MACRO REGIONAL STRATEGY DISCUSSION PAPER

D.T3.2.7 | Adriatic-Ionian (EUSAIR)

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Contents

1. Project background and programme context

The magnitude and growing trend of air traffic in Europe requires actions for enhanced and sustainable airports' landside accessibility, and more generally for airports' integration into the mobility systems of their catchment areas and in the functional urban areas where they are located.

The LAirA (Landside Airport Accessibility) project focuses on multimodal, smart and low-carbon airport surface access. The project is supported by the Interreg Central Europe cooperation programme and it includes airports and regions in eastern and southern European regions. LAirA targets about 96 million passengers and 65 thousand employees of the Budapest, Dubrovnik, Milan Malpensa, Milan Linate, Poznan, Stuttgart, Vienna and Warsaw Modlin airports and it aims at developing low-carbon mobility services and at changing airport passengers' and employees' mobility behaviours to reduce their carbon footprint.

LAirA engages airports, related airport businesses, local and regional authorities and transport providers to foster capacities in planning mobility solutions and in developing mobility strategies which reduce the carbon footprint of airports' surface access.

The LAirA partners[1] cooperate to find and apply mobility solutions which match airport traffic development and the reduction of environmental externalities generated by airports' surface access. The project has a transnational and innovative comprehensive approach that integrates seven key thematic areas:

- Electric mobility: electric vehicles are becoming increasingly practical in terms of their range, availability, cost and specification. Provision for these vehicles in terms of charging infrastructure is increasingly common at airports for convenience for customers and to support low-carbon travel.

- Air-rail links: easy access to a fast, frequent rail link to the local city centre is an attractive alternative to road-based transport to/from airports. Air-rail links development can significantly change airport's surface access modal share composition.

- Active travel: fostering cycling to the airport, particularly for airport employees, can be an alternative to driving to work if good connectivity to cycle routes in the wider area, on-site facilities and benefits for employees are in place (further than a suitable airport location).

- Shared mobility: car-pooling and car-sharing offer alternatives to taxi, car hire and single occupancy car trips. Car-sharing can be more economical than taxi or traditional car hire, depending on the timescale of use. The shared cars themselves are often low emission models, including electric options. Car-pooling is particularly useful to reduce single occupancy commute trips.

- Intelligent Transport Systems (Apps): 63 percent of the world's population is estimated to have a smart phone and Apps are now a key method of accessing information on travel. Traditionally airport Apps have focused on parking and air-side information, however, best practice examples provide detailed information for passengers on landside transport options. Apps can also assist airport staff to provide high quality customer services to passengers by providing travel information, particularly at times of disruption.

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[1] These are: Municipality of 18th District of Budapest (HU) - the Lead Partner, SEA Milan Airports (IT), Budapest Airport (HU), Regional Government of the Mazowieckie Voivodeship (PL), Stuttgart Region Economic Development Corporation (DE), Dubrovnik Airport (HR), City of Dubrovnik Development Agency (HR), Airport Regions Conference (BE), AustriaTech Ltd. – Federal Agency for Technological Measures (AT), City of Poznan (PL).

- Wayfinding: airport terminals are complex buildings, often on multiple layers. Airports with multiple options for landside travel can have the associated issue of providing information in a way which is intuitive to an international and transient audience. Clear wayfinding to onward transport connections is vital to ensure these options are as easy to use as possible.

- Road public transport: bus and coach services often provide opportunities for low cost, convenient links to a wider range of direct destinations than rail services may provide. Special airport coaches, other coach operators and local bus services can provide excellent levels of accessibility. Local bus services also provide an important option for airport staff.

The LAirA activities focussed on three strands of activities:

1. Understanding and analysing airports' surface access, concerning passenger and employee demand, and the provision of mobility services;
2. Delivering pilot projects focussed on behavioural change campaigns and car-pooling scheme for airport employees, and upgrading airport Apps with travel planning functionalities;
3. Preparing strategies and action plans to enhance airports' sustainable surface access, including measures in the seven LAirA themes based on the involved airports' specific needs.

The ambitions of this discussion paper are:

- highlighting topics and work areas which can be common to the LAirA project and the Adriatic-Ionian macro-regional strategy (EUSAIR);

- providing suggestions for topics and areas for future work in EUSAIR and potentially in the funding programmes relevant to the Adriatic-Ionian macro-region.

2. Macro regional strategies in the European Union

The "macro-regional strategies" of the European Union[2] are a policy frameworks to allow European regions in defined geographical areas to jointly tackle and find solutions to problems (e.g. related to climate change and environmental hazards, transport and connectivity, economic or social development) and to better use their common potentials to foster territorial development (e.g. by building networks to better utilize locational advantages, natural resources, human capital). Macro-regional strategies aim at strengthening cooperation between European regions and help them making their policies more efficient thanks to a joint effort in identifying territorial issues and potential solutions. Their aim is contributing to the achievement of economic, social and territorial cohesion.

