

Rural areas as actors in the project of regional systems

A comparison between Sardinia and the North-West Development Region of Romania

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Received: August 2021
Accepted: November 2021
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Firenze University Press.
DOI: 10.13128/contest-13032
www.fupress.net/index.php/contesti/

keywords
rural areas
bioregionalist model
territorial planning
economic and productive
system

Introduction

Rural areas represent 83% of the EU territory, where 30.6% of the population lives (European Commission, 2018). The processes of globalisation and the important challenges linked to the environmental and climate crisis require actions of renewal and innovative tools for intervention in rural areas, where the interrelation of anthropic and natural factors produces complex and dynamic territorial systems (Poli, 2020; Agnoletti, 2014). Since the

Second World War, the rural landscape has changed radically as a result of a progressive and continuous urbanization of the territory, with phenomena of urban sprawl that have involved areas external to the consolidated fabric, without any correlation with the quantitative population growth (Fanfani, 2006). The issues related to the agricultural use of space and the conditions of rurality have always acquired a residual role in urban and

the historical equilibrium through new dynamics of settlement related to processes of redefining the economic and productive system. The case study analysis provides the opportunity to reflect on possible solutions and perspectives to create new sustainable and long-lasting development for rural areas, enhancing the polycentric character of settlements and redefining the relationships between urban and rural production and consumption. In particular, the bioregionalist model is used as a reference for the design of new alliance pacts between city and countryside, focusing on the role of the agricultural sector in the definition of new positive connections between urban and rural areas.

territorial policies, often neglected in favor of policies directed to the support of the general trend to the urbanization of the population, which is constantly growing (Balestrieri, 2018). The now unquestioned recognition of the biological and ecosystem value of soil and its role in the protection of public health has not arrested the process of progressive land take for building purposes, which damages large agricultural areas suitable for food production and destructures the urban form. Urban and rural do not exist in nature, but are the result of an ongoing process of “social” production of

space, whose history dates back to the origin of the agricultural activity that has affected deeply the natural landscape (Sereni, 1986). The same dichotomy between urban and rural space is artificial: these are contexts with almost different characteristics, but which cannot in any way be dissociated (Santangelo, 2018). Urban development is usually conceived as a pervasive phenomenon that progressively overtakes rural space according to discontinuous dynamics and forms, resulting in the loss of natural areas that are essential for the livelihood of communities. The processes of transformation of the rural landscape do not coincide exclusively with the spread of settlements, but include the spatial changes made to space by agricultural production, a human activity that follows the same logics of the market and profit on which the urban phenomenon is based. The high concentration of agricultural production in areas with favorable characteristics (flat, with infrastructures and more productive) leads to the underutilization and abandonment of rural areas less attractive for accessibility, morphology of places or presence of detractors (Treu, 2009). Intensive agriculture, linked to an industrial structure of the agri-food system, can also have negative

The paper deals with the topic of rural areas sustainable transformation and development comparing two different contexts, Sardinia inland (Italy) and the North-West Development Region of Romania. First, it focuses on the general knowledge for the recognition of rural areas, highlighting the main features that define the territorial identity, the environmental and historical structure. The conditions of economic disadvantage and depopulation of inner areas affect the territorial structures and relationships between urban and rural spaces, unbalancing

effects on the rural territory, just as the excessive fragmentation of the farmland generates problems in the management of production processes so much that it does not allow even a subsistence agricultural activity (Agostini, 2018).

The economic and demographic crisis widely affects the European rural areas, in particular in some marginal and fragile areas, which have conditions of disadvantage such as to encourage the progressive and almost unstoppable phenomenon of depopulation, in addition to the problem of natural decrease in population. Comparing two different European contexts, the paper aims to analyze the social and economic changes connected to the depopulation of rural areas in order to discuss the bioregionalist model to reverse the trend and achieve a sustainable development (Fanfani, 2020).

The two case studies chosen for this paper are the Italian island of Sardinia and the Romanian North-West Development Region of Romania. Apparently very different in nature, the two regions share some similarities as will be shown in the following sections, notably a low population density (66 people/km² in Sardinia and 73 people/km² in the North-West Region), somewhat scarce infrastructure and a tendency for a further decrease in population because of a negative natural growth rate. In addition, the population is, in both cases, concentrated around the lowlands, with the inner, more mountainous areas being less fortunate

in this regard, while also acting as a natural barrier against mobility between more populated areas.

Notable differences between the two regions are the fact that Sardinia is more remote as an island in the Western Mediterranean, while the North-West Region of Romania shares a border with Hungary and Ukraine, making it a gateway to Western Europe and more attractive for investments (ADRN, 2021). Also, Sardinia has around 1.6 million people, while the North-West Region has 2.5 million and also a slightly smaller area (24,090 km² compared to 34,159 km² respectively). Finally, while the former has very few municipalities, with an average number of inhabitants (notably Cagliari as the most populous and prosper city), the latter has several urban centers, including Cluj-Napoca, which is the country's second largest and most important city after the capital, then the cities of Oradea, Satu Mare and Baia Mare, all counting over 100,000 inhabitants.

The paper outlines some common strategies for the construction of new relationships between rural spaces and urban contexts, which can contribute to solve some stratified problems related to ecological, infrastructural and economic dimensions. According to the bioregional approach, the protection of the soil capacity and the enhancement of agricultural uses can support the definition of strategies to improve the provision of ecosystem services, which are essential to ensure an ade-

quate quality of life, while promoting the development of local agricultural supply chains. The phenomenon of "return to the land" could support a regional economy in crisis, promoting, at the same time, local processes of self-determination and ecological preservation of the territory, in the direction of the conservation of agro biodiversity (Pinzello, Schilleci, 2014; Poli, 2014).

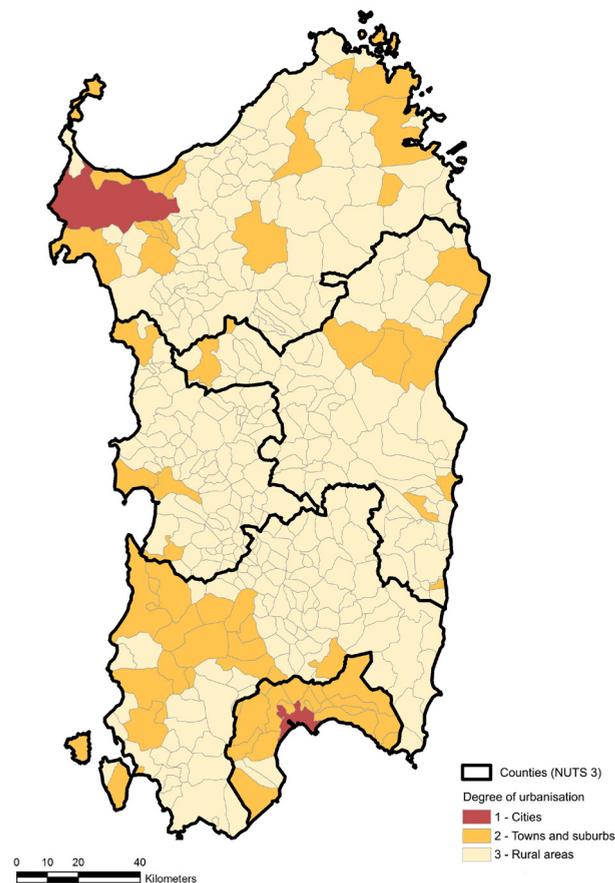
Historical Characteristics and settlement dynamics of the low-density territories

