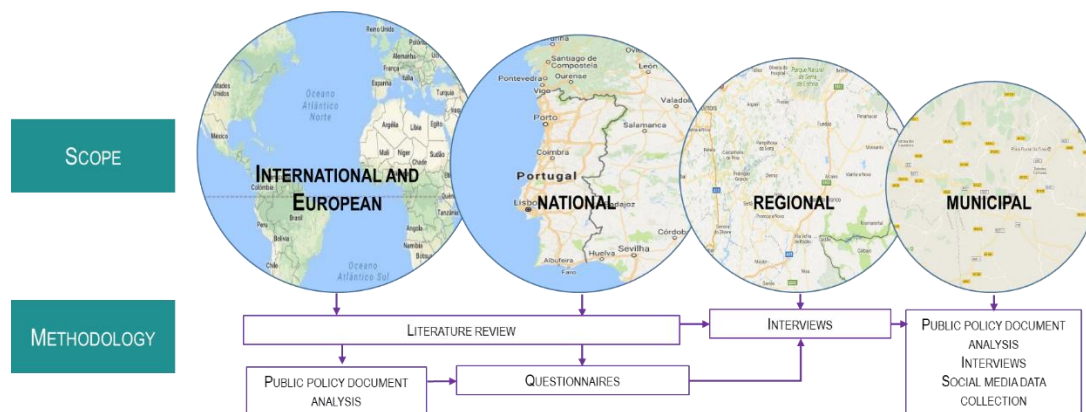


Figure 19 Research design

To ensure ethical considerations were duly observed in the data collection process, research participants were provided with information regarding the research including the purpose of the study, reasons for selecting participants, researcher contacts. Confidentiality and Anonymity, as well as the rights of participants, were explained to the participants at the beginning of each interview and participants gave their consent to audiotape the interviews. All interviews were audiotaped with the consent of participants (Creswell 2012). The consent agreement was recorded orally at the beginning of a telephone interview. During data analysis codes were

assigned to participants replacing their real names; other personal and institutional information was also treated as confidential.

### 3.3 Chapter summary

This chapter has described and explained the research design and methodology adopted by the researcher. It identifies the interpretative paradigm as followed in this research considering it embraces multi-realities. A combination of qualitative data collection methods including surveys and documental analysis were used in the research, and given its nature ethical issues were taken into account. In this way, the conditions to address the thesis research questions are established, while the empirical results, its aims, approach and findings are presented in the following chapters.

## **4 WORLD AND EUROPEAN RURAL REPOPULATION INITIATIVES AND PUBLIC POLICY FOR RURAL AREAS**

## 4.1 Initiatives for rural population attraction

As referred above rural areas can be characterized by a continued decrease in population with consequences on environmental conditions. This decline of many remote rural areas represents a central challenge to cope with and a relevant policy issue (Veneri and Ruiz 2013). Rural development has been therefore recognized as a vital policy area world-wide (Perpar and Udovč 2011). Several countries show evidence of policies dedicated to inverting rural depopulation trends. In countries like France or the USA, where National Statistics do not represent these movements, other sources report on these trends (eg. Pistre 2010).

Table 4 includes identified rural repopulation initiatives that address have as main objective the population attraction to the rural area. These are promoted at different scales, target population and include diverse strategies to tackle the issue. Most of them include support to newcomers facilitating their integration into their new communities, providing information and advice on different aspects related to the rural settings.

**Table 4 Worldwide initiatives for repopulation of rural areas**

SCALE	NAME	OBJECTIVE	LOCATION	DATE OF DEVELOPMENT	SOURCE OF INFORMATION	
Supra national	INTERREG IVC	<b>Policies Against Depopulation in Mountain Areas (PADIMA)</b>	Establish guidelines focused on the attraction of population to mountain areas of three target groups: youth, working and retired people.	Spain, France, Italy, Norway Sweden	2010-2012	<a href="https://www.euromontana.org/en/project/padima-policies-against-depopulation-in-mountain-areas/">https://www.euromontana.org/en/project/padima-policies-against-depopulation-in-mountain-areas/</a>
	INTERREG IVC	<b>GRISI PLUS</b>	Exchange experience on practical applications of geomatics tools for the development of European rural areas.	<sup>11</sup> <a href="#">European countries[1]</a>	2012-2014	<a href="http://www.grisiplus.eu/home/">http://www.grisiplus.eu/home/</a>
	ERDF - MED	<b>Philoxenia PLUS</b>	Welcome, policy for new entrepreneurs in Rural areas in five Mediterranean rural areas. Provision of assistance, at a financial, technical (tutoring) and cultural level. Media which promoted the welcome policy in order to support the territory's factors of attractiveness with respect to the economy, housing, services, equipment, and leisure (Preparing the 2014-2020 programming period)	Greece Italy Cyprus Slovenia Malta	2007-2013	<a href="http://www.philoxeniaplus.eu/the-project.html">http://www.philoxeniaplus.eu/the-project.html</a>
	LEADER - CAP	<b>Embrace the Earth</b>	Revitalization of rural areas by analysing the successes and the failures of previous initiatives to fix the population in rural territories and attract new population.	Spain	2004-present	<a href="http://www.abrazalatierra.com/inicio.shtml">http://www.abrazalatierra.com/inicio.shtml</a>
Nacional	Australian government	<b>General Practice Rural Incentives Program (GPRIP)</b>	Attracting and retaining doctors supporting increased delivery of medical services in rural and remote communities.	Australia	2010-present	<a href="https://www.ntphn.org.au/gp-rural-incentives-program">https://www.ntphn.org.au/gp-rural-incentives-program</a>
	Environmental department	<b>Rural Resettlement Ireland (RRI)</b>	Provide support for people wishing to settle in a rural area: meetings with the field officer, advice on housing to furniture removal and maintaining contact with the family after moving.	Ireland	1990-present	<a href="http://www.ruralresettlement.com/">http://www.ruralresettlement.com/</a>
Regio	BC Rural Network	<b>Comeback</b>	Assess and address specific youth retention issues and work towards creating vibrant spaces that both attract and retain the younger generation.	British Columbia, Canada	2012-2014	(BCRN 2014)

SCALE	NAME	OBJECTIVE	LOCATION	DATE OF DEVELOPMENT	SOURCE OF INFORMATION
Great Plains (several towns)	<b>Free land programs</b>	Offer free building lots to attract new residents	Great Plains, USA	1990-present	(Lu and Paull 2007)
Kansas State	<b>Rural Opportunity Zones (ROZ)</b>	Financial incentives to new full-time residents: Kansas income tax waivers for up to five years Student loan repayments up to \$15,000	Kansas, USA	2012	(Brooks 2017)
General council of the department of Gers Midi-Pyrenees regional council Chamber of commerce and industry CEEI <sup>4</sup>	<b>Soho Solo (small office home office)</b>	Attract a specific category of workers: freelances and teleworkers. Promote the advantages of rural territory and help newcomers throughout their installation.	Gers, France	2008-present	<a href="https://www.soho-solo-gers.com/">https://www.soho-solo-gers.com/</a>
National Association	<b>“Collectif Ville Campagne”</b>	Provide support for people wishing to settle in a rural area and introduce them to territories (through information and training). Support employment, social and cultural life.	Limoges, France	1997-2016	<a href="https://www.facebook.com/collectifvillecampagne/">https://www.facebook.com/collectifvillecampagne/</a>
Western Development Commission	<b>LookWest.ie</b>	Raising the level of awareness on the positive aspects of living and working in the Region; addressing an information gap and misperceptions about the West Region; Providing information about a host of relevant topics – from childcare to housing, business supports to skills base.	Donegal, Sligo, Leitrim, Roscommon, Mayo, Galway and Clare, Ireland	2004-present	<a href="https://www.lookwest.ie/">https://www.lookwest.ie/</a>
SSPA network	<b>Southern Sparsely Populated Areas (SSPA) network</b>	To make the fight against depopulation and ageing be considered a priority in both the national and European political agenda	Spain, Croatia, Greece	2016-present	<a href="http://sspa-network.eu/en/about-us/">http://sspa-network.eu/en/about-us/</a>

<sup>4</sup> European Business and Innovation Centre of Gers

Although the success of many of the initiatives presented in Table 4 are not available in some cases it is possible to obtain evidence from it's a positive effect.

At a supranational scale, funds have been attributed by the European Union (EU) to tackle the problem of depopulation in rural areas. PADIMA (Policies against Depopulation in Mountain Areas), Philoxenia PLUS and Grisi plus are three examples of multi-annual projects that involve several countries around the subject of rural depopulation. Padima and Philoxenia PLUS collected best practices for enhancing the attractiveness of rural areas and established exchange experiences between the cases involved in the project. PADIMA was a three-year period INTERREG IVC (2010-2012) project, which aimed to exchange good practices for enhancing the attractiveness of mountain areas through the study of regions of countries: Spain, Italy, Norway, Sweden and France. Philoxenia PLUS aimed to facilitate and encourage the emergence of new economic activities, innovation and performance in terms of tools and approaches for the welcoming of new active people and new populations and the promotion of local products in order to ensure sustainable development. As for Grisi plus, its main aims were increasing the appeal of rural territories in order to attract new inhabitants and promoting local tangible and intangible goods and services.

At a national scale, two initiatives were collected: one from Ireland (Rural Resettlement Ireland (RRI)) and another from Australia (GPRIP). These have distinct strategies to deal with the rural repopulation problematic namely in what concerns the target group. RRI provides support for the general public while GRIP is concerned with the doctor's attraction.

In Ireland since the beginning of the program RRI, 700 families have settled in rural areas<sup>5</sup>. It assists families that relocate from urban to rural areas in search of a better quality of life. Concerning its financial support, the Irish Department of the Environment provides 60% of its funding. Its main activities include meetings with in-migrants giving advice on housing and maintaining contact with the family after moving.

GPRIP addresses the attraction of medical practitioners and this is done through the provision of financial incentives to encourage medical practitioners (GP) in regional, rural and remote locations. Although there lack of studies regarding the effectiveness of such incentives Li et al. (2014) concluded that the incentive is likely being paid to some GPs whose preference is unaffected by such incentives. Also according to Yong et al. (2018) GRIP attracted mostly newly qualified GPs (recruitment) to newly incentivized areas rather than impact on retention.

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<sup>5</sup> <http://www.ruralresettlement.com/>

Yet, most of the initiatives found to tackle rural depopulation were launched at a regional scale. Countries such as Canada, Spain, France, Ireland, or the USA have regional policies to face repopulation issues.

The case of the free land programs (USA), according to Lu and Paull (2007) provided the influx of new residents and consequently also generated other benefits such as new businesses and new ideas to rural communities, improving their future viability. A recent research on the program mentions that Kansas has 27 communities with free land programs (Bauer 2018). According to the same author, these free land programs are a short-term solution to a long-term problem of land abandonment. In the USA, another mechanism to attract population created was the Rural Opportunity Zones (ROZ). Its purpose is to use financial incentives to attract college graduates from out of state to move to rural Kansas.

France has also ongoing regional projects such as SOHO SOLO that supports a new generation of independent entrepreneurs by providing: consulting, mentoring and information for business implementation; welcoming committees that provide information of available accommodation and local services; access to the soho solo online directory, intranet and passport; free access to eight telecentres<sup>6</sup>. Because of this initiative, the region of Gers has approximately gain 476 new inhabitants.

The Spanish project “Embrace the Earth” is a consolidated project of 18 local action groups (LAG) in five Spanish regions. EU-funded LEADER groups are incorporated into a second pillar (Rural Development Program) of Common Agricultural Policy (CAP). This was the only project found linked with the CAP ongoing broader European Policy for rural areas. Results from the project report that 500 persons representing 230 families have settled in rural areas.

The presented initiatives and public policies that contribute to the arrival of new population to a certain community, contribute to its resilience and empowerment of local communities in rural contexts. They are also seen as essential to halt rural depopulation, to maintain and enhance the quality of life in rural areas, as well as to secure the provision of services (Fischer and McKee 2017).

However, not all rural areas are aiming at attracting more population, some are planning to adapt to the decline trends they have been through. Söderberg (2015) studied the particular case of the Swedish municipalities where they came up with different strategies for rural depopulation such as the demolishing of vacant buildings, promote collaboration between small rural municipalities and even when they realize that they were losing social capital the might be reduced they consider merging with one or more neighbours municipalities.

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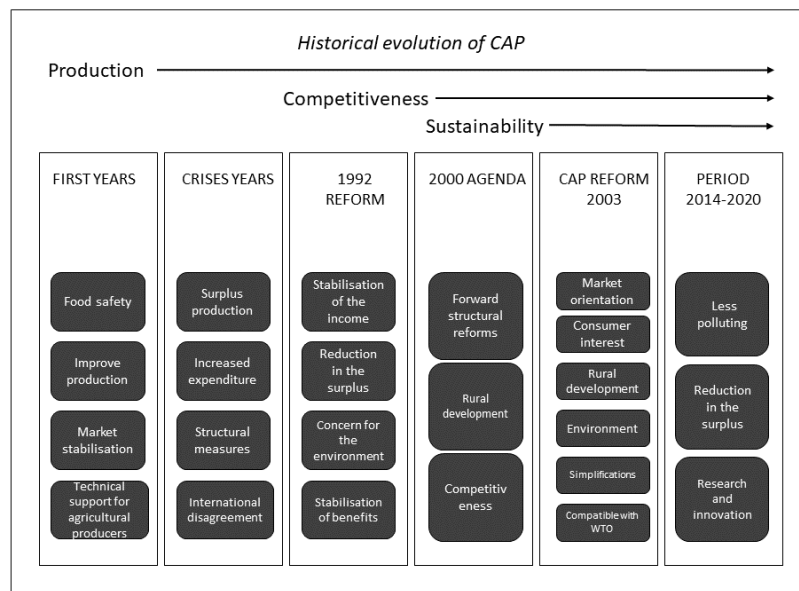
<sup>6</sup> <https://pt.slideshare.net/fcazalas/soho-solo-project>



## 4.2 European Policies in Rural areas

### 4.2.1 Common Agricultural Policy (CAP)

EU policies for rural areas have been designed closely linked to agriculture. The first policy developed for the spaces was the Common Agricultural Policy (CAP). Until the 70s rural development focused on agricultural production (Perpar and Udovč 2011). By that time, the EU assumed that it was not necessary to distinguish between agricultural policy and rural policy since agriculture was the dominant activity in rural areas. Over the years the CAP has undergone several restructuring and has gone from a much focused strategy on productivity in the first generation to a policy directed towards competitiveness and ultimately towards sustainability. Figure 20 presents a simplified outline of the historical development of CAP, with the most important milestones and changes implemented.



**Figure 20** Historical evolution of CAP (Duarte 2014)

Initially, CAP was a mechanism to provide food security. Subsequently, there was a shift in policy from productivism to supply management. In the 1990s, CAP became concerned with environmental sustainability and food quality. In 1996, it was organized in Cork, Ireland, the European Conference on Rural Development, with the aim of presenting guidelines for future European policy. The conference resulted in the Cork Declaration, which defined ten principles for a future European rural policy. Later in 2000, the Agenda 2000 reform drew some conclusions from Cork, namely by establishing the rural development policy as the second pillar of the CAP. The second pillar of the EU Common Agricultural Policy (CAP) both acknowledges and promotes rural development through diversified (non-agricultural) enterprise (CAP 2008; Wilson 2001). In

addition, this pillar provides support for collaborative governance and a territorial approach to rural development. The PDR thus emerged as the second pillar of the CAP (including guidance from Cork 1996) towards sustainable development which would ensure greater coherence between rural development and the CAP price and market policy, promoting all its components and encouraging the involvement of local actors. In addition to these programs, the European Commission has also launched a specific for rural areas, the LEADER program (Link between Actions for the Development of the Rural Economy). The idea was to create a program that would follow the principles of local development (partnerships, decentralization, territorialisation, innovation, etc.) with the aim of combating desertification in rural areas, creating conditions for its endogenous revitalization. Structural funds have been set up to finance the implementation of the CAP policies, including the LEADER initiative. In the 2014-2020 programming period, the LEADER method has been extended under the broader term Community-Led Local Development (CLLD). Today, although it is a policy domain, rural development is incorporated inside the CAP and not as an autonomous policy.

Finally, there is also some evidence that second pillar policy measures were not successful in the promotion of cohesion between Europe's regions (Shucksmith et al. 2005). The RDP has been criticised with respect to its lacking theoretical foundation, inconsistent implementation and perceived ineffectiveness (Margarian 2011).

Regarding the NRDP in Portugal, according to Batista and Figueiredo (2011), although the dominant political discourse is that of multifunctionality, investment continues to focus, essentially, on productive activities, such as the agricultural and forestry sectors. In NDRP for the period 2014-2020, there is a trend towards a greater allocation of financial resources in the productive sectors, although more concentrated in the forest sector (Soares da Silva, Figueiredo, and Rodrigo 2014). Agriculture continues to occupy a prominent place in the NDR in Portugal (Soares da Silva et al. 2014).

#### *4.2.2 Beyond CAP*

In 2010, Europe put forward Europe 2020 strategy reinforcing three priorities: smart, sustainable, and inclusive growth. The Europe 2020 strategic document identifies priorities and targets to be achieved in the next Community framework for 2014-2020. Among other objectives, Europe 2020 intends to meet regional disparities within Europe and the lack of convergence between the core and peripheral regions.

The seven flagships of Europe 2020 are:

- "Innovation Union"

- "Youth on the move"
- "A Digital Agenda for Europe"
- "Resource efficient Europe"
- "An industrial policy for the globalisation era"
- "An Agenda for new skills and jobs"
- "European Platform against Poverty"

Although as it can be seen the guidelines presented above are not focused on the rural territories, it is important to reflect on the challenges facing rural areas under the Europe 2020 strategy.

Rural areas have been through significant changes namely in what was before its dominant activity agriculture. In this context, rural policies have also witnessed a shift from a sectoral focus to a territorial one this has been named "the new rural paradigm" (OECD 2006). According to the OECD (2006), the new rural paradigm is based on two principals: "1) a focus on places instead of sectors, and 2) a focus on investments instead of subsidies". The "new rural paradigm" (OECD 2006) mainly stressed the diversity of rural areas and the resulting necessity to focus not only on agriculture and farmers but also on other industries and different private and official actors. Its social order is more flexible, diverse, and horizontally structured than its old paradigm, with multiple stakeholders involved in the governance of rural policy-making and government intervention (OECD 2006). It also brought two important main messages: rural is not synonymous with agriculture and rural is not synonymous with economic decline.

Recently OECD provided a Rural Policy 3.0 that represents an extension and a refinement of this Paradigm. Rural Policy 3.0 agenda recognises the strong interdependencies between rural and urban regions and proposes to better integrate rural and urban policies at various government levels (Table 5).

**Table 5 Rural Policy 3.0 (OECD 2016)**

	<b>Old Paradigm</b>	<b>New rural paradigm</b>	<b>Rural Policy 3.0- Implementing new rural paradigm</b>
Objectives	Equalisation	Competitiveness	Well-being considering multiple dimensions: i) economy; ii) society and iii) environment.
Policy focus	Support a single dominant resource sector	Support multiple sectors based on their competitiveness	Low-density economies differentiated by type of rural area.
Tools	Subsidies for firms	Investments in qualified firms and communities	Integrated rural development approach – spectrum of support to the public sector, firms and third sector.

Key actors & Stakeholders	Farm organizations and national governments  Uniformly applied top-down policy	All levels of government and all relevant departments plus local stakeholders  Bottom-up policy, local strategies	Involvement of: i) public sector – multi-level governance, ii) private sector – for-profit firms and social enterprise, and iii) third sector – non-governmental organizations and civil society. An integrated policy with multiple policy domains.
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Rural Policy 3.0 emphasises the following policy lessons (OECD 2018):

1. Delivering improved well-being for rural dwellers (across economic, social and environmental dimensions);
2. Understanding the growth dynamics of low-density economies (distance to markets, the role of the tradeable sector, and absolute advantages);
3. Deploying a range of policy instruments (investments, addressing market failures, and supporting social innovation);
4. Fostering a multi-sectoral approach that engages public agencies, the private sector and non-government organisations, and is inclusive of different population groups and places;
5. Integrating delivery to enable sectoral policies that match the needs and circumstances of different rural regions;
6. Understanding that there is a spectrum of rural regions ranging from those in an FUA to remote, which have different policy opportunities and challenges.

OECD points out that foster innovation and skills is a priority for rural areas (OECD 2018). Additionally, more investment is needed in renewable energy and circular economy, not only at a large scale but at a micro scale (OECD 2018).

Rural places with a high quality of life can compensate for lower wages, attract, and retain workers and their families. In many rural areas, wages are relatively low, but outmigration is less than might be expected and in some places, there is even in-migration – or “counter-urbanisation”. Households may choose to accept lower wages or higher commuting costs because of the high quality of life provided by a rural environment. Rural areas close to cities have relatively high rates of population growth because they can leverage the mutual benefits of high amenities, affordability and proximity to cities (Table 2) (OECD 2018).

Furthermore, there are several institutions in Europe (e.g. Euromotana, R.E.D.) that claim that rural areas should be in the centre of the political agenda in Europe considering balancing urban-rural areas (RUMRA 2017; ECR 2017). These institutions have handed out guidelines for public policies on their view for rural areas development. Table 6 presents the main documents developed in this context recent launched for the value of rural areas.

**Table 6 Recent launched guidelines for public policies for rural areas**

Name	Date	Aim
<b>Cork, 2.0</b>	2016	Conference declaration that includes policy orientations for declare that an innovative, integrated and inclusive rural and agricultural policy.
<b>Towards a rural agenda</b>	2017	Document design to help the Commission create a white paper that informs all future legislation as it applies to rural areas.
<b>The need for a White Paper on Rurality</b>	2017	Document launched by the European comities of the regions reflecting the provide an overview of the European Union (EU) budget dedicated to rural development and justifying the need for a white paper on rurality

According to the ECR (2017), it will be impossible to reach the Europe 2020 targets while maintaining territorial cohesion in Europe without drawing on all sources of potential growth, including rural areas. According to the same authors, the diversity of rural areas brings considerable benefit and potential for creativity and innovation yet their contributions to smart, sustainable and inclusive growth as targeted under the Europe 2020 Strategy are underestimated and underexploited.

At a time when rural depopulation constitutes a serious problem throughout Europe, the cork declaration sets the need to make rural areas attractive for people to live and work in throughout the different stages of their lives. According to Cork2.0 (2016) "Rural and agricultural policies must interact with the wider context of national and regional strategies and work in complementarity and coherence with other policies"(Cork2.0 2016, 4pp.). Improved interrelations and partnerships among them are important preconditions for economic viability, environmental performance and social cohesion of the Union as a whole. Also, cork 2.0 sets as priorities integrate a number of modern adaptation issues and to reach out to the entire population of rural regions namely increasingly on digitisation as well as knowledge workers (Cork2.0 2016).

Accordingly, it is important to understand if national strategies shaped by domestic public policy are translating strategic papers such as the Europe 2020 strategies, Cork 2.0, Towards a rural agenda and The need for a White Paper on Rurality.

### 4.3 Chapter summary

Chapter 4 explored ongoing public policy and initiatives encouraging attraction to rural areas and ongoing European policies for rural areas. The public policy initiatives encouraging attraction to rural areas are promoted at different scales, target population and include diverse strategies to tackle the issue. Most of them include support to newcomers facilitating their integration into their new communities, providing information and advice on different aspects related to the rural settings. In contrast, the main public policy for rural areas in Europe (CAP) is focused on agriculture and forests considers that the investments in these sectors will increase rural areas attractiveness. Because of this, there are several institutions in Europe (e.g. Euromotana, R.E.D.) that claim that rural areas should be seen with an holistic view and that rural issues should become more central the political agenda in Europe considering balancing urban-rural areas. For these institutions have issued guidelines for public policies on their view for rural areas development.

## **5 POPULATION ATTRACTION AND ESS IN RURAL PUBLIC POLICIES IN EUROPEAN AND IN PORTUGAL**

## 5.1 Introduction

This chapter reports the investigation on how public policies in Europe and in Portugal address rural attraction leveraged by ESS and support the new transitions skilled in-migrants generate. To fulfil this aim a cross-scale content analysis of the National Rural Developed Programs (NRDP) at European level and Municipal Master Plans (MMP) at the municipal level was done. This analysis allowed drawing conclusions about the top-down influence of population attraction through ESS.

## 5.2 Methodology

To understand and explore how public policy instruments are addressing population attraction to rural areas, as well, as if public policies support the new transitions skilled in-migrants generate. It was developed an analysis of European and Portuguese municipal policy instruments grounded in three policy domains: Ecosystem Services (ESS), Public Services and Infrastructures, and Networks and Knowledge Exchange. These three specific domains were built upon both the theoretical and documentary literature reviewed in chapter 2 thus helping the interpretation on how these specific domains are being ‘used’ as attraction and transition factors in rural areas. The analytical orientation for such an analysis is presented in Table 7.

**Table 7 Criteria for policy analysis on population attraction to rural areas**

Criteria for policy analysis		Objective
<b>Attraction and transition factors</b>	Ecosystem Services (ESS)	ES may be a motivation for moving to a rural area and promoting ES may contribute to human wellbeing.
	Public Services and infrastructure (public services, ICT, accessibility)	Supply and demand for public services and infrastructures as a reason for, and as a consequence of, population attraction
<b>Transitions factors</b>	Networks and Knowledge exchange	Networks supported by different types of knowledge exchanges are promoted and recognized as fundamental for a viable transition process.

This analysis was developed between 2015 and 2016, and it is interesting to see its alignment with current research. Specifically with the research project ROBUST (funded by the H2020 programme) that the researcher is involved since mid-2017. This project aims at advancing the understanding of interactions and dependencies between rural, periurban and urban areas and identifying and promoting governance arrangements and synergies between these three areas for inclusive growth at rural areas. ROBUST grounds its development around five policy domains: a) New business models and labour markets; b) public infrastructure and social services; c) sustainable food services; d) cultural connections; and e) ecosystem services. As it is clear, two of the ROBUST policy domains are similar to those chosen for the present public policy analysis



(ESS and public infrastructure). Furthermore, the present research was developed looking into how ESS delivery is increasing and valued through emerging new business ecosystem based. This means that the remaining public policy domains are included under the analysis of the ESS namely it economic and cultural aspects.

