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Tourist itineraries for Sustainable Mobility: an application in the Salento Area (Italy)

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Abstract

The purpose of this work is to define the design process, implemented through an analytical methodology, of two sustainable mobility tourist routes in a specific area of southern Italy (Salento); methodology applicable to other territorial realities. This design process was developed in the context of the 2014/2020 Interreg V-A Greece-Italy cross-border cooperation strategic project called "AI SMART_Adriatic Ionian Small Port Network". It takes into account the analysis of existing Plans and Programs at different levels (Sustainable Mobility Urban Plans; cycling routes; Territorial Plans, etc.), the analysis of statistical data in the area related to employment and tourism; the interlocution with key stakeholders, the analysis of architectural, landscape and food and wine surpluses. These routes have been defined for the interaction of the port of Otranto with the hinterland territories and with the opposite Ionian coast to promote the sustainable and inclusive transnational tourist fruition of the Apulian territory. The genesis of the two thematic itineraries stems from the need/willingness to valorise some areas of Salento through the connection of significant nodes in terms of landscape, architectural and historical value, which define two routes with Pulsano and Otranto as their vertices. The project brings together the potential of the Salento as an area with a strong tourist value, with the theme of sustainable mobility, suggesting the seasonality of travel of each, to meet the needs of deseasonalization of an area with a high summer and seaside tourism vocation.

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Keywords: Sustainable mobility, sustainable tourism, territorial development, internationalisation, deseasonalisation

Introduction

The events of the last few years, first because of the COVID-19 pandemic and then because of the latest war events in Ukraine, which involve us closely, have put a strain on people's livability, in cities as well as in remote areas and small towns. Now, therefore, more than ever, Europe and the world need to feel connected and close, also thanks to the development of sustainable mobility. A more connected world is a more accessible and open world. Connecting infrastructures that cross sovereign borders acquire special properties, a life of their own and become more than just motorways or high-voltage lines. They become shared services (Khanna, 2016).

More than one third of EU citizens live and work in European border regions (European Commission, 2015). In the last 20 years, border areas have gained importance (Fadigas, 2010, 2015; Castro and Alvarez, 2015; Castanho et al., 2016) and cross-border cooperation (CBC), has helped to overcome and solve important political, economic, environmental and socio-cultural issues (Nave and Franco, 2021).

Furthermore, in recent years, the aim of countries is to encourage sustainable mobility, in particular by (1) "avoiding unnecessary transport volumes, (2) changing transport regulations and practices and/or (3) improving the carbon efficiency of transport systems" (Griffiths et al., 2021). Administrative borders also create barriers associated with cross-border mobility, and efficient cross-border transport can be crucial in reducing the barrier effect on citizens' mobility and increasing the territorial integration of the European Union (EU). We can consider different types of constraints. According to Nijkamp et al. (1990), these can be 'physical' barriers (mountains, rivers, artificial walls), 'technical' (incompatibility between the railway systems of different countries) and 'cultural, linguistic and information', 'congestion' (discrepancy between supply and demand), 'fiscal' (visa costs), 'institutional' (costs of crossing a border between different jurisdictions).

Awareness of the strategic role of the tourism industry, as an instrument capable of exerting a driving force for the economy, with consequent positive externalities also for employment, can be seen in the succession of public interventions in this sector (Carlucci et al., 2012). Evidence of this can also be seen in the commitment shown by the European Territorial Cooperation Programmes that have invested substantially in the tourism sector, always associated with the term sustainable (Synthesis Report 2021 on Italian participation in the European Territorial Cooperation Programmes, ENI and IPA II 2014/2020).

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Attention to sustainability is also associated with the terms of deseasonalisation because an increase in the rate of exploitation of a natural, environmental or landscape resource for tourism purposes leads to a deterioration in the quality of the resource itself. In the presence of a demand with preferences characterised by an aversion to crowding (Butler, 1991), it becomes fundamental to be able to identify what is the optimal degree of exploitation, that is, that level of tourist use that reconciles commercial profitability and maintenance of the qualitative integrity of the available natural resources.

It is accepted in the literature that, the market mechanism does not spontaneously lead to choices that are sustainable over time (Candela, 2010), which is why the intervention of the policy maker is necessary and should take place with a view to mobilising local actors and concerting the strategies to be pursued, interest groups, in order to guarantee success in terms of the feasibility of the chosen policy actions. It is worth mentioning that the transportation sector is one of the top five most polluting factors. It is worth noting that much research has shown the close relationship between transport pollution and its toxicity (Kurac et al., 2021; Tucki et al., 2019). In particular, approximately 40 per cent of all air eutrophication comprises the share of land motor transport (Markowska et al., 2021; Bazhinov et al., 2022). Strategic Interreg V-A Greece-Italy cross-border cooperation project 2014/2020 called "AI SMART_Adriatic Ionian Small Port Network", managed by the Apulia Region, aims at the implementation and development of a common port network in the Adriatic-Ionian area; this network is based on the concept of "smart, green and integrated port" and oriented to connect the small ports of the cross-border countries involved. In the context of this project the present work aims to recount the project path and the methodology applied for the definition of two itineraries aimed at the interaction of the port of Otranto with the territories of the Salento hinterland with the opposite Ionic coast. It also aims at systematising the need for sustainable mobility in an area of southern Italy (Salento), characterised by a scarce offer of transport services, with the territorial valorisation, encouraging the sustainable and inclusive transnational tourist fruition of the Apulian territory. The genesis of the two thematic itineraries stems from the need/willingness to enhance certain areas of the Salento, through the connection of significant nodes in terms of landscape, architectural and historical value, which define two routes with Pulsano and Otranto as their vertices. The two thematic itineraries are of considerable interest both in the towns (emergencies) identified, and in the routes connecting them, as the connecting routes have considerable appeal in terms of the valuable offerings offered by the local vegetation (olive groves and vineyards), as well as in the typical urban elements (dry-stone walls, historic farms, Salento trulli).