Low population density has historically been a peculiar characteristic of the Sardinian territory. In the 1940s, the French geographer Maurice Le Lannou described landscapes extensively covered by Mediterranean scrub, which testified a limited urban development with a spread of settlements, consisting mainly of centers of minor relevance. Only Cagliari, the regional capital, was presented as a cosmopolitan urban center characterized by relations of exchange with the outside of the island. However, Sassari was quite similar to a large rural village around which, thanks to the good supply of urban services, had a population involved in agricultural activities. The weakness of urban development was, in part, caused by the non-existence of a maritime life, with very few port facilities along the Sardinian coasts, also due to the non-relevance of the economic sector of fishing. Even the industrial structure is very weak, with a working-class population

lower than the Italian average and a profile of Sardinian industry mainly represented by small craft enterprises. In mid-20th century, Sardinia was an old rural country, based essentially on the pastoral economy, in which the condition of strong isolation, due to the insularity, contributed to preserve the archaism of social and economic organization, customs, languages and traditions, as well as to preserve ancient landscapes substantially unaltered. At the beginning of the 1940s, tourism had not yet become established in Sardinia and only the mining industry was of such importance that it was able to make changes to the landscape. Some extensive transformations to the landscape of the island were introduced by the Fascist regime, designing new road routes, carrying out works of reclamation of marshy areas, in addition to the creation of rural colonies and a new town (Le Lannou, 1978). The geography of Sardinia, characterized by the presence of the massive central mountains, is the main reason for the strong isolation, with territorial areas often totally disconnected, also because of the torrential regimes of the rivers. It also made difficult the realization of a network of road and railway infrastructures, due to considerable costs and technical difficulties (Le Lannou, 1978; La Marmora, 1860). The important extension of Sardinia, associated with a low population density, generates heterogeneous environmental conditions and very particular geographical frameworks, very

Degree of urbanisation in the Region of Sardinia

Fig. 1
Source: Authors' elaboration based on Eurostat data, 2020



different from each other and full of local features and conditions, even in the high mountain areas where the population is extremely scarce (Clemente, 1964).

In the identification of the typologies of the agrarian landscape, Le Lannou related the morphologies of the land, the types of crops and the prevalent settlement patterns: the pastoral Sardinia of the central mountain, the cultivated plains and plateaus; the pastoral “tancas” of the central west; the cultivated enclosures of the north west; the areas of scattered habitats; the areas of specialized crops (Le Lannou, 1978). The interest in the population of the island, supported since 1720 by the Piedmontese, also led to concrete initiatives to establish new centers, such as Carloforte, La Maddalena and Santa Teresa di Gallura. With the plans of agrarian reclamation of the years 1920-1938 and with the following land reform of the years 1952-56, new land has been recovered to be cultivated and an internal redistribution of the population in the island’s territory started. In the post-war period, between 1947 and 1949, the reclamation works for the elimination of malaria offered further opportunities for the population of flat areas not inhabited for centuries because of the unhealthy conditions. In the early Fifties, some initiatives of urban and rural territorial organization were launched, stimulated by funds on the infrastructural system, which led to the establishment of small communities in

agrarian territory and to the anthropization of the environment by applying the model of agricultural villages, with the population plan of Nurra and the territorial plan of Sarrabus. In the years between 1955 and 1960, the crisis in southern Italy, which also severely afflicted Sardinia, encouraged the massive transfer of population to the cities and the depopulation of peripheral and mountain territories. This process was further emphasized by the political attention paid to the industrial sector, neglecting the agricultural sector which had been damaged by the excessive fragmentation of land ownership and the backwardness of farming techniques and entrepreneurial skills (Clemente, 1964). The process of industrialization and modernization of the Sardinian economic and productive system, initiated with the 1962

Rebirth Plan, had important consequences on the structure and dynamics of the Sardinian population, although influenced by specific endemic conditions (Colavitti, 2020). The territorial distribution of settlements, characterized by a large number of small urban agglomerations spread across the territory, has remained substantially unchanged since the unification of Italy until the 1970s. Subsequently, the process of modernization of the social and productive structure has not led to a significant territorial change and the persistence of the territorial dispersion of settlements suggests a backward social and economic situation. The transformation of the economic system has essentially induced the growth of urban centers in coastal areas, characterized by the dominant presence of non-agricultural activities. The coastal settlements have become hubs of demographic attraction to the detriment of the inner zones, where the size of the residential centers is correlated to the prevalent presence of livestock activities in the wild. The experienced policy of growth and development, neglecting the different rhythms with which the coastal and inner areas have been transformed, has promoted in the long period a tendency to transfer the residual population of the inner areas to the residential towns of the coastal peripheral locations because they are considered more equipped with urban services (Sabattini, 2017). Today the Sardinian settlement system is mainly characterized by

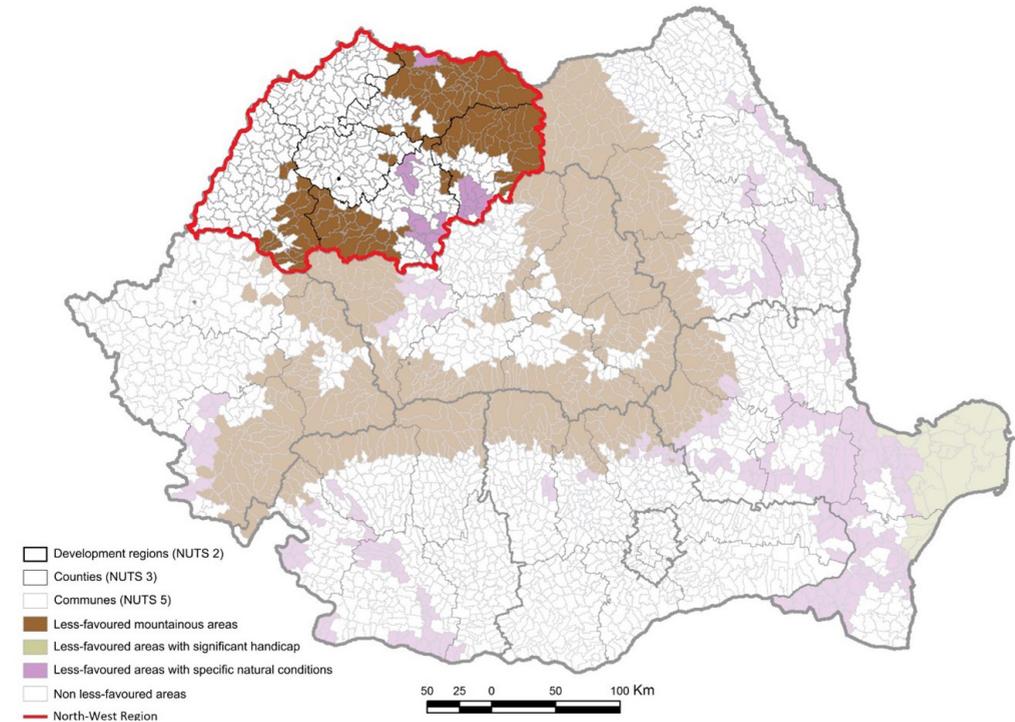
low-populated rural areas, which host about 50% of the total population, according to the Eurostat classification on the degree of urbanization by local administrative units, as can be seen in Figure 1. Tourism development has led to an evolutionary process of settlement organization, particularly in some regional areas, with the creation of urban poles characterized by an intermediate population density and greater interrelationships between coastal and inner areas.

