

Journal of Rural and Community Development

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Citation:

Martins, R., & Partidário, M. (2020). Transitions in rural areas motivated by demands on ecosystem services: Empirical results from Portugal. *The Journal of Rural and Community Development*, 15(1), 136–155.

Publisher:

Rural Development Institute, Brandon University.

Editor:

Dr. Doug Ramsey

Open Access Policy:

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Transitions in Rural Areas Motivated by Demands For Ecosystem Services: Empirical Results From Portugal

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Abstract

A transition in rural areas affected by in-migration is underway, with social-ecological systems (SES) becoming more diverse in its activities and in its social capital. In this context, ecosystem services (ES) may be acting as a pull driver for incomers, while its delivery also depends on the increase of social capital in rural areas. This paper investigates this mutualism between ES and SES, particularly whether SES and the inherent ES can stimulate attractiveness to rural areas and promote development, while also benefiting from incoming skilled in-migration. The engagement of in-migrants with rural SES and their demand for ES in rural areas is examined through literature review, observing the phenomena in different cases worldwide, and illustrated with empirical observation in rural Portugal. Results from our empirical observation reveal that the arrival of in-migrants triggers the delivery of new ES such as provisional or cultural services and that these are key to generate positive outcomes for rural SES.

Keywords: rural in-migrants, ecosystem services (ES), social-ecological systems (SES), agents of change, transition

1.0 Introduction

As acknowledged by Woods (2011) the use of rural space for leisure and recreation by a predominantly urbanized population has been transforming the rural areas mostly in developed countries in the North of Europe, challenging the primacy of agriculture. This reveals a transition away from traditional rural to urban migration, linked mostly to a new dynamic in social-ecological systems (SES). SES have been defined as dynamic systems that stand in the interconnection of social systems with the related ecosystems, whereby these become fully integrated with the human society (The Resilience Alliance, 2010). SESs are becoming more diverse (Hedberg & Haandrikman, 2014) in their activities and social systems (Phillips, 2010). When exploring how in-migrants can lead to significant changes in rural SESs and ESs, the link between SES and ES can be quite relevant, yet it appears insufficiently explored in the literature.

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 (Boyd & Banzhaf, 2007; Costanza

et al., 1997). The ES concept remarkably helps in framing the interactions between ecological and social systems, representing the direct and indirect benefits that people obtain from ecosystems (Millennium Ecosystem Assessment [MEA], 2005).

While the ecosystem provides services, humans intervene in ecosystems in different ways (Schouten, van der Heide, Heijman, & Opdam, 2012), both positively and negatively. That way, any change in ES will influence SES, and vice versa. Following this line of thought, the analysis of interactions in SES provide an opportunity to look into changing dynamics in rural areas and to the potential synergies between social and natural systems. Addressing ES in this context can help to consider, and promote, a suggested mutualism between SES and ES.

The main objectives of this paper are to (a) develop a deep understanding of how in-migrants engage with SES and create new development opportunities, (b) contributing to the advancement of new insights towards sustainable transitions in rural areas, and (c) examining the role of ES in creating rural attraction. Using evidence from Portugal as one of the European countries that is most affected by rural depopulation and an unbalanced territorial development, the paper focuses on processes of installation of in-migrants in rural SES and their relation with the social and ecological systems, namely how they use and deliver local natural resources and ES, and how do they connect with other social groups.

The paper is structured in three sections. The first section reviews the literature in relation to the importance of ES in attracting in-migrants to rural areas. This is based on a review of in-migrants motivations and also a review of the transitions in SES enabled by in-migrants in rural areas. In the second section, we present the results of the empirical research focused on the main activities created by in-migrants and their level of influence in the SES where they moved. We further analyse how the social and economic background of in-migrants may influence their relationships with the local community and the respective biophysical environment. The paper then discusses the results and concludes by suggesting how such research could support rural policy.

