D.4.5.1 METHODOLOGY FOR ELABORATING A CROSS-BORDER PLANNING MODEL

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1. Aim and scope of the document

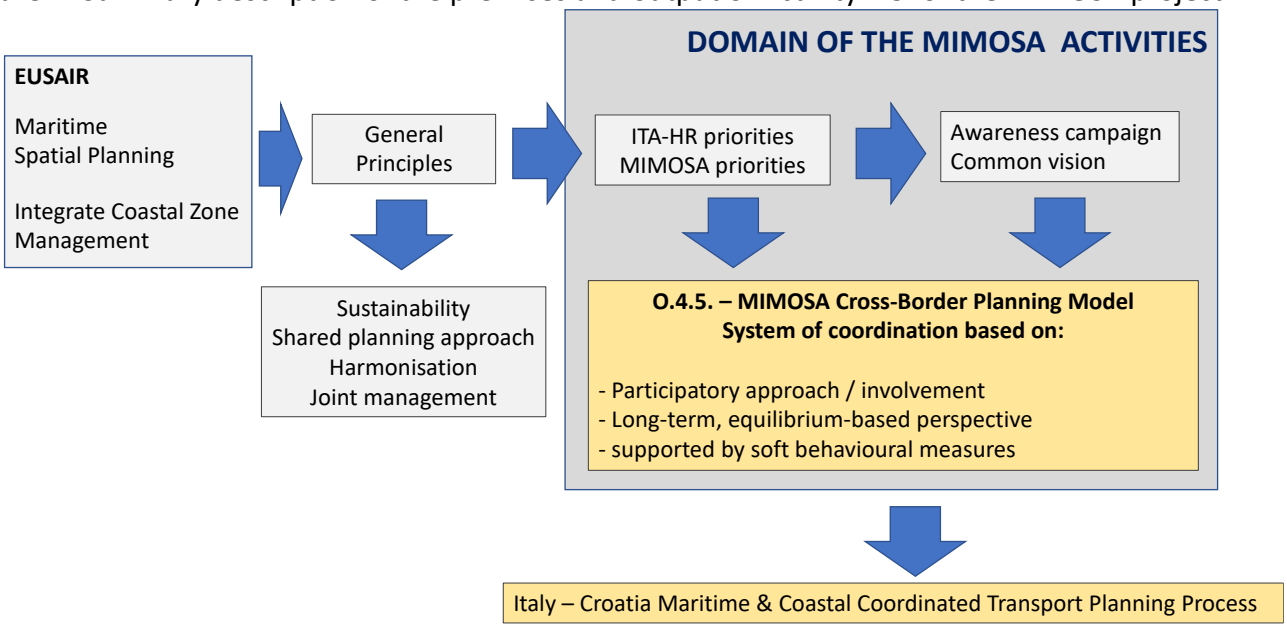
This document aims to outline a methodology to define a planning model for maritime and coastal transport in the Italy-Croatia programme area.

The development of criteria for strategic cross-border transport planning is a fundamental element of European cohesion and cooperation policies. Countries are called upon to cooperate and consult each other for the development of maritime spatial plans, as indicated by the EU Directive on Maritime Spatial Planning (EU MSP Directive, 2014/89/EU).

In the context under consideration, defining a planning model means finding ways to build a system of coordination between authorities and public and private operators, capable of achieving shared strategies through a participatory process, implementing the objectives of the above-mentioned EU directive.

The role of this project phase is therefore intended as an intermediate step between the European strategy - declined at the EUSAIR, Maritime Spatial Planning (MSP), Integrated Coastal Zone Management (ICZM) and ITA-HR programme levels - and the actual transport planning, which, however, cannot take place without the prior definition of a coordination model among the stakeholders that leads them to meet and share micro strategies around the essential principles of the strategies at the above mentioned levels. The overall concept is depicted in figure 1.

Figure 1: Summary description of the premises and output of Activity 4.5. of the MIMOSA project.



This document is therefore a document that lays the groundwork for the Output O.4.5., thus proposing a step-by-step procedure that can be implemented to achieve the necessary cross-border coordination.

This document comes downstream and coordinates with a series of activities carried out during the MIMOSA project, namely: a) analysis of relevant aspects of transport demand and supply in the programme area (WP3 and WP4), b) pilot applications of new multimodal solutions for cross-border mobility (WP4 and WP5), c) communication and dissemination actions to raise awareness of strategic priorities for cross-border transport in the programme area (WP2, WP3, WP6). Such activities are propaedeutic to the understanding of the needs of the programme area and to the creation of a common vision among decision makers and stakeholders of the passenger transport sector.

The following sections are organised as follows:
Section 2 describes the specific background involving the Maritime Transport Planning approach and procedures in the cross-border dimension of the EUSAIR strategy and the Interreg Italy-Croatia Programme area.
Section 3 presents a brief review of general principles underlying planning choices, as well as the contextual conditions and specific principles that are deemed to be adopted for the MIMOSA planning model. Lastly, it presents a brief overview of the main paradigms of planning models, certainly not with the aim of proposing a literature review but rather to clarify how the planning model to be proposed by the MIMOSA project fits into a preliminary framework prior to the construction of the actual plan, which will necessarily have to be defined by the coordination system that is the objective of the project.
Finally, section 4 describes an ideal framework for the planning methodology that will be the basis for the definition of the planning model.

2. Maritime transport planning in the framework of the Italy-Croatia programme and the Eusair strategy

2.1. The cross-border dimension

For the last 30 years, the European Union has been investing in cross-border cooperation through Interreg, a financing instrument for regional development across borders.
First developed as a Community initiative in 1990, Interreg was reorganized as a formal "objective" of European Cohesion Policy in 2000. European Cross-Border cooperation, known as Interreg A, supports cooperation between NUTS III regions from at least two Member States lying directly on the borders or adjacent to them[1].

Interreg aims to tackle common challenges identified jointly in border regions and to exploit the untapped growth potential in border areas, while enhancing the cooperation process with a view to strengthening.

Although the tool represented an important part in alleviating border obstacles and enhancing a cooperation and much progress has been made, difficulties remain in many areas, such as[2]:

- job market;
- accessing healthcare;
- pension rights & taxation;
- having qualifications recognized;
- overcoming cultural & language differences;
- accessing public facilities;

Many of the existing obstacles call for changes in laws and administrative procedures and a further development of the cooperation processes that contribute to a harmonious territorial development, implementing actions to:

- retaining people in the border areas that would otherwise migrate to the economic and service-wise more attractive national centers.
- enhancing the quality of life in the often peripheral border regions, through investments in innovation, health care, education, employment or labor mobility;
- improving risk prevention and emergency response activities

[1] Manuel de la coopération transfrontalière", Council of Europe, June 2006, Regional Policy website InfoRegio, "Cooperation across borders
[2] https://ec.europa.eu/regional_policy/en/policy/cooperation/european-territorial/cross-border/.

- exploiting potential to boost economic development

The regional diversity and different basic conditions in Europe call for region-specific concepts and solutions and form of cross-border cooperation involving neighbouring local authorities that aims to integrate a common area which faces common issues.

Cross-border cooperation implies multilateral cooperation between local and regional authorities operating in geographically contiguous areas. This applies also in case of areas separated by sea. Mimosa project's planning and proposed actions, aiming at creating in border areas, linked spaces and find shared solutions to common issues, can represent an important contribution to the solution of these problems. In fact, within a geographic framework, Mimosa's planning methodology push political authorities and administration at different levels to collaborate and promote common interests by improving living conditions for the populations concerned and pooling resources and know-how and aims to create cross-border regions macro-regional development strategies.

2.2. The sustainability dimension

More than a third of the EU population lives in border areas, along internal borders made up of natural geographic and linguistic barriers and social, economic, cultural, and political unevenness. This division and discontinuity in local territories is an impediment to the full development, in terms of potential, of the territories themselves and of the overall harmonious development of the European Union.

The problem of the so-called triple bottom line sustainability (economic, environmental, and social) is increasingly central in the political agendas of international organizations and governments around the world.

The increasing awareness in civil society, in the business world, in national governments, in administrations and in the public opinion led to the request to take tangible initiatives with targeted investments, with an integrated approach, to face an important change in the social and economic paradigm, the numerous and complex environmental and institutional challenges and to ensure a sustainable future for the new generations.

On 25 September 2015, the General Assembly of the United Nations adopted the 2030 Agenda for Sustainable Development with the definition of the SDGs (Sustainable Development Goals), which resulted in an action program consisting of 169 targets and 232 global statistical indicators (global indicator framework) subsequently declined at national and regional level by the Member States

The implementation of the 2030 Agenda requires a strong involvement of all components of society, from private companies to the public sector, from civil society to information and culture operators.

The Agenda, signed by 193 countries around the world, provides for central targets relating to the transport sector also with a focus on cross-border declination and planning activities:

- Target 9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all;
- Target 10.7 Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies;
- Target 11.2 "Safe, accessible and sustainable transport";
- Target 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries;
- Target 13.2 Integrate climate change measures into national policies, strategies and planning;
- Target 17.14 Enhance policy coherence for sustainable development;

The European Green Deal[3] is the European Commission response to the sustainability challenge: it is a new growth strategy, aligned with the 2030 Agenda, that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use (figure 2).

One of the lines of intervention, Accelerating the shift to sustainable and smart mobility, calls for interventions aiming at:

- boost multimodal transport;
- promote automated and connected multimodal mobility;
- ramp-up the production and deployment of sustainable alternative transport fuels;
- reduce drastically transport related pollution.

The importance of the ecological transition is evident considering how access to funding from the European Recovery and Resilience Facility (RRF) is bound to the fact that the National Plans (PNRR) must include measures that concretely contribute to the ecological transition and that do not violate the Do No Significant Harm (DNSH) principle. The DNSH is a principle introduced at EU level, based on what specified in the "Taxonomy for sustainable finance" (EU Regulation 2020/852), adopted to promote investments in green and sustainable projects as well as contribute to achieving the European Green Deal objectives. The DNSH states that the actions outlined in national RRPs may not cause any significant harm to the environment: this is a fundamental principle for accessing

[3] COM(2019) 640. https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en.

funding from the RRF as well as relevant for the interventions included in the complementary Italian National Plan for investments (PNC) and in the cohesion policy of the next cycle of Structural Funds.

Figure 2: Overall setting of the European Green Deal (Source The European Green Deal COM(2019) 640)

This principle, in fact, aims to assess whether an investment contributes to the six environmental objectives identified in the Paris Agreement (European Green Deal) and if the interventions do not cause significant damage to:

- the mitigation of climate change (greenhouse gas emissions);
- adaptation to climate change (negative impact of the current and future climate, on the activity itself or on people, on nature or on assets);
- the sustainable use or protection of water and marine resources;
- the circular economy, including the prevention, reuse and recycling of waste, on the direct or indirect use of natural resources or waste production;
- to the prevention and reduction of pollution;
- to the protection and restoration of biodiversity and ecosystems.

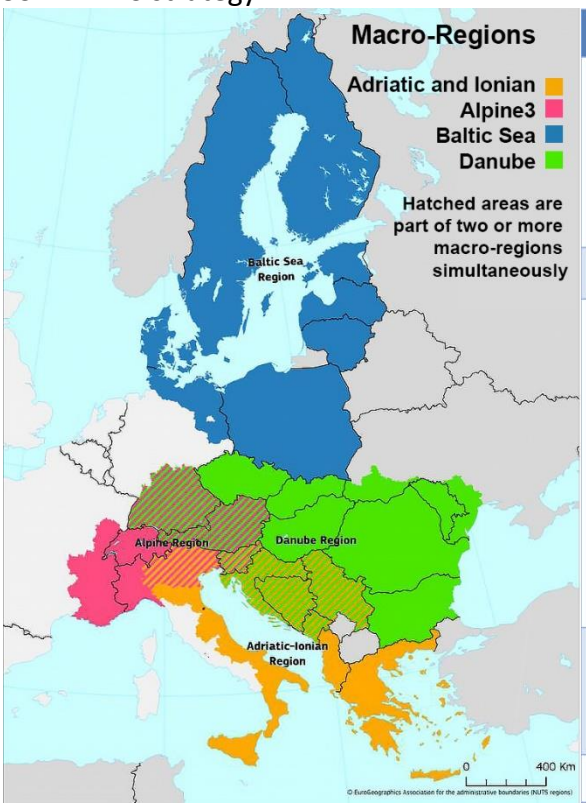
Given the premises and the centrality of the theme, sustainability, in its various forms, is a non-negotiable variable in any strategic activity of cross-border transportation planning.

