Deliverable T2.1.2 «Regional demand - supply analysis»

FINAL REPORT

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Inter-Connect project Doc. TYPE/No/Title	T2.1.2/ Regional demand - supply analysis
WP	WPT2: Cases examination towards better interconnection of ADRION Region
Authors	CERTH/HIT
Contribution	All

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1. Introduction

1.1 Work package 2; "Cases examination towards better interconnection of ADRION Region"

Inter-Connect project follows a bottom-up approach for making proof of actors cooperation for overcoming (legal, infrastructure and operational) barriers & providing improved rail-maritime based passengers intermodality.

This bottom – up approach is achieved through WPT2. WPT2 approaches the transport system from the regional/local perspective; Inter-Connect examines intermodality promotion potentials in 8 regional cases, Igoumentisa (GR), Region Emilia Romagna (IT), FVG (IT), Ljubljana (SL), Zagreb (CR), Bar (ME), Durres (AL) and Belgrade (RS), aiming to extract valuable information (effective measures, necessary cooperation schemes to support interventions implementation, transferability potentials, funding schemes for actions' realization) able to be used in other areas too and to be generalized so as to enhance ADRION's connectivity as a whole.

Figure 1: Inter-Connect cases

The measures to be studied and analysed through WP2 are mainly soft interventions; ICT, timetables harmonization for seamless travels, combined services (e.g. maritime-rail, bus-rail), integrated ticketing, intermodal hubs improvement.

Through its 8 test cases, the project aims at:

* Increasing efficiency and reduce environmental impact of transport systems, notably by providing alternative, sustainable and environmentally friendly, combined solutions
* Improving public transport competitive profile
* Facilitating the creation of synergies among transport operators
* Creating more and better integrated rail services at local and transnational level
* Reducing the declining modal share of railways
* Supporting port – hinterland connections by rail

The mainstreaming of the cases at policy level, is assured by the Inter-Connect cooperation platform activities (Act 1.3) and their replicability is possible in the ADRION area thanks to the visibility given by the platform to all the stakeholders directly and indirectly involved in it. Cases approach has a potential of replicability in other territories at regional and transnational level which are currently suffering of poor levels of accessibility to main corridors, starting from common data collection and processing methodologies defined at project level, analyze transport and accessibility conditions, optimize current services and upgrade existing facilities in poorly connected areas. Cases generalized messages will feed and strengthen Roadmap's content (Act. 3.1).

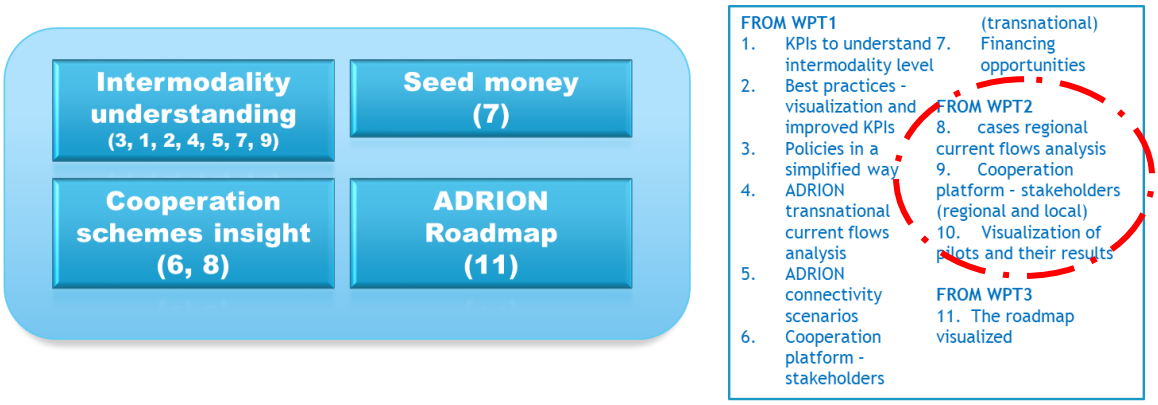


Figure 2: Inter-Connect toolkit and the feeding from the technical WPs

WPT2 will also give input to the 4 tools of project's capacity building toolkit (Act. 3.3; Intermodality understanding, seed money, interventions, cooperation schemes insight tools).

The work flow in WPT2 follows its 4 activities:

1. A deep understanding of the real users' needs (travellers) from the outputs of surveys at local people and tourists along with the analysis of the current situation (transport supply and demand data) will reveal the desired path towards intermodality promotion interventions
2. A detailed case-tailored plan will be developed
3. The cases examination will last 15 months, period within which the evaluation will also take place
4. Transferability analysis will be undertaken in order to give value to the results and give also advice to other interested cases with an ultimate scope to multiply effects and achieve sustainability in the region as a whole

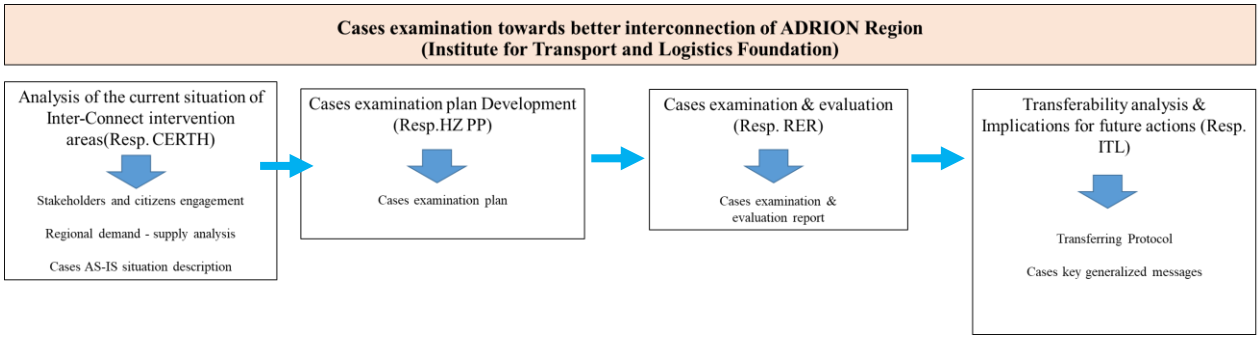


Figure 3: WPT2 activities

The two main outputs of WP2 are:

- T2.1: Inter-Connect's transnational network formulation (Cooperation Platform), an active network of organizations, authorities, transport providers and other stakeholders in transport

planning and operation that join their forces in order to promote rail and maritime based public transport in the area;
    - Primary stakeholders, directly benefited from the results of the interventions (beneficiaries)
    - Responsible parties for planning, implementing, monitoring interventions
    - Facilitators; organizations that can provide technical support in the implementation, evaluation and transferability analysis phases
    - Strategy formulation insiders; experts on the field of passengers' intermodal and rail transportation
- T2.1: Detailed Action Plan for intermodal passenger transport promotion that will contain all the wisdom (operational plan, risks, risks' mitigation, obstacles faced, outputs, feedback and corrective actions, cooperation schemes established or at least necessary)

Taking in mind that the successful studying of the cases in Inter-Connect project requires the active involvement of the Cooperation Platform (different mixture of regional, national, transnational per case) in all stages of the examination, the partnership will hardly invest towards achieving this goal. The stakeholders identified by each case will be involved at the case's examination and evaluation phase. Their participation, adding accuracy and acceptance to key findings, will be achieved through the use of 3 out of the 4 involvement steps presented in the report "Engaging Stakeholders for Project Success" (Project Management Institute, Inc., 2015), suitable adapted in Inter-Connect's nature;

- Engagement through the development of the feeling that stakeholders are appropriate parts of project's implementation possibly influencing future decision making procedures
- Benefits presentation (and repetition)
- Further incentives' provision (e.g. publicity of their role and activities at a transnational level)

1.2Activity 2.1; "Analysis of the current situation of Inter-Connect intervention areas"

The first activity of WPT2 is entitled "Analysis of the current situation of Inter-Connect intervention areas". AT2.1 continues the development of the Cooperation Platform of the project with engaging local/regional/national stakeholders in sustainable mobility decision making and implementation. The MoU drafted in DT1.3.4 is enhanced in the current activity with strongly committed local stakeholders, necessary for Inter-Connect cases examination and proposed interventions realization/implementation. The activity deals also with the wider audience engagement, thus the citizens that will be informed for the project through the local events (liaison with WPC). The activity answers also to the need for a clear quantitative and qualitative picture of passengers flows and provisions in the 8 regional cases of Inter-Connect project (focusing on the present situation). Based on the identified national and regional bodies to be involved in the Cooperation Platform, at this stage of the project partners will try to engage them (if they are not already involved from the proposal phase with letters of support). Data collection will be based on an extended desktop research (existing data from various private and public databases, existing methodologies to collect data) and stakeholders' surveys. Data collected along with passengers' needs' identified (online or on the spot surveys), stakeholders' business plans and authorities agendas review (face to face meetings/interviews) will form the current profile of Inter-Connect's cases to be further examined at the next activities.

Summing up, the goals of T2.1 activity are (grouped per deliverable):

- Deliverable 2.1.1 "Stakeholders and citizens engagement" goals
    - Regional stakeholders engagement – face to face meetings/interviews
    - Wisdom of travellers – regional needs through the local part of the surveys
    - Inter-Connect's Cooperation Platform enhancement – MoU update

- Deliverable 2.1.2 “Regional demand - supply analysis” goals
  - Transport system operation at local level understanding
- Deliverable 2.1.3 “Cases AS-IS situation description” goals
  - Cases SWOT’s analysis
  - Cases initial formulation, case’s catchment areas identification
  - Local needs identification – guidance for surveys organization for cases examination

1.3Deliverable T2.1.2; “Regional demand - supply analysis”

The second derivable of T2.1 deals with the deep qualitative and quantitative analysis of transport demand and supply will be carried out at cases’ level. Regional demand data analyzed herein refer to passenger trips conducted between the catchment area of each hub and the hub itself. Modal split data and other transport related indicators at regional level are part of the current deliverable. The identification of the catchment area of each case entails (and in parallel, arrives from) the identification of the attractiveness of the case, either the current or the potential one while it reveals the positioning of the case inside ADRION (the dynamic of the case/hub). Furthermore, the current modal split at regional level accompanied with other transport indicators, will show light on the weaknesses and hidden threats in intermodality promotion. Key results of the analysis of transport data are presented at the closing chapter and feeds the 3rd deliverable of the activity T2.1 (AS-IS situation in Inter-Connect cases).

2. Regional demand and supply data

The current chapter briefly presents Inter-Connect areas of intervention and their main characteristics while poses special focus on the catchment area of the cases definition and the regional and local transport data (demand and supply).

Given Inter-Connect objectives (assessment of upgraded soft transport interventions: ICT, Harmonization, Integrated Ticketing), the exact definition of the catchment area for each case is of integral importance. Serving the scopes of the project, the following definition was given to case’s catchment area:

“A case’s catchment area (or hinterland) is defined as the geographical area from which it attracts trips.”

