

Historic Public Paths in rural areas: Engine of development and origin of new conflicts

David Moscoso-Sánchez¹, José María Nasarre-Sarmiento², Manuel Trujillo-Carmona³, Manuel González-Fernández⁴, Ana Luque-Gil⁵, Víctor Sánchez-Sanz⁶ and Pablo Vidal-González⁶

¹University of Córdoba; ²University of Zaragoza; ³Institute for Advanced Social Studies; ⁴Pablo de Olavide University; ⁵University of Málaga; ⁶Catholic University of Valencia

Abstract

Purpose – In this article we analyse a complex social process affecting historic public paths in rural areas in southern Spain. Despite the fact that urban populations are demanding the enhancement of this type of natural heritage for tourism, sports and recreational use, some parts of the network have been abandoned or usurped.

Design/methodology/approach – The study is multidisciplinary, comprising three interlinked studies. The cartographic study comprises an inventory of public paths in rural areas based on administrative sources. The legal study analyses local, regional and national regulations governing agricultural, environmental, heritage, sports and tourism uses of the infrastructure. The sociological study analyses social discourses on the uses of public paths, and identifies conflicts between farmers, landowners, environmentalists, sportspeople and tourists.

Findings – The preliminary results identified an important public paths network in Andalusia, approximately 160,000 kilometres. The legal study found that there are laws regulating use, although local authorities do not monitor compliance or provide solutions to enhance management. The sociological study determined the attribution of environmental, cultural and economic value to public paths, but also the existence of conflicts between rural and urban populations.

Research limitations/implications – Given that this is ongoing research, only state of the art and some preliminary albeit sufficiently consistent results are presented.

Practical implications – The results could help to guide public policy and governance of public paths.

Social implications – Public paths promote rural development and a green/sustainable economy.

Originality/value – The research results and conclusions are original.

Keywords Public Paths, Rural Development, Green Economy, Cultural Change, Conflicts, Depopulation, Andalusia.

Paper type Research paper.

1. Introduction

Andalusia's rural public paths network¹ comprises drovers' roads, forest tracks, rural roads, sports and tourism trails, cultural routes, natural itineraries in protected areas and 'greenways' (often abandoned railway tracks), not all of which are regulated by law. It also includes many buildings and infrastructures (livestock resting places, visitor information centres, natural scenic viewing platforms, recreational areas, farm labourers' huts, etc.) that support and complement the network. This rural heritage is an integral part of the public road system, which fulfils communication, cultural and ecological functions (Oteros-Rozas *et al.*, 2013). These green infrastructures (GI) are in themselves a powerful expression of the cultural and ecological heritage of the rural environment. Indeed, traditional resource management activities such as agriculture, livestock breeding, forestry, transhumance and hunting have typically revolved around GIs (Mastronardi *et al.*, 2021; Vidal and Castán, 2011; Albera and Lebaudy, 2001). In Andalusia, most of the green infrastructure is public and needs to be protected and conserved. And, in cases of abandonment and usurpation, saved and recovered in order to enhance planning and management to fulfil social, cultural, economic and ecological functions, within the sustainable development of the rural environment.

In recent years, this type of heritage has acquired special prominence on the political agenda given its increasing importance among more and more sectors of society. In 2017, the Regional Government of the Autonomous Region of Andalusia passed *Law 3/2017 of 2 May on the Regulation of Footpaths*, and in 2018 *Law 10-18/PPL-000011 on Rural Public Paths*. Both parliamentary initiatives were promoted by some of the authors of this article. The new laws placed the region at the forefront of legislation on the subject and was subsequently followed by other Autonomous Regions. For example, the Regional Government of the Balearic Islands approved *Law 13/2018 of 28 December on Public Paths and Hiking Routes* in Majorca and Minorca, and the Regional Government of Murcia approved *Law 2/2019 of 1 March on Signposted Paths*. It should be noted that Spain's administrative structure is based on the devolution of powers to 17 Autonomous Regions and 2 Autonomous Cities, although the state retains full sovereignty.

Other regional laws and decrees worthy of note due to their importance are those aimed at providing administrative tools for the organisation and enhancement of historic paths, especially for sports, tourism and environmental purposes. This is the case of *Law 3/1996 of 10 May on the Protection of the Camino de Santiago* (de Compostela), approved by the Regional Government of Galicia, and *Law 5/2003 of 26 March Regulating the Network of Green Routes in La Rioja*, approved by the Regional Government of La Rioja. The latter encompasses the entire network of sports, tourism, cultural and natural itineraries in the region. Other regions have also passed various decrees on sports and tourism trails in rural areas in recent years.

Recent legislation reveals the importance currently given to historic public paths. This is the result of growing demand from the urban population for new uses. However, in recent years, the rural population—in particular, small and medium-sized farmers, livestock breeders and environmental groups—have also started to demand that public authorities take a greater interest in the correct management, maintenance, enhancement and supervision of historic public paths.

Research approach

This context has led to the creation of a multidisciplinary team of researchers from different universities and research centres coming together to collaborate in an ambitious research project, which is financed within the framework of a public call from the Regional Government of Andalusia.² The aim is to study the role played by historic public

paths in the economy and culture of rural areas by analysing their potential as a factor of rural development, economic diversification, socio-territorial cohesion and the fight against depopulation. The study also analyses the conflicts arising from the multiple uses of public rights of way due to the absence of a governance model pertaining to this type of traditional infrastructures.

The study analyses the regulatory situation (laws, decrees, programmes, plans and measures) relating to rural infrastructures, to provide keys to improving the governance of public utilities in the future. The aims of the study are as follows: ascertain the opinion and assessment of social, political and economic agents to determine the economic impact, social effects and ecosystem services derived from this type of heritage; identify the symbolic and material interests that explain the consensuses and conflicts surrounding the management and governance of this type of heritage, and, lastly, produce a map and inventory of historic public paths to determine origin, typology and condition, based on administrative sources.