2.0 ES, SES and Rural In-migration

2.1 Relevance of ES in Urban to Rural Migration

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 (Boyd & Banzhaf, 2007; Costanza et al., 1997). The concept was defined by Millennium Ecosystem Assessment (2005) as the benefits people derive from ecosystems, including critical life-support functions upon which our societies depend (Millennium Ecosystem Assessment, 2005). As human welfare depends on whether these services improve or deteriorate (Costanza et al., 1998), this may lead to uneven impacts of biodiversity loss on well-being 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, largely beyond the roles of provisioning food and raw materials to support human life (Sandifer, Sutton-Grier, & Ward, 2015). The ES paradigm contributes to changing the traditional view of nature conservation as a trade-off for human well-being, seeing nature as an important contributor to human wellbeing (Carpenter et al., 2009).

The MEA (2005) structured ES into four major categories that became universally recognized: (a) provisioning, (b) regulating, (c) cultural, and (d) supporting services. Provisioning services are physical products such as food, fiber and fuels. Regulating services are the processes that happen in nature, for example, water cleansing, nutrient filtration, climate regulation, and so forth. Cultural services are often intangible services, such as aesthetics, sense of place, religious worship, but also direct uses such as recreation, ecotourism, scientific value, and education. Supporting services are all the underlying, long-term processes in nature: (a) net primary products, (b) nutrient cycles, (c) soil formation, and (d) climate stability that secure the provision of the direct ES to humans (MEA, 2005). This framework enables a proxy to measure the value of local ecosystems, in terms of acquired benefits, to local populations.

Ecosystem characteristics and services, such as climate, scenery and tourism potential were acknowledged back in 1954 as drivers of population growth in the States of Florida, Arizona and California in the United States (Ulman, 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 migration and significant population increase (Ullman, 1954). At the local scale particular value is given to local heritage amenity services that are included in the wider category of cultural services (Hein, van Koppen, Groot, & van Ierland, 2006).

The advantages of rural areas for human wellbeing often lie in its natural resources-based amenities for tourism, leisure, agricultural production and other activities enabled by the ES. As suggested in the literature, natural and built landscapes, and their intangible features—peaceful, quiet, safe or friendly places—play an increasingly important role in the migration decision of urban out-migrants (Mitchell, 2004; Silva & Figueiredo, 2013). These ES motivations have been recognized through the lens of migration processes, especially urban to rural migration. In Portugal, this is a recent movement when compared to other Western European countries. Consequences are still unknown and therefore difficult to compare with international cases, particularly in terms of rural intervention driven by rising consumption demands (Figueiredo, 2003).

Within the Portuguese context, rural in-migration has been explored from different perspectives. Roca (2001) presented the different types of new rural movements coming from urban areas and enrolling in agricultural practices in rural areas their contribution to rural development. More recently Leal (2014) characterized initiatives closer to radical ruralities (Halfacree, 2007) and its implications for spatial planning.

Types of in-migration to rural areas have been named differently according to its ES 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 & Haartsen, 2012) or New Zealand (Thulemark, 2015). All these cases emphasize the importance of ecosystem characteristics and services and rural lifestyles in urban to rural migration.

2.2 Transitions in SES Enabled by In-migrants

Transitions brought up by in-migrants in rural communities have influenced SES directly through management practices, and indirectly through the establishment of new networks, creation of jobs or social relations at the community level. In-migrants have been responsible for a redefinition in land management,

embracing a full range of production, lifestyle and amenity values and a transition of rural landscapes from production to consumption (Holmes, 2008). 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 farming (Patarchanova, 2012). Natural resources are used and new markets developed by the land owners, however it is not clear whether these actions have positive or negative impacts in land management (Cooke, 2012). Some examples follow to illustrate.

In Cumbria—United Kingdom—in-migrants increased significantly the number of businesses offering employment and opportunities to other rural inhabitants (Kalantaridis & Bika, 2006). For Sorice, Kreuter, Wilcox, and Fox (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 drives ecological change. Likewise, Cooke (2012) argues that lifestyle landowners are actively shaping ecological systems destination. A study in Scotland observed that in-migration to rural areas makes a substantial contribution to job growth and rural labour markets (Stockdale, 2006) both for in-migrants and for others living in the rural community. 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).