EU macro-regional strategies may be supported by various EU funds, like the European Structural and Investment Fund. EU macro-regional strategies are initiated and requested by the EU Member States concerned (located in the same geographical area / macro-region) and endorsed by the European Council. Following the European Council request, the strategies are drafted and adopted by the European Commission. As a result, such strategies are intergovernmental initiatives. Their implementation relies heavily on the commitment and goodwill of the participating countries.
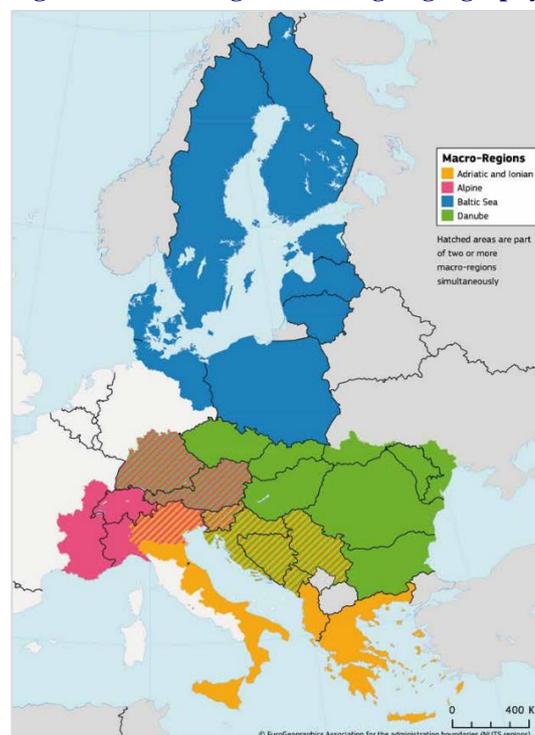
Another important aspect is that macro-regional strategies do not come with new EU funds, legislation or formal structures: they rely on coordination and synergy, enabling the optimal use of existing financial sources including EU, national, regional and private funding, better implementation of existing legislation, and better performance of existing institutions at all levels. EU macro-regional strategies address challenges and opportunities specific to the geographical areas they concern that are too local to be of direct interest to the whole EU, but too broad to be dealt efficiently at the national level.

The objectives of the strategies are long-term and jointly agreed by the participating countries. They vary according to the needs of the macro-region concerned, focusing on strategic issues that bring added value to horizontal EU policies. Each strategy involves a broad range of actors at various levels (international, national, regional, local), sectors (public, private, civil society) and fields of expertise, thereby providing a platform for consistent multi-country, multi-sectorial and multi-level governance. To date four EU macroregional strategies have been adopted. Each is accompanied by a rolling action plan updated regularly to accommodate emerging needs and to remain relevant in a changing context:

Figure 1: Macro-regional strategies geography

Source: European Commission (2017)

- the EU Strategy for the Baltic Sea Region (2009);

- the EU Strategy for the Danube Region (2010);

- the EU Strategy for the Adriatic and Ionian Region (2014);

- the EU Strategy for the Alpine Region (2015).

Macro-regional strategies involve 19 EU Member States and 8 non-EU countries, for total over 340 million people. The Figure on the right shows the geographical span of the macro-regional strategies[3].

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[2] Please see: https://ec.europa.eu/regional_policy/it/policy/cooperation/macro-regional-strategies/

[3] Please see: https://ec.europa.eu/regional_policy/sources/cooperate/macro_region_strategy/pdf/mrs_factsheet_en.pdf

2.1. The Adriatic-Ionian macro-regional strategy

The Adriatic-Ionian macro-regional strategy (EUSAIR) includes eight countries, as reported in the following Figure: four EU Member States (Croatia, Greece, Italy, Slovenia) and four non-EU countries (Albania, Bosnia and Herzegovina, Montenegro, Serbia)[4]. We note it involves territorial areas which are part of the Central Europe Programme and in particular northern Italy (Lombardy, Emilia-Romagna, Veneto, Friuli-Venezia Giulia and Trentino-Aldo Adige), and the whole of Slovenia and Croatia.

Figure 2: ESUAIR geographic scope

Source: www.adriatic-ionian.eu

The EUSAIR overall objective is promoting economic and social prosperity and growth by improving the macro-region attractiveness, competitiveness and connectivity. EUSAIR focuses on four thematic pillars:

1. Blue growth;
2. Connecting the region;
3. Environmental quality;
4. Sustainable tourism.

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[4] Please see: https://www.adriatic-ionian.eu/about-eusair/

These pillars address the core challenges and opportunities identified as being of central importance for the macro-region. The following paragraphs shortly present each pillar with the aim of identifying the LAirA relevance to EUSAIR and understand in which pillars LAirA can contribute to EUSAIR.

2.1.1. Blue growth

The overall objective of this pillar is driving innovative maritime and marine growth in the Adriatic-Ionian macro-region by promoting sustainable economic growth and jobs, as well as business opportunities in the blue economy sectors. The pillar focuses on building on the regional diversity in the macro-region to promote pathways to innovative maritime and marine growth.

The specific objectives are:

- promoting research, innovation and business opportunities in blue economy sectors, by facilitating brain circulation between research and business communities, and increasing their networking and clustering capacity;

- adapting to sustainable seafood production and consumption, by developing common standards and approaches and providing a level playing field in the macro-region;

- improving the sea basin governance, by enhancing administrative and institutional capacities in the area of maritime governance and services.