The overall aim of the study is to provide knowledge for administrative and political actors to adequately organise different uses of public paths. In this regard, our research provides a technical report on the management situation, state of conservation, characteristics and social, economic and environmental potential of Andalusia's historic public paths, as well as a detailed cartographic description of its infrastructure.

Purpose and structure of the article

With this article, we aim to raise awareness of a reality that also affects other European countries (Mastronardi *et al.*, 2021; Sténs and Sandström, 2014; Robertson, 2011; Sandell and Fredman, 2010), yet takes on a unique connotation in Mediterranean countries, especially Greece, Spain, Italy and Portugal. This is due to the fact that in all four countries the rural population density is very low and migration from rural areas to large cities has been very significant in the last half-century. This situation has led to progressive deagrarianisation, the disappearance of transhumance, the abandonment of small villages and the concentration of land ownership in the hands of a few. This process has given rise to the abandonment of public cultural heritage including historic public paths, but also other types of heritage such as mills, fountains, irrigation channels, castles, churches, etc. Furthermore, the lack of inventory on tangible public assets facilitates usurpation by private individuals.

The fact that some routes have been blocked and/or dismantled by private individuals has only come to light after urban populations began to show interest in engaging in sports, tourism and recreational activities using public infrastructures. Even civil and religious buildings in abandoned villages have been affected.

In Section 2 of this article, we review the most important literature on the subject through prominent publications and subject-specific reference material on the situation of public heritage. In particular, we focus on the principal research on greenways, drovers' roads, and sports and tourism trails in Spain. We also devote space to examining the question of public rights of way in other countries. This is followed by the methodology, research results, recommendations, and lastly, the conclusions.

2.- Literature review

In recent years, social and institutional agents linked to the areas of agriculture, the environment and even heritage have been increasingly promoting reflection and analysis on historic public paths in rural areas. This can be seen in popular publications such as the 2016 *Anuario de Agricultura Familiar en España* —published by the Rural Studies Foundation of the Small Farmers' Union (UPA)— which includes several contributions on the role of sports trails and public roads in rural development. In turn, the well-known

journal *Ambienta*, published by the Spanish Ministry of the Environment, released a special issue (issue 120, published in 2017) on drovers' roads, which incorporates some of the topical debates that we collect here, from the recovery of traditional activities in the agricultural environment to conflicts of public paths ownership. In October 2019, the *Revista de Patrimonio Histórico*, published by the Regional Government of Andalusia, released a special issue (issue 98) in which several authors contributed on topics of interest related to public paths, footpaths, greenways and other public heritage assets.

In the strictly academic field, we have noted an emerging and diverse repertoire of research performed in the last decade that studies the role of drovers' roads specifically from an agrarian and environmental perspective (Oteros-Rozas, 2013), new social uses of greenways (Luque, 2011), the economic and social impact of sports trails (Sánchez, 2014; FEDME, 2012), and even the impact of the Camino de Santiago (Morales, 2017) and cultural routes in rural areas, as well as their impact on socioeconomic development (Monzón, 2017; Ruiz-Jaramillo *et al.*, 2021). Some of this research has been performed in the field of geography in an attempt to identify and enhance the value of historic public paths in the service of new tourism activities (Luque-Gil, 2003). Other research has gone even further by taking advantage of the emerging diffusion of new social uses, in particular sports, of natural infrastructures to analyse the process of rural restructuring in depth (Moscoso-Sánchez, 2010). An even more finely-tuned research project focuses on the study of the problems of recovery, enhancement and supervision of public paths (Campillo, 2001).

Thus, for example, research by Otero-Rozas (2013) explores the role of traditional agricultural practices in the creation of ecosystem services and their impact on the sustainability and resilience of agroecosystems in the Mediterranean basin. Research by Oteros-Rozas (2019), Vidal (2011) and Vidal and Castán (2011) draws attention to how transhumance, in the past, has proved to be an adaptive strategy in itself (based on mobility) and a fountain of traditional ecological knowledge, which is invaluable for adapting to global change.

Luque (2011) performed a study focusing on the habits, behaviour and attitudes of greenways users in Andalusia. According to the author, greenways and their annexed facilities (resting areas, visitor centres, museums, children's play and fitness areas, sports tracks, viewing platforms, etc.) are especially attractive for the practice of sports, tourism and educational activities linked to the natural environment and, of course, health. All such activities benefit the rural population, given that routes generally pass close by to villages and natural environments of outstanding value. In addition, users also use these resources as places for recreation, walking and socialising. Therefore, this research shows that traditional infrastructures, such as these, have also become a backbone of social dynamism, providing social benefits and, consequently, improving the living conditions of the rural population.

In her study, Luque-Gil (2003) helped to design a methodology from a geographical perspective —based on multi-criteria evaluation— for the planning of sports-tourism activities in rural areas and, in particular, protected natural areas in Andalusia. Her study provides solutions for the enhancement of natural infrastructures, such as paths and trails, for tourism and recreational use under sustainable development criteria. In her methodological development, she proposes restriction, adaptability and impact criteria, as well as their corresponding factors and variables, for a total of 12 sports-tourism activities that comprise 'active tourism', especially hiking, mountain biking and horse riding.

In this regard, the study by Monzón (2017) shows that the recovery and valorisation of traditional paths and byways can be a coherent alternative as a driving force behind local development. To this end, recovery, conservation and maintenance processes need

to be undertaken supported by technology, and, crucially, the involvement of surrounding communities. Throughout his study, the author highlights the lack of a single criterion when it comes to intervening in the conservation of public paths in the Canary Islands. His study also proposes a methodology for intervening in the management of traditional paths that could be used as a reference to raise awareness about their importance.

The FEDME study (2012), which focuses on the economic and social impact of signposted trails on sustainable rural development, scrutinises the factors that drive the development processes of populations that cross signposted trails. The research shows that a good approach to promoting trail networks has multiple effects. First, it recovers historic public paths, as well as the rural heritage associated with them, by highlighting the attractions of the environment and supporting protection initiatives in all fields, as well as creating synergies for footpath networks. Second, it facilitates new economic activity in the rural environment, creating a complementary offer that could benefit the development of the service sector by stimulating tourism activity through a seasonally adjusted and innovative offer based on the revaluation of local amenities. Third, it promotes a sustainable development model, providing it is adequately regulated through the coordinated efforts of managers and the socioeconomic agents from the area.

