



Effects of counter-urbanization on Mediterranean rural landscapes

C. Herrero-Jáuregui · E. D. Concepción

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Abstract

Context Counter-urbanization, or the reverse migration from the city to the countryside, is a well-known demographic trend associated with rural restructuring since the 1980s. Counter-urbanization is particularly relevant in social-ecological systems with a long history of human land use, such as the Mediterranean ones. However, the extent and impacts of this phenomenon are largely unknown, particularly in this region.

Objectives We aim to review the state of the issue of counter-urbanization in the Mediterranean region. We focus on the particular determinants and outcomes of this phenomenon in Mediterranean landscapes.

Methods We conducted a bibliographic review using the Web of Science. We summarized and classified the main findings in different categories according to the socio-economic drivers of this process and

its impacts on the landscape along the land sharing-sparing gradient.

Results We found 31 studies that met the criteria to be reviewed and classified them as follows: a first group of studies focused on counter-urbanization as an urban sprawl driver; a second group linked counter-urbanization to rural gentrification. These two groups point to a twofold trend of land intensification or abandonment resulting in land-sparing landscapes. A third group of studies explored the urban–rural migration motivated by economic crisis and rural areas’ role as refugees that support land-sharing landscapes. A fourth group focused on multi-functional, land-sharing landscapes enhanced by rural newcomers.

Conclusions Although counter-urbanization can follow the usual path of urbanization and gentrification, it may also constitute an alternative way to reverse the current trends of rural abandonment and land-use intensification in Mediterranean landscapes. Public policies play a major role to drive this movement toward the maintenance or recovery of multi-functional landscapes, and to minimize their undesirable impacts.

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Keywords Counter-urbanization · LULC changes · Land-use intensification · Rural abandonment · Rewilding · Multifunctional landscapes

Introduction

Social-ecological systems (SES) are complex adaptive systems that are constituted by networks of constant and reciprocal interactions between the socio-economic and biophysical structures of the territories and landscapes (Berkes and Folke 1998; Folke et al. 2016; Herrero-Jáuregui et al. 2018). Ecological systems within any given social-ecological structure supply a series of services or goods to the social system which are essential for human wellbeing. In turn, the social system affects the structure and functioning of the ecological system through the management of natural resources and land uses, based on its values and through the institutions and governance systems with which it is endowed (Morán-Ordóñez et al. 2013). These interactions give rise to patterns, structures, and dynamics that feedback through complex loops into the processes that generated them in a continuously evolving manner, thus constituting co-evolving systems (Levin et al. 2013). Spatially, these systems are reflected in landscapes with a given composition and configuration, which can be quantified by metrics, so that the study of the structure of the landscape can provide information on the functionality of socio-ecosystems (Herrero-Jáuregui et al. 2019). The dynamics of SES and the landscapes they are reflected on are subject to changes generated by direct and indirect drivers that operate synergistically and are very intense in the current process known as Global Change (MEA – Millennium Ecosystem Assessment 2005). Under particular socioeconomic and policy contexts, changes in demography promote changes in land use and land cover (LULC) and, consequently, alter ecosystem services (ES) supply (Bruno et al. 2021).

Land conversion to achieve the demands of the world's growing population is one of the main drivers of LULC change (Foley et al. 2005; Mendenhall et al. 2014). The need to reconcile biodiversity conservation with human activities has given rise to an intense debate in science and policy on what landscape model is more suitable to better achieve both objectives: at one extreme, the model known as 'land sparing' advocates occupying less land with intensive land use and taking advantage of the rest of the land for biodiversity conservation (Loconto et al. 2020). This model is favored by the global trend of rural–urban migration (> 55% of the world's population lives now

in cities; ONU 2018; Liu et al. 2020) and associated rural abandonment, and subsequent forest transition and rewilding (Navarro and Pereira 2012; Perino et al. 2019; Bruno et al. 2021), while intensifying productive land in the most appropriate places (i.e., intensive farms vs extensive cattle ranching). In this way, the increase in forest mass would be linked to an increase in regulating services such as carbon sequestration, erosion control, and increased forest species richness (Green et al. 2005; Balmford et al. 2019). At the other extreme, the 'land sharing' conceptual and operational model describes a heterogeneous landscape shaped by a multi-functional agricultural matrix that contributes to biodiversity conservation via wild-life friendly or high nature value (HNV) farming (Lomba et al. 2020). Both landscape models are correlates of agri-food models that are an important determinant of population movements. However, studies emerge suggesting that this debate polarizes two solutions that are not necessarily opposed and that evidence indicates that the largely mixed solutions depend on the context (Grass et al. 2019). Indeed, non-intensive agriculture is not necessarily less productive than intensive one (Badgley and Perfecto 2007), domestic cattle can play the role of large wild herbivores (Gordon et al. 2021), and there are other variables at stake besides biodiversity conservation and food production, which would be better reflected using the ecosystem services framework (Tschardt et al. 2012; Loss and Von Wehrden 2018). Moreover, in distinctly cultural landscapes, such as Iberian landscapes, the abandonment of agro-silvopastoral systems implies the irreversible loss of biological and cultural diversity (Rescia et al. 2008; Morán-Ordóñez et al. 2013; Arnaiz-Schmitz et al. 2018; Herrero-Jáuregui et al. 2019; Pili et al. 2019; Schmitz et al. 2021). However, other studies argue that even including imperfections, a land-sparing landscape is more effective in reconciling food production with biodiversity conservation (Balmford et al. 2019), thus rendering the debate open and alive.