The pillar focuses on three topics: blue technologies, fisheries and aquaculture, and maritime and marine governance and services.

Based on the pillar's thematic scope LAirA is not relevant to the pillar.

2.1.2. Connecting the region

The overall objective of this pillar is improving connectivity within the macro-region and with the rest of Europe, with reference to both transport and energy networks. According to EUSAIR the macro-region is facing huge infrastructure disparities, notably between "old" EU Member States and the other countries, and better transport and energy connections are compelling needs for the macro-region, and a precondition for its economic and social development.

The specific objectives are:

- strengthening maritime safety and security and developing a competitive regional intermodal port system;

- developing reliable transport networks and intermodal connections with the hinterland, both for freight and passengers;

- achieving a well-interconnected and well-functioning internal energy market which supports the three key energy policy objectives of the EU (namely competitiveness, security of supply and sustainability).

The pillar focuses on three topics: maritime transport, intermodal connections to the hinterland and energy networks.

LAirA is strictly relevant to the pillar and in particular to the topic of intermodal connections to the hinterland, which specifically mentions macro-regional issues in rail passenger traffic decrease and in the lack of air connectivity.

Moreover, despite there is not a direct LAirA relevance to the maritime transport topic, an additional element to consider is that increasing cruise sector traffics can have a positive correlation with airport traffics, with reference to cruise passengers boarding at home seaports and using airports to reach them.

2.1.3. Environmental quality

The overall objective of this pillar is addressing the issue of environmental quality in marine, coastal and terrestrial eco-systems in the macro-region. According to EUSAIR environmental quality is essential for human activities in the macro-region and for ensuring economic and social well-being.

The specific objectives are:

- ensuring good environmental and ecological conditions of the marine and coastal environment by 2020, in line with the relevant EU *acquis* and the eco-system approach of the Barcelona Convention[5];

- contributing to the goal of the EU Biodiversity Strategy to halt the loss of bio-diversity and the degradation of eco-system services in the EU by 2020, and restoring by addressing threats to marine and terrestrial biodiversity;

- improving waste management by reducing waste flows to the sea and reducing nutrient flows and other pollutants to the rivers and the sea.

The pillar focuses on two topics: the marine environment, and transnational terrestrial habitats and biodiversity.

LAirA is indirectly relevant to the pillar because it aims at reducing landside transport environmental impacts. Nevertheless, we note that the pillar strongly focusses on the marine environment, habitats and biodiversity and not specifically on the reduction of transport negative externalities.

2.1.4. Sustainable tourism

The overall objective of this pillar is developing the sustainable and responsible tourism potential of the Adriatic-Ionian macro-region, by developing innovative and quality tourism products and services. It also aims at promoting responsible tourism behaviours by all tourism-related stakeholders across the Region (the wider public, local, regional and national private and public actors, as well as tourists and visitors). The pillar identifies socio-economic aspects, bureaucratic obstacles removal, touristic business opportunities and SMEs competitiveness as essential elements to touristic development.

The specific objectives are:

- diversifying the macro-region's tourism products and services along with tackling seasonality of inland, coastal and maritime tourism demand;

- improving the quality and innovation of tourism offer and enhancing the sustainable and responsible tourism capacities of the tourism stakeholder across the macro-region.

The pillar focuses on two topics: diversified tourism offers (products and services), and sustainable and responsible tourism management (innovation and quality).

LAirA is indirectly relevant to the pillar because:

- airports are key assets for touristic development of the EUSAIR regions and touristic development relates to air connectivity (also with reference to the possibility to tackle seasonality issues);

- landside airport accessibility plays a key role for passengers (tourists) to reach their final destinations; de-carbonising landside airports' accessibility means contributing to sustainable tourism practices.

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[5] Please see: https://ec.europa.eu/environment/marine/international-cooperation/regional-sea-conventions/barcelona-convention/index_en.htm

2.2. The relevance of LAirA project results in the context of EUSAIR

This paragraph analyses more in detail the LAirA relevance to EUSAIR, with specific focus to pillar 2 ("Connecting the region"), which is the one having direct relation to the LAirA topics.

LAirA was born to answer the project partners' need to face the challenges that increased air traffics bring to airports' accessibility, and more generally to reduce CO_2 emissions related to airports' surface access. A second element which is important to the LAirA partners is the possibility to foster airport development thanks to improved landside transport connections.

The analysis of EUSAIR air traffics that we have developed in this paper shows that the main EUSAIR airports have registered an increase in air traffics. More specifically we analysed 8 airports in the Adriatic-Ionian macro-region. We included the three LAirA airports which are part of the macro-region (Milan Malpensa, Milan Linate and Dubrovnik) and the first two airports with more than 1 million passengers in each country of the macro-region[6]. The following table lists the airports we analysed, as well as their positioning within the Trans-European Transport Network. In particular, we indicated if the airport is a core airport in the TEN-T network and if it is part of the TEN-T core rail network[7].

