

## 0.5.2

# ICARUS strategy for intermodal connections in Adriatic Ionian Region

WP5 Transport strategies and results roll-out

A.5.3 Contribution to the relevant local, national and macro regional policies

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# 1 Introduction

## 1.1 The ICARUS project

Car transport is still at 80% of land transport in EU28 and trends say it will grow in the next years. This is particularly true for Italy and Croatia, due to bottlenecks in multimodal connections and to a governance which is not receiving market signals and mobility trends. As also mentioned in the IT-HR Work Programme, new travellers are demanding the implementation of new transport services addressing the lack of efficient multimodal networks (road, rail, air, water transport), as well as low connectivity and mobility of hinterland and coastal areas of the IT-SI cross-border region.

The ICARUS project (*“Intermodal Connections in Adriatic-Ionian Region to Upgrowth Seamless solutions for passengers”*), financed by the Interreg Italy- Croatia Programme, attempted to tackle these challenges through the improvement of passenger intermodal transport connections within the Programme area, thus easing coast-hinterland sustainable accessibility and promoting car-independent lifestyles among citizens and tourists.

*Figure 1. The project partnership*



More specifically, responding to the Programme specific objective 4.1 (*“Improve the quality, safety and environmental sustainability of marine and coastal transport services and nodes by promoting multimodality in the Programme area”*), project partners committed to implementing activities and testing solutions that have allowed to:

- Improve passengers’ intermodal connections throughout the territories of the Programme area, thus creating seamless multimodal and environmentally friendly intermodal transport solutions;
- Foster the behavioural change of transport users and increase the use of intermodal low carbon transport solutions, also through the concept of Mobility as a Service (MaaS);
- Boost existing or new maritime connections among the Italian and Croatian coasts by raising the number and efficiency of services of both ports and land sides, thus supporting the sustainable transport integration of coastal and hinterland areas;

- Enhance the capacity of territorial authorities and stakeholders to better plan and promote intermodal transport solutions through a more efficient cooperation as well as an improved sharing of data and best practices.

Sustainable multimodal seamless solutions have been tested by regions of Emilia-Romagna, Abruzzo, Veneto, Friuli Venezia Giulia, Primorsko-Goranska, Istrian Region and throughout the Croatian railway area through **8 pilot actions**. These have led to the harmonization of timetables, the improved availability of car/bike sharing within transport nodes, the implementation of innovative ICT solutions for seamless flow of information, as well as of integrated intelligent multimodal payment systems, dynamic travel planning and cross-border intermodal services.

## 1.2 Aim of the document

In the framework of WP5 (*“Transport strategies and results roll-out”*) and activity 5.3 (*“Contribution to the relevant local, national and macro regional policies”*), the deliverable O.5.3 has the objective of influencing policy-making in the planning of local intermodal mobility throughout the Adriatic Ionian region by resuming all policy contributions from the ICARUS project.

In this purpose, chapter 2 will present the main logic of objectives, strategies and actions, which derives from project activities and insights obtained through the project’s lifetime. Following the definition of this triad, chapter 3 outlines some brief conclusive remarks.

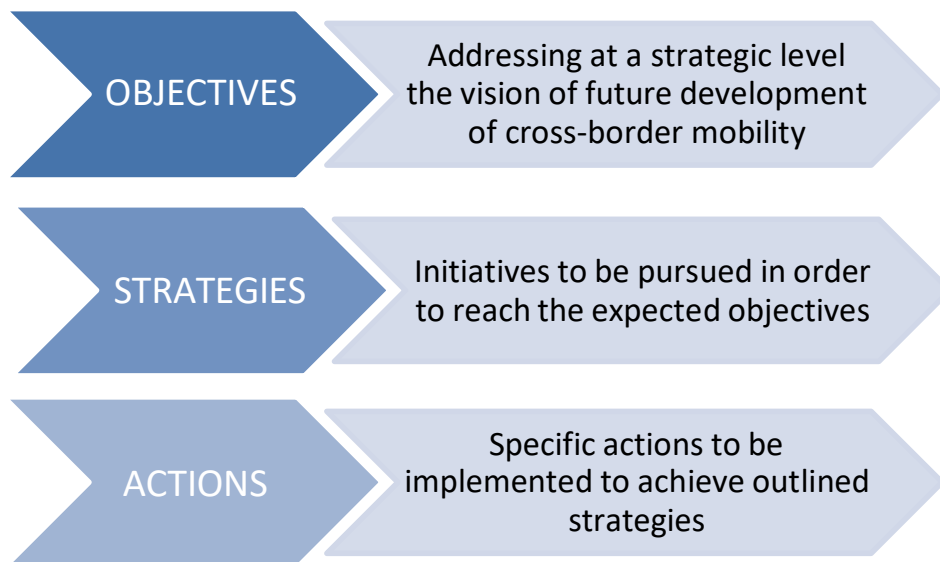
In this way, a clear set of actions and strategies, embedding the main results and lessons learned, will be at the disposal of both the main EU macro-strategies and local/regional administrations of the Programme area and beyond, thus reaching both a local and transnational dimension. This, in turn, demonstrates how ICARUS activities are not limited and focused to the sole IT-HR cross-border areas, but rather have the potential to benefit other territories as well.