The application of these criteria is presented in Table 7 consists of two parts: the first part to see if the criteria are met and the second part to understand if they are factors of attraction and transition. The results of the application can be seen in chapter 5.4 regarding European National Rural Development Programs (NRDP) and chapter 5.5 regarding Portuguese Municipal Master Plans (MMP). The attraction and transition factors are explained in the next chapter answering why were they considered for analysis and how is the analysis going to be developed.

### 5.2.1 Attraction factors

The factors of attraction selected for public policies analysis are Ecosystem services (ESS) and Public services and infrastructures (PSI).

#### Ecosystem Services

As described in chapter four every ecosystem provides essential services and goods and delivers irreplaceable support functions on which human life relies (Costanza et al. 1997; Boyd and Banzhaf 2007).

In this research the aim has been to understand if public policies under analysis have in consideration the potential of ESS contribution to human well-being and if policies create the opportunities for the enhancement of these services, enabling its promotion. For the purposed of this study, the TEEB definition was the one that seems more adequate: the definition describes ecosystem services as outcomes of ecosystems and as contributions to human wellbeing.

Table 5 illustrates the concept of ESS with the classification adopted in TEEB that includes 17 ecosystem services divided into the four categories. This thesis follows the classification by TEEB

**Table 8 Classes of TEEB categories<sup>7</sup>**

Categories	Ecosystem Services
<b>Provisioning services</b>	Food
	Raw materials
	Freshwater
	Medicinal resources
<b>Cultural ecosystem services</b>	Recreation and mental and physical health
	Tourism
	Aesthetic appreciation and inspiration for culture, art and design
	Spiritual experience and sense of place

<sup>7</sup> <http://www.teebweb.org/resources/ecosystem-services/>

Categories	Ecosystem Services
<b>Regulating services</b>	Local climate and air quality Carbon sequestration and storage Moderation of extreme events Waste-water treatment Erosion prevention and maintenance of soil fertility Pollination Biological control
<b>Habitat or supporting services</b>	Habitats for species Maintenance of genetic diversity

As mentioned in chapter 2 within the motivations to move from an urban to a rural setting the majority of in-migrants include non-economic reasons, and very frequently these motivations are related to ESS such as amenities, rural lifestyle (peaceful settings) and contact with nature. These ESS motivations are recognized through the lens of migration processes, especially urban to rural migration.

#### Public services and infrastructures

Under the term public services generally are included services and goods for daily life, addressing basic needs that have a great impact on the standard of living of citizens. Public services can be organized into different types (Dremel 2013):

- technical (e.g. water, electricity and gas networks);
- retail (e.g. supermarkets or other facilities of local supply, like post offices, banks but also administrative services);
- social (e.g. education facilities, health care as well as services for the young and for the elderly);
- cultural infrastructure (e.g. theatres, libraries but also restaurants or pubs).

The hindered availability of public services can be the reason for people to migrate (Dremel 2013). At the same time, a declining demographic structure is often not sufficient to support the provision of adequate public services. Thus, rural areas alone have difficulty providing the necessary critical mass of facilities, producer services and investment to support economic development, so entrepreneurs have difficulty starting up businesses in this areas (Perpar and Udovč 2011). Furthermore, the capacity for defining and implementing development strategies highly depends on social capital availability. Basile and Cecchi (2005) stress that supplying better levels of public services by the government creates the climate of trust in collective action, in a community with a poor stock of social capital, and this can help build social capital in such communities. According to Berry (2004), a certain level of public services provision is also crucial in order to enable social inclusion. Likewise, the OECD (2010) states that “the availability of an

appropriate mix of private, public and voluntary services in all communities is an increasingly important factor in building a competitive and sustainable economy” (in Nielsen et al. 2012).

The types of public services delivered in rural areas must be analysed with particular attention because of the low-density specificity of this area (Basile and Cecchi 2005). Although it is, still the responsibility of the state to guarantee for the provision, the state is less and less able to fully comply with this task. For example, the market and civil society are two actors that could take over certain parts of the provision (Dremel 2013). As suggested by Naldi et al. (2015) municipalities in non-densely populated areas could collaborate best practices for providing efficient public services like transportation.

Also, being connected, in terms of, networks, face-to-face contacts, and mobility of human capital is of crucial importance and on establishing or fostering knowledge exchanges (McCann and Ortega-Argilés 2013). Infrastructure, both physical and digital are vital in order to achieve this. Yet, a quarter of the rural population has no access to the Internet (RUMRA 2017), this digital divide not only affects the develop the potential offered by connectivity and digitisation of rural areas (Cork2.0 2016) but also decreases the attractiveness of rural areas. Recent case studies have reported that ICT enables those creative professions to work from rural locations (Roberts and Townsend 2016) and that older people become interested and able to use ICT after training (Onitsuka and Hoshino 2018). ICT also speeds up the process of knowledge sharing worldwide and across all areas, and creating a cheap communications space for the development of new worldviews and lifestyles (Fischer-Kowalski et al. 2012).

In short, the development of ICT can be seen as a necessary condition of avoiding the economic marginalisation of sparsely populated areas (Dubois and Roto 2012). In addition, the EU needs to improve the information and communication technology (ICT), especially concerning high-speed internet in rural regions, and thereby creating a more digital society. These targets are set in order to promote an economy where knowledge and innovation are the driving forces behind growth (Friedrichs and Westlund 2015).

In this research, both public services and infrastructures will be analysed to the extent public policies recognizes the importance of having PSI as a condition for rural areas development and to what extent public policies include strategies to offer alternative ways of supplying adapted to low-density areas. Public policy documents under analysis are reviewed and measures that address public services and infrastructures improvements are identified.

## 5.2.2 *Transition factors*

### Networks e knowledge exchange

As described in chapter 2 rural areas are characterised by several features challenging to economic growth, including low rates of population in/out- migration, physical distance to end markets and a low critical mass of firms (Tregear and Cooper 2016). The development of networks and collaboration between actors in rural areas, on the basis the attraction of knowledge workers increasing the access to knowledge and new pools of ideas may bring advantages such as achievement of economies of scale and/or scope in production, and facilitation of better knowledge exchange to surpass current challenges (Storper and Scott 2009). Transition management centres the development in innovation through change, highlighting the role of knowledge and social learning through experimentations (Pahl-Wostl 2007). Thus, social relations, knowledge and learning are intimately connected to each other, as for example in the implementation of network structures where actors depend on each other and interact in a dynamic way. Putnam (2000) and others, economists have recognised the role of networks, reciprocal obligations, shared norms and trust as an important contributor to economic performance (McIntosh et al. 2008). Particularly, many times these networks make the form of formal/informal partnerships. Partnerships have different purposes, varying from serving a regulative function, playing a methodological, supportive and supervisory role, to functioning as a knowledge and communication centre (Björstig and Sandström 2017). Furthermore, partnerships are institutional arrangements for financial cooperation, a development strategy, a tool for solving problems, conflicts and providing community amenities, an arrangement for crisis management and knowledge transfer, or a way to modernize the public sector (Björstig and Sandström 2017). The importance of social actors and their interactions for achieving sustainability and the critical role of innovation is at the core of transition management. More specifically, all the transition management tools include both stakeholder and community engagement elements (e.g., participation as the way for vision building, knowledge-creation and scenario drawing) and innovation-stimuli elements (Loorbach 2010). Recent research shows that face-to-face interaction is important in developing trust and bonding social capital (Roberts and Townsend 2016). Additionally, also informal social networks can provide space for innovation and flexibility (Gunderson et al. 1995 in Folke et al. 2005). In this respect, the European Network for Rural Development (ENRD) (2009) acknowledges the positive outcomes and synergies available from creating new linkages between rural communities and rural actors, since this help to establish knowledge-sharing platforms for different peer groups.

The main aim of including the transition factors on public policies analysis is to understand if the public policies measures promote and enhance networks/cooperation and partnerships and qualifications within rural areas contributing to sustainable transitions in rural SES.

## 5.3 Europe - The role of NRDP in population attraction

### 5.3.1 Context

The National Rural Development Program (NRDP) under the Common Agricultural Policy (CAP) second pillar was chosen as a reference public policy due to its focus on the development of rural areas within Europe, with large influence at national government levels. Therefore, the NRDP 2014-2020 will be analysed to identify if the policies include the factors of attraction and transition.

It is stated that the NRDP “helps the rural areas of the EU to meet the wide range of economic, environmental and social challenges of the 21st century”<sup>8</sup>. The new CAP is now more integrative addressing rural development on a broader base than in the past when it was focused mainly on agriculture.

CAP has two pillars: first pillar market support measures and second pillar comprises the rural development programs that are the major tool of rural development of the European Union.

The EU defines 3 cross-cutting objectives for Rural Development Program (RDP): Environment, Climate change mitigation and adaptation and innovation and follows six common EU priorities<sup>9</sup>:

1. Fostering knowledge transfer and innovation in agriculture, forestry, and rural areas;
2. Enhancing the viability and competitiveness of all types of agriculture, and promoting innovative farm technologies and sustainable forest management;
3. Promoting food chain organization, animal welfare and risk management in agriculture;
4. Restoring, preserving and enhancing ecosystems related to agriculture and forestry;
5. Promoting resource efficiency and supporting the shift toward a low-carbon and climate resilient economy in the agriculture, food and forestry sectors;
6. Promoting social inclusion, poverty reduction and economic development in rural areas.

The focus of all the priorities presented for rural development is mostly related to the agricultural sector areas. The priorities mentioned are linked to the enhancement of the agriculture and forest activities namely its knowledge and innovation, competitiveness and chain organization (Priority 1, 2, 3). Other two priorities include enhancing ecosystems

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<sup>8</sup> [http://ec.europa.eu/agriculture/rural-development-2014-2020/index\\_en.htm](http://ec.europa.eu/agriculture/rural-development-2014-2020/index_en.htm)

conditions for agriculture and forest activities (Priority 4 and 5). Only priority six is not directly related to farming or agriculture.

Regarding the budget foreseen for the 2014-2020 period, only €84 billion is allocated for rural development programs from a total amount of over €362 billion. Furthermore, according to the EU, at least 30% of funding for each RDP must be dedicated to measures relevant for the environment and climate change and at least 5% to LEADER.

The development of each NRDP are under the ministries responsible for rural affairs and depend on each country (Table 9). In some countries rural affairs fall under different ministries, in others, it rests in only one ministry. In the case of Ireland, Northern Ireland, England and Wales this ministry responsible for rural affairs is also responsible for environmental issues.

**Table 9 Rural issues by ministry in EU Member states with the NRDP under study**

Country	Ministry
<b>Croatia</b>	Minister of Agriculture
	Ministry of Environmental Protection and Energy
<b>France</b>	Ministry of Town and Country Planning, Rural Affairs and Local Government
	Ministry of Agriculture, Agrifood and Forestry
<b>Ireland</b>	Department of Agriculture, Environment and Rural Affairs
<b>Italy</b>	Minister of Agriculture, Food and Forestry Policies
	Minister of the Environment, Protection of Land and Sea
	Minister of Heritage and Cultural Activities and Tourism
<b>Northern Ireland</b>	Minister of Agriculture, Environment and Rural Affairs
<b>Portugal</b>	Ministry of Agriculture, Forest and Rural Development
<b>Scotland</b>	Cabinet Secretary for the Rural Economy and Connectivity
	Cabinet Secretary for Environment, Climate Change and Land Reform
<b>Spain</b>	Minister of Agriculture, Food and Environmental Affairs
	Minister of Industry, Energy and Tourism
<b>England</b>	Environment Food & Rural Affairs
<b>Wales</b>	Minister for Environment.

### 5.3.2 NRDP Sample selection

From a total of 118 RDP, 28 are NRDP (Table 10). The present research includes the NRDP from the 10 European countries that were written in an understandable language by the researcher (Figure 21). The European Commission website<sup>10</sup> was used to obtain all the information related to the NRDP under analysis. The policy analysis was centred in two of the seven sections<sup>11</sup> that

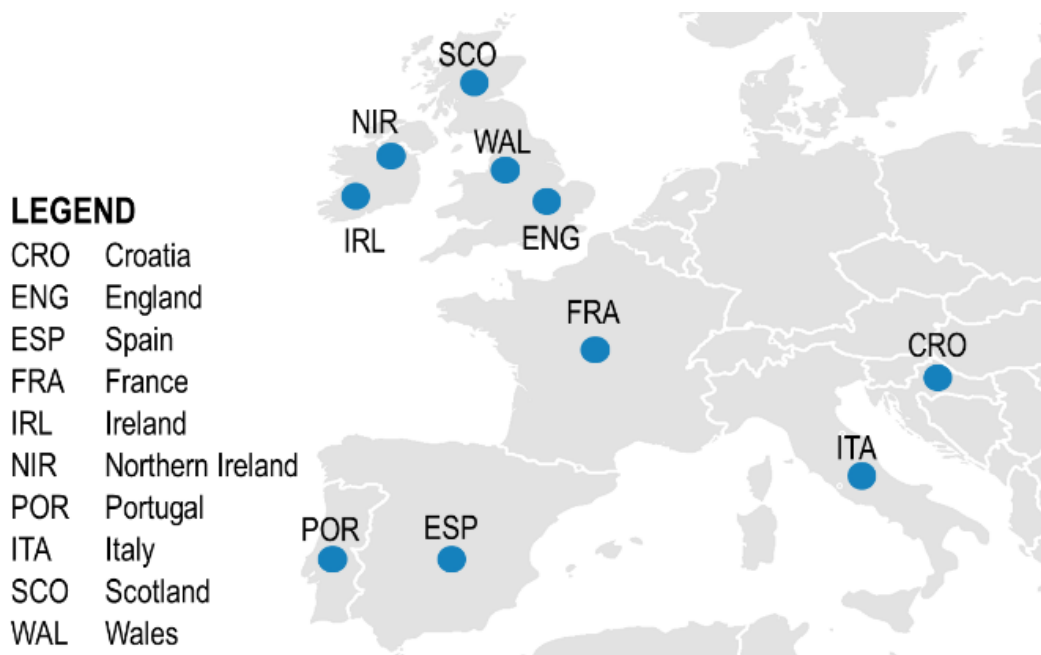
<sup>10</sup> [http://ec.europa.eu/agriculture/rural-development-2014-2020/country-files/index\\_en.htm](http://ec.europa.eu/agriculture/rural-development-2014-2020/country-files/index_en.htm)

<sup>11</sup> swot, identification of need, description of the strategy, assessment of ex-ante conditionalities, description of the performance framework, description of the measures selected, evaluation of the plan

structure the NRDP: Identification of Needs and Description of the Strategy. Yet, for identifying the use of the ESS concept, the whole document was analysed.

**Table 10 Number of RDP available**

Rural Development Programs (RDP)	Nº
Total of RDP	118
Total of National RDP	28
Available in known languages <sup>12</sup>	10



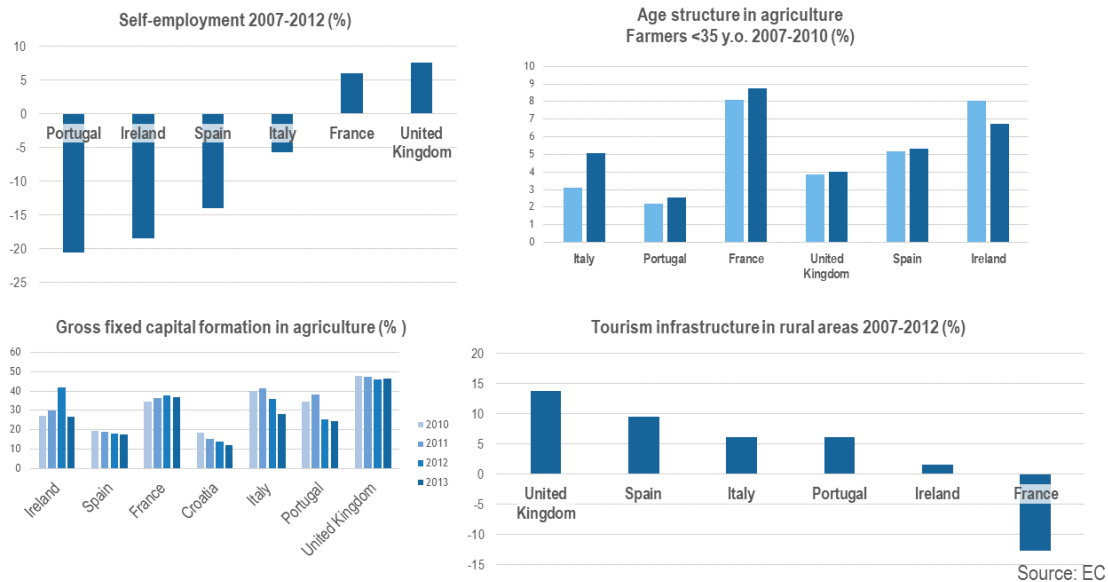
**Figure 21 European map with the location of the case studies**

The scope of analysis has been limited to the national level because, although the EU provides the general framework: i) each country at the national level has to tailor their NRDP to reflect the challenges of its rural areas, and it is important to understand in the context of the present research how this was done; ii) According to the EU, the Member States and regions draw up their RDP based on their needs and addressing at least four of the six common EU priorities<sup>8</sup>. The United Kingdom consists of four constituent countries, England, Scotland, Wales and Northern Ireland (DEFRA 2016). For this research, it was key to understand the priorities in each country.

Regarding the variation of the population, and as shown, all countries under study except the UK (England, Scotland, Wales, and Northern Ireland) have witnessed population losses in the last decades. Also, all countries except the UK and France have witnessed a decrease in self-

<sup>12</sup> English, French, Italian, Spanish, Portuguese

employment. The same can be observed regarding gross fixed capital formation in agriculture with only France facing a slighter decrease than the remaining countries. Yet regarding the number of young farmers and tourism infrastructure, more positive dynamics have been observed lately (Figure 22).



**Figure 22 Statistics on the EU Member states with the NRDP under study**

### 5.3.3 Results on NRDP analysis

This section presents the results of the analysis of the two mentioned sections in NRDP: Identification of Needs and Description of the Strategy. The results are structured in three parts: Population dynamics, Attraction factors (ESS and Public Services and infrastructures) and Transitions factors, according to the criteria presented in Table 7.

#### Population dynamics

The purpose was to understand how public policies consider issues concerning population dynamics, in particular, rural depopulation and its consequences. Similar to a previous study on RDP 2007-2013 (Kováts and Kovács 2012) it appears that ageing in rural areas is the most evident problem reported in the NRDP under study. Kováts and Kovács (2012) refer that ageing population and unemployment are frequent factors responsible for population decline. Using examples from the analysis conducted in this research, the English NRDP speaks about “approximately 50% aged over 45”. Both England’s and Croatia’s refer that the ageing population has consequences on the demand for health services in rural areas.



Yet the Scottish and the Northern Ireland NRDP bring an opposite perspective on rural population trends. The first refers that the population in rural areas increased faster than in urban areas between 2001 and 2011. In their SWOT analysis, the Scottish NRDP identified the “sustained population growth and higher levels of employment” as a strength of Scottish rural areas. On the Northern Ireland NRDP, there are references of a census of the population estimates increasing in rural areas.

From the analysis conducted five out of the 10 revised NRDP pointed out to consequences of population decline in rural areas (Table 11). These consequences include the decline of the rural economy, loss of innovation potential due to the exit of the younger generations, reduction in the provision of public services due to reduced demands and finally the lack of maintenance of cultural and natural values. The other five cases missing in Table 11 do not refer to the consequences of population decline in their countries.

**Table 11 Rural population and consequences mentioned in the analysed NRDP**

Country	Consequences of population decline mention in the NRDP				Examples
	The decline of the rural economy	Loss of innovation	Reduction in services	Lack of maintenance of natural, cultural values	
CRO	x		x		"Lack of access roads and other physical infrastructure...in rural areas to support the rural population"
ENG	x				"difficulty in access to highly skilled labour often poses a threat to business growth and the ability to fill vacancies"
IRL		x	x		"young people emigrating from rural areas results in the loss of innovation potential"
POR	x			x	"maintenance of natural values, landscape, culturally associated with rural economies"
SCO	x		x		"The sparsity of populations in remote areas can lead to difficulties in accessing services and facilities. It also leads to limited opportunities for business growth."

Regarding specific strategies for attracting population, Table 12 shows which countries have such strategies and what kind of measures were mentioned in the NRDP to make it happen. Five of the 10 countries analysed have programmed strategies to attract new population to rural areas. Nonetheless, this number increases to seven if included the needs pointed out by each of the member countries for their rural areas. As shown in Table 12, all except the Croatian and

Scottish NRDP have measures associated with new entrants in the agricultural sector. Likewise, the Wales NRDP refers that the vitality of rural areas is closely linked with the presence of a competitive and dynamic farming sector. Three of the case studies analysed, Northern Ireland, France and Italy do not mention strategies for attracting population and have not been included in Table 12.

**Table 12 Explicitly strategies or needs for attracting population mentioned in the NRDP**

Country	IDENTIFICATION OF NEEDS	DESCRIPTION OF THE STRATEGY	Example of explicit actions
CRO	x	x	"Combating rural depopulation and increasing the quality of life for economic revival" "The support for entrepreneurship and the creation of new jobs in rural areas are guidelines by which RDP can influence the retention of the young and active rural population and in the long term achieve the return of those who left"
ENG	x		"Support for new entrants in the agriculture and forestry sectors and more effective succession planning"
ESP	x	x	"Promote rural repopulation, through employment and wealth generation and structuring of the territory by transforming rainfed crops to efficient irrigation, minimizing potential environmental impacts."
IRL	x	x	"Targeted Investment Support to Young Farmers Entering into Agriculture."
POR	x	x	"Support for young farmers."
SCO	x		"Support new entrants and generational renewal to drive forward change and stimulate sustainable economic growth, innovation."
WAL		x	"The vitality of rural areas is closely linked to the presence of a competitive and dynamic farming sector, attractive to young farmers, which plays an important role in generating economic activities"

### *Attraction factors*

#### Ecosystem Services

To infer about the inclusion of ESS in NRDP the analysis started by locating whether the keyword ESS was included in the documents. This was followed by an identification of specific ESS. From the 10 cases reviewed, seven include the keyword ESS in an explicit way at least once (Table 13), mainly in the swot analysis and mostly related to opportunities that ESS create in rural areas. The English NRDP, for example, mentions that "there is potential to significantly increase wood and timber production and to develop markets for wider 'ecosystem services' such as carbon and water regulation services". None of the analysed NRDP documents make explicit reference to any of the four ESS categories.

**Table 13 Occurrences of ESS as a keyword in NRDP, by section of the document**

NRDP SECTIONS	Countries									
	CRO	ENG	ESP	FRA	IRL	NIR	POR	ITA	SCO	WAL
SWOT										
IDENTIFICATION OF NEEDS										
DESCRIPTION OF THE STRATEGY										
ASSESSMENT OF EX-ANTE CONDITIONALITIES										
DESCRIPTION OF THE PERFORMANCE FRAMEWORK										
DESCRIPTION OF THE MESURES SELECTED										
EVALUATION OF THE PLAN										

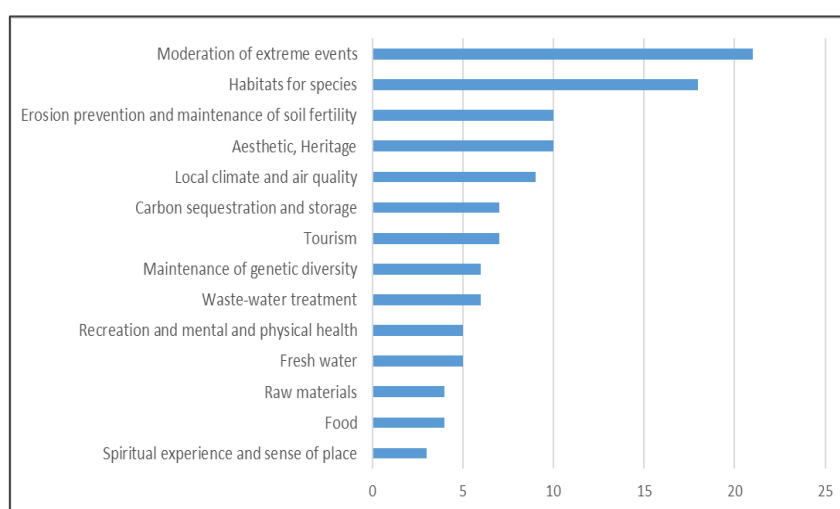
There are however some references to specific ESS. In the sections Description of the Strategy and Identification of Needs in all of the analysed documents ESS (explicitly mentioning the ESS) or terms related to ESS (implicitly related) were identified (Table 14), using the ESS identified in Table 5. The French and the Italian NRDP are those with fewer references to terms related to ESS. On the other hand, Croatia, England, and Northern Ireland NRDP are those with more ESS mentioned.

**Table 14 Summary of results of the explicit/implicit ESS found in the NRDP**

ES		Countries									
		CRO	ENG	ESP	FRA	IRL	NIR	POR	ITA	SCO	WAL
Provisioning	Food										
	Raw materials										
	Freshwater										
	Medicinal resources										
Cultural	Recreation and mental and physical health										
	Tourism										
	Aesthetic, Heritage										
	Spiritual experience and sense of place										
Regulating	Carbon sequestration and storage										
	Moderation of extreme events										
	Local climate and air quality										
	Erosion prevention and maintenance of soil fertility										
	Pollination and biological control										
	Waste-water treatment										
Habitat or supporting	Habitats for species										
	Maintenance of genetic diversity										

Interesting to note is that all NRDP analysed refer (always implicitly) to the ESS Moderation of extreme events, followed by Habitats species except France and Italy (Figure 23). The first is related to measures that concern the adaptation to climate change and the resilience of forest

and agricultural sectors to extreme events. The second presents measures of habitat recovery and management to increase biodiversity. Some cases such as NIR or IRL specify measures that include the protection of priority habitats and species of Natura 2000 sites. Other ESS such as spiritual experience and sense of place or food are generally less mentioned in all NRDP. However, regarding food, there is frequent reference to measures that tackle innovation, advisory services or assistance for business in rural areas contribute to the enhancement of agricultural conditions, and consequently to food production. Non-material ESS such as spiritual experience and sense of place, or even aesthetical values, are given less attention in most of the cases. From the 17 ESS presented in Table 8 only Medical resources (provision) and Pollination services (regulation) were not considered in any way in the cases analysed.



