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SuMo

Booklet

on the main results
of the SuMO project

SuMo

Sustainable Mobility in the Port Cities of the Southern Adriatic Area

SuMo **"Sustainable Mobility in the Port Cities of the Southern Adriatic Area"** is a project funded by the Interreg IPA CBC Italy-Albania-Montenegro Programme 2014/2020. The main objective of the project was to improve sustainability and mobility in some of the main port cities of the programme area, through developing a cross-border Adriatic system to encourage the use of more sustainable means of transport, alternative to cars (hybrid/electric motorboats and buses, bicycles) and to generate a positive change in the behavior of citizens and stakeholders about the sustainable use of transport means, the reduction of CO2 emissions and the halt of climate change.

Four pilot actions have been implemented in Termoli, Brindisi, Bar, Valona, in order to improve the travel experience of tourists and citizens while reducing the carbon footprint in the involved territories. Specifically, the project saw the purchase of an hybrid/electric motorboat for the public transport service in Brindisi, to favour the sustainable port connection within the city center; for Montenegro the purchase of a hybrid bus for the public transport service in the area of the port of Bar; for Albania the improvement and construction of a cycle track and for Molise the purchase of two Variable Message panels (TEIMS - Traffic and Environmental Monitoring System), which will provide information on roads, means of transport and environmental status in the area of the port and the railway station of the Municipality of Termoli.

Key specific objectives

- To widen the smart sustainable mobility network through the development of territorial and cross-border guidelines
- To raise citizens' awareness on smart and green mobility
- To improve coordination among countries for the implementation of integrated traveler transport systems, reducing existing disparities among regions
- To enhance tourist transport systems, promoting the overall economic development of the regions and favouring their connections.

Project Duration: 42 months (1 July 2020 – 31 December 2023)
Total Budget: € 1.079.535.350,00
IPA II Contribution: € 917.604.75

PARTNERSHIP

STP Brindisi S.p.a. (Italy)

Port of Bar (Montenegro)

Municipality of Vlora (Albania)

Municipality of Termoli (Italy)

STP BRINDISI S.P.A. (PUGLIA, ITALY)

Pilot action: Purchase of an electric/hybrid Motorboat (catamaran) for public transport service in the city of Brindisi (inner and medium port connections with the town centre of Brindisi)

For more than three decades, the STP Brindisi has been the steadfast provider of public transport services in Brindisi and across the expansive territory of its province, extending its reach to include sea transport within the internal harbour waters of the port.
To enhance both efficiency and sustainability in the internal port, the STP Brindisi pilot action consists in the purchase of a CAT39 model electric catamaran. This cutting-edge vessel will be integrated into the public transport service operating in the inner and medium port areas, replacing the current motorboat that relies on a conventional diesel engine.
The motorboat has the following characteristics:

- Length: 11.99 m;
- Width: 5.51 m;
- Draft: 0.95 m;
- Capacity: 40 people (crew included);
- 2 Ocean Volt SD10 Dual Propulsion System electric motor with a power output of 10 kW;
- Lithium-ion Valence DC Battery pack featuring a capacity of 14 kWh and a voltage of 48 volts;
- 1.5 kW photovoltaic system integrated into the boat's awning
- 5-kW back generator

Environmental impact analyses conducted during the testing phase indicate a substantial 80% reduction in fuel consumption, translating into an estimated annual CO2 savings of 76 tons based on a diesel emission factor of 2.64 kg per litre. This not only underscores the tangible benefits of the transition to electric propulsion but also aligns with global efforts to mitigate the adverse effects of climate change.


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In a significant leap towards technological integration, STP Brindisi has partnered with the online platform Victron Energy and its VRM – Remote Monitoring system. This innovative technology empowers the organization to remotely monitor the entire energy system of the CAT39 electric catamaran.
The remote monitoring system is accessible through both an online platform and a dedicated app. Crucial data, including energy consumption, battery state of change, solar yield, and tank levels and temperature, are available for real-time monitoring. This integration not only enhances the operational efficiency of the CAT39 but also establishes a robust framework for sustainable and eco-friendly maritime practices.