Table 1: EUSAIR airports included in the analysis

| Country	Airport (IATA code)	TEN-T core airport	TEN-T core rail network
Croatia	Dubrovnik (DBV)		
	Zagreb (ZAG)	✔	✔
Greece	Athens (ATH)	✔	✔
	Heraklion (HER)	✔	
Italy	Milan Linate (LIN)	✔	✔
	Milan Malpensa (MXP)	✔	✔
	Venice (VCE)	✔	✔
Slovenia	Ljubljana (LJU)	✔	✔
Albania	Tirana (TIA)	✔	✔
Bosnia and Herzegovina	Sarajevo (SJJ)	✔	✔
Montenegro	Podgorica (TGD)	✔	✔
	Tivat (TIV)		
Serbia	Belgrade (BEG)	✔	✔

Source: Steer analysis

We have analysed the airports' passenger traffic in the period 2014-2018, as reported in the following Figure.

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[6] Please note that the LAirA partner Dubrovnik Airport is also the second Croatian airport and Milan Malpensa the second Italian one. Please also note the we only included airports located in regions which are part of EUSAIR.

[7] Concerning airports in non-EU countries we considered the proposal for TEN-T indicative extension to Neighbouring Countries (please see: https://ec.europa.eu/transport/infrastructure/tentec/tentec-portal/site/maps_upload/annexes/annex3/Annex%20III%20-%20VOL%2031.pdf).