**Figure 23** Number of explicit/implicit references to ESS

Examples of explicit/implicit references to ESS obtained from the analysis of cases are compiled in Table 15.

**Table 15** Examples of references related to ESS found in the NRDP

Ecosystem Services		Examples of explicit/implicit references to ESS or its improvement
Provisioning	Food	Conversion and maintenance of organic farming practices
	Raw materials	Increase the production of forest raw materials sustainably
	Freshwater	Overcoming the limitations in water availability and improved efficiency use
Cultural	Spiritual experience and sense of place	Protection and enhancement of landscape character, quality, and sense of place
	Aesthetic appreciation and inspiration for culture, art and design	Preserve the cultural and social uniqueness and beauty of rural villages
Regulating and Maintenance	Erosion prevention and maintenance of soil fertility	Soil erosion prevention and increasing of soil fertility and soil organic matter
	Carbon sequestration and storage	Managing soils to help conserve our carbon stocks and reduce soil erosion
Habitat or supporting services	Maintenance of genetic diversity	Protect native breeds that are under threat

## Public services and infrastructures (PSI)

The analysis aimed to understand what kind of policy orientations for PSI in rural areas are included in the Identification of Needs and Description of the Strategy sections in each of the 10 NRDP analysed. For Croatia and England, the factors under analysis are included in the strategies and needs of the documents analysed while for Spain, France, Portugal and Italy this factors appear to be less important or not of the competence of the NRDP. Five out of 10 prioritize the need to enhance communications and improve access to broadband for rural communities. The Welsh NRDP identifies the need to “investment in ICT infrastructure in rural areas” that may contribute to increase competitiveness and overcome isolation. Also, according to the Scottish NRDP the access to broadband, besides promoting social inclusion, contributes also to a reduction of the carbon footprint in rural areas. The ICT services were also mentioned in five of the 10 NRDP analysed.

Concerning accessibility, generic measures such as developing physical infrastructure or construction of access roads in agriculture and forestry are proposed by Scotland and Croatia respectively. Additionally, the Croatian NRDP points out that there is insufficient investment in promoting the touristic offer and its branding namely in natural heritage sites and historical and cultural heritage. Accordingly, the Welsh NRDP addresses the need to improve access to landscape and to the historic environment. Except for the broadband, and to roads to access agriculture areas or touristic itineraries, no other specific infrastructures were mentioned in the NRDP analysed.

On the subject of PSI, there are no references to specific public services (e.g. healthcare, education or social care) in any of the analysed NDRP. The Welsh and Northern Ireland NRDP only propose measures such as improvement of access to basic services for rural communities.

## *Transition factors*

### Networks and Knowledge exchange

The analysis focused on how each of the 10 NRDP promoted transitions in rural areas enabling the creation of networks and knowledge exchange. The aspects mostly mentioned are collaboration and partnerships in relation to Networks, and knowledge exchange and learning in relation to Knowledge exchange within the agricultural and forest sectors (Table 15). Concerning collaboration and partnerships, the Spanish and Portuguese NRDP both identify the need to enhance collaboration between research, agriculture and forestry, and industry for innovative projects. Regarding knowledge processes and learning an example is provided by the Scottish NRDP mentioning the need to “Improve coordination and integration of advisory

services” while the Northern Ireland NRDP refers to the need to “address low levels of educational attainment and the skills gaps within the industry”. Regarding the selected transition criteria Croatia and England are the two countries that cover all the criteria.

## 5.4 Portuguese public policies analysis

### 5.4.1 Context

Regarding the analysis of the Portuguese public policies relevant for rural development, it was decided to focus on the Municipal Master Plan (MMP) as the main spatial instrument covering the municipal territory. The MMP has been the most effective territorial management instrument for the design, control and respective implementation of development at the local level (Fidelis 2001). In the Portuguese territorial management system (Decree-Law no. 80/2015, 14<sup>th</sup> May) the regional spatial programmes (PROTs) define the regional territorial development strategies, integrating options established at the national level and establishing the framework for the municipal development strategies. They are the reference framework for drawing up spatial municipal plans. Among these, the Municipal Master Plan (MMP) is the instrument through which the development strategies and options defined at national and regional planning and programme levels are transferred to locally applicable regulations and zoning plans. In the Portuguese planning context, the municipal master plan (MMP) is mandatory and responsible for defining the municipal territorial development strategy, the municipal territorial model, the relations of interdependence with neighbouring municipalities, the location options and the management of social facilities and equipment (Article 95 (1) of the Decree-Law no. 80/2015, 14<sup>th</sup> May).

#### *Municipal Ecological Structure (MES)*

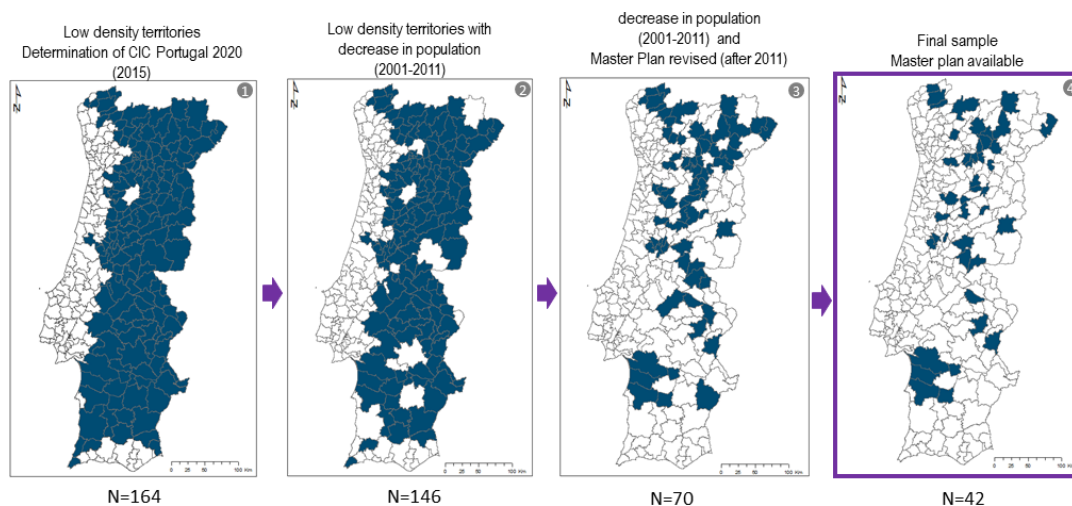
The expression "Municipal Ecological Structure" (MES) is introduced for the first time as a legal instrument in the context of the 1999 Legal Framework of the Instruments for Territorial Management (RJIGT) (Decree-Law no. 80/2015, 14<sup>th</sup> May). This diploma defined the MES as "the areas, values and systems for the environmental protection and enhancement of rural and urban areas, such as the regional and municipal environmental protection and enhancement networks, which include areas at risk of environmental imbalance values. The "Municipal Ecological Structure" exists in continuity across the rural and urban areas, as referred in the Decree-Law no. 9/2009, of 29<sup>th</sup> May and must be included in the MMP, as established in the Decree-Law no. 138/2005 of 2<sup>nd</sup> February. In the rural land the "Municipal Ecological Structure" covers the land included in the Fundamental Network of Nature Conservation, namely the natural areas subject

to risks and vulnerabilities and even other areas of land selected and enclosed according to the municipal interests, namely environmental protection and enhancement, landscape and natural heritage.

#### 5.4.2 MMP sample selection

As previously mentioned the objective of the research is to understand the strategy followed in the municipalities that have been losing population, to counteract this problem and create value in these territories. For that purpose, and through the overlap of the low-density map, population variation map, and the map of the published MMP after 2011 in the ArcGIS (Figure 24), the following methodology was adopted:

- Low-density territories in the Portuguese continent were selected (2012) (Determination of CIC<sup>13</sup> Portugal 2020 (2015)) (N=164);
- Territories that had lost population between 2001 and 2011 according to the census 2011 (N=146);
- Territories with the MMP published after the results of the census 2011 (N=70);
- The final sample adopted in the study were the 42 MMP available for analysis.



**Figure 24 Selection of the sample**

Therefore, the initial sample included 70 municipalities for which the intention was to analyse the main report of the MMP in relation to the explanation and justification of the strategic objectives for the development of the municipality. The low-density territories that had lost population between 2001 and 2011 according to the census (N=146) (Figure 24) were also

<sup>13</sup> Interministerial coordination committee

contacted by e-mail. This contact had two objectives: obtain the MMP for analysis for those cases that had no documents available online for analysis that is twenty-eight from the seventy. This contact had also the intention to understand if the municipality had other ongoing initiatives to attract population to the municipality for analysing. From this contact, 16 e-mails were answered, from which ten send information to analyse and one request a Skype call (Table 16).

**Table 16 Municipalities that answer the e-mail request**

Municipalities	Answers		
	E-mails answered	Send information	Request Skype call
ANSIÃO		x	
ARCOS DE VALDEVEZ		x	
ARGANIL		x	x
AROUCA		x	
BELMONTE	x		
CHAVES	x		
COVILHÃ	x		
ELVAS	x		
FIGUEIRÓ DOS VINHOS		x	
FERREIRA DO ZÊZERE		x	
IDANHA-A-NOVA		x	
PORTEL	x		
RESENDE	x		
SABUGAL		x	
SARDOAL		x	
TONDELA		x	

All information received included both MMP reports and the initiatives to attract population, although MMP published before 2011 were not considered in this study. Ansião was the only municipality that made available only the MMP report.

The final sample adopted in the study were the 42 MMP available for analysis. The 42 documents included in the content analysis are presented in Table 17.

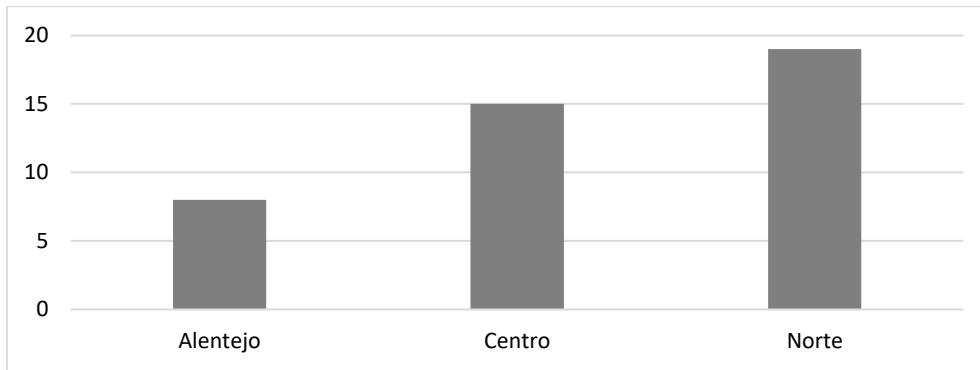
**Table 17 MMP selected to analyses**

Municipality	Publication date
Penedono	2011
Monção	
Vila pouca de Aguiar	2012
Penela	2013
Montalegre	
Ponte da Barca	
Sátão	
Tabuaço	



Municipality	Publication date
Alijó	2014
Alter do Chão	
Celorido de Basto	
Nelas	
Oliveira do Hospital	
Vinhais	
Aljustrel	2015
Ansião	
Armamar	
Carrazeda de Ansiães	
Estremoz	
Fornos de Algodres	
Manteigas	
Miranda do Douro	
Mirandela	
Penacova	
Alandroal	
Castanheira de Pêra	
Lamego	
Murça	
Oleiros	
Penalva do Castelo	
Penamacor	
Sabrosa	
Vila Velha de Rodão	
Alvito	2016
Santiago do Cacém	
Proença-a-Nova	2017
Alcacer do Sal	
Cinfães	
Grandola	
Tarouca	2018
Tondela	
Arcos de Valdevez	

Figure 25 shows the distribution of these municipalities in regions in Portugal, with the North region, followed by the Centre region, the ones with a higher number of cases under analysis.



**Figure 25 Distribution of the MMP according to the Portuguese regions**

### 5.4.3 Results of Municipal Master Plan policy analysis

Similarly to the analysis developed for the NRDP, results are structured in three parts: Population dynamics, Attraction factors (ESS and PSI) and Transitions factors.

#### Population dynamics

The municipalities not only recognize that there is depopulation, but they also point out that this phenomenon has had as consequences environmental problems such as low land maintenance and gradual degradation of the landscape. With reference to the use of the expression “depopulation”, 75% of the cases make explicit use of this expression at least once along the report. However, and as one of the key findings of this study, is that none of the chosen municipalities has any long-term strategies to adapt to a declining population situation. Most of the time references are in association with attracting new people, according to Satão MMP “It is urgent to find mechanisms to reverse this trend or at least its stagnation”. No reference was found on the need to adapt to a decreasing population, such as reducing equipment’s, infrastructures or even renovating or demolishing empty buildings. Policies are focusing on three main strategic actions: the creation of business parks like Proença-a-Nova MMP, increase the buildings construction area and tourism infrastructures like new natural swimming pools and endogenous product fair. However, as referred to in the literature review and European policies, attracting people may require other factors besides the ones just mentioned. The policies also tend to focus their attention on the attraction of returnees that return at retirement. Only in one case, Penalva do Castelo, explicitly mention the importance of attracting qualified population to the municipality that may contribute to augment local skills.

## Attraction factors

### Ecosystem Services

This analysis started with understanding if the term ESS is included explicitly in the MMP under study. For that purpose, the keyword “ecosystem” was searched throughout the documents. Results show that none of the analysed documents referred to the following terms: environmental services (Mooney and Ehrlich 1997), ecosystem functions (De Groot 2006) or ESS (Costanza et al. 1997; MEA 2005). The two related terms mentioned are natural heritage and ecosystems, both firmly embedded in the promotion of its protection and conservation.

However, there are several implicit considerations to ESS (Table 18) that may indirectly enhance its delivery. First of all, as mentioned above, the Municipal Ecological Structure (MES) included in all MMP, is the main tool to guide and implement the good maintenance of ecosystems in the municipality. For example, there are municipalities, such as Arcos de Valdevez that point out the importance of its natural resources to attract people to the territory. Yet, the way the MMP promote the advantaged of being mostly a rural municipality is through the promotion of new construction in natural settings: "... fostering building in rural areas e can be a powerful instrument to ensure territorial and social cohesion in the municipality ". Likewise, public policies under analysis may create opportunities for the economic growth of ecosystems based activities such as agriculture and tourism and recreation. Regarding the use of energy in the cases analysed, two municipalities provide for the implementation of measures focused on energy efficiency and renewable energy. There were also found measures concerning the marketing of local endogenous products in more than half of the cases analysed. These include development and implementation of a program for the valorisation and promotion of agricultural and forestry products of the municipality including the creation of a municipal brand. In most of the MMP plans analysed (around 30) is planned the implementation of a promotional program that reinforces the tourist brand of the municipality. Table 18 includes examples of measures related to ESS found in the analysed documents.

**Table 18 Examples of measures related to ESS in the analysed documents**

ESS Categories	Measures selected from the MMP
<b>Provisioning services</b>	Design and implementation of a program of valorisation and promotion of the agricultural and forestry products of the Municipality (e.g. olive oil, native breeds, almond and mushrooms)
<b>Cultural ecosystem services</b>	Development of tourism associated with endogenous resources
<b>Regulating services</b>	Monitoring of the quality of the natural spaces of the Municipality

ESS Categories	Measures selected from the MMP
Habitat or supporting services	Promote energy efficiency and encourage projects aimed at the production and valorisation of alternative energies (solar, biogas, wind)

### Public services and infrastructures

Planning policies are improving rural living conditions, assuring that all inhabitants have access to public services and infrastructures. In most of the cases, measures point out for the reinforcement of the existing network of equipment and infrastructures (e.g. swimming pool, hotel, fire). However, in eight of the analysed MMP improved and alternative transport networks and communications such as the creation of a collective inter-municipal transport service for low-density areas (transport on request) or multiple use facilities policies are also mentioned. Another example of a strategy for the provision of PSI is the inter-municipal project of equipment and collective services. Regarding ICT ten from the 42 MMP analyzed point out measures to invest infrastructures of new technologies namely by promoting teleworking, creating technological spaces for the dissemination and training and strengthen the broadband Internet network.

Seven municipalities have the intention to promote the rehabilitation of the constructed sites. According to the MMP of Oliveira do Hospital these measures also follow the growing interest in the purchase and recovery of housing by external investors. Two of the MMP analysed have previewed the improvement of lease policy of the municipality.

Examples of how public services and infrastructure are addressed in 42 municipal master plans are presented in Table 19.

**Table 19 Examples of measures related to Public Services and infrastructure in the analysed documents**

PSI	Measures selected from the MMP
<b>Public services</b>	Building rehabilitation in the historical centre
	Support the owners in the rehabilitation of their property (technically and financially)
	Creation of a network of new equipment and infrastructures (swimming pool, hotel, fire station)
<b>ICT</b>	Creation of mobile public services – e.g. mobile health unit
	Invest in the structures of new technologies and create services and new work solutions (telecommuting, etc.)
	Establishment of pedagogical activities using ICT
	Creation of ICT spaces ("Internet Space")
	Strengthen the broadband Internet network and the digital project

PSI	Measures selected from the MMP
<b>Accessibility services</b>	Creation of a collective inter-municipal transport service for low-density areas (transport on request) Systems of home support and transport to day centres (for elderly)

## Transition factors

### *Networks and Knowledge exchange*

As one of the MMP sets that "Networking, based on horizontal cooperation, is essential for the creation of multiplier development dynamics" only twenty-five MMP mention measures to reinforce cooperation. These cooperation measures cover different sectors namely in transports, natural parks marketing and nature base infrastructures implementation or tourism. Two of these MMP also propose the formulation of strategic partnerships, in particular with universities and processing industries in order to optimize agroforestry resources management. Another interesting initiative in this field is the creation-shared space for processing of endogenous products. Another similar measure provides for the creation of teleworking spaces in dispersed settlements or small centres in rural areas.

Regarding knowledge exchange measures, one of MMP recognizes vocational training as a major factor for the attraction of skilled workers helps to fix the productive fabric. However, this is just one example as only half of the analysed sample address the issue. In the policies under analysis, examples of measures to match demand from employers and professional skills of the inhabitants and to promote self-employment in core sectors of the municipality were found. Training actions are centred in sectors such as technologic innovation, food and agriculture, and tourism. Table 20 shows examples of how Network and Knowledge exchange is addressed in 42 MMP.

**Table 20 Examples of measures related to Network and Knowledge exchange**

Transition factors	Measures selected from the MMP
<b>Networks</b>	<p>Promotion and support to new initiatives and investments, foster strategic partnerships, innovation and modernization of production and business processes.</p> <p>Partnerships with neighbouring councils for the creation of new equipment and for the profitability of existing ones, avoiding redundancies in the supply that burden the municipality in the long term and tend to the success of their projects.</p> <p>Promotion of partnerships for housing among the various agent's beneficiaries in the municipality</p> <p>Promotion of strategic partnerships, namely with university</p> <p>Shared space for processing of endogenous products, creating conditions for the implementation, under the conditions required by law, of micro-projects in the food sector</p>
<b>Knowledge exchange</b>	<p>Education and social assistance - targeting the internal and external market and offering</p> <p>Promote vocational training actions appropriate to the needs of the municipality</p>

### Municipal policies for population attraction

Regarding population attraction, the municipalities point different actions to tackle the problem. Sectors such as education, social work, economy, urban rehabilitation, business incubators, industrial zones, and taxes benefits were mentioned as important policy vectors to attract population.

In the field of education, measures are being advanced, such as rehabilitation of school infrastructures, the offer of schoolbooks and social support (transports and speech therapy). The social care measures are mainly for the families in need and include special rates in the water bill, sanitation and waste treatment. Furthermore, tax exemptions on licensing for young couples, large families and people with financial difficulties.

As an important measure to attract people, urban rehabilitation is highlighted in three studied. The Sabugal municipality is offering construction materials and/or financial support to housing recovery to families with financial difficulties.

Measures for the reduction of red tape cost such as municipal taxes namely VAT, municipal tax and rate of duties are included in the proposals of the 4 studied municipalities and align with the guidelines of Rural Cohesion Policy (Copus and Hörnström 2012).

Regarding the economy, the strategies are focused in the creation/and or improvement of industrial parks endowed with the latest technologies for strategic sectors, three of the ten MMP

studied, are planning the creation of more industrial areas or expanding the existent ones. Under this topic, there is also available the incubators designed, amongst other things, to the artistic creation of equipped offices (e.g Tondela and Sabugal). Sabugal Industrial Area, which among other purposes, the Municipality is willing to offer Shared Services to the companies already established. In this context, arise also the support offices to a rural entrepreneur (Sabugal).

Arganil stresses how is important to create partnerships with IAPMEI and the University of Coimbra to attract companies or partnerships focused in the primary sector: the club of producers investing in the diversification of endogenous products. The Municipality of Idanha-a-Nova also created partnerships among other agents namely Regional Direction of Agriculture and Fisheries of the Centre and Superior School of Agriculture of Higher Polytechnic Institute of Castelo Branco.

The municipalities show also territorial marketing strategies, such as Expovez, aiming at the promotion and internationalization of products and companies, by establishing a network of contacts with the authorities and local business associations. Arouca also in promotes the investment in endogenous products, such as the ones related to the primary sector as the Farmer Fair. However, marketing actions are not included in all case studies.

Less mentioned issues are related to primary sector investments, infrastructures. In Tondela, the revitalization of the primary sector through investments by the municipality in the wine sector is ongoing processes that are perceived as a way to attract new residents. Sabugal is the only municipality prepared to provide the villages with WiFi, by signing protocols with the telecommunications companies in order to increase the fibre optic coverage.

In this analysis is individualized the case of Idanha-a-Nova, as the only one developing a programme totally committed to attracting population based in four vectors: Idanha green valley, Idanha Vive, idanha Experimenta e Idanha made in (Table 21).

**Table 21 Programme ReStart - Vectors and objectives**

Vectors	Purpose
<b>Idanha green valley</b>	Attract projects, entrepreneurs and rural companies with innovation and making the difference
<b>Idanha Vive</b>	Create conditions to attract and welcome talented people to move in with their families, to this fantastic community of Idanha-a-Nova
<b>Idanha Experimenta</b>	Offers the opportunity to the people interested to know Idanha –a-nova, before making any decision of moving in with their families or company.

Vectors	Purpose
Idanha made in	Shows all the best that Idanha-a-Nova can offer, being local products, culture, events or even projects, politics and opportunities that are being developed.

The programme ReStart is based essentially on a marketing strategy for rural areas focusing on the agriculture sector and its products by creating conditions to install new agricultural companies and products processing. As previously, referred Idanha-a-Nova owns a Rural Business Incubator. Resulting from a partnership between the University Institute of Lisbon (ISCTE-IUL) and the Massachusetts Institute of Technology (MIT), BGI was challenged in 2016 by the Idanha-a-Nova City Council to develop a strategy to attract talents to the region: I-danha Food Lab, was created to answer the challenge. In 2018, had nine start-ups linked to the sector working in the municipality<sup>14</sup>.

## 5.5 Chapter summary

This chapter has been helpful in answering the research question: How National Rural development policies in Europe and Municipal Master Plans in Portugal policies address population attraction in rural areas.

The analysis of the selected European (NRDP) and National policies (MMP) revealed that most of the instruments recognise that depopulation has consequences on natural values and landscape and loss of innovation potential and therefore it is an important issue to deal with in rural areas.

### *Attraction factors – ESS and PSI*

- The results have shown that both the European and National level policies include the implementation of measures provide for maintenance of a good ecological status of the environment and this is crucial as the large majority of natural resources in Europe are located in low-density territories;
- Regarding the recognition of the concept of ESS in all analysed NRDP documents, there were references to ESS. In contrast, in the MMP no references were found regarding ESS or its categories;
- Cultural ecosystem services are, in general, less mentioned in the NRDP then in MMP thus, according to the literature review these are the ones with more demand;

<sup>14</sup> <https://www.publico.pt/2018/10/28/p3/noticia/idanha-food-lab-durante-tres-dias-monsanto-capital-agricultura-sustentavel-1848720>



- The evidence collected suggests that NRDP has its focus on boosting agricultural and forest sectors. Including welcoming policies to new entrepreneurs on agriculture and forest sector;
- At a municipal level there are already signs that point to the diversification of sectors encouraging, for example, the service and knowledge-intensive sectors however these are just a minority of the plans analysed;
- Although at the European level there were no specific references regarding PSI at a municipal level, a few MMP identify for example alternative models of collective service provision in rural areas (e.g. mobile services or transportation on request);

*Transition factors – Networks and Knowledge exchange*

- NRDP provides measures for learning, collaboration and partnerships and innovation related to agriculture and forest sectors;
- Half of the MMP analysed include measures cooperation measures cover different sectors namely in transports, natural parks marketing and nature base infrastructures implementation or tourism;
- MMP promotes training actions centred in sectors such as technologic innovation, food and agriculture, and tourism.

These results lead to the conclusion that there are differences between the several policies collected worldwide focused on attracting population to rural areas and NRDP and MMP in Portugal.

National Rural Development Program (NRDP), in the context of the CAP, is an important policy instrument for rural development. The comparison that was conducted on the different NRDP enabled insights into the way each country implements the priorities established by the EU for RDP. The analysis of the case studies revealed that there are different degrees of integration of the established factors of attraction and transitions analysed in the ten NRDP. Yet, most of the analysed documents consider the same factors of attraction identified in the present study.

As for the MMP under analysis, they may create opportunities for the economic growth of ecosystems based activities such as agriculture and tourism and recreation. Tourism is seen with great hope as the trigger for the development of low-density territories yet this is planned mostly around the new building and infrastructures. The MMP also includes measures promoting marketing actions of local endogenous products and touristic brands yet, in the MMP there is a lack of measures for capacity building, training and network enhancement along the touristic value chain. This reveals that less support is given to transition factors (networks and knowledge exchange) under analysis.

