O.5.2 Position Paper

WP5 – Developing tools and harmonizing services for a sustainable intermodal mobility

5.3 – Enhancing green transport modalities and the interconnections from the nodes and the cycling axis

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Main challenges

Cycle tourism is one of the main forms of sustainable tourism and it is growing rapidly in Europe, in particular through the development of long-distance cycle routes of the BicItalia[1] and EuroVelo[2] networks.

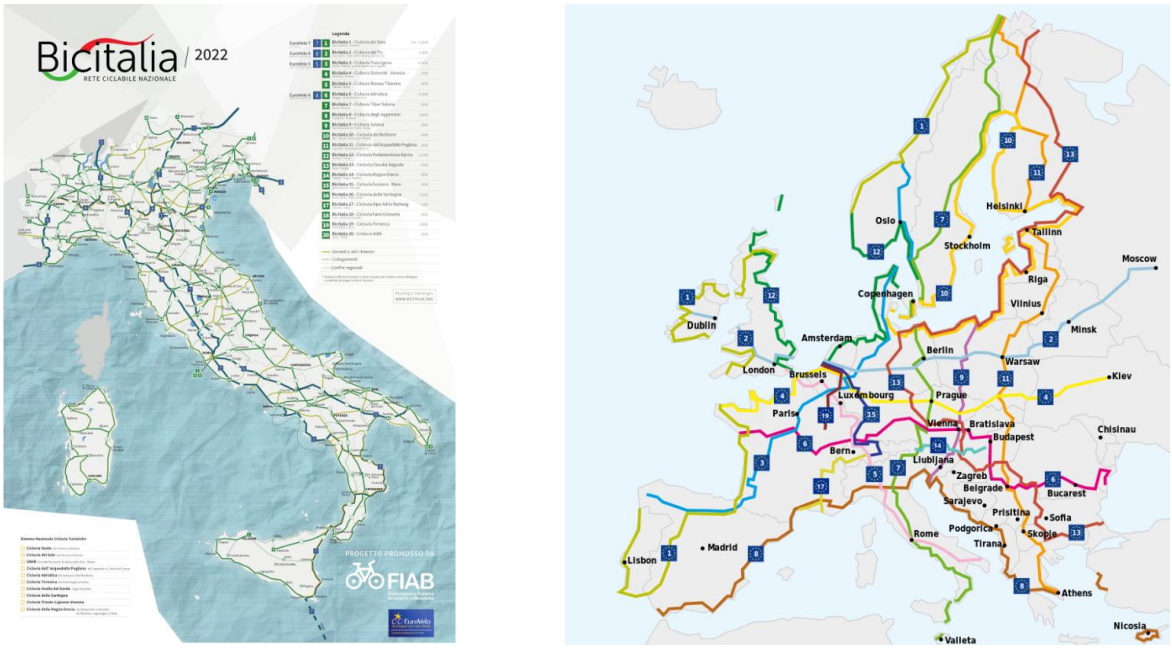

Fig. 1 - Bicitalia and EuroVelo Network

In the Programme area, the Italian coast of Adriatic basin is crossed by the Adriatic Cycle Route (BI6) and the Croatian coast by EuroVelo 8 (Mediterranean Route).

The idea of developing an integrated cycling route running along the Adriatic and Ionian coast is now an EUSAIR flagship project ready to start. The ADRIONCYCLETOUR[3] is not just a cycling route

[1] Bicitalia is an Italian national project of Fiab (Federazione Italiana Amici della Bicicletta - Italian Federation of Friends of the Bicycle) that aims to provide Italy, as well as the vast majority of European countries, with a cycle network connecting all Italian regions through a network of quality cycle routes. https://www.bicitalia.org/it/

[2] EuroVelo is the European network of long-distance cycle routes that cross and connect the whole continent. The development of EuroVelo will lead to safe, direct, coherent and connected cycling infrastructure and cycle route networks that will benefit all categories of cyclists. https://en.eurovelo.com/

[3] https://www.adriatic-ionian.eu/event/adrioncycletour-the-integrated-project-for-cycleways-in-the-adriatic-ionian-region/

that connects all the coast – it creates connections with the hinterland areas and capital cities, involving also the participating countries that do not face the sea basin. The ambition of the ADRIONCYCLETOUR is to create a pleasant transnational cycle route that is connected also with other means of transport for your return. It promotes historical, artistic, cultural, and naturalistic heritage of the region and develops the new trend of eco-tourism.