Very recently, an alternative pathway to the forest transition has been described, which has to do with counter-urbanization or the reverse migration phenomenon, from the city to the countryside (Jiménez et al. 2022). These authors refer to peri-urbanization as the flow of outmigration of inhabitants settling in existing (and partially abandoned) rural nucleus or hamlets as opposed to the urban overspill that jointly

takes place with urban migration and estate development widely studied in the 1980–1990s (Ravetz et al. 2013; Serra et al. 2014; Shaw et al. 2020). Since the 1980s, counter-urbanization is the most well-known demographic trend associated with rural restructuring, affecting countries in different ways (e.g. Weekley 1988; Sant and Simons 1993; Dahms and McComb 1999). Often, counter-urbanization is linked to amenities, leisure activities, and second-home ownership that present rural environments as home places, even when no permanent relocation has taken place (Halfacree 2014). According to the global-scale study of Jiménez et al. (2022), neo-rurals would favor the forest transition by moving to the countryside with an idyllic vision of nature, although often resulting in conflicts with the local population, not only because of the disparity of visions about the rural environment (Martín-Forés et al. 2020; Elbakidze et al. 2021) but also by generating an increase in land prices that expel the local population (rural gentrification). However, the movement of the population from the city to the countryside in the double aspect of urbanites seeking another type of life (Halfacree 2009) and foreign migrants settled in rural areas (Camarero et al. 2009; Papadopoulos 2011; Sampedro and Camarero 2018), could also be a driver of rural development through several pathways: indirectly, by reinforcing local production through their consumption patterns, or directly, by them initiating agricultural activities, mainly part-time (Duguma et al. 2021). In this case, the phenomenon of counter-urbanization would favor a heterogeneous landscape immersed in an agricultural matrix (land sharing), contributing to the conservation of biocultural and landscape diversity.

Counter-urbanization is particularly relevant in times of economic crisis and in SES with a long history of human use, such as the Mediterranean ones (Remoundou et al. 2016). A ‘back to the countryside’ process has been documented in Greece during the economic recession of 2008–2014, which did not result in a forest transition, but rather took advantage of the rural way of life, products, and activities in the primary sector in the face of the economic crisis (Gkartzios 2013; Salvia et al. 2020). This reverse migration process incorporated elements of modernity and tradition: new methods of work and organization along with the rediscovery of traditional crops, products, and cultures. In Portugal, too, the role of the rural environment as a safety net in times of economic

adjustment has been documented (Silva and Cardoso 2017). However, not only economic crises but also health crises such as the recent COVID pandemic can trigger counter-urbanization. According to the Spanish Ministry of Ecological Transition and Demographic Challenge, since 2018 population from small municipalities has been increasing, a phenomenon that has been reinforced by the COVID pandemic, but that was already apparent before (MITERD 2022). As per this report, the population that immigrates to small municipalities mainly comes from urban areas. Although not all small municipalities (less than 5000 or even 1000 inhabitants, in the case of Spain, though these figures can vary among countries) can be considered rural, all rural municipalities are small. Thus, results from this report are relevant to explore a recent change of trend in the outmigration movement from small municipalities. Notably, the protagonists of this migration are young people and women. This could reverse the continuous outflow of the young and female population that has predominated until recently and further aggravated the problem of depopulation in rural areas. This positive trend has to be consolidated so that it can compensate for the negative vegetative growth in small municipalities (MITERD 2022). Among the causes that may explain these population movements towards rural areas, two key factors are the proximity to cities (up to 1 h) and digital connectivity, that is, the availability of high-speed internet that enables one to work remotely. Recent results in the Spanish case point to an increase of people in municipalities further away from the main city in Madrid region enhanced by teleworking (Belzunegui-Eraso and Erro-Garcés 2020; Herrero-Jáuregui et al. 2021).

Only a few studies have documented however the effects of this reverse migration process on the landscape structure, biodiversity, and ecosystem services. Some of them have concluded that, although the re-occupied rural environment was more resilient in the face of the economic crisis, the classic biodiversity conservation strategies, through protection figures and restrictive access regulations, were not as solid (Troumbis and Zevgolis 2020). A recent study has evinced an incipient expansion of urbanized land into protected areas throughout the European Union (EU) over the last decades, which may compromise their conservation, especially in densely populated areas and vulnerable systems,

such as Mediterranean ones (Concepción 2021). Besides the recently published work of Jiménez et al. (2022), which presents a single case study in the Mediterranean basin, there is no other evidence at a global scale of the effects of counter-urbanization on the structure and configuration of landscapes and therefore on the functionality of SES. Thus, the scope and extent of this phenomenon in the Mediterranean basin are largely unknown. Moreover, it may not be appropriate to transfer the rural idyll concept from Anglo-Saxon countries to the Mediterranean region (Hoggart and Paniagua 2001). Also, studies suggest that the dispersed city will not be the city of the future in Mediterranean European urban areas mainly due to the failure of suburbia as a space for maintaining social frameworks and family welfare (Dura-Guimera 2003).

According to the mentioned above, the overall aim of this paper is to review the state of the art on counter-urbanization in the Mediterranean region, their socio-ecological particularities, in terms of drivers and context, concerning to similar processes occurring in other parts of the world, and their impact on the landscape and the ecosystem services it provides.