Moscoso-Sánchez (2010) provides an insight into the social dynamics of so-called 'rural restructuring' based on the dissemination of new uses in and around natural and traditional rural infrastructures. He analyses how new uses of such public assets has created a new framework of social relations in the rural environment that has altered the roles previously established by individuals and social groups to explain and regulate the precise order of social dynamics. This has produced a scenario of conflict, which requires solutions in order to provide an adequate collective balance. A balanced model of interests or governance is needed that no longer places large, medium and small farmers and farmworkers at the centre of the social pact, but rather rural and urban populations, sportspeople, ecologists, hunters, farmers, environmental managers and entrepreneurs in the tourism sector.

And lastly, following on from the previous study, Campillo (2001) performed an in-depth study that analyses the conflicts generated around historic public paths in rural areas. Due to the progressive abandonment of the Spanish countryside, which began in the 1950s, rural areas have experienced how the combination of abandonment of agricultural activity and the concentration of land in the hands of large landowners has led to the abandonment and/or neglect of its historic public paths. This has given rise to situations that are somewhat difficult to comprehend:

- Closure or alteration of drovers' roads and public rural roads by private landowners.
- Isolation of abandoned villages whose descendants cannot access family homes due to the usurpation of public roads by private individuals.
- The destruction of forest tracks and drovers' roads in some parts of the countryside.
- Widespread impunity in local councils due to a lack of knowledge or resources to deal with these situations.
- And the consequent court proceedings the problem gives rise to, as well as conflicts that often take on a violent nature between owners, estate guards and users.

The problem of historic public rights of way governance represents a clear example of the need to address the management of heritage resources in rural areas (Campillo, 2011). The current map of social conflicts in rural areas is no longer the same as it was in the past (the struggle of the peasantry against large landowners, or of small farmers against large landowners). These days, conflicts emerge between interest groups and

social and economic agents who clash over other symbolic and material references in relation to natural resources in the rural environment.

In the case of historic public paths, the dispute revolves around two symbolic concepts with significant material weight: private interests versus public interests of access and use. This new conflict calls for multidisciplinary studies capable of providing solutions for better resource management by means of an appropriate governance model (Torre *et al.*, 2020).

In this regard, we would like to focus a little more extensively on public rights of way by looking at how this situation has been dealt with in other countries. One of the most comprehensive examples is that developed by the Nordic countries. In Sweden, Right of Public Access or *Allemansrätt* guarantees the hiker or passer-by the right of passage through the land, whether it is publicly or privately owned. The right to enjoy nature takes precedence over the right to property and is firmly established in Swedish society (Sandell and Fredman, 2010; Sténs and Sandström, 2014). This right of way is also present in Norwegian law (*Allemannsrett*), as well as in Finland. Iceland follows the same tradition, albeit with its own nuances, as in the latter cases, the principle is that the land and its owners are respected.

In England and Wales, public rights of way are regulated by the *Countryside and Rights of Way Act (CRoW Act)*, which ‘allows members of the public to enter onto designated access land and to remain there for the purpose of “open air recreation” provided they do so in a way that is respectful to the land, to the landowner, and to other users of the land’ (Robertson 2011, p. 246). There is a similar regulation in Scotland, the *Scottish Outdoor Access Code*. However, in the Republic of Ireland, landowners consider that their rights are compromised if walkers walk on their land without prior permission. Even to walk on marked footpaths ‘waymarked ways’ crossing private property requires prior authorisation. In this regard, the Irish association – Keep Ireland Open (KIO) – is fighting for public access rights to rural roads.

The philosophy behind access in the United States (US) is similar to that in Ireland. In this case, influential hiking clubs pushed for the network of hiking trails that had been designed since the late 19th century to be made available for public use, either with the help of the State, which bought plots of land, or with the authorisation of private owners (Chamberlin, 2016). Unlike old Europe, the problem in the US is quite different, since the hiking routes were designed practically from scratch.

In Denmark, although initially linked to the Nordic tradition mentioned above, public rights of way are regulated by the *Protection of Nature Act* on public access to land. In this case, access is limited to unfenced, uncultivated land. However, landowners still reserve the right to expel walkers from their land. In Switzerland there is a right of access, the *betretungsrecht* mainly on uncultivated land, combined with former rights of way in wooded areas. Another example is the densely populated Netherlands, where access rights to natural areas, even in public spaces, are regulated by the *Protection of Nature Act*.

The closer we move to Southern Europe, the more complicated access rights become, following in the tradition of Roman law as compared to Germanic law. According to Robertson (2011, p. 259), France, Italy and Spain ‘have no discernable [sic] cultural or legal right of public access to private land’. This tradition is strongly influenced by the historical occupation of the territory, which in many cases is based on plots and privatisation from Roman times.

More specifically, the use of drovers’ roads is mainly found in countries with a solid tradition of transhumance, which has a strong presence in Mediterranean countries. In France, drovers’ roads or *drailles* enable the movement of livestock from the Alps to the plains of Provence (Albera and Lebaudy, 2011). In Italy, especially in the south of the country, the drovers’ roads or *tratturi* are suffering significant degradation, associated with

the abandonment of transhumance (Mastronardi *et al.*, 2021). In Spain, Law 3/1995 of 23 March 1995 on Drovers' Roads includes numerous articles with the aim of recovering, protecting and organising historic public paths characteristic of the rural environment, to allow the right of passage through the network of drovers' roads.

Methodology

This study is approached from a multidisciplinary perspective, secured through the integration of members with backgrounds in anthropology, sociology, geography, statistics and cartography, and law. This enables the object of study to be approached from different disciplinary perspectives, organised around three main areas of analysis.