## 2 The logic behind objectives, strategies and actions

ICARUS strategy for intermodal connections in the Adriatic Ionian region has been designed according to a consolidated strategic logic hierarchically structured, in order to provide a **comprehensive and coherent framework encompassing both general goals and specific measures** to be applied.

The hierarchical structure of the ICARUS strategy for intermodal connections hereby presented includes **three different levels**, from objectives to actions, which are reported in the figure below

*Figure 2. Overview of the logic behind the ICARUS strategy for intermodal connections*



While **objectives** define the more strategic vision to be achieved, the proposed **strategies** represent a schematic list of areas of intervention to be addressed in order to achieve the expected goals. Last but not least, **actions** present a more concrete list of measures to be implemented in order to fulfil the proposed strategies.

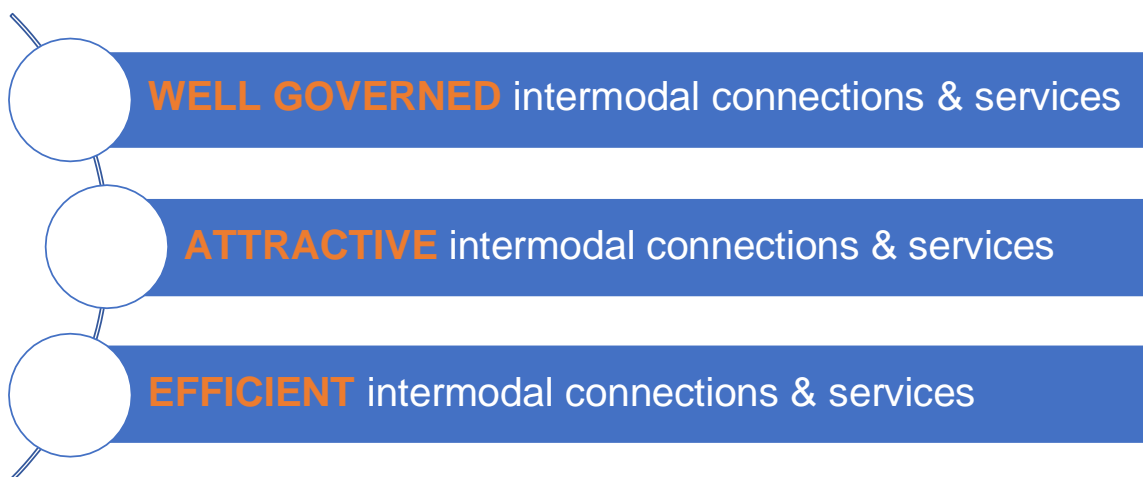
In this case, **pilot actions implemented in the framework of the ICARUS project** have been analysed and their compliance and correspondence with each proposed strategy have been catalogued on the bases of three levels: great compliance (*green*), medium compliance (*yellow*) and low compliance (*orange*).

Objectives, strategies and actions are presented more in detail in the paragraphs below.

## 2.1 Focus on objectives

Resulting from both project activities (bottom up approach) and a top down strategic vision linked to macro-regional strategies and policy addresses, three main objectives have been identified in the framework of the strategy hereby presented and are reported in the figure below.

*Figure 3. Overview of the objectives of the ICARUS strategy for intermodal connections*



The first objective (***Well governed intermodal connections and services – O.1***) tackles the administrative side of intermodal connection and services, emphasizing the importance of identifying, involving and properly engaging local and regional authorities and territorial stakeholders with the aim of fostering well governed connections and services. In this purpose, different stakeholders shall be involved to support the combination of different means of transport, and thus intermodality.