Figure 3: EUSAIR selected airports - passenger traffics 2014-2018
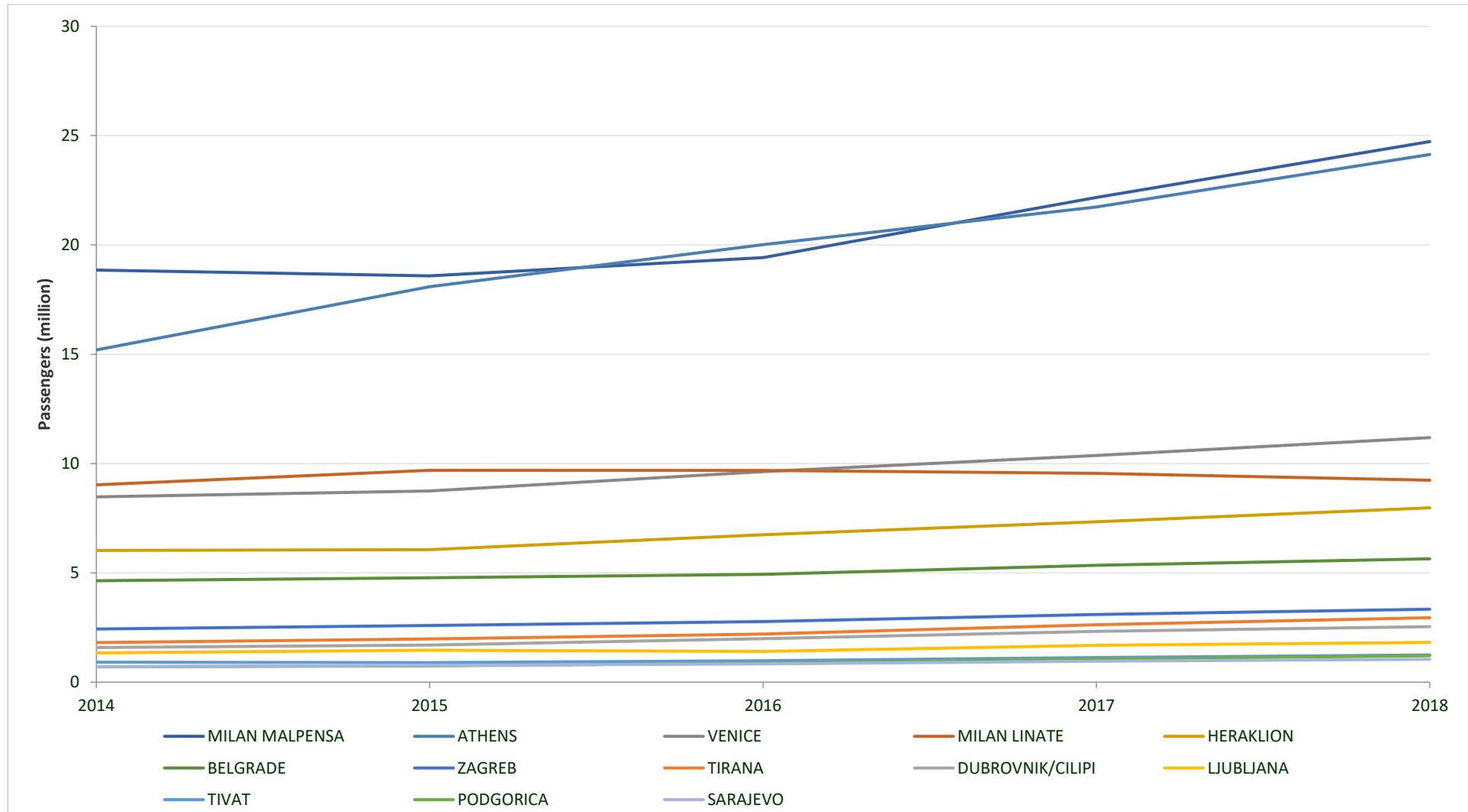
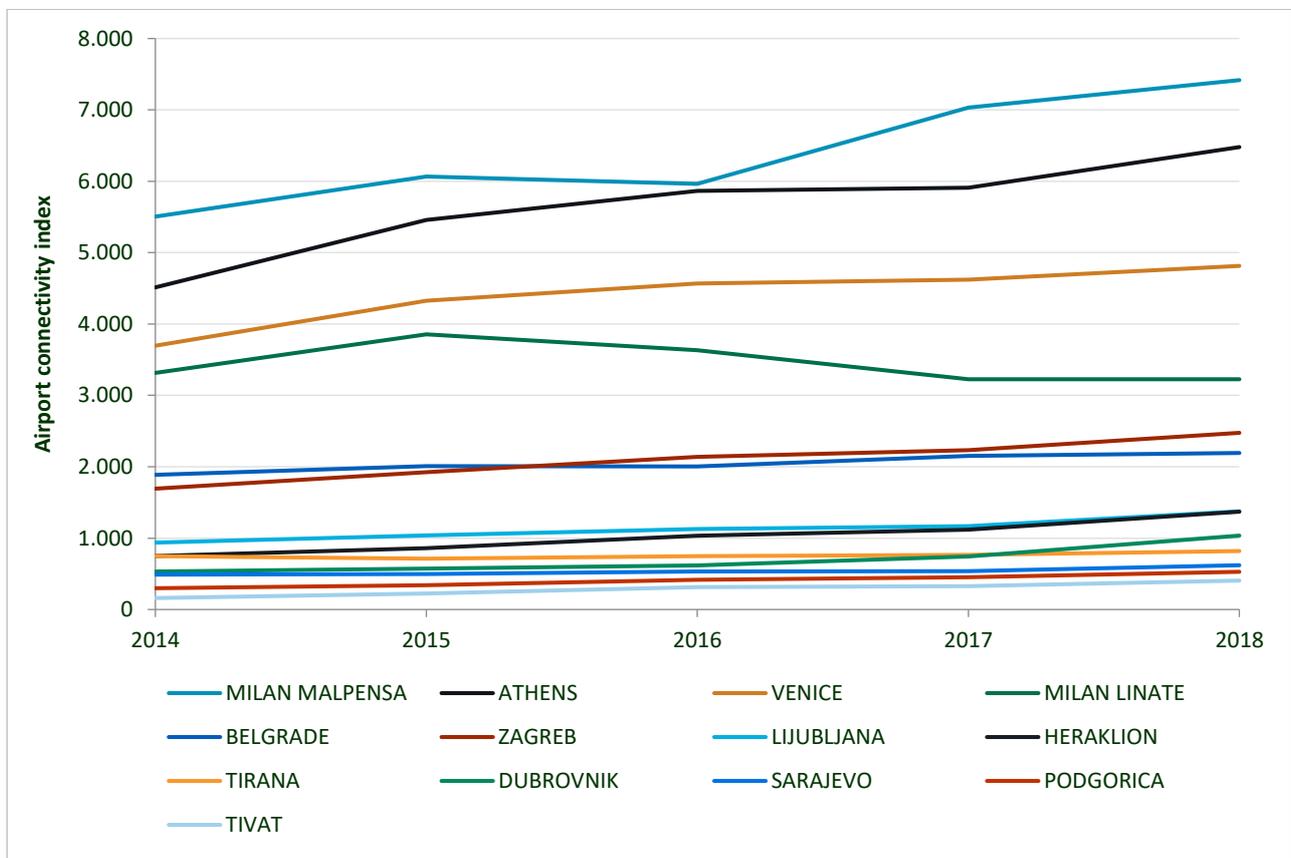Source: Steer analysis on airports' statistics

We note that:

- the total CAGR of the concerned airports in the period 2014-2018 is 7.9%;

- airports with the highest CAGR are Podgorica (+14.7%), Tirana (+13.0%), Dubrovnik (+12.5%);

- airports in non-EU countries have an average CAGR which is higher than the CAGR of airports in EU Member States (respectively 8.4% *versus* 7.8%); nevertheless, we note traffics in absolute values are significantly lower (in 2018 about 12 million passengers at airports in non-EU countries compared to 84 million passengers at airports in EU Member States).

The analysis of the airports' connectivity index[8] also confirms positive dynamics in the concerned period, as reported in the following Figure. Airports with the highest CAGR in terms of connectivity are: Tivat (26.1%), Dubrovnik (18.1%) and Heraklion (16.3%).

Figure 4: EUSAIR selected airports - connectivity index 2014-2018

Source: Steer analysis on ACI Europe data

The analysed airports' growth rates are significant, and we think this confirms the importance of air transport to the macro-region, as indicated by the EUSAIR Action Plan[9], which identifies airports as entry points to the macro-region and which sets a specific action to develop air transport.