According to Bosworth (2010) not only are in-migrants able to establish businesses, generate new income and create more jobs, 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 (Herslund, 2012; Krannich, Luloff, & Field, 2011) 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 (Nadler, 2012; Stockdale, 2006).

Another perspective, no less relevant, on the impacts of rural in-migration is the modification of the social system. The modification of the population in depopulating areas affects the production of social capital (Meijer & Syssner, 2017). In-migrants in rural areas in developed European countries 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). As argued by Putnam (2001) social capital is understood in terms of trust-based networks of society engagement. Also in low-density areas or even depopulated areas, the interactions between different actors could result in several benefits (Meijer & Syssner, 2017). Bosworth and Willett (2011) observed that in-migrants tend to bring new skills and extensive networks facilitating social mobility and providing more access to resources and services, for example, employment and education. According to Prados (2005) in-migrants change the socio-demographic composition and the professional structure of the population. In Australia a study observed that in-migrants redefining rural spaces are from higher socio-economic backgrounds (Argent, Tonts, Jones, & Holmes, 2009). Some authors see this as a risk, alerting to the fact that social capital can favour especially those who are already well-resourced possibly leading to an elitism that can undermine the greater societal good (Saint Ville, Hickey, Locher, & Phillip, 2016). Often new residents, as strangers, may be seen as a threat since, according to Byles-Drage (2008) this may mean future sharing of power.

However, this interaction between newcomers and local population may also stimulate the latter to become more entrepreneurial (Akgün, Baycan-Levent, Nijkamp, & Poot, 2011). It could be argued that in rural areas that are not prepared for such demand this may come as a negative consequence for rural SES. For example, in the cases of England and Spain, Solana-Solana (2010) reveal that increasing rural in-migration lead to a rise in housing prices due to its low supply. Locals may attribute the increased housing costs to newcomers, eventually disturbing social cohesion (Wilbur, 2012).

Most literature discusses in-migration centred on human motivations. As shown, many scholars refer to ES as an important motivation in rural in-migration, but few discuss the potentially promising transitions rural in-migrants can bring to ES and rural SES. The present paper intends to contribute to fill in this gap by providing new insights on the extent to which existing SES can attract new actors and promote sustainable social-ecological transitions.

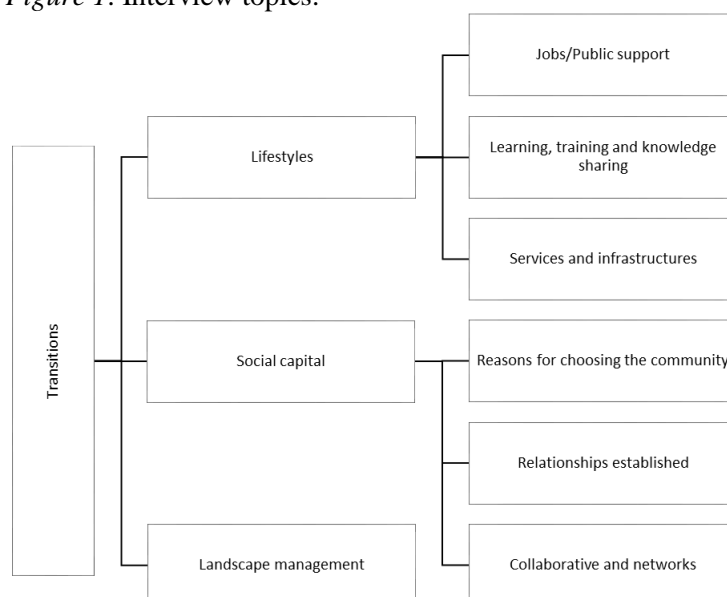
3.0 Materials and Methods

Our research included a review of the main existing literature on rural in-migration to learn about in-migration process, particularly to find out about the relevance of ES within those processes and its influence on the SES. The literature reviewed involved published scientific articles in peer review journals and book chapters with the purpose of understanding the state of play in rural in-migration and relationship to SES.

We then developed an empirical case study in Portugal to seek rural in-migration motivations from first data sources through interviews to skilled urban to rural migrants.