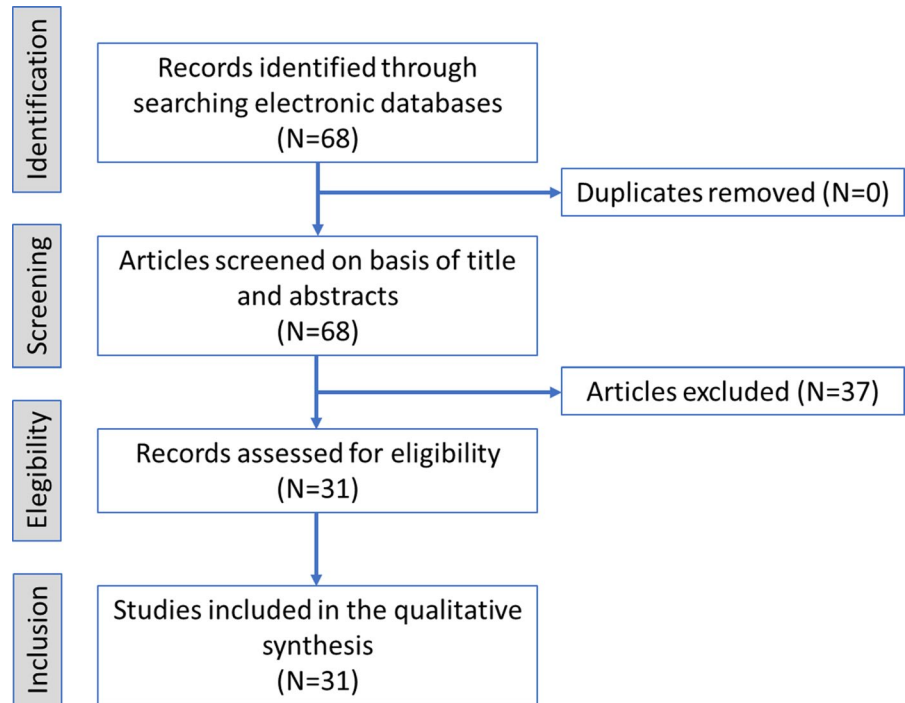
We hypothesize that the current counter-urbanization phenomenon in Mediterranean countries will shape different landscapes along the land sharing-sparing gradient, depending on a variety of factors operating at different scales, from local to global: the profile of migrants, the geographical characteristics of rural areas, the economic cycles, the global markets, the socio-political context and the public policies operating in each case. Counter-urbanization effects on the landscape will not be the same if triggered by a teleworking neo-rural population that goes shopping once a month at large supermarkets and is disconnected from local activities, as by those who do so regularly in local markets and are involved in agricultural activities, even on a part-time basis, strengthening short marketing circuits and the valorization of local produce and culture. Neither will be the proliferation of new housing developments that results in urban sprawl or dispersion into the countryside with the subsequent impacts on biodiversity and ecosystems, as opposed to the restoration and reoccupation of empty houses that maintain compact villages and towns surrounded by a cultural landscape made of agricultural and natural elements.

Methods

We conducted a bibliographic review on the drivers and effects of counter-urbanization or urban–rural migration on Mediterranean landscapes, summarizing the main findings. First, we conducted a literature search in the Web of Science database looking for all entries which included in the topic the following search terms: (counter-urbanization OR counter-urbanisation OR counterurbanization OR counterurbanisation OR urban–rural migration OR urban emigration OR urban outmigration OR rural immigration OR amenity migration) AND (landscape OR land use) AND (Mediterranean OR Iberian).

We defined the knowledge areas to which all the entries belonged and read all abstracts to select the publications that met the criteria for deeper analyses (Fig. 1). We then read all the articles and summarized the information according to the following variables: (1) type of study (discussion paper, empirical research, review); (2) site of study (geographic reference); (3) type of area (coast, mountain, rural, metropolitan area); (4) spatial scale (local, regional, national, continental); (5) time period; (6) methods and type of analysis (LULC analysis, spatial analyses, interviews, and questionnaires, review); (6) research question and (7) conclusions. We defined a spatial scale as local when case studies were restricted to a small area within the same social-ecological unit (similar social and ecological characteristics and relationships between them). The spatial scale was considered regional when case studies belonged to more than one social-ecological unit. We classified conclusions in different categories according to the main effects on the landscape found in each case: whether rural immigration promoted rural gentrification, urban sprawl or suburbanization dynamics, tourism development, disconnection from rurality, and land or ecosystem degradation due to unsustainable resource use and unbalance demand/supply of Ecosystem Services. We also included socio-economic drivers and considered whether public administrations, economic and work markets, or leisure and lifestyle played an active role in each process. We summarized the main findings and discussed them in light of further results and reports about urban–rural migration.

Fig. 1 Systematic review flow diagram based on the Preferred Reporting Items for Systematic reviews and Meta-Analyses statement (PRISMA, Moher et al. 2009)



Results

We found 68 results from 1999 to September 2022, 50% of which were published after 2016. The most represented areas were environmental sciences and ecology (72%), geography (56%), business economics (44%), and biodiversity conservation (43%).

From the 68 publications, only 31 publications reporting 36 case studies met the criteria for a deeper analysis: this is, studies that analyzed landscape composition and/or configuration in the light of urban–rural migration and/or the socio-economic drivers of this process (Table 1).

Spain was the country with the most case studies (31%), followed by Italy, Turkey, and Greece (17% each), Portugal (5%), and Romania, Syria, Austria, and France (2% each). Notably, no African country or any of those located in the most oriental region of the Mediterranean were studied (Fig. 2).

The spatial scale mostly used in the analyses was regional (58%), followed by local (19%), national (16%), and continental (6%). Regarding the type of region analyzed, most of them studied metropolitan areas (26%) followed by rural areas and the whole region (with no distinction of the area, 23%). A

particular distinction was made between mountain areas (16%) and coastal areas (12%) (Table 1).

The temporal scale most commonly analyzed was a time span of a 40-year period (33.33%), followed by a period of 10 (26.67%) and 20 years (20%). Less than 10% of studies analyzed longer periods (60 or 80 years). Notably, none of the 31 studies analyzed population movement enhanced by the COVID pandemic (Table 1).

Regarding the type of data used, two types of empirical studies can be identified, each comprising half of the total studies: Those using LULC spatially explicit data and/or public statistics and those using semi-structured interviews and sometimes supporting public statistics. Remarkably, there was only one study that combined LULC analysis (spatially explicit) with interviews with local stakeholders (Acebes et al. 2021). There was only one review and discussion study (Dura-Guimera 2003).