Fig. 2 - Adriatic Cycle Route (BI6) and the Croatian coast by EuroVelo 8 (Mediterranean Route)

Modal integration between cycle networks and other transport networks is fundamental. MIMOSA has faced the challenge of defining a new approach to the mobility of people in the study area focusing on the need to initiate a marked change (i.e., concerning both policy makers and transport end users' behaviour), which involves the entire cross-border territory as well as regional connections, making passenger transport more accessible and sustainable in the whole Program area.

Within the Project, Work Package 3 (WP3) is dedicated to the in-depth quantitative and qualitative analysis of passenger transport demand, while WP5 is concerned with the implementation of pilot projects aimed at developing cross-border innovative sustainable solutions and services

Therefore, within the MIMOSA project, Act. 5.3, which this position paper refers to, focuses on enhancing green transport modalities and the interconnections from the nodes and the cycling axis, and related pilot, aim at creating the conditions so that the main cross-border interchange nodes (ports, railway station and airports) are connected to the mentioned cycle axis and are accessible by bicycle with appropriate equipment (parking included) and services.

This was achieved by:

1) creating n.1 innovative Mobile HUB, supporting sharing services to be provided in a more flexible, innovative and economic way (with a specific focus on connections between city centers and peripheral areas),
2) developing a Website for Cycle Tourism in Dubrovnik-Neretva County,
3) drafting one Operational plan for cycle tourism development in the area of Dubrovnik-Neretva County,
4) making both the Airport of Bari and Brindisi "Bike Friendly",
5) setting a e-Bike points foreseeing n.1 set of e-bikes and Parking equipment for e-bikes in Port of Rovinj,
6) upgrading bike lanes in Dubrovnik-Neretva County.

Moreover, PP6 (Apulia Region) set up a vademecum (guidelines) of the main best practices, on infrastructure standards and services, for fostering the intermodality bike– public and collective transport (D.5.3.1) with actions in favour of passengers with bikes at main interchange nodes.

MIMOSA therefore appears absolutely consistent with the consideration reported in Italy-Croatia Cooperation Programme: "The area is characterised by the dominance of road transport on land bound routes and by a large number of smaller and bigger ports at the coast line. The connections to the hinterland are sometimes limited, there are many bottlenecks in multimodal connections and the governance is poor too. This is evident by the maritime traffic congestion at port areas and in general in coastal areas. At the same time, the number of visitors and travellers is increasing, demanding the implementation of new transport services and therefore opening opportunities for transport boosting in different transport modes. The lack of efficient multimodal networks (road, rail air, water transport) as well as low connectivity and mobility of peripheral areas can be potentially addressed by improving transport organization, services, infrastructures and management."[4]

[4] Programme_2014TC16RFCB042_ver_5_09_06_2020_en.pdf

This results in serious need to increase the efficient multimodal networks as well as to improve the connectivity and multimodal connections within the cooperation area, by experimenting new innovative and sustainable solutions such as Bike & e-Bikes Facility Points, and ICT tools to make access to information on transport services and intermodal opportunities available to people open and easier.

Introduction

The MIMOSA Project has promoted a new cross-border approach to the critical issues of the mobility system in the Programme area, with the aim of improving the supply of multimodal and sustainable transport services for people. Indeed, this appeared necessary to solve the common problems of an extremely predominant road transport and to improve connectivity between Italy and Croatia through an enhancement of the supply of sustainable mobility options (i.e., to citizens and tourists) based on the shared knowledge of the transport demand, both in quantitative terms and with regard to people habits and needs in terms of mobility.