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The effort made was to systematise these remarkable emergencies with multiple vocations, systematising them along two different paths. Systematising what has in fact always existed but is now present in a disaggregated and uneven manner, bringing out the potential of the sum of the excellences. Two structured thematic routes were therefore defined, for which both the transport and accessibility offer and the cultural offer present were fine-tuned. Planning must aim to identify strategies that reconcile the development of competitive tourism activitiès and ensure the attractivenèss of territories and the preservation of their natural and cultural resources, while promoting their adequate accessibilitỳ (Bergantino et al., 2021). The topic of sustainable mobility in rural areas or small towns and villages has always received less attention from planners and politicians than in densely populated areas. This means that the transport offer in these types of areas is mostly limited to a few (low-frequency) public bus services and few or no railway stations serving citizens. This overall picture leads to the synthesis that for the most part the local population is inclined, if not forced, to use the car for all needs and movements, effectively making citizens dependent on this private means of transport for any type of activity (work, leisure, education, etc.). Actions and policies to improve mobility in these areas act as a lever for change and as an added value for economic, social and tourism development and act as a multiplier of development, in a transversal and inclusive way.

Furthermore, we know that in small centres it is not true that all residents have a private car. Indigents, the elderly, the disabled and the very young are not able to own or drive a car, and the social conditioning due to this inability to provide for their own movement is very strong in terms of the commitment of those who provide care for their families and neighbours. If this is true for local residents, another argument must be made in terms of inclusiveness for the mobility of travellers.

On the other hand, for small centres, being equipped with good connection infrastructures becomes an indispensable prerogative to be able to welcome visitors, travellers and tourists. A prerequisite for any good planning result, related to sustainable mobility, is to involve the local population, public and private actors, the elderly, young people, businesses, women, taking into account their specific needs and the possible solutions that may emerge from collective confrontation.

After an introduction and a context analysis, the article highlights the benchmarking of some new sustainable transport modes, and then goes into the methodology adopted and the rationale behind the design of the two tourist routes described in section 4 of this paper. The conclusions are reported in section 5 of the paper.

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Context analysis

The context analysis examines, albeit briefly in this section, socio-economic data, local planning, the offer of existing services and connection infrastructures, the cultural and landscape offer, local food and wine, and the organisation of other routes and dedicated roads

For the socioeconomic analysis, with 3,926,931 inhabitants on 1 January 2021, Apulia is the eighth most populous region in Italy. A total surface area of approximately 19,540.52 km2 means that the population density stands at 200.96 inhabitants per km2, a value that is intermediate in the national picture (the average Italian value on 1 January 2021 is 196 inhabitants/km^2). The female demographic component prevails slightly over the male, at 51.3% of the total regional population. The consolidated data for the period 2001-2019 show a decreasing demographic trend, with the trend becoming particularly intense in the period 2014-2019, which is also confirmed in the provisional data as at 1 January 2021. Focusing on some of the sectors most directly related to tourism, in 2018 in Apulia there were 9,487 companies of 3 employees and more active in the Accommodation and Catering sector, 1,001 companies active in the Artistic, Sporting and Recreational Activities sector, 1,743 operators in the Rental, Travel Agencies and Business Services sector, 586 companies active in the Real Estate sector and 17,242 companies operating in the Trade and Motor Vehicle Repair macro-sector. Accommodation and catering establishments account for 16.29% of the regional business fabric, while commercial activities account for 30.84%. The incidence of the Rental, Travel Agencies and Business Services (2.99%), Artistic, Sporting and Recreational Activities (1.72%) and Real Estate (1.01%) sectors is much lower (Elaborations on ISTAT 2019 data).

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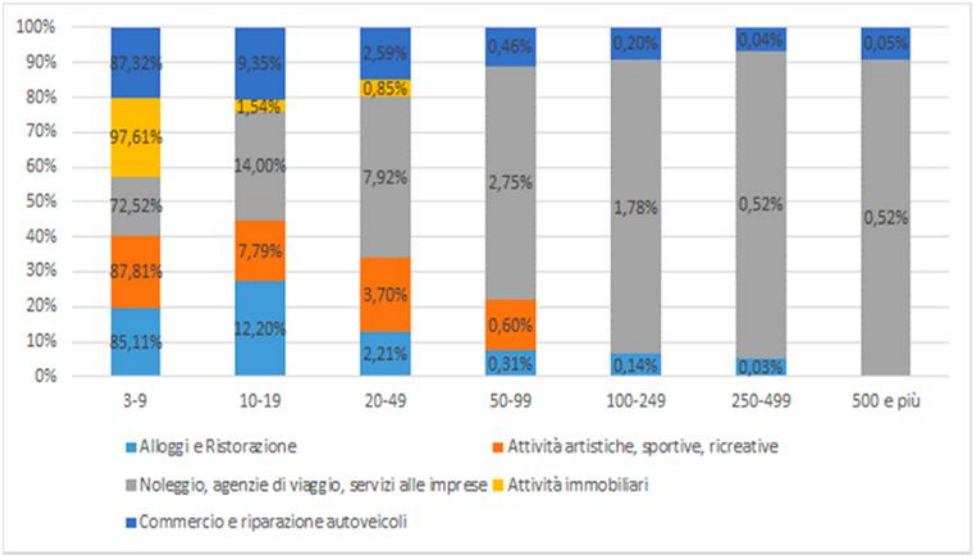

Figure 1: Active enterprises by size class, main tourism-related sectors, Apulia 2019 (elaboration on ISTAT data). In light blue the data of accommodation and catering. In gray the data of rental, travel agencies, business services. In blue the data of trade and motor vehicle repair. In orange the data of arts, sports, recreation. In yellow the data of real estate activities.