2.3. EUSAIR strategy and specific objectives of the Pillar 2 "Connecting the Region"

European Union (EU) macro-regional strategies are policy frameworks that enable countries located in the same regions to face and possibly solve problems or better exploit the potential they have in common. As a matter of fact, EU macro-regional strategies tackle specific geographic challenges and

opportunities that are often too local in scope to affect the EU as a whole but are too broad to be effectively addressed only at national/regional level. In other words, they act as a link between two institutional levels represented by EU and national/local policies. The objectives of the macro-regions' cooperation are strategic, long-term and agreed by the participating countries, including a total of 19 EU member states and 8 non-EU countries that can thus benefit from strategic networking. Each strategy involves a wide range of actors at various levels (international, national, regional and local), sectors (public, private, civil society) and areas of expertise, thus providing a platform for multinational, multisectoral and multilevel governance. Four EU macro-regional strategies have been established, each accompanied by an action plan setting specific priorities, pillars or action groups, with a tailor-made governance and specific functioning processes. However, looking more closely at the Interreg Italy-Croatia, three of the four macro-regions established so far involve the area of reference of the Programme (i.e. EUSALP, EUSAIR and EUSDR, see the map in figure 1). Among these ones, in particular, the EUSAIR macro-regional strategy involves the whole Adriatic and Ionian Region, thus including both EU Member States and not, whose main characters area simplified in the figure 3.

Figure 3: European Macroregional Strategies (MRS): EUSALP – EUSAIR – DANUBE – BALTIC SEA and EUSAIR MRS strategy



	EUSAIR
Logo	EU Strategy for the Adriatic and Ionian Region EUSAIR
Founded in	2014
Participant countries	1. Croatia 2. Greece 3. Italy 4. Slovenia 5. Albania (non-EU) 6. Bosnia and Herzegovina (non-EU) 7. Montenegro (non-EU) 8. North Macedonia (non-EU) 9. San Marino (non-EU) 10. Serbia (non-EU)
Mission (Pillars)	**Pillar 1**. *Blue growth* **Pillar 2**. *Connecting the region* **Pillar 3**. *Environmental quality* **Pillar 4**. *Sustainable tourism*
Website	https://www.adriatic-ionian.eu/

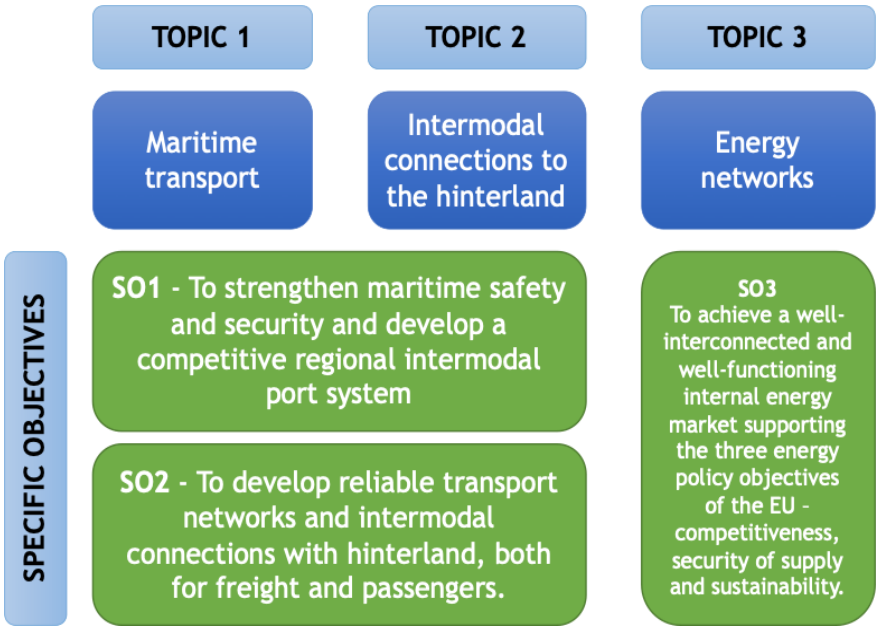
Source: https://s3platform.jrc.ec.europa.eu/eu-macro-regional-strategies; EUSAIR MRS: https://www.adriatic-ionian.eu/about-eusair/

As many other international strategies, EUSAIR highlights the importance of transport as one of the main drivers of both economic and social development. EU macro-regional strategies are also including priorities and goals in the field of transport, key topic to be addressed to ensure a smooth mobility of people as well as seamless flows of goods transported across the macro-region. This is also the case of EUSAIR, whose action plan dedicates an entire pillar (Nr. 2) to the topic of transport, mobility, and connectivity. In this purpose, the "*Connecting the region*" EUSAIR pillar is encompassing three specific objectives hereby reported:

- To strengthen maritime safety and security and develop a competitive regional intermodal port system.
- To develop reliable transport networks and intermodal connections with hinterland, both for freight and passengers.
- To achieve a well-interconnected and well-functioning internal energy market supporting the three energy policy objectives of the EU – competitiveness, security of supply and sustainability.

Moreover, to achieve the specific objectives presented above, the pillar 2 of EUSAIR has set three specific topics – presented below – in order to better address efforts and resources should concentrate on. (Figure 4)

Figure 4: EUSAIR – PILLAR 2 – TOPICS and SPECIFIC OBJECTIVES (SO) (Source: https://www.adriatic-ionian.eu/about-eusair/pillars/yellow-pillar/)



The MIMOSA project shows a significant synergy with the first and second topics, considering that the project aims at improving the quality, safety and environmental sustainability of marine and coastal transport services and nodes by promoting multimodality in the IT-HR Programme area. Nevertheless, despite Topic Nr. 3 seems to be somehow out of scope, it is to be further highlighted how energy networks are in any case part of the transport network as far as they support mobility, with specific reference also to the new and innovative fuels currently being supported at EU level. Moreover, MIMOSA project is tackling, specifically, the problems connected to the low level of cross-border connectivity which represents one of the well-known weak points of the transport network where usually seamless solutions are lacking. In this purpose, the solutions proposed by MIMOSA encompassing innovative and smart tools are contributing to strengthening cross-border mobility by taking into account also the sustainability challenge. After briefly outlining the general framework and the fundamental characteristics of the Adriatic Ionian Macro-Regional strategy and of pillar no. 2 on "connectivity", now it's essential to examine in depth the most important policies and intervention actions implemented by EUSAIR strategy, in order to improve and guarantee an integrated transport planning and management in this specific territorial area of the European Union. It can be useful to define a methodology model for cross-border maritime and coastal passenger transport planning between Italy and Croatia coherent and directly linked to the strategic reference framework of this European Macro-Region. This framework concerning the specific objectives planned by the Pillar 2, in the timeframe 2014-2020, has developed a series of processes, activities, working groups and synergies between Member States (in terms of governance, planning and joint pilot actions on mobility and transport) fundamental to identify coherent criteria for our IT-HR cross-border deliverable.

On this subject, we consider 4 different specific intervention levels, each one contributes to determining the common horizon of the Adriatic-Ionian transport strategy. On the basis of the selected contributions and insights within these four levels of EUSAIR policy definition and implementation it will be possible to determine specific coordinates to develop our methodology model. In 2014 it was enacted by the European Commission the European Union Strategy for the Adriatic and Ionian Region[4]. The preparation process of this strategy was accompanied by a supportive analytical document [SWD (2014) 191 final] in order to identify and address (through a cross-sectoral approach) the main problems, challenges and opportunities at "transboundary/transnational" level affecting this specific territorial area and then grouping in the 4 interdependent thematic pillars above mentioned. The analysis of the state of the art of the 8 countries included in the MRS (4 Member States and 4 Non-EU Western Balkan Countries) presented to the EC, pointed out "Connectivity" as one of the 3 specific themes (with Energy and Environment) just commonly identified and tackled by the same eighth countries since 2000 within Adriatic Ionian initiative (based at that time on the first operational EU programmes provided by

[4] European Commission, (2014), Action Plan accompanying the document concerning the European Union Strategy for the Adriatic and Ionian Region, {COM(2014) 357 final} {SWD(2014) 191 final}, SWD(2014) 190 final;

EU). At the same time this overall analysis was based on a Discussion Paper and a wide stakeholder consultation (especially regional and local authorities, inter-governmental and non-governmental bodies, international financial institutions and the private sector, including individual citizens) held in 2013. In addition to the specific results of this wide analysis, in order to identify main problems and challenges affecting the whole transportation system and set up the Pillar 2 of the Adriatic-Ionian MRS, and some relevant cross-cutting issues emerged in other pillars, such as the pollution of the sea due to the intensive maritime transport and the traffic congestion in the coastal areas, especially during peaks of tourist arrivals. The EUSAIR strategy launched in 2014 [COM (2014) 357 final] based its implementation process on:

A. limited number and well-defined objectives (4 main pillars);
B. a rolling Action Plan accompanying the strategy;
C. a capacity building approach;
D. building synergies with research and innovation networks;
E. a dynamic governance system tailored on both a political and operational dimension.

The Pillar 2 (Connecting the Region) is coordinated by Italy and Serbia, while Croatia is one of the coordinators of Sustainable Tourism Pillar (nr. 4). The Key conditions identified for a sound implementation process of the strategy including (in a nutshell):

- commitment of MR countries in involving every level of government and different policy sectors (National Ministers have to align policies and funds to the strategy objectives);
- guidance and evaluation of the implementation process by country;
- mobilising and align EU and national funds and a specific assistance is needed from the 2014-2020 Adriatic-Ionian transnational cooperation programme (e.g. ERDF and IPA funds);
- involving key target stakeholders at different levels.

The assessment of the implementation strategy has been carried out through periodically delivered Progress Reports of the Pillar Coordinators and a wide data collection through Interreg ADRION programme implementation, in order to include all the non-EU countries of the area. The Action Plan accompanying the EUSAIR Strategy [SWD (2014) 190 final] is totally focused on the implementation of the 4 Pillars defined by the strategy. Concerning Pillar 2 “Connecting the Region”, the main target is reducing infrastructure disparities, especially between MS and non-EU countries, the implementing plans are “embedded in a wider sustainable transport plan linked to local and regional air quality plans”. The main objective could be summarised as the need to ensure to the whole MR area “Efficient and sustainable transport connections”, in terms of maritime, mainland and interregional passenger and freight intermodal links within the EUSAIR territories, to achieve this objective is a wider regional cooperation between all involved countries is extremely needed improving a coordinated approach.

The simplification of border crossing in terms of infrastructural, administrative and jointly developed projects it’s a necessary precondition to make cross-border connections more efficient

and interconnected within the whole macro-regional area." The strategy considered the Pillar 2 as "an obvious prerequisite for the 3 other pillars" because of (as example) the harmonisation of "maritime traffic monitoring and information system" supporting development of maritime activities and at the same time intermodal transports reduces environmental impact; then it' has been considered "better transport connections" as a "must for tourism development, particularly in insular and remote areas". The Action Plan has identified some relevant examples of Pillars 2 targets by 2020, to be pursued within the actions planned for each one of the two major transport sub-topic included in the backbone of this pillar.

Concerning the two transport topics included in Pillar 2, the targets identified as reference examples in the EUSAIR Action Plan with an implementation timeframe within 6 years from the launch of the strategy (2014-2020) and tailored on the specific needs emerged from the analysis of the geographical, economic and social context of the Adriatic-Ionian Region, they could be substantially summarised in the common interest to realise a fully integrated transport system including all the core nodes between sea, coasts, islands and hinterland. Moreover, this system requires specific consideration of the weaknesses and bottlenecks featuring cross-border dimension and bridging the disparities between Member States and non-EU countries as far as possible The Macro-regional approach in 2014 is something still "experimental", in any case this specific process allowed a permanent monitoring and evaluation of the activities and different implemented projects within the whole area. Furthermore, the localised area of intervention has enabled to collect and analyse "reliable and comparable data throughout the Region" not previously accessible and available. For these reasons, when the macro-regional strategy and related action plan was launched, result indicators were still provisional, defining themselves gradually during the implementation of policies, actions and projects, just allowing later to indicate the real baseline, real changes achieved, new priorities and a real ex post evaluation. In September 2020, the development level and related results achieved by all MRS was analysed through an overall assessment by the European Commission, publishing a Staff Working Document[5] and a Report "on the implementation of EU macro-regional strategies"[6].