Despite the absence of real urban agglomerations of metropolitan type, new centralities and new peripheries emerge in the territorial settlement system in a process of continuous evolution. The presence of densely populated areas, in which at least half of the population lives in urban centers, is limited to the urban conurbations of Cagliari and Sassari. In summary, the Sardinian regional territory is characterized by a condition of overall and widespread rurality, in which it is possible to recognize different situations within the single provincial territories, with a limited number of relevant urban areas. For this reason, even the Rural Development Program of the Region of Sardinia 2014-2020 does not define compartments but applies to the entire regional territory (Colavitti, Floris, Serra, 2020). From the current analysis of the island’s economic system, the tourism sector emerges with emphasis, providing support to the manufacturing industry, crafts and services. Until the cri-

The North-West Development Region of Romania and its less-favored areas

Fig. 2

Source: Authors' elaboration based on MADR, 2012, Annex 4; with changes



sis of 2008, increasing economic dynamics are recorded in the service sector, while other economic sectors still follow a positive trend until 2015. The agricultural activity is now showing some slight signs of recovery, after a long period of stagnation and difficulty.

More specifically, the primary sector is responsible for 4% of total investments on the regional territory, higher than the Italian data (2.6%), with an increase of 13% in the two-year period 2016-2017. In 2019, the number of agricultural enterprises decreased by 119 units compared to the previous year, but still represents a share of 23.9% of total regional companies. The percentage value is particularly high compared to the South (19.8%) and the Centre-North (11.5%), although the high presence of agro-pastoral enterprises is associated with a small size of them (CRENOS, 2020).

The North-West Region of Romania consists of six counties – Cluj, Bihor, Bistrița-Năsăud, Maramureș, Satu Mare and Sălaj – encompassing Northern Transylvania, Maramureș and the Northern part of the West Plains. It has a varied landscape, from the mountainous Carpathians in the South and East to the hilly center where Cluj-Napoca is located and to the plains in the West, bordering Hungary. As such, the infrastructure and density in population varies greatly with the largest cities concentrated either in the center (Cluj County) or along the Hungarian Border (Bihor and Satu Mare) and the lowest density villages scattered in

the mountainous Țara Moșilor [the Land of the Moși], Maramureș, Oaș, Sylvania, Lăpuș and Năsăud ethnographic regions (Ilovan et al., 2016). The latter, consisting of almost half of the region, are considered disadvantaged (less favored) areas and receive aid for development from the government and the European Union (see fig. 2 for a map of less favored areas).

There are three types of less favored areas in Romania (LFAs), covering 63.9% of the country, based on three dimensions – physical problems (related to difficult landscape and land quality), demographic and economic problems and technical problems respectively (land structure, infrastructure, etc.). Of these three types, the North-West Region includes two (see fig. 2), namely a large portion of mountain areas – characterized by a significant limitation of land use possibilities and an increase in the cost of land work, caused by high altitude and slopes, but also areas with specific handicap – with a significant level of deterioration of land productivity caused by phenomena of erosion, acidification, alkylation, excessive moisture, drought, salting, compaction, etc. (Havadi-Nagy et al., 2015).

The mountains bordering the region to the East (the Eastern Carpathians) and South (the Western Carpathians) constitute natural borders that are crisscrossed by the main rivers irrigating the land and establishing valleys like the Someș (with its Someșul Mic and Someșul

Mare tributaries), the Crasna and the two Criș (the Crișul Negru and the Crișul Repede rivers). Further north, there are the Tisa and Theiza rivers in remote Maramureș. All these valleys are also the main routes of transit, commerce, and settlement concentration – from Oradea to Năsăud and from Satu Mare to Turda, south of Cluj-Napoca.

The road network totals 12,738 km, out of which 1,690 km are not in optimal conditions of use. Only 4,256 km are modernized, which represents a percentage of 33.41% of the total road length, well below the national average of 42.54%. Only 68.2 km of highways were in service at the end of 2020. The railway network is in a deplorable state, even worse than the general situation in Romania. The total length of railways in 2018 was 1,668 km, of which 311 km are electrified lines (18.64%), and 244 km

are double lines (14.62%), but their state is so precarious that speed limits are enforced for trains in order to prevent derailing. Also, there is a notorious lack of connections between regions as no new railways have been constructed since the communist period (1989)(ADRN, 2021).

The rural area of the North-West Region consists of 403 communes. Out of a total of 1,800 villages, from an administrative point of view, 48 villages belong to municipalities and cities (thus being part of the urban environment, they are not eligible for rural development funds). The territory covered by rural localities in the region is 29,285.93 km², representing 85.73% of the total area. The communes in the region are of various sizes, the average population in 2018 being 3,229 inhabitants. The largest communes are Florești (Clujcounty)

with 38,257 inhabitants, Apahida (Cluj county) with 13,854 inhabitants, and Sânmartin (Bihor county) with 11,778 inhabitants (ADRNV, 2021). The region has several natural gold and silver deposits (in the Oaş-Gutâi-Țibleș-Rodna area), but also aluminum, salt, common lime stones, marble, kaolin, and andesite. The abundant forested areas also constitute a natural regenerable resource if used wisely. Thermal waters are in Satu Mare and Bihor counties with Oradea, Satu Mare, Beiuș, and the villages of Acăț, Boghiș, Tășnad, Noroieni, Marghita, Sânmărtin-Băile Felix, Băile 1 Mai, Borș and Sălacea being most renowned for bathing opportunities. Furthermore, the total surface of protected natural areas in the North-West Development Region (the 281 protected natural areas) is 1,821,368.12 hectares, representing approximately 15.17% of the total area of protected areas in Romania – 12,001,283.97 hectares (ADRNV, 2021). According to the Ministry of the Environment, Waters and Forests, the North-West Region encompasses 171 protected areas of national interest, which represent approximately 54.8% of the total protected areas. Of these, the highest concentration is in Maramureș, where 60% of the county is protected and the lowest is in Sălaj County with less than 10%. Even though tourism in the region is on the rise, having more than doubled in the last eight years, from 852,523 arrivals in 2012 to 1,721,729, the North-West Region only ranks