Based on the main focus and results of the studies revised, they can be divided into four groups (Table 1): (I) a group of studies focuses on the effects of urban sprawl and suburbanization enhanced by counter-urbanization (29%). This category encompasses some of the others, but deserves a category for

Table 1 Characteristics of the studies analyzed, according to the data source, socio-economic drivers, socio-economic effects, and landscape and ecosystem effects

| ID | Study characteristics | | | | Data source | | | Socio-economic drivers | | |
|-----------------------------------|-------------------------|----------------------|---------------|------------------|-------------|---------------------------|-----------------------|------------------------|---------------------------|------------------------|
| | Site of study | Type of area | Spatial scale | Time span (year) | LULC maps | Socio-economic indicators | Inter-views/workshops | Public policies | Economic and work markets | Leisure and life-style |
| | | | | | | | | | | |
| Acebes et al. (2021) | Spain | Urban–rural gradient | Regional | 1990–2020 | X | | X | X | X | |
| Alonso-González (2017) | Spain | Rural | Local | 1990–2015 | | | X | | | X |
| Benessaïah (2021) | Greece | Whole | Local | 2008–2020 | | | X | | X | |
| Bianchini et al. (2021) | Italy | Metropolitan | Regional | 1949–2016 | X | X | | | X | |
| Cremer-Schulte and Dissart (2015) | France | Rural | Regional | 1990–2006 | X | X | | X | | X |
| Dura-Guimera (2003) | Spain | Metropolitan | Local | 1960–2000 | | | | | X | |
| Gretter et al. (2017) | Austria, Italy, Romania | Mountain | Regional | | | X | X | X | X | X |
| Hurley and Ari (2018) | Turkey | Mountain | Local | 2010–2011 | | | X | | | X |
| Kalantaryan et al. (2021) | Europe, Italy, Spain | Rural | Continental | 2011–2017 | | X | | X | X | |
| Kaya (2007) | Turkey | Metropolitan | Local | 1985–2001 | X | X | | | X | |
| Khadour et al. (2021) | Syria | Coastal | Local | 1950–2020 | | X | X | | X | |
| Kocabişik and Loopmans (2021) | Turkey | Rural | Local | 2014–2016 | | | X | | | X |
| Löffler et al. (2016) | Italy | Mountain | Local | 1992–2013 | | | X | | | X |
| Moren-Alegret et al. (2018) | Portugal, Spain | Rural | Regional | 2011–2014 | | | X | X | X | X |
| Ntassiou (2022) | Greece | Mountain | Regional | | X | X | | | | X |
| Orsini (2013) | Italy | Urban–rural gradient | Local | 2000–2010 | | X | X | | | X |
| Pacheco-Romero et al. (2021) | Spain | Whole | Regional | 1999–2016 | X | X | | | | X |

Table 1 (continued)

| ID | Study characteristics | | | | | Data source | | | Socio-economic drivers | | | |
|-----------------------------|---------------------------|----------------------|---------------|------------------|-----------|---------------------------|-----------------------|-----------------|---------------------------|------------------------|---|--|
| | Site of study | Type of area | Spatial scale | Time span (year) | LULC maps | Socio-economic indicators | Inter-views/workshops | Public policies | Economic and work markets | Leisure and life-style | | |
| | | | | | | | | | | | | |
| Salvati (2018) | Greece | Whole | Regional | 2002–2016 | | X | | | X | | | |
| Salvati et al. (2017) | Italy | Metropolitan | Regional | 1949–2006 | X | | | | X | | | |
| Salvia et al. (2020) | Greece | Whole | Regional | 1940–2019 | | X | | | X | | | |
| Satir and Erdogan (2016) | Turkey | Whole | Regional | 1989–2013 | X | | | X | | | | |
| Sayadi et al. (2009) | Spain | Mountain | Local | 2002 | | | X | | X | | | |
| Schmitz et al. (2018) | Spain | Whole | Regional | 1980–2015 | X | X | | | | | X | |
| Solana-Solana (2010) | Spain | Coastal | Regional | 1981–2006 | | X | X | | | | X | |
| Tulla et al. (2017) | Europe, Spain, Romania | Metropolitan | Regional | 1981–2011 | | | X | | X | | X | |
| Ünal et al. (2019) | Turkey | Whole | Regional | 1990–2017 | X | X | | | X | | X | |
| Uysal and Sakarya (2018) | Turkey | Coastal | Local | 1950–2011 | | | X | | X | | X | |
| van der Sluis et al. (2019) | Europe, Portugal, Estonia | Rural | Continental | 1995–2020 | | | X | | X | | X | |
| Venanzoni et al. (2017) | Greece | Urban–rural gradient | Regional | 2001–2011 | X | X | | | X | | X | |
| Zambon et al. (2018) | Greece | Rural | Regional | 1970–2015 | X | | | | X | | X | |
| Zasada et al. (2010) | Spain | Coastal | Regional | 1990–2007 | X | X | | | X | | X | |