Considering the economic, employment and social importance that tourism, its related sectors and its allied industries express in the regional context, the important changes induced on the macro-sector by the outbreak of the pandemic emergency in 2020 have triggered - as in the rest of the country - a slump in tourist presences that only in the first half of 2021 seems to show the first signs of a trend reversal.

In order to highlight the first impacts of this framework on Apulia's tourism performance, it is useful to compare the incoming tourism flows observed at different points in time.

In the period 2015-2018, Apulia has pursued a dual positioning on the tourism market, as a leading competitive destination on both the national and international scene, while favouring the progressive deseasonalisation of tourist flows.

The results of this path can be fully seen in the growth in international arrivals (+41.8%) and presences (+32.5%) during the period under consideration, with a consequent increase in the internationalisation rate of incoming tourism, which rose from 21.3% in 2015 to 25.6% in 2018, enjoying particular success with the markets of France, the Netherlands, Germany, the United Kingdom and the USA.

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The annual changes in the 2018 data compared to the previous year confirm this path. Arrivals in 2018 amounted to 4,065,983 (+3.7% compared to 2017) and stays amounted to 15,196,391 overnight stays (+0.5%).

Of these, 1,042,556 arrivals and 3,553,556 overnight stays relate to tourists from abroad, with annual increases - of +14% and 9% respectively. The internationalisation rate of arrivals stands at 25.6% (+2.4% compared to 2017) and that of overnight stays at 23.4% (+1.9%). The top five foreign markets in terms of importance of arrival flows are Germany, France, the United Kingdom, Switzerland and the Netherlands. Flows from Germany (21.7% of arrivals from abroad) are slightly down on the previous year (-0.5%), while the drop in flows from Switzerland is more significant (-5.5%, 7.8% of arrivals in 2018).

On the other hand, there are significant increases in demand from Spain (+34.5%, 2.6% of arrivals in 2018), Poland (+24%, 3.5% in 2018) the USA (+22%, 5.1% in 2018) and the Netherlands (+23%, 6% of arrivals in 2018). There were 3,023,427 tourists from Italy in 2018 (+0.2% compared to 2017) for 11,642,835 overnight stays (down -2%), mainly from the same region Puglia, Lombardy, Campania, Lazio and Emilia-Romagna.

According to the Survey on *Brand Awareness, Image and Equity* of Apulia, in 2017, for Italians the region is positioned as the destination of the sea, good wine and oil, characterised in particular by the opportunity to experience the traditions and the welcome of the local population. Foreign tourists, on the other hand, identify Apulia as the region of villages and traditions, handicrafts and local products, which is also characterised by the welcome and reliability of the local population, as well as the heritage of landscapes and nature.

A careful analysis and mapping of the tourism assets detectable in the territories of the municipalities involved in the two itineraries was carried out, providing a detailed snapshot of the local tourism heritage, dividing it into the following macro-categories (Environment and Nature; History and Culture; Food and Wine, Churches and Sacred Art; Tourist Services).

The main local planning tools were also taken into account:
Pulsano-Leporano Sustainable Urban Mobility Plan:

The PUMS details the offer of services and transport infrastructure and outlines two possible implementation scenarios. The Plan devotes much attention to the use of bicycles and stimulates citizens to active mobility. In this regard, a specific paragraph is dedicated to 'Incentivising the daily use of bicycles and electric micro-mobility devices. Cycling as an additional factor of local development'. The following is reported verbatim: "Interventions on the supra-local cycle network include addressing signposting and making safe the itineraries identified in the LAG Colline Joniche Green Route and the new

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'Three Castles' cycle-tourist itinerary (San Crisperi Castle - Faggiano, de Falconibus Castle in Pulsano and Muscettola Castle in Leporano). The PUMS also envisages similar measures for a cycling 'Wine Route' connecting Lizzano and Manduria.

The urban and suburban cycle network is to be integrated with the network of pedestrian routes and paths in order to define a complete active mobility network (including related signposting) to support tourist and cultural activities. The Plan also envisages the setting up of two manned 'velostazioni - bike hubs', one to be located in the urban area and one in the coastal area, at which to offer support services for cycling (cycle workshop, cycle-tourist infopoint, bicycle rental, electric bike recharging points, guarded parking) and to coordinate activities for the promotion and dissemination of cycling.

Training measures and economic incentives for cycling as well as the provision of bicycle parking spaces in building regulations are part of this strategy."

Regional Territorial Landscape Plan (PPTR):

The Regional Territorial Landscape Plan identifies a multi-modal network of slow mobility, interconnected with the regional infrastructure system in order to make the regional territory continuously practicable and usable, through road, rail, cycle or maritime routes connecting nodes of naturalistic, cultural and landscape interest that cross and connect the Apulian landscapes with scenic and evocative stretches. The slow mobility network identified is the result of the implementation of a whole series of scenarios and projects implemented at a regional, wide area or park level, which the Plan acquires, putting them in dialogue with each other in view of the fruition of areas and territorial figures. The project represents an integrated system of nodes and networks at different levels and for different types of travel, aimed at achieving the multimodality necessary for capillary access to the territory and fruition of the landscapes.