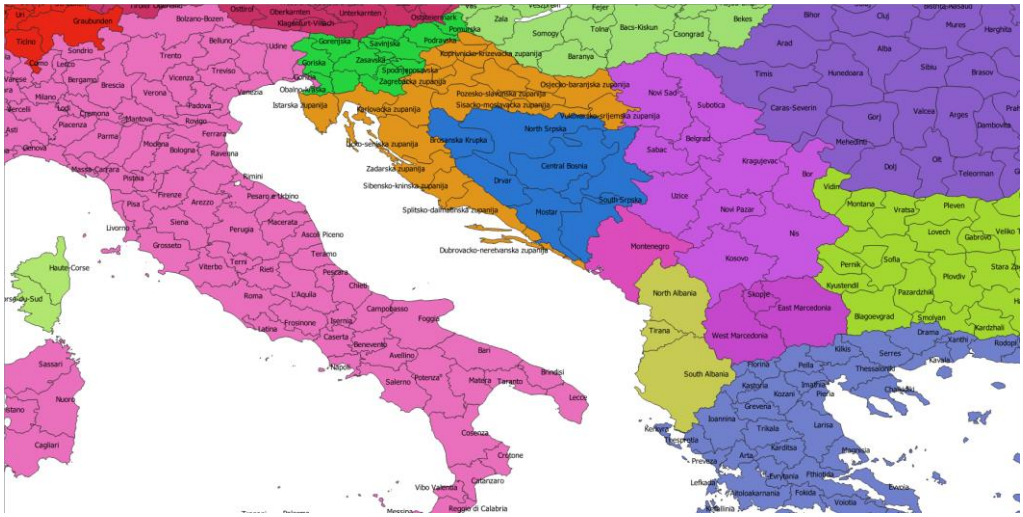


Figure 4: ADRION region in NUTS3

However, the application of this definition is a customized procedure, since neighbouring land uses and geographical extents to which a hub remains attractive (for its activities or connections) cannot be predefined for all cases. Thus, one cannot predetermine the catchment area's extent in a strict geographical context (i.e. a radius of 250km around a city) as every hub represents a special case. In addition, the extent of the catchment area may vary, given planned or future investments and developments. The clarification and exact definition of the catchment area is crucial for mapping the "as-is" situation, so that all qualitative and quantitative datasets refer to the exact same areas. The definition of the catchment area follows a NUTS 3 classification as seen in . Main socioeconomic data and transport related information for the catchment areas, e.g. main terminal, geographical and demographical characteristics, average GDP or income data and Value of Time indicators, will reveal the dynamic of the areas and the opportunities for becoming main attraction poles in ADRION region.

Furthermore, the collection (where available) and critical assessment of regional and local transport related indicators and data (e.g. modal split, demand and supply data) consist part of the current deliverable.

2.1 The case of Igoumenitsa, GR

2.1.1 Igoumenitsa in a nutshell

The Greek intervention area focuses on Igoumenitsa's Municipality in Epirus Region, which thanks to the Port of Igoumenitsa is one of the two main western gates of Greece to Adriatic – Ionian Sea (the second is Patra in Western Greece Region).

Igoumenitsa, one of the most important urban areas in the Region of Epirus, is a coastal city of approximately 26.000 inhabitants located in the northwestern Greece. Its economy is dominated by the tertiary sector, which mainly relates to transport and touristic activities mainly generated from the port of Igoumenitsa and its connection with Egnatia Odos, the main horizontal road axis of Greece.

Although being considered as a relatively isolated city inside Greece, the last years, Igoumenitsa acts as main gateway of Greece serving flows from/to ADRION Region thanks to the operational upgrade of its port (Igoumenitsa's Port) and to its connection to Egnatia Odos.

The new Port of Igoumenitsa, inaugurated at 2003, is located in the southern side, outside the urban area. The port focuses on passenger traffic in ADRION, offering routes to Brindisi, Bari, Ancona, Venice (Trieste), and Ravenna (occasionally) as well as to the Greek destinations of Patras, Corfu and Paxos. Therefore Igoumenitsa appears to be an emerging center playing a crucial role both at regional and transnational level, in parallel and in complementary with Ioannina and the rest cities of the region.

The city in numbers as derived from the traffic surveys and desktop search can be seen as;

- Demographics

9.145 residents* 49 res./hect
Data concern the city of Igoumenitsa

- Household data

50% 1-2 members
50% 3-5 members

- 23,2% average population growth

Data concern the wider area of Igoumenitsa

- Employment data

2.116 unemployed persons in the Municipality
19,4% of the economically active population, 1.251 men και 865 women
61% unemployment increase within the Municipality (2001-2011)
The economically inactive population reaches the 57,8%

2.1.2 Igoumenitsa's catchment area

The catchment area of Igoumenitsa case is the Region of Epirus, consisting of 4 Prefectures; Thesprotia, Ioannina, Arta and Preveza.

Figure 5: Igoumenitsa's catchment area in NUTS3

Table 1: Igoumenitsa's catchment area data

Country	Name - NUTS3	Population	Per capita	Area (km2)	Inter-Connect hub/case	Catchment Area

			gross domestic product by Nuts II, III (€/year)			
Greece	Thesprotia	43.660	12.184	1.515	YES	
Greece	Arta	67.870	10.842	1.662		YES
Greece	Preveza	57.720	11.887	1.036		YES
Greece	Ioannina	167.400	11.441	4.990		YES

2.1.3 Igoumenitsa's catchment area main terminals

Main entrance for the city is its port. Further to the port that is located in close vicinity to the city (around 4km), tourist can arrive to Igoumenitsa using the Airports of Ioannina, Preveza and Corfu. The city is not served by railway.

Table 2: Igoumenitsa's catchment area main terminals

Igoumenitsa catchment area main terminals	Distance from Igoumenitsa city center
Port of Igoumenitsa	3,7km
Ioannina Airport (national)	84km
Interurban bus station, Igoumenitsa	1.9km
Airport of Preveza - Aktion International Airport (operated by fraport)	92km
Corfu Airport (national)	45km (ferry connection)

Following are the aggregated data on passenger traffic and vehicle traffic (in the case of port only) for each of the above terminals.

- Port of Igoumenitsa foreign passenger and vehicle traffic

According to the official statistics maintained by the Port Authority of Igoumenitsa, passenger and vehicle flows since 2006 to 2018, are presented in the following figures (see APPENDIX I for primary data).

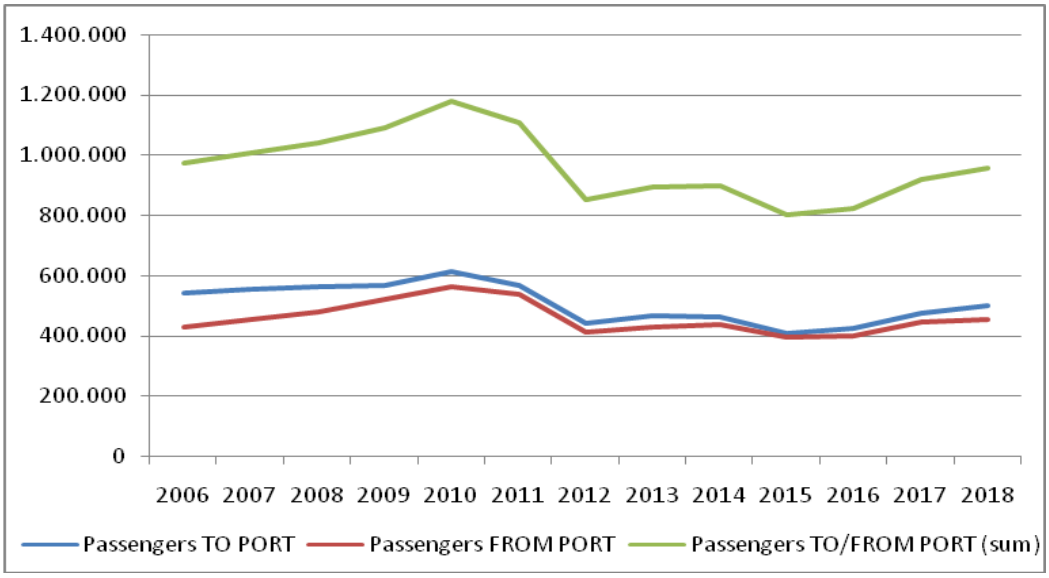


Figure 6: Port of Igoumenitsa foreign passenger traffic (2006-2018)

Foreign passenger traffic (total arrivals and departures) via Igoumenitsa Port experienced an upward trend from 2006 to 2010, reaching 1,200,000 passengers in 2010. This upward trend was followed by a significant decline over the next two years - in 2012 passenger traffic just exceeded 800,000 passengers. Since then, the movement of foreign passengers through the port ranges from 800,000 to just under 1 million passengers, but have so far failed to overcome it. A similar trend is observed in car traffic (see Figure 3) and motorbike traffic (see Figure 4).

In the case of foreign motorbike traffic, the only difference is that since 2012 motorbike traffic constantly have been increasing, reaching at 2018 the peak value of 2010.

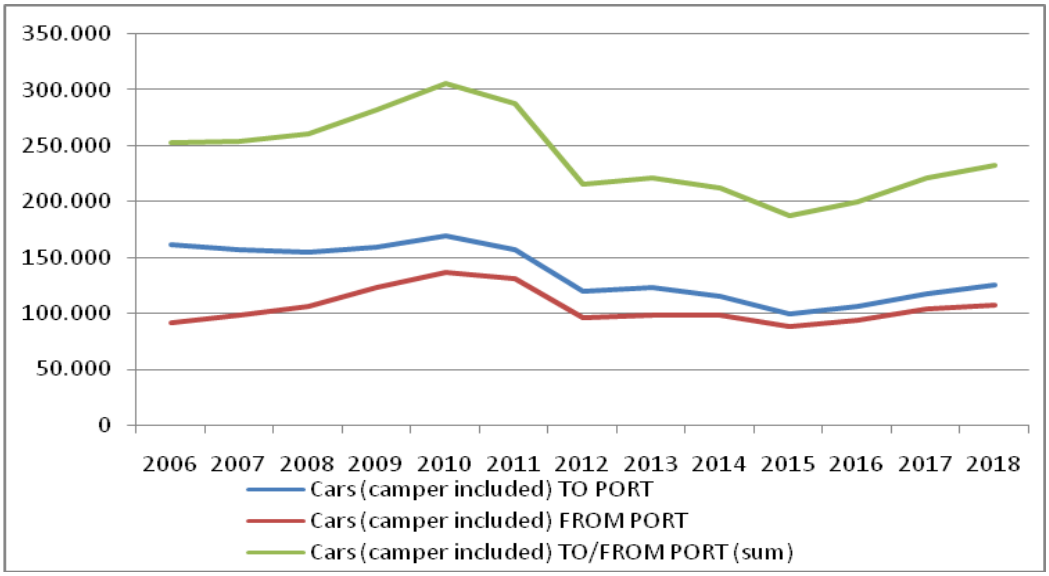


Figure 7: Port of Igoumenitsa foreign car traffic (2006-2018)

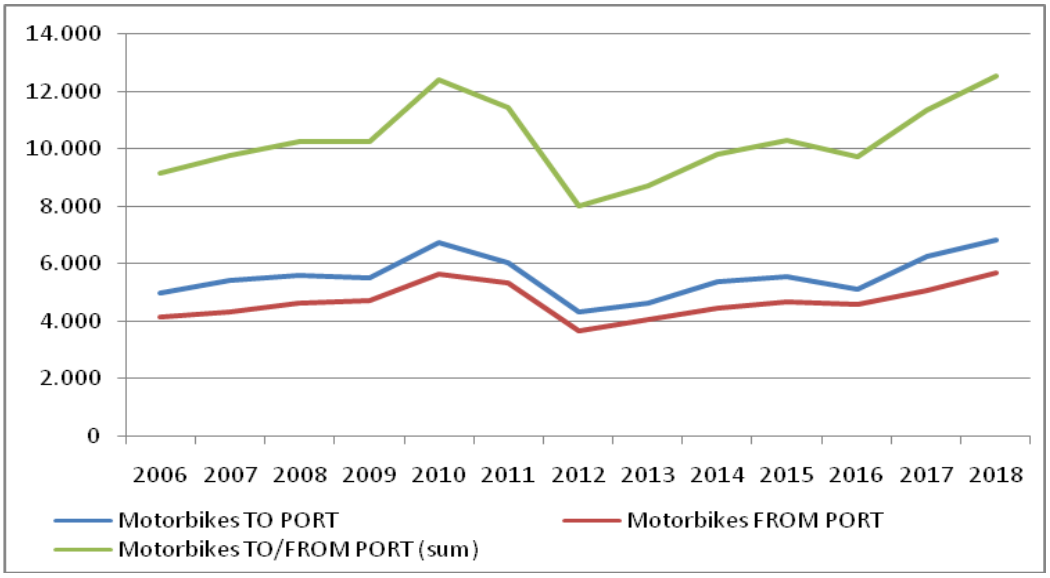


Figure 8: Port of Igoumenitsa foreign motorbike traffic (2006-2018)