fourth at national level after the Central, București-Ilfov and South-East Regions (INS, 2021). Finally, a noteworthy concern is the impact of air and water pollution derived from anthropic activities in the area. While transportation and construction make up for most of greenhouse emissions and dust in urban areas, the rural settlements exhibit high air pollution through inadequate animal husbandry. Even though between 2012 and 2018, air quality has improved slightly with 18% rather than 24% emissions above the maximal admitted level (RNMCA, 2021), air pollution remains high and affects the inhabitants' quality of life. Of the four major river basins in the region – the Tisa, the Mureș, the Criș and the Someș – water quality ranges from 71.08% good and 28.92% average and poor in the Tisza basin and a much worse 55.92% good and 44.18% average and poor in the Someș basin, which is the largest by area (ANAP, 2018). The North-West Region ranks second at national level after the South-Muntenia Region, in terms of the number of contaminated and potentially contaminated sites. The largest number of contaminated sites are located in Maramureș County (102 sites). Of all these, most belong to former industrial platforms or land polluted by production for heavy industry, in various stages of degradation, which have a negative impact on the environment (ADRNV, 2021).

Historically, the North-West Development Region, established in 1998, was part of the Principality of Transylvania and of the Kingdom of Hungary, later included in the Austro-Hungarian Empire until it was finally unified with Romania in 1918. Most of the population is of Romanian ethnicity but there is a notable Hungarian minority around Satu Mare and in Bihor. The area was however far more ethnically diverse up until the interwar period, with Hungarians, Germans, Ukrainians, Poles and Jews making up for more than 33% of the total (1930 census). It is one of the most diverse cultural melting pots in Europe, with very different expressions in habitation and church architecture, ranging from fortified Saxon churches to traditional wooden spires up to 50 m tall and from Romanesque and Gothic to Renaissance, Baroque and Art Nouveau (Pop, Bolovan, 2016). The same can be said by its diverse social stratification and religious composition. The latter was also historically very diverse but experienced a slow uniformization over the last century (with an Orthodox majority at present). Up until the communist period (starting at the end of 1947), most of the population was involved in agriculture (farming and animal husbandry) and the ratio of urban to rural population was very low (22.8% to 77.2% in 1946) (Alexandrescu et al., 2018) but that tendency has drastically changed, and it now registers a more balanced situation with 53.8% urban to

46.2% rural population, still making Romania one of the least urbanized countries in Europe (Ciucnea et al., 2019). However, the resettlement of the population was based on an artificially state induced industrialization during the communist regime, which became unsustainable after the 1989 Revolution (Ilovan et al., 2019; Ursu, 2019) and meant that a lot of former industrial workers had to qualify for a different sector or emigrate altogether. Following the ascension of Romania to the European Union in 2007 and the opening of borders to Western Europe, a massive emigration phenomenon has been steadily taking place, and most of the country is subject to a drop in population. The North-West Region is similarly affected, with a total population of 2.55 million in 2019, as compared to 2.74 million in 2002.

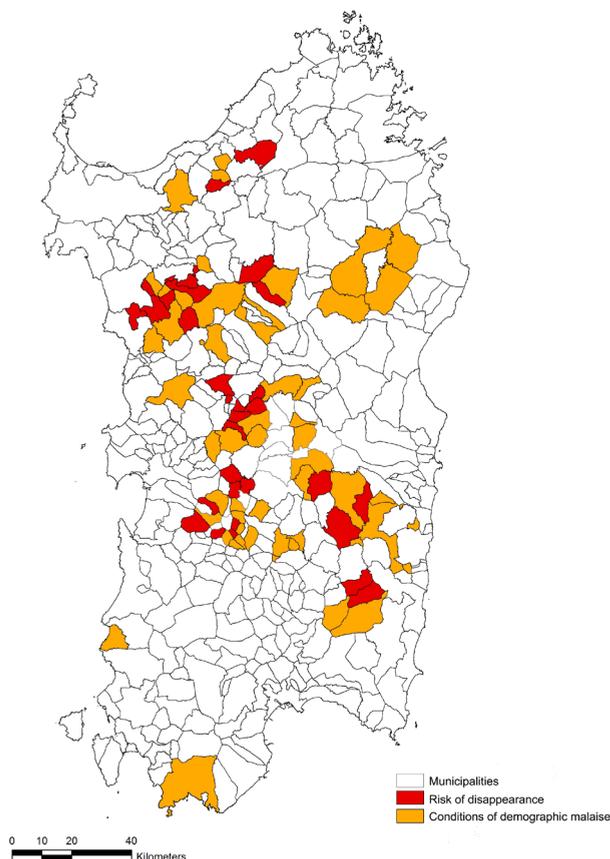
The rural areas of Sardinia: demographic decline and economic development

For a long time, Sardinia has been experiencing a progressive decrease in the number of resident population, which in December 2019 amounted to 1.611.621 units, with a reduction of 27.741 inhabitants compared to the 2011 census (ISTAT Permanent Census Data). In the 60 years between the 1951 census and the 2011 census, the percentage of municipalities in demographic decline was about 60%, 228 municipalities out of 377, and more than a third of these (35.5%) recorded a decrease of more

Demographic health of Sardinian municipalities

Fig. 3

Source: Authors' elaboration based on Sardinia IDMS Project 2013



than 40%. Hopeless attempts to keep residents in these areas used welfare assistance, following the myth of preserving the inner areas (Sabattini, 2017).

Several studies on demographic dynamics have highlighted some ongoing trends concerning the phenomenon of depopulation in Sardinia. In particular, the study that the Region of Sardinia commissioned in 2013, *Municipalities in extinction*. The scenarios of depopulation in Sardinia IDMS Project 2013, analyzed the state of “demographic health” of municipalities, as can be partially seen in figure 3. Only 148 municipalities out of 377 result in a condition of good or fair demographic health, representing 45% of the regional land surface and 67.4% of the resident population. On the other hand, 101 municipalities are in a critical condition, representing 28.4% of the territory and 24.1% of the regional population. The remaining 128 municipalities are in a very critical or severe condition, hosting just 8.5% of the regional population on a land area equal to 26.6% of the total. In particular, there has been an increase in the resident population in coastal areas, with a constant decrease in the average altitude above sea level, and a greater attractiveness of the southern part of the island. The municipalities with a serious or very serious situation are usually located in the mountains or hills, far from the coast, and usually have a population of less than 3,000 inhabitants. On the contrary, the municipalities in good and fair

health are mainly coastal, located in the plains or hills, often with a population of over 3,000 inhabitants. The strong decline in the birth rate, in particular, has produced an increase of average lifetime and a consequent important aging of the population. If on the date of the census of 1951, the average age of the population was less than 29 years, in 2011, it has risen to about 44 years.