The integrated landscape network of slow mobility therefore consists of the following projects:

- creation of a quality road use network representing the main connection and visual access route to the historical nuclei and to the regional landscape heritage, to be implemented through the enhancement of the historical routes connecting the city systems identified in the 'Territorial morphologies' table of the Plan;
- creazione di una rete regionale integrata di collegamenti ciclo-pedonali e greenway, in grado di connettere il sistema diffuso dei beni antropici e paesaggistici, da attuarsi sfruttando le potenzialità dei percorsi esistenti rappresentati dai tratturi, dalle ferrovie dismesse, dalle strade di servizio e dalle linee di approvvigionamento idrico;

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- creation of a sustainable and quality public transport system, integrated into the landscape and integrated, in railway stations, with private road transport, with regional cycle-pedestrian routes and with maritime connections, to be implemented through the valorisation of the railway heritage consisting of minor railway stations and local railway lines (Ferrovie del Gargano, Appulo-Lucane, Ferrovie del Sud Est, etc.) that cross or lap up contexts of high landscape value;
- creation of a system for the use of regional coastal centres by sea, to be implemented through the valorisation of the landing places of the main tourist resorts, as places of access to coastal landscapes and interchange with land networks;
- the creation of a system of multifunctional ecological corridors linking the coast to the hinterland, to be implemented through the active protection, enhancement and renaturalisation of the main rivers, blades, ravines and valleys;
- the integration of all modes of transport that make up the multimodal network, giving priority to rail, cycle, pedestrian and maritime transport, to be implemented through the valorisation and adaptation of railway stations and landing places, as places of interchange and access to landscape resources;
- the creation of a sustainable coastal use system of high landscape quality, to be implemented through the valorisation or adaptation of existing coastal infrastructures (roads, railways, stations and landing places);
- the creation of a system of transversal multi-modal landscape corridors that function as the main (user and visual) access to the coast, to be implemented through the enhancement of the system of roads linking coastal marinas and sub-coastal centres and the creation of integrated multi-modal routes (railway, shuttle bus, cycle track, submarine) and interchange car parks at marinas;
- redevelopment of the integrity and recognisability of the entrances and urban fronts of the historic core system, to be implemented through the redevelopment of historic city access roads.

From the Landscape Plan the one that emerges with great interest for our survey area with regard to infrastructure connections is Multimodal Project no. 4. "Salento Circuit": Railway circuit Lecce-Maglie- Otranto-Santa Maria di Leuca-Gallipoli-Lecce with the possibility of access to the coast and to the sea bed (station/landing interconnection) through multimodal connections (shuttle-bike): Spongano-Castro, Tricase- Tricase Porto, Gagliano-Santa Maria di Leuca, Marciano-Torre Vado, Ugento - Torre San Giovanni, Nardò-Santa Caterina.

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With DGR no. 177 of 17/02/2020 the Regional Council adopted the 'Proposal for a Regional Cycling Mobility Plan'. The same resolution initiated, in accordance with the provisions of Article 14 of Legislative Decree 152/2006 and subsequent amendments and additions and Article 11 of Regional Law 44/2012 and subsequent amendments and additions, the consultation procedure as part of the Strategic Environmental Assessment procedure, including the Environmental Impact Assessment, of the plan proposal adopted.

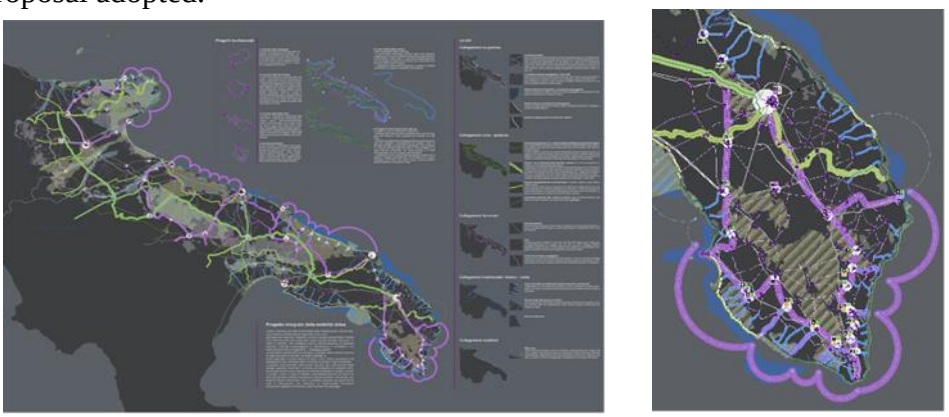

Fig. 2: Regional Cycling Mobility Plan (PRMC) with details of the multimodal mobility project

Of the defined routes, those that intercept the area of interest for the two routes planned for this work are:

Fig. 3: The Apennine cycle route (from PRMC)

The Apennine Cycle Route intercepts the municipalities of Nardò, Veglie, Avetrana, Manduria, which are part of our two routes, and the RP06/BI14-Cycling of the Three Seas.

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Fig. 4: The Three Seas cycle route

The Ciclovia dei Tre Mari intercepts the municipalities of Copertino, Cutrofiano, Leverano, Maglie, Nardò, Porto Cesareo, Lizzano, Manduria, Maruggio, Pulsano, all of which are stops on our two thematic routes

Benchmarking of new sustainable transport modes

Below is a summary of some significant projects of new sustainable transport modes.

With respect to what is envisaged by Plans and Programmes, European rather than national, we would like to point out that the National Research Programme 2021-2027 - LARGE AREA OF RESEARCH AND INNOVATION, CLIMATE, ENERGY, SUSTAINABLE MOBILITY reports the indications envisaged by the Smarter Italy Programme, launched in 2020 by the Ministry of Economic Development, in collaboration with AgID, aiming at the design of innovative tenders. Among the 4 specific lines of action is Action 4: Innovative solutions for improving mobility in historical centres and villages.