Semi-structured interviews with twenty-four guiding questions (see Figure 1) were conducted between November 2016 and March 2017 and lasted between 30 to 60 minutes. All the interviews were recorded and transcribed with the permission of all participants and analysed using QSR NVIVO© v.11, a software for qualitative data analysis. This process provided an opportunity to get familiar with the data and to identify common themes.

Figure 1. Interview topics.



The empirical study in Portugal focussed on the central region. We chose this region because it is a territory with levels of rurality above the average of mainland Portugal (Centro Regional Coordination and Development Commission, 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. The interviews had the intention of including a diversity of people that moved from large cities to smaller rural areas, with no limitations regarding their motivation, professional activity or date of moving. Individuals were 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 attraction of population into rural areas and contributing to its life quality, were contacted, resulting in eight positive answers. Third, by personal connection, two contacts were made and accepted to participate.

Phone call interviews were conducted with twelve individuals that moved to a low-density territory. To conduct the interviews, an e-mail was sent to invite individuals to participate in the study and to schedule the interview made in the agreed date. The interviews were made by phone. The availability of inexpensive, relatively easy-to-use technologies have made it more efficient to conduct audio interviews (Deakin & Wakefield, 2014).

Table 1 summarizes respondents and their characteristics. Of the twelve interviewed: a) eight were male, b) the average number of household members was three, c) the average residence in the rural locality was six years, and d) five of them were already familiar with the area when they moved in. From the individuals interviewed, six have children, making up a total of 14 children.

Individuals moved to eight different municipalities in the centre region that share similar problems such as the loss of population from 2011–2016 and the fact that most of its population is employed in the tertiary sector (see Table 2).

Other criteria involved in the choice of the study area include the type of ecosystems. The same municipalities have a great diversity of ecosystems related to the forest and the agricultural mosaic and mountain systems. Forest ecosystems when managed may provide a variety of ecosystem services such as (a) recreation, (b) landscape, (c) carbon sequestration, (d) watershed protection, (e) protection from soil erosion, and (d) biodiversity. Indirect uses includes 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 Park¹. 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 practices².

¹ http://www.cm-seia.pt/images/pdf/gabineteflorestal/caderno_2_informacao_de_base.pdf

² <http://www.cm-vvrodao.pt/media/455747/Relatorio.pdf>

Table 1. *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	
J	M	6	N	N	Y	Agriculture
L	F	4	Y	Y	N	
M	M	1	N	Y	Y	

Table 2. *Social-economic Characteristics of Municipalities*

	N° of inhabitants (2016)	Area (km²)	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

4.0 Results

The natural environment and lower levels 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 they now have more time available to enjoy outside activities. This contact with nature includes appreciating the natural scenery and learning to identify new plants and animals. The sensation of relaxation provided by nature during the working period was also a benefit emphasized by the interviewees. Other nonmaterial benefits expressed by the interviewees were the feeling of safety and health benefits brought by fresh air and less noise pollution in rural settings, which interviewees value in their living place.

All of the aspects mentioned above are directly connected with ecosystems and its services. Table 3 summarizes the ES related factors of attraction mentioned by the interviewees. Results show that interviewees are mainly attracted by factors related to regulating and cultural ES.

Table 3. *Ecosystems Service-related Factors of Attraction*

Type of ES	Factors of attraction
Provisional	Food—Access to fresh products and eating healthier; being able to produce their own food
	Fewer cars and less pollution, increased air quality
Regulation	Fresh air with health benefits
	Safety of the rural environment
	Nature related activities—tracking, river swimming, picking blueberries, cycling
Cultural	Aesthetics and beauty of the site
	Opportunity to work outside in natural sites
	Calm life and rhythm - less stress “slow living”

All ES categories were mentioned by interviewees as important factors for living in a rural setting. The regulating services such as fresh air with health benefits, safety and less pollution were factors mentioned in the interviews. Regarding cultural ES, the benefit gained from the rural lifestyle enabled the possibility of enjoying and promoting tracking, cycling and river swimming for them and also for visitors. Some factors regarding provisional services were also mentioned such as the use of ES with the direct benefit of producing and consuming their own healthier food.