Table 1 (continued)

| ID | Socio-economic effects | | | | Landscape and ecosystem effects | | | | | Group |
|-----------------------------------|------------------------|---------------------|-----------------------------|--|---------------------------------|----------------------------|-------------------------------|--|---|-------|
| | Rural gentrification | Tourism development | Disconnection from rurality | Urban sprawl, suburbanization dynamics | Agricultural intensification | Land/ecosystem degradation | Abandonment and reforestation | Sustainable multifunctional landscapes | | |
| Acebes et al. (2021) | | X | X | X | | | X | | | II |
| Alonso-González (2017) | X | X | | | | | X | | | II |
| Benessaiah (2021) | | | | | | | | X | | III |
| Bianchini et al. (2021) | | | | X | | X | | | | I |
| Cremer-Schulte and Dissart (2015) | | X | | | | | | X | | IV |
| Dura-Guimera (2003) | | | | X | | | | | | I |
| Gretter et al. (2017) | | | | | | | | X | | IV |
| Hurley and Ari (2018) | X | X | X | | | | X | | | II |
| Kalantaryan et al. (2021) | | | | | | | | X | | IV |
| Kaya (2007) | | | | X | | | | | | I |
| Khadour et al. (2021) | X | | X | X | X | | | | | II |
| Kocabiyik and Loopmans (2021) | X | | | | | | | | | II |
| Löffler et al. (2016) | | | | | | | | X | | IV |
| Moren-Alegret et al. (2018) | | | | | | | | X | | IV |
| Ntassiou (2022) | X | | | | | | | | | II |
| Orsini (2013) | | | | | | | | X | | IV |
| Pacheco-Romero et al. (2021) | | | X | X | X | | | | | I |
| Salvati (2018) | | | | X | | | | | | I |
| Salvati et al. (2017) | | | | X | X | | | | | I |
| Salvia et al. (2020) | | | | X | X | X | X | | | I |
| Satir and Erdogan (2016) | | X | | X | | | | | | III |
| Sayadi et al. (2009) | | | X | | X | | | | | I |
| Schmitz et al. (2018) | | X | X | X | | | X | | X | IV |
| Solana-Solana (2010) | X | | X | X | | | | X | | II |
| Tulla et al. (2017) | | X | | X | | | | | X | IV |
| Ünal et al. (2019) | | | X | | | | X | | | II |
| Uysal and Sakarya (2018) | X | X | X | X | | | | | | II |
| van der Sluis et al. (2019) | | | | X | X | | | X | | I |
| Venanzoni et al. (2017) | | | | X | | | | | | I |

Table 1 (continued)

| ID | Socio-economic effects | | | | | Landscape and ecosystem effects | | | | | Group |
|----------------------|------------------------|---------------------|-----------------------------|--|------------------------------|---------------------------------|-------------------------------|--|---|--|-------|
| | Rural gentrification | Tourism development | Disconnection from rurality | Urban sprawl, suburbanization dynamics | Agricultural intensification | Land/ecosystem degradation | Abandonment and reforestation | Sustainable multifunctional landscapes | | | |
| Zambon et al. (2018) | | | | | X | | X | | | | II |
| Zasada et al. (2010) | X | | X | X | | | | | X | | II |

See also the Appendix S1 for further details on the addressed issue and the main findings

itself, as the main focus of these studies is the urban overspill that jointly takes place with urban migration and estate development; (II) some studies conclude that the process of counter-urbanization generally by amenity migrants, generates rural gentrification through the revalorization of housing heritage which expels local population due to the increment in prizes. This is usually accompanied by a displacement of rural activities by tourism and leisure and by a general process of disconnection from nature (38%). These two groups of studies point to landscapes of land-sparing type, with an intensification of rural activities in the most productive sites and abandonment of rural activities elsewhere; (III) A third group of studies, mainly from Greece, explores the urban–rural migration motivated by economic recession and highlights the role of rural areas as a safety net that support people livelihoods in times of crises (6%), mainly on a land sharing basis; (IV) A fourth group shows results of a land sharing type of landscape being supported and maintained by rural newcomers that revitalize local economies and promote the recovery of cultural and multi-functional landscapes (25%). In this last group, the difference of origin of newcomers (young people, amenity migration, or refugees) is an important aspect regarding the use of the territory and possibilities of land use change. Finally, 16% of studies point to public policies as a main factor defining the outcomes of contra-urbanization at the landscape level (see details on addressed issues and main findings of each study included in this review in Appendix S1).

Discussion

Our research reviews the existing literature on the relationship between counter-urbanization and landscape structure in the Mediterranean region. Although global counter-urbanization literature, particularly in northern countries dates back to 1978, it is striking the paucity of literature on the effects of counter-urbanization on the landscape, particularly in the Mediterranean region: only 31 studies have been identified that tackle somewhat the issue and just one of them has used an empirical approach to both measure counter-urbanization and landscape configuration (i.e., through landscape metrics) (Satir and Erdogan 2016).