Beyond the reduction in carbon emissions, the pilot action has a cascading effect on the environmental landscape of the harbour. One of the notable ancillary advantages is the substantial reduction in noise pollution, a prevalent issue in bustling port areas. As the CAT39 electric catamaran glides through the harbour waters, the hum of the electric motor replaces the once omnipresent rumble of the diesel engine. This not only contributes to a more serene and harmonious harbour environment but also signifies a commitment to fostering sustainable and eco-friendly practices in the maritime sector.

Moreover, the STP Brindisi's investment in eco-friendly transportation reflects a broader dedication to community welfare. By embracing cutting-edge technology, the organization not only pioneers environmental sustainability in the transport sector but also sets a precedent for other entities to follow suit. The introduction of the CAT39 electric catamaran represents a paradigm shift, demonstrating that economic progress need not come at the expense of ecological well-being.

Territorial Sustainable urban mobility Plan

STP Brindisi developed, with the support of the Department of Economics and Finance of the University of Bari, the Territorial Sustainable Urban Mobility Guidelines. The document is meant to provide guidance for the development of a Sustainable Urban Mobility Plan (SUMP) in Brindisi, with a focus on its unique characteristics. The plan is designed to align with the needs of a medium-sized city like Brindisi, emphasizing both short-term and long-term sustainability goals.
The document identifies four essential pillars for Brindisi's SUMP:

- Sustainable Mobility
- Equity, Security, and Social Inclusion
- Environmental Quality
- Innovation and Economic Efficiency

These pillars serve as the foundation for Brindisi's SUMP, tailored to the city's characteristics and aimed at improving transport sustainability over both the short and long term.
Several potential interventions are proposed for the Brindisi area, including optimizing passenger mobility demand management (both tourist and work-related), improving transportation means, and enhancing light infrastructure networks. Additionally, there is a focus on improving urban ds movement of goods and shifting the modal split towards alternative transportation modes, particularly those not reliant on traditional fuels. The STP Brindisi's role in providing sea transport within the port and integrating it with urban public transport is emphasized, offering an attractive alternative to road transport in certain districts.
The document also emphasizes the concept of "rediscovery" as a key element of sustainability. It suggests that reinterpreting territorial heritage can lead to "slow" or "sweet" mobility configurations that allow for unique use of spaces and contribute to the preservation of cultural diversity.


catmarine


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Info Day at Salone Nautico di Puglia-SNIM

On 14 October 2023 STP Brindisi organised an Info Day event held at the Salone Nautico di Puglia-SNIM (Porticciolo Turistico di Brindisi – Via Dardanelli, 2), where the electrical motorboat, financed by the SuMo project, was showcased.

The Info-day marked a significant milestone for the SuMo project, as the acquisition of this fully electric motorboat represents a significant step forward towards greener and smarter mobility, in addition to being one of the very few examples of electric boats used for public transportation in Italy.

The Info-day was also a great opportunity to disseminate about other activities implemented within the project, which include through the development of territorial and cross-border guidelines to expand sustainable mobility networks, improve cross-border coordination in the implementation of transport systems, and upgrade tourist transport systems.

PORT OF BAR (MONTENEGRO)

Pilot action: Purchase of an hybrid bus for public transport service in the Bar port's area.

The Port of Bar stands as the pivotal hub within Montenegro's port system, playing a vital role in the nation's economy as it facilitates the transit of nearly all overseas trade goods. Recognized by the EU as a crucial element in Montenegro's transport network, the port operates as a multifaceted facility, handling both freight and passenger traffic.

Aligned with the "Action Plan for a Sustainable and Low-carbon Port of Bar," the port has recently acquired an Urbino 12 mild hybrid bus from the company "Solaris Bus and Coach sp. z.o.o", one of the leading European bus and trolleybus manufacturers. The action is designed to enhance energy efficiency and mitigate pollutant emissions in the port vicinity. Presented on December 7, 2022, this environmentally conscious vehicle will primarily serve the transportation needs of port staff and guests.