Between 2019 and 2020 the EUSAIR accepted the request of the North Macedonia to be included in the strategy as the 9th country of the regional area, and at the same time it has been in charge as the third coordinator (together with Italy and Serbia) of TSG 2 of Pillar nr. 2 on transport objectives. This territorial enlargement of the region has been consistent with the goal of extending the Macro-Region to the Western Balkans as targeted in 2014. Considering Topic 1 "Maritime Transport" and Topic 2 "Intermodal connection to the hinterland", the main results achieved within

[5] European Commission, (2020) *Commission Staff Working Document accompanying the document, report on the implementation of EU macro-regional strategies {COM(2020) 578 final},* SWD(2020) 186 final.
[6] European Commission, (2020) *Commission Staff Working Document accompanying the document, report on the implementation of EU macro-regional strategies {COM(2020) 578 final},* SWD(2020) 186 final.

this pillar in terms of connectivity, accessibility and enhancement of the overall transport system (for all modes) in terms of policy impact, and implemented by the Thematic Steering Group nr. 2 (TSG2) are:

1. a 'Master plan for transport in the Adriatic and Ionian region', which aims at making the region more integrated and interconnected with the rest of Europe and the Mediterranean, and to support the EU transport policy in the EUSAIR.
2. the EUSAIR Multimodal Transport Model (EMTM) which aims at promoting harmonisation of EU transport acquis in Western Balkan countries. Strong links have been established with the Transport Community Treaty

The implementation results of the EUSAIR strategy on transport objectives are really relevant for a methodology aiming at elaborating a cross-border transport planning model within the Italy-Croatia Programme Area: 1) the multi-level governance promoted by the EUSAIR strategy is certainly the most effective instrument for coordinating the planning process in the cross-border dimension and in this framework, the process of involving policy makers and stakeholders on different levels is crucial. The availability and operability of a tool such as the EUSAIR Stakeholder Platform is a significant achievement, and it could be useful also within the cross-border planning model proposed by the MIMOSA project. As emerged in the EUSAIR context formal and informal engagement/involvement of government and non-government actors, particularly at subnational level (region, municipalities etc.) it's a complex issue to manage and at the same time a strategic objective to achieve. The regional and local dimension represent the basic territorial levels to apply, testing and harmonising a strategy such as the MRS[7]. Transferring this issue to our context, the administrative differences and the various competences shared between regional, local and national transport authorities require the widest potential involvement of all the actors responsible for the transport system (planning and management) between Italy and Croatia, in order to harmonise objectives and results in a shared approach, both at political and operational level. the principle of 2) Cooperation within and across strategy should be taken into account: a transport planning model within the framework of Italy-Croatia programme area, it also needs to be in line with action plans and guidelines developed in terms of "Connectivity" by the other MRSs including this specific Adriatic area in their policies. Finally, the most important thing emerged from the analysis of the implementation results of EUSAIR Pillar 2 is 3) the development of a Masterplan for transport in the Adriatic and Ionian region and the realisation of an EUSAIR Multimodal Transport Model (EMTM). Both these strategic tools are implemented by the EUSAIR TSG2, aiming to achieve a homogeneous and effective level of integration and interconnection of the overall transport system (including all modes of transport) in the Adriatic-Ionian MR. In this direction the target is overcoming barriers and bottlenecks due to the internal borders between the different countries, on the other hand it's equally crucial to harmonise principles and policies on mobility planning and

[7] Michalun, M. V., & Nicita, A. (2019). *Multi-level governance and cross-sector practices supporting the European Union Strategy for the Adriatic and Ionian Region*.

management especially between Member States and non-EU countries (e.g., also by establishing strong connections with the Transport Community Treaty[8]). As highlighted in the policy paper published in 2020 by the Thematic Cluster 4 on "Integrated multimodal sustainable water and land transport" of the Interreg Adrion Programme, the main objective of the EUSAIR Transport Master Plan is to identify a "common vision" of a shared transport system. It has to be consistent with the National Transport and Mobility Plans of the involved countries and at the same time with EC development plans for TEN-T Networks in the Balkan as well as aligned with existing TEN-T corridors in the Adriatic-Ionian area. A specific focus of the Masterplan intervention should be to overcome barriers and gaps still affecting cross-border sections, not just as infrastructures but also as efficiency/safety of the services Finally the paper emphasises the congruency between EUSAIR transport topics and the EU policies and funding programmes for 2021-2027: the two basic priorities are based on: A) harmonising Maritime transport system to be inclusive and sustainable at environmental level; B) realising seamless intermodal connections (freight + passengers), (Interreg Adrion TC4, 2020, pp.14-15). In 2019, Mirjana Jovanovic and Pierluigi Coppola, the EUSAIR Pillar 2 Coordinators presenting at the 47th EU Transport Conference in Dublin[9], the perspectives and the state of the art of EUSAIR Transport Masterplan. The fundamental idea of this tool is allowing joint planning of transport infrastructures, based on common priorities of intervention and suitable resources and funding opportunities The Masterplan major challenges could be summarised as follows:

1. Supporting the European Commission in the implementation of TEN-T Network in South East Europe;
2. Promoting EUSAIR Countries within a common and shared strategic framework;
3. Prioritising actions and measures pointing out synergic effects while setting timelines[10].

The elaboration of the Masterplan is scheduled on the basis of an implementation Roadmap The ISTEN (*Integrated and Sustainable Transport in Efficient Network*) project (financed by Interreg ADRION 2014-2020) providing in 2021 a "Strategic Action Plan for ADRION Region" as a deliverable within its implementation framework, has analysed the step forward of this Masterplan Roadmap underlying the wide EUSAIR "country reviews'' conducted by the Masterplan in order to collect data for all transport modes in terms of services provided by the national systems, and related national strategies/plan ongoing or still to be implemented. This phase in 2021, during the ISTEN Final conference it has been announced as concluded, while the step related to "Transport demand and supply analysis and identification of critical issues" it has been descripted as still ongoing. The MIMOSA methodology should be strongly linked to the different stages of the roadmap, considering the IT-HR planning model a potential (and relevant) "part of the whole" EUSAIR masterplan, with a

[8] https://www.transport-community.org

[9] Jovanovic, M., Coppola P., (2019) Presentation of The EUSAIR Pillar 2 Coordinators on "Connecting South-East Europe: vision and challenges of EUSAIR, the European strategy for the Adriatic-Ionian Region," 47th European Transport Conference – ETC-2019, Annual Conference of the Association for European Transport (AET), Dublin 10 October 2019

[10] (Jovanovic, M., Coppola P., 2019 - ISTEN Project, 2021, "Strategic Action Plan for ADRION Region", pp. 51-52)

high degree of integration and synergy. This because, the EUSAIR Masterplan implementation process (but also project outcomes as the Plan delivered by ISTEN project[11]) represent an essential background framework to be considered in the MIMOSA cross-border planning model.

2.4. Strategic objectives from IT-HR and peculiarities of the Programme area.

Similarly to Pillar number 2 of EUSAIR, the Interreg Italy-Croatia Programme also entails a priority axis dedicated to transport and in particular - considering the specific coastal dimension - to Maritime transport. In fact, the Programme area embraces 33 statistical NUTS III territories belonging to both Italian and Croatian sides surrounding the Adriatic Sea, aims at enhancing and leading the cooperation among administrations, companies and citizens of its territory of reference, mainly through the provision of a strategic framework and governance that deals with the allocation and management of EU funds dedicated to this area (Figure 5).

Figure 5: Interreg Italy-Croatia 2014-2020 – Cooperation Area (Source: Interreg IT-HR 14-20 Cooperation Area
https://www.italy-croatia.eu/cooperation-area)

As mentioned above, one of the focuses and priorities of the Programme lays on maritime transport (i.e., Priority axis Nr. 4), which is an essential component being the Adriatic Sea the border between Italy and Croatia. As a matter of fact, the provision of efficient and effective maritime connections all year-round is essential to ensure cross-border accessibility, including during periods that are outside of the major tourist flows of the high summer season. In addition, marine and coastal transport services represent a more sustainable option and are a precious component to promote multimodality.

The Specific Objective under this axis (i.e. 4.1) takes a cue from the concept of multimodality as a way to promote safer and more sustainable connections: for this reason the Programme has supported actions developing new traffic modes directed towards the use of vessels using compatible energy sources, the adoption of innovative ICT systems to enhance embarking and disembarking of passengers in vessel traffic management and

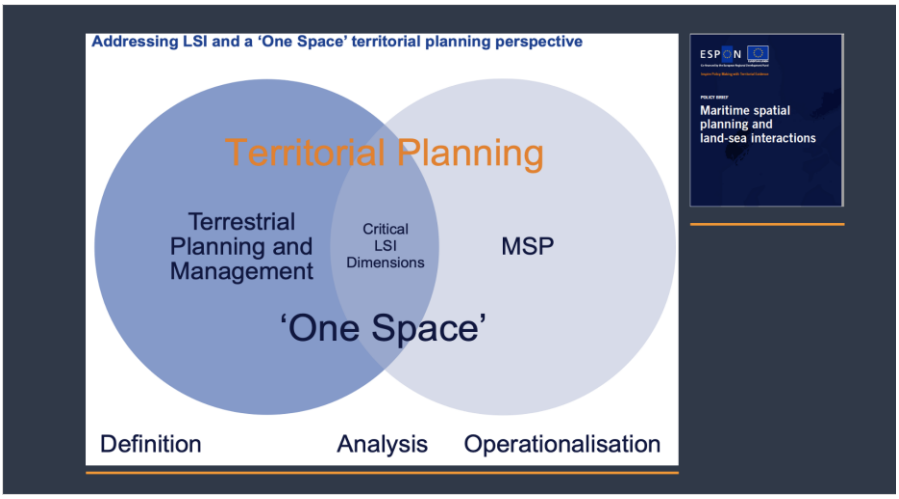
[11] ISTEN project (2021) , Integrated and Sustainable Transport in Efficient Network, *WPT2 – Activity T2.3 – Strategic Action Plan for ADRION Region*, Interreg Adrion 2014-2020;

implementation of electronic ticketing systems and electronic traffic management to ensure a more efficient and safe development of traffic in the area. Beside the optimization of individual modes of transport, the Programme has also strived to improve the surveillance and coordination capacity and to create the necessary framework for substantial investments, in order to meet all the challenges for a sustainable, environmental-friendly and low carbon transport system. Despite the widespread presence of ports of different size and importance, the current offer of routes between the two shores of the Adriatic is quite restricted, especially during low tourist seasons, and this is affecting the accessibility of the hinterland and the overall Adriatic-Ionian area, where a long-lasting tradition of individual mobility has to be remarked. In fact, road transport is still predominant thanks to the network of motorways and Adriatic state roads running between Italy and Croatia, some of which are also part of the Mediterranean corridor that links the south of Spain to the Hungarian-Ukraine border. However, the connections to the hinterland are sometimes limited, while there are still many bottlenecks hampering the use of efficient multimodal connections. Therefore, the high seasonality of tourism, the increasing numbers of visitors and travellers, combined with the lack of efficient multimodal nodes in the area, generate relevant traffic congestions in the coastal zones, especially in the proximity of main nodes and at the cross-border. In this framework, the MIMOSA project worked in order to underline the importance of transport in the overall economy of the programme area, and especially of waterway transport, which has the potential of becoming the driving force for the sustainable socio-economic development of the area. As summarised in the previous paragraph, the Maritime Transport, Priority Axis 4 (SO 4.1) 2014-2020, is based on the basic issue to reduce the pressure arising from transport (in terms of pollution, traffic congestion, inadequate/obsolete infrastructures) on the Adriatic Sea basin and the related coastal areas in order to protect the naturalistic-environmental heritage of this specific (and fragile) territorial ecosystem. At the same time, emerging the need to substantially enhance cross-border accessibility and connectivity, increasing multimodal connections, improving quality and safety of transport services, and upgrading the connection nodes between coast and hinterland (also considering tourism peaks).

Considering now the specific level of transport planning both in terms of state-of-the-art analysis and emerging needs, and at the level of development through the actions and activities financed by the 14-20 programme, it is necessary to highlight the fact that in a cross-border maritime territorial dimension such as Italy Croatia - where the Adriatic Sea is a fundamental and distinctive feature of the whole territorial ecosystem - this issues is (also) integrated in the framework of Maritime Spatial Planning (MSP), as well as partially in the Integrated Coastal Zone Management (ICMZ). The MSP since the beginning of its adoption and standardisation as a common framework within the EU policies (Directive 2014/89/EU) established among its main specific objectives (Art.5) the effective contribution of the Member States to the sustainable development of Maritime Transport; then included (Art. 8) within the pertaining (human) activities and practices to oceans and seas must be considered the maritime transport routes and related traffic flows. Maritime transport planning is therefore a tool inevitably overlapping MSP, cross-border cooperation, and a range of European

policies focused on sustainable mobility and transport planning. This planning process, necessarily, should find the right balance between the needs of the environmental ecosystem preservation and development of human activities. Considering a basic perspective, the Maritime Spatial Plans "*need to fulfil several requirements, including taking account of Land-Sea Interactions (LSI), following an ecosystem-based approach, ensuring coherence between MSP and other processes, and enabling transboundary cooperation between EU Member States*"[12]. This perspective still has to reach a "wider recognition" at international level but in any case, it could represent a fruitful common approach to be pursued within the EU territorial framework (Figure 6).

Figure 6: ESPON, Territorial planning as one space. LSI Dimension. Source: MSP-LSI Project Team, in ESPON, Policy Brief - Maritime spatial planning and land-sea interactions, working paper, October 2020, p.11.