Also, their main professional activity is related to ES. In-migrants have been investing in nature tourism and infrastructure for sports and leisure, creating new products with organic farming and promoting local traditions and knowledge dissemination (see Table 4).

Table 4. Interviewees' Actions That Increase the Delivery of ES

Type of Es	Actions That Increase the Delivery of ES
Provisional	Medicinal resources—production of essential oils from plants
	Food—organic production; selling products (olive oil, sheep)
	Planting autochthones species
Regulation	Detecting forest fires—volunteer forester
	Stream restoration not only in their lands but also in the lands of neighbours
	Creation of touristic experiences: one-day grape harvest, farm to table program
	Perpetuate traditional knowledge through arts
Cultural	Creation of a camping site
	Cycling tourism: design, planning, tourist infrastructure for nature tourism
	Develop activities regarding traditional knowledge and natural ecosystems

As an example of a cultural ES, one of the interviewees created a song called *lenga lenga da queijeira* that describes systematically 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 and promotes the delivery of ES.

Results show that in-migrants recognize they receive direct benefits in their life and professional activities associated with ecosystems, and therefore some examples were given relating to the way they promote and maintain (a) nature conservation, (b) low consumption patterns, and (c) management practices: contributing in this way to long-term sustainability of natural resources. In-migrants gave examples of attempts at implementing systems based on renewable energy, namely by adopting systems of sustainable energy—solar and heat recovery—and using natural materials—such as stone, wood, and cork—for building constructing. In most cases, they have also been restoring and renovating old buildings, reusing, when possible, old materials instead of building new structures. Regarding those working in the agricultural field, three out of four practiced organic farming, 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 pressuring land, we do the crop rotation so that there can be maximum use of resources without introducing fertilizers, pesticides, herbicides”. Yet, 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 to different suppliers”.

The arrival of new people to a community may also carry benefits related to establishing learning processes that should not be undervalued. The interviews reveal that in-migrants have improved their knowledge regarding ecosystems and the services they provide due to their new activities.

The acquisition of new knowledge for the implementation of their new activities was done in two ways: some interviewees took advantage of their previous work experience, and having family in the business, to develop activities. While other interviewees had no previous knowledge or support to manage their new activity. These have overcome their knowledge gaps through self-learning and through knowledge sharing. The latter involved a learning process, where older residents in the local community with longer-term empirical experience and new arrivals shared experiences namely on climate and biophysical variability of the region.

Lack of networks inside the community is often one of the major challenges for rural in-migrants (Brown, 2010). This is in line with our sample results that show that not all participants benefit from a good social 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 several obstacles. 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 who most easily established relationships within the community were those with children and the professional artists. 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 he, together with another couple of in-migrants, 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 the 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.

To understand the degree of integration in the new SES, 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 were 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 as they only have to go to regional hospitals when they have to consult a specialist.

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 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 rehabilitated old buildings, in order to have a place to stay. As for education services, those who have children in elementary school mentioned the importance of having free access to education, while 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. Finally, public transport is poor, which means that having a car is a prerequisite in rural areas.

On the subject of financial support, four interviewees have had support from European funds, namely the rural development program, to develop their activity. This support was mainly used to recover buildings in ruins and other construction facilities for tourism purposes.

Local authorities, as is the case of the municipality and the parishes, see newcomers as a positive factor, recognizing benefits that emerge from new projects brought to the territories by 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 5 summarizes the opinion of interviewees on the support they have had from the local authorities.

When asked their opinion regarding the needs and priorities for the region, the most frequent responses given by in-migrants were that decentralization of services and enterprises should be encouraged, skilled people should be attracted to the region, and cooperation between municipalities promoted. In addition, interviewees underlined that both territorial and digital communication systems are an essential need and fundamental to strengthen any economic activity and therefore this must be ensured.

During the interviews, in-migrants shared the initiatives carried out in the place where they moved. Some were previously planned while others emerged 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 6 shows the various initiatives described above including information on its location, type of activities, aims, date of implementation, interviewee that is leading the initiative—according to the code in Table 1—and website where more information about the initiative can be acquired.