The analyses carried out in the context of WP3 and in particular in action 3.1 have shown that there is an annual flow of about 1.5 million of tourists between Italy and Croatia (i.e., with reference to 2019), of which 80% are Italians. Furthermore, this flow has been growing since 2010, especially in the Croatian component. The car is used by about 90% of Italian tourists and 76% of Croatian ones (see D.3.1.1 and O.3.1). Moreover, Italian tourism is much more seasonal than Croatian tourism and it is concentrated in the counties of Istria called Primorje-Gorski Kotar, Split-Dalmatia and Lika-Senj. However, if we consider excursionists (i.e., those who return to their country of origin during the same day) in addition to tourists, the flow of people moving between Italy and Croatia drastically rises to almost 5 million people, 96% of whom are Italians.

These flows translate into road traffic of between 1.3 and 1.5 million cars crossing the Croatian border yearly, of which about 20% are Italian. Most of the foreign vehicles in Croatia passes through the border with Slovenia, concentrating on five border crossings points, where long queues occur, especially on summer weekends.

The Segmentation Analysis (i.e. D.3.1.2) and Future scenarios elaborated in MIMOSA (i.e., D.3.1.4) highlighted that there are possibilities for influencing changes in the distribution of travelers among the various transport modes. Car is expected to remain the most commonly used mean of transport, but it is possible to favor the shift from cars to sustainable mobility and to bike mobility in particular thanks to some conditions, such as:

- Improvement of multimodal connections and cycling intermodality with other transport modes with specific regard to transport nodes, as showed by the pilot carried out by Region of Friuli Venezia Giulia (RFVG) - D.4.3.3 No.1 Pilot Cross-Border intermodal service. CB

bike&bus seasonal service to connect Trieste to Porec, for accessibility to the most relevant cycling routes of the area, namely Parenzana cycle route in Istria & CAAR in RFVG, establishing synergies with existing CB seasonal maritime services Trieste - Istria and increasing options of CB transport services set up by RFVG;
- Improvement of connectivity on starting point and destination;
- New and/or improved services for cycling mobility.

This Position Paper has been developed by taking into account the following deliverables of the Activity 5.3:

- **D.5.3.1 - Vademecum on main best practices, infrastructures standards and services for the intermodality bike-public and collective transport at nodes in the CBC Area Itay-Croatia**, developed by PP6 – Puglia Region at the aim of providing guidelines on these aspects to decision makers, public transport operators, mobility/bicycle planners and mobility managers.

- **D.5.3.2 – N.1 Operational plan for cycle tourism development in the area of Dubrovnik-Neretva County,** developed by PP11- Dubrovnik-Neretva County, to increase the knowledge on the field and to define further steps needed to develop cycle tourism & intermodality with other passenger transport modes.

- **D.5.3.3 - No.1 Innovative "Mobile HUB"**, developed by PP3 – ITL supporting the sharing services to be provided in a more flexible, innovative & economic way (with a specific focus on connection between city center & peripheral areas). In detail, the Mimosa Virtual Mobile Hub was based on two different online platforms: the first one to monitoring the GPS systems installed in each e-bike, able to collect in real time the data related to the position of each e-bike to the batteries levels and to block the e-bikes (through a remote disconnection of the batteries 'alimentation) in case irregular movements were detected; the second one for the e-bike booking system management.

- **D.5.3.4 - No.1 Website for Cycle Tourism in Dubrovnik-Neretva County**, developed by PP11-Dubrovnik-Neretva County that upgraded an existing website for cycle tourism, including links to other similar websites as well as all bicycle paths and info points in the area of Dubrovnik-Neretva County.

- **D.5.3.5 - No.1 Set of solutions for an easy access to the airports of Bari & Brindisi by passenger travelling by bicycle**, developed by PP6 – Puglia Region, aimed at improving the accessibility to airports by bicycle travelers using equipment & services. This represents the first experience of "Bike Friendly Airport" at European level, in detail the pilot activities consist in two Bike Facility Points – respectively in Bari and Brindisi airports - duly equipped for assembly and disassembly bikes in the arrivals / departures area, signposted routes and information (by signs, panels, web, social networks etc..) how to get/to out the airport by bike.