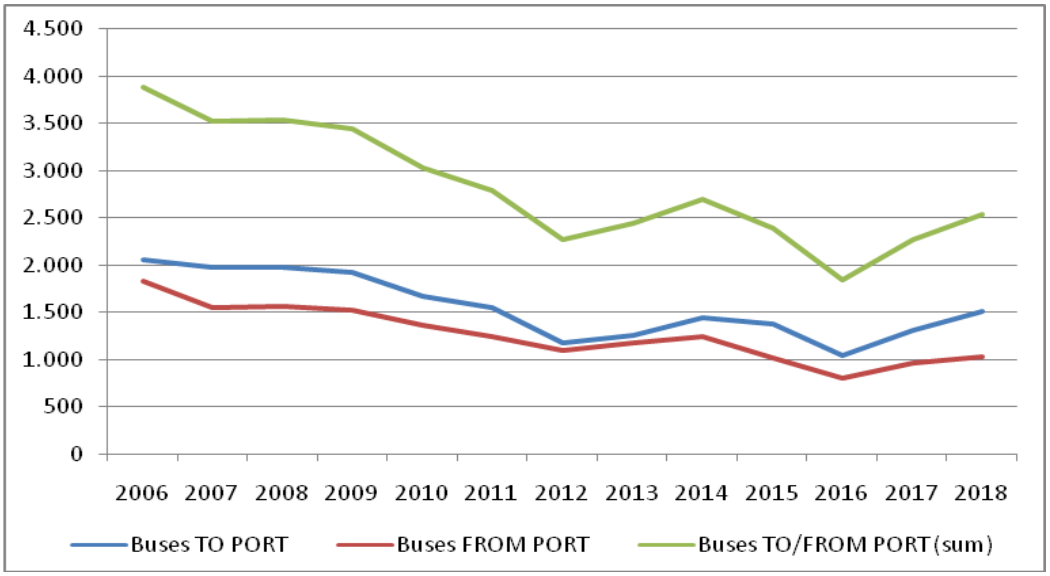


Figure 9: Port of Igoumenitsa foreign bus traffic (2006-2018)

The trend of bus traffic through the port of Igoumenitsa over the same time period (2006 - 2018) is shown different (see Figure 5). From 2006 to 2012, bus traffic is steadily decreasing - the volume in 2006 was about twice that of 2012. From 2012 to 2018 bus traffic ranges from about 2,000 to 2,500 buses with relative fluctuations.

- Ioannina Airport (national) foreign passenger traffic

According to the official statistics maintained by the Civil Aviation Authority, Ioannina Airport passenger traffic since 2006 to 2018 is presented in the following figure.

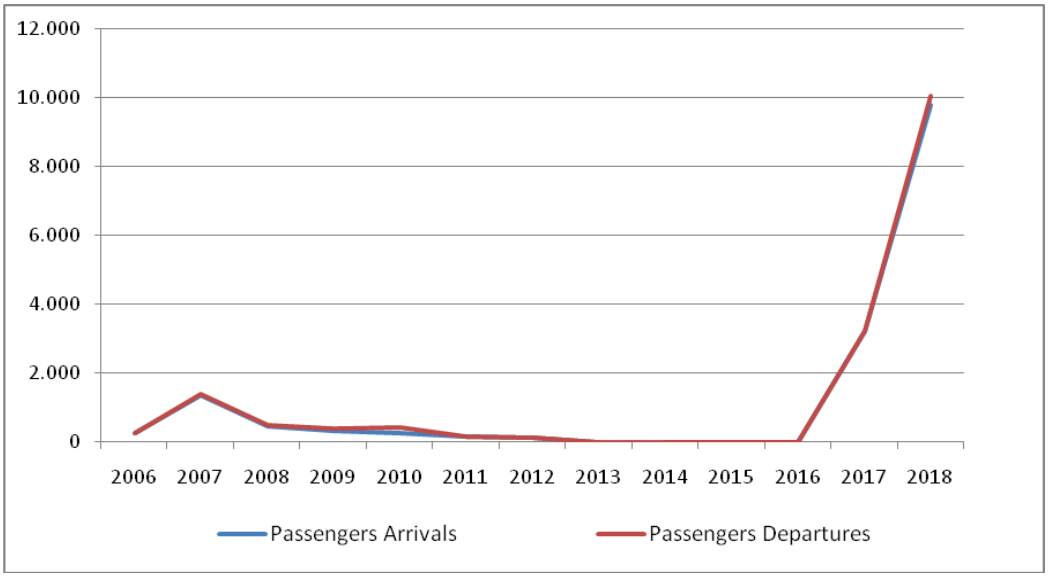


Figure 10: Ioannina Airport foreign passenger traffic (2006-2018)

Impressive is the rapid increase of foreign passengers' traffic (arrivals and departures) in the last 2 years, 2016 - 2018. In the past decade (2006 - 2016), both arrivals and departures have been at very low levels. It is worth noting that foreign passenger arrivals are zero in 2013 - 2015, while departures in the same period are at extremely low levels (less than 10 per year).

- Interurban public transport system characteristics

The following table lists the bus lines of the Intercity Bus of Thesprotia/ Igoumenitsa Company, the daily (from Monday to Friday) number of routes operated and the daily passenger traffic for a non-peak month (October) and for the peak month (August).

Table 3: Intercity Bus lines of Thesprotia/ Igoumenitsa

BUS LINES	TYPICAL DAILY NUMBER OF ROUTES (from Igoumenitsa)	DAILY PASSENGER TRAFFIC (non-peak month)	DAILY PASSENGER TRAFFIC (peak month)
Igoumenitsa's links to areas within the Regional Unit of Thesprotia			
Igoumenitsa – Kastri – Ag. Vlasios	8	120	150
Igoumenitsa - Kokkinia	2	20	26
Igoumenitsa - Drepano	10	0	600
Igoumenitsa - Syvota - Perdika	3	32	37
Igoumenitsa - Skorpiona - Polyneri	2	6	8
Igoumenitsa - Mesovouni	2	5	8
Igoumenitsa - Paramythia	3	53	63
Igoumenitsa - Filiates	8	73	77
Igoumenitsa's links to areas outside the Regional Unit of Thesprotia			
Igoumenitsa - Parga	1	18	20
Parga - Igoumenitsa (through the Egnatia Motorway)	1	18	20

BUS LINES	TYPICAL DAILY NUMBER OF ROUTES (from Igoumenitsa)	DAILY PASSENGER TRAFFIC (non-peak month)	DAILY PASSENGER TRAFFIC (peak month)
Igoumenitsa - Patra	1 per week	n/a	n/a
Igoumenitsa - Ionnina	6	n/a	n/a
Igoumenitsa - Thessaloniki	2	n/a	n/a
Igoumenitsa - Mavromati (connection with Albania)	4	25	35
Igoumenitsa - Leykada	1	5	24
Igoumenitsa - Athens	2	23	48

The lines that serve the connection of the city of Igoumenitsa, and therefore its port, with the nearest and most remote areas within the borders of the Regional Unit of Thesprotia, show relatively low frequencies and corresponding levels of passenger traffic. Due to the lack of urban public transport in the city, these lines partly cover the needs of urban commuters, but obviously not efficiently due to the very low routing frequencies. This is also the reason, why 60% of trips to/ from the wider area of Igoumenitsa are carried out by private car - driver or passenger (see section 2.6 below).

There are also very low daily passenger levels and on the lines connecting the city, and therefore its port, with areas outside the Regional Unit of Thesprotia (at least for lines for which data is available), with very low daily routing frequencies respectively, due to the low demand for passenger trips.

It is clear from the above that due to reduced demand, the frequency of routes is limited, so ways to increase demand should be sought either by providing improved services and on the basis of transnational connections - attracting tourists - or by creating new services which will can be adapted to demand to ensure the financial viability of the system.

- Aktion Airport (international) foreign passenger traffic

According to the official statistics maintained by the Civil Aviation Authority, Aktion Airport passenger traffic since 2006 to 2018 is presented in the following figure.

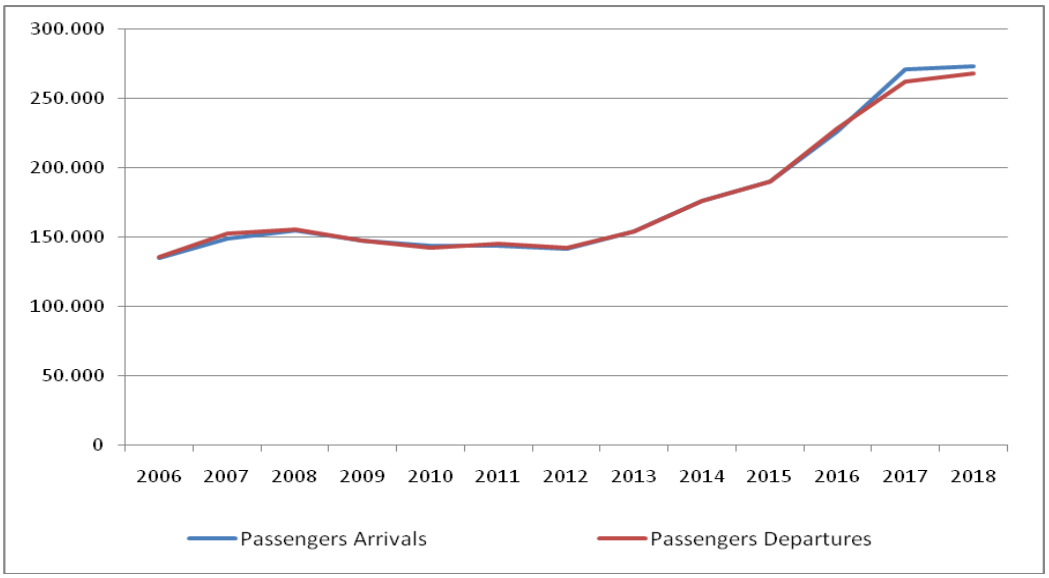


Figure 11: Aktion Airport foreign passenger traffic (2006-2018)

Through this particular airport in the wider Igoumenitsa area, foreign passenger traffic is recorded at a higher level than Ioannina Airport. During the period from 2006 to 2012, both arrivals and departures were around 150,000 passengers, and since then there has been an upward trend, reaching over 250,000 in 2017 and 2018.

- Corfu Airport (national) foreign passenger traffic

According to the official statistics maintained by the Civil Aviation Authority, Corfu Airport passenger traffic since 2006 to 2018 is presented in the following figure.