2.5. The Italy-Croatia cooperation perspectives for 2021-2027 programme

As a recap of the analysis of the strategic framework, and anticipating what will be the topic of the next section, we introduce some principles for cross-border transport planning as already defined and commonly accepted both by the scientific community and by transportation experts and planners, such as:

- pursuing a shared planning approach in all areas: networks, systems, infrastructure, including operational aspects;

[12] ESPON, (2020), *Policy Brief - Maritime spatial planning and land-sea interactions,* working paper, October, p.2.

- the need to provide a harmonization of legal and administrative procedures, to be achieved on a case-by-case basis, even applying deviations and exceptions by the respective national requirements;
- the establishment of jointly management structures based as example on EGCTs model[13].

Nevertheless, we retain the recognition of the specific cross-border background as a fundamental element in defining and adapting a truly functional methodology to elaborate a transport planning model tailored on the territorial dimension of reference. This is extremely significant in our project case, as well the presence of the one and only maritime border influences the respective coastal areas and the connections between them and the hinterland, involving all modes of transport. This increases the level of the challenge to address a multimodal and interconnected perspective. Furthermore, the timeframe within MIMOSA Methodology (D.4.5.1) it has been drafted, reviewed and delivered, overlaps the transition period between the conclusion of the 2014-2020 Interreg Italy-Croatia Operational Programme (within this framework the MIMOSA project was financed and implemented) and the launch of the new 2021-2027 Programming period. For this reason, on the basis of the opportunity to compare the 2 Funding strategies concerning objectives and results (expected and achieved in 2014-2020) and next defined targets (2021-2027) for the transport and mobility topic, we provide in this paragraph a brief comparative analysis useful to tailor and define our "methodology for a cross-border planning model" on a broader and more comprehensive background framework.

Switching to the new programming period of Interreg Italy-Croatia 2021-2027, the territorial and socio-economical analysis underpinning the new cooperation programme, emphasises as "*collectively, port activities, shipbuilding and repair and maritime transport represent the second most important sector at the level of both Member States*". [ed: Italy and Croatia]. In this commissioned Report the topic of transportation is addressed in 3 different domains: - *Green Urban Mobility - Sustainable and Intermodal Ten-T - National, Regional, Local and Cross-Border Mobility*[14]. In the first one (Green Urban Mobility), the analysis reaffirms the issue of transport congestion in both countries (IT-HR) as a still growing key factor despite the progress achieved in terms of e-mobility and cycling (infrastructures, services and citizens habits). In terms of public transport services (railways and buses), the Programme area is still considered as inadequate both for competitiveness and effective use by citizens. In any case, in both countries, the leading key factor is still the "over-use" of private cars in urban areas - the Report mentions the significant Eurostat data: "*there are around 60 thousand vehicles per 100 thousand inhabitants in the Italian coastline regions, and more than 46 thousand vehicles per 100 thousand inhabitants in the Croatian coastline*

[13] Medeiros, E., Ferreira, R., Boijmans, P., Verschelde, N., Spisiak, R., Skoniezki, P., ... & Berzi, M. (2021). *Boosting cross-border regions through better cross-border transport services. The European case*. Case Studies on Transport Policy, 9(1), 291-301.
[14] Interreg V-A IT-HR 21-27, 2021, par. 4.13 - 4.14 - 4.15, pp. 85-100

regions"[15], this is due also to the worst EU level of customer satisfaction with urban transport systems ranked by both countries. Just considering these major issues pointed out by the Report, the urban sustainable mobility represents for the Cooperation Programme 21-27 an important challenge to specifically address, also because it was not so emphasised and tackled by the previous programming period.

Differently, concerning the domain named as "Sustainable and Intermodal Ten-T", the Report mentions the results and impact generated by the Interreg Italy-Croatia 2014-2020 - particularly in terms of a wide and "deeper" cross-border cooperation on the field of maritime transport, focused on strengthen intermodality and the port system (considered as a whole) on both sides of the Adriatic Sea, in this case should be taken particularly into account the effects of COVID-19 pandemic. For '21-'27 the TEN-T corridors included in the Programme Area (Scandinavian – Mediterranean corridor; Baltic Adriatic corridor; Mediterranean corridor) and the interoperability between different transport nodes (both maritime and land-based) should still be considered as a potential core topic, maintaining and enhancing the synergies so far achieved with EUSAIR strategy, CEF instrument and EU implementation plan (2020) for the Motorways of the Sea (MoS).

Despite the relevant work done by the project financed in 2014-2020, the intermodality transition has to be completed, particularly for some ports, and persisting bottlenecks removed. In this perspective, the following excerpt in the report appears particularly meaningful for the MIMOSA Planning Methodology: *"Port towns need strong capacities to plan their spatial development in a sea-land integrated approach, in order to allow a smooth integration between the needs of the local community and those of the port logistics"*[16]. Finally, there's a portion of the Programme Area not covered by TEN-T and MoS existing/planned corridors and it should not be lagging behind, together with the need to lead the multimodal implementation of infrastructures and systems towards a solid overall setting based on environmental sustainability and ICT solutions. The last domain on "*National, Regional, Local and Cross-Border Mobility*", reprises and reaffirms the heavy imbalance between the use of private means of transport and the use of the public transport system affecting local and regional mobility in the Programme area. The traffic congestion due to the high number of private vehicles and the really low diffusion of hybrid/electric cars and charging stations is still a relevant problem to be effectively tackled.

The public transportation system (land-based), despite the presence of a quite structured networks of Buses and Railways (Italy Adriatic coastline has a significant railway infrastructure, while Croatia is underdeveloped in southern coastal region), is underused by passengers in both countries considering also the lack of adequate quality rank compared to the EU standards. Cross-border public transport connections (for all transport modes) are still based on few and scarcely developed

[15] Interreg V-A IT-HR 21-27, 2021, par. 4.13 p. 86.
[16] (Interreg V-A IT-HR 21-27, 2021, par. 4.14 p. 93)

solutions. The road network should be enhanced in terms of infrastructures and totally over-used, particularly in the Croatian coastal area during the tourist seasons. Railway and maritime CB connections between the two Adriatic sides are still unavailable and/or underdeveloped options. There's really a huge amount of work to be done, in different directions, for all transport modes in order to develop, improving and greening the connections between Italy and Croatia. Considering data, analysis and conclusions presented in the framework of this Report, the Cooperation Programme for Interreg Italy-Croatia 2021-2027 (v 1.0) has focused the Priority nr. 3 on "Sustainable Maritime and Multimodal Transport" (Interreg IT-HR CP 21-27) The specific objective of this priority is wide in terms of transport and mobility perspectives: "*Developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility*".

In this way the MIMOSA Methodology for Cross-border planning model has the opportunity to merge and overlapping, as background framework, transport priorities, specific objectives, targets and indicators of the two subsequent Cooperation Programmes of the Interreg IT-HR: 2014-2020 and 2021-2027. This is a relevant basis in order to enlarge the vision and enhancing the guidelines of the proposed model, able to provide an even more detailed picture of the territorial and spatial context.

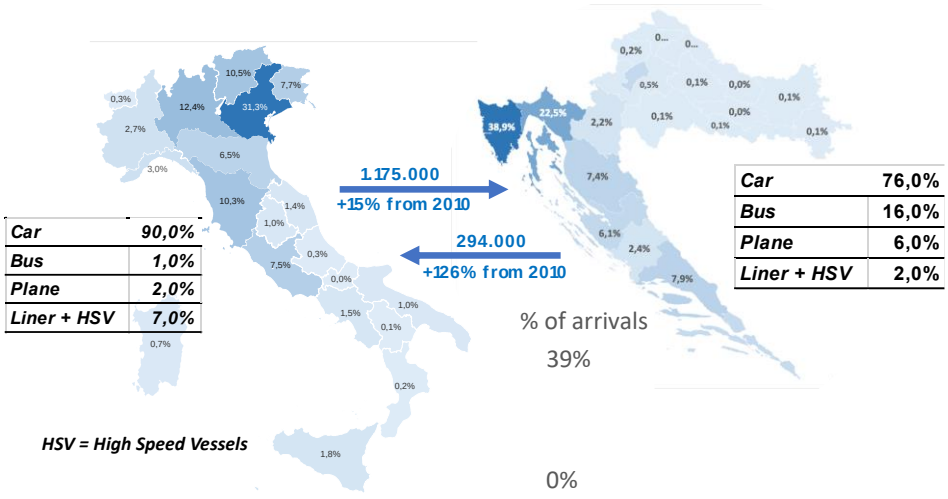
3. State of the art on strategic planning for maritime passenger transport

3.1. A look at the context

The Italy-Croatia programme affects a particular territory, insofar as it is characterised by the presence of a maritime border but, at the same time, competing with a land travel alternative (through Slovenia) that is particularly competitive with respect to maritime transport, to the point that to date most travellers between the two countries use the car for cross-border trips (see in this respect documents O.3.1 - Passenger Transport Demand Analysis, and D.3.1.1 Quantitative Analysis Of the Existing Demand of the MIMOSA project).

The Italy-Croatia programme area presents some peculiar characteristics that emerge from the results of the analyses conducted in WP3 and WP4 of the MIMOSA project and can be summarised as follows (Figure 6 and Table 1):

Figure 6: Number of tourists, share of arrivals in destination regions/counties and percentage share of transport means used for Italy and Croatia (2019)



- Passenger traffic between the two countries mainly consists of travel for tourism purposes. Overall, most passengers use cars, while maritime transport (liners and fast boats) has shares between 2 and 7% of the total travel demand.
- About 60% of arrivals are concentrated in the northern regions of the two countries close to the borders. Furthermore, there is currently no rail route that can offer a credible alternative to car travel, which means that new maritime and coastal connections between destinations in these regions have good potential to attract travellers and also, hopefully, to reduce car traffic.

- The central and southern Italian and Croatian regions have arrival shares of between 7 and 10 per cent and growing. We think this area represents a potential catchment area for the development of maritime transport. However, on the Italian side presently these regions are served by two main ports (Ancona, in the Marche region, and Bari, in the Puglia Region) that are considerably distant from each other (about 4h45m by car) and leave important destination like Rome, Naples and their surroundings at the limit of their catchment area.

Table 1: Estimate of Italians and Croatians visitors travel mode share (2019)

Transport mode	Italian visitors	Croatian visitors	Overall visitors (weighted average)
Car	90,0%	76,0%	88,2%
Bus	1,0%	16,0%	2,9%
Plane	2,0%	6,0%	2,5%
Liner	5,5%	1,0%	4,9%
High Speed Vessels	1,5%	1,0%	1,4%
Total	*100,0%*	*100,0%*	*100,0%*

Source: "Passenger transport demand analysis", O.3.1 MIMOSA project.

This context poses both constraints and reference points for developing the methodology for the definition of a planning model that, referring to the principles of the aforementioned EU strategy of Maritime Spatial Planning, allows for the pursuit of the sustainability and cohesion objectives set by the programme. As will be explained later on, in this context the traditional categories of planning models must somehow be further elaborated and/or integrated with peculiar considerations and traits, in order to make room for cohesion logics based on participatory processes and shared decisions on long-term projects.

In the next section we will briefly recall some principles of transport planning that can best characterise the methodological choice underlying the model to be developed in the MIMOSA project.

As specified in section 4 of this document, the context analysis is a prerequisite for the definition of the plan and, in our case, the plan model. This analysis was carried out within the MIMOSA project, mainly in WPs 3 and 4 and partly in WP 5, so please refer to the project documents for more details on these aspects.

3.2. Principles for sustainable transport planning

In this part of the document, we briefly recap the basics of planning principles and the main transport planning models, expressive of different interpretative paradigms.

When speaking of planning principles, there is often a tendency to confuse the objectives of planning with the principles relating to the process according to which planning takes place. In the former case, one refers to objectives to be achieved, usually broken down into general and specific objectives and whose attainment is measured through performance indicators (Key Performance Indicators - KPIs). An example of how these are described and classified is shown in Table 2.