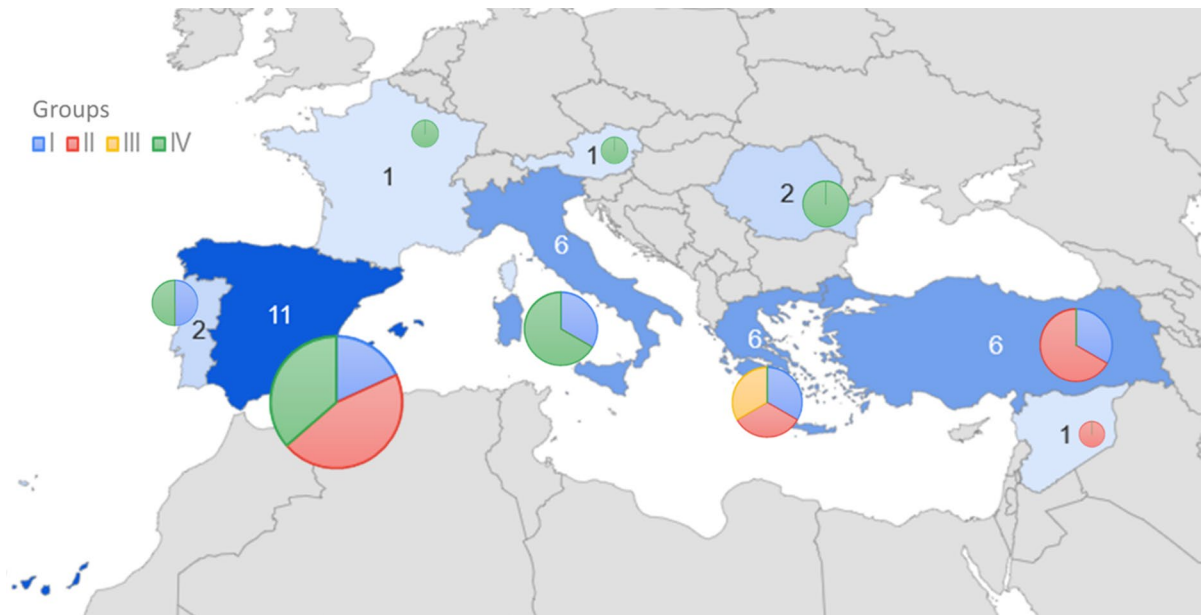


Fig. 2 Geographic location and the number of case studies included in the bibliographic review. Pie chart size is proportional to the total number of studies in each country. They show the percentage of studies focusing on the topics classified

in group I (urban sprawl and suburbanization), II (rural gentrification), III (safety net in times of crisis) and IV (recovery of multi-functional landscapes). See below for details of the group description

A reason for that could be that rural immigration does not directly generate changes in land use that are reflected in the landscape. Indeed, if rural immigrants resume agricultural activities that were being already performed, such as pastoralism, the change of actors will not be reflected in a change in land use, as pasturelands will continue being pasturelands. This happens in some regions in Spain, where cattle ranching activities have almost completely been undertaken by north African immigrants, with no noticeable landscape change (Nori 2017; Nori et al. 2020). Similarly, if rural immigrants are attracted by a natural environment characterized by a low level of human intervention, they will promote the current re-wilding process going on across Europe (Jiménez et al. 2022), and their arrival into rural areas will not be noticed at the landscape level, in another way than through an increment of building areas (Concepción 2021).

Another reason could be that although rural immigrants do generate a change in land use, either directly or indirectly through their consumption behavior of locally produced products, this change has taken place very recently and thus it is still unnoticeable in the landscape. Considering the Spanish report that

shows a change in depopulation tendency since 2018 (MITERD 2022), 4 years could be a too short period for land use changes to be effectively reflected in a change in landscape structure. However, as several of the reviewed studies point out (e.g., Dura-Guimera 2003; Benessaiah 2021; Kocabiyik and Loopmans 2021) there is an important need to analyze the effects of rural immigration on Mediterranean landscapes and its relation with the balance supply/demand of ecosystem services. Through this section we develop the main conclusions found in the literature review, divided into the four groups described in the results.

Urban sprawl and suburbanization

There is evidence all across Europe and particularly in Mediterranean countries of a process of urban sprawl and agricultural intensification in flat and irrigable areas, together with a process of land abandonment and forest expansion in uplands and more remote areas (Salvati et al. 2017). Also, tourism and leisure activities are replacing traditional economies. This is perceived as a threat to the cultural heritage and linkage with the territory of rural people (Acebes

et al. 2021). Those land use changes are driven by a global economy, demographic trends, and joint effects of diverse EU policies (van der Sluis et al. 2019). Overall, particularly Mediterranean countries are suffering a shift from a spatially-balanced, structurally-complex and functionally-diversified agricultural landscape to a homogeneous, simplified, and fragile system (Zambon et al. 2018), while diffuse urbanization is co-occurring with intensive cropland expansion over mosaic and extensive cropping systems. Thus, counter-urbanization could be a rebound effect of urbanization and peri-urbanization processes in agricultural areas. Dispersed urban expansion frequently reflects the spatial relocation of economic activities in search of cheaper land (Venanzoni et al. 2017).

This movement of people from urban to rural areas, in search of a quieter lifestyle and more in contact with nature, might jeopardize the maintenance of traditional agriculture and foster an overall decrease in human-nature connectedness (Pacheco-Romero et al. 2021), together with the ongoing rewilding process (Jiménez et al. 2022). If this was the case, counter-urbanization should correlate with the rate of loss of traditional agricultural activities, which would reflect in a land-sparing type of landscape and upset the balance between supply and demand of ecosystem services (Herrero-Jáuregui et al. 2019). Indeed, the intense urbanization process recorded along the European Mediterranean coast enhanced by second home urbanization of retirees from the UK and the EU has had far-reaching impacts on landscapes and ecosystem services, such as lower agricultural production, the reduction of groundwater recharge, soil degradation, and salination, marginalization of natural vegetation, disruption of habitats or microclimatic changes due to either the widespread expansion of impervious surfaces or an exacerbated overconsumption of natural resource (Zasada et al. 2010). These impacts were in turn reinforced by the Spanish housing bubble (Burriel de Orueta 2016). Fuerteventura, an island of the canary archipelago (Spain), has shown a ‘deruralization’ transition from a local socio-ecological system based on traditional land-use practices to one based on coastal tourism (Schmitz et al. 2018). Likewise, the economic growth in the coastal region of Syria has driven the diversification of rural activities, especially in the service sector, which has resulted in agricultural intensification, industrialization, and

urban sprawl, and all this in turn in a rural population disconnected from rurality (Khadour et al. 2021). Counter-urbanization thus entails the risk of transferring the residential and touristic growth model of the Mediterranean coast, which implies massive development and the extensive occupation of the territory, to the inland municipalities (Solana-Solana 2010).