- **D.5.3.6 - No.1 Parking equipment for e-bikes and No. 1 set of e-bikes**, developed by PP14 – Port of Rovinj to increase the attractiveness of the port and improve the quality of passenger services. The pilot action promotes the use of environment friendly transport solutions in the city center and while traveling with different types of transport (for example, it is possible to arrive to Rovinj port by ship with a bike on board the use the new cycling route from Rovinj to Kanfanar and then continue the journey by train). Also, port authority supervisor and operators promote cross-border connection because new e-bikes connect different locations in Rovinj; moreover, all relevant information about green transport modalities and similar are gathered on one info digital panel.

- **D.5.3.7 - No.1 Set of solutions for upgrading bike lanes in Dubrovnik-Neretva County**, developed by P11-Dubrovnik-Neretva County, with several scopes: to redesign some existing bike lanes, to reconstruct existing building to create the future cyclocenter, to set-up new signs & trail marking, parking repair & similar equipment according to needs. DNC signed an Agreement with Municipalities and City of Korcula for the purchase and installation of 19 bicycle service sets and 20 bicycle stands to contribute to the development of cycling tourism in the County.

Current situation and lessons learned

In this context, pilot projects implemented in action 5.3 allowed MIMOSA to reach objective n.2, i.e., the improvement of multimodal and sustainable connections for passenger transport and the harmonization and standardization of offered services by putting the users at the center, with a peculiar of new attention to possible forms of new forms of business models and on the integration between cycling mobility with other transport modes.

The lessons learned can be summarized as follow:

- **D.5.3.2 – N.1 Operational plan for cycle tourism development in the area of Dubrovnik-Neretva County,** aimed from one side at increasing the knowledge on the field thanks to a detailed analysis of current state in DNC describing the main profile of the County, an overview of cyclotourism supply and demand, and from the other one at defining further steps needed to develop cycle tourism & intermodality with other passenger transport modes.

- **D.5.3.3 - No.1 Innovative "Mobile HUB"** highlighted from one side the importance of a data driven approach useful to develop new services to foster sustainable mobility, and from the other allowed to explore the potentiality of an innovative public-private cooperation scheme by putting attention to legal framework and constraints such as the GDPR, insurances and safety systems.

- **D.5.3.4 - No.1 Website for Cycle Tourism in Dubrovnik-Neretva County** allowed to think about the importance of user-friendly approach in developing an ICT tool finalized at providing information and services and at raising the awareness of citizens and foreign population at the same time. Moreover, another important aspect emerged from this pilot is that the development of cycle tourism must be connected with other sectors such as traffic management, spatial planning, urban planning, etc.

- **D.5.3.5 - No.1 Set of solutions for an easy access to the airports of Bari & Brindisi by passenger travelling by bicycle**, raised the attention to several aspects, such as: i) new services that can be offered to cyclo-tourists in order to increase the attractiveness of a territory; ii) the importance of creating synergies among several stakeholders to assure the proper planning realization and conduction of a similar intervention (namely: the Region as Policy Maker, Aeroporti di Puglia a Transport Operator, Touristic Agencies/Tourists as final beneficiaries of the services).

- **D.5.3.6 - No.1 Parking equipment for e-bikes and No. 1 set of e-bikes**: this pilot focused the attention on the importance of assuring more intensive communication with local/regional and/or national and international stakeholders to have a wider picture needed to plan more effective solutions for promoting new sustainable mobility solutions to connect transport node with cities and peripheral areas.

- **D.5.3.7 - No.1 Set of solutions for upgrading bike lanes in Dubrovnik-Neretva County**, allowed a further discussion on the economic impact of cyclotourism that is one of the fastest growing branches of the tourism in the world. In order to gain value from this aspect and favor a sustainable growth of the area, it is important to provide adequate infrastructures and services that can be used both by local population and specialized tourist agencies, and more a "unique and harmonized" name and platform at County/Region level to promote the area as a destination.

- **D.5.3.1 - Vademecum on main best practices, infrastructures standards and services for the intermodality bike-public and collective transport at nodes in the CBC Area Itay-Croatia**, suggested the importance of assuring the intermodality between the cycling mobility and other means of transport in main interchange terminals (such as airports, seaports, railways stations, bus terminals). At this aim it is possible to implement different actions, related to: accessibility actions, signs and services, by classifying them according to the transport node and the type of intervention if physical or not.