The Urbino mild hybrid specifically employs a unique system, combining an internal combustion engine with an electric motor functioning as a power generator. This innovative setup reduces fuel consumption and minimizes exhaust emissions by alleviating strain on the combustion engine. Additionally, the vehicle harnesses energy recovery technology, storing energy during braking and utilizing it during acceleration.

This process positions mild hybrids as environmentally friendly alternatives, reducing fuel consumption by 20 to 30% on average, compared to a Diesel-fuelled vehicle and therefore aligning with the objectives of the SuMo project.

With a total length of 12 m, and boasting a capacity of over 90 passengers (29 seated and 72 standing), the bus features a 2-2-2 door layout and cutting-edge air-conditioning—a crucial amenity in the warm Mediterranean climate. The advanced climate control system ensures passenger comfort regardless of the season. Further, the driver's cabin is enclosed with tall glass screens, ensuring a secure and comfortable working environment, effectively separating the driver from passengers. The hybrid bus was purchased at a price € 277.000,00 and the EU co- financing is € 250.000,00.

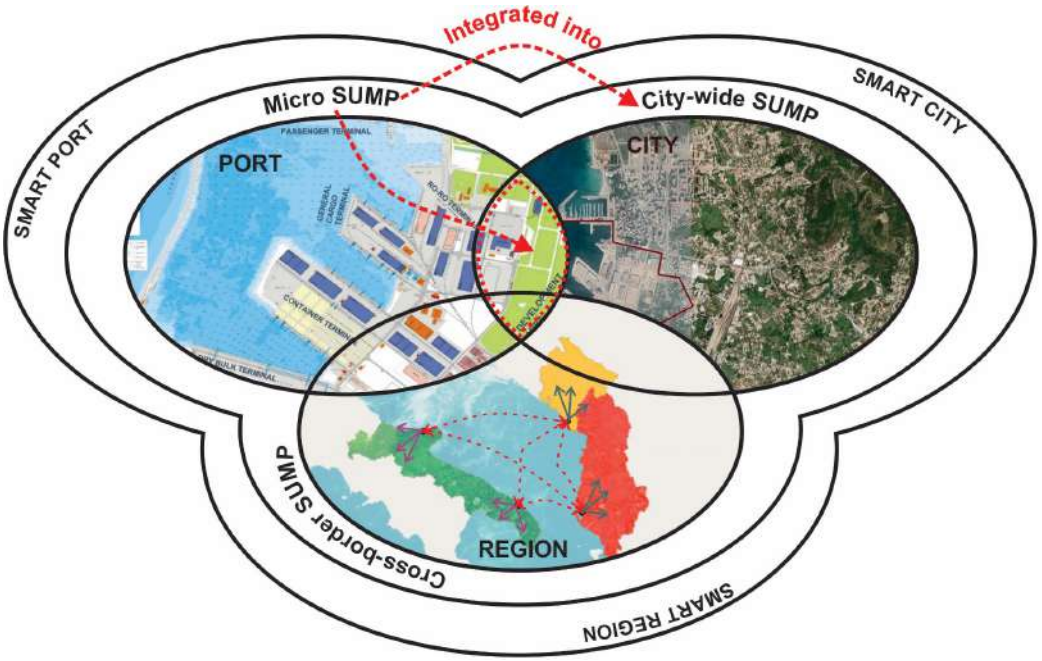
The bus will be used mainly to transport Port staff (about 570 workers), making 8 round trips per day on a route of about 2 km. Considering that the service would have an extremely high level of usage at the beginning and end of the shifts, there would be a time window of 3 to 4 hours in the middle of each shift where the bus could be used for other purposes, such as passenger transport of tourists between the Port of Bar and the Old City of Bar.