The demographic trend has had an impact on the settlement dynamics, starting after the Second World War, due to the significantly unbalanced redistribution of the inhabitants in the territory. At the same time, the significant and rapid progress of urbanization, which have affected some areas of the island, espe-

cially coastal ones, accompanied by attempts to modernize the economic system, have produced further diversifications and changes in the consolidated cultural patterns and pre-existing lifestyles, helping to encourage the process of depopulation of the inner municipalities.

Although the Sardinian context is characterized by a very low tendency to change socio-cultural variables, compared to more developed areas, the settlement centers on the coast have over time become poles of demographic attraction against those of the internal areas (Sabattini, 2017). In a framework of denatality and population aging, worrying phenomena of demographic decline are emerging in a large part of the regional territory, particularly the ones with greater development delays and economic backwardness. According to some studies, the overall population of Sardinia could decrease by 9.3% over the next thirty years, with the risk of the loss of several municipalities by 2050.

The municipalities at greatest risk of disappearance have a resident population of less than 1,000 inhabitants and are located mainly in the hill and mountain range. The main risk is that the millenary settlement patterns of the population, in which rural villages represent a presidium to protect the physical structure of the territory, may be destroyed in a relatively short period of time, with a serious loss of local identity that will irreversibly change Sar-

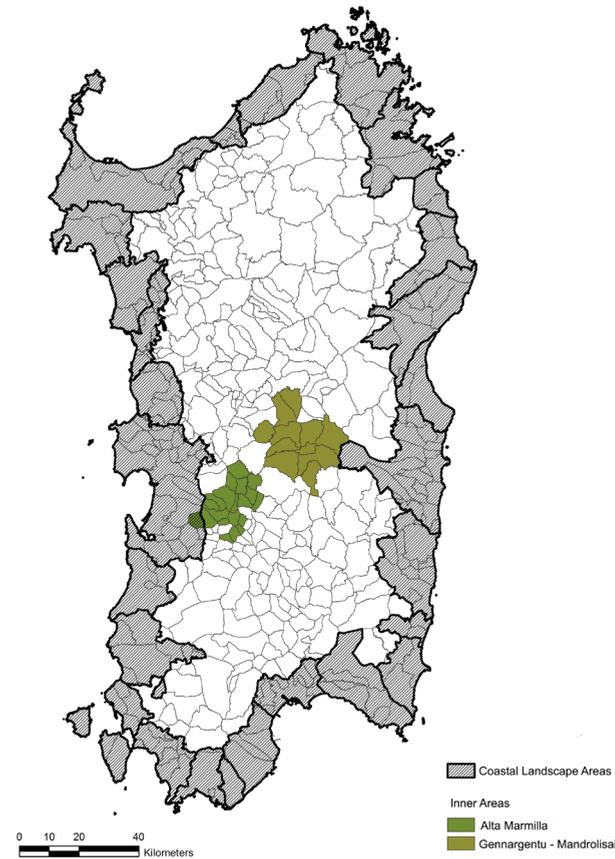
dinia. The dynamics of depopulation is driven by heterogeneous factors, among which the main one is the emigration of residents, especially young people, in search of employment opportunities and services, resulting in the progressive aging of the resident population and reduction of collective facilities. Additional factors affect the phenomenon of territorial abandonment, although it is difficult to assess the weight of each single cause, such as inadequate services and infrastructure and reduced employment opportunities, income, health, and education (Bottazzi, 2015).

The consequences on the urban structure, produced by the social and economic changes following the implementation of the intervention policy started in Sardinia since the beginning of the 50s of the last century, have not been carefully evaluated. The transformation of the regional productive system, with the downsizing of the agricultural sector and the development of the services sector, has impressed extensive transformations on the ancient social and economic structure of the island, with the transfer of part of the population employed in the primary productive activities moving towards the public administration and industry. The relocated population is predominantly made up of young people, leading to a further aging of the residents that have remained in the internal part of the island and a progressive impoverishment due to anagraphic causes (Colavitti, 2020; Sabattini, 2017).

Sardinia landscape coastal area and target inner areas

Fig. 4

Source: Authors' elaboration based on the Regional Landscape Plan and National Strategy for Inner Areas



In the framework of innovative national policies for development and territorial cohesion, the National Strategy for Inner Areas (SNAI) aims to overcome the marginalization and demographic decline of the so-called “inner areas”, fragile and marginal territories, far from the main centers of supply of essential services but rich in important environmental and cultural resources, highly diversified by nature and by anthropization processes. The project adopts a place-based approach and a model of multilevel local governance to address the needs of territories characterized by significant disadvantages of geographical or demographic nature. Inner areas represent about 60% of the whole national territory, 52% of the municipalities and 22% of the population. SNAI invests in the promotion and protection of the richness of the territory and local communities, enhancing their natural and cultural resources, creating new employment circuits and new opportunities, also to counteract the demographic decline.

The extent of the problem in the Region of Sardinia is clear: 318 municipalities out of a total of 377 fall into the category of inner areas, which host 824,930 residents (over 50% of the regional population). As part of the 2014-2020 resources programming cycle, a number of areas in which to concentrate actions have been selected at the regional request. In Sardinia two priority areas have been identified, Alta Marmilla and Gennargentu Mandrolisai,

involving 30 municipalities and 22,714 inhabitants.

The inner area Alta Marmilla, which is homogeneous from an administrative, socio-productive and geographical point of view, is located between the basaltic plateau of Giara and the volcanic massif of Monte Arci. It covers 19 municipalities, with a population of 9,325 inhabitants in 2019, registering a reduction of 8.54% in the period 2011-2018. The municipality with the largest population is Ales, with 1,515 inhabitants and the remaining ones do not exceed one thousand residents. According to the SNAI classification, these are mainly peripheral areas and three intermediate areas. The problems are essentially linked to the lack of public transport services, the commercial and entrepreneurial network, as well as the strong demographic crisis, with some municipalities at risk of disappearance. Potentialities are offered by the widespread archaeological and historical-artistic heritage and by the uncontaminated environment and landscape that can act as driving factors for development. In this case, ten municipalities fall into the category of ultra-peripheral areas and only one in peripheral areas.

The inner area Gennargentu Mandrolisai is composed of 11 municipalities in the province of Nuoro, which belong to the Union of Municipalities of the same name. It involves a population basin of 13,897 inhabitants in 2019, recording a reduction of 8.36% in the period

2011-2018. The largest municipality is Desulo with a population of 2,277. The territory is totally mountainous and is characterized by the important presence of agricultural and wooded areas, as well as high mountain silvo-pastoral activities and silvo-cultural productions. The main criticality is related to the limited accessibility, both inside and towards other territories, due to the morphological and orographic characteristics of the territory.