Proposed Solutions and Recommendations

The proposed solution in MIMOSA and related recommendations can be summarized as follow:

- **Solution A: Improve the cycle accessibility of transport nodes and increase the intermodality between cycling mobility and other means of transport:**
  - *Recommendation A.1:* it is crucial to prioritize the intervention to be realized to improve the cycle accessibility and intermodality. This task should be performed starting from a demand analysis, primarily focusing on high-demand services, and from the mapping of existing infrastructures and services. Decisions has to be taken according by optimizing the results expected by each intervention and available funds.
  - *Recommendation A.2*: The measures for making bike friendly the modal shift nodes have to be defined according to a participatory approach by involving the targeted stakeholders, and they have to be included in planning and programming tools.
  - *Recommendation A.3*: It should be advisable that competent Public Authorities introduce among evaluation criteria to assign tenders and/or distribute funds, rewards

for sustainable proposals, for example the provision of racks for bicycle in purchasing new means buses, etc.

- **Solution B: New and innovative services for cycle tourism**
  - *Recommendation B.1:* Public support for the realization of new innovative services to test public-private cooperation schema for multimodal sustainable services is essential (to implement the testing phase, to ensure the performing of services beyond the testing phase and to properly define the relationships among service managers);
  - *Recommendation B.2:* It is important to dedicate more attention on legal framework related to data protection, i.e. data collected can be used for planning and designing new services, insurance schemes and responsibilities etc..
  - *Recommendation B.3:* The new cyclomobility and multimodal services should be created addressing the mobility needs expressed by target groups (even resorting to the involvement of consumer associations, e.g., the Italian federation fostering environment sustainability and the use of the cycling mode called Federazione Italiana Ambiente e Bicicletta – FIAB);
  - *Recommendation B.4:* The cycle tourism is one of the fastest growing branches of tourism in the world, but it is needed that each territory contribute with in
  - vestments to foster the territorial marketing and promotion: i.e. by investing in new infrastructures and services dedicated to cycletourists.
  - *Recommendation B.5:* Territorial marketing and promotion cannot disregard the modern ICT solutions, such as Webplatform, Website and Apps providing useful information and instruction in several phase: planning the trip, and during the travel itself. These tools need to be integrated with territorial marketing policies and sustained also by private and public funds.
  - *Recommendation B.6*: Data Science and Artificial Intelligence are a powerful tools to support qualified and smart Territorial Planning and Monitoring. Data collected can be used for different applications such as web-gis, or to develop a Digital Twin.

Conclusions and relevance for the EUSAIR area

The above-mentioned pilot projects contribute to accomplish the objective of improving the connectivity of transport networks which characterizes the second pillar of the EUSAIR strategy (i.e.,

"Connecting the Region"), enhancing the attractiveness of the involved areas and fostering their economic and social development. In fact, the interventions for improve the cycle accessibility defined in the Vademecum, as well as the improved bike lanes in Dubrovnik-Neretva County, the Bike Facility Points in Bari and Brindisi airports and the e-bike points in Port of Rovinj, contribute to the development of the comprehensive network and at improving the accessibility of the target areas. At the same time other interventions like the Innovative Mobile HUB realized by ITL, the website for Cycle tourism in Dubrovnik Neretva County contribute to foster cross-border facilitation and to increase the attractiveness of the area.

The transferability of results obtained in MIMOSA will be ensured through different channels, such as the Permanent cross-border Network and the EUSAIR stakeholder platform. The commitment of both stakeholder groups aims at transferring results both for analysis activities and for transport planning purposes, not only in Italy and Croatia but also in other countries of the Adriatic-Ionian region. In addition, the engagement of some MIMOSA partners in projects of the 2021-2027 programming period offers the opportunity to further transfer the obtained results, creating synergies for the advancement of passenger mobility.

References

- D.5.3.1 - No.1 Vademecum (guidelines) on main best practices, infrastructures standard & services for the intermodality bike – public & collective transport at nodes in the CBC area Italy-Croatia.pdf
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