The Programme reports on what has already been acquired in other studies, Programmes and Transport Plans at European and national level. In addition to dedicated programmes such as 7Fp and H2020, the CIVITAS and ELTIS initiatives at European level are carrying out initiatives of broad interest and wide-ranging environmental impact. The specific objectives are aimed at the progressive electrification and automation of transport systems; the expected results concern the reduction of polluting emissions, the decongestion of traffic, and the improvement of services, also in terms of accessibility and safety.

In the National Programme for Research 2021-2027 - GREAT ENVIRONMENTAL RESEARCH AND INNOVATION, CLIMATE, ENERGY, SUSTAINABLE MOBILITY it is emphasised how crucial it is, in

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order to move the levers of change, to act with enabling policies, service offerings, policies and implementation organisation, attention to health and protection of citizens. Actions that require rapid and substantial changes in the direction of a joint and integrated development of public transport services and infrastructures and new solutions for sharing mobility, micro-mobility and active mobility, as well as mobility systems dedicated to tourism. Mobility that is sustainable and inclusive for citizens and travellers alike.

The following are some of the directions enabling change and improvement of mobility and thus of life itself:

Efficiency, equity and quality of public transport
Sharing mobility
Micro-mobility, assisted mobility and active mobility
MaaS (Mobility as a Service)
Tourism mobility and mobility tourism

Efficiency, equity and quality of public transport; emphasis is placed on the importance of automated and connected mobility solutions, aimed at maximising accessibility to areas and services, social inclusion, travel safety, environmental quality and efficient traffic management. With respect to these macro-themes and planning addresses, it must be considered that the specificity of the national territory requires attention to the design of solutions aimed not only at urban areas but also at extra-urban and rural areas (villages) with weak demand, of which our country is rich.

One possible direction could be to design conventional public transport services with stops and frequencies based on the needs of the local population, operating mostly during the high demand period. Another direction to pursue is to think of mini-hubs/interchange points, close to railway stations or main bus stops, offering different bike/car-sharing services and where multimodal travel information and payment systems are available.

The topic of sharing mobility, although growing nationwide (by 15% on average in 2018 compared to 2015), is currently not very widespread, especially in the south, which is little used by women and offers poor levels of intermodality. The direction is to think of shared mobility solutions (including DRT and car-pooling services offered by a single point/coordination unit that manages the transport services of several (small) municipalities;

Micro-mobility, assisted mobility and active mobility (mostly scooters, conventional and pedal-assisted bicycles), mostly reserved for the individual. This type of active mobility should be designed and planned with great attention to personal safety, providing dedicated lanes and protected, well-marked and appropriately lit zones. This mode alone cannot function as an alternative to car transport, but well accompanied by car sharing, public

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transport and MaaS, it represents an excellent solution in terms of sustainability. In small towns and cities and in the Centre-South it represents a residual mobility solution to date, but it is an interesting way to promote intermodality between different means of transport. Pedestrian mobility opens up space for social inclusiveness, is democratic, affordable and open to all. Proof of this is the explosion of the phenomenon of widespread participation in the Cammini d'Italia, which, together with the system of national (Tourist Cycle Routes) and European (EuroVelo) cycle routes and Greenways, offer opportunities for the development of sustainable mobility and economic development, including in inland areas (Slow Tourism). In this sense, in the present study, ample space has been given to pedestrian and bicycle mobility on the two planned routes, against interventions aimed at the environmental upgrading of some identified stretches.

MaaS (Mobility as a Service) refers to the development of commercial solutions concerning the integration of mobility services; it has so far been implemented with reference to tariff integration and/or the concentration of several mobility services in the hands of the same operator.

Finally, the issue of tourist mobility and mobility tourism is among those that concern us most closely. In this sense, it is important to plan and design integrated transport services and infrastructures for tourist and local transport, also in terms of deseasonalisation. In favour of sustainable mobility are the many slow and gentle mobility initiatives based on the integrated use of collective means of transport, cycling and walking, or micro-mobility on-demand services.

Some interesting examples to consider in terms of a 'bottom-up' approach to sustainable mobility are those implemented at Burgerbus in Germany, Go-Mobil in Austria, Badenoch &Strathspey in Scotland. On the SMARTA website, there are many examples of EU-funded projects that are working on the topic of sustainable mobility.

Among the initiatives implemented at the national level, the projects are: LiMIT4WeDa - 'Light Mobility for Weak Demand Areas', financed by the European Interreg Europe Programme in which the Lazio Region also participates, and the 'SaMBA - Sustainable Mobility Behaviours in the Alpine Region' project, financed by the European Alpine Space Programme, led by the Piedmont Region.

The first project - LIMIT4WeDA - aims to improve, support and integrate local public transport in rural areas with low transport demand, making it more flexible and less expensive. Such urban or rural areas are generally characterised by inefficient public transport systems and consequently by widespread private car use. This reduces the spatial accessibility of these areas and perpetuates an unsustainable mobility system that discriminates against people.

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To convert this trend in Perugia (IT), a pilot action was implemented for a new public transport system, through which a service with low demand became a high-performance and sustainable transport service that improved the quality of life, particularly of disadvantaged people. No timetables or fixed routes are required for this new public transport system.

Users book the service through a call centre by freely choosing the place and time of departure/arrival, thanks to software managed by the call centre operator who sends messages to a terminal on board the bus. Two types of booking are possible: - an "early" booking to book the bus in advance and a "real time" booking to book the next arriving bus.

Beneficiaries are disadvantaged people living in rural and urban areas with low population density, economically needy people and people with disabilities, public administrations at local/regional level, politicians/decision-makers at national/EU level.