Normative Study

The normative study aims to assess the regulations, programmes and road maps currently in force in Spain. The aim is to examine the level of effective involvement of state, regional and municipal authorities in the management and planning of historic public paths by means of comparative and administrative law methods and official sources. It also analyses a selection of complaint procedures relating to conflicts over the ownership and use of rural roads in order to study the characteristics and the procedure followed in processing conflicts, as well as the rulings in resolved cases.

Sociological Study

An ongoing qualitative sociological study is being performed using focus groups and individual interviews as data collection methods. In particular, 2 focus groups and 17 individual interviews have been performed so far.

The sample incorporates the following profiles: 1) representatives from the Regional Government of Andalusia and the Government of Spain with competences in agriculture, rural development and the environment; 2) experts from town and provincial councils; 3) experts and managers from local action groups; 4) representatives from professional agricultural organisations; 5) representatives from environmental groups and citizen platforms for the defence of historic public paths; 6) rural tourism and/or active tourism entrepreneurs, and 7) urban users/tourists/sportspeople/visitors.

The interviews were transcribed, and the conversations were analysed by coding fragments.

Statistical and Cartographic Study

The statistical and cartographic study of historic public paths is also ongoing. Its aim is twofold: to map footpaths, greenways, the Camino de Santiago, rural paths, drovers' roads and other roads that are used for sports and tourism or are still used for the transit of traditional activities or by local and regional authorities to patrol protected natural spaces. Once mapped, the factors influencing the existence of more paths in some areas and their level of use are analysed. The second aim is to study the public paths that are not being developed but have potential for use by the public in new tourism and creative activities, such as hiking and mountain biking. This will enable us to obtain an estimate of the land that could potentially be used for this purpose.

After mapping, the results will be made available in a viewfinder, using online software tools in Open Access that will be compatible with any system used by the Spanish authorities (ORTOFOTO, SIGPAC, etc.). Cartographic information will be provided by typology (drovers' roads, forest tracks, sports trails, etc.), public ownership of the property, state (signposted, with unmanaged public use, not in use, or with use impeded by private enclosures), main activity (agriculture, livestock or forestry, tourism and sports, communication, etc.).

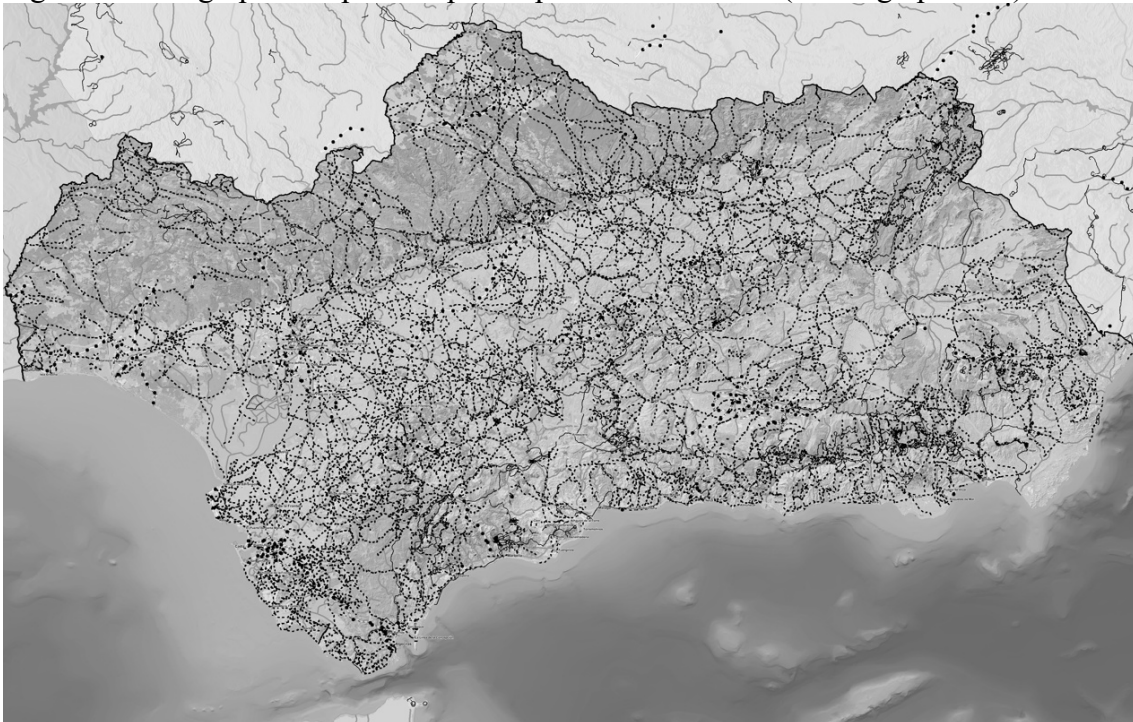
Preliminary research results

Some data on the potential of public paths assets

Andalusia has the extraordinary potential to multiply the added value of its natural spaces and rural areas through the creation of new uses. It currently has 11,700 kilometres of signposted and approved sports and tourism routes in the natural environment. In addition, the region is home to more than 500 kilometres of greenways registered in the Spanish Ministry of [Land, Air and Maritime] Development and 8,000 kilometres of marked drovers' roads—there could be many more given that the historic inventory totals 31,000 kilometres. Andalusia is also home to 1,116 signposted kilometres of the Camino de Santiago and 23,000 kilometres of forest trails mapped by the forestry commission.

The immense network of public paths in Andalusia—most of which are owned by local authorities and according to current figures from our study amount to 93,400 kilometres—are also waiting to be added to the region's magnificent sports and tourism assets. The situation of uncertainty and state of abandonment (due to alterations, ploughing or closure by private individuals) which affect part of the historic public paths must, irrefutably, be subject to regulations and plans to safeguard public interests and use (Trujillo, 2016). Indeed, with efficient and coordinated management of resources, the southern region of Spain could capitalise on the use of its wealth of heritage.