The first aspect that stands out is that, although most NRDP and MMP recognize the problem of population loss in rural areas, none of them has a clear strategy to invert the trend nor have references to other ongoing policies that include guidelines to tackle the problem. The public policies collected worldwide focused on attracting population to rural areas have as main strategies the support to newcomers namely through their integration in new communities, providing information and advice on different aspects related to the rural settings. None of the analysed policies (National and Municipal level) includes such a focus, which may lead to a constraint when discussing the integration of in-migrants in rural areas.

Chapter 6 uses the survey data to identify what attracts most in-migrants to rural areas of Portugal and understand lifestyles and activity of in-migrants. It also includes municipal stakeholders view on the need to attract new residents and the contribution of ecosystem services to municipal development and an explanation on the initiatives carried out by the skilled in-migrants that have been interviewed in Penela Municipality.

## **6 IN-MIGRATION IN LOW-DENSITY TERRITORIES IN PORTUGAL**

## 6.1 Introduction

The objective of this chapter is to examine, based on empirical analysis, to what extent ESS are factors of attraction for skilled in-migrants in rural areas and, provided the knowledge they hold and the networks they create, how can they contribute to improve, and enhance, ESS delivery in rural SES.

## 6.2 Methodology

The empirical analysis presented includes in-migrants views on the factor of attraction to the territories and the description of their relationship with the new social-ecological system they found. This is followed by exploratory research on municipal stakeholder's views on the attraction of new residents and the contribution of ESS to local development. Finally, the chapter concludes with the synthesis of the initiatives promoted by skilled in-migrants (Figure 26).

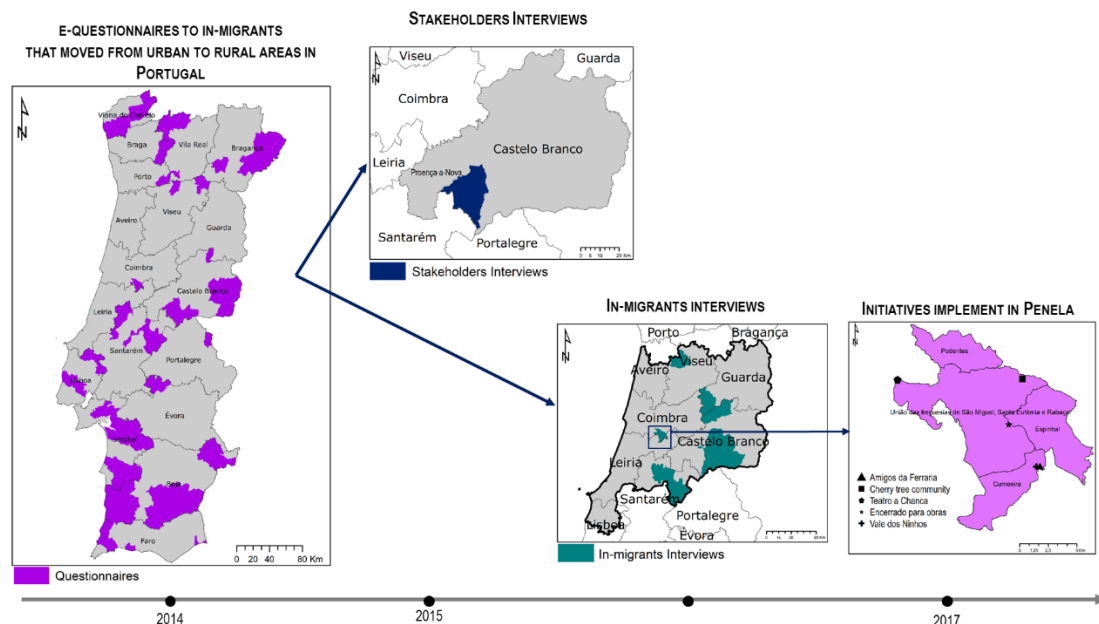


Figure 26 Methodology followed by the research to select the sample of analysis

In an initial phase, exploratory e-questionnaires were applied without geographic restriction, setting as the only condition the need that individuals had to have migrated from an urban area to a rural area. E-questionnaire to urban to rural in-migrants in Portugal focuses on motivational aspects and attraction factors connected with ESS and to social ties with the local communities. In 2014 the e-questionnaires were launched during one month and *73 complete e-questionnaires were obtained*.

In a second phase, the aim was to understand stakeholder's views on the phenomena under study, that is, understand the need to attract new residents and the contribution of ecosystem services to the larger sample of the questionnaire were contacted. Only one of the three

municipalities gathered a number of answers worth sharing in this research. In 2015, twelve *telephone interviews were applied municipal stakeholders* from Proença-a-Nova.

As the e-questionnaire sample was largely concentrated in the centre region of the Portuguese territory third phase of the research consisted of direct telephone interviews skilled in-migrants from this region. The aim of this phase was to explore the main reasons that lead people to change from an urban to a rural area and identify the factors that attracted and the constraints found after the change. From the *twelve telephone interviews* conducted to skilled in-migrants in the rural Portuguese Centre region: four were individuals who responded the e-questionnaire; six were contacted using the database of the projects “New settlers” and two resulted from personal contacts of the researcher.

Lastly, in 2017 for the *five initiatives implemented in Penela municipality* an in-depth analysis was conducted. From all the empirical analysis led the individuals and promoters of the initiatives in Penela were involved from the beginning as they had answered the e-questionnaire, the interviews. Another important aspect to focus on Penela was that the researcher had been since 2013 in contact with the initiatives developed by skilled in-migrants. Therefore, these initiatives were considered to be the most diverse regarding the number of actors involved and more institutional support and also showed evidence on ecosystem management and social capital development. Because of this, the territory of Penela and its ongoing initiatives seem to be the right place to focus.

## 6.3 Research context

### 6.3.1 Portuguese context

Mainland Portugal covers an area of 92.212 km<sup>2</sup> and 10.6 million inhabitants (2011), with two metropolitan areas, Lisbon and Porto, holding 43 % of the total population (INE 2013) with the most rural part of Portugal located to the East side of the mainland country. Throughout the years there has been a growing imbalance between the west seaside and the east side of the mainland country namely in what refers to its population. According to the national statistics institute (INE), 198 Portuguese municipalities lost population between 2001 and 2011 (Figure 27).

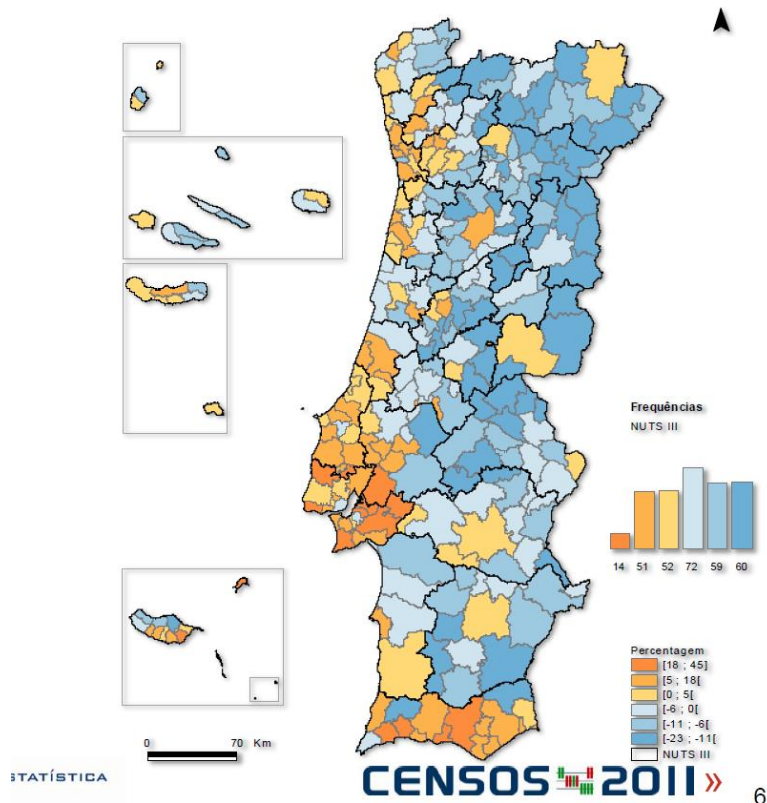
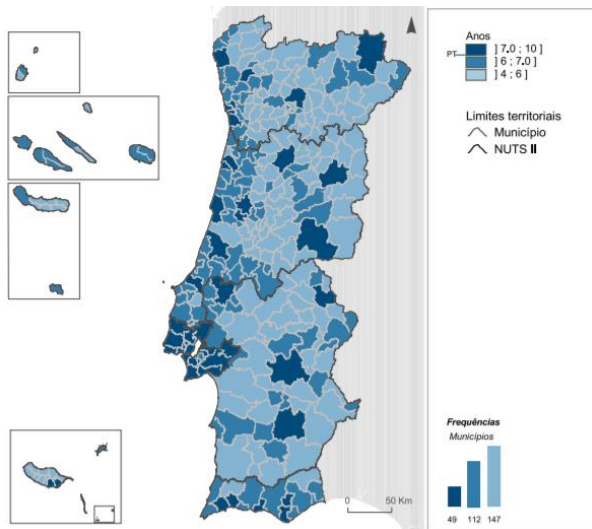


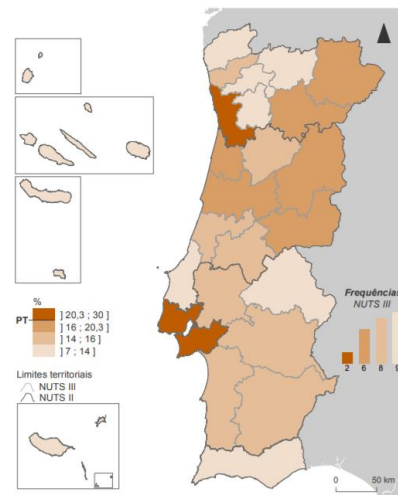
Figure 27 Resident population variation, by municipality, 2001-2011 (INE)

Rural areas represent more than 80% of the territory of Portugal with an old age dependency ratio<sup>15</sup> over 30% in 2012. Portugal has the oldest farming population in Europe, with a rate of 0.04 young farmers for each elderly farmer (EU 2013b). Among the EU-15 Member States, Portugal predominant rural regions registered the fastest decline of population in Europe (EU 2013a). This population decline has decreased the availability of social capital in rural areas. Besides ageing, the education level is also low on the east side of the country. The municipal picture of the average academic qualifications of the Portuguese population for the year of 2011 allows the identification of higher average schooling, that is, people with more than 7 years school are located mainly in the metropolitan area of Lisbon (Figure 28). Medium-sized cities, namely the 18 district capitals including the ones in the east side of the country have also a higher percentage of people with high academic qualifications. Concerning the proportion of employees with higher education, Figure 29 shows that these are concentrated in the metropolitan areas of Lisbon and Oporto.

<sup>15</sup> The old-age dependency ratio is defined as the number of people older than 65 years in relation to those aged between 15 to 64 years.



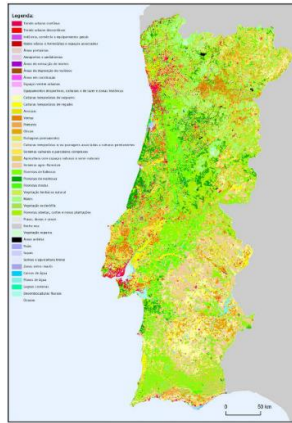
**Figure 28 Average number of years of schooling complete, by municipality, 2011**



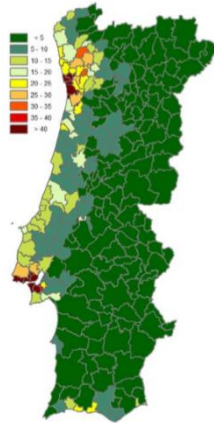
**Figure 29 Proportion of employed persons with higher education in establishments**

The lower capacity of Gross Value Added in most of the east side of the country is notable. This might, however, be justified by the prevalence of a low diversified business structure, family structure based on low levels of business and low capacity for innovation (UMVI 2016).

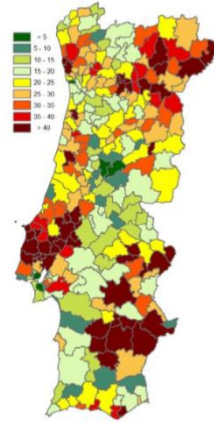
The characterization of the territorial occupation of the Continent shows the coast with forest predominance and heterogeneous agricultural zones, replaced in zones near the metropolitan areas of Lisbon and Porto by predominantly agricultural occupation. Figure 30 shows land occupation from the CLC2012 for Continental Portugal. The land use occupation classes with the largest expression in Continental Portugal are by descending order, Forest, Agriculture, Agriculture with natural areas and agroforestry systems, Natural vegetation and Urban areas (Caetano and Marcelino 2017). Yet, both artificialized and forest areas increase significantly between 1985 and 2012. Forest and Agriculture were the most abundant land use classes, occupying 37,3% and 31,2 % of the mainland territory, while the built areas occupy 3,7%, mostly concentrated in the west side of the mainland country (Caetano and Marcelino 2017). The municipalities with a higher percentage of built areas are associated with the main metropolitan areas (Lisbon and Oporto) and are mainly located in the west side of the mainland country (Figure 31). The municipalities with a higher percentage of agricultural areas are distributed in three parts of the country: around Lisbon Metropolitan area; South Alentejo; and Northeast side (Figure 32). As for the forest areas, the municipalities with higher percentage are concentrated in the centre region (Figure 33).



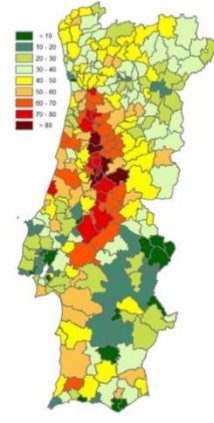
**Figure 30 CLC 2012 for Continental Portugal (Caetano and Marcelino 2017)**



**Figure 31 Percentage of land use occupied by constructed areas (Caetano et al. 2017)**

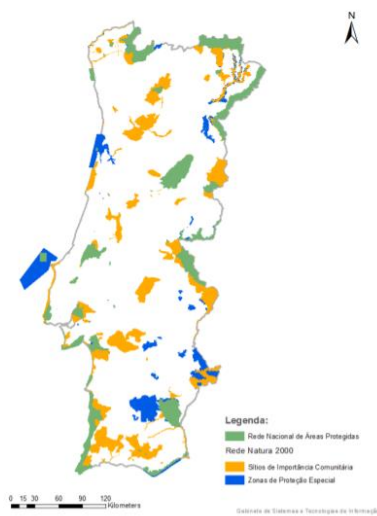


**Figure 32 Percentage of land use occupied by agriculture areas (Caetano et al. 2017)**

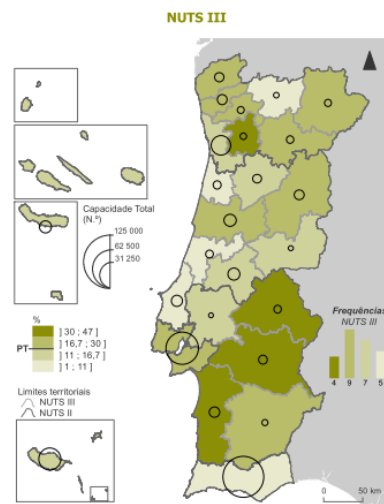


**Figure 33 Percentage of land use occupied by forest areas (Caetano et al. 2017)**

Relatively to nature conservation areas in Portugal, the protected areas and National Natura 2000 network is an attempt to integrate those areas defined in several legal instruments. Figure 34 illustrates the available nature conservation areas mapped for Portugal that covers 21% of the continent 681220 ha (EC 2013b).



**Figure 34 Protected areas and National Natura 2000 network (EC 2013b)**



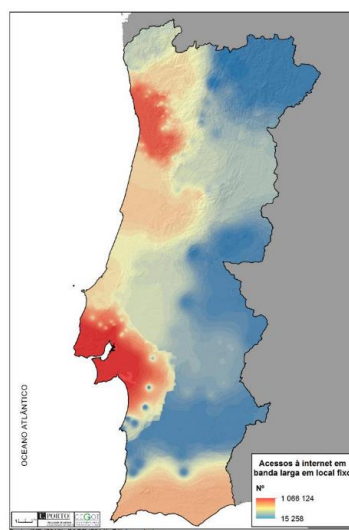
**Figure 35 Variation of the tourist accommodation - Portugal and NUTS III, 2013/2016 (INE 2017)**

Regarding tourism, the number of overnight stays grew in all regions and in all types of accommodation, except for the Lisbon Metropolitan Area, where there was a decrease in overnight stays in rural tourism and housing tourism establishments (-10.3% a year). The Centre (+ 39.1%), North (+ 25.7%), Algarve (+ 24.9%) and Alentejo (+ 23.9%) recorded the highest growth rates in accommodation between 2013 and 2016 (INE 2017).

The use of advanced communications technologies and digital literacy enables to overcome the access to services (OECD 2018). These type of infrastructures namely Information and communication technology (ICT) is highly territorial imbalance (Figure 36). According to UMVI



(2016) in order to reach the goal of 100% rapid broadband coverage, Portugal will need significant investment in rural areas.



**Figure 36 Broadband internet access at a fixed location, 2015**

### 6.3.2 Centre region context

As the e-questionnaire sample was largely concentrated in the centre region of the Portuguese the focus of the interviews were in this region. The centre region is the region with a lower unemployment rate (CCDR 2014), this may indicate that the region provides more opportunities for jobs and living conditions. Regarding its population, the region presents low-density levels and great asymmetries between the east and west side of the country. The centre region includes 100 municipalities from which 59 are low-density territories. The centre region is a territory with levels of rurality above the average of mainland Portugal (CCDRCC 2011) marked by issues of population decline and ageing, abandonment, a decline of traditional agricultural systems and situations of tragic occurrences of environmental hazards related to forest fires. This has had consequences on environmental, landscape, biophysical and cultural heritage degradation. This region is also characterized by the low level of professional and educational training, the lack of professional and of economic organizations (CCDRCC 2011). The centre region shows, however, a growing number of jobs registered in employment centres between 2001 and 2014 in all sectors of activity, but especially in the tertiary sector. Despite this, based on data available in the Pordata, the centre region suffered a decrease of its active population in about 12000 people between 1981 and 2011.

The centre region occupies around 31,7% of the continental area, dominated by forests, agriculture and uncultured areas. This region stands out in relation to the others by the predominance of the area occupied by forest (46.36% of the total area of the region). The forest

area in this region increased between 1995 and 2010 due to the high conversion that occurred in agriculture areas (Meneses, Vale, and Reis 2013). However, this increase in the forest areas was mainly determined by the conversion to eucalyptus and invasive species that contribute directly to habitat destruction (Pereira et al. 2009). In fact, eucalyptus and pine forest in Portugal, by its structure, composition and management production patterns, tend to have limitations in terms of maintenance and promotion of biodiversity (Pereira et al. 2009).

### *6.3.3 Penelas context*

As described above from all the empirical analysis led the individuals and promoters of the initiatives in Penela were involved from the beginning as they had answered the e-questionnaire, the interviews.

The municipality of Penela has an area of 134,80 km<sup>2</sup>, and four parishes: União de Freguesias de São Miguel, Santa Eufémia e Rabaçal, and the parishes of Espinhal, Podentes e a Cumeeira. Penela has 5.584 inhabitants, less 369 than in 2011, and the parish with more inhabitants is União de Freguesias de São Miguel, Santa Eufémia e Rabaçal (PORDATA, 2017). The municipality of Penela has a privileged location in relation to the main national roads, namely IP1, IP3 and IC3, and is about 30 minutes car travel from the city of Coimbra (district capital). Concerning its land use, 49% of the territory is covered by forest followed by around 21% of agricultural areas. For example, Penela's territory has areas occupied by forest species of high environmental value such as oaks and more adapted to the soil-climatic conditions of the territory. It typically presents Mediterranean vegetation cover, composed of characteristic species such as Portuguese Oak and Cork Oak. In the municipality of Penela is located one of the 27 villages of the network of villages of Shale: Ferraria de São João.

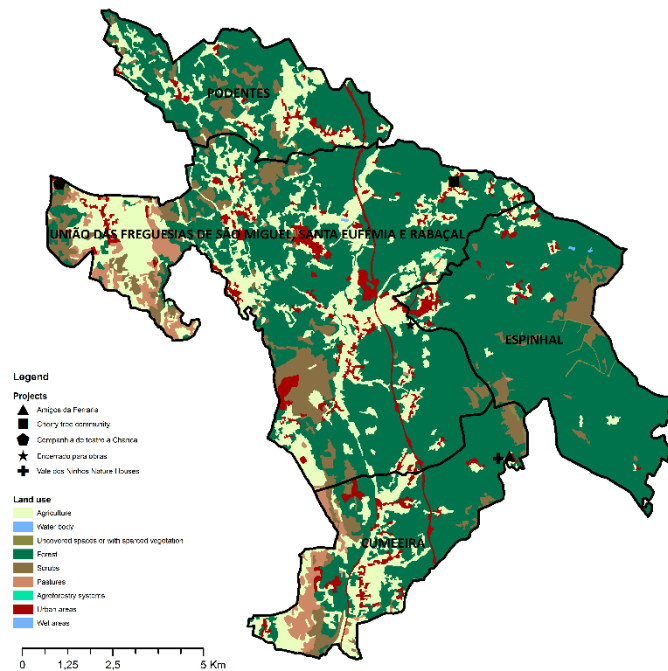


Figure 37 Land use map Penela (COS 2015)

## 6.4 In-migrants leading transitions: a survey on in-migrants views

### 6.4.1 E-Questionnaires

#### Methods

The questionnaire was designed for this specific purpose and carried out between September 23rd and November 22th, 2014. It was directed at individuals that left their home city and elected rural areas as their new place to live. E-questionnaires were used to reach recipients. The message sent electronically with the e-questionnaire described the purpose of the study and stated that participation was voluntary and anonymous. The e-questionnaire was answered exclusively via the web, hosted at [www.qualtrics.com](http://www.qualtrics.com), considering that the targeted recipients would be well familiar with online tools. We carried out the questionnaire at the national level. Due to the emergency of urban-rural migration in Portugal, there are no databases set to map the universe of in-migrants.

The questionnaire was built based on Paniagua (2002b) around relevant topics that were identified through the literature review. Other than general data (location of current and previous place of residence, gender, field of qualification, age, nationality, place of birth, age of the household members), other topics included reasons for change of place of residence (motivations, importance of the destinations characteristics, date of displacement, expectation,

support for displacement, obstacles in the displacement process), past and present work experiences, relation to the local community and future intentions.

The questionnaire included open and closed questions and was easy to complete showing only relevant questions to the respondent, based on their previous answers. Once online questionnaire deadline passed qualtrics enable to export all responses to a spreadsheet format (.csv). Responses were inputted in the Statistical Package for the Social Sciences (SPSS) to carry out the statistical analyses. In SPSS first cross tables and significance test was carried out. The data was afterwards transferred into Microsoft Excel and more analyses and calculations were done, as well as tables and figures created.

### *Sample characteristics*

The e-questionnaire included 35 questions (nine of them mandatory) addressing the following topics: demographic data (age, gender, household, level of education), spatial and temporal distribution (migration year, place of destination), the motivation for migration, rural areas attributes that attract in-migrants and constraints found. The relationships with the community and local associations were also addressed in specific questions in an attempt to identify the level of engagement of in-migrants with rural communities and territories.

As mentioned the e-questionnaire was sent by e-mail. E-mails were sent to 60 rural in-migrants whose contact was obtained through the collection of newspapers, tv reports and other media sources. The remaining e-mails (794) were sent to contacts that may provide information or contacts to enlarge the sample. This process was conducted by collecting institutional e-mails from municipalities, associations, nationwide rural tourism enterprises and national entities for rural development with interest on rural in-migration, like the Association of Young Farmers of Portugal, General direction for Agriculture and Rural Development and National Institute for Agricultural and Veterinary. In the end, a total of 73 completed e-questionnaires were obtained (i.e. answering all mandatory questions) (Table 22).

**Table 22 Survey statistic and response rate**

e-mails sent	854
undelivered e-mails	68
successfully delivered e-mails	786
E-questionnaires received	147
E-questionnaires completed	73
Response rate (%)	8.5

In this survey, in-migrants were identified as respondents whose previous address was in a city and current address in a low-density rural area, identified through their postal code address. No

limitation was established for the date of change of place of residence. Information regarding the respondent's residence was tracked by comparing the previous and current postal code of residence (first two questions).

The 73 respondents have Portuguese nationality, 43 are female and 30 are male (Table 23). Most of the respondents (96%) are in-migrants aged between 20 and 64, which is working age population, while only 4% are over 65 years. A high percentage of the respondents (92%) are highly qualified and have an academic degree. This contrasts with the situation of Portuguese rural areas in 2011, where 55.9% of the rural population holds only basic education, 9.7% have higher education and 7.1 are not able to read or write (GPP 2014).

**Table 23 Characteristics of in-migrants surveyed**

	Frequency	Per cent
<b>Gender</b>		
Female	43	59
Male	30	41
Total	73	100
<b>Age</b>		
20 – 64 years	70	96
More than 65 years	3	4
Total	73	100
<b>Education</b>		
High school	5	7
Technical-vocational course	1	1
Bachelor/Degree/Pos-graduation	46	63
Master/PhD	21	29
Total	73	100

In-migrants skills (Figure 38) typically include Engineering (e.g. agronomic and civil), Architecture, Biology and Ecology and Informatics. Before moving most of the in-migrants were employed with 59% being dependent workers while 28% were independent workers.