The second SaMBA project (acronym for Sustainable Mobility Behaviours in the Alpine Region) is a project aimed at supporting low-carbon mobility in the Alpine Space by promoting policies and instruments to encourage changes in citizens' behaviour with respect to transport modes. With the aim of increasing decision-makers' awareness of the potential of policies to change mobility behaviour, reward-based mobility policies to trigger behavioural changes in favour of more sustainable travel options, such as the use of public transport, cycling and walking, were experimented with, also by means of gamification.

A relevant selection on the projects financed on the topic of tourism by the European Territorial Cooperation Programmes was carried out by the Territorial Cohesion Agency on the FARO projects, which identified 11 of them for the 2014-2020 Interreg programmes. (Agenzia di Coesione Territoriale, I Progetti Faro dei Programmi Interreg 2014-2020).

Methods

The Apulia region is not new to the definition of tourist routes and itineraries, which have been taken into account in the design of those proposed here. In order to design and define the two tourist itineraries, the notable emergencies with multiple vocations were systematised into two different routes, enhancing what has in fact always existed but is now present in a disaggregated and uneven manner, bringing out the potential of the sum of excellences. Therefore, two structured thematic routes were defined, for which both the transport and accessibilitỳ offerings and the cultural offerings present were fine-tuned. To do this, we started from the considerable richness that the territories offer at the present time, while also verifying areas of potential improvement in terms of accessibilitỳ to them. The value of the present,

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however, leaves room for future planning, which must provide for improvements, additions and design of areas of enchantment, aimed at sustainabilitỳ and social integration and economic development.

Having to and wanting to give the two itineraries a focus on sustainable mobility, the present and relevant data defined and approved by the Regional Cycling Mobility Plan, and the areas of landscape relevance by PPTR were taken into account when defining them, as well as the Italian Cammini, which are increasinglỳ chosen by people of all generations to rediscover our country and live an experience dictated by a different perception of time, the desire to enjoy the silence and sociability that comes from meeting those who have a common path to live.

It is difficult to choose a single connotation to give to each itinerary, since this area of Apulia is rich in monuments, towers, castles, museums, with a landscape full of olive groves and vineyards, and with a strong food and wine connotation, and privileged enough to possess a landscape with a unique character, rich in history, traditions and areas to experience and discover.

The definition of the two thematic itineraries stems from having systematised and brought together severaì factors:

1) Stages identified by routes marked by two different LAGs (Local Action Groups):

- GAL "Terre del Primitivo": **Avetrana** - Erchie - Fragagnano - **Lizzano** - **Manduria** - **Maruggio** - Oria - San Marzano - **Sava** - Torre Santa Susanna - Torricella. Through the definition of these stages, a typical, experiential, relaxing journey is proposed, in a slow travel mode, also thanks to the knowledge of a product of excellence of this territory, Primitivo di Manduria DOP and DOCG.
- GAL Colline Joniche GreenRoad: Carosino - Crispiano - Faggiano - Grottaglie - Roccaforzata - Giorgio Jonico - **Pulsano** - Monteparano. The LAG identifies various Green routes based on the principles of the Green Economy and Sustainable Tourism, with the aim of making known and enhancing those territories covering the entire Jonian arc, which starts from the sea and connects the eleven municipalities of the LAG Colline Joniche: 132 Km to stimulate the development of an eco-sustainable economy in the area of the Ionian land, enhancing, on the one hand, the hidden cultural and natural assets, including through the discovery of paths and routes, and, on the other hand, promoting local food and wine through visits to farms, production and tasting companies and their products. Pulsano is identified in two routes: the Three Castles cycle route: (Castle of San Crisperi - _Faggiano, Castle de Falconibus of Pulsano and Castle Muscettola of Leporano). Another

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route (route 17) starts from the centre of Pulsano and runs along provincial and rural roads. It is possible to intercept the Pulsano cycle path that leads to the sea.

2) The stages defined by 'Le Strade del vino DOC Primitivo di Manduria e Lizzano'.
   The road identifies these stops as destinations of considerable interest and rich in history and traditions. **Pulsano**, **Lizzano**, Leporano, **Manduria**.

3) What is reported and taken from 'Unione dei Comuni Terre del Mare e del Sole'.
   The Union of Municipalities comprises 7 municipalities located in the province of Taranto: Leporano, **Pulsano**, **Lizzano**, Torricella, **Maruggio**, **Manduria**, Fragagnano and **Avetrana**. The Union was established in 2001 with the common purpose of cooperating to propose integrated environmental redevelopment interventions, harmonise the exercise of functions and services with the needs of citizens, and ensure a fair use of resources; to exercise effective influence on supra-municipal bodies that manage services; to manage and expand the number of functions and services compared to those previously managed by individual municipalities, ensuring efficiency and greater cost-effectiveness for the benefit of the community.

4) As provided for and planned in the Regional Cycling Mobility Plan (PRMC):
   Ciclovia dei Tre Mari (Otranto - Sapri) - Itinerary 14 BicItalia:
   bicycle path in the lower Salento area between Otranto and the Gallipoli-Porto Cesareo section, passing through Nardò, an area interconnected with a Salento branch of the Ciclovia dell'Acquedotto.

5) What is provided for and planned by the Regional Territorial Landscape Plan (PPTR) in which the roads of landscape value in the area are indicated:
   Pulsano, San Marzano di San Giuseppe, Fragagnano, **Manduria**, **Avetrana**, **Leverano, Copertino**, Galatina, **Cutrofiano**, **Maglie**, **Otranto**.

6) The presence of Coastal and Inland Towers: Torre Borraco:
   Torre Ovo: Torre Saline; Torre Colimena; **Torre Castelluccia**; Torre Santa Susanna. A fourth cycle path is possible on the strategic horizon, from Gallipoli to Otranto, passing through Nardò and Galatina.