The criteria for selecting the target areas do not seem to take into account the complexity and the history of the relationship between man and territory (Colavitti, 2020). In addition, the resources provided by SNAI allow to operate on the system of services and to realize

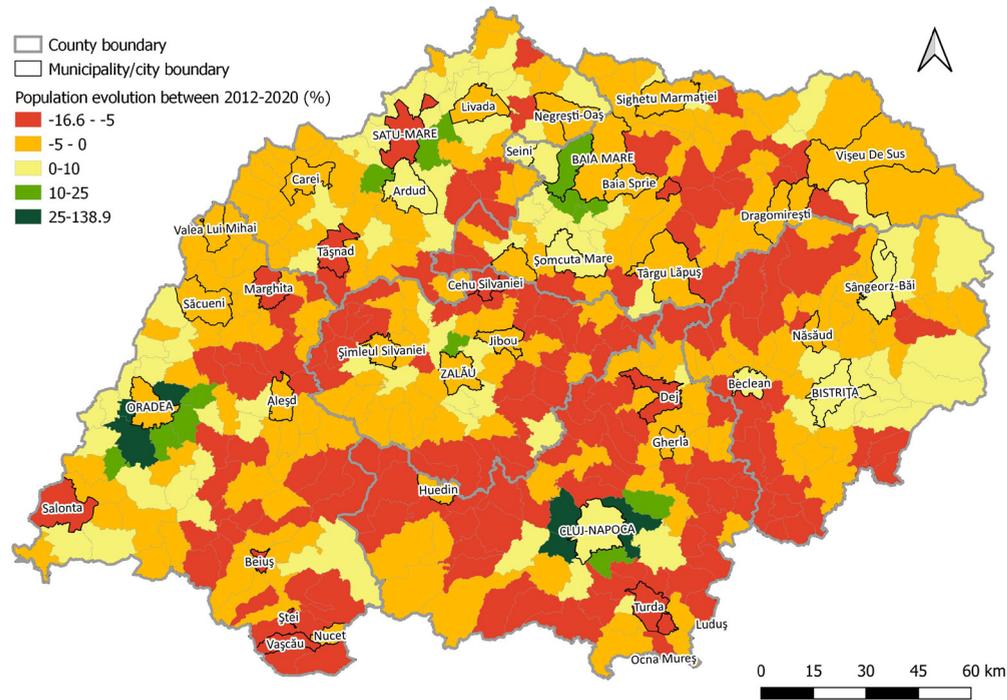
specific local development projects, but often in an uncoordinated way within a strategic and planning framework, usually focused on coastal areas.

Even the Regional Landscape Plan has given priority to the coastal strip, waiting to be extended to the inner areas of the island, as can be seen in figure 4. In this perspective, the Region of Sardinia has launched a research project with Sardinian universities for the knowledge and identification of rural landscapes which, taking up the European Landscape Convention, are identified in the project as “parts of the territory with prevalent agricultural, zootechnical, forestry, natural and settlement uses, single or combined, whose characterization derives from the interrelation of natural and/or anthropic, material and immaterial processes, as perceived by the populations”¹. With the term “rural landscape” is defined a territory characterized by common biophysical, geophysical and historical-cultural connotations, in which agricultural, zootechnical and/or silvocultural productions are carried out, significant in terms of quantity. The landscape value of such areas is also conferred by anthropic elements such as terracing, suburban gardens, the organization of crops, land reclamation or agrarian reforms. The Regional Landscape Plan can contribute to identify possible virtuous co-evolutions between landscapes inherited from past generations and new investments in the territory, safeguarding

Population evolution by household in the North-West Development Region, 2012-2020

Fig. 5

Source: Author's elaboration based on ADRNV, 2021, fig. 11, p. 33, with changes



the existing relationships between the characteristics of rural settlement and their historical and cultural contexts. Today, Sardinia's inner areas are waiting for the definition of guidelines and rules for use and transformation by the socio-economic actors, essential conditions for the construction of an endogenous, self-sustainable and durable development.

The highlands of Transylvania: scarcity of infrastructure and rich cultural heritage

Romania in general is characterized by a predominant rural landscape. The rural area covers 87% of the total surface of the country and only 45% of the total population, registering an average density of only 47 inhabitants/km². According to the OECD methodology, the rural area of Romania covers 94% of the total sur-

face and 48% of the overall population, with the same density (Havadi-Nagy et al., 2015). The North-West Development Region is consistent with these numbers, having an average urbanization ratio of 52.40%. It registers a total of 43 towns and cities, however most of them have a very small population of less than 20,000 inhabitants (30 out of 43), whereas only four of them reach a population of 100,000 inhabitants or higher (Cluj-Napoca, Oradea, Satu Mare and Baia Mare) (ADRN, 2021). Due to traditional inclinations, a large proportion of the population of these 30 small towns still engages mostly in agricultural activities specific to the rural way of life, further decreasing this ratio in reality. As stated before, the population of the area has registered a steady decrease, mostly due

to emigration abroad for the last three decades, the 2019 resident population being less than the 2002 total by more than 7% (roughly 190,000 people). A less intensive but still notable phenomenon is the migration from poor rural areas to more favorable suburban settlements clustered around the four larger cities, especially around Cluj-Napoca and Oradea, as can be seen in figure 5.

Out of the 433 communes and municipalities making up the North-West Region, more than two thirds experienced a drastic population decrease in the last three decades. Whereas most of the rural areas underwent visible shrinkage from 0 to 16.6%, particularly those secluded in the mountains, very few former rural areas (actually suburban expansions of the city in the metropolitan area) were characterized by a massive increase, sometimes by 51% (in the case of Sântandrei, near Oradea) or even 138% (in the case of Florești, near Cluj-Napoca)² in just eight years, from 2012 to 2020 (ADRN, 2021).

The reasons for this drastic change in residents are complex and include poor infrastructure, long distances to urban centers that provide vital services like education and health, low employment opportunities and a significantly lower income than what could be gained in cities. Furthermore, the population has been aging at an alarming rate due to several factors including the raise of life expectancy for the elderly, the steady decrease in birth rates, and

the migration of the workforce, particularly younger people, abroad or to the big cities. It is estimated that around 10,000 children in this region are left behind with one or both parents working abroad, which constitutes a major social issue (ADRN, 2021).

Sălaj county, for example, has the lowest percentage of active population (63.76%) and the highest percentage of retired people (26.08%) as compared to the national (60.06% and 18.94%, respectively) meaning that for every two active people that pay social security there is almost one retired person benefitting from those funds (INS, 2021).

Other concerns, related to the shrinking and ageing rural population, include the poor representation of non-agricultural activities and jobs (which cause a dependency of the locals on subsistence farming and animal husbandry), a poor entrepreneurial culture, low qualifications, and lack of interest in attending training courses and even a higher rate of school drop-out than the national average. All these translate into a lower income per household, sometimes bordering poverty (MADR, 2021).

With the risk of poverty also comes the risk of social exclusion, especially for the Roma ethnic minority, and a gradual degradation of culturally valuable settlements and historical monuments and sites, as their occupants leave or fail to take care of them properly (MADR, 2021). Isolation also means accessibility is low due to poor road infrastructure, the tourist-ori-

ented services also suffer and so this potential revival for the local economy is all but lost in the process as well. Many villages suffer from poor internet connection and even a bad connectivity to the electric grid or to fresh water and sewage.

The National Programme for Rural Development of the 2014-2020 period was managed by the Romanian Ministry of Agriculture and Rural Development and its internal structure, titled the General Department for Rural Development. According to this document, Romania has a significant agricultural surface, with a high percentage of arable land.