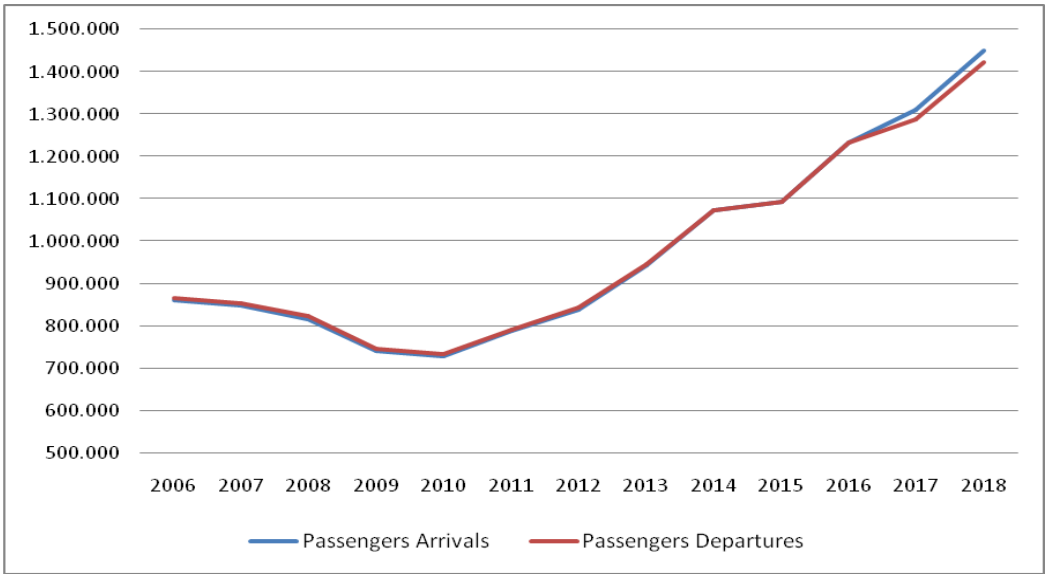


Figure 12: Corfu Airport foreign passenger traffic (2006-2018)

Corfu Airport is clearly the main entrance / exit gate for tourist arrivals by plane to the wider Igoumenitsa area (with main destination probably Corfu). Between 2006 and 2018, the minimum number of foreign passengers arriving and / or departing is approximately 700,000 passengers (in 2010), while the maximum number of passengers is recorded in 2018, approximately 1,400,000. Important is the continuous and rapid upward trend observed from 2010 to 2018.

2.1.4 Igoumenitsa's regional and local transport data

Regarding transport system operation of the city, the following facts built the Mobility Data Profile of Igoumenitsa;

- 3.482 private cars - 377 private cars/1.000 residents.
- 85% of households owns at least one private car
- 1% of households own as basic vehicle the bicycle
- 11% of households does not own a vehicle
- 60% of trips are carried out by private car (driver or passenger)
- 67% of trips are made for work purposes
- 62% of car trips are serving just one person (the driver/no other passengers in the vehicle)
- 8 min (18,8%) average car trip duration
- travel time required from parking space to final destination ≤ 1 minute (56,3%)
- 26% walking (modal) share (distance < 100 m)

- 3% cycling (modal) share

Main problems as derived from the Sustainable Urban Mobility Plan of the city are related to high use of car, inexistence of traffic calmed areas and low investments on bicycle and walking experience upgrade.

2.2The case of Bologna and Region Emilia Romagna, IT

2.2.1 Bologna in a nutshell

The Emilia-Romagna Region (RER) is located in the northern part of Italy and has 4.3 million inhabitants. The regional area constitutes of nine provinces and co-operates on several levels in the framework of the LPT and private mobility governance.

Bologna is the capital city of Emilia-Romagna, in the Po Valley of Northern Italy. The city lies between the Po River and the Apennine Mountains. It is home to the oldest university in the world, the University of Bologna, founded in 1088. The city has a population of around 375,000 inhabitants, extending to 1 million over the greater Bologna area.

Bologna is the main rail and highway junction in Italy and has a fast-growing, international Airport. Bologna's future plans include large investments over the next several years to expand the airport and to build a new train station with high speed tracks, tram lines that will run partially underground, a suburban railway network and an elevated monorail connecting the train station to the airport.

The Municipal Town Council approved the new Urban Transport Master Plan (PGTU) in 2007. The plan addresses the main transport issues (pollution, accidents, congestion) affecting the daily life of citizens. The overriding goal of the PGTU is to improve quality of life, through sustainable mobility and improved accessibility. Measures focus on increasing public transport and cycle lanes, while safeguarding the most valuable environmental and architectural zones.

2.2.2 Bologna’s catchment area (c.a.)

The hub of Bologna is characterized by the simultaneous presence of attractors being very heterogeneous in terms of function (big concentration of private-public services/activities, presence of the University, the international airport, the high speed railway, the International fair etc.). Therefore, transport flows are varying within the respective catchment areas. Given these general considerations, the present analysis is based on a catchment area where the daily working flows from/to Bologna are still relevant.

The catchment area corresponds to a big part of the territory of the Emilia Romagna Region.

Figure 13: Bologna's catchment area in NUTS3

Table 4: Bologna's catchment area data

Country	Name - NUTS3	Population	GDP (€/year)	Area (km2)	VoT - Value of Time(€/h)	Inter-Connect hub/case	Catchment Area
Italy	Bologna	976.243		3702.32	15€/h	YES	YES
Italy	Ravenna	384.761		1859.44	15€/h	YES	YES
Italy	Forlì-Cesena	390.738		2378.4	15€/h		YES
Italy	Rimini	321.769		864.88	15€/h	YES	YES

2.2.3 Bologna's c.a. main terminals

The wider catchment area of Bologna is served by all modes of transport through a highly dense network of terminals;

Table 5: Bologna's c.a. main terminals

Bologna's c.a. main terminals
Bologna airport
Rimini airport
Cruise Terminal Ravenna

Bologna train station
Bologna San Vitale train station
San Lazzaro di Savena train station
Ozzano dell'Emilia train station
Varignana train station
Castel San Pietro train station
Imola train station
Castel Bolognese train station
Solarolo train station
Lugo train station
Bagnacavallo train station
Russi train station
Godo train station
Ravenna train station
Classe train station
Lido Di Classe/Lido di Savio train station
Cervia/Milano Marittima train station
Cesenatico train station
Gatteo train station
Bellaria train station
Igea Marina train station
Rimini Torre Pedrera train station
Rimini Viserba train station
Rimini train station

2.2.4 Bologna's regional and local transport data

Basic facts for mobility in Bologna are depicted in the following tables and graphs;

Table 6: Bologna case, basic transport data

Main indicators	Buses	Railway
Railway Network Extension (in Km)		350 Regional 1050 State RFI 250 High Speed
Trip lengths *year	111.164.744 bus*km	17.649.630 Train * km
Passengers *year	280 million	41 million
Trainsets, Buses and Trolley fleets	3.155 bus – 121 trolley	150 trainsets
Traffic revenues *year	€ 142.000.000,00	€ 107 Million
Regional funds for public transport services *year	€ 243 million	€ 135 million
Operating stations/bus stops	30.871	260 stations
Regional funds for Regional railway maintainace *year		€ 15 Million

Bologna Airport carries 6.9 million pass / year

Table 7: Bologna case, regional demand data

Demand Data in Passengers on a regular day from Hub to Catchment Area						Demand Data in Passengers regular day from Catchment Area To Hub					
From	To	Air	Car	Rail	Bus	From		Air	Car	Rail	Bus
Bologna	Ravenna	/	107	57	5	Ravenna	Bologna	/	262	381	10
Bologna	Rimini	/	38	65	6	Rimini	Bologna	/	99	228	11
Bologna	Forlì	/	122	202	13	Forlì	Bologna	/	194	855	18
Bologna	Cesena	/	63	127	3	Cesena	Bologna	/	113	308	3

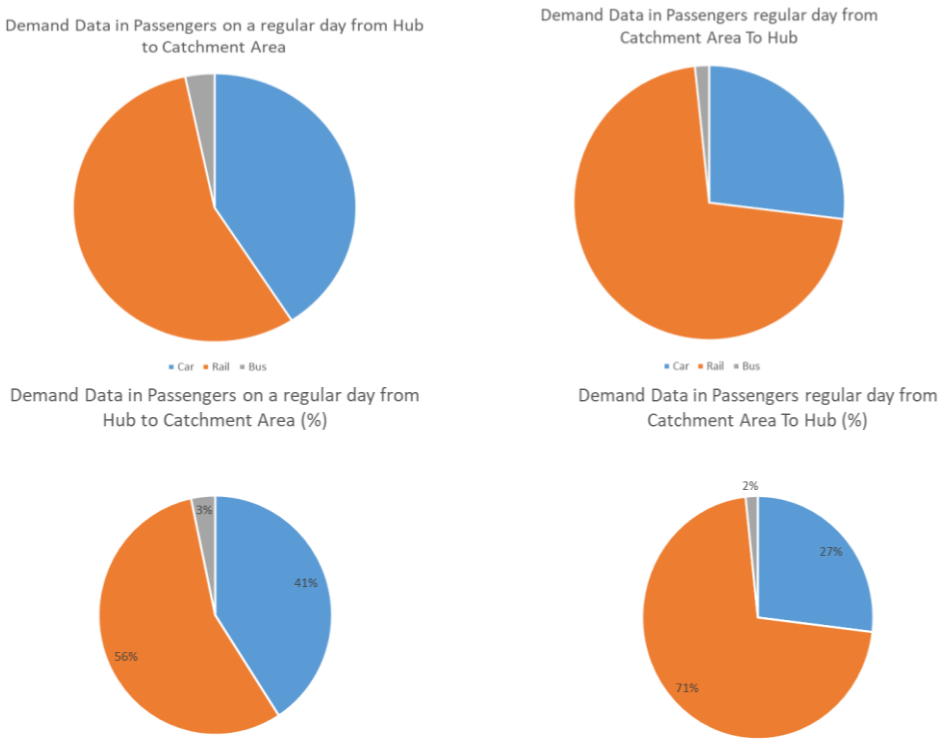


Figure 14: Bologna regional transport demand

2.3The case of Trieste and Friuli-Venezia Giulia, IT

2.3.1 Trieste in a nutshell

Trieste is a city and a seaport in northeastern Italy. It is situated towards the end of a narrow strip of Italian territory lying between the Adriatic Sea and Slovenia, which lies almost immediately south and east of the city. It is also located near Croatia some further 30 kilometres (19 mi) south. Trieste is located at the head of the Gulf of Trieste and throughout history it has been influenced by its location at the crossroads of Latin, Slavic, and Germanic cultures. In 2009, it had a population of about

205,000 and it is the capital of the autonomous region Friuli-Venezia Giulia. The metropolitan population of Trieste is 410,000, with the city comprising about 240,000 inhabitants.

2.3.2 Trieste catchment area (c.a.)

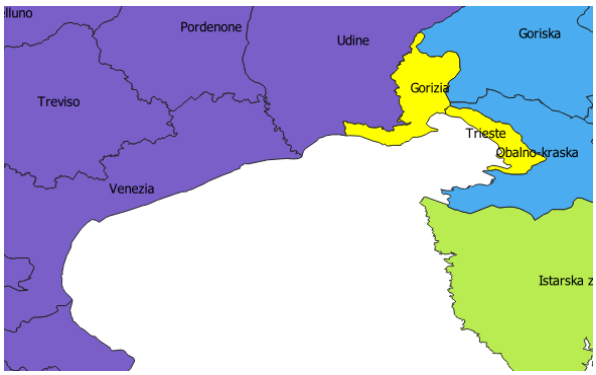


Figure 15: Trieste catchment area in NUTS3

Besides the geographical and demographical characteristics of the areas, POP (population), average GDP (Gross Domestic Product in € per year) indicators are reported in Table 7. The catchment area of Trieste hub is shaped in this form also due to the city's particular positioning near the national border - almost as an enclave.

Furthermore, with specific reference the railway network, Trieste station is the terminus of the line coming from Monfalcone (and connecting to other relevant centres of north-eastern Italy as Gorizia, Udine and Venice). The other railway lines crossing the province of Trieste have been used, apart from an experimental connection to Ljubljana that is operating from September 2018, only for freight traffic (mainly from/to Trieste port). Therefore, Trieste plays a relatively limited attractive role to its region, because of its geographical location. Consequently, only the NUTS 2 area corresponding to the province of Gorizia is included in the Trieste hub catchment area.

On the other hand, the long-term cross-border integration process is fostering a renewed role of transnational hub, to which Trieste is inherently vocated.