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7) The pilgrims' routes: the Ionian Way from Matera to Finis Terrae: Pulsano, Marina di Lizzano, Maruggio, Manduria, San Pietro in Bevagna, Porto Cesareo, Nardò, Gallipoli, Ugento, Lido Marini, Leuca. the path examined is the stretch of the Cammino Materano (between Basilicata and Apulia) that defines 7 different routes. A sacred place of European and Mediterranean civilisation as a meeting point of peoples and cultures, and of pilgrims on their way to Rome or the Holy Land. A 215 km route along the Ionian coast rich in natural and scenic, historical and archaeological beauty. Most of the route runs along the Ionian Sea with its turquoise and crystal-clear waters, composed of backdune paths immersed in the Mediterranean maquis, long rocky and sandy beaches. The coast is also rich in 16th-century watchtowers and numerous natural oases. Along the route, however, it is possible to visit important cities (Taranto, Manduria, Nardò,) and small charming villages with museums and archaeological sites of the Messapian civilisation, to be discovered slowly, giving oneself the chance to meet locals and wayfarers, observe the places and experience the traditions. The section selected for route 2) intercepts Pulsano and the last stop it identifies is Nardò, before continuing on to Otranto. At the moment, the Via Jonica is still closed. Feasibility studies have been completed, but signposting and a list of accommodations are still being structured.

8) The presence of significant historical and architectural pre-existences:
A careful analysis and mapping of the tourism assets detectable in the territories of the municipalities involved in the two itineraries was carried out, providing a detailed snapshot of the local tourism heritage, breaking it down into the following macro-categories:

- Environment and Nature: natural, environmental, landscape attractions, including beaches, nature parks and reserves, caves and other sites of specific environmental interest;
- History and Culture: remains and architectural relics of past civilisations that have inhabited or passed through the places on the itinerary; the category also includes the intangible heritage of festivals, fairs, events in which the local tradition of culture and folklore is reflected;
- Enogastronomy: typical products that are an expression of local culture and traditional practices (production, processing, consumption), capable of expressing a unique value proposition for its typicality and geo-identification;

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- Churches and Sacred Art: churches, basilicas, caves of faith, paintings, sculptures, statues, masonry works, evidence of the Catholic-Christian culture of the past and its deep intertwining with local devotion;
- Tourist services: supply of local accommodation and its availability, as well as any added-value services for tourists (e.g. information services, guides, etc.).

9) The identification of typical places in the Taranto Murgia: route of and linking popular agricultural centres, vineyards and evidence of Messapian culture.

10) What emerges from the analysis of the socio-economic context, on the main motivations for tourism in this area.

11) What emerged from the SUMS (Sustainable Urban Mobility Plan) of Pulsano-Leporano

Results and Discussion

Having defined the two thematic itineraries, this project suggests walking them in different seasons, both to better enjoy the itineraries according to the potential of the seasons, and with a view to deseasonalisation. Notwithstanding the wonder of being able to appreciate the itineraries during all seasons of the year, the advice for walking the two itineraries is:

1) ITINERARY OF THE VILLAGES BETWEEN OLIVE GROVES AND VINEYARDS: Pulsano - Lizzano - Sava - Manduria - Avetrana - Veglie - Leverano - Copertino - Galatina - Cutrofiano - Maglie - Otranto (**SUMMER-WINTER**)
2) THE VIA JONICA BETWEEN THE TARANTINE WALLS AND FINIS TERRAE: Marina di Pulsano - Torre Castelluccia - Marina di Lizzano - Maruggio - San Pietro di Bevagna - Porto Cesareo - Nardò - Cutrofiano - Maglie - Otranto (**SPRING - AUTUMN**)

Spring and autumn for itinerary 2) are better suited to walking and cycling along the roads and routes that intercept the coastline, on foot or by bicycle, alone or in company, with the aim of enjoying each step or pedal stroke while experiencing emotions, observations and suggestions, in seasons when the heat or cold do not hinder the pleasure of walking and the walkability due to the density of the presences and the lights and colours are softer.

Slowness allows us to observe and feel even the smallest things that we do not normally notice, allowing and facilitating encounters and facilitating sociality, which the pandemic has put to the test. Walking to rediscover the pleasure of a slow pace, and to get to know and enjoy the spaces

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we walk and cross. Walks are also attractive to all ages, they are inclusive, democratic, inexpensive and open to all.

A time to share but also to find oneself. One can enjoy the beautiful sea of the coast without being overcrowded; appreciate the Mediterranean vegetation present and the smells not distorted by the scorching heat of the summer season.

Itinerary 1) is advisable to be travelled in winter or summer, by car and in comfort (as there are no electric buses/shuttles to be activated yet, even with an on-call service), to enjoy the summer festivals, beautiful monuments and museums to be visited at leisure, but also in enclosed places protected from the cold or heat. The ideal for both routes would be to be able to offer all people (young, old, women, children, adults, the disabled) the opportunity to walk them at their best in all seasons of the year. This is not entirely possible at present, as there are no electric shuttle buses, protected cycle paths or signposted routes, but the hope is that starting from the structure of the two thematic routes defined here, the various municipalities intercepted can join forces to meet the needs of all categories of people.

Another important factor to be taken into account over time is the need to integrate what is emerging from the results of other projects funded under various European Programmes: (for example) the BioTours: Biodiversity and Tourism Strategy to protect cetaceans project (Interreg IPA CBC Italy-Albania-Montenegro Programme), or other results of the same AI SMART project on fast maritime connections along the Adriatic coast.