There are several strengths that characterize agriculture in the North-West region, such as the trend to increase the production and commerce with ecological products, a varied array of traditional quality food, big diversity of natural resources and local products, and a growing interest of the young in agriculture (MADR, 2021; cf. also Havadi-Nagy, 2021; Muntean, Caranfil, Ilovan, 2021). The region hosts agricultural and forested land, generating ecosystem services: high biodiversity, high nature value areas managed in a traditional manner, close to nature, well preserved natural resources, extensive rather than intensive agriculture, relevant resources of renewable energy (MADR, 2021; Cebotari, Benedek, 2017). The weaknesses of the agricultural sector, impacting the rural area, are the large number of small farms (for subsistence and semi-sub-

sistence), which use much of the agricultural surface workforce, high fragmentation of agricultural and forested land, small farms, especially in the mountainous area, many old farmers, low agricultural productivity, low appreciation for the public services provided by farmers (e.g. landscape, biodiversity), low level of basic professional training and professional competences among farmers, low cooperation among farmers reflected in low association degree impacting negatively the viability of farms, large percentage of agricultural area situated in areas affected by natural limitations, with low productivity, weak organizing and advertising of short food chains (MADR, 2021).

To these weaknesses, one can add certain threats induced by the socio-economic situation of the rural area: decrease of rural population, especially of the young and qualified ones, mainly in areas impacted by restrictive natural and social circumstances, widening disparities between the rural and urban area based on life quality, late submission of project proposals by beneficiaries indicated in local development strategies within Local Action Groups, running the risk of losing funds because of limited capacity of public authorities and private actors to make investments (MADR, 2021).

Based on the above-mentioned strengths, and considering the weaknesses and threats, in the last decades, the Romanian Government used the financial opportunities provided by the Eu-

ropean Union in order to strengthen Romanian agriculture and improve the life quality in the rural areas. One of the implemented programs was SAPARD (Special Accession Programme for Agriculture and Rural Development) and, at present, it is LEADER/Community-Led Local Development (CLLD). Their success and impact are still to be assessed.

Discussion

The “urban” model of life, promoted with particular force since the 1950s in Italy, is based on a high degree of population mobility, for economic and employment reasons linked to a global market and for an individualization of experiences that tends to contrast and strongly reduce the traditional mechanisms of social control. New development models, based on the valorization of local resources that are today unused, could slow down the processes of depopulation. The strengthening of the polycentric character of settlements, through specific interventions on accessibility, could constitute high-density networks in which municipalities that gravitate around a center of attraction or neighboring municipalities, well connected and with short travel times can facilitate the population of the territory. Rethinking the system of local governance, including the establishment of possible inter-municipal areas that aggregate small or very small municipalities for the joint management of a range of collective services, starting

with transportation, can facilitate such processes (Maciocco 2011; Bottazzi, 2015).

The idea of comparing the region of Sardinia with the Carpathian sub-region in Romania (a region within a region) stems primarily from the structural data of the two economies and from the presence of a similar amount of natural capital. The economic-environmental data make it possible to draw a number of comparisons on the basis of which to introduce the bioregional and ecosystem approaches the basis of a possible objective of socio-economic revitalisation by opening up traditional economic sectors to technological innovation and, above all, optimally strengthening (through cooperation and networking) local services and community care, in the light of current benchmarks interpreting competitiveness, sustainability and social inclusion in Europe. Other parallels can be drawn with regard to the socio-economic transformations that took place after the 1950s, albeit within a radically different political framework, which have influenced the history of the two countries.

Both in Sardinia and the North-West Development Region of Romania, the bioregionalist approach could rebalance the relationship between urban and rural areas, which is the cause of the phenomenon of depopulation of the inner territory of the region, acting first of all on the decoding and representation of the historical, cultural and identity of the territories, using new categories of interpretation of

the heritage values of the territories, the landscape, the production system and community relations (Magnaghi, 2020). On these fundamental elements, it is possible to structure a self-sustainable socio-economic model that gives new decision-making impulse to local civil societies in order to build long-lasting processes of endogenous qualitative growth. The recovery of rurality suggests for Sardinia and for all the regions that present the same gaps on the modernization path, the establishment of a new way of life that can be oriented to the promotion and support of a balanced local development. The reterritorialization of local food systems and food supply chain planning is also fully within the current responsibility of territorial government. In some recent experiences of minor centers in Sardinia we can recognize some interesting signs of an urban renaissance that is able to reconcile local identities and interlocal synergies, reconstructing the complementary relationship that joined the city and the countryside until the industrial revolution, in a continuous exchange of goods, information and affects. The city returns to take care of the territory, a task carried out sometimes cooperatively by a more complex urban entity, the city of villages (Maciocco, 2011, 2017). For the North-West Region of Romania, there is a great diversity (compared to other regions) and there is no functional homogeneity of the rural area. However, it can be seen that the de-

velopment of animal husbandry, eco-tourism and non-agricultural activities could be the focal point to converge all areas of the region, probably the best opportunity to capitalize on agricultural resources throughout the region (ADRNV, 2021).

Cluj County is on the second place in Romania, after Bucharest, with 11.2% of its employees having higher wages than 1,000 Euros per month, in 2016 (Ionescu-Heroiu et al., 2019). Bihor and Satu Mare account for 3.2% each, Sălaj for 3.1%, Bistrița-Năsăud for 2.5% and Maramureș for 2.4%, at the other end of this hierarchy (Ionescu-Heroiu et al., 2019). As such, the university city of Cluj-Napoca is the most attractive one in the North-West Region, for young and qualified workforce. It is also a city with complex services with regional relevance. Within this region, Oradea is a city with complex services relevant at the sub-regional level, while Baia Mare and Satu Mare are cities with mixt services, also of sub-regional relevance. Bistrița, Zalău, Turda and Sighetu-Marmației are cities with mixt services, relevant at the county level (ADRNV, 2021).

Among the most important associative structures of the urban areas in the North-West region, there are the metropolitan areas of the following cities: Cluj-Napoca, Oradea, Baia Mare, Satu Mare, and Zalău (ADRNV, 2021). The following measures are recommended for developing further the metropolitan areas, and these are to be considered major axes for

investment: metropolitan connective infrastructure, metropolitan business infrastructure, vehicles and public transport infrastructure for the metropolitan areas, rehabilitation, modernization and enlargement of the heating systems, urban regeneration of the neighborhoods of blocks of flats, rehabilitation of buildings and of the historic urban centers, development of the housing fund, rehabilitation of the public spaces, and creation of metropolitan parks (Ionescu-Heroiu et al., 2019).

However, in the North-West Region, development disparities are present, as these urban affluent areas are counterbalanced by other areas that lack urban polarizing centers and are featuring social and demographic decline. According to the Development Plan for the North-West Region, some of these areas are the following, to be found in each county: the southern and eastern part of Bistrița-Năsăud county; the southern part of Satu Mare county; the mountainous area, the northern and eastern part of Cluj county; the southern part of Bihor county; the southern and south-eastern part of Sălaj county, etc. The settlement network access to cities and their services is a balanced one, but usually towns that offer services to rural areas are underdeveloped (under 10,000 inhabitants) and have quite rural features (ADRNV, 2021).