Figure 1. Cartographic map of the public paths in Andalusia (in design process)



In relation to use, in Spain there are currently more than 7.5 million people who practice hiking on a regular basis (CSD, 2021), 16 million annual visitors to protected natural areas (Junta de Andalucía, 2021) and almost 12 million overnight stays in rural accommodation (INE, 2021), among which the use and enjoyment of rural paths and trails has become one of the principle demands. This demand has an important impact on the main economies of Europe, especially in the United Kingdom, where, according to the European Commission, it produces an economic impact of 6.5bn euros per year (MAGRAMA, 2014). Use of public paths increased after the COVID-19 crisis, with official sources revealing that 6 out of every 10 people who performed physical activities and sports during the pandemic did so in green areas, peripheral areas away from urban

centres or in the countryside. Currently there are 1 million citizens who practice hiking in Andalusia (CSD, 2021).

In this regard, the opportunity that the —currently estimated— 1bn users of European public paths (tourists, hikers, cyclists, pilgrims, etc.) represents for the creation of quality employment and the economic revitalisation of the rural environment needs to be assessed. Not only should it be assessed as a complementary offer and a way of redistributing tourism — a strategic sector in Spain— but also as an initiative that fits in with the European Commission's 'green economy' agenda (Vidal, 2020; Vidal and Sánchez, 2019; Moscoso and Nasarre, 2019; Vías *et al.*, 2018), as well as the UN 2030 Sustainable Development Goals, in particular: Goal 1. End Poverty; Goal 3. Ensure Good Health and Well-being; Goal 5. Gender Equality; Goal 8. Promote Sustained, Inclusive and Sustainable Economic Growth; Goal 10. Reduced Inequality between and within countries; Goal 11. Sustainable Cities and Communities; Goal 13. Climate Action, and Goal 15. Sustainable use of Terrestrial Ecosystems.

From this perspective, the recovery, enhancement and promotion of the use of historic public paths can also represent an opportunity to tackle the major problem of socioeconomic imbalance and depopulation in rural Andalusia. In this regard, this environment (which in Andalusia represents 64% of the territory, 524 municipalities and 24% of the population, and includes 30% —2.8 million hectares— of protected natural spaces) needs to be maintained and cared for through strategies, proposals and measures that guarantee the conservation of the resources that facilitate its various traditional and modern uses. From this perspective, the recovery of historic public paths could be a driving force for the much-needed territorial restructuring, economic development and environmental sustainability of rural Andalusia.

Historic public paths: a source of opportunities for rural development

The recognition, mapping, management, enhancement, maintenance and supervision of historic public paths in rural areas are major factors in rural development, economic diversification, socio-territorial cohesion, population fixation and environmental sustainability. These features are based on historical experience and the new opportunities offered by such infrastructures, namely:

- Historic public paths guarantee the maintenance of traditional activities linked to agriculture, livestock and forestry among small and medium-sized farmers, livestock breeders and foresters, who are finding it increasingly difficult to access the exploitation of natural resources due to the progressive concentration of land in the hands of a few, scrubland and loss of roads through abandonment.
- It also favours the expansion of a 'green economy' linked to the maintenance of public rights of way at many levels.
 - The restructuring of the professional body of environmental agents in duties of supervision and guardianship.
 - Employment for professional sportspeople relating to nature activities.
 - Public jobs for local people and construction companies for the recovery, maintenance and enhancement of paths.
 - The potential for improving the exploitation of natural resources on public estates, such as cork and pine nut harvesting, honey production, path and scrubland clearing, and grazing.
 - It also impacts the increase of an ordered and sustainable offer of tourism activities linked to sports, environmental and cultural activities.
- In relation to the impact on employment from a gender perspective, the recovery and enhancement of public paths contribute to increasing the supply of services relating to sectors in which women with vocational training in rural areas tend to work (such as

hotel and catering management). It could even promote training relating to disappearing traditional crafts, trades and gastronomy. However, it could also encourage women to develop activities not linked to so-called traditional ‘women’s work’. In relation to this, results from previous research (Luque Gil *et al.*, 2018) highlight the entrepreneurial dimension as significant from the perspective of gender.

- It also contributes to socio-territorial cohesion by increasing income and income distribution among the population. The structuring of a new economic fabric could reduce the economic inequalities that currently exist between the per capita income of medium to large cities and small rural municipalities. This would also have an effect on the improvement of infrastructures and the supply of services around new activities in towns and rural areas.

- The multiplying effect of economic activities derived from the recovery, maintenance, supervision, reappraisal and the promotion of new uses of public paths could, in turn, lead to a certain fixation of the population in the region. Previous studies have shown that after becoming the spearhead of new economic activities linked to the promotion of sports and tourism, some municipalities later become population centres (Moscoso-Sánchez, 2003; Moscoso-Sánchez, 2010). There is evidence that the local economies in various populations in Andalusia are now maintained by the activities surrounding public rights of way. This is the case of villages in Sierra Nevada and the Alpujarras (Granada), the Sierras of Cazorla, Segura and Las Villas (Jaén), the Sierra of Grazalema (Cádiz), the region of La Axarquía (Málaga), the Sierra of las Subbéticas Cordobesas (Córdoba), the Sierra Norte of Sevilla (Seville) and the Sierra of Aracena (Huelva).

Image 1. Group of hikers crossing a town along a marked path in the Alpujarra (Granada)



- From an ecological point of view, historic public paths —especially drovers' roads— also fulfil important ecological functions that give rise to a series of ecosystem services. In this regard, some of the studies previously mentioned (Oteros-Rozas, 2013) have already demonstrated their potential. Drover's roads constitute a reservoir of biodiversity, they are both habitat and nursery for species, especially when the surrounding environment is less naturalised. They host pollinators that improve the productivity of adjacent sunflower fields, an essential component in the functioning of ecosystems. And they also fulfil an important connectivity function for species between areas of forest and different ecosystems in the current context of landscape fragmentation.
- And lastly, from the perspective of environmental sustainability, historic public paths are fundamental in order to adapt to climate change: through the availability of ecological corridors for species whose ecological niche has been displaced and through the care and maintenance of soils via extensive and, especially, transhumant livestock farming. The EU Community Agricultural Policy (CAP) in Horizon 2020 and other European conservation policies focus on the conservation of low-intensity agricultural practices that support the conservation of biodiversity while still producing food. As a result, the maintenance of public paths and the natural clearing of shrubland by farm animals in so-called 'marginal areas' during the summer help to maintain natural cover to prevent erosion. In turn, it also gives rise to a privileged infrastructure for preventing, containing and controlling fires, which in 2019 alone affected 70,000 hectares in Spain.