The two itineraries, although not very far apart, have different characteristics. Itinerary 1) of the Borghi tra uliveti e vigneti (villages among olive groves and vineyards) has more of an exploration character of the inland areas and villages, while itinerary 2) La via Jonica tra le murge tarantine e Finis Terrae (The Ionian Way between the Taranto Murgia and Finis Terrae) explores the coastal areas and joins the hinterland halfway inland. Both itineraries have a strong food and wine connotation.

Itinerary 1 is developed in 12 stages and has a total length of about 108 km. The route connects the Marina di Pulsano on the Ionian coast with Otranto on the Adriatic coast, crossing the Apulian territory longitudinally. With the exceptions of Marina di Pulsano and Otranto, all the intermediate stages of the itinerary consist of rural villages/small towns in the hinterland of Taranto and Lecce.

The route (fig. 5) is developed in the following stages:

1. Marina di Pulsano (Pulsano TA);
2. Lizzano (TA);
3. Sava (TA);

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4. Manduria (LE);
5. Avetrana (TA);
6. Veglie (LE);
7. Leverano (LE);
8. Copertino (LE);
9. Galatina (LE);
10. Cutrofiano (LE);
11. Maglie (LE);
12. Otranto (LE).

Itinerary 2 is developed in 9 stages and has a total length of about 118 km. The route connects Marina di Pulsano with Otranto, first travelling south along the Ionian coast, in the section connecting Marina di Pulsano and Porto Cesareo, and then curving inland towards Nardò, from where the route then continues longitudinally towards Cutrofiano, Maglie and then Otranto, on the Adriatic coast.

The route (fig. 5) is developed in the following stages:

1. Torre Castelluccia presso Marina di Pulsano (Pulsano, TA);
2. Marina di Lizzano (Lizzano, TA);
3. Maruggio (TA);
4. San Pietro in Bevagna (Manduria, TA);
5. Porto Cesareo (LE);
6. Nardò (LE);
7. Cutrofiano (LE);
8. Maglie (LE);
9. Otranto (LE).

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Fig. 5: The stages of the two planned routes.
1) Village itinerary among olive groves and vineyards_seasonality recommended to travel it, summer, winter. 2) itinerary of the Ionian way between the Taranto murge and finis terrae_seasonality recommended to travel it, spring, autumn.

Entire route 1) ITINERARY OF VILLAGES BETWEEN OLIVE AND VINEYARDS:
Pulsano – Lizzano – Sava – Manduria – Avetrana – Veglie – Leverano – Copertino – Galatina – Cutrofiano – Maglie – Otranto:

- by car Duration 2 hours 27 minutes (121 km)
- by bicycle duration 6 hours and 54 minutes (93 km)
- on foot (non-stop) 18 hours 22 minutes (90 km)

It was not possible to calculate journey times by public transport due to the multiple changes and variations in waiting times for changing from one means of transport to another.

Entire route 2) LA VIA JONICA TRA LE MURGE TARANTINE E FINIS TERRAE:
Pulsano – Torre Castelluccia – Marina di Lizzano – Maruggio – San Pietro di Bevagna – Porto Cesareo – Nardò – Cutrofiano - Maglie – Otranto

- by car Duration 2 hours 37 minutes (126 km)
- by bicycle duration 6 hours and 11 minutes (118 km)
- on foot (non-stop) 23 hours 16 minutes (114 km)

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It was not possible to calculate journey times by public transport due to the multiple changes and variations in waiting times for changing from one means of transport to another.

Conclusions

The topics of connections, sustainable mobility and territorial development through tourism activities are closely linked. This work aims to demonstrate that through an analytical methodology that allows the study of the tools, data and information of an area, including through the involvement of key players, it is possible to formulate and design tourist routes and itineraries. It is developed within the framework of the strategic Interreg V-A Greece-Italy cross-border cooperation project 2014/2020, named "AI SMART_Adriatic Ionian Small Port Network", narrating the design path and the methodology applied for the definition of two itineraries aimed at the interaction of the port of Otranto with the territories of the Salento hinterland with the opposite Ionian coast, in order to foster the sustainable and inclusive transnational tourist fruition of the Apulian territory. Taking into account the sector's literature, but above all starting from an in-depth context analysis of complex territorial planning devoted to local sustainable development (PUMS, Regional Territorial Landscape Plan, Regional Cycling Mobility Plan, etc.); the offer of tourist itineraries already structured; the mapping of tourist assets detectable in the territories; the socio-economic context; the offer of existing transport infrastructures and services and the socio-economic and accommodation context, the two itineraries defined as follows: Itinerary 1) of the Borghi tra uliveti e vigneti (Villages among olive groves and vineyards) is more of an exploration of the inland areas and villages, while itinerary 2) La via Jonica tra le murge tarantine e Finis Terrae (The Ionian Way between the Taranto Murgia and Finis Terrae) explores the coastal areas and joins the hinterland halfway inland. Both itineraries have a strong food and wine connotation.

The two thematic itineraries are of considerable interest both in the towns (emergencies) identified, and in the routes connecting them, since the connecting routes have considerable appeal in terms of the valuable offerings offered by the local vegetation (olive groves and vineyards), as well as in the typical urban elements (dry-stone walls, historic farms, Salento trulli). The effort made was to systematise these remarkable emergencies with their multiple vocations into two different routes. The weaknesses found in the identification of the routes were revealed in the lack of concerted planning with the municipalities that the two routes pass through. From the scouting of the routes done, it is clear that to date many stages need infrastructural renovation; the presence of garbage and abandoned objects that should be removed was verified; the need to include route signage and to design lighting

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appropriate and commensurate with this type of route (low environmental impact and environmental and landscape enhancement). If these results were adequately promoted and communicated to the individual municipalities involved in the stages, concerted planning could be initiated, which would be very useful in the implementation of what was done in the context of a European project, moving away from the logic of siloed planning and programming.

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