General features of the rural area of this region may support bioregional practices, based both on available resources and inhabitants'

attitudes towards sustainable development (Havadi-Nagy, 2021; Muntean, Caranfil, Ilovan, 2021). Some of these characteristics are the following: insufficiently capitalized traditional practices that could support the development of high value products; the availability of an enlarging market; attractiveness of the rural area to be increased through the necessary investment in basic infrastructure. For these changes to take place, research shows that it makes a difference the return of Romanians who were active abroad and achieved specific knowledge and capital in order to develop their economic activities in Romania (Ilovan et al., 2021; Muntean, Caranfil, Ilovan, 2021). In addition, rural population should have more access to programmes for lifelong learning and for training in order to develop their entrepreneurial skills. In this context, information and communication technology enables connections irrespective of physical distance and supports development. A trend to develop sustainable rural tourism and ecotourism, as well as to preserve and promote local identities, together with the interest of a part of the younger generation in agriculture, supports a better connection between cities and rural areas and the territorialist approach to development. However, financial support from the European Union proves critical in many cases, in order to modernize and restructure the agricultural sector (MADR, 2021). As a result, lately, more businesses develop alternative food networks,

where, besides the social and economic value of their activities, they also raise consumers' awareness concerning the quality and environmental sustainability of the products they buy (MADR, 2021; Havadi-Nagy, 2021). In addition, bioregional practices may further encourage farmers and consumers to preserve biodiversity, landscapes, soil quality, and give up activities that negatively impact the environment (MADR, 2021).

In the rural area, the consumption of cultural activities is negatively impacted by a lack in cultural infrastructure or little represented infrastructure. This area is limited to visitors who come especially for museums and art galleries, artisanal exhibitions, historical and cultural parks, and heritage objectives (ADRNV, 2021). In addition, the existence of protected areas enables the development of ecotourism, such as the one practiced in national parks and nature reserves, with varied flora and fauna, and unique landforms in Romania. In the North-West Region, such touristic activities are present in the Rodna Mountains National Park, the Apuseni National Park and the Maramureş Mountains National Park (ADRNV, 2021). They are present also in the neighboring areas of the protected ones, where there are touristic resorts. Ecotourism (hiking, alpinism, speleological tourism, and extreme mountain tourism) observes the integrity of natural landscapes, of ecological biodiversity, and also creates opportunities for tourists to con-

tribute to the development of local communities (ADRNV, 2021; INCDT, 2009). Moreover, the tourists' growing interest into traditional gastronomy, slow food, and sustainable agriculture, include gastronomic tourism into ecotourism (ADRNV, 2021). However, one cannot ignore the alteration in the last three decades and a possible loss of cultural heritage and rural traditions.

To sum up the picture, the rural landscape (where it has survived in its original, unaltered form) consists of a picturesque blend of wild natural surroundings and some still idyllic small settlements that can be delightful for those interested in rural ecotourism. The rural expressions of the Romanian vernacular, particularly those present in the North-West Region in secluded areas like Maramureş or Țara Moşilor have a particular appeal and patina as wooden buildings have aged well and have blended with nature. In the words of Lucian Blaga, "No monumental architectural style has emerged in Romania, but there is no need for it: the spirit of the country's architecture is fully revealed in a simple farmhouse or a church overrun with nettles" (Pătraşcu, 2008, p. 14).

Conclusions and new perspectives

The relevance of the research of trends and potential for rural areas development is primarily caused by increased attention of scientists to spatial topics. Rural territories occupy most of the Sardinian and Romanian territory

but, at the same time, development of rural areas does not seem to be the focus of political interests. Many local development initiatives have been carried out by local communities, in spite of support from central government and regional administrations. Moreover, regional administrations have demonstrated difficulties in governing integrated rural development actions by coordinating the different initiatives of settled communities (is the case for the Sardinia region).

In Italy, from the 1990s onwards, the processes of rationalization of public spending and modernization of the public administration have led to a rethinking of welfare and of the way in which services are provided, aimed at reducing direct public intervention in two directions: on the one hand, the introduction of competition- and profit-oriented logics, justified by the need for greater efficiency in both management and expenditure; on the other, the recalibration towards welfare mix systems and forms of territorialisation of services, the expression of a progressive devolution of competences from the State to the territorial authorities through which services are designed with respect to territorial needs

The rural territories themselves, already affected throughout the 20th century by processes of abandonment, depopulation, emigration and crisis in the economic fabric, have seen a progressive reduction in the supply of services. Today, the rural is the subject of new

relevance (Carrosio, 2019; De Rossi, 2018). The need to think of actions that hold together social cohesion and local development that calls into question the importance of integration in its various dimensions (between economic and social, intergenerational and inter-actor, between different social actors), crucial in territories where resources are more loose and dispersed.

The urban bioregion model goes in this direction. The expression 'bioregion' highlights the need to re-found the co-evolutionary relationship between human settlement and the environment, redefining the rules of production of space. This should lead to complex and integrated living and production systems, based on networks of small and medium-sized towns, each in a balanced relationship with its own environment, its own agro-forestry system, its own local production systems based on the enhancement of the territorial, environmental and landscape heritage as a common good (Fanfani, 2020).

The idea of a "spatial contract" could properly strengthen the territory, fostering the development of polycentrism useful for community participation (Schafran, Smith, Hall, 2020). The presence of important cultural infrastructures is limited by the lack of modern access and mobility infrastructures which make it difficult to increase sustainable use (both Sardinia and Transylvania).

The challenge for rural areas is to strengthen their importance within general policies, both state and regional. In order to do this, it would be useful to think around the bioregional dimension that takes into account the following essential features:

- to improve population's living conditions including the infrastructure provision; for example, the transport accessibility through the development and enforcement of the standards of regional and local roads;
- to promote the polycentric development and enhance all kinds of integrated services providing the population and entrepreneurs with various types of them;
- to improve the cooperation, farming, increasing the availability of agricultural markets for small and medium producers,
- to support the development of specialized infrastructure for the storage of agricultural products, the introduction of new technologies for processing agricultural materials, and promote the use of unused land in rural areas suitable for efficient agriculture;
- to contribute to the diversification of employment and broaden support for the population's initiatives in the field of entrepreneurship, not only linked to agriculture, but also to the economic output of the agricultural industry sector.

Notes

¹Region of Sardinia, Rural Landscapes of Sardinia. Methodology for the identification of local rural landscape areas. Annex to the Deliberation of the Regional Council n. 65/13 of 6.12.2016.

²These are, of course, the official figures but estimates for Florești, for example, are even higher, making it the most populous commune in the country that has not achieved urban status. It is estimated that it has more than 50,000 residents that commute to Cluj-Napoca daily, for work and services.

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