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[8] The airport connectivity index is defined by ACI Europe as the sum of direct and indirect connectivity; it measures the overall level to which an airport is connected to the rest of the world, either by direct flights or indirect connections via other airports, in particular: direct connectivity includes the direct air services available from the airport – measured not just in terms of destinations, but also in terms of frequency; indirect connectivity measures the number of places people can fly to, through connecting flights at hub airports from a particular airport (source: https://www.aci-europe.org/policy/connectivity.html).

[9] European Commission, Commission staff working document, Action Plan accompanying the document Communication from the Commission to the European parliament, the Council, the European Economic and Social Committee and the Committee of the Regions concerning the European Union Strategy for the Adriatic and Ionian Region (COM(2014) 357 final).

The immediate implication of airports' traffic growth is the need to face the challenges related to airports' surface access enhancement and sustainability, which is the LAirA thematic scope. In particular the LAirA objective on improving airports' accessibility (and in particular in connecting airports into the mobility systems of their catchment areas) is strictly relevant to the EUSAIR specific objective on "developing reliable transport networks and intermodal connections with the hinterland". The specific objective description as reported in the Action Plan includes multiple thematic areas to which LAirA is relevant, as reported in the following Table.

Table 2: LairA relevance to the ESUAIR specific objective „Intermodal connections to the hinterland"

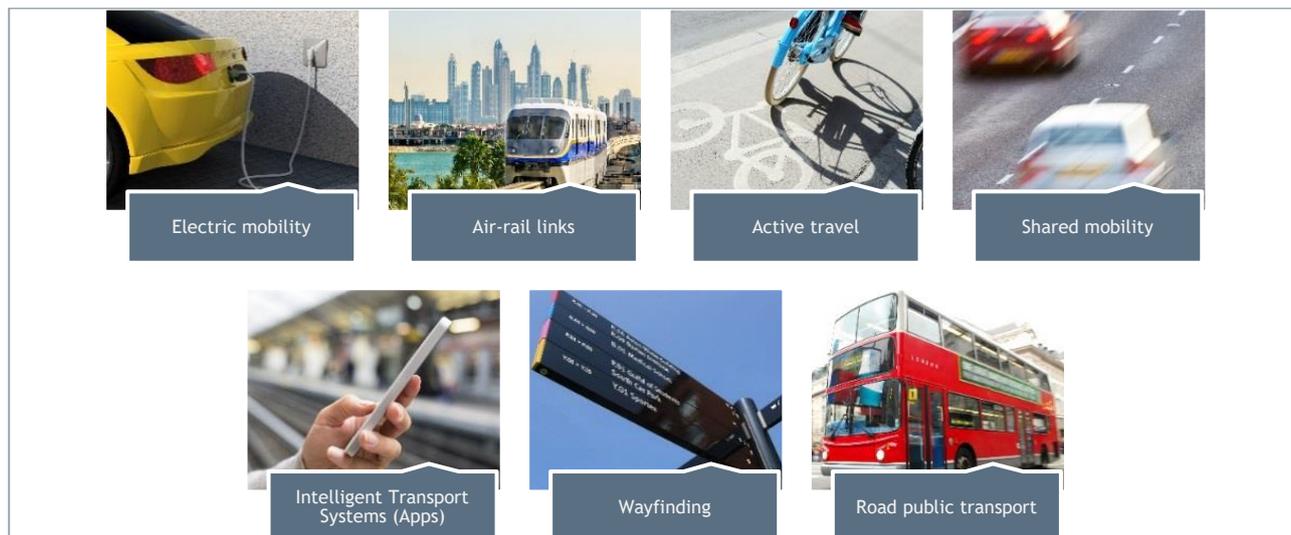| EUSAIR thamatic areas	LAirA relevance
Meeting the transport demand levels and seasonal/daily traffic peaks	LAirA supports the development of landside transport services to accommodate air transport growth (e.g. air-rail links, car-sharing, road based public transport).
Considering spatial planning in transport investments and strategies	LAirA promotes the integration of policies in Functional Urban Areas and this includes both transport and spatial/territorial planning.
Considering life-styles impacts on the transport sector	LAirA develops pilot projects to foster behavioural change in airports accessibility both for passengers and employees (e.g. behavioural change campaign for employees, car-pooling platforms, active travel promotion)
Leveraging innovations to foster transport sustainability	LAirA develops Apps to allow passengers planning travel by public transport and fosters the roll-out of electric mobility.
Fostering railway services competitiveness	LAirA focuses on the topic of air-rail links and on the multimodal integration of airports into rail mobility systems[10].
Reduction of transport negative externalities	LAirA has the core goal to make airports' accessibility green and sustainable.

Source: Steer analysis

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[10] The project has not focussed on the topic of competition between High Speed Rail and air transport.

3. Proposals for consideration

This Chapter focuses on proposing action areas to the EUSAIR macro-regional strategy based on the LAirA thematic areas (which are reported in the Figure below).