Table 2. Summary example of sustainable transport goals, objectives, and key performance indicators (Source: Litman, T. (2015). *Evaluating public transit benefits and costs*. Victoria, BC, Canada: Victoria Transport Policy Institute)

Sustainability Goals	**Objectives**	**Performance Indicators**
Economic area		
Economic productivity	1. Transport system efficiency 2. Transport system integration 3. Maximize accessibility 4. Efficient pricing and incentives	1. Per capita GDP 2. Portion of budgets devoted to transport 3. Per capita congestion delay 4. Efficient pricing (road, parking, insurance, fuel, etc.) 5. Efficient prioritization of facilities
Economic development	1. Economic and business development	1. Access to education and employment opportunities 2. Support for local industries
Energy efficiency	1. Minimize energy costs, particularly petroleum imports	1. Per capita transport energy consumption 2. Per capita use of imported fuels
Affordability	1. All residents can afford access to basic (essential) services and activities	1. Availability and quality of affordable modes (walking, cycling, ridesharing, and public transport) 2. Portion of low-income households that spend more than 20% of budgets on transport
Efficient transport operations	1. Efficient operations and asset management maximizes cost efficiency	1. Performance audit results 2. Service delivery unit costs compared with peers 3. Service quality
Social		
Equity / fairness	1. Transport system accommodates all users, including those with disabilities, low incomes, and other constraints	1. Transport system diversity 2. Portion of destinations accessible by people with 3. disabilities and low incomes
Safety, security, and health	1. Minimize risk of crashes and assaults, and support physical fitness	1. Per capita traffic casualty (injury and death) rates 2. Traveller assault (crime) rates Human exposure to harmful pollutants 3. Portion of travel by walking and cycling
Community development		1. Land use mix 2. Walkability and bikeability

	1. Helps create inclusive and attractive communities	3. Quality of road and street environments
Cultural heritage preservation	1. Respect and protect cultural heritage Support cultural activities	1. Preservation of cultural resources and traditions 2. Responsiveness to traditional communities
Environment		
Climate stability	1. Reduce global warming emissions Mitigate climate change impacts	1. Per capita emissions of greenhouse gases (CO_2, CFCs, CH_4, etc.)
Prevent air pollution	1. Reduce air pollution emissions 2. Reduce harmful pollutant exposure	1. Per capita emissions (PM, VOCs, NOx, CO, etc.) 2. Air quality standards and management plans
Minimize noise	1. Minimize traffic noise exposure	1. Traffic noise levels
Protect water quality & hydrologic functions	1. Minimize water pollution 2. Minimize impervious surface area	1. Per capita fuel consumption 2. Management of used oil, leaks, and stormwater 3. Per capita impervious surface area
Open space and biodiversity protection	1. Minimize transport facility land use Encourage compact development Preserve high quality habitat	1. Per capita land devoted to transport facilities 2. Support for smart growth development 3. Policies to protect high value farmlands and habitat
Good Governance and Planning		
Integrated, comprehensive and inclusive planning	1. Clearly defined planning process Integrated and comprehensive analysis Strong citizen engagement Lease-cost planning	1. Clearly defined goals, objectives, and indicators 2. Availability of planning information and documents 3. Portion of population engaged in planning decisions 4. Range of objectives, impacts and options considered 5. Efficient and equitable funding allocation

The topic of principles relating to the planning process, on the other hand, is different. These concern, for example, the way in which decision-makers are selected, the presentation and evaluation of the results of preliminary analyses, the terms under which negotiations take place, and so on. There are, of course, numerous contributions in this regard. Making a long story short, as basic prerequisites a planning process should be (adapted and modified from the original formulation in Litman, 2015)[17]:

- Comprehensive: all significant options and impacts are considered and evaluated.
- Efficient: the process and its results are oriented to the most efficient solution in terms of resources and results. The process itself should not waste time or money.
- Inclusive: people and organization affected by the plan must have opportunities to be involved.
- Informative: the results of the planning process must be understood by stakeholders (people affected by a decision).
- Integrated: the planning process should consider both individual and collective interests, both short-term and long-term goals, including related aspects even if not expressively part of the transport dominion (e.g. land use, residentials, etc.).

[17] Source: Litman, T. (2015). *Evaluating public transit benefits and costs*. Victoria, BC, Canada: Victoria Transport Policy Institute.

- Transparent: everybody involved understands how the process operates and on what basis decisions are taken.

Of course, the objectives and the ways in which the planning process is carried out are closely intertwined. This is also the case with the European maritime spatial planning strategy and the EUSAIR strategy, as outlined in the previous chapter of this document. General principles for cross-border transport planning emerging from the strategic framework, as described above, are the following:

- pursuing a shared planning approach in all areas: networks, systems, infrastructure, including operational aspects;
- the need to provide a harmonization of legal and administrative procedures, to be achieved on a case-by-case basis, even applying deviations and exceptions by the respective national requirements;
- the establishment of jointly management structures.

As for the specific objectives of the Italy-Croatia programme and of the MIMOSA project, we considered it appropriate to outline some "hybrid" principles, in the sense defined above, in the light of the findings of the analyses carried out during the project and the strategies mentioned above. Indeed, the MINOSA projects rely on a robust analysis of the peculiar contextual conditions of the cross-border transport offer and demand. We think that, above the general principles briefly highlighted in the previous section, we shall focus on specific principles to be adopted in defining a model that, in fact, configure as a preliminary step to the actual planning strategy definition.

3.3. Priorities emerged from analysis in WP3/4 of the MIMOSA project suitable to be ground for discussion in the MIMOSA planning model

Unlike what normally happens when transport planning is controlled or coordinated by a single authority, in this case it is a question of ascertaining the most appropriate co-ordination methods between stakeholders operating in different regulatory contexts (national and regional) and with different objectives. The series of analyses carried out in the MIMOSA project, concerning the demand and supply of passenger travel in the programme area, made it possible to identify a number of priorities and the relevant peculiarities of the context for the planning model to be implemented.

Beyond the environmental priority, which is common to all strategies for improving transport sustainability and goes together with the reduction of car use, in the light of the analyses carried out during the MIMOSA project we feel we can say that a planning model suitable for the context

must necessarily consider certain fundamental aspects that we describe below and that we consider specific principles for the planning model to be adopted in the MIMOSA project:

- Need for a participatory and shared strategy.
- Long-term time span perspective, with shared identification of intermediate steps.
- Focus on accessibility of nodes and integration of maritime and coastal transport
- Greater accessibility of islands and coastal areas, with special attention to people with disabilities

Need for a participatory and shared strategy.

Participation is not only convenient but also necessary. For the maritime part, the reference context is that of international maritime passenger transport, which is regulated by a series of conventions and technical regulations regarding minimum requirements (safety, personnel skills, equipment, etc.) but obviously not regulated in the strict sense from an economic and organisational point of view. In other words, a centralised, top-down planning model is not applicable, because transport operators are free to plan their supply according to their own economic objectives. The objectives that the Union sets in the development of transport concern socio-environmental as well as economic improvement aspects, such as the development of a low-carbon economy, the fight against climate change, environmental protection, energy efficiency and so on. The planning model to be adopted in order to aim at these objectives entails the need to create the conditions for sharing them as much as possible so that operators can recognise an advantage, including an economic one, in taking decisions that are consistent with those objectives.

Long-term time span perspective, with shared identification of intermediate steps.

Compared to land transport, sea transport has a greater rigidity in planning, a number of documentary and technical complexities, and a more rigid cost structure, characterised by relevant scale and saturation economies, generally longer breakeven and higher internal rates of return. These characteristics, among others, make investment in maritime transport infrastructure relatively riskier than in land transport. Consequently, the planning of maritime transport systems aims at a naturally longer time horizon and requires a competitive ecosystem (i.e. demand, regulatory system, networks, technologies, etc.). relatively stable or at least predictable for operators to consider innovative investments. The long-term path, moreover, necessarily requires the planning of intermediate milestones and related milestones to safeguard the actual occurrence of the desired long-term conditions underlying the investments.

Focus on accessibility of nodes and integration of maritime and coastal transport

The multimodal integration of coastal and maritime transport is one of the priorities that emerged from the analyses of the MIMOSA project. This priority, on the one hand, raises the question of assessing the impacts of new maritime services also in terms of overall accessibility to coastal destinations, on the other hand, it widens the scope of participatory planning to the involvement of public and private operators in inland areas. Consequently, it is reasonable to assume that the range of objectives and indications that will emerge from the consultations will also be very broad,

creating a situation in which the role of moderation and governance of the processes by the territorial authorities for their respective competences will be crucial.

Greater accessibility of islands and coastal areas, with special attention to people with disabilities
The territory of the programme area is characterised by a significant presence of areas with reduced accessibility, particularly the islands of Croatia and some coastal areas. Surveys have shown that this problem is particularly felt by the population in general, which also considers a priority to guarantee the accessibility to persons with disabilities (see the deliverable of the MIMOSA project D.3.1.2 "Segmentation Analysis"). In the absence of a co-ordinated plan, it is natural that the attention of operators will turn to the routes of greatest commercial interest. In the logic of sustainability and territorial cohesion it is necessary to adopt a perspective that transcends partial economic evaluations and looks instead at the quality of service in the entire programme area. In this sense, the planning model must also include stakeholders selected among users, especially those who are 'fragile' due to their location or personal conditions.

We think that these four general priorities might be topics to be introduced in the process of building a common understanding, together with possible further topics, specifications of these or emerging needs that might arise from the consultations with relevant stakeholders.

The next step consists in framing the plan model in one of the possible macro-perspectives with which transport planning is approached. By "perspectives" we mean the underlying logic that guides analysis and decision-making, hence a methodological aspect upstream of the definition of the specific tools for analysis, consultation or evaluation of alternatives. The next section is devoted to this topic.

3.4. Approaches to transport planning

It is not in the purpose of this document to present a dissertation on planning models or an analysis of the literature, but we consider it useful to provide a brief summary of the underlying logics, because this will allow us to explain later on the approach considered most suitable for defining the planning model for the Italy-Croatia programme.

The purpose of planning is to enable policy makers and operators to create the conditions for decisions and actions that over time make the transport system sustainable and consistent with the set objectives. The expression “planning model” is used here with particular reference to the framework adopted for the process of planning. As for transport, the fundamental prerequisites of planning models are the specific objectives of the planner, directly related to the specific spatial and logistical scope of the planning to be carried out, as well as the type of information and data that are needed to support decisions. In a nutshell, this means that the geographical scope, the spatial

and temporal range, and the type of transport determine the necessity or appropriateness of using different approaches. For instance, urban public transport and long-haul land passenger transport will require different approaches to planning because the objectives are different, the tools for implementing the strategy are different, and the data and information needed for decisions are different.

A thorough transport planning model are must be based on transport system modelling, i.e. the depiction / reconstruction (more or less simplified) of the transport system, which a necessary input for the process of planning since it's at the basis of the scenario development and travel demand forecasts. System modelling is a relevant phase of the passengers' transport planning model. Differently from freight logistics planning, (which in a nutshell are normally planned with a view to optimising transport routes and fares), travellers choose times and modes according to their own evaluation of utility that can only in part be governed or influenced by transport service operators and should rather be pandered.

The most commonly acknowledged planning model is known as "4 stages" or "classic transport model" or "trip generation, distribution, modal split and assignment" model[18]. This model is also called 'trip-based' because it starts by examining a zoned territorial area and a network of transport or transport routes, both existing and potential (in the case where planning also involves the creation of new infrastructure). Each of the four stages mentioned above is the subject of a separate analysis. For example, for the first stage (trip generation), data is collected on population density by area, employment, commercial or leisure spaces, educational facilities, etc., to obtain indications of the number of trips that are generated and attracted to each area.

Note that this model is not intended to replicate choice processes, nor does it assume that the individual traveller has specific travel objectives. Rather, it is an analytical scheme that seeks to reconstruct the connectivity and intensity of network use for a combination of origins and destinations. In this sense, it goes beyond the planning model in the strict sense because it constitutes a kind of analytical paradigm. It is based on the collection and processing of data that are fundamental to any kind of planning model, and in this sense, we can say that the '4-stage model' is a meta-model that is to transport planning as the alphabet is to the construction of words. In fact, although there are alternative proposals (e.g., starting with the formulation of the problem to be solved, rather than the connection to be made), alternative processes always require analyses to be carried out that are in some way related to the stages of the 4-stage process. Indeed, in an ideal situation where all the necessary data and information needed to implement the 4-stage process are available, one is theoretically able to solve any planning issue, since this would mean to be able to portray the whole mobility system in all its internal and external interactions. Normally

[18] de Dios Ortúzar, J., & Willumsen, L. G. (2011). *Modelling transport*. John Wiley & Sons. 4th Ed. P.20 f.

this is not the case, and in different concrete situations, approaches are adopted that favour some aspects over others, depending on the situation, the type of objectives and forecasting models used.

To this end, we have grouped the main planning models into three categories to which correspond three underlying logics that the planner pursues for the realisation of objectives. We call these three approaches 'equilibrium-based', 'activity-based', and 'behaviour-based'. These three categories summarise three distinct types of objectives, i.e. three different perspectives on planning goals, which we can summarise as the objectives of maximising the efficiency and effectiveness of transport systems according to specific functions. That tripartition represents three different categories of functional objectives, respectively the balance between travel demand and supply, the accessibility of passengers to the activities and functions of the territory, and the accommodation of individual travel needs and behaviour. However, in concrete application, there is an "hybrid" adoption of these approaches, with significant overlaps both in the forecasting techniques used and in the fields of application. All these approaches, however, are based on data and information whose availability is a fundamental prerequisite for any possible formalised analysis. To put it to an extreme, a planning process that is based only on desires, visions or goals and lacks data and analytical models, is almost certainly doomed to fail in the long-term because it lacks the necessary basis for assessing the feasibility and sustainability of the plan to be implemented.