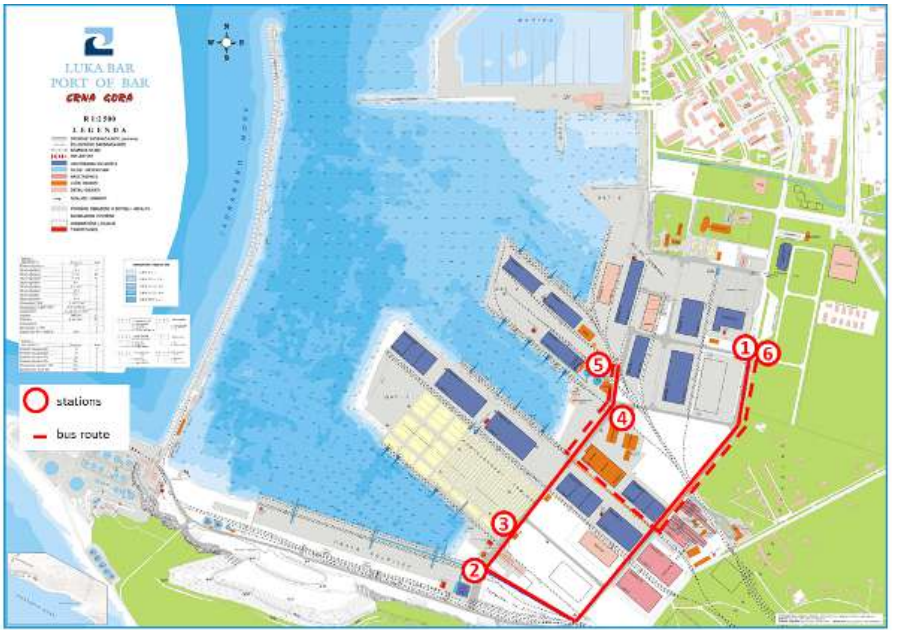
Beyond its eco-friendly attributes, this vehicle is a transformative solution capable of replacing numerous private cars, freeing parking space, alleviating air pollution, and mitigating traffic congestion within the port area and the city of Bar. This shift not only enhances overall security in the port zone but also streamlines security checks by reducing the number of vehicles present

Territorial Sustainable Urban Mobility Plan Port of Bar

The guidelines “Territorial Sustainable Urban Mobility Plan” of the Port of Bar outline strategic tasks for integrating sustainable transportation systems within port cities in the South Adriatic area. It draws from existing solutions worldwide, aiming to adapt these to the project-involved port cities. The report focuses on identifying and analysing current sustainable transportation solutions and their potential adaptability and proposing suitable sustainable transportation solutions for city port areas, assessing their feasibility, effectiveness, and passenger satisfaction.
Identified solutions for the Port of Bar are include:

- Creation of walking and cycling paths within the port area
- Organization of the Port of Bar internal transport of employees within the port area and tourists from the Old City of Bar by hybrid bus
- Organization of the Port of Bar commute transport of employees to and from suburban areas by hybrid bus
- Car-pooling system for the staff of the port
- Promote E and H mobility for employees who move for business purposes.





Event “Fishing day in the Port”

"Port of Bar” JSC hosted the event "Fishing Day in the Port" with the aim of inviting citizens and introducing them with the port area. In addition to recreational activities for fishing enthusiasts, this event, which was organized for the first time in the port, was an excellent opportunity to promote the hybrid bus that was purchased withing the project SuMo. Citizens age 12 to 80 took part in the fishing competition, and the hybrid bus was used for transport of participants to the breakwater where the event was organized.

MUNICIPALITY OF VLORA (ALBANIA)

Pilot action: Improvement, tooling and set up of cycle path starting from the port of Vlore