Figure 5: LAirA thematic areas

| Electric mobility | Air-rail links | Active travel | Shared mobility |

| Intelligent Transport Systems (Apps) | Wayfinding | Road public transport |

Source: Steer

In particular we decided to focus on:

- Electric mobility, because road transport is an important mode to the macro-region;

- Air-rail links, considering that EUSAIR focusses on the development of intermodal transport and specifically of rail transport;

- Road public transport (including coach services), because services can be set-up with more limited investments compared to the rail sector (and this may help facing tourism seasonality which characterises the macro-region).

We have not focused on the following thematic areas:

- Active travel, because this strongly depends on the airport location and on the possibility for employees to commute by bike;

- Shared mobility: because despite it is a developing sector its impacts on the reduction of environmental impacts of airport surface access seem lower compared to the three above mentioned thematic areas;

- Intelligent Transport Systems, and specifically Apps, and wayfinding, because we think transport service and infrastructure development (rail or road) seems having priority in a wide part of the macro-region, and in particular in the western Balkans; nevertheless, we understand that the topics may be of interest to airports.

The following tables reports an analysis of the availability of air-rail, electric mobility, and road public transport and coach services at the 8 airports that we selected.

We note that public transport (buses) and coach services are available at most airports, while air-rail links and electric mobility services are available in a more limited number of airports.

Table 3: Transport services at the selected EUSAIR airports

Airport	Electric charging stations[11]	Public transport	Rail	Coach
Dubrovnik (DBV)		✔		✔
Milan Malpensa (MXP)	✔	✔	✔	✔
Milan Linate (LIN)	✔	✔	✔[12]	✔
Venice (VCE)		✔		✔
Belgrade (BEG)		✔		✔
Zagreb (ZAG)		✔		✔
Athens (ATH)		✔	✔	
Heraklion (HER)		✔		✔
Ljubljana (LJU)	✔	✔		✔
Tirana (TIA)				✔
Sarajevo (SJJ)		✔		
Podgorica (TGD)				
Tivat (TIV)				

Source: Steer analysis of airports' web site information

The following sub-chapters focus on the three LAirA thematic areas that we selected and provide indication on how ESUAIR airports could develop measures in these areas, including opportunities and challenges. In particular, we also propose recommendations which are meant to be:

- potential components of future projects in EUSAIR, that airports and other transport stakeholder may develop;

- suggestions to EUSAIR institutional stakeholders to support their dialogue with funding programmes relevant to the macro-area, and in particular suggestions to inform topics of future calls.

3.1. Electric mobility

Airport access and exit by car for customers and staff, be it as a driver parking at the airport or pick up/drop off by family member, friend or taxi, is a key mode of travel for airport accessibility. In many cases car is the most convenient option, particularly for those travelling from locations not directly connected by public transport or at times when public transport may be less frequent. Fostering transport electrification allows decarbonizing the sector and reducing its environmental impact.

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[11] The charging stations are dedicated to car sharing services.

[12] Works for M4 metro line extension to Linate Airport are ongoing the first part of the project will be ready by 2021.

The continued development and increasing availability of electric vehicles (EVs) has allowed some airports to consider opportunities to use this technology to maintain the flexibility of car and taxi travel but with a lower level of CO_2, NOx and particulate emissions than those associated with traditionally fueled vehicles.

Equally there are financial advantages for the adoption of EVs due to the low operating costs and consequently competitive total cost of ownership. This is particularly important for fleet procurement to assess the direct and indirect costs and create benchmarks for vehicle replacement.

The following table includes recommendations, opportunities and challenges for airports to deliver actions in the electric mobility thematic area.

Table 4: Electric mobility - recommendations, opportunities and challenges

Recommendations	Opportunities	Challenges
▪ Work with local and national government to develop a supportive policy environment for EVs. ▪ Where electric taxis are considered, ensure vehicles are appropriate design and that appropriate charging infrastructure is introduced to support specific taxi operational requirements. ▪ Provide taxi incentive programme to encourage low emission taxis. ▪ Provide attractive incentives for public landside access by EVs vs traditional fuelled vehicles e.g. paid parking but free charging. ▪ Provide adequate mix of charging types for different parking needs for public parking.	▪ EVs provide the opportunity for the same level of convenience as private car or taxi. ▪ Many countries in the EU have policies to support adoption of EVs which would be expected to increase level of demand for charging infrastructure. Having facilities to meet that demand is an opportunity to meet customer need and reduce CO_2. ▪ EVs can now fulfil the needs of private users and taxi companies.	▪ Passengers may opt to use EVs than other forms of sustainable surface access. EV use would not reduce wider transport issues such as congestion or parking pressure. ▪ There is a risk that government policy may change at some point reducing support for EVs.

Source: Steer

3.2. Air-rail links

Where available, rail links provide the opportunity for fast, efficient and attractive links to key destinations such as city centre sites. Research shows how introduction of direct air-rail services can dramatically impact mode share aware from the private car[13].

Many airports have direct air-rail links, with the rail station either being constructed within the terminal building (such as Amsterdam Schiphol), within short travel distance of the main terminal building (such as Newark), or within a short bus journey way (such as London Luton).