In a nutshell, these categories of planning models start from existing demand (which is assumed to be known) to define an offer that optimises the planner's objectives based on the expected response of demand to the decisions taken. The 'equilibrium-based' models have a distant origin in the concept of classical economic equilibrium, for which under certain conditions supply and demand regulate themselves autonomously, reaching a situation of optimal equilibrium (called 'Nash equilibrium', which in essence means a situation in which any change leads to a decrease in utility for someone) thanks to the full information and rationality of the decision-makers. These conditions, in the case of transport, are known as Wardrop's principles[19], and in practice propose a mathematical construction based on conditions that depict an ideal condition to be used as a point of reference rather than as a situation likely to be fully met. Within the 4-stages model, the Wardrop's principle apply to the stage of the 4th stage (traffic assignment), with origin, destination and mode of transport already identified (or given) in the previous 3 steps.

In recent years, application of yield management techniques on public service fares, as well as increased passenger sensitivity to environmental impact and service quality could justify the use of these approaches if disutility is perceived in terms of economic and environmental costs and lack of comfort.

[19] The mathematical foundations of this approach are attributed to Wardrop, J. G. (1952). Road paper. some theoretical aspects of road traffic research. *Proceedings of the institution of civil engineers*, *1*(3), 325-362.

Referable to this logic is the approach that sets as the main objective of planning the optimisation of transport supply as a function of one or more variables and starting from a series of constraints, mainly origin and destination of flows and capacity of carriers.

In support of this approach, increasingly articulated operational research and planning models have gradually been developed, whose goal is to calculate multimodal solutions capable of satisfying transport demand by minimising the parameters generally expressive of the "cost" to the traveller and considering the various constraints posed by the supply system and infrastructures.

The basic information for adopting this approach is therefore parameters measuring transport costs, the elasticity of demand, the magnitude of flows framed in their respective origins and destinations, and the capacity of carriers (or roads), and so on[20].

In its original formulation, this category of models considers equilibria between agents of the same level (e.g. drivers choosing the best route). The theoretical and conceptual evolution of these models with respect to the traditional equilibrium concept has led to the consideration of two- or multi-level optimisations, i.e. relating to situations in which the transport supply is planned while also taking into account elements of demand reaction (typically, reactions based on elasticity with respect to cost or, more generally, disutility) to supply strategies, as well as multi-stage adaptation systems. In all this, demand is a given, it is considered only on the basis of its aggregate manifestations, the traveller's decisions respond to the criteria of rationality typical of economic equilibrium problems[21].

Demand forecast adopt correlation-based models (see 3.1.4 for details on this class of models). Thus, for instance, for the same cost between two trips, the one of shorter duration is always preferable, and vice versa. We are therefore not in the situation, which we shall see later, of behaviour-based models, which instead are based on the analysis of behaviour and its psychological determinants.

A further prerequisite is the possibility of implementing optimising decisions, i.e. the existence of a master in control of investments and other decision-making levers, without the need to negotiate with other parties or with demand.

[20] See for instance Liu, Y., Bunker, J., & Ferreira, L. (2010). Transit users' route-choice modelling in transit assignment: A review. *Transport Reviews*, *30*(6), 753-769. Bliemer, M. C., Raadsen, M. P., Brederode, L. J., Bell, M. G., Wismans, L. J., & Smith, M. J. (2017). Genetics of traffic assignment models for strategic transport planning. Transport reviews, 37(1), 56-78.

[21] It should be noted that in the 'classical' view, in this approach the individual and system equilibrium conditions coincide in the sense of a 'Pareto-efficient' situation, i.e. an equilibrium situation in which the improvement of one individual position necessarily leads to the worsening of another. Consequently, the optimal planning provides also the optimal condition for all users.

This approach has two characteristics that make it particularly suitable for maritime passenger transport, namely: a) the prominence given to economic and infrastructural constraints with respect to demand pandering, conditions that are consistent with the relative rigidities of maritime transport supply compared to other cases (e.g. urban transport), b) the adaptability of the models to possible different manifestations of demand in the face of alternative scenarios.

On the other hand, planning according to such an approach is entirely based on the concept of a master authority capable of deciding on every aspect of supply, which makes it clearly unsuitable for the situation in the MIMOSA territorial context in which it is instead necessary to achieve shared planning within the framework of European strategies but which, in order to be accepted, must necessarily take into account a series of constraints and partial objectives set by the various stakeholders. The solution may be to exploit the analytical potential of this approach without translating it into planning but by making the analyses and forecasts conducted according to this logic available to a coordination of stakeholder representatives and public authorities.

*Activity-based models (*** part of the modelling ***)*
The main objective of activity-based models[22] is to ensure the accessibility of a population to places of activity, assuming that travel demand is derived from activity demand (work, leisure, health, shopping, etc.). In these models, the analysis and/or forecasting of traveller flows, simulations, etc. therefore take place on the basis of: a) an analysis of movement patterns in space and time triggered by the presence of attractors (work, tourism, etc.); b) an analysis of the main geographically localised (or georeferenced) nodes and points of attraction; c) an assessment of traveller behaviour regarding travel choices and the main behavioural variables that determine them (so called "determinants").
The forecasting models adopted for this approach are mainly time-based series forecast models, essentially autoregressive models (see the MIMOSA project deliverable D.3.1.4. "Development Scenario"), with short-term adjustments that in this approach are based on data such as the spatial distribution of the population by age group, income and occupation, movement habits, means of transport used, as well as on the detection of georeferenced flows, which can now be detected in real time thanks to the so-called LBS (Location-Based Service) data, that are provided by signals from personal smartphones. It has developed in recent times thanks, of course, to the availability of ICT tools that allow the detection of individual movements in real time and their analysis by means of the mappings made possible by georeferencing software. Of course, it is only possible in the face of

[22] See, for instance: Axhausen, K. W. (2000). Activity-based modelling: Research directions and possibilities. *Arbeitsberichte Verkehrs-und Raumplanung*, *48*. Jones, P. M. (1982). *The practical application of activity-based approaches in transport planning: An assessment* (No. 191/CP Monograph). Kim, K. (2018). *Recent Advances in Activity-Based Travel Demand Models for Greater Flexibility* (Doctoral dissertation, Portland State University).

a wide availability of data and often finds obstacles to its development where data are not collected, or if collected, are not made available in a way that allows them to be processed for analysis.
Such approach fits particularly the planning of areas with a high population density and transport alternatives, contexts in which routine/daily travel prevails (which guarantee the predictability and recursiveness on which autoregressive models are based) and there is a reasonable flexibility of supply in adapting to possible changes. The nature of the findings of this model is predominantly short-term oriented, and does not consider the typical aspects that influence travel demand in the medium to long term and which are the basis of correlation-based forecasting techniques (see D.3.1.4 above).

Behaviour-based models
Behaviour-based models aim to plan transport by predicting and/or modifying (according to the planner's objectives) the possible behaviour of travellers in specific travel situations[23]. Therefore, such models have as a fundamental premise the analysis of: a) how people decide on the modes, times, destinations and other parameters of travel that they can control, b) what are the determinants of their behaviour, in order to be able to possibly orient them in a way that the planner deems desirable. In fact, rather than an approach to planning, this category of models represents an approach to the demand forecasts underlying planning that goes beyond the (simplifying) conception of rational choice based on economic utility alone, introducing the role of subjectivity and psychological behaviour determinants.
In the models previously seen, demand is essentially an aggregate figure in which the characteristics of the traveller are not relevant for forecasting purposes since the figure measured is the manifestation of demand as a whole. In this category of models, on the other hand, individual variables are relevant. For this reason, the demand is disaggregated by socio-demographic, economic and psychographic variables in the same way as in typical marketing segmentation analyses. Then, the behavioural theories underpinning analyses in this logic therefore draw on the psychology of decision-making, and aim to explain travel choices through the variables of behavioural models such as attitude, personal norms, habits, perceived behavioural control, and so on[24].

This approach has found increasing interest along with the questioning of one of the fundamental assumptions about transport planning, namely the assumption that transport demand is exclusively a demand assessed based on functional utility, as it is derived from the individual's need to perform certain activities. Today, we know that mobility opportunities are determinants of activities (in fact, the contrary of the traditional perspective) and are assessed based on aspects that are not strictly functional but subjective. For instance, it is not always true that at same cost a faster travel is

[23] See, for instance: Golledge, R. G., & Garling, T. (2001). Spatial behavior in transportation modeling and planning., https://escholarship.org/uc/item/94f957b8
[24] A review of main behavioural models adopted in the travel choice analysis can be found in the MIMOSA deliverable D.3.1.3 “Habits and Behavioral Analysis”.

considered a better one, since it might depend on subjective perception of features of non-functional-to-travel features of the service (e.g. noise, comfort, environmental impact, wi-fi available, etc.). According to this approach, for instance, for some segments of people “staying in touch” could be more important than “saving times”, thus the preference structure of these segments could determine a travel choice not in line with the time-saving comparison of alternatives.

The increasing focus on so-called 'soft-measures' for the orientation of the public towards sustainable travel modes and routes is an example of how this approach has significant potential for the planner.

Given its peculiarities, this approach is increasingly considered in the integrated planning of transport systems, since the analysis of how individual and behavioural variables affect travel choices results in a broadening of planning boundaries beyond simple transport management. Aspects related, for example, to residential choices, travel conditions, leisure time patterns, perception of subjective aspects (safety, comfort) and so on, emerge as relevant in the overall planning activities.

3.5. Involvement and capitalisation as basis of the coordination model

The purpose of this brief review of planning models is to understand the best way forward in the particular case of passenger transport between Italy and Croatia. The analyses carried out during the MIMOSA project and briefly presented above show that passenger flows are for the overwhelming majority travel for tourism. Moreover, the need for a long-term perspective highlighted above (see section 2.3. of this document), together with the high predictability of flows through both autoregressive techniques and through models based on the correlation with macro-variables (see in this regard the MIMOSA Deliverable D.3.1.4. "development scenario"), convince us that the planning perspective for maritime transport could be better managed according to an equilibrium-based logic. On the other hand, many of the micro-dynamics occurring on coastal transport and, specifically, on origin-destination connection might benefit from a behaviour-based approach.

The actual implementation of a planning process, however, will be a further step after the definition of the model for cross-border planning providing the coordination that is the preliminary step to be fulfilled within the MIMOSA project, coherently with the overall present context and the strategy highlighted above. The way such model will be built is described in the next section. Of course, it will be based on a consultation process in which relevant stakeholders will be interviewed and subject to a series of surveys launched in two different phases (May 2022 – September 2022). Moreover, it will benefit from the capitalisation of results from similar funded project (concluded and/or still ongoing) selected within Cross-Border and Adrion EU programmes, like for instance (non-exhaustive list):

– ADRIA A project - *Accessibility and development for the re-launch of the Adriatic internal* - financed by Interreg Italy-Slovenia CBC 2007-2013;
– ADRIGREEN project - *Green and Intermodal solutions for Adriatic airports and ports* - financed by INTERREG V-A Italy – Croatia 2014 - 2020
– ADRIPASS and ADRIPASS Plus projects – I*ntegrating multimodal connections in the Adriatic-Ionian region,* financed by INTERREG V-B ADRION 2014-2020;
– BSR Access - *Access to clean, efficient and multimodal transport corridors in the Baltic Sea Region* - financed by INTERREG VB Baltic Sea 2014 - 2020
– DEEP-SEA - Development of Energy Efficiency Planning and Services for the Mobility of Adriatic MARINAs financed by INTERREG V-A Italy – Croatia 2014 – 2020

These projects, like probably others, share similar elements and/or actions with MIMOSA, that might be useful in the process of the transport planning model definition, given their focus on maritime issues and multimodal connections. The next section will enter into details of the proposed methodology for the model building.

4. Methodology for a model of maritime transport planning in the programme area

4.1. From common understanding to a participated planning project

The objective of the CB planning methodology here proposed is to identify the steps to create a model for strategic planning (that will be provided in Output O.4.5) that necessarily sees the participation of numerous players and that can be applied in multiple contexts. In this purpose, the methodology tries to abstract itself from a specific reference context, while particular attention has been paid to transversal aspects such as sustainability or cross-border cooperation.

In other words, the methodology proposed here is not intended to represent a sum of specific methods or techniques, but draws a conceptual and operational framework that, from time to time, should be declined through the application of processes, methods and techniques identified based on the context, on the actors involved and the objectives to be pursued.