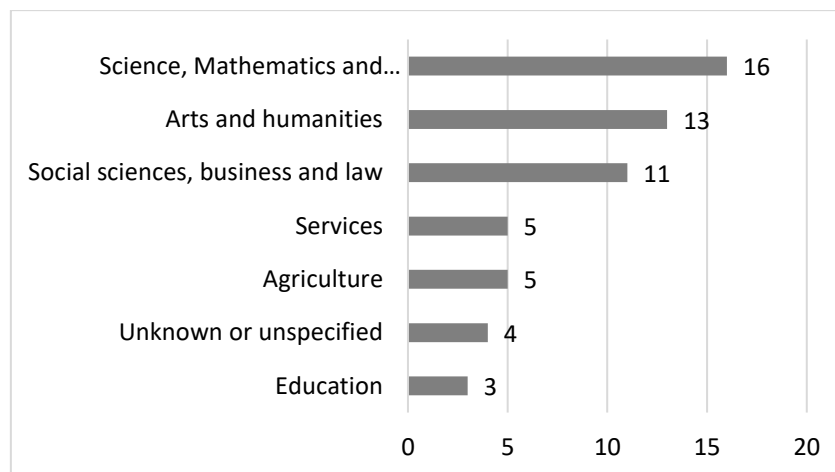


Figure 38 Training area<sup>16</sup>

Respondents were also asked about the relationship between their current professional activity and natural resources (Table 24). Using a rating scale of 0-3 (low dependence), 4-7 (medium dependence) and 8-10 (high dependence), the highest dependence scored 47% as the most frequent answer.

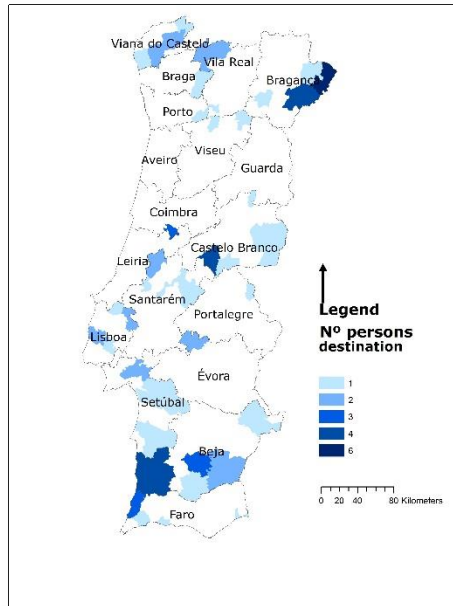
Table 24 Relationship between their professional activity and natural resources

	Frequency	Percent
Low dependence	18	26
Medium dependence	19	27
High dependence	32	47
Total	69	100

Data shows that the sample in-migration started 20 years ago, with the first migration in 1982 and the highest increase of migration in the 2012–2014 period. The majority of the respondents (53%) have lived in rural areas for more than 5 years.

Regarding the spatial distribution of the urban to rural relocation process, the most significant destinations include Bragança in the North of the country and Castelo Branco in the Center (Figure 39), both inland, on the East side. This is quite meaningful given that, as mentioned, major cities are located closer to the ocean on the West side of the country. In addition, these regions are the furthest away from the main metropolitan areas of Lisbon and Oporto and are classified as predominant rural areas according to OECD (2010). One exception occurs in the Beja region, in the municipality of Odemira, the only predominantly rural coastal municipality, which has shown the highest rates of population loss over the years. Odemira, located in the Southeast of the Portuguese territory, closer to the Atlantic coast, has also attracted a significant number of in-migrants in the sample.

<sup>16</sup> Classification of areas of education and training according to National Statistics Institute



**Figure 39 Map of destination – nº of in-migrants per municipality**

Considering previous places of residence results shows that the highest percentage (70%) moved from metropolitan areas. The largest group left Lisbon region (55%), followed by Oporto (15%), and other medium cities in Portugal in the Braga region (5,5%).

### *Results of the e-questionnaires*

#### *Motivations*

In the sample of this research, the most significant reasons for leaving the city include environmental reasons (Table 25). In-migrants were asked to select and rank the five reasons that mostly determined them to leave the city, from nine reasons (one being an open reason), and asked to rate from most important (1) to least important (5). The nine reasons are shown in Table 25 and could be grouped as: economic (high cost of living, employment opportunities; reducing commuting time); social (return to the place of origin, having friends and/or family at the destination); and environmental assets (tranquillity of rural areas, rural amenities, rural environmental quality). This amenity service intends to reflect that skilled in-migrants value cultural ESS potential to provide an attractive environment.

Results show that the most frequently selected motivations are rural environment quality and tranquillity of rural areas, respectively 62 and 60 out of 73 respondents, with the tranquillity of rural areas rated as most important (1) and rural environment quality as the second (2). Interestingly, the motivation “Having family and/or friends at destination” is the motivation right after but only selected by 35 respondents.

**Table 25 Descriptive statistics of motivations for moving out of the city**

	Frequency	Mean	Median	Mode	Std. Deviation	Coef. Variation
High cost of living	32	3,4	3,00	5	1,3	39%
Employment Opportunities	31	1,9	1,00	1	1,3	67%
Reducing commuting time	34	3,4	3,50	3a	1,3	37%
Return to place of origin	20	2,7	2,50	1a	1,4	52%
Having friends and / or family at the destination	35	2,9	3,00	2	1,3	44%
Tranquility of rural areas	60	2,6	2,00	1	1,4	54%
Rural amenities	26	3,1	3,00	3	1,1	37%
Rural environmental quality	62	2,8	3,00	2	1,3	46%
Other	20	2,9	3,00	1a	1,7	57%

In the open option, “other” several reasons were given: starting a new life project (3), having closer social relationships (2) and the need to take care of family inherited goods (3). In-migrants were asked to value the importance of eleven place attributes identified as determinants for relocation, along a 10-point Likert-type scale: closeness to nature, pollution levels, availability of housing, travel time to work, community receptive to new residents, proximity to family and friends, road accessibility to urban centres, active local community, access to schools, levels of local services (local shops, post office) and access to healthcare. These factors have been mentioned previously in other studies such as Bijker et al. (2012), Van Dam et al. (2002) or Grimsrud (2011).

Table 26 shows the mean and standard deviation for each of the 11 attributes proposed for the local importance. The lowest mean was obtained in the attribute "access to healthcare" and the highest was obtained for the “closeness to nature”. This attribute also presents the most frequently selected attribute and the lowest standard deviation (1.97) which shows that this is an important local attribute for most respondents. The largest variation coefficients were observed in the attributes "access to healthcare", " access to schools" and "proximity to family and friends".

**Table 26 Descriptive statistics of local attributes in rural destinations**

	Frequency	Mean	Median	Mode	Std. Deviation	Coef. Variation
Closeness to nature	67	8,5	9,0	10	1,9	23%
Availability of housing	54	7,5	8,0	10	2,7	35%
Travel time to work	53	6,8	7,0	10	2,8	41%
Pollution levels	53	7,7	8,0	10	2,5	32%
Road accessibility to urban centres	52	6,1	7,0	8	2,7	44%
Levels of local services (local shops, post office)	51	5,3	5,0	5	2,6	50%
Active local community	46	5,7	5,5	5	2,9	50%



	Frequency	Mean	Median	Mode	Std. Deviation	Coef. Variation
Proximity to family and friends	45	6,2	7,0	9a	3,1	50%
Access to healthcare	43	5,1	5,0	1a	3,0	59%
Community receptive to new residents	41	6,3	7,0	8	2,7	44%
Access to schools	41	5,4	5,0	8	3,0	56%
Outros	14	9,3	10,0	10	1,3	14%

Respondents were also asked to specify constraints found after their arrival, through an open-ended question. Each respondent could give three responses that were then subjected to a content analysis, and then coded and grouped. In-migrants pointed accessibility and mobility (eg. “Nonexistence of public transport to the place of employment” or “distance to major urban centres”) and social isolation (eg. “lack of people with the same interests”) as the most significant problems found (Table 27). Other constraints such as lack of goods and services (eg. “provision of health services” and “lack of competition in the purchase of consumer goods and high price associated”) and housing (eg. “lack of houses for rent”) were also mentioned. Fewer respondents mentioned issues like climate or cultural offer. To a less extent, the clash with the local community was also brought up. Expressions like “the community found strange the presence of younger people with no family relation to the site” or “bad reception by the local population” is mentioned regarding the integration with the local community.

**Table 27 Constraints found after migrating (%)**

	Frequency	Percent
Goods and services	32	21,1
Social isolation	26	17,1
Accessibility and mobility	25	16,4
Housing	18	11,8
Local community	13	8,6
Bureaucracy	10	6,6
Employment and Human resources	8	5,3
Financial support	7	4,6
Communication infrastructure	6	3,9
Climate	4	2,6
Cultural offer	3	2,0
Total	152	100

Despite constraints, when asked about their satisfaction 85% indicated that they were very satisfied, and the remaining answered they were satisfied, while 86% stated that their change meets their expectations. The remaining 14% did not fulfil their expectations and only 10 % answered that they plan to change residence in the next two years to other small villages nearby.

The lack of services (tourism, health, education, culture) and bad reception by the local community were therefore considered disappointment factors. Dissatisfaction appears to be related also to lack of available land and low return on the financial investments. The first is also mentioned by ongoing policies<sup>17</sup> that represent a threat to Portuguese rural areas. Concerning support received in their move to rural areas, 53% of the respondents answered that they did not have any kind of support, while the remaining indicated government subsidies/incentives as well as European funds.

In order to understand the influence of in-migrants on the local community one question addressed the extent, in-migrants generate local employment. Results show that among the thirteen respondents that indicated that were self-employed, twelve (92%) employ people from the community where they are located.

Additionally, in-migrants professional activities were analysed to understand their influence on rural areas activities. In-migrants work in a variety of sectors contributing to the economic diversification. “Tourism” and “Agriculture, livestock, hunting, forestry and fish” are the sectors that

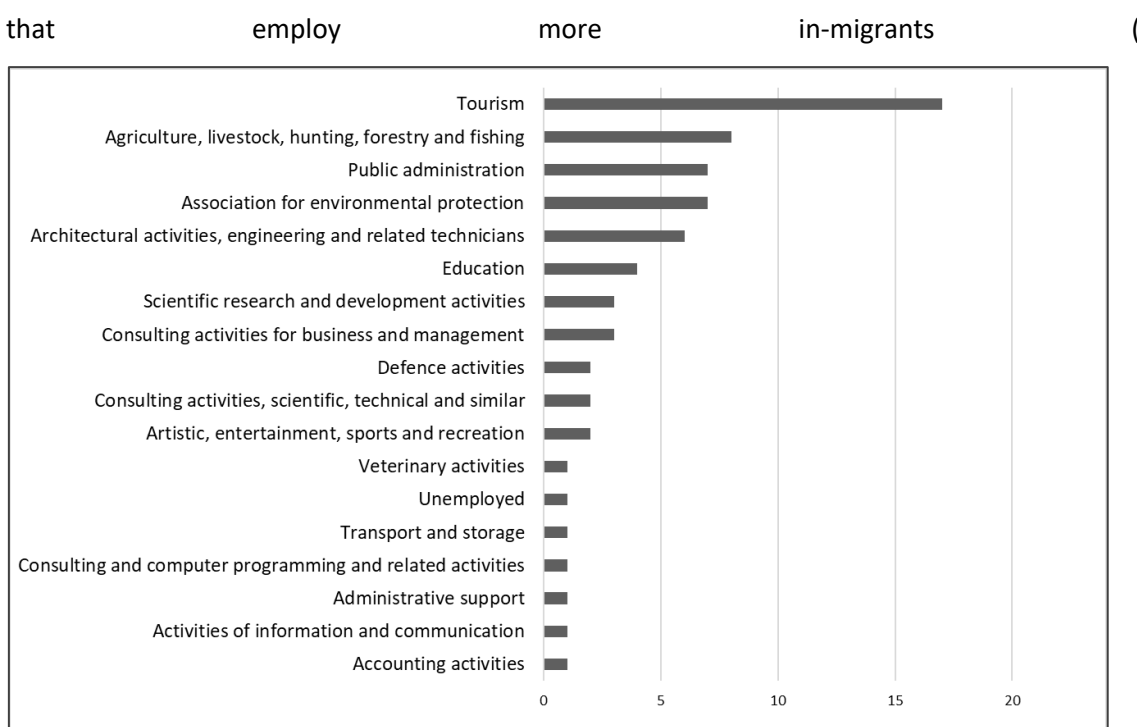
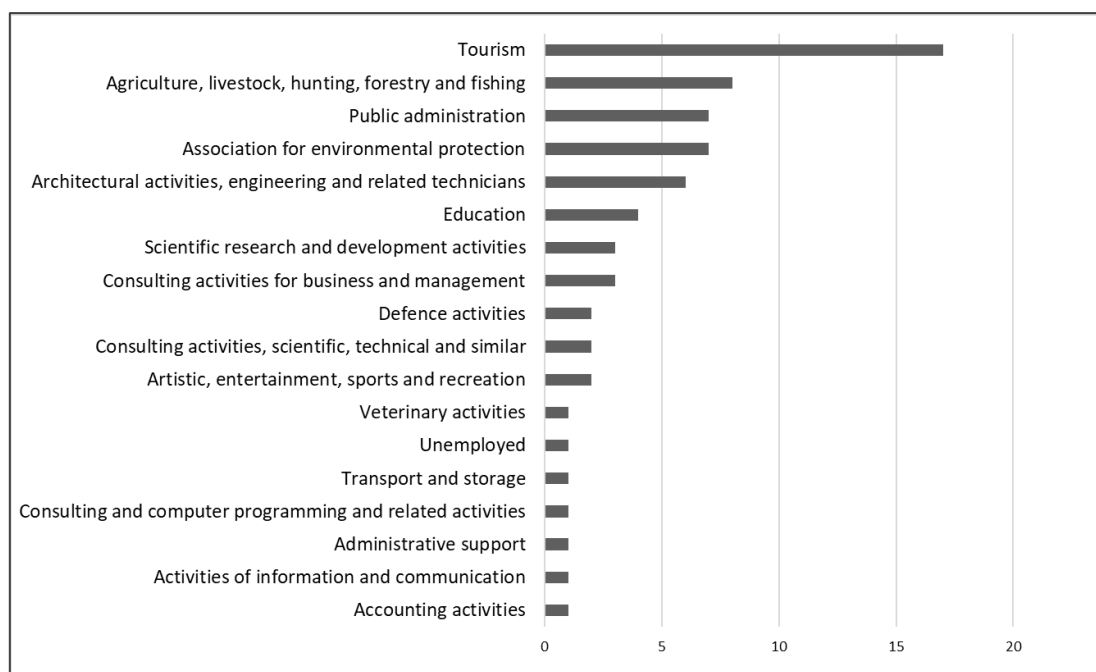


Figure 40). This fact is aligned with recent trends in the tourism sector and demands for new agricultural enterprises registered in Portugal in the last years<sup>18</sup>. Other sectors employing in-migrants are public administration and associations for environmental protection.

<sup>17</sup> Portuguese National Rural Development Program 2014-2020

<sup>18</sup> Pordata and Analysis of the agricultural sector 2011-2016 (Banco de Portugal)



**Figure 40 Professional activity of In-migrants (nº)<sup>19</sup>**

To further examine the overall relationship of in-migrants with local communities, other questions asked if in-migrants maintain contact with the local community and if they engage in local community events. Results show they have daily contact with the local community (71%) and engage in the community events by participating always (29%) or occasionally (26%), while 18% indicated that they often promote events (Table 28).

**Table 28 Relation with local community and events**

	Frequency	Percent
<b>Relationship with local community</b>		
I do not know the other members of the community	1	1
Greeting	4	6
I have occasional contact	12	17
I have daily contact	52	75
Total	69	100
<b>Involvement in community events</b>		
No	3	4
Yes, I attend	5	7
Yes, occasionally participate	17	25
Yes, I participate whenever I can	20	29
Yes, actively participate	11	16
Yes, I often promote	12	18
Total	68	100

Results achieved seem to indicate convergence between the reasons to migrate to a rural area and the reasons to remain in the territory. Figure 41 shows that the most highly valued attributes

<sup>19</sup> According to the Portuguese Economic Activities Classification

that enable remaining in the destination area are the tranquillity of the rural areas, the rural environment and having friends/family on the site.

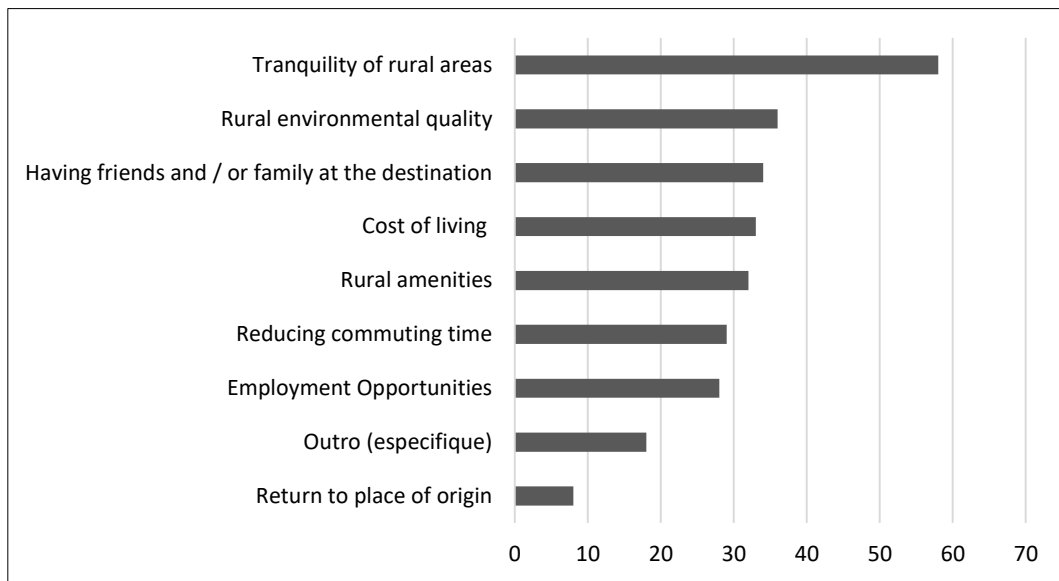


Figure 41 Attributes that enable staying in rural areas (nº)

## 6.4.2 Interviews

### *Sample selection and context*

Individuals selected through three different sources: First, interviewees were recruited using previous contacts with participants in a survey developed in 2014 regarding the motivations and blockers of active and qualified workers to rural areas in Portugal. Two of these accepted the invitation to participate in the telephone interview. Second, potential participants listed in a project database called “New Settlers”, aimed at “promoting the metropolitan exodus increasing the quality of life for the population”, were contacted, resulting in eight positive answers. Third, by a personal connection, two contacts were made and accepted to participate.

Firstly, phone call interviews with 12 individuals that moved to a low-density territory were conducted. Secondly, 12 long-term residents working in various sectors in a rural municipality facing the loss of population were conducted. These results are illustrative and cannot be interpreted as representing the entire population. To conduct the interviews, an e-mail was sent to invite individuals to participate in the study (

Appendice B Interview request).

The interviews were made by phone. The availability of inexpensive, relatively easy-to-use technologies, for example, have made it more efficient to conduct audio interviews (Deakin and Wakefield 2014).

Individuals interviewed were selected using three different sources: First, interviewees were recruited using previous contacts with participants in a survey developed in 2014 regarding the motivations and blockers of active and qualified workers to rural areas in Portugal. Two of these accepted the invitation to participate in the telephone interview. Second, potential participants listed in a project database called “New Settlers”, aimed at “promoting the metropolitan exodus increasing the quality of life for the population”, were contacted, resulting in eight positive answers. Third, my personal connection, two contacts were made and accepted to participate. The final sample for the interviews included 12 skilled in-migrants engaged in arts, tourism, agriculture and consultants in management and accounting activities.

Table 29 summarizes respondents' and characteristics. In the twelve interviewed: a) eight are male, b) the average number of household members is three, c) the average residence on the local is six years, and d) five of them were already familiar with the area when they moved. From the individuals interviewed six have children that make up a total of 14 children.

**Table 29 Interviewees characteristics**

Interviewees	Gender	Household members	With roots in the village	Received external financial support	From Lisbon	Business activity
A	M	2	Y	N	Y	Advisor
B	F	4	N	Y	Y	Tourism
C	M	5	Y	N	Y	Agriculture
D	M	1	N	N	N	Culture
E	M	2	N	N	Y	
F	M	4	N	Y	Y	Tourism
G	M	2	Y	N	Y	Advisor
H	F	2	N	N	Y	Tourism
I	F	2	Y	N	Y	Agriculture
J	M	6	N	N	Y	
L	F	4	Y	Y	N	
M	M	1	N	Y	Y	

Individuals moved to eight different municipalities in the centre region (Figure 42).

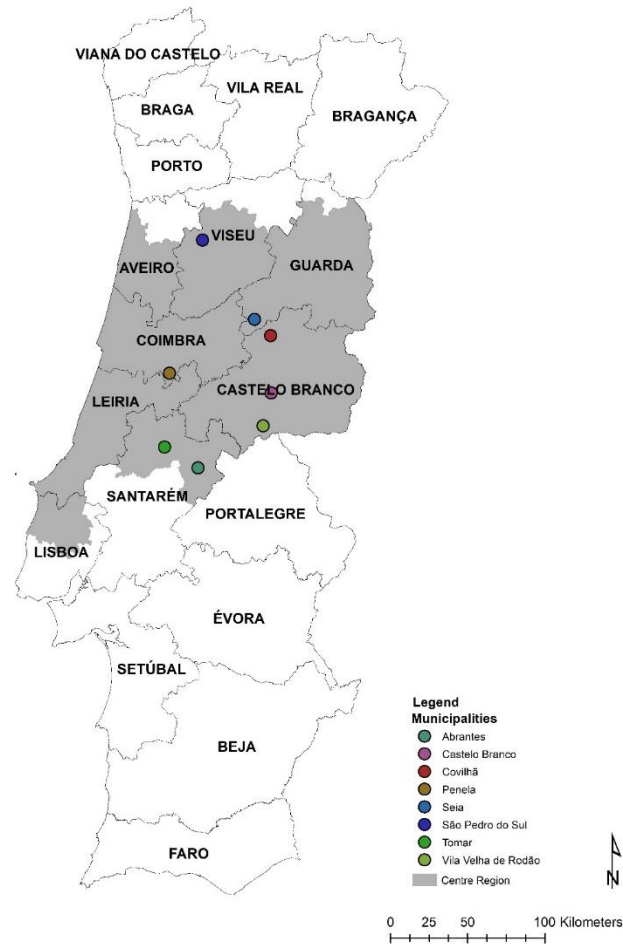


Figure 42 Municipalities receiving skilled in-migrants from the sample

As for the municipalities where the interviewees moved to and implemented their projects they share problems such as the loss of population between 2011-2016 and the fact that most of its population is employed in the tertiary sector (Table 30).

Table 30 Social-economic characteristics of municipalities

	Nº of inhabitants (2016)	Area (km <sup>2</sup> )	Population variation (2011-2016)	Old population (>65years) (%)	Employed population by sector of economic activity (%)		
					Primary (%)	Secondary (%)	Tertiary (%)
Abrantes	36 493	715	-2655	27	4	29	67
Castelo Branco	53 317	1438	-2592	25	3	25	73
Covilhã	48 463	556	-3086	26	2	29	68
Penela	5 584	132	-369	30	2	29	69
São Pedro do Sul	15 970	349	-818	28	10	29	62
Seia	23 178	436	-1434	27	3	32	66
Tomar	37 989	351	-2508	27	3	23	74
Vila Velha de Rodão	3 261	330	-256	40	5	31	64

The same municipalities have a great diversity of ecosystems related to the forest and the agricultural mosaic and mountain systems. Forests ecosystems when managed may provide a variety of ecosystems services such as recreation, landscape, carbon sequestration, watershed protection, protection from soil erosion and biodiversity. Indirect uses “comprise the many ecological functions of trees” (Bishop 1999), such as watershed protection, reduction of air pollution or protection of soil erosion.

As an example, Seia has 61.89% of its territory included in the protected area of the Serra das Estrela Natural Park<sup>20</sup>. Seia also includes three areas classified under Natura 2000 site: Serra da Estrela, Carregal do Sal and Complexo do Açor. Vila Velha de Rodão located between the river Tagus and its affluent Ocrea includes in its territory two special protected zones Tejo Internacional and Erges e Ponsul. The protection zone classification is due to an important nesting site for birds. These zones have been degraded by several drivers of change namely disturbance of nesting or feeding sites by agro-forestry activities and abandonment of traditional agricultural practices<sup>21</sup>.

## *Results of the Interviews*

### *Relationship with ESS*

The natural environment and lower level of stress are benefits acknowledged by all interviewees regarding their new rural lifestyle. They point out that in their current life they have increased contact with natural space and have more availability to enjoy outside activities. The contact with nature, including viewing natural scenes, being in natural settings and identifying plants and animals.

Two interviewees underline the importance to be in contact with nature and provide such experience to their children. One of them said that he was able to allow their children to play outdoors: “when I was a child I remember riding a bicycle between buildings, and now my daughters can ride their bicycles in the farm.” The sensation of relax that nature provides during the working period was also a benefit emphasized by the interviewees. Participant’s rural settings also represent an increase in safety, which people value in their living place.

Table 31 summarizes the ESS related factors of attraction mentioned by the interviewees. Results show that interviewees are mainly attracted by factors related to cultural ESS, naming the possibility of developing nature-based activities as direct use of ESS. Some factors regarding regulation and provisional services were also mentioned such as use of ESS with direct benefits

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<sup>20</sup> [http://www.cm-seia.pt/images/pdf/gabineteflorestal/caderno\\_2\\_informacao\\_de\\_base.pdf](http://www.cm-seia.pt/images/pdf/gabineteflorestal/caderno_2_informacao_de_base.pdf)

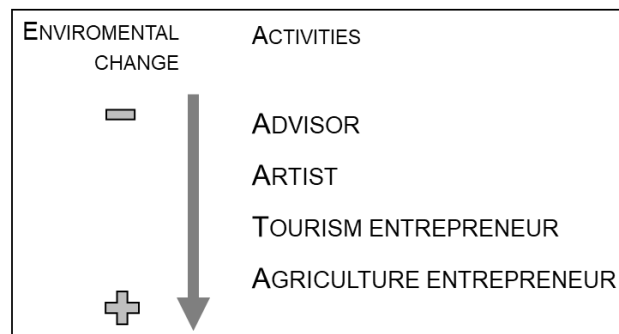
<sup>21</sup> <http://www.cm-vvrodado.pt/media/455747/Relatorio.pdf>

producing and consuming own food and indirect use of ESS as a sense of more calm rhythm or safety less pollution.