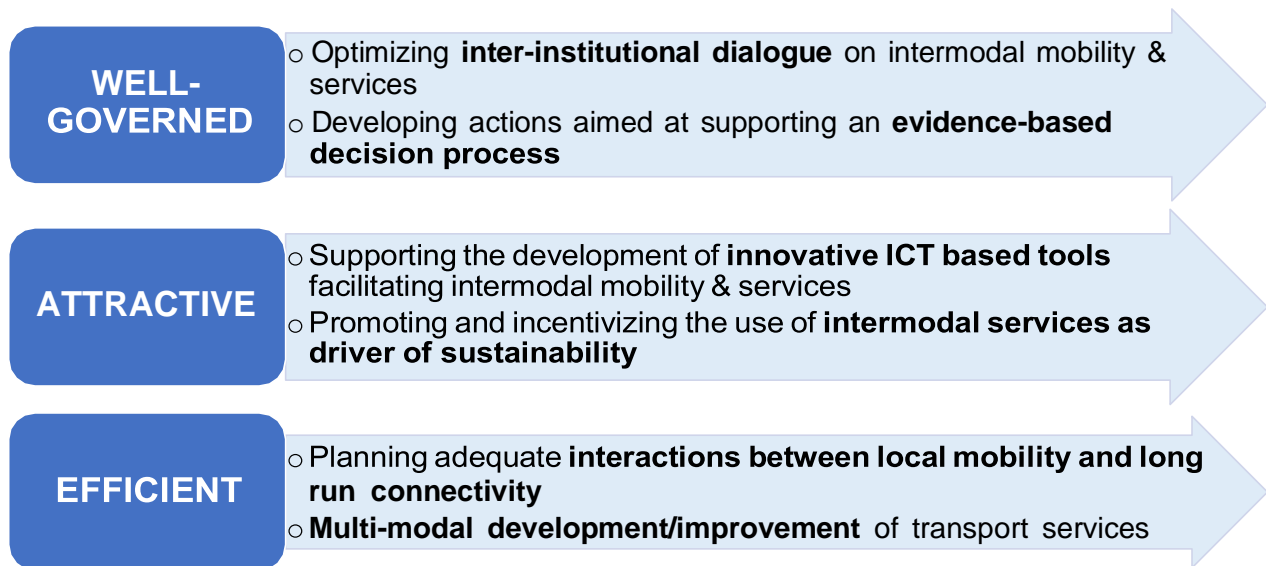
The second objective (***Attractive intermodal connections and services – O.2***), on the other hand, deals with the attractiveness of intermodal services and connections, which is an important aspect to be considered when organizing public transport services. As a matter of fact, the actual use of services is essential to ensure their economic sustainability, turning them into long-term solutions to the benefit of citizens and tourists.

Last but not least, the third objective (***Efficient intermodal connections and services – O.3***) underlines the need to ensure the efficiency and effectiveness of intermodal connections and services, in order to foster their use by potential users, thus representing a real and viable alternative to the widespread use of private cars.

## 2.2 Focus on strategies

Six strategies have been identified to support objectives and facilitate the achievement of the scenario outlined of well-governed, attractive and efficient intermodal connections and services.

*Figure 4. Overview of the strategies of the ICARUS strategy for intermodal connections*



Concerning the first objective of well-governed intermodal services and connections, two main fields of action have been underlined as fundamental to reach the objective of reference and are reported below.

- An **efficient inter-institutional dialogue on the topic of intermodal mobility and services (S. 1)**, in order to properly coordinate the actions of different administrative departments, reach shared priorities and implement a coherent strategic vision. This element is especially necessary for a cross-border territory, which is inherently characterised by a relevant deal of complexity in terms of stakeholders and authorities to be involved.
- An **evidence-based decision process (S. 2)**, in order to foster a bottom up approach allowing to implement services tackling real mobility needs of citizens and tourists. In this case, an important issue to be tackled is data availability, as large information on offer and demand is not always available, especially across cross-border territories. In this regard, relevant opportunities are related to the possibility of exploiting increasingly available (open) data, which should be further elaborated and organized in harmonized frameworks.