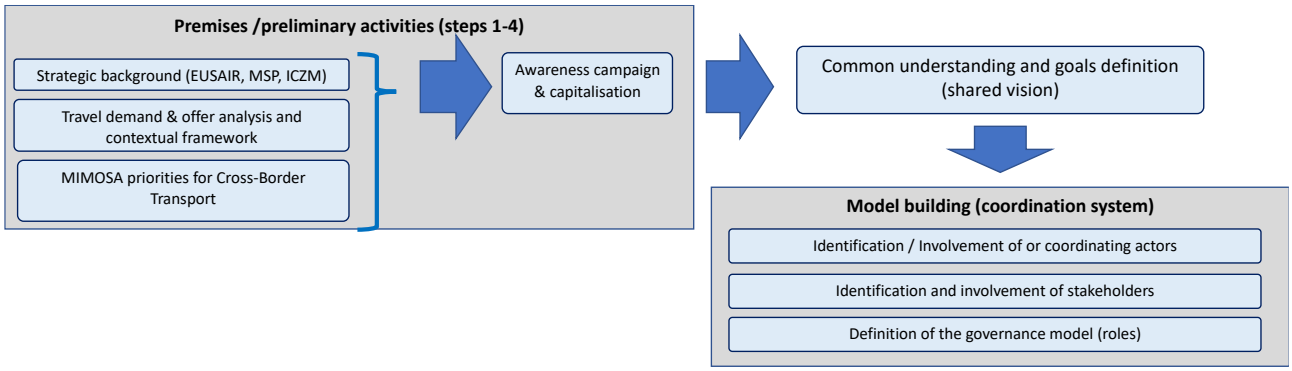
The building of the planning model is not, of course, a standalone activity, but it is rooted in the depiction of the strategic framework, on the specific contextual conditions and on the priorities emerging from the analysis of transport demand and offer in the programme area. This is the overall sense of what has been presented in this document, referring to aspects embedded in the European overall strategy, in the Italy-Croatia programme and in goals and analysis related to the MIMOSA project. Two main series of activities are needed to build a participatory approach to planning inscribed within the framework of the strategic goals defined at the upper level. Preliminary activities, which creates the knowledge base and that are the premise for the creation of a shared vision, and model-building activities, aiming at defining the structure and the governance of the participatory planning model.

The steps of this process are listed below and represented in figure 7:
Preliminary steps (1-4)
1. Identification of the strategic framework (European-level, programme-level, project-level)
2. Analysis of the context: travel supply and demand, their interaction, territorial peculiarities, etc.[25]
3. Identification of priorities at cross-border level (that become planning specific objectives), within the framework of the strategies and priorities established at cross-border level.
4. Awareness and capitalisation to create a shared vision / common understanding on these priorities

[25] It should be noted that the context and scenario analysis is not only preliminary, but should also be carried out on a regular basis to check the progress of the plan and provide scenarios based on the decisions taken.

Model-building steps (5-7)
5. identification/involvement of co-ordinating actor(s)
6. identification/involvement of stakeholders (differentiated by role)
7. definition of the governance model (roles) of the participatory process (while the operational modalities will be defined by the coordinating actor(s).

Figure 7: Steps of the planning model building



The sequence of these steps clarifies how the structure of the MIMOSA project provides a solid ground for the definition of the planning model, given that the preliminary steps have already been developed or are developing in parallel with the model-building process. Steps from 5 to 7 are specific steps to be implemented for the definition of the MIMOSA planning model. As it can be understood, some of these steps are favoured by the awareness and capitalisation activities.

The common understanding is the base for the building the coordination system highlighted above, and the awareness campaign and the capitalisation activities will have a crucial role in the building of common understanding, both bridging knowledge gaps and stimulating the engagement of specific actors and their direct commitment. The expected outcomes of the awareness campaign might be summarised as follows:

- to promote transparency and accountability, helping to promote greater trust between citizens and public institutions/policies makers,
- to encourage better understanding about development of policies and associated challenges;
- to raise public support and confront institutional resistance to reforms;
- to address potential concerns over the undue influence of vested interests over decision making by guaranteeing that the policy making process is open, inclusive and fair and would improve the quality of policy decisions.

In the context of the Mimosa project, the awareness campaign (O.3.6) will represent both a tool for communication / dissemination of project results, and an opportunity for engagement in the overall

EU strategy, thus building the common understanding at the basis of the coordination system needed for the planning activities. The campaign is expected to provide the support of stakeholders who, in the aforementioned perspective of participation, can promote the planning (i.e. institutions) or provide their own contribution for the elaboration of proposals (i.e. civil society, entrepreneurs, experts, etc.).

As underlined in the previously paragraphs, where the need for a participatory nature of the model was highlighted, the involvement and the cooperation of a wide range of different stakeholders, belonging to both from private and public sector, is desirable. Co-ordinating actors are intended as those subjects who have regulatory roles within the context of maritime and coastal transport. General stakeholders are intended as those subjects having an interest (as economic operators, end-users, affected by the activities, etc.) in the results of the planning process.

The governance model is a written regulatory scheme adopted by the subjects involved in the planning, defining the role of each participant, the process for decision making and ways to resolve disputes and to reach a convergent result in the event of irreconcilable positions. Moreover, the governance model defines general operational rules, like for instance who convenes the meetings, who determines the topics for discussion, how proposals are to be presented, and so on. The purpose of the governance model is to ensure representativeness and balance between the parties. The governance model will be examined in the document describing the planning model (O.4.5 MIMOSA Cross-Border Planning Model). It can already be said, however, that it will refer in large part, if not in full, to existing experiences and in particular to the experiences of the European Groupings of Territorial Cooperation (EGTCs) that are specifically set up to facilitate cross-border cooperation and to improve the coordination of spatial planning.

The overall process will have to fulfil a series of typical prerequisites of the participative process, that is:

- to create a community basis to open up the work-table for planning;
- to bring together sometimes – disconnected voices having common ideas;
- to obtain a more complete representation of the context and the emergence of unexpressed needs and barriers that are not evident;
- to win support and reduce mistrust and resistance among adverse stakeholders;
- to include experiences, knowledge and hard skills in the planning process;
- to mobilize external subjects and organizations fostering a change;

In this regard, in the proposed methodology, particular emphasis is placed on the representation of the context for the identification of stakeholders and their needs or - vice versa - on the identification of critical issues and of the directly and indirectly affected stakeholders. Still on the participatory nature, the methodology stresses the importance of identifying, at the political and institutional level, the "high level" stakeholders who, with the signing of a Memorandum of

Understanding or similar agreement, reach and formalize a common understanding aligning their own objectives, becoming promoters of the process aimed at defining strategies and interventions. At the operational level, experts, representatives of stakeholders and institutions, take part in the work of the tables / panels, through guided and participatory elaboration of ideas, proposed action that led to the definition of targeted and shared strategies.

The next sections will briefly describe techniques for stakeholders mapping and involvement that have already proven to be a successful guide for participatory planning activities and an allegoric representation of the process that will be at the core of the planning process.

4.2. Stakeholders' mapping and involvement

The stage of stakeholder mapping and involvement is, of course, crucial and it is sensitive to how the competitive context is represented. In other word, the representation of the competitive system affects the representation of relevant stakeholders. In typical, business-oriented environment, this is usually assessed through the Value Chain concept, a model functional to the schematic representation of a sector and of the various components as well as of the related connections. However, in our case we are dealing with an upper and preliminary level aimed at setting a coordination system, the proposal is to process and identify stakeholders according to the Wind-Mill model further described.

In fact, the representation of the sector and of the factors relevant for planning purposes also includes the list of the subjects who operate in it and outside it but with an interest. The analysis conducted to identify and characterize the stakeholders should be aimed at gaining an insight in order to foster their involvement and active support.

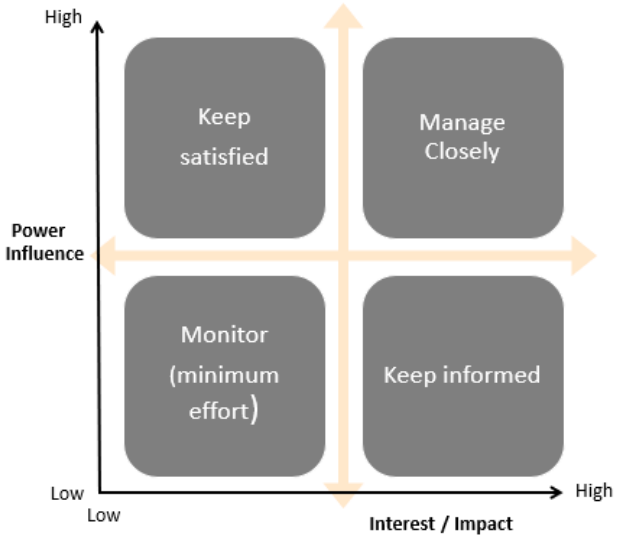
Further fine-tuning of the stakeholder's analysis could be conducted through the extensive use of:
- Expert judgment. Expertise should be considered from individuals or groups with specialized knowledge or training in understanding the politics and power structures in the sector, Knowledge of the environment and culture of the organizations operating in the sector.
- Questionnaires and surveys. Questionnaires and surveys can include one-on-one reviews, focus group sessions or other mass information collection techniques.
- Brainstorming. Brainstorming is a general data-gathering and creativity technique that elicits input from groups such as team members or subject matter experts.
- Documents analysis. Assessing the available project documentation and lessons learned from previous projects to identify stakeholders and supporting information.

The analysis of the identified stakeholders should result in a list of players with relevant information such as their positions in the sector or in an organization, roles, stakes, expectations, attitudes,

levels of support, interest in information. The use of data mapping and representation techniques may be helpful to categorize stakeholders in order to highlight the many to be prioritize among the previously identified and build relationships.

Common methods include the Power-Interest grid or similar versions (power/influence grid, or impact/influence grid, etc.). Each of these techniques supports a grouping of stakeholders according to their level of authority (power), level of concern about the project's outcomes (interest, ability to influence the outcomes of the project (influence), or ability to cause changes to the project's planning or execution (figure 8).

Figure 8: Stakeholder mapping matrix



4.3. A look at operational activities: the ESPON Windmill model

The model of the windmill, presented in the ESPON Final Report Practical Guide for Developing Cross-border Public Services, is an allegoric tool to describe a methodology for the development of cross-border public services or CPS, here presented suggesting that the same logic could be adopted for the definition of proposed action in the cross-border Mimosa context The mill consists of a main body (Foundation) consisting of an analysis of the socio-economic and political-administrative situation of the area subject to planning followed by the definition of common objectives starting from an analysis of the needs identified thanks to the analysis above and an agreement between the parties promoting the planning activity. In addition to the main body, the mill consists of four blades which represent the four project areas for planning a cross-border service (fig.9).

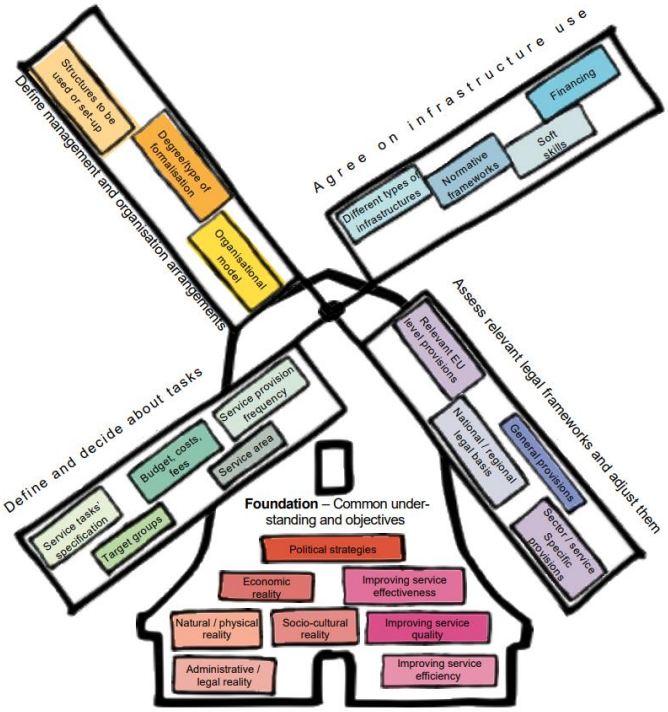
The next steps consist in defining a proposal (a cross-border public service in the ESPON case) through the processing of the following four aspects, represented as the four blades of the windmill:

- the tasks/services;
- infrastructure and infrastructure use;
- relevant legal frameworks and adjustment;
- management and organization arrangements.

The foundation ensures that the CPS is grounded and supports relevant contributions to the development of the cross-border region. Each of the four blades contains the elements required to make the windmill function. The combination of the four blades ensures that the CPS is operational and fully functional. Once foundation and all building blocks have been consistently addressed, the CPS can deliver.