This strategic perspective is concretely pursued through different initiatives (supported by various EU cooperation projects) that are addressing connections been re-established/improved with the neighbouring countries (Slovenia and Austria). Furthermore, various interventions and initiatives being carried out at local level are characterised by a growing attention paid to sustainable tourism (e.g. tailored public transport services) also considered as a relevant driver for reaching higher demand level for cross-border services.

Table 8: Trieste catchment area data

Case Study	Country	Name - NUTS3	Population (2017)	GDP (€/year) (2015)	Area (km2)	Inter-Connect hub/case	c.a.
A (existing transnational maritime lines)	Italy	Trieste - ITH44	234,682.00	€ 7,886,000	212	YES	
	Italy	Gorizia - ITH43	139,673.00	€ 3,656,000	466		YES

B (Muggia-Koper maritime connection)	Italy	Trieste - ITH44	234,682.00	€ 7,886,000	212	YES	

2.3.3 Trieste c.a. main terminals

Trieste c.a. is served by all transport modes. In particular, table 8 is showing the main terminals located within the provinces making up the Trieste catchment area.

However, in trying to identifying a catchment area pivoting on the hub of Trieste, it is consider the particular geographic conformation of the related area as well as of the transport network. In this purpose it is to recall the particular positioning of Trieste with respect to the national borders and fact that its main station (Trieste Centrale) is a terminus station of the Italian railway network. Hence, depending on the specific connection transnational trips from/to other nodes are not necessarily pivoting on the Trieste node. In particular, this remark is to be taken into account with reference to Gorizia rail and bus stations.

Table 9: Trieste c.a. main terminals

Trieste c.a. main terminals
Trieste airport (Province of Gorizia) and related intermodal terminal
Central bus station of Trieste
Central bus station in Monfalcone
Central bus station in Gorizia
Railway central station of Trieste
Railway station in Monfalcone
Railway station in Gorizia
Railway station in Villa Opicina (with reference to the peculiar role in cross-border connectivity)
Terminal passeggeri Trieste (maritime lines)

2.3.4 Trieste regional and local transport data

Basic facts for mobility in Trieste wider area are depicted in the following tables and graphs;

Table 10: Trieste case, regional modal split

Regional modal split			
	private car	bus	train
	93.10%	4.70%	2.20%

In particular, Table 9 is providing regional level data (thus including also parts beyond Trieste catchment area) that are showing a strong of the private car mode. Focusing on the provinces that are actually belonging to the Trieste catchment area, it is to register a higher share of PT modes. In particular, the province of Trieste, while accounting for about 8% of the overall trips, it is associated to the 15% of the rail trips (which are mostly from/to Trieste Centrale station). In this purpose it is to consider that the same area.

	TPL automobilistico		Ferrovia	
Origine	Valori assoluti	%	Valori assoluti	%
Prov. Gorizia	7.091	11,3%	3.258	11,2%
Prov. Pordenone	15.882	25,2%	5.326	18,3%
Prov. Trieste	6.998	11,1%	4.537	15,6%
Prov. Udine	32.629	51,8%	9.845	33,8%
Veneto	419	0,7%	6.158	21,1%
Totali	63.019		29.124	

Figure 16: Trieste case, N. of daily transfers (winter - working day)

As a consequence of the described situation, Trieste Centrale (the city main station, which is also the only one open to passenger traffic within the urban area) is ranking as second at regional level, in terms of arrived passengers, after Udine station.

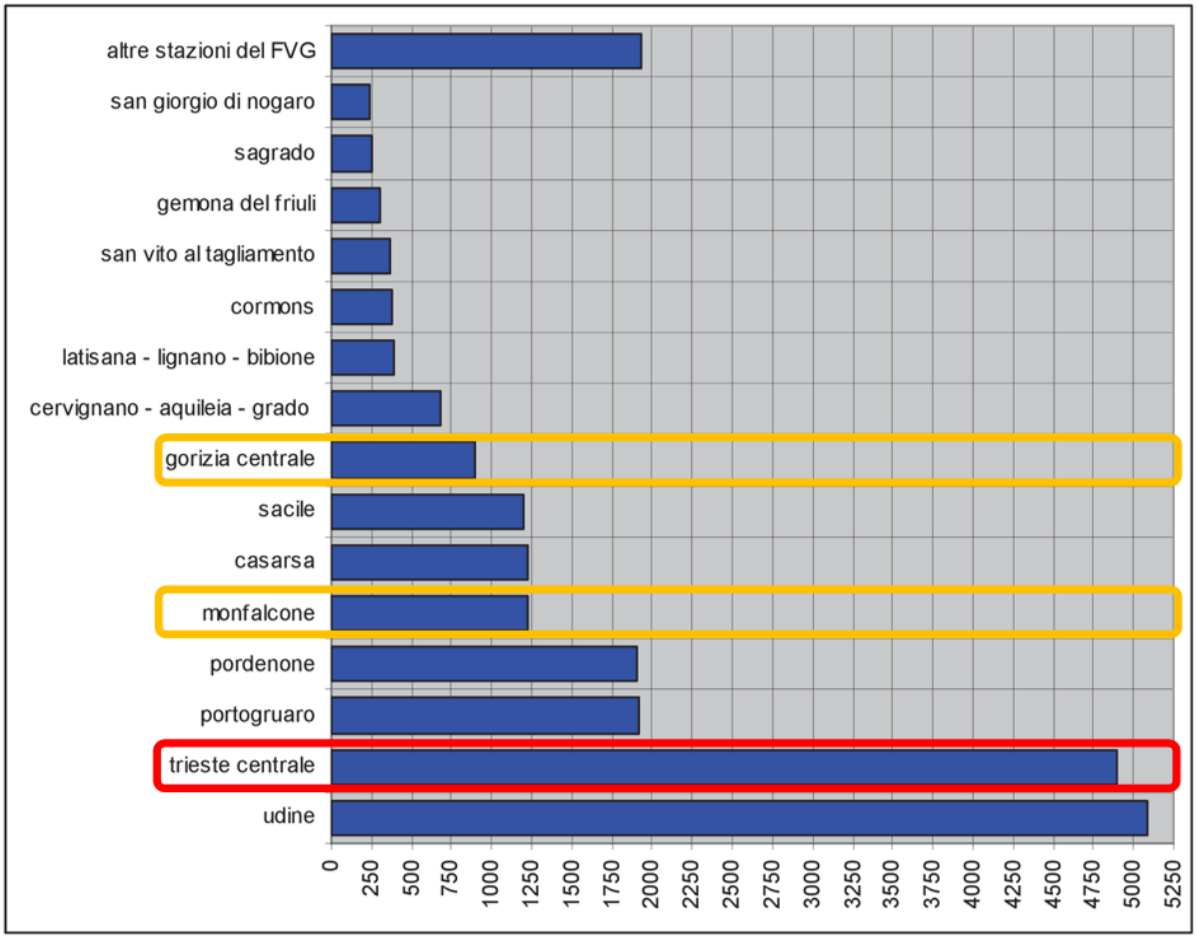


Figure 17: Trieste case, Friuli Venezia Giulia main rail stations ranking in terms of daily arriving passengers

The representation above is also highlighting the other two relevant stations in the Trieste catchment area: Monfalcone (almost 1250 daily passengers) and Gorizia central station (about 800 daily passengers).

The role and positioning of Trieste in the rail network is also testified by the passenger flows thematic map.

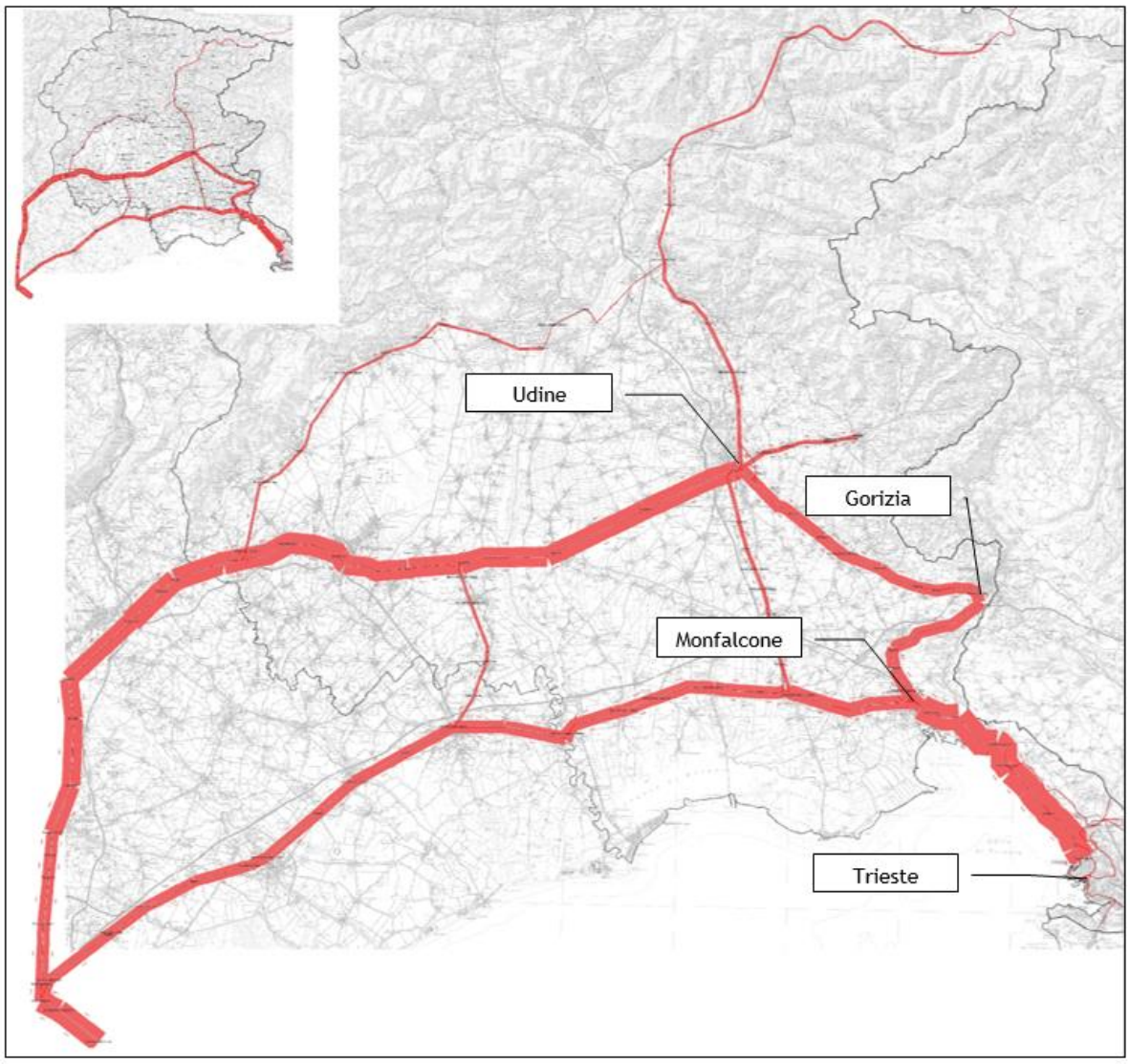


Figure 18: Passengers flow in the rail network (red bands width proportional to the number of daily passenger in an average working day)

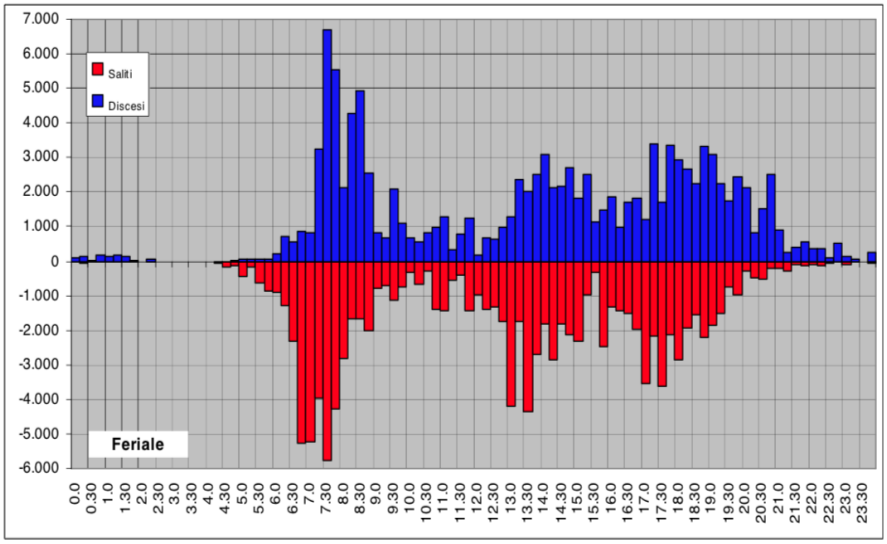


Figure 19: Trieste case, Passengers departed and arrived in a working day - railways FVG

Taking into account all modes of transport, the difference between Udine and Trieste become even greater. In particular, the 7.6% of overall regional trips is associated to Udine while the share related to Trieste is 6.9%. In fact Udine, even though its population amounts to about a half of Trieste one, since it is characterised by a more relations with the neighbouring municipalities.