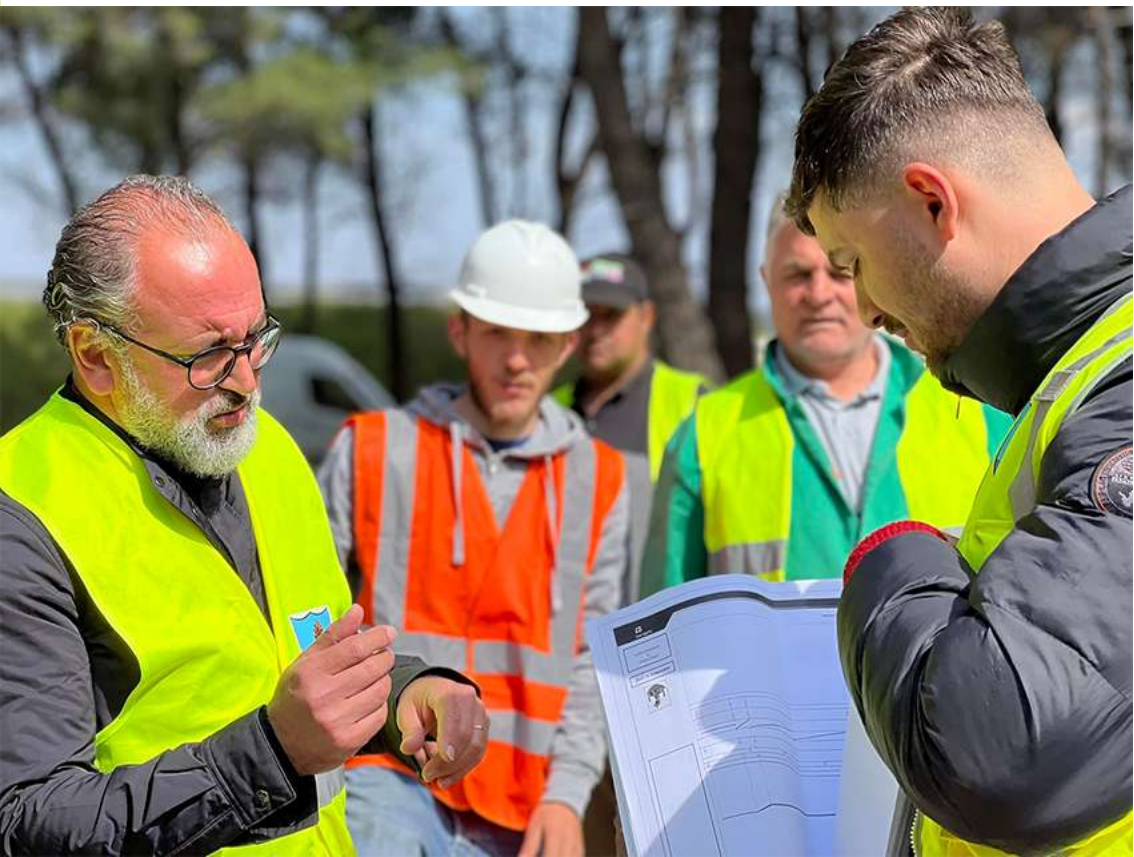
The Municipality of Vlorë pilot action focuses on the creation of essential infrastructure to promote sustainable transportation. The initiative involves the construction of a meticulously planned bike lane and sidewalk, connecting the terminus of Sazani Road with the bridge of the former Soda production factory, spanning a distance of 490 meters with a width of 3.2 meters.

An integral aspect of the project addresses the efficient management of rainwater draining along the route. A purpose-built drainage channel, 0.5 meters in width, runs alongside the bike lane, complemented by strategically placed wells featuring rain gutters and drainage equipment at 25-meter intervals. These elements are interconnected by 315 mm ribbed pipes, and three designated discharge points ensure effective management of white water across the entire length of the road segment.

To extend the utility of the infrastructures beyond daylight hours, the project incorporates thoughtful lighting solutions. Eighteen lighting poles have been strategically installed along the bike lane and sidewalk, providing ample illumination, and enhancing safety for users during nighttime hours.

A notable and unplanned intervention in the project was the construction of a metal-structured bridge over the black water channel. This deviation from the initial proposal became necessary due to constraints posed by the width of the existing bridge, which could not accommodate the planned bike lane. This adaptation underscores the project's commitment to overcoming challenges and ensuring the successful implementation of sustainable infrastructure.

The overarching goal of this pilot action is to promote cycling and micro-mobility, presenting a viable alternative to private motorized transport. By encouraging these sustainable modes of transportation, the initiative aims to contribute significantly to the reduction of emissions, air pollution, and noise pollution. Furthermore, it seeks to enhance the overall attractiveness and quality of urban life, benefitting residents, the local economy, and society as a whole. The integrated approach of this project not only addresses immediate transportation needs but also underscores a commitment to fostering a healthier and more sustainable urban environment.