Likewise, attractive intermodal services and connections should be pursued through the implementation of two main strategies hereby presented.

- The **design and implementation of innovative ICT tools (S. 3)** aimed at fostering intermodal mobility through the provision of either real time or general information on mobility. In addition, the possibility to buy digital intermodal and combined tickets is also relevant, as it provides additional services for users to make intermodality more attractive.
- The **promotion of the use of intermodal services among citizens and potential users (S. 4)** through both awareness raising campaigns and more concrete actions, in order to present intermodality as a driver for sustainability and incentivize the use of public transport instead of private cars.

Efficient intermodal connections and services can also benefit from the implementation of the following two main strategies.

- The **planification of an adequate link between local mobility and long run connectivity (S. 5)**, with the aim of connecting higher infrastructural level (i.e. TEN-T core and comprehensive network, national main infrastructures) with the mobility network at the regional and local level supporting urban intermodal mobility.
- The **design and implementation of new/innovative intermodal transport services (S. 6)**, thus providing new intermodal and combined mobility solutions (especially fostering bike-bus and bike-train intermodality) that allow to cover cross-border mobility needs and concretely represent a real and effective alternative to the private cars, whose dependency is still widespread among citizens of the Adriatic Ionian region.

### 2.3 Focus on actions

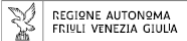







Actions represent the more **concrete side of the logic outlined in this strategy**, as they provide practical insights on how strategies and objectives should be **concretely pursued**.

Taking stock of all the important activities that have been implemented throughout the project, and as a way to provide evidence of the strategic importance of objectives and strategies hereby identified, **pilot actions implemented in the framework of ICARUS** have been analysed and their significance with reference to each proposed strategy has been classified on the bases of three levels:

- i. great compliance (*green*),
- ii. medium compliance (*yellow*), and
- iii. low compliance (*orange*).

The table below classifies the 8 pilot actions of ICARUS, briefly presenting the focus and main results for each initiative, followed by an overview of their connection with the six strategies, whose level of compliance – as explained above – is represented by the corresponding color.

*Table 1. Overview of the ICARUS pilot actions*

REGION	PARTNER(S)	PILOT FOCUS	MAIN RESULTS		
<b>PA1. Intermodal solution bike-train in the Friuli Venezia Giulia Region: bike ramps installed in the train stations connecting CAAR and Parenzana cycle route</b>					
Friuli Venezia Giulia (IT)	 	FVG Region aimed at ensuring easier access to train platforms for all cyclists. Train stations from Tarvisio to Cervignano del Friuli were fully equipped with bike ramps, in order to make the intermodal option more attractive.	Easier access to the stations and trains is a strong incentive to use the bike to get around. Furthermore, the train stations are located along the CAAR cycle path, facilitating cyclists who wish to use a combination and bike and train to satisfy their mobility needs.		
<b>CONNECTION WITH ICARUS STRATEGIES</b>					
					

**PA2. Launch of cross-border intermodal service bike-bus from Trieste to Porec, connecting CAAR and Parenzana cycle paths**

Friuli Venezia Giulia (IT)



Daily bus connections from Trieste to Poreč were implemented on weekends (Friday – Sunday), from July until October 2021. A minibus equipped with a bike rack ensured the provision of an effective multimodal option, also linking the Alpe-Adria and Parenzana cycle paths.

The bike and bus connection was beneficial for tourists and citizens crossing the IT-HR border. It allowed users to embark on their journey without their private cars, thus fostering bike tourism and intermodality.

**CONNECTION WITH ICARUS STRATEGIES**



**PA3. Technical solutions for improvement and implementation of integrated ticketing system of Croatian Railways**

Croatia



Croatia railways planned to improve the existing ticketing and booking system for passengers travelling by train and also carrying their bikes. The current web application allows the purchase of passenger ticket only. The app update allows the purchase and booking of tickets for both passengers and bikes.

HŽPP drew a technical specification report on the current condition of online sales channels and provided recommendations for future improvements of online sales system through web and mobile applications. For instance, the opportunity to buy tickets to travel with bicycles was extended to the online app.

**CONNECTION WITH ICARUS STRATEGIES**



**PA4. Development of an ICT Web application in Primorsko Goranska County to promote intermodal passenger transport**

Primorje-Gorski Kotar (HR)



International Transport Cluster developed an ICT solution for promoting intermodality in the Primorsko Goranska County, in Croatia. Moreover, the web platform offers information about the new integrated solutions in other partner regions.