**Table 31 Ecosystems service-related factors of attraction**

TYPE OF ESS	FACTORS OF ATTRACTION
Provisional	Food - Access to fresh products and eating healthier; being able to produce their own food
Regulation	Less cars and less pollution, increased air quality Safety of the rural environment
Cultural	Nature related activities - tracking, river swimming, picking blueberries, cycling Aesthetics and beauty of the site Opportunity to work outside in natural sites Calm life and rhythm - less stress "slow living"

The arrival of people to rural areas can create opportunities and threats as it is often followed by increased pressures on resources with consequences for the degradation of the environment. All in-migrants are rural space consumers and they manage the environment in different degrees (Figure 43).



**Figure 43 Relation between environmental change and activities in-migrants enroled**

Skilled in-migrants recognize the benefits associated to ecosystems and are doing efforts for the production of renewable energy namely by adopting systems of sustainable energy (solar and heat recuperator), and using the natural materials (such as stone, wood, cork) for building constructing. In most cases, they have also been recovering new buildings instead of building new ones.

In this matter, results show that regarding those working in the agricultural field, three out of four practiced organic agriculture and showed they care and are aware of the importance of preserving the biophysical environment. In addition, the techniques they apply to their practice contribute to ecosystem conservation, as for example one interviewee mentioned that he is “not forcing land, we do the crop rotation so that there can be maximum use of resources without introducing fertilizers, pesticides, herbicides”.

According to the results, the concern with natural ecosystems conservation adopting sustainable practices in agriculture and functional diversification of natural systems tourism are fostered by



in-migrants. They have been investing in nature tourism and infrastructures for sports and leisure, creating new products with organic farming and promoting local traditions and knowledge dissemination (Table 32). As an example, one of the interviewees created a song that he reproduces in his shows called *lenga lenga da queijeira* that describes step by step how to make *rabaçal* cheese in a traditional way, including the amount of sheep's milk, goat's milk and all the details of the process. Such actions enhance the direct and indirect benefits that people derive from nature.

**Table 32 Interviewees actions that increase the delivery of ESS**

TYPE OF ES	ACTIONS THAT INCREASE THE DELIVERY OF ESS
Provisional	Medicinal resources - Production of essential oils from plants
	Food - Organic production; Selling products (olive oil, sheep)
Regulation	Planting autochthones species
	Detecting forest fires – voluntary forester
	Streams restoration not only in their lands but also in the lands of neighbours
Cultural	Creation of touristic experiences: one-day grape harvest, farm to table program
	Perpetuate traditional knowledge through arts
	Creation of a camping site
	Cycling tourism: design, planning, tourist infrastructure for nature tourism
	Develop activities regarding traditional knowledge and natural ecosystems

#### *New social capital – knowledge and networks creation*

The arrival of new people to a community may carry benefits related to establishing learning processes and new networks that should not be undervalued. Regarding the acquisition of new knowledge for the implementation of their new activities. Some interviewees take advantage of their knowledge, previous work experience, and higher education and having family in the business to develop activities. While other interviewees had no previous knowledge or support to manage their new activity. Further knowledge acquisitions were overcome in two ways. One was through self-learning: “I read about the several areas where I have the activity: construction, tourism, outdoor activities, agriculture and management of natural spaces in general”. Another way was through knowledge sharing. The learning processes were established with older residents in the local community with longer-term empirical experience namely on climate and biophysical variability. A participant mentioned that at the beginning of his activity an old resident gave him useful advice on what to plant and in which season to do it.

Social integration of newcomers is nevertheless a clear challenge for rural communities experiencing in-migration (Brown and Fellow 2010) and not all participants benefit from a good integration. Some interviewees showed some concern about the reduced social relationships they established on site, one mentioned that in “the rural world where I am we are talking about people already aged, which represents a generational gap”. Most of the time new and old

residents are not connected which creates an obstacle to knowledge sharing. This fact blocks learning processes beyond the boundaries of their activities. Other additional differences relate to the social relations ideals, as one interviewee stated that he “does not think at all that people are nice and that they know how to welcome”. In line with this observation, there was also another participant mentioning “the fact that they do not know our family puts us in a position of greater distrust and greater resistance to some initiatives”. As reported by Krannich et al. (2011) this shows that newcomers trigger feelings of suspicion among some old residents.

From the group of interviewees in the sample, those which most easily established relationships with the community were interviewees with children and the professional of arts. Interviewees with children mention that children are facilitators of social relations namely within the school context with the parents of their children’s classmates. As for the interviewees connected with arts, due to their profession, they showed more availability to engage with the local community and, according to them, they were well accepted.

Another interviewee shared that, together with another couple of in-migrants, they established a “local residents association” as a network to bring together all the community. In the beginning, the association was very active but it faded out throughout the years. It appears that the only ones promoting activities were newcomers and that the local community would not get involved. His comment when referring to the local community was: “they are not very active in revitalizing the life of the association”.

When asked about training opportunities the interviewees were all unanimous - no training was available in the region on the topics they need.

#### *Challenges triggered by local social-ecological systems*

The adoption of environmentally friendly practices was not always straightforward as two participants engaged with touristic activities indicated. Interviewees found difficulties in obtaining the products they needed due to limited market availability of environmentally friendly products, as noted about the biological pool: “we had to do a huge search to know who could help us in this, as there is not much in Portugal. And yet, it was not a straightforward solution, we had to buy different parts to more than one supplier”.

To understand the degree of integration in the new social-ecological system, we asked in-migrants their opinion about the existing settings such as the performance of public services and infrastructure (PSI) facilities in-migrants encountered. The availability of PSI is one of the important factors of attraction and retention in rural areas. In this context, regarding the main PSI, interviewees are satisfied with the response by their municipalities - “one good thing people cannot even imagine: there are no queues at all”. Participants reported that they have good

assistance to general health care, but need to look for the regional hospitals when specialities are needed.

The respondents are digitally literate and they use the internet on a daily basis, for work and leisure. About internet connection, one point of view was “for those who do not have internet, it is still isolated.” Despite all having access to the internet, it appears the quality of the signal is weak, there is only one internet service available and its efficiency depends on the site. One interviewee mentioned, “You cannot pick up the radio. The TV has internet interferences. I know people have difficulties”. This is considered a problem since they depend on the internet for their daily activity.

Concerning housing, the results show that although some of the interviewees have old family houses, they all built new houses, or rehabilitate old buildings, in order to have a place to stay. There is poor public transport, which means that having a car is a prerequisite in rural areas.

As for education services, those who have children in elementary school mentioned the importance of having free access to education, and the municipality provides transportation for the children in the morning.

Still, regarding education, it was mentioned by one interviewee that his family, apart from their main income activity, was responsible along with three other couples for the re-opening of an old primary school.

On the subject of financial support, four interviewees have had support from European funds, namely the rural development program, to develop their activity (Table 33). This support was mainly used to recover buildings in ruins and other construction facilities for tourism purposes. Due to the small scale of the farming areas, farmers cannot apply for European funding. Thus, of five participants enrolled in the agricultural activity only one has financial support for agriculture production.

Local authorities, as is the case of the municipality and the parishes, see newcomers as a welcoming factor. Their support is often well-intentioned and politically there is a recognition of benefits that emerge from new projects brought to the territories by skilled in-migrants. However, when asked about the support given by the local authorities to their needs, the answers were not so positive. For example, in relation to road conservation, building recovery and the marketing for rural tourism, some interviewees mentioned every time they contact the municipality they show availability to solve problems but then no action was really developed.

**Table 33 Perception of the support given by municipalities**

MUNICIPALITY	PERCEPTION BY THE INTERVIEWEES OF THE SUPPORT GIVEN BY MUNICIPALITIES
Abrantes	(-)Lack of initiatives attracting new investments
Castelo Branco	(-) Lack of promotion of the ongoing activities on the municipality
Covilhã	(+)Good level of response to public services
Penela	(+++) Protocols with new business in the municipality Marketing and promotion of endogenous products
São Pedro do Sul	(-) Lack of knowledge to support new emerging activities
Seia	(++) Interest and moral support in the new ongoing initiatives (-) Lack of funds available to support ongoing initiatives
Tomar	(+) Good level of response to public services
Vila Velha de Rodão	(+) Good level of response to public services (-) Prioritize industry development

When asked about the needs and priorities of the region, one interviewee referred that “the countryside is not being sold well. Politicians do not care. People are missing”. On this topic, the most frequent responses were encouraging decentralization of services and enterprises, attracting skilled people, and promoting cooperation between municipalities, knowledge sharing among those with the same activities, and reducing social-cultural gap through a “social school”. As a priority, one interviewee said that both territorial and digital communication systems are an “essential need” and fundamental to strengthen any economic activity. Indeed, as reported above, all projects implemented by the interviewees are digitally available through their webpage or Facebook. A physical and digital connection is also crucial while selling their products through organic box-schemes. For example, one of the ideas expressed by one of the interviewees was to share services among the several municipalities, overcoming their borders: “Municipality A could have the school and the municipality B could have the pool”. The in-migrants interviewed perceived that local politicians were not really recognizing the value that the new project implemented mean for the community or the municipality.

#### *Skilled in-migrants on-going initiatives*

Along the interviews, in-migrants shared the initiatives carried out in the place where they moved to. Some were previously planned while others emerge from the context where they established their new residence. The initiatives are quite diverse and they are not a complete representation of the contemporary reality of the Portuguese rural space. Table 34 shows the various initiatives described covering different components of the local social-ecological systems such as organic agriculture, tourism, nature conservation, education, civic, arts.

**Table 34 Main information on the Initiatives promoted by skilled in-migrants interviewed**

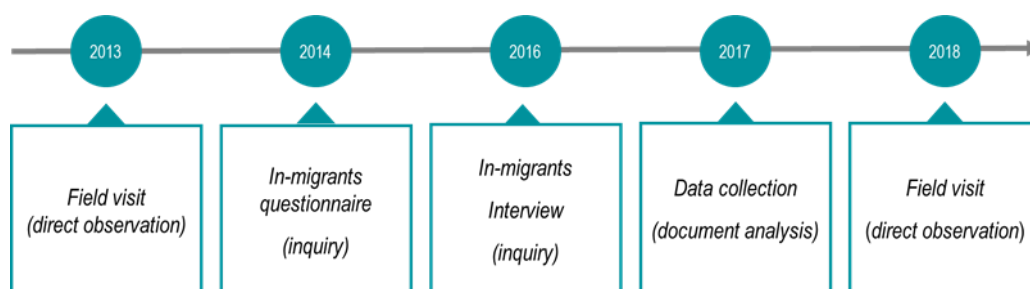
NAME OF THE INITIATIVE	VILLAGE, MUNICIPALITY	TYPE						SOURCE OF INFORMATION	DATE	AIM
		ORGANIC AGRICULTURE	TOURISM	NATURE CONSERVATION	EDUCATION	CIVIC	ARTS			
1.LUGAR DO AINDA	São Vicente da Beira, Castelo-Branco		X					<a href="https://www.facebook.com/lugardoainda/">https://www.facebook.com/lugardoainda/</a>	2016	Rural tourism business
2.AMIGOS DA FERRARIA DE SÃO JOÃO*	Cumeeira, Penela			X	X	X		<a href="https://www.facebook.com/pg/ferrariadesaojoao/events/?ref=page_internal">https://www.facebook.com/pg/ferrariadesaojoao/events/?ref=page_internal</a>	2011	Value the patrimony and cultural aspects of the village
3.VALE DO NINHO NATURE HOUSE			X					<a href="http://www.vn-nature.com/">http://www.vn-nature.com/</a>	2015	Sustainable eco-tourism business
4.COMPANHIA DE TEATRO A CHANCA	Rabaçal, Penela						X	<a href="https://www.facebook.com/companhiadachanca/">https://www.facebook.com/companhiadachanca/</a>	2015	Professional theatre company
5.COMMUNITY OF CHERRY TREES*					X			<a href="http://projetodafelicidade.wixsite.com/happinessproject">http://projetodafelicidade.wixsite.com/happinessproject</a>	2016	Waldorf school <sup>22</sup>
6.ENCERRADO PARA OBRAS	Penela, Penela						X	<a href="https://pt-pt.facebook.com/encerradoparaobras/">https://pt-pt.facebook.com/encerradoparaobras/</a>	2008	Professional theatre company
7.VILLA TRAVANCINHA	Travancinha, Seia		X					<a href="https://pt-pt.facebook.com/VillaTravancinha/">https://pt-pt.facebook.com/VillaTravancinha/</a>	2015	Rural tourism business
8.OLEOS ESSENCIAIS	São Romão, Seia	X						-	-	Production of biologic essential oils from aromatic and medicinal plants
9. QUINTA DAS LAMEIRAS	São Pedro de Tomar, Tomar	X						<a href="https://pt-pt.facebook.com/QuintadasLameiras-S%C2%BA-Pedro-de-Tomar-385184644913356/">https://pt-pt.facebook.com/QuintadasLameiras-S%C2%BA-Pedro-de-Tomar-385184644913356/</a>	2010	Organic farming business
10. VALE DA SARVINDA	Alfrívda, Vila-Velha de Rodão	X	X	X				<a href="http://www.valedasarvinda.pt/">http://www.valedasarvinda.pt/</a>	2011	Organic farming and touristic activities

\* non-profit organization

A set of key aspects could be highlighted regarding the initiatives presented. The first one is the diversity of sectors in which skilled in-migrants have their activities. Initiatives are predominantly related to agriculture and tourism but also to arts and nature conservation. Agriculture activities chose to do it in an organic way, and the one implemented in Tomar was the first organic farming. The three initiatives related to agriculture sell their products distributing fresh organic baskets in the cities close by. Another aspect to highlight is that four of these initiatives rely on and encourage volunteer activities in order to achieve their objective. The initiatives under study also promoted the involvement of the community namely the Amigos da Ferraria de São João that gradually enrolled in their activities diverse actors of the community, and beyond the community. Vale da Sarvinda also contributes to the integrating of farmers in extra-local food networks. From the ten initiatives presented the ones located in Penela Municipality will be detailed in the next chapter. This particular municipality concentrates the largest number of initiatives (five) with different characteristics, which may trigger transitions processes in its social-ecological system. Furthermore, the present PhD research study has been following the evolution of the initiative in Penela since its beginning: in 2014 when its promoters answer the questionnaire, later in 2016 when the same individuals answer the interviews and pointed out the projects they were implementing and finally in 2017 when data on the five initiatives reported were completed through the analysis of social media.

## 6.5 Ongoing initiatives in Penela Municipality

The present research started following the evolution of the initiatives in Ferraria de São João, In Penela in 2013 with a field trip visit to the village. Later the promoter of initiative and other two skilled in-migrants that moved to Penela answer the questionnaire and interviews from the present research. Documental data was collected on all the initiatives developed by the three promoters and a field visit was done to Penela (Figure 44).



**Figure 44** Researcher involvement in the initiatives developed in Penela

Since the five initiatives that are going to be detailed are located in Penela they share similar demographic, institutional and ecological dynamics. Penela is one of the municipalities of the

Centre region of Portugal, belongs to Pinhal Interior Norte (NUT III), and is also part of the Intermunicipal Community (CIM) of the Region of Coimbra, which belongs to the Centro Region (NUT II).

### *6.5.1 Presenting the initiatives*

The initiatives are presented below according to its location: villages of Ferraria de São João, Chanca, Cerejeiras and Penela. For each initiative, the aim, story and actors engaged in the initiative are described. Based on the information collected, a discussion on the potential of the initiative for social-ecological systems is done.

#### *A. Ferraria de São João, Penela*

##### **1. Vale do Ninho Nature Houses**

In the last 10 years Ferraria de São João has received the arrival of a young couple (an informatics engineer and a teacher) from Lisbon metropolitan areas that decided to restart their lives in the village.

Vale dos Ninhos Nature Houses are located in what was once Vale do Ninho (Nest valley) cottage. The cottage dates back from the 19th century, belonging then to the Pires Family. The houses were totally rebuilt, now providing all the commodities to the guests. They incorporate maximum eco-efficiency and sustainable construction: use of local natural materials such as stone, wood, cork. It also includes energy efficiency solutions: water recover, solar energy, fireplace with heat recover, underfloor heating system and traditional wood oven. It offers accommodation, together with personalized advice on sports activities nature or village experiences.

They also promote "Farm to Table" with clients, an activity that involves harvesting the vegetables and cooking them. Other experiences are provided to their visitors such as cheese making or BTT rides. In the village, they were responsible for the creation of the BTT Centre in the village, the first infrastructure of the kind in Portugal, with exclusive equipment for lovers of mountain biking, available on a self-service basis, and connected to a 196 km of cross-country rails. The project caught also the attention of international news channels such as the American newspaper Washington Post or Cambodia.



Figure 45 Report on Vale dos Ninho Nature Houses in The Camboja Daily<sup>23</sup>

Together with other three rural tourism that meanwhile opened in the village, they received around 1000 national and international visitors in the village per year. Besides contributing to the promotion of the village nationally and internationally, this project has also contributed to increasing recreation areas through new infrastructures and applied nature base solutions<sup>24</sup> in the construction of the houses for tourism.

## 2. Amigos da Ferraria de São João – ZPA (Village Protected Zone)

The association of Friends of Ferraria de São João was created by skilled in-migrants in order to value the heritage and cultural aspects of the village. Since its creation, it has developed several projects, the creation of pedestrian routes in the village and surroundings, and the acquisition of a centennial cork oak area with the goal to maintain and preserve a protected species that is classified as a national tree on Portugal. They also developed a plan called “Aldeia Viva”. This initiative, created in 2011, was developed in straight collaboration with the Municipality of Penela with the main objectives of: a) promoting the traditional culture of the territory; b)

<sup>23</sup><https://www.facebook.com/ferrariadesaojoao/photos/a.163436040409422.42912.108460709240289/1303061539780194/?type=3&theater>

<sup>24</sup> According to IUCN “actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits”



educating for ecology; c) providing moments of experimentation and exploration essential to learning, encouraging physical activity in direct contact with Nature; and d) stimulating the interaction between villagers and the general population. Under this plans several workshops were put in practice around traditional activities such as cheese and bread making.

In 2017, following the big forest fires that occurred in the territories around the village (June 18<sup>th</sup>), all inhabitants start working together for what they called an action plan for the village protection zone – ZPA #eufiz acontecer (#i made it happen) (Figure 46)



Figure 46 ZPA #i made it happen logo

They designed the plan during a meeting attended by 40 members of the community. The main objective of this plan is to substitute the eucalyptus that existed in the limits of the village with oak trees and other fire resistant autochthones species. After establishing their objective, they had 16 regular community meetings where they decided the actions needed to pursue the project’s objective. Among land management activities, they have also launched a sponsorship program for trees (October 2017), and several voluntary actions for tree planting, from November 2017 until March 2018 (Table 35). These activities were also reported in national television and newspapers.

Table 35 ZPA in Numbers<sup>25</sup>

Actions	Number
Volunteers received	More than 500
Voluntary actions	11
Community meetings	16
Tv and journal reports	34
Scientific conferences	2

Events are being planned and developed, taking into account the opinion of long-term residents recognizing their experience in the surrounding landscape.

<sup>25</sup> Facebook consulted in 22nd March 2018

*B. Chanca, Penela*

**3. Arts – Chanca Theatre Company**

Chanca has been the place chosen by a couple of artists that founded the Chanca Theatre Company (in co-production with the Poetic Razões Project) dedicated to the creation of cultural events. This couple transferred their art business from Lisbon to Penela in 2015. Since then they have been creating their plays mainly inspired by the local attributes and inhabitants of the village of Chanca. Their first play entitled “O Sítio” was based on previous work to understand the local knowledge and traditions of the community on the subject of the performance – rurality (Figure 47). "O Sítio" shows the life of a couple in the desertified, aged and isolated interior, inviting the elderly, children, young people and active population to reflect on the problem of human desertification. This play was presented in August 2015, in Chanca – Rabaçal, in an open-air theatre event in the streets of the village to all the inhabitants at no costs. The population and entities of the municipality joined and attended a different way of telling stories.



**Figure 47 “O Sítio” Theatre Companhia da Chanca**

The event had the participation of over 80 people from different social classes and ages and from several places beyond the borders of the village and even from the municipality namely the chairs of the Municipal Council of Penela and the Union of Parishes of S. Miguel, Santa Eufémia and Rabaçal, and many residents in Chanca. For some of the inhabitants of the village, this was the first time in their life they were participating in such an event and the first time they had the opportunity to contact with decision-makers from the municipality. After the event, the promoters collected testimonies from the inhabitants of the Chanca Village about the theatre show "Sítio", revealing how special it was for them having attended such an event. This initiative based on empirical knowledge and traditions of the local community enhanced the local immaterial heritage and promote the involvement of the community of the village.

#### 4. Education - Community of Cherry Trees

The school of Cherry Trees in the Espinhal parish was closed for over 10 years. However, in October 2016, tree couples of in-migrants settled in the municipality and some villagers, with the support of the municipality, decided to re-open it. Their aim with the creation of the “Learning Community of Cherry Trees” was to build a project based on the Waldorf methodology where children had access to the skills and confidence they needed to be happy and fulfil their true potential both academically and as a human being, contributing towards a more compassionate and peaceful world (Figure 48).



Figure 48 Newspaper report on the Community of Cherry Trees (21 July 2018)

Currently the school has 10 children attending and includes several activities: a) daily farming and meditation; b) weekly visits from community members for learning from real-life experiences; c) volunteering by local families to invest 8 hours per month in maintaining the school; d) learning through real ‘living books’; e) and weekly meetings. During 9 months, the founders of the project have raised about 10.000€ to improve the building where the school runs. The local community recognized this project and its potential and contributed for its implementation by donating a building, land, paint, and new furniture.

### **5. Encerrado para Obras**

The founder of Encerrado para Obras is an arts producer that moved his company to Penela in 2007. Along the years the company has been working in the municipality in different projects. They have a protocol with the municipality that stipulates that one of the productions made during the year have to be context related. For example, for the production of 2009 "Queija Me Mucho" they had to study how was the Rabaçal cheese done and they learn this in a local artisanal cheese shop. In other productions they have, they planned a show around the local production of honey. This company also works in collaboration with other organizations, for example, a local mental disorder association, Cerci Penela, where they lead an amateur theatre company "Obras feitas". The premiere of the play was on the World Theatre Day with revenues going in full to the poorest families in the municipality.

Other curious examples were the production of "My Tree My Home" focused on passing the message of respect for the environment, including a history with several animals and a Cerquinho oak, one of the most common trees in the region. For this initiative, they were supported by locals who shared information about the trees that exist and the cultural relationship the community has with nature.

#### *6.5.2 Summary of the initiatives*

As these initiatives are quite recent, its impact is yet difficult to measure. However, according to Schumpeter (1934), these initiatives carry out diverse types of innovation. Schumpeter (1934) was the first to provide an analysis of innovation and a typology of different forms of innovation. This concept has been applied to other fields. Recently, the Young Foundation (2012) defined their own typology based on Schumpeter's work. The present initiatives are described below according to the referred typologies innovations in SES (Table 36). In the context of the present research is also important to explore the way the initiatives may relate to ESS. The initiatives may enhance cultural ESS such as the case of Vale do Ninho Nature Houses or Companhia de Teatro a Chanca and regulation ESS such as Amigos da Ferraria de São João. The set of selected initiatives has a residual impact on the provisional service since only one of the initiatives is producing food but only for self-consuming. At a community level, most of the initiatives contribute to the improvement of the local image of the village where they are implemented.

**Table 36 Types of innovations promoted by the initiatives described**

NAME OF THE INITIATIVE	INNOVATIONS							KEY ASPECTS
	NEW PRODUCTS	NEW SERVICES	NEW PROCESS	NEW MARKETS	NEW PLATFORMS	NEW ORGANIZATIONAL FORMS	NEW BUSINESS MODELS	
Amigos da Ferraria de São João		X	X			X		Environmental protection Cooperation among members of the community Recover local traditions and its dissemination
Vale do Ninho Nature Houses	X	X		X			X	Energy efficiency in construction agro-tourism (e.g.biological pool) Promoting endogenous products
Companhia de Teatro a Chanca		X	X	X			X	Cultural arts based on local knowledge and presented to the inhabitants of the village Key role bridging local actors and communities through the events promoted
Community of Cherry trees	X				X	X		Education activities nature related Network for implementing new forms of learning processes and knowledge exchange
Encerrado para Obras		X			X	X		Arts based on cultural heritage and local knowledge Partnerships with institutions of disable people

## 6.6 Rural SES attraction: a survey on stakeholder's views

This section presents the results of the application of an inquiry to key municipal stakeholders by an interview on the attraction of new residents and the contribution of ecosystem services to local development. Specific objectives of the interview included exploring measures implemented that contribute to attracting new residents to the municipality and analysing the potential to attract new residents through ecosystem services.

### 6.6.1 *Sample selection*

During the present research, besides the collection of the perceptions and opinions of skilled in-migrants in rural areas important to collect the perception also from those that live in low-density territories. To bring out a cross-representation of a diversity of actors associated with rural communities, participants were identified by information already obtained with the e-questionnaires applied previously in this research. The intention of the study was to include in the investigation municipal stakeholders perceptions on the three municipalities with more answers to the e-questionnaire applied in the previous stage of the research. All parishes of the three municipalities were contacted by the official e-mail sent on May 2015. From these contact no answers were obtained. Instead, stakeholders were contacted through telephone accessed in the web site of each of the municipality. A snowball technique was used to enlarge the sample asking in each interview if participants knew other stakeholders that could be relevant to participate in the research. The individuals selected to be part of this study lived 'permanently' in the municipality for at least 15 years. Twelve telephone interviews were conducted in June 2015 to stakeholders from Proença-a-Nova municipality, the only one that was available. The interview took an average duration of about 30 minutes each.