Territorial Sustainable Urban Mobility Plan – Municipality of Vlora

The Municipality of Vlora developed the Territorial Sustainable Mobility Plan with the aim to guide the development of the Sustainable Urban Mobility Plan (SUMP) for the Municipality, taking into account the features and characteristics of the city.

The document intends to assist the Municipality of Vlora in increasing internal capacities to develop and implement sustainable, inclusive, integrated and accessible transport strategies, policies, technologies, practices, procedures, tools, measures and transport systems that recognize the end-to-end travel experiences of all users and freight. The proposal is intended to make it easier for the citizens to combine walking, cycling, the use of public transport as well as shared mobility (cars and bikes) as more sustainable alternatives to individual private car use.

The following approaches are suggested:

- Encouraging public transport to be wider, more efficient, integrated, attractive and inclusive;
- Encouraging cycling and micro-mobility as an alternative to private motorized transport;
- Promote Vlora as a city with sustainable mobility, combining investments in infrastructure and increasing the elasticity and responsiveness of the mobility system;
- Providing alternatives and charging of parking as incentives to guide sustainable choices;
- Encouraging the design and use of the city's streets and urban spaces with a focus on children;
- Implementation of Intelligent Systems, digital solution, electronic mobility for a (more) intelligent city.


AMMANN


LABI

MUNICIPALITY OF TERMOLI (MOLISE, ITALY)

Pilot action: Purchase of at least 2 Variable Message Panels (TEIMS - Traffic and Environmental Monitoring system)

The Municipality of Termoli, within the scope of SUMO project, has installed 5 Variable Message Signs (VMS) strategically positioned throughout the city and intricately linked to the bustling port infrastructure.

These Variable Message Signs are an instrumental component of the urban infrastructure of Termoli, providing invaluable information to the city's residents and visitors alike. Their primary function is to disseminate real-time updates on traffic conditions, the presence of ongoing roadwork, or any interruptions in the flow of city traffic. Additionally, they serve a crucial role in delivering tourist-related information, enhancing the overall visitor experience.

In the context of Termoli's thriving port, these Variable Message Signs take on a multifaceted role, serving as vital conduits of information dissemination. They play a pivotal role in conveying essential details such as tourist-centric schedules and services, information related to the transportation of goods, and updates on commercial activities within the port.

These signs are not just practical but also economically efficient, making them a valuable asset to the city's infrastructure. The effectiveness of this Variable Message Sign network is evident in its ability to efficiently communicate vital information to the public, ensuring the smooth flow of both vehicular and pedestrian traffic while minimizing disruptions.

What sets our VMS network apart is its adaptability and scalability. The technical specifications defined for this project provide a solid foundation for future endeavors, both within our city and beyond. With the knowledge and expertise gained from the successful implementation of this pilot action, this technology can easily be applied to similar urban contexts throughout Italy and Europe.

The installation of these Variable Message Signs has already begun to yield positive results. Traffic management has become more streamlined, with commuters benefiting from real-time updates on road conditions and potential detours. Tourists exploring the city have access to up-to-date information about cultural events, historical sites, and local attractions, ensuring a richer and more enjoyable experience.

Furthermore, the port area has witnessed a transformation in the way information is disseminated. Previously, it was challenging to convey important schedules and services to tourists and stakeholders effectively. However, with the introduction of these signs, the process has become significantly more efficient. Tourists can now easily plan their visits to the port, taking full advantage of the services and attractions it offers.

From an economic perspective, the investment in this VMS network has proven to be a prudent choice. The benefits of improved traffic management, enhanced tourist experiences, and more efficient communication within the port contributes to an overall increase in the city's economic competitiveness. Moreover, the adaptable nature of this technology opens doors for further applications and collaborations in the future, both locally and on a broader European scale.

In conclusion, the installation of Variable Message Signs in strategic locations within Termoli and port area represents a significant leap forward in urban infrastructure and communication. These signs not only serve as a practical tool for traffic management but also enrich the experiences of our residents and visitors. Their adaptability and economic efficiency make them a model worth replicating in similar urban settings across Italy and Europe, further enhancing the connectivity and vibrancy of our cities.