This web platform represents a one-stop-shop for users who wish to travel around Croatia in a more sustainable way. Quickly available information enables citizens and tourists to find their optimal travel solutions and choose a set of environmentally friendly transport modes for their journey.

**CONNECTION WITH ICARUS STRATEGIES**



**PA5. Development of a platform calculating pollutants saving linked to RER's dynamic travel planner**

Emilia-Romagna (IT)



Emilia-Romagna Region developed a web portal to calculate the CO2, PM10, NOX and VOC savings by choosing to use public transport as an alternative to the car. The calculator is connected to RogER, a service that provides all users with tickets and information to travel within the Emilia-Romagna Region.

RogerAmbiente raises awareness on pollution generated by the users' trips and will be used to incentivize virtuous travel behaviours. Users can check their specific environmental savings thanks to the data coming directly from the dynamic travel planner. RogerAmbiente can be easily scaled up by linking it with other dynamic travel planners or ticketing systems.

**CONNECTION WITH ICARUS STRATEGIES**



**PA6. Connecting coast and countryside of the Istria County with bike and train integrated solution**

Istria (HR)



Istrian Development Agency (IDA) planned to improve connections between the coast and the rural areas in the Istrian County by promoting the combined use of bike and train. IDA focused on the railway route from Pula to Buzet where up to now passenger had no possibility to carry their bikes on the train.

IDA organised special promotional activities to present the new bike-train solution now available in Istria. Numerous tourists will now have the opportunity to enjoy Istrian natural and cultural sites by traveling in an environment friendly way.

**CONNECTION WITH ICARUS STRATEGIES**



**PA7. ICT platform for mobility data systematisation supporting intermodality in the area of the Metropolitan City of Venice**

Venice (IT)



MCVE worked on the data systematization related to mobility and infrastructures through a webGIS platform. It includes information about transport services and infrastructures, thus supporting the overall management of intermodal connections and connectivity within the different territories of MCVE. Moreover, this tool represents a support to be further update and upgrade according to future needs of this sector. In addition, two infrastructural interventions were implemented to provide additional facilities for cyclists.

The activities implemented – related to both ICT tools and small infrastructures – resulted in the enhancement of bike-bus intermodality through the provision of additional facilities for cyclists as well as a mobility portal for users to have a complete overview of available public transport services in the territory of the MCVE. Finally, the webGIS platform provides the local administration with harmonized data on mobility fostering an evidence-based process of decision-making.

**CONNECTION WITH ICARUS STRATEGIES**



**PA8. ICT Systems to better connect coast and rural areas, real time check in and tracking for passengers in the Abruzzo region and for reaching the Croatian coast**

Abruzzo (IT)



The pilot action developed by the Regional Agency for Production Activities aimed at better connecting the countryside and the coast of the Abruzzo region. ARAP developed a new ICT solution providing info mobility and integrated ticketing, real time check-in and tracking for passengers. The app is a tool for informing visitors about routes, points of interest and available means of transport to reduce the number of cars and to stimulate tourists to visit the sites using environmentally friendly transport.

The application developed by ARAP allows tourists and citizens to organise their trip and buy tickets online. Easier access to information will increase the use of more sustainable transport means and incentive citizens to leave their car at home.

**CONNECTION WITH ICARUS STRATEGIES**



The pilot actions implemented in the framework of ICARUS and here classified represent an example – to be capitalized – of concrete activities that can be implemented in order to achieve the three objectives of **well-governed**, **attractive** and **efficient** intermodal connections and services in the Adriatic Ionian region.

## 2.4 Resuming table

The three objectives, six strategies and pilot actions (connected to the strategies for which each PA was recognized as highly significant) are resumed in the table below.