Thinking about a new model of rural governance

The progressive neglect and abandonment of historic public paths in Andalusia in the past is associated with a general crisis of governance of natural resources in the rural environment —not only of public paths— expressed through symbolic and material conflicts between traditional actors linked to the primary sector and new social and economic actors. This reality requires the provision of tools to guide public action in order to re-establish appropriate governance that provides greater social and environmental stability in the rural environment.

Our research gathers evidence of the following circumstances associated with historic public paths:

- From the outset, the authorities, in particular local councils, seem to have neglected their responsibilities in relation to public paths in terms of maintenance, supervision, inventory and sanctioning. Many roads, paths, tracks and drovers' roads have been progressively abandoned, and this situation has favoured actions by private individuals who have fenced off, ploughed up and diverted many for their own use and interests. This prevents small landowners, farmers and livestock breeders from accessing their land. This situation only came to the attention of the media and the political agenda once social pressure gained momentum owing to the growing interest in rural tourism, hiking, mountain biking, mushroom picking, and family and group excursions to the countryside. Over the last two years, around 50 inventories of municipal trails have been registered in Andalusia, although there is still a long way to go, given that there are 785 municipalities in an area of 87,268 km².
- It has been observed that some large landowners, farmers and livestock breeders, and owners of hunting companies and hunting grounds seem to have forced a model of inaction or poor governance of public paths on public authorities. Given that such groups have adequate resources, they also have access to legal advice that hampers lawsuits against them for the act of appropriating or closing drovers' roads, rural roads or forest tracks; with all that this entails from the perspective of the exploitation of natural resources. Previous studies also provide evidence of this (Torre *et al*, 2020; Trujillo, 2019; Campillo, 2013).

- And lastly, small and medium-sized farmers and livestock breeders and, in particular, environmental associations, citizens' platforms for the defence of public roads, sports associations and federations active in hiking, mountain biking and horse riding, cultural and pilgrimage associations, as well as other scattered groups in defence of public assets, are organising themselves —generally through citizens' platforms— to demand change through applying political pressure. Their actions include rallies in front of town halls or other symbolic places (they have even performed actions in the European Parliament) and via weekly mass rallies on public rural paths that have been blocked or usurped by private individuals.

Image 2. Group of hikers during a protest march in defense of public paths



Recommendations

Research on the uses of historic public paths suggests the need for a fresh assessment of the governance model that has traditionally guided the rural world, or at least its adaptation to current times.

The research team behind this study defends the idea that rural life needs to be academically reviewed anew, given that the changes experienced in the last two decades have been very significant. The review needs to be twofold. First, from the perspective of governance, to determine the actors who are currently involved in establishing the symbolic and material value of rural resources, and how new norms (formal and informal) emerge from this. In this regard, the representation of interests model needs to be reviewed in order to represent the new reality of the rural environment, which contemplates not only landowners but also other social and economic agents. Second, from the perspective of socioeconomic value, given that the structure of the population employed in traditional activities (agriculture, livestock, etc.) is in constant decline. The weight of new socioeconomic activities needs to be assessed based on enhancing the value of endogenous resources in the rural environment, with the aim of incorporating public

action based on the verification of their potential. As an indication of the current situation, in Spain the population employed in the agricultural sector is barely 4% of the total employed population.

The conflicts that arise and the representation of interests in the rural environment in relation to public paths must be regarded as something of a novelty in the field of social sciences owing to one important feature; namely that the focal point of tension relating to symbolic and material positions is mobilised in the urban environment, although it is materialised in the rural environment. Increasingly, we find situations in which medium and large landowners have no family or residential ties with the territories where their properties are located (financial investment funds that acquire large properties for their exploitation have their fiscal or administrative headquarters thousands of kilometres away from their properties) and, simultaneously, the social actors who fight for the preservation of and free access to public paths often reside in cities, and not the rural environment.

There also needs to be a social awareness model that not only highlights the defence of this type of heritage but is also easily recognisable in other areas of rural life with an impact on urban society, such as, for example, the productive models of agriculture and livestock farming, the management of water resources and food security. We must not lose sight of the fact that rural areas today are not only shaped by farmers and livestock breeders, but rather by a wide range of social and economic agents that have nothing to do with traditional occupations: from managers of protected natural areas, local and rural development agents, entrepreneurs in the renewable energy sector, ecological agriculture and tourism to tourists and sportspeople who visit the rural environment. All form part of a sociological reality whose lines have become blurred and distinct from the traditional structure of the rural society that used to inhabit and manage the resources.

Even among farmers themselves, the reality of the sociological characteristics is very different between those who have incorporated technological innovation and modernised agricultural methods and manage their crops from their home or office in a medium-sized city, and small farmers who work the land destined for local supply using ecological systems of cultivation. It could be useful to study the reality within this framework to see to what extent symbolic and material disputes over historic public paths (as with other types of resources) takes place in the city and not in the countryside—not to mention the implications at a global level—and to reflect on how the rural environment should continue to be governed.

Conclusions

The research on which this article is based confirms our hypotheses. Historic public paths can ensure the continuity of traditional activities, favour the expansion of a 'green economy', contribute to socio-territorial cohesion and have a multiplier effect on other economic activities. Moreover, from an ecological perspective, historic public paths, and in particular drovers' roads, could also fulfil important ecological functions that give rise to a series of ecosystem services, be a fundamental tool in adapting to climate change and contribute to confining and controlling forest fires. These conclusions coincide with those highlighted in other studies (Monzón, 2017; Oteros-Rosas, 2013; Moscoso-Sánchez, 2011; Campillo, 2001). In turn, the progressive neglect and abandonment of public paths has generated a crisis of resource governance characterised by a scenario of conflict between traditional actors linked to the primary sector and new social and economic actors. The singularity of these conflicts is that the focus of confrontation is expressed particularly in the urban environment—although we must emphasise the global scope—even though they materialise in rural areas.