The interviews were structured to be flexible to the interviewee's answers, but applied in a way to maintain its basic structure for a common analysis of the content of the interviews, focused on three topics: municipality attraction factors, public policies and incentives to attract new residents and ongoing initiatives in the municipality (Figure 49). These specific topics were selected to find out, from a stakeholder's perspective, the importance of attracting new residents to the municipality and the contribution of ecosystem services to local development. All the interviews were transcribed and then forwarded to the respective interviewees for approval. Content analysis was used to analyse the interview scripts, through systematic search where codes were generated from the data themselves in the course of the study (Sandelowski 2000).



**Figure 49 The three domains of the interview design**

The interviewees who agreed to participate in the study were part of the following groups: "Public authorities", "Economic agents" and "Civic Associations" (Table 37). All of the interviewees are inhabitants of the municipality and the majority of respondents are representatives of "Cultural and sports association". In order to guarantee interviewee anonymity to each individual as attributed a code.

**Table 37 Categories of stakeholders included in the study**

Categories	Description	Representation	Nº	Interviewee reference
<b>Public authorities</b>	Individuals responsible for designing and implementing renovation strategies at a municipal level.	Municipality	2	A, B
		Parishes	2	C,D
<b>Economic agents</b>	Individuals who have businesses (small or medium-sized) in the community.	Tourism operator	1	E
		Forest company	1	F
<b>Civic Associations</b>	Individuals from the civil society that develop community activities for social support.	Cultural and Sports association	6	G,H,I,J,K,L
<b>Total</b>				12

### 6.6.2 Context of Proença-a-Nova

The Proença-a-Nova Municipality has five parishes and covers 395,4Km<sup>2</sup>. Similar to the Beira-Baixa (NUTII) region where it is integrated (Figure 50) it has been losing population since 2001 (Figure 51). In 2016, the municipality had a population density of around 19,3 inhabitants per km<sup>2</sup> and 7 623 inhabitants (against the 24,2 inhabitants per km<sup>2</sup> and 9576 reported in the 2001 Census). In 2016, the ageing index, an indicator that analyses the relationship between the number of elderly people and the young population of a territory, was 370,5, significantly higher

than the registered in Beira-Baixa (274,7) and in Portugal (148, 7)<sup>26</sup>, meaning that the population in the municipality is getting older.

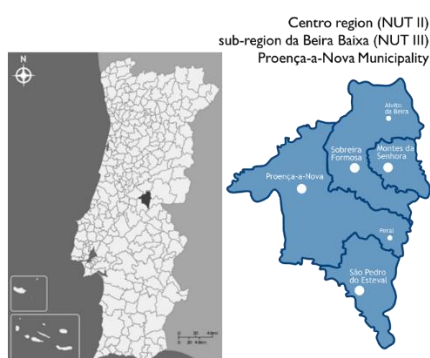


Figure 50 Location of the municipality

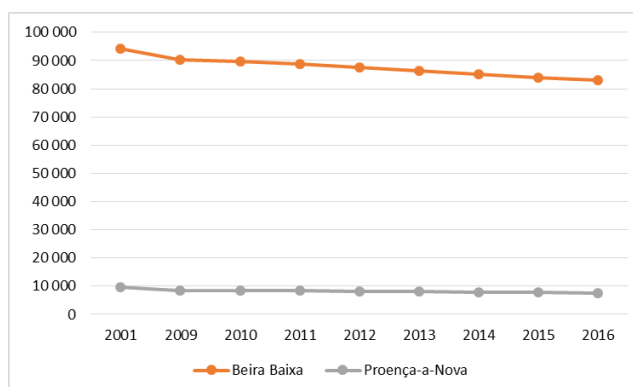


Figure 51 Resident Population (Pordata)

As for land use distribution, 52% of the territory is covered by forest which is mostly pine forest (33%) and unproductive area (34%), with also 11% of agriculture areas and 2% of urban areas<sup>27</sup>. Its pine forest delivers multiple ecosystem services, including nature tourism and water regulation.

Considering accessibilities, the municipality of Proença-a-Nova has benefited, in the last decade, of national, regional and municipal road improvements. The Complementary Itinerary IC8 passes in Proença-a-Nova and establishes the connection between Figueira da Foz (IC1), Pombal, Figueiró dos Vinhos, Pedrógão Grande, Sertã, and Castelo Branco (A23 / IP2)<sup>28</sup>, positioning Proença-a-Nova as a very well connected region with the North and South of Portugal. Yet this has not impeded population loss.

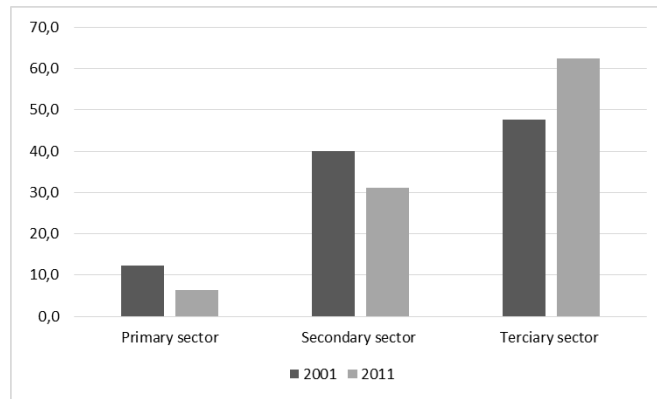
In 2011 the employed population was mainly in the tertiary (62%) and secondary (31%) sectors, with the primary sector accounting for only 6,4% of the total (Figure 52). The services that provide the majority of jobs in the municipality are located in the main city, Proença-a-Nova.

<sup>26</sup> [https://www.pordata.pt/Municipios/Quadro+Resumo/Proen%C3%A7a+a+Nova+\(Munic%C3%ADpio\)-230679](https://www.pordata.pt/Municipios/Quadro+Resumo/Proen%C3%A7a+a+Nova+(Munic%C3%ADpio)-230679)

<sup>27</sup> Estudos de Base -VOLUME IV SISTEMA BIOFÍSICO da Revisão do PDM de Proença a Nova (2012)

<sup>28</sup> Estudos de Base - Vol V\_I Infraestruturas, Sistema viário e de transportes da Revisão do PDM de Proença a Nova (2012)





**Figure 52 Employed population per sector of activity (%) (Pordata)**

### 6.6.3 Results of the Interviews

#### Municipality attraction factors

#### *Municipality attraction factors*

Attracting more residents to the municipality is considered a priority for all of the interviewees. Expressions such as “Maximum importance” or “I think this is one of the most priority things at the national level that governments should all look at” mentioned Interviewee F. Issues related to the lack of population were also pointed out during the discussion on the population topic: abandonment of the agricultural landscape, loss of identity, lack of people to work namely on ecosystem management, reduce of safety and ageing. Still, Interviewee A showed some concern on population attraction explaining that “not all new residents have done good things”.

Looking at the strong points pointed by the interviewees to attract new inhabitants the ecosystems services supply was one of the points mentioned by the interviewees. Landscape beauty, conditions for tourism practice or fresh air were characteristics of attraction mentioned by the interviewees. Due to the natural and environmental conditions, including the tranquillity, calmness and quietness of the place, interviewees highlighted the quality of life as an important characteristic of the municipality to attract new residents. Regarding entertainment, interviewees mentioned that the municipality has been investing in culture and leisure. Free-time activities such as sports facilities, cultural events are promoted. This is perceived to be appealing in as nowadays people do not have to go to Lisbon to go to a theatre or cinema “what the big urban centres offer we also have” referred Interviewee A. The same interviewee also mentioned that life is more affordable in the municipality than in a big city. Even with low wages, in the municipality, it is possible to live with better life quality than in a big city like Lisbon. Interviewee J mentioned, “I know people that went to other cities but when the weekend arrives they come back. If they would have a job here they would stay and live in the municipality”.

### *Push factors from the municipality*

However, the main obstacle to attract newcomers is, according to the interviewees, the lack of jobs offered in the municipality. Some express a nostalgic feeling related to the closure of a big industry in 2001 that employed more than 200 residents in the municipality (Interviewee H, K). Interviewee I and J referred that it would be important to “attract industry and business that create new jobs.” Interviewee, I also mentioned neighbour municipalities that have factories and another type of industrial economy. The accessibility despite being good there has been an increase in tolls on the A23, which is even more expensive than the A1. Some people arrived and left the municipality due to financial issues.

### Public policies and incentives to attract new residents

#### *Measures implemented to attract people*

When respondents were asked to identify, in their opinion, measures/actions implemented to attract more residents to the municipality they point out exclusively the ones implemented at a local level. It was possible to identify similar perspectives within the sample: zero charge for setting up a new business in the remodelled business park; an established protocol between the Council of Proença-a-Nova and the Council of Lisbon for the start-up of Proença-a-Nova. “There is a great willingness of the municipality to create conditions for people to settle in the territory” considered Interviewee G. In fact, the whole sample agreed that the municipality has been doing a good job with the means they have. A general view among participants was that the European policies (namely the NRDP) is not adequately relate to the realities and needs of the Portuguese rural areas. In addition, they mentioned that issues of demography are structural for several municipalities in Portugal and therefore attention and priority is needed to change the imbalance Portugal is facing.

#### *Suggested future policies*

According to the interviewees, future policies should focus on the enhancement of the forest areas and their ecosystem services. Investment in provisional services and cultural services were suggested by the stakeholders interviewed (Table 38).

**Table 38 Ecosystem services that should be promoted**

Type of ESS	Factors of attraction
<b>Provisional</b>	Wood, resin, Goats (milk, cheese), Cherry tree, strawberry tree <sup>29</sup>
<b>Cultural</b>	Tourism, Leisure, River swimming pools

<sup>29</sup> *Arbutus unedo* is well known in Portugal for its quality liquor

Regarding the cherry tree, for example, Interviewee J pointed out the case of Fundão that has a huge marketing strategy for cherries and has major success. He thinks this is a good example worth to adopt.

Related to ecosystem services provision interviewee K mentioned that the production of livestock and artisanal cheese is, nowadays, managed by elderly and with time it tends to disappear. “The production that we have today in the country does not reach the demand”, she said. It is noteworthy that these stakeholders did not identify the maintenance of ecosystems as an important aspect as a way of preserving the environmental conditions currently existing in the municipality.

The importance of cultural ESS was illustrated during the interviews as tourism and other recreational activities were mentioned associated with investments needed in a near future such as camping site for caravans.

In addition, interviewees suggested attracting youngsters, giving them the conditions to stay. Given the long tradition with cattle raising, it was suggested that the municipality should provide training opportunities in this field and create cooperation protocols with schools and business in the municipality. In addition, participants mentioned that vocational training offered was not adequate to what local employers need.

#### Ongoing initiatives in the municipality

Due to some municipality measures, namely the good quality of the fibre optic cable, since 2009 the ICT business (Outsystems) was implemented in the municipality business park. With 55 employees, in 2017, Outsystems has a technological innovation laboratory that develops software for customers around the world. Interviewees refer to Outsystems as a good thing that has moved the local commerce and has brought young people to the Municipality. Companies such as “Outsystems” also created new economic dynamics in the local municipality. As mentioned by Interviewee B “Outsystems today has 40 IT engineers working in shifts because they work with America, consequently, local restaurants adopted different schedules to support and serve their meals.” Other smaller business have been coming to the municipality such as a number of rural tourism, oil extraction “Branquinha” or “Linha ambient” (a recycling business). Concerning the valorisation of ESS interviewee B mentioned the intention to create a partnership among the several municipalities that have pine forest in their territories to create value from these forests and their products.

## 6.7 Chapter summary

This chapter set out to discuss the empirical findings of the study objectives, which include the background of individuals interviewed, the motivations for in-migration to rural areas, and their relationship with the existing communities and ecosystems. The perspective of municipal stakeholders on the attraction and conditions for creating value through ecosystem services was also captured.

Empirical data revealed:

- ESS, and environmental quality aspects in particular, among the leading motivations to move to rural areas;
- Skilled in-migrants consider their quality of life-related to work, infrastructure, environment, and housing conditions were mainly seen as having increased;
- Skilled in-migrants recognize the benefits of the environment and they have been contributing to natural regeneration and conservation;
- They improve ESS creating new activities that make necessary environmental protection activities to make viable their business and activities. Those investing in organic farming include the maintenance and protection of plant and soil (regulatory ESS) while those launching arts events rural setting as described above have contributed for the maintenance of cultural ESS;
- Skilled in-migrants enabled the entrance of human capital and social capital to the receiving communities; The skilled in-migrants interviewed revealed they put a significant effort creating social networks;
- Interaction among the members of the community (through the initiatives skilled in-migrants implemented) and creation of new services (such as the case of the school and new local associations) as described above these are a great opportunities to create space for collaboration and enhance bonding, bridging and linking social capital;
- Stakeholders point out positive ongoing dynamics in local economies and the municipality has been investing in new areas - Enhancing Ecosystem Services.

## **7 SKILLED IN-MIGRANTS ATTRACTION AND CONTRIBUTION FOR SUSTAINABLE SES TRANSITIONS**

## 7.1 Introduction

This chapter undertakes a discussion around core themes that are associated to changes in rural areas motivated by skilled in-migrants. It draws upon the theoretical foundation of this thesis, that is the cross-relationship between SES, ESS and Social Capital in rural areas and Transitions enabled by skilled in-migrants, presented in chapter two and its empirical application in the Portuguese low-density areas. Additionally, a review of the main public policies in rural areas was done. The research was driven by the aim of the thesis: Investigate whether socio-ecological systems (SES) and inherent ecosystem services (ESS) stimulate attractiveness and promote transitions for sustainability in rural areas, benefiting from incoming skilled in-migrants boosting rural value.

## 7.2 The thesis findings synthesis

In the context of urban-to-rural migration in low-density territories in Portugal results captured a similar population profile as other studies in the literature: in-migrants are young, active and higher qualified, contrasting with the profile of the majority of the existing local residents, and revealing a significant transition in rural areas regarding age and qualifications. Results demonstrate that the middle-class in-migration is of great importance to increase diversification and innovation fostered by social capital.

Evidence from the empirical research show recent in-migrant movements from metropolitan areas to low-density Portuguese rural territories is being led by ecosystems related attributes, such as tranquillity of rural areas and rural environmental qualities. This study is in line with the one developed by Mendes and Carmo (2013) also in Portugal, in which people with higher levels of education prefer a quality of life that is marked by a quiet, peaceful and safe social environment. In the survey results, the most mentioned attribute when selecting the rural destination was living closer to nature. Other ESS related aspects that attracted the interviewees include access to fresh products, eating healthier food and be able to produce own food. As for ESS cultural aspects, the aesthetics and beauty of the site and nature-related activities (e.g. tracking, river swimming) were also mentioned. These shows that natural resources are considered factors of attraction to rural territories, and consequently, can be regarded as development factors. Indeed, the present research is aligned with the idea that material and immaterial natural heritage and other symbolic components constitute a set of resources from which a development process can be launched (Santos Silva et al. 2018). In the sample obtained in the research, skilled in-migrants enrolled diverse activities, some of them continuing what they were doing previously, others developing new activities. For example, those investing in

organic farming include the maintenance and protection of plant and soil while those launching art events in rural settings have disseminated the delivery of cultural ESS. They have also been responsible for promoting new products (touristic experiences or organic agriculture) and create new demands acting as critical change agents such as the need to implement new technology or the need to invest in market strategies. In this context, results of the in-depth interviews to skilled in-migrants also show that interviewees recognize that having a good environmental status benefits their activities and therefore they have been developing actions that contributes for natural regeneration and conservation.

As mentioned in chapter five, the hindered availability of public services and infrastructures (PSI), is also a factor that conditions people mobility. The shrinkage in public services in many rural areas can increase depopulation leading to more public service closures. In the case of Portugal, decades of out-migration led to a decrease in some rural areas of public services and infrastructures, and consequently to lower public investments over the years. Even though Portugal has seen major investments in regional highway infrastructure and equipment covering rural areas in recent years, investments on local road infrastructure and services have been insufficient. However, results from the present study show an unequal distribution of PSI with some in-migrants revelled satisfaction and others pointing the conditions of the PSI as a constraint found with their change. The first is aligned with the study by (Plieninger et al. 2013) where the in-migrants perceive their quality of life-related to work, infrastructure, environment, and housing conditions as having increased. The ones dissatisfied point out the lack of goods and public services (eg. “provision of health services” and “lack of competition in the purchase of consumer goods and high price associated”) and housing (eg. “lack of houses for rent”) and great dependence on car use as existing constraints. Additionally, results show that the respondents are digitally literate and they use internet on a daily basis, for work and leisure and so, having access to internet infrastructure is an important condition and it appears the quality of the signal is not always particularly good. This is consistent with the context data present in chapter six whereby Portugal will need significant investment in rural areas to achieve 100% cover of rapid broadband coverage, especially in it low-density territories in the east part of the country.

The interviewees bring with them the social networks and knowledge from the city, and to implement their initiatives they rest on their personal motivation. However, results point to a social problem related to lack of trust among the local community given the few examples of knowledge sharing in the results achieved. Cultural differences or norms were often cited as deterring socialization (Brown and Fellow 2010). As described in chapter six, most of the

initiatives started in total disconnection with the local community, which may block the establishment of networks and learning processes essential to enable transitions to occur.

Concerning the recognition of the importance of ESS in all analysed public policies, namely the NRDP documents, there are some measures to account for good environmental status such as increase soil fertility or to promote carbon sequestration included in the regulating category. Rural areas include areas of Fundamental Network for Nature Conservation, natural areas subject to risks and vulnerability thus these measures are of great importance. As for the municipal policy analysis, the response of MMP to the integration of ESS in policy and planning still faces many challenges. As mentioned in chapter five, although not explicitly mentioning ESS the MMP do include measures to provide for maintenance of a good ecological status of the environment. The MMP under analysis may create opportunities for the economic growth of ecosystems based activities such as agriculture and tourism and recreation. Tourism is seen with great hope as the trigger for the development of low-density territories yet this is planned mostly around the new building and infrastructures. The MMP also includes measures promoting marketing actions of local endogenous products and touristic brands yet, in the MMP there is a lack of measures for capacity building, training and network enhancement along the touristic value chain. This reveals that less support is given to transition factors (networks and knowledge exchange) under analysis.

Even so, the MMP promotes measures for attracting more investment to the municipality such as new industrial areas and new equipment to attempt to reverse the population decrease tendency.

On the consequence of depopulation in rural areas both public policies analysed at the national and municipal level (NRDP and MMP) point out that, the phenomenon has consequences on natural values and landscape and loss of innovation potential.

Regarding PSI, even though there are measures addressing this issue no specific public service is mentioned in all the analysed NRDP. However, regarding infrastructure specific measures regarding the improvement of the broadband was found in half of the sample. At a municipal level, a vast majority of the plans include guidelines for reinforcement of the existing network of equipment and infrastructures. To a less extent, planning approaches based on alternative PSI provision models were found. Examples include alternative transport networks or multiple use facilities services.

From the above-described synthesis, three main topics emerged: ESS as an attraction factor for skilled in-migrants in rural SES; Benefits and challenges skilled in-migrants enable in rural SES; Policy-making and planning instruments addressing people attraction to rural SES. Discussions will be structured around the referred topics.



### 7.3 ESS as an attraction factor for skilled in-migrants in rural SES

The ESS supply was one of the main points mentioned by the sample inquired in the present research to attract new residents, namely landscape beauty or conditions for tourism practice. Quality of the environment such as less pollution and increased air quality were also mentioned as factors of attraction. These results shed light on the relevance of ESS among the attributes of rural areas to attract in-migrants and this fact is in line with other studies showing that skilled in-migrants rate ecosystems services as being very important for their migration process. For instance, results are aligned with Wilbur (2012) in what concerns the motivations for the in-migration process in rural areas. Likewise, the municipal stakeholder interviewed highlighted the quality of life as an important characteristic of the municipality to attract new resident's characteristics such as tranquillity, calmness and quietness of the place were also mentioned. Although other considerations in destination choice have also been pointed out in the present study and also by literature review such as affordability (Holmes and Argent 2016), the proximity of family and friends or work-related reasons (Grimsrud 2011). In this research, the variables mentioned were given less weight by the research sample.

Regardless of their motivation to move all of them to recognize that having increasing contact with nature and made efforts to establish relationships within the members of the community. Due to this interaction, new learning processes emerged. For instance, participants mentioned recognizing wild berries, mushrooms or medicinal plants. Also, the acquisition of traditional knowledge namely of practices with other community members is part of the ongoing learning processes.

Results also show that in-migrants activities are both dependent on, and contribute to, enhancing ESS. In the Portuguese case, in-migrants express concern about environmental issues, underlining that environmental protection is a condition for the feasibility of their business and activities. In the case of tourism activities, for example, the landscape is a very important factor, and the type of landscape is mostly determined by users of the territory. Thus, the improvement of the environmental conditions by in-migrants is even more relevant in the context of rural areas with a low-density population as this will also affect other ongoing activities creating a spillover effect. Furthermore, what the results of the present investigation show is that in-migrants give preference to sustainable solutions in their activities (both agriculture and tourism) than to the conventional solutions available on the local markets. This is important as they also contribute to the attractiveness of these territories. However, it is important to highlight that the solutions adopted are associated with longer-term options and pathways regarding their implementation, and consequently involve increased demanding conditions that

are often difficult to obtain. It seems therefore that, in order to make environmental innovations the mainstream of rural activities, the adoption of sustainable solutions have to become more expedite and the existing conditions (e.g., taxes, subsidies, regulatory frameworks) must be made more adequate. Also, as sustainability solutions are beneficial for ESS supply in these Portuguese rural areas, skilled in-migrants making efforts to implement such sustainable management should be compensated.

Refreshed dynamics created by newcomers is relevant for stimulating rural lifestyles and livelihoods, the wellness of the SES features, and the quality of delivery of ESS. As mentioned throughout the investigation it is necessary to promote the quality of life of the populations for their establishment in the territories. Additionally, as public policy analysis, the analyzed documents consider the ESS as factors of attraction and the environment to be a comparative advantage between urban and in rural areas and something that should be preserved.

#### 7.4 Benefits and challenges skilled in-migrants enable in rural SES

Transitions triggered by skilled in-migrants in Portuguese rural areas are broader than changes in land use functions, and a re-definition of social-ecological systems (SES) is also underway with SES becoming more diverse (Hedberg and Haandrikman 2014) in its activities and in its social systems (Phillips, 2010), creating new opportunities that were less apparent before. In-migrants as change agents have contributed to the diversity of SES as the activities they promote are predominantly related to agriculture and tourism but also arts and education. Results show that not only their investment has been cross-sectorial, and that rural areas are not limited to agriculture or forestry activities anymore but also initiatives being implemented featured as innovations in the municipalities where they were implemented. With these initiatives, skilled in-migrants are not only creating desirable rural lifestyles for themselves but may also be contributing to the long-term resident's well-being. As illustrated, some of the initiatives described in chapter six promoted involvement of the community, namely the village association, with the "Amigos da Ferraria de São João" that gradually enrolled diverse actors of the community and beyond the community. In this case, ESS are also being co-produced by the community especially as all community is engaged in the action plan for the protection of the village. This initiative was developed by agents of change (skilled in-migrants) that established leadership and promote several actions on their arrival to the village and in response to an environmental crisis and risks. The results show that skilled in-migrants have been responsible for raising awareness of the creative potential of rural areas. The research showed that in-migrants actively contribute to the exploitation of natural and cultural capital in territories they

move to. This initiative has been highly appreciated by the local community contributing to reducing the gap between the two social groups (long-term residents and newcomers). Particularly important is that the ideas and innovations that emerge from this initiative helped tackle complex real-world problems and therefore can also strength the resilience and promote the transition of the system (Westley et al. 2011). These kind of innovative strategies that explicitly foster collaboration and learning contribute to trust building and the formation of new social networks of communities. From the set of initiatives triggered by the interviewed in-migrants, a set of key aspects could be highlighted: the diversity of sectors that skilled in-migrants act upon; the initiatives being featured as innovations in the villages and the municipalities where they were implemented. In addition, the opportunities that emerge in certain rural areas with the arrival of in-migrants have led to new challenges that have to be addressed namely in what concerns the provision of PSI. A need emerged in the context of Penelas municipality and skilled in-migrants took action and engage in collective action to respond to it. The community of cherry three (re-opening of the school) example illustrates this well that consists in a Waldorf school. Indeed, skilled in-migrants in the context of the Portuguese rural areas present atypical capabilities and qualities and put forward innovative actions and processes that can have unpredictable consequences if well empowered. The investment in new fields such as tourism has been made possible through public financial support of rural development programs namely on accommodation facilities. The present investigation also shows that initiatives with cultural and educational purposes have been implemented with no financial support and this may be a blocker for its maintenance in a close future. Besides financial support, also political support is required to enable niche emergence in rural communities namely on providing infrastructures and marketing facilities for the success of the new activities provided by skilled in-migrants. Although it seems reasonable to consider that from their own perception, and from the perception of the local authorities, in-migrants are an important condition in transition processes in rural development, the interviewees' perception is that local authorities do not always prioritize their needs.

Major challenges related to the arrival of skilled in-migrants based on the results of this research are related to lack of assistance on the integration processes in the communities and disconnection between local actors.

The process to achieve successful integration of skilled in-migration consists of a complex mechanism for each locality. Although, as reported, in-migrants make an effort to engage with local communities, it is arguable if it is indeed only their role, as new arrivals, in establishing that linkage. Indeed, research in European rural societies confirms that it is difficult to promote local development in places with a weak social capital and a top-down approach through the local

government (Dargan and Shucksmith 2008). Interaction among the members of the community (through events and associations) and the creation of new services as described by some of the interviewees are a great opportunity to create space for collaboration. As reported in chapter six, initiatives such as “Amigos da Ferraria de São João” and community of cherry trees currently have surpassed the cultural barriers and have been encouraging greater intra-group exchange which may bring advantages for knowledge exchange. In addition, for such initiatives, many in-migrants remarked that they had to continue learning while trying to implement their ideas.