Rural gentrification

Parallel to counter-urbanization processes, there is evidence of rural gentrification and the expulsion of local people through the rise of prizes of rural properties (Alonso-González 2017; Uysal and Sakarya 2018), but also through changes in leisure and retail activities, consumption patterns, and valuation of rural properties, whether used for housing or other purposes (Phillips 2002). For example, in Turkey, the designation of a national park promoted the creation of second-home or amenity real estate market within or around their villages, while their traditional inhabitants migrated to other towns and most or nearly all households and land parcels were sold to amenity in-migrants (Hurley and Ari 2018). Other studies show how in rural areas where tourism facilities have been improved, gentrification occurs in parallel. The migration of the middle class to the villages transforms the traditional land use and rural landscape. In Turkey, the increase in the demand for new housing threatens the olive groves and increasing real estate prices makes it difficult for local people to acquire property in the villages (Uysal and Sakarya 2018), while in some Spanish regions increasing housing demand has triggered a significant bubble in real estate prices with important consequences for the local economy and ways of life (Alonso-González 2017).

Rural gentrification in emerging economies may contribute to the local economy but at the expense of the displacement of the local inhabitants that continue migrating to cities (Kaya 2007; Kocabiyik and Loopmans 2021). In Turkey, public investment and policies to promote that people come back to rural areas have not been effective to reverse the effect of mass subventions to tourism and industrial facilities that together with security problems encouraged rural inhabitants to migrate to cities in the recent past (Satir and Erdogan 2016). Also, economic growth in the coastal region of Syria has driven the diversification

of rural activities, especially in the service sector, agricultural intensification, urban sprawl and industrialization, which has resulted in a rural population disconnected from rurality (Khadour et al. 2021). The decline in the rural population and the abandonment of lands has increased the forest areas and, thus, favoring land-sparing (Únal et al. 2019). Overall, the replacement of the agricultural sector by the service sector and change in land use creates post-productive rural landscapes, which shift from areas of production to spaces of consumption with a mismatch between the demand and supply of ecosystem services (e.g., food production or recreational activities) (Alonso-González 2017; Uysal and Sakarya 2018; Bianchini et al. 2021).

Rural refuge in time of crisis

However, as some researchers have suggested, the transfer of the rural idyll concept from other countries (notably Anglo-Saxon) to Spain is not appropriate (Hoggart and Paniagua 2001), and there are limits to the applicability of Anglo-American theories of deconcentration for the Mediterranean city (Dura-Guimera 2003), that would result in a land sparing type of landscape. One of the reasons might be typical Mediterranean expanded family networks and a continuum between urban and rural landscapes (Salvati et al. 2017; Benessaiah 2021). For example, in Greece, going back to the land enhanced by the 2008 economic recession was facilitated by high rates of rural housing and land ownership, mainly through family networks linking rural and urban areas, that maintained a rural land-sharing type of landscape through small-scale family farming (Salvia et al. 2020; Benessaiah 2021). Indeed, the resilience to external shocks (in this case, economic recession) of such land-sharing landscapes shaped by small-scale family farming seems to be higher than that of land-sparing types, such as urban, industrial, and intensive agriculture, as happened in Greece (Serra et al. 2014; Salvati 2018). After the 2008 financial crisis, a trend for the return to the land appeared in Mediterranean countries. The awakening of the rural areas creates the need for additional research into the concepts of rural, rurality, and rural revitalization, amongst others. Images of remote rural areas across Europe show depopulation, revealing the impact of politics on a particular place and the ensuing development of

public policies (Paniagua 2010). This is in contrast to the rural renaissance arising from the return to the land where the countryside is presented as a refuge for the people of the towns (Hilmi and Burbi 2016). Also, the economic dependency on agriculture and direct connection to nature results in a greater awareness of the landscape among the inhabitants living in rural places, with lifestyle contributing to the preservation of the landscape's character and identity (Khadour et al. 2021).

Lastly, even though none of the studies analyzed population movement enhanced by the COVID pandemic, we believe that during the pandemic, new perceptions have arisen about living in the village. In most countries of the world, the imposition of lockdown pushed populations to relocate from cities to rural areas to the localities of their origins (e.g. Denis et al. 2020) something that has given rise to scenarios for the future of the cities and the revitalization of the villages (Beria and Lunkar 2021). Thus, further studies in the Mediterranean region are needed that help develop locally rooted theories of counter-urbanization that take into account the specificities of Mediterranean cultures and landscapes.

Rural newcomers as change actors

Current rural newcomers, usually part-time or hobby farmers, frame their “dwelling” on moral discourses and see their land as cultural heritage rather than as a personal ownership of productive land (Orsini 2013). The majority of these newcomers, many of whom have children, are either self-employed or telecommuters. They often implement innovative business ideas and thus create local jobs in the vicinity of their new residences (e.g., handicrafts, art, or executive functions in tourism and agriculture) (Löffler et al. 2016). This can be a driver of change toward land-sharing landscapes, at least avoiding them from the ongoing trend of abandonment-intensification-urbanization described above. Several studies show how a new type of agriculture is being developed by rural newcomers that is resulting in the expansion or maintenance of a cultural landscape, particularly in mountain areas. In a study in peripheral Alpine areas, Löffler et al. (2016) found that newcomers, with the support of both new and long-established residents, are revitalizing arable land and terraces and regenerating ancient cultural paths. Besides, the

restoration of vernacular farm buildings contributes to rural landscape sustainability and the return to traditional agriculture that boosts stable ecosystem balances (Cillis et al. 2020). In the Western Balkans, the rehabilitation of traditional houses has contributed to rural socio-cultural and economic sustainability, preserving the heritage and further improving the ecological quality of housing units and their adjustment to present standards (Kosanović et al. 2019; Ntassiou 2022). Counter-urbanization process close to protected areas shows that, despite the risk of gentrification and urban sprawl (Hurley and Ari 2018; Concepción 2021), may promote sustainable local development and rural multifunctionality through environmentally added value activities (Tulla et al. 2017; Moren-Alegret et al. 2018). In these areas, finding a balance between socioeconomic growth and environmental protection is key. An evaluation of the extent to which regional nature parks in France were associated with the development of their territories indicates these protected areas were not detrimental to local economic development, but even positive to attract population, tourism, business, and employment (Cremer-Schulte and Dissart 2015).