With reference to daily passengers of bus services linking different municipalities, the following figure shows the Origin-Destination couples presenting higher values at regional level. The relations involving Trieste (red rectangles) or at least a municipality in the catchment area (orange rectangles) provide only a limited number of the reported cases (besides, not reaching the highest values).

Relazione bidirezionale	Passeggeri/giorno
Tolmezzo-Udine	1.180
Azzano Decimo-Pordenone	1.013
Gorizia-Monfalcone	988
Monfalcone-Trieste	922
Pordenone-Sacile	794
Tarcento-Udine	711
Aviano-Pordenone	703
Tricesimo-Udine	638
Fontanafredda-Pordenone	610
Fiume Veneto-Pordenone	598
Pasiano di Pordenone-Pordenone	591
San Daniele del Friuli-Udine	567
Brugnera-Pordenone	558
Maniago-Pordenone	556
Pordenone-Prata di Pordenone	555
Spilimbergo-Udine	554
Gorizia-Gradisca d'Isonzo	553
Gemona del Friuli-Udine	529
Gorizia-Grado	522
Fagagna-Udine	516
Codroipo-Udine	511

Relazione bidirezionale	Passeggeri/giorno
Pordenone-Zoppola	503
Grado-Udine	454
Pozzuolo del Friuli-Udine	439
Basiliano-Udine	419
Lignano Sabbiadoro-Udine	407
Mortegliano-Udine	406
Povoletto-Udine	403
Pordenone-San Vito al Tagliamento	400
Martignacco-Udine	382
Palmanova-Udine	373
Pavia di Udine-Udine	368
Cividale del Friuli-Udine	359
Cormons-Gorizia	352
Latisana-Lignano Sabbiadoro	334
Reana del Rojale-Udine	333
Pordenone-Spilimbergo	330
Pagnacco-Udine	319
Castions di Strada-Udine	315
Talmassons-Udine	314
Montereale Valcellina-Pordenone	306
Lestizza-Udine	305

Figure 20: Trieste case, Main routes (demand data) of bus service (Public transport)

2.4The case of Zagreb, HR

2.4.1 Zagreb in a nutshell

Zagreb is the capital and the largest city of Croatia. It is located in the northwest of the country, along the Sava river, at the southern slopes of the Medvednica mountain. Zagreb lies at an elevation of approximately 122 m (400 ft) above sea level. The estimated population of the city in 2018 is 809,932. The population of Zagreb urban agglomeration is slightly above 1.1 million inhabitants and it makes approximately a quarter of a total population of Croatia. Zagreb is the 4th largest city in Southeast Europe by population, but it is 2nd largest city in Southeast Europe by area.

2.4.2 Zagreb catchment area (c.a.)

The area considered would be primarily Croatia, with focus on railway lines ending in ports, and ports of Rijeka, Zadar, Split and Dubrovnik/Ploče themselves. Wider area would cover regional metropolitan areas with traveling potential (Ljubljana, Sarajevo etc.), again, connected with railway lines with afore-mentioned Croatian ports.

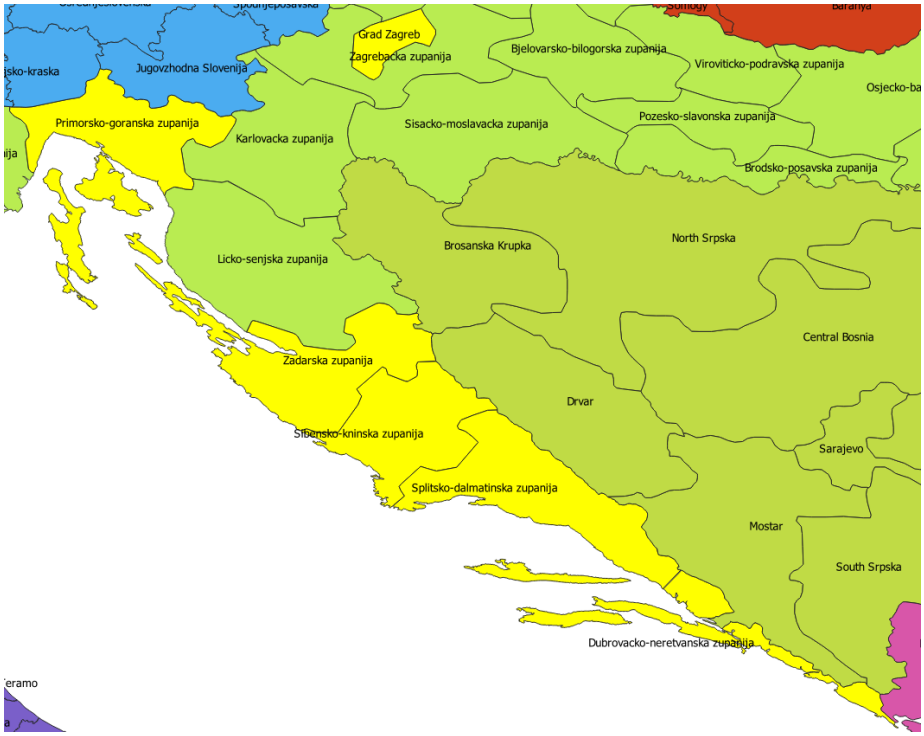


Figure 21: Zagreb catchment area (c.a.)

Table 11: Zagreb catchment area data

Country	Name - NUTS3	Population	GDP (€/year)	Area (km2)	Inter-Connect hub/case	Catchment Area
Croatia	HR041 Grad Zagreb	790,017	14,875,767	641	YES	
Croatia	HR031 Primorsko-goranska County	310,195	3,727,355	3,588		YES
Croatia	HR033 Zadarska County	170,017	1,466,277	3,646		YES
Croatia	HR034 Šibensko-kninska County	109,375	865,004	2,984		YES
Croatia	HR035 Splitsko-dalmatinska County	454,798	3,712,509	4,540		YES
Croatia	HR037 Dubrovačko-neretvanska County	122,568	1,311,028	1,781		YES

2.4.3 Zagreb c.a. main terminals

Zagreb is served by all transport modes, while rail connection to the coastal areas plays an important role.

Table 12: Zagreb c.a. main terminals

Zagreb c.a. main terminals
Zagreb Glavni kolodvor
Zadar railway station
Split railway station
Port of Split
Port of Zadar

Port of Dubrovnik

2.4.4 Zagreb regional and local transport data

Available data for regional connectivity of Zagreb to the coastal areas (and vice versa) exist for rail;

Table 13:Zagreb case, Zagreb to coastal areas rail demand data (HZPP data,2017)

From	To	Rail	From		Rail
Zagreb	Rijeka	7430	Rijeka	Zagreb	6650
Zagreb	Zadar	113	Zadar	Zagreb	15
Zagreb	Šibenik	714	Šibenik	Zagreb	482
Zagreb	Split	40349	Split	Zagreb	36045
Zagreb	Dubrovnik	-	Dubrovnik	Zagreb	-

2.5The case of Ljubljana, SI

2.5.1 Ljubljana in a nutshell

Despite the fact that Ljubljana urban region (LUR) covers only 12% (2.555 m2) of entire area of Slovenia, it is the biggest region in Slovenia in terms of population (547.893 of inhabitants, 26 % of whole Slovenia) and its number are increasing every year. In comparison to GDP of other Slovenian regions, GDP per capital in LUR is the highest since LUR is generating around 37% of the national GDP. Resulting in its importance, 77.000 people come to work in Ljubljana urban region every day from other regions, most of them are from Southeast Slovenia (SE of LUR) and Gorenjska (NW of LUR) region. If we also include students, the number of daily commuters that work in other municipality within the region is 142.500. Taking into account the modal split, which is in favour of private cars, we can estimate that around 122.000 cars are entering Ljubljana urban region every day. Data from various sources indicate that catchment area of Ljubljana includes regions from which most of the commuters travel daily to Ljubljana urban area. It consists of six (6) regions, namely Savinjska, Zasavska, Spodnjeposavska, Gorenjska, Notranjsko-kraska and Jugovzhodna Slovenija.

Main document for definition of transport measures in Slovenia is Resolution on the National Program for the Development of Transport in the Republic of Slovenia until 2030 (ReNPRP30) which was adopted in November 2016 from National Assembly of the Republic of Slovenia. Document provides a clear picture on a defined vision of a transport policy which is to ensure sustainable mobility. Besides other topics, document also aims at measures to improve traffic safety, reducing environmental burdens, improving the accessibility of passengers to and within the main urban agglomerations and improving the organizational and operational structure of the transport system in order to ensure its efficiency and sustainability. Measures that are connecting with Inter-Connect implementations in Slovenia to improve PT services are:

- U.4: Connection of Ljubljana with the Airport: Jože Pučnik Airport Ljubljana does not have the proper public passenger transport connections to the capital city of Ljubljana. Proper bus with the connections must be introduced (direct connections, not through surrounding areas, e.g. a direct connection between the airport and Ljubljana), and/or combined vehicles on demand or a proper railway connection provided. Measure must be taken into account when siting and designing new infrastructure.
- U.14: Development of Stations: the development of stations will focus mainly on improving accessibility for passengers, especially persons with reduced mobility, through which passenger safety will be ensured, along with the introduction of information systems and systems for public communication. Special attention must be paid to the arrangement of the currently inadequate Ljubljana passenger station.

Additionally, proposed actions within Inter-Connect project are, in the regional context, supported from Regional Development Programme of the Ljubljana Urban Region under programme 3.1. Sustainable mobility in Ljubljana urban region which includes the following measures:

- Measure 3.1.1: Promotion of the use of public transport: it is important to ensure integration of all public transport modes in the region through mutually coordinated transport timetables of the regional railway and the system of city buses as well a joint intermodal price and payment system.
- Measure 3.1.2: Updating and optimisation of the railway network: in order to increase the mobility of the population, boost energy efficiency and environmental acceptability of transport, it is urgent to revitalise the railway network that will allow Slovenia and Ljubljana as part of the network of core European cities to attain economic competitiveness.

2.5.2 Ljubljana catchment area (c.a.)

The Ljubljana Urban Region is the most prosperous Slovenian region, with high development potential and economic strength. The region is geographically situated in central Slovenia at a well-passable and strategic location, between the Alps and the Mediterranean, on the route from central Europe to the Danube region and Italy. With the entry of Slovenia into the EU and the Schengen area the international transport and transit position of Ljubljana and Slovenia has been further strengthened (Catch-MR project, 2012). Nevertheless the importance of the Ljubljana urban area remains mostly within the regions of Slovenia.