We believe that our findings could be of public use in view of the measures that need to be adopted for the appropriate regulation of public paths in rural Andalusia, and we

also believe that they could be useful in many other Mediterranean regions. It is important to determine the types and level of use of this type of heritage, to map existing infrastructures and analyse formulas for regulation. However, we also need to provide solutions to conflicts over uses between different social and economic actors in rural areas. This has been highlighted in previously mentioned studies (Ruiz-Jaramillo *et al.*, 2021; Torre *et al.*, 2020).

In this respect, as we highlighted in the introduction, our research aims to contribute to improving the governance and enhancement of this type of heritage in the area of public action by providing insight into the current situation of the network and the most complete mapping possible. Some of the solutions that we consider could contribute to understanding, adding value to and organising public paths are as follows:

- First, it is essential for all Andalusian town councils and regional authorities to create an inventory of their public paths infrastructures in rural areas, recognising them as the public assets that they are, just like schools, hospitals or public streets and squares.
- Second, coordination mechanisms must be established between public authorities, with a view to organising compatible uses of infrastructures in order to determine how to avoid conflicts. More specifically, it is essential to coordinate the regulations for sports, tourism, agricultural, livestock and environmental protection use.
- Third, it is essential to ensure that infrastructures are maintained, through road planning, and to develop permanent supervision to prevent unlawful situations from occurring.
- Fourth, public actions aimed at the recovery, maintenance, supervision, enhancement and promotion of this type of infrastructure should favour its impact on the rural population.

Among the principal limitations of our research is the need to perform economic studies that would help to expand the data on the impact of public paths in rural areas. Although our sociological study offers positive indications of the economic and social repercussions of this type of heritage, an economic study would provide additional data to contrast our qualitative evidence. The second limitation is that this is an ongoing research project, which is only at the halfway point, and there is still another year of work to complete. Some additional findings may emerge, although the evidence is already abundant and clear. Moreover, this research builds on previous research conducted by the research team (Moscoso-Sánchez, 2010; 2020; Torre *et al.*, 2020; Trujillo, 2019; Nasarre, 2016; FEDME, 2012). It only remains to finalise the mapping and submit the reports to the authorities. A third limitation is the difficulty in obtaining the collaboration of the authorities (local and regional), given that not all are willing to collaborate. It must also be taken into account that the region of Andalusia is one of the largest in Europe – larger and more extensive than some EU countries.

To conclude, given the social interest aroused by new uses of historic public paths, we would encourage the scientific community to replicate this study in other territories from other scientific perspectives.

References

- Albera, D. and Lebaudy, G. (2001), *La routo. Sur les chemins de la transhumance entre les Alpes et la mer*, Ed. Primalpe, Pontebernardo.
- Campillo, X. (2001), *La gestión de la red de caminos en zonas de montaña*, Universidad Autónoma de Barcelona, Barcelona.
- Campillo, X. (2011), “La determinación de la propiedad de los caminos: entre la geografía y el derecho”, available at: https://www.adesalambrar.com/documentos/La_determinacion_de_la_propiedad_de_los.pdf (Accessed 19 November 2022)
- Campillo, X. (2013), “El dictamen pericial de caminos y servidumbres de paso”, *Diario de La Ley*, No. 8014.
- Chamberlin, S. (2016), *On the Trail. A History of American Hiking*, Yale University Press, New Haven.
- Consejo Superior de Deportes (2021), “Estadística 2020. Encuesta de Hábitos Deportivos en España”, Available in: <https://www.culturaydeporte.gob.es/dam/jcr:07b62374-bfe9-4a65-9e7e-03a09c8778c3/encuesta-de-habitos-deportivos-2020.pdf> (Accessed 16 January 2021)
- Federación Española de Deportes de Montaña y Escalada (2012), *Senderos señalizados y desarrollo rural sostenible*, Ministerio de Agricultura, Alimentación y Medio Ambiente, Madrid.
- Instituto Nacional de Estadística (2021), “Alojamientos de turismo rural: encuesta de ocupación e índice de precios”, available at: https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176963&menu=ultiDatos&idp=1254735576863 (Accessed 19 January 2022)
- Junta de Andalucía (2021), “Estadística de visitas a equipamientos de uso público en Espacios Naturales Protegidos de Andalucía”, available at: https://www.juntadeandalucia.es/medioambiente/portal/landing-page-%C3%ADndice/-/asset_publisher/zX2ouZa4r1Rf/content/estad-c3-adstica-de-visitas-a-equipamientos-de-uso-p-c3-bablico-en-espacios-naturales-prottegidos-de-andaluc-c3-ada/20151 (Accessed 19 January 2022)
- Luque, P. (2011), *Análisis del modelo de uso-visita de los deportistas-turistas de las vías verdes andaluzas*, Universidad de Granada, Granada.
- Luque-Gil, A. M. (2003), “La evaluación del medio para la práctica de actividades turístico-deportivas en la naturaleza”, *Cuadernos de Turismo*, No. 12, pp. 131-150.
- MAGRAMA (2014), *Impacto económico y social del programa de caminos naturales*, Ministerio de Agricultura, Alimentación y Medio Ambiente, Madrid.
- Mastronardi, L., Giannelli, A. and Romagnoli, L. (2021), “Detecting the land use of ancient transhumance routes (Tratturi) and their potential for Italian inner areas’ growth”, *Land Use Policy*, Vol. 109 No. 105695. DOI: doi.org/10.1016/j.landusepol.2021.105695
- Marsden, T., S. Whatmore, S., and Lowe, P. (1990), *Rural restructuring. Global processes and their responses*, David Fulton Publishers, London.
- Monzón, F. (2017), *Las redes camineras tradicionales como factor de desarrollo local*, Universidad de La Laguna, Santa Cruz de Tenerife.
- Morales, X. (2017), *Las rutas turísticas culturales como factor para el desarrollo de las áreas rurales. Análisis comparado del Camino de Santiago en Galicia (España) y*

el Sistema Vial Andino en Ecuador, Universidad de Santiago de Compostela, Santiago de Compostela.