OBJECTIVES	STRATEGIES	ACTIONS
<b>O. 1 – WELL GOVERNED</b> intermodal connections and services	<b>S. 1 – Optimizing inter-institutional dialogue</b> on intermodal mobility and services	<b>PA7.</b> <i>ICT platform for mobility data systematisation supporting intermodality in the area of the Metropolitan City of Venice</i>
	<b>S. 2 – Developing actions aimed at supporting an evidence-based decision process</b>	<b>PA7.</b> <i>ICT platform for mobility data systematisation supporting intermodality in the area of the Metropolitan City of Venice</i>
<b>O. 2 – ATTRACTIVE</b> intermodal connections and services	<b>S. 3 – Supporting the development of innovative ICT based tools</b> facilitating intermodal mobility and services	<b>PA3.</b> <i>Technical solutions for improvement and implementation of integrated ticketing system of Croatian Railways</i>
		<b>PA4.</b> <i>Development of an ICT Web application in Primorsko Goranska County to promote intermodal passenger transport</i>
		<b>PA5.</b> <i>Development of a platform calculating pollutants saving linked to RER's dynamic travel planner</i>
		<b>PA6.</b> <i>Connecting coast and countryside of the Istria County with bike and train integrated solution</i>
		<b>PA8.</b> <i>ICT Systems to better connect coast and rural areas, real time check in and tracking for passengers in the Abruzzo region and for reaching the Croatian coast</i>



<p><b>O. 2 – ATTRACTIVE</b> intermodal connections and services</p>	<p><b>S. 4 – Promoting and incentivizing the use of intermodal services as driver of sustainability</b></p>	<p><i><b>PA1.</b> Intermodal solution bike-train in the FVG Region: bike ramps installed in the train stations connecting CAAR and Parenzana cycle route</i></p>
		<p><i><b>PA4.</b> Development of an ICT Web application in Primorsko Goranska County to promote intermodal passenger transport</i></p>
		<p><i><b>PA5.</b> Development of a platform calculating pollutants saving linked to RER's dynamic travel planner</i></p>
		<p><i><b>PA6.</b> Connecting coast and countryside of the Istria County with bike and train integrated solution</i></p>
		<p><i><b>PA8.</b> ICT Systems to better connect coast and rural areas, real time check in and tracking for passengers in the Abruzzo region and for reaching the Croatian coast</i></p>
<p><b>O. 3 – EFFICIENT</b> intermodal connections and services</p>	<p><b>S. 5 – Planning adequate interactions between local mobility and long run connectivity</b></p>	<p><i><b>PA2.</b> Launch of cross-border intermodal service bike-bus from Trieste to Porec, connecting CAAR and Parenzana cycle paths</i></p>
	<p><b>S. 6 – Multi-modal development/improvement of transport services</b></p>	<p><i><b>PA2.</b> Launch of cross-border intermodal service bike-bus from Trieste to Porec, connecting CAAR and Parenzana cycle paths</i></p>
		<p><i><b>PA3.</b> Technical solutions for improvement and implementation of integrated ticketing system of Croatian Railways</i></p>



### 3 Conclusive remarks

As far as **transport and mobility cover a pivotal role in the society**, the demand for sustainable, intermodal and efficient services is expected to grow in the following years, especially in cross-border areas, where both the car dependency ratio and the potential for implementing sustainable transport are still highly significant.

In this purpose, the ICARUS strategy for intermodal connections in the Adriatic Ionian region hereby presented – including the strategic logic of objectives, strategies and actions – represents the result of a **strategic approach combining both bottom up and top down inputs**, gathering elements deriving from both macro-regional strategies and other supranational policies and activities that have been implemented in the framework of ICARUS and are thus representing a **concrete expression of territorial needs and priorities** in terms of intermodal services and connections.

The objective of a **well-integrated**, attractive and efficient intermodal transport system is **not an easy** one to be achieved, especially **in cross-border areas** where other challenges have to be faced, including the additional **difficulty of involving** authorities and stakeholders of two different countries.

Furthermore, the **Adriatic Ionian macro-region** presents a great **potential for involving** and further developing – also with an intermodal and combined focus – **different means of transport**, including bicycles, busses, ferries, trains, thus involving both the land and maritime sides.

Besides the provision of new, innovative and improved intermodal services, however, also the potential **number of users shall be enhanced**, in order to reach the economic sustainability of such services. In this purpose, sustainability shall be promoted as a more attractive and tangible topic. As an example, the promotion of dedicated initiatives able to **valorise externalities** into concrete discounts, fines or wider accessibility issues should represent a guiding topic to be further investigated.

Furthermore, **tourism attractiveness** should be seen as a development opportunity for territorial accessibility, **representing a strong driver** for new sustainable transport opportunities in particular during the summer season, where the mobility needs of both citizens and tourists are wider.