Besides the geographical and demographical characteristics of the areas, POP (population), average GDP (Gross Domestic Product in € per year) and VoT (Value of Time in € per hour) indicators are reported in the table below.

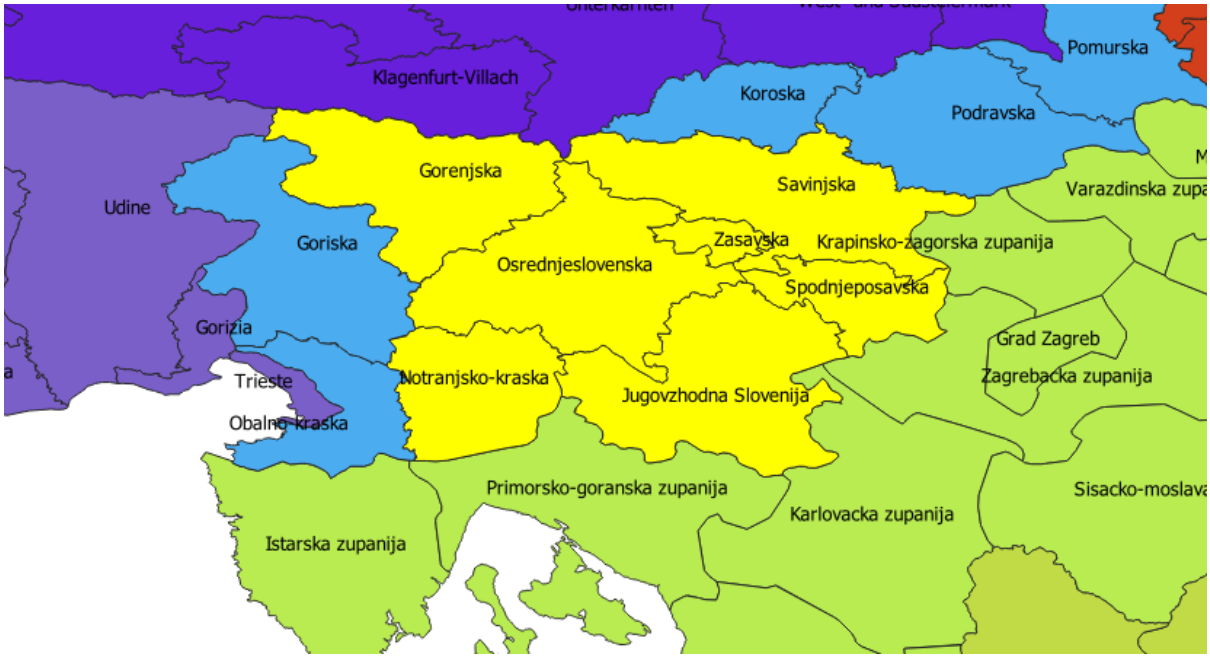


Figure 22: Ljubljana catchment area (c.a.)

Table 14: Ljubljana catchment area data. Source: Si-Stat data, 2018

	Population	GDP (€/year)	Area (km2)	VoT (€/h)	Hub	Catchment Area
Osrednjeslovenska	534.807	13.037	2.555	12	YES	
Jugovzhodna Slovenija	142.554	2.299	2.675	8		YES
Notranjsko-kraska	52.419	649	1.456	6.1		YES
Gorenjska	203.703	2.927	2.137	7.1		YES
Spodnjeposavska	70.086	1.035	885	7.3		YES
Savinjska	260.093	4.084	2.384	7.7		YES
Zasavska	44.106	523	264	5.8		YES

From the table above we can clearly see the importance of Osrednjeslovenska region be it in the terms of population, gross domestic production (with 13.037 EUR/year GDP of Osrednjeslovenska region is more than one third higher than in fallowing region in its catchment area) and value of time (estimated VoT for inhabitants of Ljubljana is 12 EUR/h, followed by 8 EUR/h in Jugovzhodna Slovenia and 7,7 in Savinjska region).

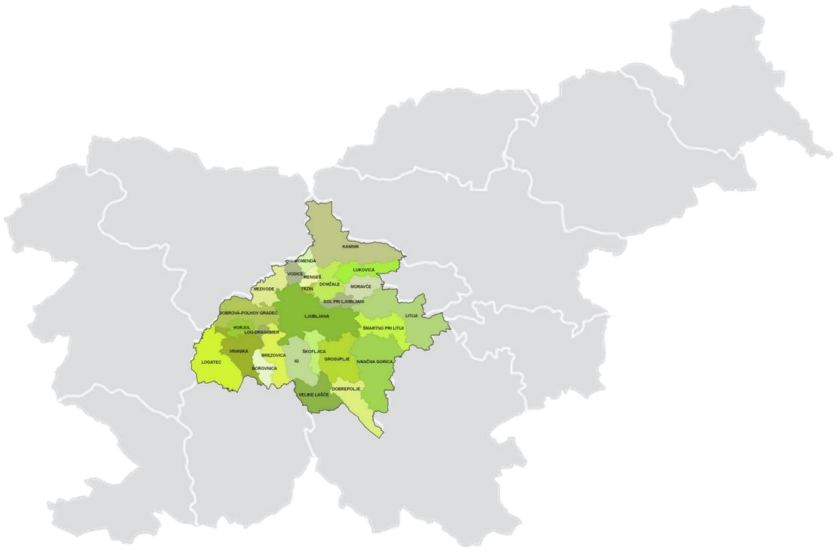


Figure 23: Ljubljana urban region with its municipalities

2.5.3 Ljubljana c.a. main terminals

Main transport terminals within case study of Slovenia in Inter-Connect project are the cruise terminal of Koper, Koper bus and train station, Ljubljana main passenger hub (bus and train) and main airport of Slovenia, Ljubljana Jože Pučnik Airport (Ljubljana Airport). All terminals serve both domestic and international purposes. Catchment area of case study covers whole Slovenia with special focus on Ljubljana urban region, coastal areas of Slovenia and Gorenjska (Upper Carniola) region where Ljubljana Airport is located.

Due to the project purposes we must also state the main touristic attractions within the study area. Main touristic attractions are concentrated at coastal areas of Slovenia (Koper, Izola and Piran), Postojna cave in Postojna, Škocjan caves near Divača and city centre of Ljubljana. Additionally, tourists are also attracted by lake Bled (located 35 km from Ljubljana Airport) and Bohinj (60 km from Airport). Within the case study mainly touristic potential of Ljubljana region from coastal area will be taken into observation. Since the main bottleneck and potential for improvement can be found in the further development of Slovenian railways' service, the main focus of analysis will be given to this section. As it can be seen from the image below railway infrastructure is, within the study area, available from maritime area (Port of Koper) to hinterland. Railway connects coastal areas of Slovenia with Divača, Sežana, Postojna and Ljubljana, but the services (timetables, running times during weekends, ect) should be largely improved. Among the strong current points as regards railway transport promotion in Slovenia are the following:

- Connection Ljubljana Trieste Venice, planned in begienning of 2019,
- Investments in rolling stock,
- Train stations renewal (7)/ building (3) in Ljubljana urban region,
- Reconstruction of train line Ljubljana - Kočevje.
- Integrated ticketing (since 2016; students & pupils only)
- New P&R sites within Ljubljana urban region and wider;

- Introduction of online purchase of train tickets (implemented already at end of November 2018)

Figure 24: Slovenian railway network Source: Slovenian railways, 2018

Since providing interconnections are the main elements of transport terminals main connections of analysed terminals in Ljubljana urban region catchment area are as follows:

- Ljubljana Airport: main Slovenian airport with connections to main European capitals;
- Ljubljana bus and railway hub: main railway and bus hub in Slovenia provides national (e.g. Maribor, Kranj, Postojna, Novo mesto) and transnational (e.g. Trieste, Villach, Graz, Budapest, Zagreb) connections;
- Koper bus and railway hub: as it is the final terminal of Ljubljana-Koper main transfers are only possible to the Koper city buses and local shuttles to Portorose or Piran;
- Koper maritime terminal: is main terminal for major cruise ferries that stay in Port of Koper for a day and use various transfers to travel around Slovenian coastal areas or to other touristic attractions in the region.

2.5.4 Ljubljana regional and local transport data

Despite the fact that within the Inter-Connect project the most important are the regions connecting maritime areas to Ljubljana urban region, the reliable data on modal split are only available on national and regional level. The latest available data (2014) for whole Slovenia indicates that modal split of passenger kilometres in Slovenia was 86,5 % for cars, 10,7 for regional busses and 2,7 % for rail. Observing only Ljubljana urban region, we can see that the same refers to its daily commuters. In year 2013 84,3 % of daily commuters to LUR travelled with a car and only 15,7 % used other, more sustainable means of transport (be it public transport or cycling). Despite the fact that the transport on

city scale is not relevant for the case of Inter-Connect transport in Slovenia, we are presenting some results from urban modal split in Slovenian cities.

From the figure below, we can see that the share of cars modal split is in general around 50 % in selected Slovenian cities, while share of public transport varies from 8 % in Nova Gorica to 29 % in Ljutomer. Share of cycling is the lowest since it is estimated to be around 8 % with maximum in Ljubljana where bike share in 2013 was around 11 % and it kept on rising. Modal share for walking grows from 9 % in Koper to 35 % in Ljubljana. As presented above the data is different for general modal split of the whole Slovenia. It should be once again emphasised, that data below is only on city scale and does not relate to modal split on regional scale.

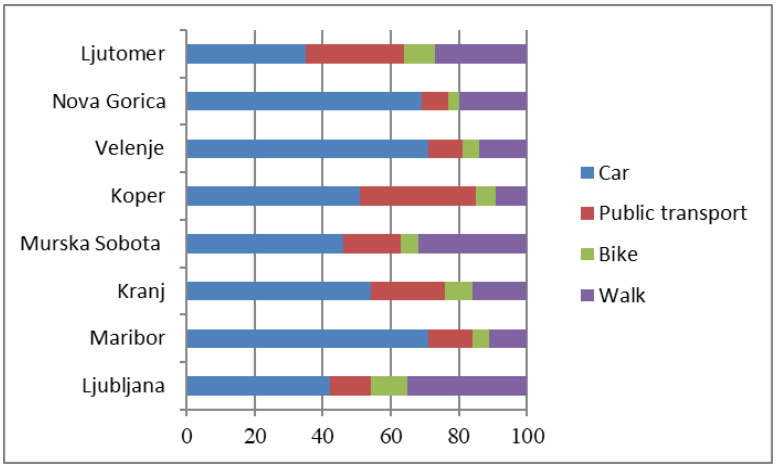


Figure 25: Modal split in selected Slovenian cities, Source: TEMS - The EPOMM Modal Split Tool, 2016; other available data from cities

Table below indicates the daily home-work related migrations among regions in Slovenia. Table indicates that main migration are done to Osrednjeslovenska (Ljubljana urban region) region. Majority of daily migrants arrives from Gorenjska region (more than 20.000 daily migrants, 10 % of all employed in Ljubljana urban region) and other regions are following with around 10.000 daily work related migrants. Considering the data on modal split, which is favour of cars with around 85 %, we can indicate that transport related issues are of huge importance to be solved in Ljubljana urban region. Data is for year 2017, which are also stated in the main policies for sustainable mobility in Slovenia.