- Moscoso-Sánchez, D. (2003), *La montaña y el hombre en los albores del siglo XXI*, Editorial Barrabés, Huesca.
- Moscoso-Sánchez, D. (2010), *Deporte, territorio y desarrollo rural en Andalucía*, Ministerio de Agricultura y del Medio Rural y Marino, Madrid.
- Moscoso-Sánchez, D. (2020), “El papel del turismo deportivo de naturaleza en el desarrollo rural”, *ROTUR. Revista de Ocio y Turismo*, Vol. 14 No. 2, pp. 70-87. DOI: 10.17979/rotur.2020.14.2.6535
- Moscoso-Sánchez, D. and Nasarre, J. M^a. (2019), “Caminos y senderos, fuentes de desarrollo y lucha contra la despoblación rural en Andalucía”, *Revista de Patrimonio Histórico*, No. 98, pp.16-19. DOI: 10.33349/2019.98.4424
- Nasarre, J. M^a. (2016), *Senderismo. 100 hitos normativos y para pensar*, Editorial Desnivel, Madrid.
- Oteros-Rozas, E. (2013), *Análisis de una práctica tradicional en la cuenca en la cuenca mediterránea desde una perspectiva socio-ecológica: la trashumancia en la Cañada Real Conquense*, Universidad Autónoma de Madrid, Madrid.
- Oteros-Rozas, E., Martín-López, B., González, J., Plieninger, T., López, C. and Montes, C. (2013), “Socio-Cultural Valuation of Ecosystem Services in a Transhumance Social-Ecological Network”, *Regional Environmental Change*, Vol. 14 No. 4, pp. 1269–1289. DOI: 10.1007/s10113-013-0571-y
- Oteros-Rozas, E., Ravera, F. and García-Llorente, M. (2019), “How Does Agroecology Contribute to the Transitions towards Social-Ecological Sustainability?”, *Sustainability*, Vol. 11 No. 16, pp. 1-13. DOI: 10.3390/su11164372
- Robertson, H. (2011), “Public Access to Private Land for Walking: Environmental and Individual Responsibility as Rationale for Limiting the Right to Exclude”, *Georgetown International Environmental Law Review*, Vol. 23, pp. 211-262.
- Ruiz-Jaramillo, J., García-Pulido, L.J., Montiel-Vega, L., Muñoz-Gonzalez, C.M. and Joyanes-Diaz, M.D. (2021), “The potential of defensive architectural heritage as a resource for proposing cultural itineraries”, *Journal of Cultural Heritage Management and Sustainable Development*, Vol. ahead-of-print No. ahead-of-print. DOI: 10.1108/JCHMSD-01-2021-0007
- Sánchez, V. (2014), *El fenómeno senderista en España. Análisis por un panel de expertos*, Universidad de Valencia, Valencia.
- Sandell, K. and Fredman, P. (2010), “The Right of Public Access – Opportunity or Obstacle for Nature Tourism in Sweden?”, *Scandinavian Journal of Hospitality and Tourism*, Vol. 10 No. 3, pp. 291-309, DOI: 10.1080/15022250.2010.502366
- Sténs, A. and Sandström, C. (2014), “Allemansrätten in Sweden: A Resistant Custom”, *Landscapes*, Vol. 15 No. 2, pp. 106-118. DOI: 10.1179/1466203514Z.00000000029
- Torre, M., Ghislanzoni, M. and Trujillo, M. (2020), “The disappearance of public paths in Spain and its impact on landscape justice”, *Landscape Research*, Vol. 45 No. 5, pp. 615-625. DOI: 10.1080/01426397.2020.1736532
- Trujillo, M. (2019), “A Desalambrar los caminos públicos para luchar contra la despoblación”, *Revista de Patrimonio Histórico*, No. 98, pp. 196-209. DOI: 10.33349/2019.98.4419

- Trujillo, M. (2016), “Situación de las vías pecuarias y los caminos públicos y su defensa ciudadana”, *Agricultura Familiar en España*, No 2016, pp. 164-170.
- Vías, J., Rolland, J., Gómez, M.L., Ocaña, C. y Luque-Gil, A. (2018), “Recommendation system to determine suitable and viable hiking routes: a prototype application in Sierra de las Nieves Nature Reserve (southern Spain)”. *J Geogr Syst*, No. 20, pp.275–294 DOI: 10.1007/s10109-018-0271-8
- Vidal, P. (2020), *Hiking in european mountains. Trends and horizons*, De Gruyter, Berlin.
- Vidal, P. (2009), “Los estudios y la investigación sobre etnografía pastoril: estado de la cuestión”, *Ager. Revista de Estudios sobre Despoblación y Desarrollo Rural*, No. 8, pp. 9-24.
- Vidal, P. and Sánchez, V. (2019), “Hiking paths and intangible heritage: a quest for cultural roots. Cases in the province of Castellón, Spain”, *Sport in Society*, Vol. 22 No. 12, pp. 2065-2076. DOI: 10.1080/17430437.2018.1551368
- Vidal, P. and Castán, J.L. (2011), *Trashumancia en el Mediterráneo*, CEDDAR, Zaragoza.

[1] Andalusia is the most populated region in Spain, with 8,465,236 inhabitants in 2021, and covers an area of 87,268 km² - slightly larger than Austria. It was established as an Autonomous Region in 1981 and has its own administrative powers in most areas. The region is divided into 8 provinces (Almería, Cádiz, Córdoba, Granada, Huelva, Jaén, Málaga and Seville).

[2] The project, titled Recovery and enhancement of rural roads and footpaths, sources of rural development and the fight against depopulation in Andalusia (PRY020/19), was selected within the framework of the 9th Call from the Andalusian Studies Centre Research Projects (CENTRA) from the Regional Government of Andalusia.