Rail connections (both in terms of the rail station and rail services) that are of good quality, provide an attractive alternative to road-based alternatives, particularly at congested times on the road network. Airports may rely on standard rail services, either serving the local commuter market, national or international services serving a much wider catchment and/or dedicated express services.

The following table includes recommendations, opportunities and challenges for airports to deliver actions in the air-rail links thematic area.

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[13] For example Oslo airport has been able to achieve an overall public transport share of 68%, the highest in all Europe, 70% of which is attributed to the "Flytoget" air-rail link

Table 5: Air-rail links - recommendations, opportunities and challenges

Recommendations	Opportunities	Challenges
- Develop station travel plans to support sustainable access to stations. - Promotion of ticketing incentives such as Interline tickets, Airport Advance Fares for air passengers. - Provide discounted ticket options for staff. - Develop suburban rail links for airports, to improved wider direct accessibility for passengers and airport employees. - Ensure Express services offer an easy to understand level of service in terms of travel time and quality of service. - Ensure that air-rail services are high frequency, reliable, provide modern facilities (such as Wi-Fi) and provide direct connections to city centre transport hubs. - Where new infrastructure is built ensure careful risk management, including contingency planning should it be needed. - For PPP projects ensure procurement criteria include consideration of interaction of other services and future infrastructure and rolling stock needs. - Ensure ticket pricing is set at a level that is attractive for the user so not to suppress demand and maximise opportunities for CO_2 reduction.	- Air-Rail stations can be developed to improve landside access through station travel planning measures (for example improved wayfinding and travel information). - Interline ticketing and Airport Advance Fares show opportunity for better integration of air and rail tickets. - Rail services are a key mode of access for airport staff, and ticketing discounts can encourage travel by rail by airport employees.	- Introduction of new rail services can take considerable time. - Existing rail and station infrastructure may constrain expansion to accommodate additional services either to improve access or due to increased demand. - Disruption to rail infrastructure can impact on air-rail services. - Construction of new rail infrastructure is complex and unforeseen issues can arise.

Source: Steer

3.3. Road-based public transport and coach

Road-based public transportation can provide direct connections between an airport and surrounding destinations. Local buses, dedicated airport links and bus/coach services serving hotels and tourist markets provide connection to city centres. Coach services provide options from locations further afield.

Road based mode share for access to airports do not appear to be compiled at the European level though research indicates an average European mode share of around 17%. Dedicated bus services often provide a high level of quality, with service frequencies high, vehicles being modern, spacious with ample luggage space, services running across a 24hr period, Wi-Fi, and easy to purchase ticket options. Increasingly these can purchased via Apps in advance.

Local services also provide an important travel option for commuters also.

The following table includes recommendations, opportunities and challenges for airports to deliver actions in this thematic area.

Table 6: Road-based public transport and coach- recommendations, opportunities and challenges

Recommendations	Opportunities	Challenges
- Provide low cost fares for passengers. - Provide fares via Apps. - Provide high quality premier bus service that is high frequency, provides 24hr service and modern facilities such as wi-fi. - Provide high-quality transport interchange facilities. - Provide discounted ticket options for staff which include both season tickets for full time staff and multi-journey tickets for shift workers. - Provide a Commuter Centre Coordinator to facilitate promotion of ticketing discounts and work to encourage take-up by staff. - Ensure accurate bus information is promoted by linking to operators own information. - Consider need for on demand services to improve access for employees to the airport site in locations or at times when traditional services are unavailable. - Consider application of emerging best practice with App based on demand bus services.	- High quality express bus services provide lower cost alternatives to rail links. - Bus fare discounts can support bus use by staff. - Discount multi-journey tickets can encourage occasional sustainable travel choices e.g. bus for day shifts/car for nights. - On demand services provide an opportunity to improve access to staff outside of core working hours, supporting CSR as well as environmental objectives. - On demand services are developing with the advent of new technology presenting opportunities for this option to become more common.	- Bus services may change more frequently than rail services. Ensuring information is accurate can be challenging thus direct links to operators' information may be the most effective method. - Bus services can be impacted on by congestion on the road network, particularly at peak times.

Source: Steer

4. Conclusions

The LAirA territorial contexts and the Adriatic-Ionian macro region share the economic benefits of air traffic growth, as well as the challenges this brings to airports' landside accessibility.

This paper has identified some areas for future projects that EUSAIR stakeholders, and in particular airports, may develop. These focus on airports' surface access and aim at providing suggestions about topics and areas for future work in EUSAIR and potentially in the funding programmes relevant to the Adriatic-Ionian macro-region. Main areas concern:

- Analysing and piloting sustainable transport services to connect airports and touristic destinations of the Adriatic-Ionian macro-region;

- Fostering airports' low-carbon accreditation and developing strategies and action plans to reduce their environmental foot-print with special focus on airports' accessibility;

- Integrating airports in rail transport systems, both with reference to TEN-T and to the connection to urban nodes;

- Planning and delivering electric mobility at airports through cooperation between airport infrastructure managers and policy makers in charge of promoting electric mobility at a wider territorial scale;

- Studying and piloting transport services to/from airports which can meet seasonal demand, especially in relation to touristic flows.