Table 5. Interviewees Opinions Regarding the Support Given by Local Authorities

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

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. There are in-migrants that have promoted more than one initiative, in these cases, one is related to their business and another is to respond to a lack of services in the community benefiting a wider society. Agricultural activities are normally done as organic farming, and Quinta das Lameiras in São Pedro de Tomar was the first organic farm in the municipality. The three initiatives related to agriculture sell their products, distributing fresh organic baskets in nearby cities, allowing farmers to integrate farmers into extra-local food networks. 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. In the case of Amigos da Ferraria de São João the activities promoted enrolled diverse actors of the community, and beyond the community.

Table 6. Main Information on the Initiatives Promoted by In-migrants Interviewed

Name of the initiative	Village, Municipality	Type							Date	Aim	Interviewee code (Table 1)	Source of information
		Organic Agriculture	Tourism	Nature conservation	Education	Civic	Arts					
1. Lugar do Ainda	São Vicente da Beira, Castelo-Branco		X						2016	Rural tourism business	B	https://www.facebook.com/lugardoainda/
2. Amigos da Ferraria de São João ³	Cumeeira, Penela			X	X	X			2011	Value the patrimony and cultural aspects of the village	F	https://www.facebook.com/pg/ferraria-desaojoao/events/?ref=page_internal
3. Vale do Ninho Nature House			X						2015	Sustainable eco-tourism business	F	http://www.vn-nature.com/
4. Companhia de Teatro a Chanca	Rabaçal, Penela							X	2015	Professional theatre company	E	https://www.facebook.com/companhiadachanca/
5. Community of Cherry trees ³					X				2016	Waldorf school ⁴	E	http://projetodafelicidade.wixsite.com/happinessproject
6. Encerrado para Obras	Penela, Penela							X	2008	Professional theatre company	D	https://pt-facebook.com/encerradoparaobras/
7. Villa Travancinha	Travancinha, Seia		X						2015	Rural tourism business	H	https://pt-facebook.com/VillaTravancinha/
8. Oleos Essenciais	São Romão, Seia	X							-	Production of biologic essential oils from aromatic and medicinal plants	I	-
9. Quinta das Lameiras	São Pedro de Tomar, Tomar	X							2010	Organic farming business	J	https://pt-facebook.com/Quinta-das-Lameiras-S%C2%BA-Pedro-de-Tomar-385184644913356/
10. Vale da Sarvinda	Alfrívda, Vila-Velha de Rodão	X	X	X					2011	Organic farming and touristic activities	M	http://www.valedasarvinda.pt/

³ Nonprofit organization

5.0 Discussion

In-migration to rural low-density territories reveal a transition in usual trends and an increased recognition of new SES paradigms, with many scholars referring to ES as an important motivation in rural in-migration. An empirical analysis conducted in Portugal captured a population profile similar to other studies in the literature (Bijker et al. (2012) or Solana-Solana (2010)): in-migrants are young, active and high qualified, contrasting with the profile of the majority of existing local residents, and revealing a significant change in rural areas regarding age and qualifications.

Evidence from the empirical research show recent in-migrant movements are being led by ecosystems related attributes, such as tranquillity of rural areas and rural environmental qualities. In addition, and as mentioned by all interviewees, the valorisation of the fresh air, less pollution and increased contact with nature is in line with evidence that indicates positive impacts of nature exposure on general health and stress reduction (Sandifer et al., 2015).

This paper wishes to contribute to the argument that increasing the attractiveness of rural areas can be an important measure to face the acknowledged rural social-ecological systemic problem: depopulation. Results of this study are in line with others developed 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 (Mendes & Carmo, 2013). 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 is also linked with the results presented in this research (Santos Silva et al. 2018).

The different spatial and temporal scales at which SES operate (Herrero-Jáuregui et al., 2018) makes it difficult to assess transitions within a relatively short time study. Yet our results reveal several innovative initiatives that may have positive consequences for the local SES. In the sample obtained in the research, in-migrants enrolled in 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 ES. They have also been responsible for promoting new products—touristic experiences or organic farming—and creating new demands, acting as critical change agents, such as for example in relation to the need to implement new technology, or the need to invest in market strategies.