In this ongoing transitions experiments, one cannot predict if a multiscale transition is indeed going to emerge, however, the results describe good experiments that should be followed and supported. Yet, integration in the communities through public policies are absent or forgotten in this process. Examples of initiatives such as Waldorf School, art events or organic agriculture activities should be supported by public policies to gain trust by local communities and authorities. As introduced in the present research, for a niche to develop, to trigger learning processes and ultimately a change of behaviours, the integration of skilled in-migrants and their acceptance by the local community are essential conditions to enable success. Increase capacity building promoting knowledge exchange among agents could be one way to enhance good practices already established. As in-migrants disentangle, new configurations it only depends if the accurate support is given to ongoing initiatives in order to become mainstream and lead to changes in regime. Thus, for shaping the future towards a better and more sustainable environment, the change should be steered in desired directions Shove and Walker (2007) namely, acting on look-in's, and constraints should not be overlooked or minimized.

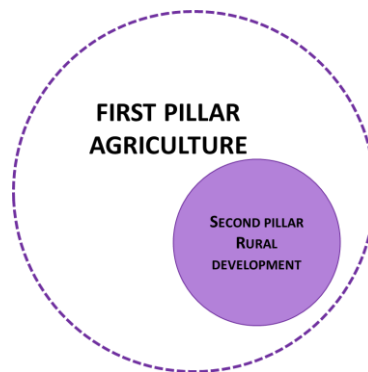
As Elinor Ostrom (2009, 2010) has pointed out time and again trust in one another and confidence that norms of reciprocity apply, are crucial for communities to engage in collective action and to care for their ‘common good’.

The described links between ESS and human motivations for migration and activities developed are a way to better understand the dynamics of coupled human and natural systems. The application of the SES concept in this study shows SES can be a promoter of development through the attractiveness of ESS and at the same time benefit from the arrival of skilled in-migrants.

## 7.5 Public policy addressing people attraction and transitions in rural SES

The public policy initiatives encouraging attraction to rural areas are promoted at different scales, target population and include diverse strategies to tackle the issue. Most of them include support to newcomers facilitating their integration into their new communities, providing information and advice on different aspects related to the rural settings. In contrast, the main policy for rural areas in Europe (CAP) namely its second pillar dedicated to rural development is focused on agriculture and forests considers that the investments in these sectors will increase rural areas attractiveness. For that, there are numerous measures to provide advice to farmers, to promote collaboration among stakeholders and to increase farming viability, competitiveness and address key environmental challenges. Despite the decrease in employment in the primary sector, the NRDP seem to prioritize the sector. This focus in the primary sector by the RDP was already observed by Ward and Lowe (2004) in England regarding another program period. Yet, Adams and Adger (2013) results show that the use of provisioning services for income is not the only way of attracting newcomers.

Indeed, due to its historical background and even the name CAP, the original focus of rural policy has always been the agricultural sector and continues like this (Figure 53). Additional, the current programming period has a planned total allocation for rural development much lower than the RD allocation of the previous programming period (ECR 2017) which reinforces the idea of the primacy of agriculture and forest.



**Figure 53 Relationship between first and second pillar of CAP**

For attracting in-migrants, Remoundou et al. (2015) suggest that policies could move away from traditional industries and contribute to restructuring the rural economy encouraging, for example, the service and knowledge-intensive sectors. As some authors point out, rural development differs from the development of agriculture and the countryside (van der Ploeg, et al. 2015; Ward and Lowe 2004). Therefore it appears that CAP could play a major role by being more open and flexible toward adopting more context placed policies (Hartel et al. 2016). This

could be done through the adoption of measures that enhance multisector activities and creates conditions to strength rural value chains.

As for the municipal policies the growth paradigm is still predominant, that is, the discourse and planning options continue quite optimistic regarding population increases. Yet, even the structures for public service delivery that were previously set up during (and in response to) past growth periods are no longer well suited for the present context, due to the demographic changes that were experienced. Despite of this, none of the analysed MMP includes in their documents the intention of adopting policy measures to capitalize existing infrastructures (e.g. old schools, museums) or to share equipment or services with neighbour municipalities.

This has important considerations for future work: rural areas are currently operating under an outdated policy approach, which is failing to appreciate the changes that are occurring in their territories. In addition, infrastructures such as ICT are not prioritized in none of the public policies analysed. Thus, one can expect with such an approach that the maintenance of the digital divide will continue to be a blocker for the development of rural areas.

However, these public policies most of the time are quite new and their implementation is not yet translated into sustainable livelihoods on the ground. In the future, it is of the utmost importance to ensure that public policies addressing rural attraction have in account sustainable development. The proposed factors of attraction and transition adopted in the present study can provide guidelines for policy design, although it is important to improve and test the selected factors on future empirical research.

As an opportunity for rural areas and to meet the growing needs of those living in rural areas European documents such as “Towards a Rural Agenda” or a White Paper for Rural Areas” advanced with guidelines for public policies design. These include measures such as foster innovation and skills in rural areas, strengthening rural value chains and local productive networks, improve access to PSI and balance urban-rural.

Thus, it is important to guarantee a better articulation of these public policies, in particular through an assessment of the consequences of repopulation policies at an international and national level and more meaningful support to those that are implementing successful initiatives at a municipal level. MMP should focus on the capacities of rural areas namely in Portuguese low-density territories to create value through endogenous resources and taking advantage on the proactivity of their actors.

To end, the lack of data on the success of the initiatives and public policies for population attraction may come as a blocker to its replication. In this context, it would be important to have obtained besides data on public policy being implemented also its monitoring and evaluation to enable understanding of their impact in the context of rural depopulation.

## **8 CONCLUSIONS AND FURTHER RESEARCH**

## 8.1 Introduction

The preceding chapters have explored key themes that have arisen from the theoretical and empirical work: ESS as drivers of population attraction, skilled in-migrants as agents of change and core ongoing public policies guidance for rural areas.

The research has been dedicated to addressing three research questions whose answers will be presented. This is followed by discussing a number of limitations and recommendations for future research.

## 8.2 Answering the Research questions

This research explores the conditions for transition processes enabled by skilled in-migrants, looking for empirical evidence in Portuguese rural settings following three research questions:

**RQ1 - Are ESS playing a role in attracting skilled in-migrants to rural SES?** As mentioned, although Portuguese rural areas are still facing population decrease, evidence from the empirical research show that there are recent migratory movements from metropolitan areas to low-density rural territories. Findings show an increasing trend of rural in-migration, the research then suggested that SES, and respective ESS, could be considered among the main motivations for this increase.

**RQ2 - What benefits and challenges skilled in-migrants enable in rural SES?** Skilled in-migrants have changed in more or less extent their new SES. In the sample, skilled in-migrants enrolled in diverse activities. They have also been responsible for promoting new products (touristic experiences or organic agriculture) and create new demands acting as a critical change agent. Some initiatives under study also promoted the involvement of the community encouraging greater intra-group exchange and knowledge exchange.

To answer the **RQ3 - Are policy-making and planning instruments leading sustainable transitions and attracting people in rural SES?** The results of this work show that skilled in-migrants and local stakeholders do have a wide perception of what kind of ecosystems services are available reinforcing that ESS will be important for the future of the region. This leads to the assumption that it is advantageous ESS in political decisions namely in policies to be implemented. Results show that the policies analysed (National and Municipal level) focus on boosting agricultural and forest sectors and that create specific measures for the delivery of regulation services (ESS) in these sectors. In addition, at a municipal level, there are already signs that point to a diversification of sectors encouraging, for example, the service and knowledge-intensive sectors however these is just a minority of the plans analysed. One of the utmost concerns is a lack of effective implementation of public policies for skilled in-migrants



integration in local communities. Although it is important to acknowledge the interest of the local authorities in the attraction of new inhabitants to rural areas and the value they place on the environment and its ESS none of the analysed policies (National and Municipal level) includes a focus on population attraction and integration, which may lead to a constraint when discussing the integration of newcomers in rural areas.

### 8.3 Contribution of the thesis

This thesis is a first step toward an integrated approach to the study of the links between SES, ESS, Human well-being, Social capital, and induced transitions by skilled in-migrants.

One contribution consists of broadening the geographic scope of the skilled in-migrants to include the Portuguese territory. These issues have been much more explored in North of Europe with some examples already existing in Spain and Greece. Within this skilled in-migrant group, however, their activities are not only focused on a sector such as agriculture or tourism. A most prominent contribution of this thesis is including crossing the in-migration processes with the understanding of rural ongoing policies for rural areas. In the policy domain, this thesis offers insights on worldwide initiatives to counteract rural depopulation. In conclusion, skilled in-migrants actions have the potential to scale up and drive rural transitions towards sustainability if well supported by public policies. In particular, skilled in-migrants have an important role in building social capital and adding value to rural social-ecological systems. At the same time, a key challenge for rural policy-makers is to promote public policies that contribute to sustainable transitions, which means that public policies must provide for social-ecological systems diversity and adaptive capacity. In this line of thought public policies have the potential to enhance the conditions to attract and integrate skilled in-migrants into rural areas increasing the essential social capital for sustainable transitions toward the adaptability of SES.

### 8.4 Limitations

This study had several limitations that must be acknowledged. Because this research focuses on a new emergent phenomenon, the first limitation that was the scarcity of the literature available on the research topic at in Portugal. The contingency plan for dealing with such scarcity was accounted for in the methodology: using other information sources (such as interviews with relevant stakeholders) and considering literature not only of the Portuguese case but also of other countries. Another relevant constraint is related to a small sample that limits the generalisability of the findings. For instance, the length of the e-questionnaire might have also contributed to this limitation influencing the response rate. To address this issue a lighter

version of the questionnaire in the exploratory phase of the research might have help to reach a higher number of in-migrants.

As researched followed the geographical location with more responses for applying the interviews at a regional and municipal scale the areas surveyed are not coincidence with the ones offering more nature conservation areas and therefore according to the thesis the ones able to attract more people to live in. However, as shown the results on both surveys are align which also indicates despite not having ousting beauty site or areas with a high level of biodiversity people value natural assets per see and still consider environmental related issues as the main motivation for moving. Considering the findings of the exploratory questionnaires, in the end, results may or may not be consistent with other parts of the Portuguese territory. Also, the results of the exploratory questionnaire were analysed through interpretation and this may be biased. Furthermore, finding someone willing to be interviewed was a struggle in this research and the interview design was limited to a number of restrictions. Particularly the telephone interviews open some disadvantages in terms of implicit data such as visual expressions. During the proposed researched another critical aspect was the time scope. The contingency plan for dealing which such case was to reduce the number of case studies. The fact that a reduced number of in-migrants were interviewed to understand the role of immigrants on rural social-ecological systems, can also pose issues of representativeness of the findings, and again, of generalisation.

Regarding the interviews to municipal stakeholders, the sample obtained was reduced. This happened probably because all parishes from the three municipalities where the research had obtained more answer on the exploratory questionnaire were contacted by e-mail.

Yet, the referred limitations of data collection were addressed by using different methods (questionnaires, interviews, document analysis), allowing triangulation of sources information (from different places and people) and to some point increase the credibility and trustworthiness of the research. This prompt the researcher, to the best of its abilities considering the availability of information, to and to provide contextual information on the role of in-migrants on rural social-ecological systems in the empirical analysis. The presented limitations should be addressed in future studies to explore the replicability of the results.

## 8.5 Recommendations for future research

There are several implications for further research. Firstly, it would be relevant to conduct a longitudinal study to monitor and understand the evolution of ongoing initiatives that enable sustainable transitions in rural SES. This could be addressed by applying a social-ecological

diagnosis at a community scale and by defining criteria for measuring the impacts new initiatives may create on the SES.

Secondly, and not less relevant, it would be necessary to explore the institutional support and mechanisms that enable the exchange of experiences, namely diverse types of knowledge within the communities.

Finally, from a spatial planning perspective, future research could include the evolution of ESS at local scale identifying ways to enhance the provision of ESS contributing to the wellbeing of the communities.



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## APPENDICES



# APPENDICE A E-QUESTIONAIRES

12/2/2014

Qualtrics Survey Software

## Introdução

Caro participante,

Este inquérito enquadra-se no âmbito de uma investigação de doutoramento cujo foco são as pessoas que deixaram a cidade e foram residir para áreas rurais. A investigação insere-se no programa de doutoramento em Engenharia do Ambiente do Instituto Superior Técnico, Universidade de Lisboa (IST/UL) sob a orientação da Professora Maria do Rosário Partidário.

Se deixou a cidade e optou por ir residir numa área rural, este inquérito é para si.

Os objetivos são:

- **Identificar as principais motivações que o/a levaram a mudar-se para uma área rural;**
- **Identificar os fatores que o/a atraíram e as condicionantes/dificuldades que encontrou após a mudança.**

As respostas a este inquérito e conclusões após tratamento são confidenciais e utilizadas exclusivamente para fins de investigação.

Seria importante contar com a sua participação. O inquérito tem trinta questões onde se pede que selecione a resposta com que mais se identifica. Este ocupará cerca de 15 minutos e está disponível até 22 de Novembro.

Muito obrigado.

Rute Martins Cegonho  
Doutoranda em Engenharia do Ambiente do IST/UL

## Dados gerais

Q1.

Código postal do local de residência atual

Q2.

Código postal do local de residência anterior

Q3. Género

Q4. Habilitações

Q5. Área de formação

Q6.  
Idade

Q7.  
Nacionalidade

Q8. Naturalidade

Q9. Indique as idades dos membros do agregado familiar:

	0-19 anos	20-64 anos	Mais de 65
membro 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
membro 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
membro 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
membro 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
membro 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### Processo de mudança de residência

Q10. Indique, por ordem da mais importante (1) à menos importante (5), as motivações para si determinantes para deixar a cidade:

- Custo de vida elevado
- Oportunidades de emprego
- Regresso ao local de origem

- Ter amigos e/ou familiares no local de destino
  - Redução dos tempos de deslocação para o trabalho
  - Tranquilidade das áreas rurais
  - Amenidades rurais
  - Qualidade do ambiente rural
  - Outro (especifique)
- 

Q11. Na eleição do atual local de residência, avalie o grau de importância que cada um dos seguintes elementos teve em detrimento de outra área rural, de acordo com a escala apresentada:

	Sem importância					Elevada importância					
	0	1	2	3	4	5	6	7	8	9	10
Acessibilidade rodoviária a centros urbanos											
Tempo de deslocação para o trabalho											
Proximidade de família e amigos											
Comunidade receptiva a novos moradores											
Comunidade local ativa											
Disponibilidade de habitação											
Níveis de serviços locais (eg. comércio local, correios)											
Acesso a cuidados de saúde											
Estabelecimentos de ensino											
Proximidade à natureza											
Níveis de poluição											
Outros:											

Outros: <input type="text"/>																			
Outros: <input type="text"/>																			

Q12. Em que ano mudou para a atual residência?

Q13. As expectativas que tinha quando planeou a mudança correspondem à realidade encontrada?

Sim

Não. Por favor indique as três principais razões:

Q14. Para o seu processo de mudança contou com algum apoio financeiro/logístico?

Q15. Se sim, por favor indique o(s) apoio(s) que obteve

Amigos

Subsídios nacionais/locais

Propriedades familiares

Casa de família

Incentivos nacionais/locais

Outros:

Q16. Está inserido em algum projecto de dinamização das áreas rurais?

Sim. Qual?

Não

Q17. Quais foram para si os principais aspetos negativos na hora de se instalar?



(Por favor indique até três aspetos por ordem decrescente de importância)

1	<input type="text"/>
2	<input type="text"/>
3	<input type="text"/>

### Atividade Profissional Passada e Presente

Q18. Qual a sua situação profissional antes de mudar de residência?

- Trabalhador por conta própria – empregador  
 Trabalhador por conta própria – isolado  
 Trabalhador por conta de outrem  
 Desempregado  
 Outro:

Q19. Em que área exerce a sua atividade profissional?

Q20. Em relação ao seu local de trabalho por favor indique:

	Tele trabalho (trabalho à distância)	Trabalho presencial
Atividade profissional antes da mudança	<input type="radio"/>	<input type="radio"/>
Atividade profissional após a mudança	<input type="radio"/>	<input type="radio"/>

Q21.

Após o processo de mudança, mudou de actividade profissional?

Q22. Se Sim, quais as atividades profissionais que exerceu desde que se estabeleceu na região atual?

	Área de actuação
Atividade actual	<input type="text"/>
Atividade anterior	<input type="text"/>

Q23. Qual a sua situação profissional atual?

- Trabalhador por conta própria – empregador
- Trabalhador por conta própria – isolado
- Trabalhador por conta de outrem
- Desempregado
- Outro:

Q24. A sua atividade profissional atual está relacionada com o património natural local (exemplo: turismo natureza agricultura e floresta, atividades ao ar livre)

- Sim. Qual?
- Não

Q25. Qual o grau de dependência da sua atividade profissional em relação aos recursos naturais locais? Por favor classifique de 0 (nenhuma dependência) a 10 (completamente dependente).

Nenhuma dependência

Completamente dependente

- |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 0                     | 1                     | 2                     | 3                     | 4                     | 5                     | 6                     | 7                     | 8                     | 9                     | 10                    |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q26. Se é empregador por conta própria emprega pessoas da comunidade onde está instalado?

Q27. Para além da sua atividade profissional principal exerce alguma outra actividade?

Q28. Se SIM, indique em qual dos seguintes os domínios:

- Turismo
- Lazer
- Agricultura de produção
- Agricultura de transformação
- Silvicultura
- Outro:

**Relacionamento com a comunidade local**

Q29. Tem contato com a comunidade local?

Q30. Envolve-se em eventos da comunidade?

Q31. É membro de alguma organização local?

 Sim, Qual? NãoQ32. Como classifica a sua satisfação em relação à sua mudança?  
Por favor classifique de 0 (nada satisfeito) a 10 (completamente satisfeito).

Nada satisfeito

0

1

2

3

4

5

6

7

8

9

10

Muito satisfeito

**Futuro**

Q33. Planeia mudar de residência dentro dos próximos dois anos?

Q34.

Se respondeu SIM, por favor indique até três razões:

1

2

3

Q35. Dos fatores abaixo apresentados, por favor indique os que o/a fazem permanecer no seu local de residência:

- Custo de vida
- Oportunidades de emprego
- Local de origem
- Ter amigos/ou familiares no local
- Redução dos tempos de deslocação
- Tranquilidade do local
- Amenidades rurais
- Qualidade da água e ar
- Outro (especifique)

Q36. Estaria disponível para participar na continuação desta pesquisa e para futuro contato?

- Sim, abaixo indique o seu contacto de e-mail

- Não

Q37. Tem algum comentário ou alguma informação adicional que queira deixar?

**FIM**

**Agradecemos o tempo despendido e a sua contribuição para a presente investigação, durante o mês de Dezembro terá acesso aos primeiros resultados da mesma.**

Se conhecer alguém cuja mudança se enquadre na investigação associada a este inquérito agradece-se o reencaminhamento do mesmo ou o fornecimento do contacto no espaço abaixo.

Para qualquer esclarecimento ou contributos adicionais relacionados com os temas abordados não hesite em contactar-me: [rutemartinscegonho@tecnico.ulisboa.pt](mailto:rutemartinscegonho@tecnico.ulisboa.pt) ou 968912747.





## **APPENDICE B INTERVIEW REQUEST**

### **a) Skilled in-migrants**

Caro Sr/Sra,

#### **QUAL A FINALIDADE DO ESTUDO?**

O objetivo deste estudo é perceber as mudanças individuais e coletivas do processo de migração urbano-rural.

Assim, convido-o a participar numa entrevista telefónica sobre cinco temáticas:

- Estilos de vida;
- Bases de confiança com a comunidade;
- Aprendizagem e redes;
- O território onde vive e seu futuro.

#### **QUEM É A RESPONSÁVEL PELO ESTUDO?**

O meu nome é Rute Martins Cegonho e estou a desenvolver o doutoramento em Engenharia do Ambiente no Instituto Superior Técnico, Universidade de Lisboa (IST/UL) sob a orientação da Professora Maria do Rosário Partidário.

#### **COMO É QUE OBTIVE O MEU CONTATO?**

O seu endereço eletrónico foi-me facilitado por si na primeira fase deste trabalho quando colaborou no questionário online em novembro de 2014.

#### **TENHO QUE PARTICIPAR?**

A participação no estudo é voluntária. Se você decidir participar, o seu contributo enriquecerá o nosso estudo. O tempo médio estimado para completar a entrevista é de 45 minutos.

#### **AS MINHAS RESPOSTAS SÃO CONFIDENCIAIS?**

Sim. As suas respostas serão apenas tratadas no âmbito deste estudo e não será identificado.

#### **COMO AGENDO A ENTREVISTA?**

Para agendar a entrevista telefónica basta responder a este e-mail, indicando a sua disponibilidade (dia e hora) e aguardar a confirmação da mesma.

Para qualquer esclarecimento ou contributos adicionais relacionados com a investigação não hesite em contactar-me: [rutemartinscegonho@tecnico.ulisboa.pt](mailto:rutemartinscegonho@tecnico.ulisboa.pt) ou 968912747.

Agradeço desde já a sua disponibilidade

Rute Martins Cegonho

## b) Local Stakeholders

Exmo(a) Sr(a)

Estabeleço o presente contato no âmbito de uma investigação de doutoramento em Engenharia do Ambiente do Instituto Superior Técnico, Universidade de Lisboa (IST/UL).

### **Objetivo:**

Conhecer a perspetiva dos atores locais sobre a atração de novos residentes ao município e o contributo dos serviços dos ecossistemas para o desenvolvimento local.

**Entrevistados:** Atores locais que vivem no território "permanentemente" há pelo menos 20 anos. Entre os estudos de caso selecionados o seu município foi um deles.

Se tem o perfil mencionado convido-o a participar numa entrevista via telefone/skype com a duração de 30min a agendar na *primeira semana de Junho* ou outra data que lhe for mais conveniente.

A sua perspetiva é importante pois contribui para a evolução desta investigação.

Para qualquer esclarecimento ou contributos adicionais relacionados com os temas abordados não hesite em contactar-me: [rutemartinscegonho@tecnico.ulisboa.pt](mailto:rutemartinscegonho@tecnico.ulisboa.pt) ou 968912747.

Muito obrigado.



## APPENDICE C TOPICS COVERED IN SKILLED IN-MIGRANT INTERVIEW

### Estilos de vida

Preocupa-se em reduzir a pressão sobre o ambiente? Dê exemplos (*eg. reciclar, uso de materiais mais duradouros*)

Produz os seus próprios alimentos? Consome produtos de produtores locais?

Medidas de conservação e/ou valorização dos recursos naturais no seu dia a dia ou na sua atividade profissional? Pode dar-me exemplos? (*eg. reabilitação de ribeiras, recuperação de habitats*)

O fato de estar num meio rural faz com que usufrua mais do espaço natural? Considera que tem boas condições para o acesso e usufruto deste espaço? Isso alterou a sua vida? Como?

Como variou o seu poder de compra desde que se fixou? ( *aumentou/diminuiu*) Corresponde às suas expectativas? Porquê?

Quais as suas principais fontes de rendimento?

Teve que investir capitais próprios quando migrou? (*e.g. para montar o seu negócio ou construir a sua casa*) Depende de incentivos para manter a sua atividade? (*e.g. governo, fundos europeus, etc.*)

### Aprendizagem e redes de relações

Procura aprender sobre o contexto onde está inserido? Porquê? A que fontes recorre?

Como é que a comunidade o vê? (*e.g. como um ajudante, ativo, competidor*)

Já participou nalgum intercâmbio de conhecimento e práticas na comunidade? Dê exemplos de questões partilhadas.

Além do seu trabalho está inserido nalguma outra organização/rede/associação? Qual? O que procura nestas redes? Qual o papel que desempenha?

Tem contato com outros migrantes rurais? Partilha experiências com eles? Quais eram os pontos em comum?

Em que situações recorre à administração local? Como tem sido apoiado por esta?

### O território e o seu futuro

Está satisfeito com os serviços públicos e infraestruturas o local onde habita? (*saúde, educação, transportes, telecomunicações*) Porquê? Recorre a serviços alternativos? (*on-line ou noutra região*)

Já encontrou alguma situação que o fez pensar em regressar? Como a ultrapassou?

Quais deveriam ser as apostas para a dinamização da região por parte das autoridades locais?

E que mudanças na região gostaria de promover pessoalmente? O que precisaria para as concretizar?

### Características gerais

Agregado familiar a contar consigo (*nº, filhos e idades*)

Sector de atividade em que trabalha (*eg. agricultura, turismo, ong, investigação*)

Habilitações e área de formação

Experiência com voluntariado, trabalho comunitário



## APPENDICE D TOPICS COVERED IN LOCAL STAKEHOLDERS INTERVIEW

### Objetivo:

Perspetiva dos atores locais sobre a atração de novos residentes e o contributo dos serviços dos ecossistemas para o desenvolvimento local.

Especificamente pretende-se:

- Identificar interações entre agentes da comunidade;
- Explorar as medidas implementadas que contribuem para a atração de novos residentes;
- Analisar potencial para atrair novos residentes através dos serviços dos ecossistemas.

### Início

- **Agradecer a disponibilidade**
- **Pedir para gravar**
- **Confirmar que vive no território há cerca de 20 anos**

### Questões:

- 1) Na sua opinião qual a importância (1 menos importante a 5 mais importante) de atrair novos residentes ao município? Porquê?
- 2) O que considera que atrai novos residentes ao seu município?
- 3) Qual é a sua perceção acerca das medidas ou ações concretas que têm sido implementadas para atrair mais residentes ao município?
- 4) Na sua opinião quais foram as medidas mais bem-sucedidas? E as que não cumpriram os objetivos estabelecidos?
- 5) Do seu ponto de vista que recursos, produtos e/ou serviços existentes no concelho poderiam contribuir para a atração de novos residentes?
- 6) Tem conhecimento de projetos de colaboração entre os residentes de longo prazo e novos residentes no município?
- 7) Conhece alguém que não tenha conseguido instalar-se em concelhos do interior do país por dificuldades encontradas? Quais foram os problemas encontrados?
- 8) Para o objetivo desta entrevista, na sua opinião existe mais alguma informação que considere relevante e que não foi aqui tratada / mencionada? Se sim, qual(is)?