The allegory of the mill can be taken up in the Mimosa project and adopted to describe the steps of the methodology relating to the "reach a common understand" between the political-institutional subjects and the subsequent phase of proposals elaboration through the setting of thematic tables and working groups that use the four blades as a prompt list to discuss. In other words, the base of the mill represents the phase in which, once the context of the project is defined, everyone's objectives are aligned and a political direction is defined. The work of the technicians is built on this agreement and organized through divided thematic working groups on the model of the four blades, in order to present the intervention proposals.

Figure 9: The ESPON report's windmill model
(Source: ESPON Practical Guide for Developing Cross-border Public Services



4.4. Reaching a common understanding (the windmill's base)

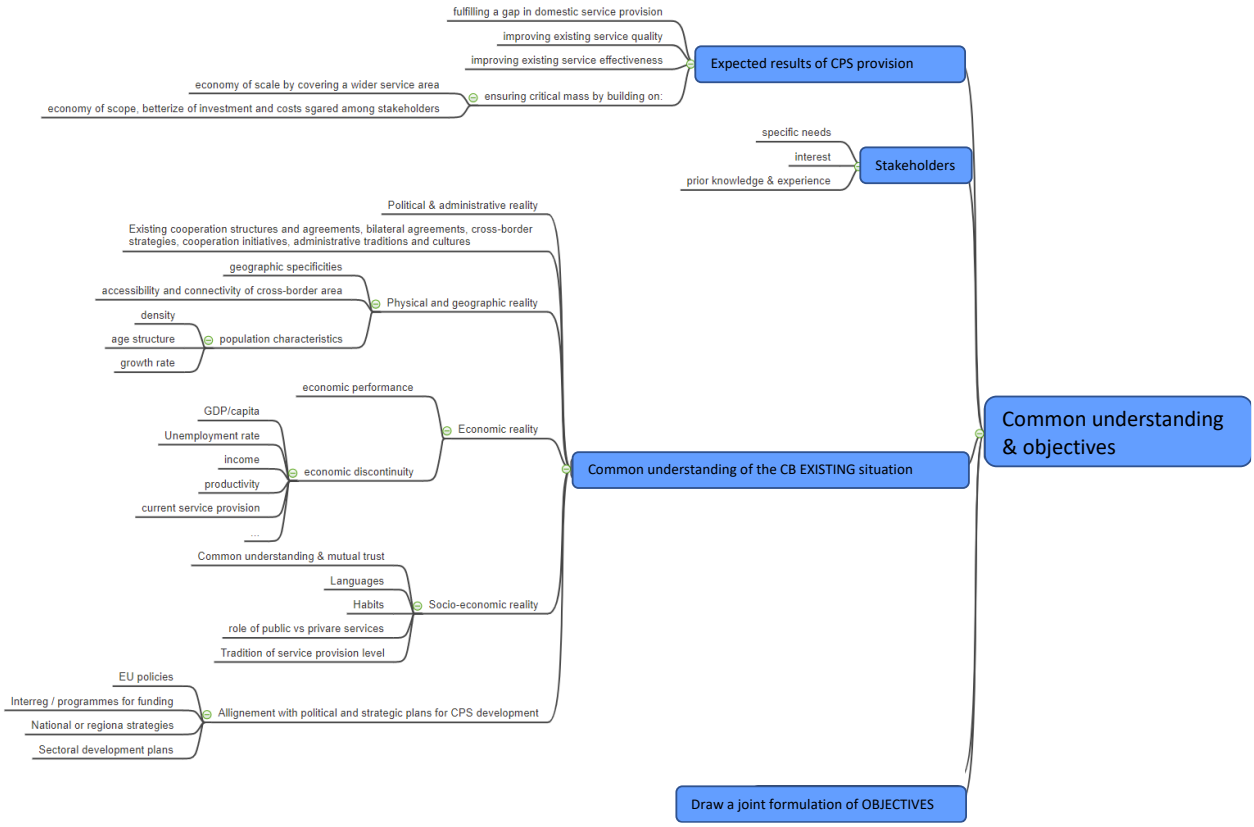
The purpose of this phase is to combine different perspectives and related negotiation models in order to define an institutional political basis to promote the subsequent planning phases. The various political-institutional actors interested in the planning process align their positions by making their interests converge to indicate common lines of action also formalizing their commitments through MoUs or analogous form of agreement.

By adopting, as an example, the logic of the ESPON windmill model, in order to achieve the "common understanding", with reference to figure 10 (common understanding & objectives), the involved parties must:

- make their positions explicit (specific needs, interest at stake, prior knowledge and experience);
- reach a common understanding of the cross-border existing situation;
- define the expected results (why plan, what concrete results are expected?);
- draw a joint formulation of objectives.

Given the participatory nature and the will to include actors with different perspectives and interests at stake, considering how conflicts and disagreement are likely to arise it is desirable to adopt, in the moments of confrontation, an integrative type of negotiation approach (win-win) which aims to ensure beneficial agreements for both parties. Each of the parties acts assertively for the purpose of mutual benefit. The situation is to find a win / win position in which each party gives up secondary and partisan interests, giving priority to mutual interests. For this reason, it creatively integrates the interests of both parties into the agreement reached. In this way, relationships are secured and strengthened in the future.

Figure 10: Example of the Common Understanding process with evidence of the areas to be developed



Starting from the aforementioned political direction and the needs highlighted in the previous analyses, through forms of confront and participatory elaboration, representatives of civil and entrepreneurial society, institutions, experts and technicians discuss and elaborate proposed actions.

The discussion can be organized as workshops designed around themed tables and working groups.

A tool for organizing the workshop and elaborating proposals, is reported as an example, underlining how it can be adopted in the Mimosa project through the metaphor of the ESPON windmill.

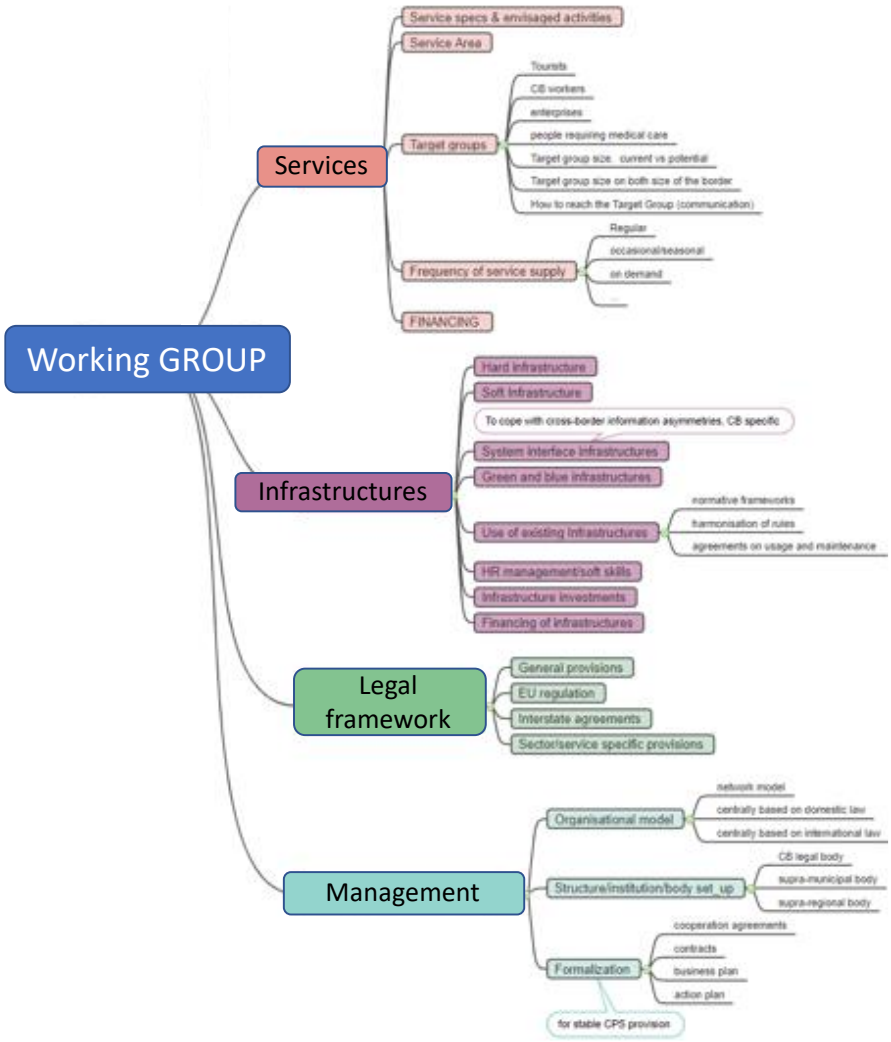
Among the others, the European Awareness Scenario Workshop (EASW) is a method aimed at seeking an agreement between different groups of stakeholders acting in a specific context with the aim of reaching a shared vision for the near future. More generally, it is a tool for the management of workshops, useful for promoting debate and social participation, for find out and understand needs and suggesting shared solutions.

EASW is structured around two main activities: the development of visions and the proposal of ideas (Mimosa's proposed actions).

In the first phase, the participants work in same-interest groups (citizens, technical experts, private sector and public sector). Each of these groups autonomously elaborates the vision of how they would like their environment/territory to be in the near future. After this, in a plenary session, each group presents the key elements of its vision of the future.

A discussion of the similarities and differences between the different views follows.

Figure 11: Example of workshop management structure for the four "blades" (source: http://focus.formez.it/content/manuale-commissione-europea-metodologia-easw



The different aspects of the different visions are then brought together to create a common vision for the community.

The second next phase is the generation of ideas: the participants are divided into other groups (of mixed composition) each in charge of a specific theme (in the case of Mimosa they could be the four thematic areas identified by the ESPON Windmill model).

Thematic groups discuss and propose the actions, policies and measures to be taken to make their common vision a reality (proposed actions). The workshop brings together policy makers,

entrepreneurs, citizens and industry experts. Moderators accompany the participants along the work of the tables: they present the work, manage the phases, present the various visions and coordinate the work in the plenary.

4.4. Systematizing and prioritizing strategic themes

The moments of confrontation and the thematic panels work led to the proposal of various actions.

During the next phase, further processing is carried out aimed at analyzing the proposals in order to:

- evaluate technical and economic feasibility;
- select the most relevant ones;
- evaluate the possible synergies between proposed actions and between existing and proposed actions.
- assess their consistency with existing policies and with existing interventions.

To select the most significant interventions, it is advisable to think in terms of expected impacts.

The assessment of the expected impact introduces a theme that can constitute a development hypothesis for the whole methodology with the provision of tools for ex-ante evaluation of a measure (expected results / potential impact) and a monitoring system for on-going and ex-post evaluation through, for example, the definition of impact areas and performance measures or indicators.

The impact areas are the dimensions effected (observed effects), while the impact indicators can be built ad hoc according to the intervention or selected from those consolidated at national level (e.g. *BES - indicatori di benessere equo e sostenibile or indicators ISTAT*) or supranational (e.g. SDGS, partially introduced in relation to sustainability dimension).

The monitoring for the evaluation of the interventions, the collection of results, would also allow the identification of possible "quality criteria" for the ex-ante selection of further or future interventions.

Example of possible criteria to select “good” interventions:

- resources commensurate with the objectives;
- ex ante definition of the methods for measuring results;
- sustainability of the intervention / lasting effects;
- level of innovation;
- degree of engagement and participation;

- communication plans;
- transparency.

5. Conclusions

This document outlined a methodology to build a coordination model between actors who share the common goal of improving cross-border transport but who a) do not necessarily share the same vision at the start of the process, b) have obvious differences in views and objectives. The seven-step process (see section 4.1.) seems to us to be fully in line with the aims of the MIMOSA project, in full coherence with the strategic objectives at European level and with the structure of the project itself. Indeed, the MIMOSA project has already developed, or is developing, the preliminary steps towards the realisation of the common understanding, which will be realised in the shared vision advocated by the awareness and capitalisation campaigns. In fact, these two activities will bring out not only the general and non-deferrable strategic principles (sustainability, shared planning approach, harmonisation, joint management), but also those specific to the project as emerged in the preliminary steps. (participative approach, long-term, equilibrium-based perspective with a focus on soft-measures, nodes accessibility and integration with coastal transport, islands accessibility and a peculiar attention to the needs of disabled people).

Looking forward, the analytical and preliminary part will have to be systematically updated for the planning purposes that will be identified from time to time, as well as according to the natural evolution of EU policies.

The model will then be completed by a proposal of a model of governance built on the primary consideration of ensuring equal representation and inclusiveness.

Finally, for the sake of completeness, an operational management model of shared planning (known as ESPON windmill) was also presented, which although beyond the scope of this paper and the planning model, is useful to understand how operations can be better managed through the seven-step process proposed here.