Results of the in-depth interviews of in-migrants also show that interviewees recognize that having a good environmental context benefits their activities, and therefore they have been developing actions that contribute to natural regeneration and conservation.

The interviewees bring with them the social networks and knowledge from the city, and to implement their initiatives they rest on their personal motivation. Interaction among the members of the community—through events and associations—and creation of new services—such as the case of the school and new local associations—as described by some of the interviewees are seen as great opportunities to create spaces for interaction and collaboration.

However, in this process constraints should not be overlooked or minimized. Not all cases are alike, and results point to blockers related to social interaction with the local community and public services and infrastructures.

A social problem related to lack of trust among the local community was mentioned by several interviewees. This could be rooted in the cultural differences and norms in both social groups—long term residents and in-migrants—often cited as major factors of deterring socialization (Brown, 2010).

Results show that hindered availability of public services can be an important constraint to rural in-migration. In the case of Portugal, decades of out-migration led to lower public investment over the years because of a decrease in services and infrastructure demand. In this context, the use of advanced communications technologies (ICT) and digital literacy is an opportunity to enable the access to services (OECD, 2018). Yet a 25% of the rural population has no access to the Internet (Rural, Mountainous and Remote Areas, 2019). This digital divide not only affects the potential offered by connectivity and digitization in rural areas (Cork2.0, 2016) but it also decreases its attractiveness. In short, the development of ICT can be seen as a necessary condition to avoid a decrease in this emerging ongoing movement.

Following other authors such as Stockdale (2006), von Reichert, Cromartie, and Arthun (2014) or Guimond and Simard (2010), this paper supports that in-migration can change the social and economic dynamics, and in particular the increase of flow in the benefits provided by ES in rural areas. Based on our results, we can argue that in-migration in rural settings can stimulate demand for public services and infrastructure, which can help to develop new businesses and revitalize such territories. However, new rural policies are needed to recognize these emerging trends. Although, as shown in the results, in-migrants are an important piece in transition processes from their own perception and from the perception of the local authorities, local authorities do not always seem to have the means to prioritize and support new needs. It is therefore important that national and local policies be reconfigured to take into account this emerging phenomenon and its characteristics.

6.0 Conclusions

Our final point is the mutualism between SES and ES in stimulating skilled in-migration attractiveness to rural areas, promoting transitions in usual development patterns. An empirical case explored the situation in Portugal, collecting evidence that can add knowledge and contribute to improving the understanding of this emerging urban to rural migration phenomena and how it is developing. Changes are most related to the characteristics of the new population that are now exploring rural SES and also the new activities that they are developing. Results from the Portuguese study illustrate the importance of attracting, and maintaining, in-migrants in rural areas considering greater social and economic dynamics, with potential positive outcomes for ecological and social systems.

At least three key conclusions can be learned from the result of the interviews and initiatives in rural areas in Centre region, Portugal:

- The delivery of ES relies fundamentally on the wellness of SES, and on the management of rural environments by social systems. ES, such as food production, nature or cultural tourism, and biophysical amenities, can be considered major triggers for urban in-migrants who wish to change their lifestyle and pursue new ES based businesses.
- Fragilities in rural areas, such as demographic features—aging communities, depopulation—and contextual characteristics created by infrastructures, services and market–business conditions, limit the potential of SES as well as transition processes towards sustainability.

Based on results from our study, rural in-migrants have an important role as agents of change, leading bottom-up approaches and maintaining rural communities, cultural heritage and ES, as well as in creating new development dynamics that can enhance the wellness of SES.

- To better manage these territories the development processes should include a mix of bottom-up and top-down actions: a conclusion also supported in the literature (Shucksmith, 2018). Those institutions, actors and networks that have the capacity to link businesses and communities should balance existing supplies and new demands in rural areas, shifting rural areas to become increasingly more valuable and attractive, welcoming different social groups.

Further research is needed to monitor this phenomenon, its positive and negative impacts, and the importance of the value people are placing on their biophysical environments, enhancing the potential of SES to promote sustainability in rural territories.

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