On the other side, previous research has shown that migrants living in rural areas and working in agriculture can have a fundamental role in sustaining certain types of agricultural production in constant demand for temporary work. Migration is already playing an important role in slowing down aging in some member states, and immigrants share a relevant part of the agricultural workforce in several European countries, where the proportion of rural employment that is filled by migrant workers has gradually increased over time. However, these facts are often coupled with low integration outcomes both in rural areas in general, and in the agricultural sector in particular, where migrants are more likely to work in elementary occupations, to be employees, and to have temporary forms of recruitment than locals (Kalantaryan et al. 2021).

The role of administrations

Current urban–rural migration is a highly distinctive phenomenon, as it is immersed in the context of worldwide concern for global change, livelihood sustainability, circular economy, internet access, and flexibility through telework (Duguma et al. 2021).

The counter-urbanization movement driven by the recent pandemic contains differential aspects concerning previous movements, at least in the Mediterranean context. The concept of rurality is being redefined (Rich 2021), and better communications and services are in place as are also opportunities for jobs not necessarily related to the primary sector. Teleworking thus can become a very important tool for rural reoccupation, in parallel to current discussions for the relocation of private firms and public administration. COVID-19 has proved that people can work remotely even from the village. In a post-COVID era, we anticipate new working conditions that allow everyone to work from everywhere, enabling the return to the village. At the same time, in many cases, there are conditions of associationism, internet connection, and knowledge for the local product to easily reach new consumers. Furthermore, this is all taking place at a time of great concern for Global Change, with the modification of consumption habits, the circular economy and short marketing circuits, new forms of associationism and producer–consumer relations, and the agro-ecological revitalization of the territories becoming progressively more important to ensure the socioecological viability of multifunctional rural landscapes (Lomba et al. 2020). Also, multi-functional agricultural landscape provision responds to a social demand (Sayadi et al. 2009). This is taking place all across Europe, with regional and local heterogeneities that do not neglect these generic trends (Pinto-Correia et al. 2018). However, while these back-to-the-land trends contribute to enhancing people's resilience and may play a role in the growth of sustainable farming and rural revitalization, much remains unknown regarding the processes involved (Benessaiah 2021).

Public initiatives to facilitate the integration of rural immigrants within local communities can help the long-term establishment of this new population engaging in rural activities, not only as employees but as self-employed. The manifold experiences of the integration performed by community action in Austria, Italy, and Romania pointed to three main aspects as crucial to integration: the presence of a supportive social environment, the engagement of local actors who broker contacts between the groups, and the availability of appropriate meeting spaces (Gretter et al. 2017). Public administration can easily facilitate these processes.

Finally, small-scale farming activities are key elements in shaping multifunctional landscapes made up of a mosaic of heterogeneous land uses. As some studies show, local initiatives in the management of traditional and cultural landscapes can be very effective when they focus on small-scale areas and specific landscape qualities (such as management of the traditional elements of a Mediterranean agricultural landscape) (Selman 2004; Orsini 2013). However, Common Agricultural Policy (CAP) regulations and subsidies have been historically designed for large exploitations, thus promoting the intensification and homogenization of landscapes and the abandonment of less profitable small-scale farms (Concepción et al. 2020; Pardo et al. 2020). Administrations should promote legislation specifically designed for small exploitations so that they can cope with the procedures and bureaucracy associated with them. Recently new legislation has arisen in Spain (Royal Decree, RD 1086/2020), which aims at adapting EU regulations to small-scale farming. Besides, the new CAP (EU Regulation 2021/2116) will include from 2023 onwards a redistributive payment, this is an additional income support for the first hectares of each farm, to support small and medium-sized exploitations, most of which are family and professional farms. It is necessary to explore whether these initiatives facilitate rural activities thus maintaining and shaping Mediterranean multifunctional landscapes.

Conclusions

Although counter-urbanization in the Mediterranean can follow the already described path of urbanization, touristification, gentrification, and loss of rural identity, there is evidence that Mediterranean countries share some differences with Anglo-Saxon and northern European countries where most literature on counter-urbanization and rural idyll has been developed. There is currently a new impulse of counter-urbanization supported by the extended net of socio-economic linkages along the rural–urban gradient still existing in Mediterranean countries that can reverse the trend of rural abandonment and land-use intensification that shapes land-sparing landscapes. Counter-urbanization, even with the risk of gentrification and urban sprawl, may foster sustainable rural development and multifunctionality. For this purpose

it is crucial to find a balance between socioeconomic growth and environmental protection.

Public administrations can play a pivotal role in riding this new wave of rural occupation by different types of migrants (amenity migrants, refugees, young people, families with kids, etc.) and promoting a certain type of landscape. First, more studies are needed that look at the factors that are triggering this change to promote this movement from administrations interested in reverting population loss. Also, it is necessary to look at the effects that this change in demography is having on landscapes and associated ecosystem services. If administrations are interested in preserving Mediterranean multifunctional landscapes and preventing further outmigration from rural areas, maintaining local agricultural activities, recovering abandoned fields and traditional elements of the rural landscape, and including them in existing recreational programs of rural tourism, are among the strategies to take full advantage of this aesthetic landscape potential, and to foster sustainable development of these regions.

Finally, to offer scientifically based guidelines towards the maintenance or renaissance of multifunctional landscapes, and minimize the negative impacts of rural immigration, it is crucial to understand this movement, its drivers, and the consequences on landscapes.

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