Territorial Sustainable Urban Mobility Plan Municipality of Termoli

The Municipality of Termoli developed the Regional Transport Plan (RTP), which aims to be one of the fundamental tools for the economic, social, and cultural growth of Molise, reversing the ongoing trend of demographic and economic decline.
The RTP, in particular, aims to revive the regional transport planning process in the Molise region by proposing a multi-sectoral approach that seeks to study the individual sectors of the transportation system and aims to propose integrated and synergistic intervention strategies that can support various areas of the region.

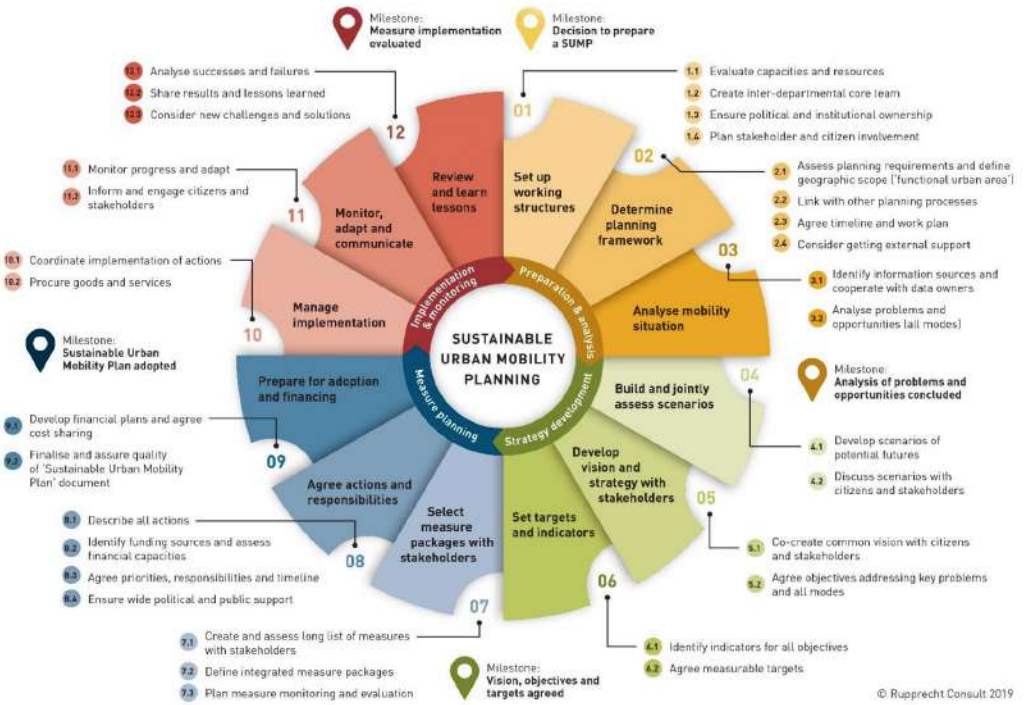
The RTP sets the following objectives:

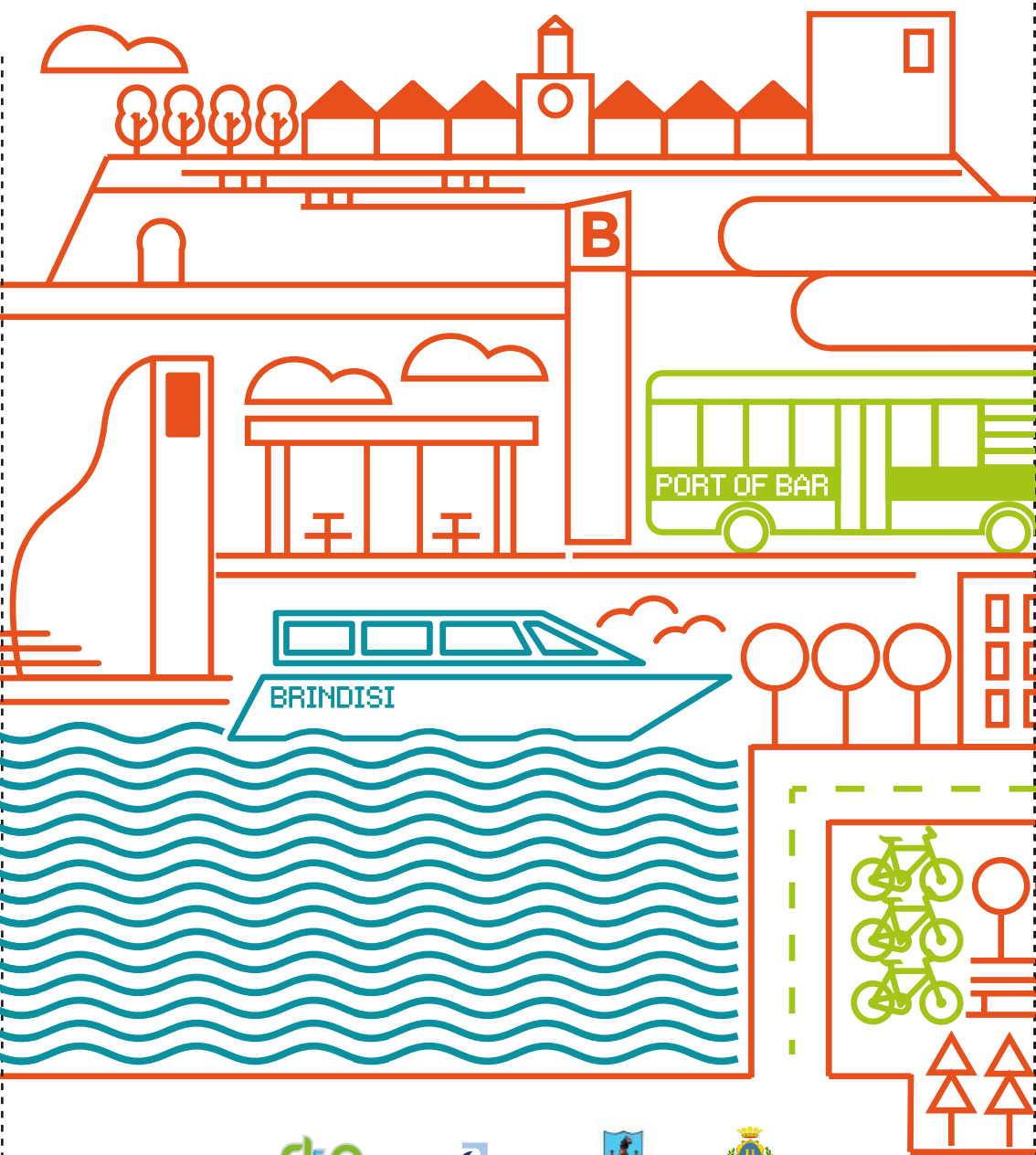
- Ensuring the right to mobility for people and goods by promoting public transportation;
- Ensuring the economic development of the region through improved integration of railway, maritime, road, and air transportation systems;
- Ensuring the perfect balance between the aforementioned objectives and the need to protect the environmental framework.

PROJECT MAIN OUTPUT

Cross-border Sustainable urban mobility Plan

The main output of the SuMo project is the "Cross-Border Sustainable Urban Mobility Plan". The document focuses on developing sustainable urban mobility plans for Adriatic port cities. It aims to enhance regional connectivity and accessibility while addressing transport infrastructure deficiencies. Key aspects include analyzing territorial and macro-territorial contexts, assessing the role of transport infrastructures in border regions, and developing a methodology for evaluating these infrastructures. The document emphasizes the need for sustainable mobility as a tool for local development, highlighting the importance of cooperation, modernizing transport infrastructures, and promoting socio-economic integration across borders. The ultimate goal is to foster sustainable growth, reduce isolation, and improve the quality of life in these regions.





Società Trasporti Pubblici Brindisi S.p.A.

PORT OF BAR

Municipality of Valona

Municipality of Termoli

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