Table 15: Daily home-work related migrations from selected regions in Slovenia, Source: Si-stat data portal, 2018

	Osrednjeslovenska (work)	Gorenjska (work)	Jugovzhodna Slovenija (work)	Podravska (work)	Savinjska (work)	Obalno-kraška (work)	Other regions (work)
Osrednjeslovenska (home)	208.237	7.637	2.763	2.276	2.005	1.649	4.941
Gorenjska (home)	20.709	62.224	252	582	463	426	1.174
Jugovzhodna Slovenija (home)	11.736	331	45.391	443	300	288	1.583
Savinjska (home)	10.743	478	268	3.801	84.773	340	2.711
Zasavska (home)	9.308	282	336	197	1.117	67	11.488
Podravska (home)	9.200	366	172	101.200	5.034	791	3.137
Primorsko-notranjska (home)	5.156	124	167	151	269	1.950	13.921
Obalno-kraška (home)	4.850	242	132	571	360	37.886	2.262
Goriška (home)	4.192	464	64	460	231	1.123	40.000
Posavska (home)	3.814	172	3.858	433	1.186	88	20.151
Pomurska (home)	2.990	96	42	3.509	412	83	30.911
Koroška (home)	1.507	55	35	1.204	1.990	316	21.918
	292.442	**72.471**	**53.480**	**114.827**	**98.140**	**45.007**	**154.197**

2.6The case of Bar, ME

2.6.1 Bar in a nutshell

Bar is a coastal town and seaport in southern Montenegro. It is the capital of the Bar Municipality and a center for tourism. According to the 2011 census, the city proper had 17,649 inhabitants, while the total population of Bar Municipality was 42,068.

Port of Bar has great potentials as a regional importance port;
•The quality of the port infrastructural links with its hinterland has a strong influence on the current port capacity utilization rate;
•Motorway Bar (Montenegro)– Belgrade (Serbia) is under construction;
•Future motorway Adriatic-Ionian is still in planning phase;

Bar has a ferry line to Bari, Italy which is operated by Montenegro Lines. In season, ferries also go to Ancona, Italy. Bar is well connected with inland Montenegro, as well as with the rest of the Montenegrin coast. The Sozina tunnel, completed in 2006, shortened the road connection with Podgorica to around 50 km (31 mi). Bar is connected to other coastal towns by the Adriatic motorway, which extends from Ulcinj to Herceg Novi, and on to Croatia. Bar is also the final station of the Belgrade - Bar railway, which connects Bar with Podgorica, northern Montenegro and Serbia. Podgorica Airport is about 40 km (25 mi) from Bar. There are regular flights to Belgrade, Budapest, Zürich, Frankfurt, Ljubljana, Paris, Rome and Vienna.

Figure 26: Main terminals in Bar

The Port of Bar is a point of departure of the railway line Bar-Belgrade. Railway network in Montenegro consists of three railroads and they are as follows:

1.Vrbnica-Bar (part of the railroad Belgrade-Bar on the territory of Montenegro);
2.Podgorica-Nikšić; and
3.Podgorica-Božaj (part of international railroad Podgorica-Shkoder (Albania) at the territory of Montenegro);

2.6.2 Bar catchment area (c.a.)

Figure 27: Bar catchment area (c.a.)

2.6.3 Bar c.a. main terminals

Table 16: Bar c.a. main terminals

Bar c.a. main terminals
Passenger terminal (Port of Bar)

Bar Bus station
Bar Railway station
Podgorica Airport
Podgorica railway station
Airport Tivat

2.6.4 Bar regional and local transport data

According to the MONSTAT (Montenegro Statistical office), transport related data for Bar are presented in the following table:

Table 17: Percentage of respondents who arrived with the following means of transport in Bar

Means of transport/ Year	With his own car	Bus	Airplane	Train	Ship	Other		Total Surveyed guests
1997	43.00	20.00	3.00	32.50	0.50	-	**1997**	1109
1998	43.54	22.00	1.90	33.20	0.18	0.18	**1998**	1100
1999	45.25	44.25	6.25	4.00	-	0.25	**1999**	400
2000	32.90	30.90	6.20	29.10	0.80	0.10	**2000**	1000
2003	39.00	32.60	7.40	22.25	0.60	0.15	**2003**	1200
2004	45.08	22.68	3.29	27.45	1.05	0.45	**2004**	1214
2005	43.42	26.95	2.16	26.78	0.69	0.00	**2005**	1225
2006	45.03	23.07	2.10	29.23	0.58	0.00	**2006**	1200
2007	48.03	21.42	3.79	25.38	1.39	0.00	**2007**	1220
2008	44.42	21.35	5.73	27.03	1.48	0.00	**2008**	1200
2009	47.44	25.74	4.18	21.47	1.17	0.00	**2009**	1240
2010	30.51	40.44	1.72	27.13	0.20	0.00	**2010**	1240
2011	32.70	38.24	3.00	26.05	0.00	0.00	**2011**	1295
2012	33.10	41.44	5.28	20.18	0.00	0.00	**2012**	1295
2013	52.57	17.02	2.01	25.34	3.06	0.00	**2013**	1000
2014	49.18	29.57	5.59	13.62	1.13	0.91	**2014**	552
2015	57.38	23.66	5.80	10.31	0.86	1.99	**2015**	1539
2016	63.84	13.66	1.80	19.16	1.54	0.00	**2016**	1480

The railway network

	Years		Index
	2016	2017	2017/2016
Length of railway network in km			
The actual length of railway network	250.5	250.5	*100.0*
From the actual length one-track	250.5	250.5	*100.0*
From the actual length width of track 1,435m	250.5	250.5	*100.0*
Length of track (1.1 + 1.2)	327.7	327.7	*100.0*
1.1 Open line and main through track	250.5	250.5	*100.0*
1.2 Stations and other tracks	77.2	77.2	*100.0*
Of the total length railway network electrified	223.8	223.8	*100.0*
Railway stations and other official places			
2. Total units (2.1 + 2.2 + 2.3)	47	47	*100.0*
2.1 Stations	12	12	*100.0*
2.2 Halt	25	25	*100.0*
2.3 Other official places	10	10	*100.0*

Figure 28: Railways in Montenegro

Road passenger transport

	Years		Index
	2016	2017	2017/2016
Inventory status means of transport			
Number of buses	358	369	*103.1*
Headquarters	13 202	13 382	*101.4*
Power, kw	63 775	64 945	*101.8*
Transport of passengers and passenger kilometers			
Passengers, thousands	7 544	7 575	*100.4*
Passenger kilometers, thousands	113 798	114 196	*100.3*
Mileage vehicle - total in thousands	18 223	17 944	*98.5*

Figure 29: Road transport (passengers) in Montenegro

Local road transport

	Year		Index
	2016	2017	2017/2016
Inventory status means of transport			
Number of buses	68	68	100.0
Headquarters	4 970	4 970	100.0
Power, kw	7 661	7 661	100.0
Lines			
Number of lines	24	24	100.0
Length of lines, km	601	601	100.0
Passengers and mileage			
Passengers, thousands	939	964	102.7
Mileage vehicles total in thousands	4 232	4 350	102.8

Figure 30: Road transport at local level, Montenegro

2.7The case of Durres, AL

2.7.1 Durres in a nutshell

Durrës, historically known as Epidamnos and Dyrrachium, is the second most populous city of the Republic of Albania. The city is the capital of the surrounding Durrës County, one of 12 constituent counties of the country. By air, it is 165 kilometres (103 miles) northwest of Sarandë, 31 kilometres (19 miles) west of Tirana, 83 kilometres (52 miles) south of Shkodër and 579 kilometres (360 miles) east of Rome. Located on the Adriatic Sea, it is the country's most ancient and economic and historic center.

Major roads and railways pass through the city of Durrës thank to its significant location and connect the northern part of the country to the south and the west with the east. Durrës is the starting point of Pan-European Corridor VIII, national roads SH2 and SH4, and serves as the main railway station of the Albanian Railways (HSH).

The Pan-European Corridor VIII is one of the Pan-European corridors. It runs between Durrës, at the Adriatic coast, and Varna, at the Bulgarian Black Sea coast. The National Road 2 (SH2) begins at the Port of Durrës at the Dajlani Overpass, bypasses the road to Tirana International Airport, and ends at the Kamza Overpass in the outskirts of Tirana where it meets National Road 1 (SH1) State Road heading to northern Albania. The Albania–Kosovo Highway is a four-lane highway constructed from 2006 to 2013 between Albania and Kosovo. As part of the South-East European Route 7, the highway will connect the Adriatic Sea ports of Durrës via Pristina, with the E75/Corridor X near Niš, Serbia. As most tourists come through Kosovo, the laying of the highway make it easier to travel to Durrës.

The very advantageous geographical location makes the port of Durrës to the greatest port of Albania, and among the largest in the Adriatic and Ionian Sea. The port is located in the south-western part of Durrës it is an artificial basin that is formed between two moles, with a west-northwesterly oriented entrance approximately wide as it passes between the ends of the moles. Port of Durrës is also a key location for transit networks and passenger ferry, giving Durrës a strategic position with respect to the Pan-European Corridor VIII. The port has experienced major upgrades in recent years culminating

with the opening of the new terminal in July 2012. In 2012, The Globe and Mail ranked Durrës at no. 1 among 8 exciting new cruise ports to explore. It is one of the largest passenger port on the Adriatic Sea that handle more than 1.5 million passengers per year.

The rail station of Durrës is connected to other cities in Albania, including Vlorë and the capital of Tirana. The Durrës–Tiranë railway was a 38-kilometre (24-mile) railway line which joined the two biggest cities in Albania: Durrës and Tiranë. The line connects to the Shkodër–Vorë railway halfway in Vorë, and to the Durrës-Vlorë railway in Durrës. In 2015, some rail stations and rolling stock along the Durrës-Tiranë line are being upgraded and latter colored red and white.

2.7.2 Durres catchment area (c.a.)

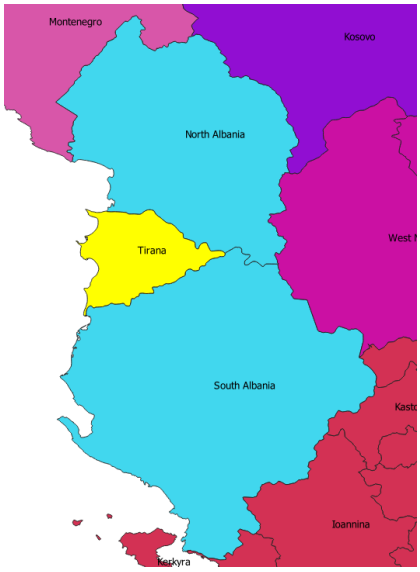


Figure 31: Durres catchment area (c.a.)

Table 18: Durres catchment area data

Region	POP	GDP	Area
Tirana	862100	1426.6	2367.505

2.7.3 Durres c.a. main terminals

Table 19: Durres catchment main terminals

Durres c.a. main terminals
Port of Durres
Tirana Airport

2.7.4 Durres regional and local transport data

ALBANIAN NATIONAL TRANSPORT PLAN (ANTP3)
PASSENGER TRAFFIC ANALYSIS, MODELLING AND FORECASTS

GENERAL METHODOLOGY
Based on the surveys undertaken in the main roads an OD (Origin Destination) trips matrix for passengers has been built. The process to obtain the demand matrix in passenger starts building the

origin destination matrix at each point surveyed. Once each matrix has been obtained and expanded, the final matrix is obtained by comparing the different matrices in order to homogenizing the relations observed, avoiding to overestimate of the number of trips in each relationship. Then, the 4 stages model is applied (generation and attraction, distribution, modal split and assignment) to obtain model results that were calibrated with the observed traffic.

TRANSPORT PERFORMANCE. BASE YEAR SCENARIO
The results obtained, and the comparison with previous results, are shown in the following table.

Table I - 4. Total number of passengers and general performances in the Base year 2018. Comparison with the previous versions of the Plan

	2010 ANTP 1	2014 ANTP 2	Base year 2018 ANTP 3
Passengers	210,070	247,918	307,426
Passengers x Km	21,735,767	23,100,000	32,855,095
Average trip length in km.	103	93.2	107

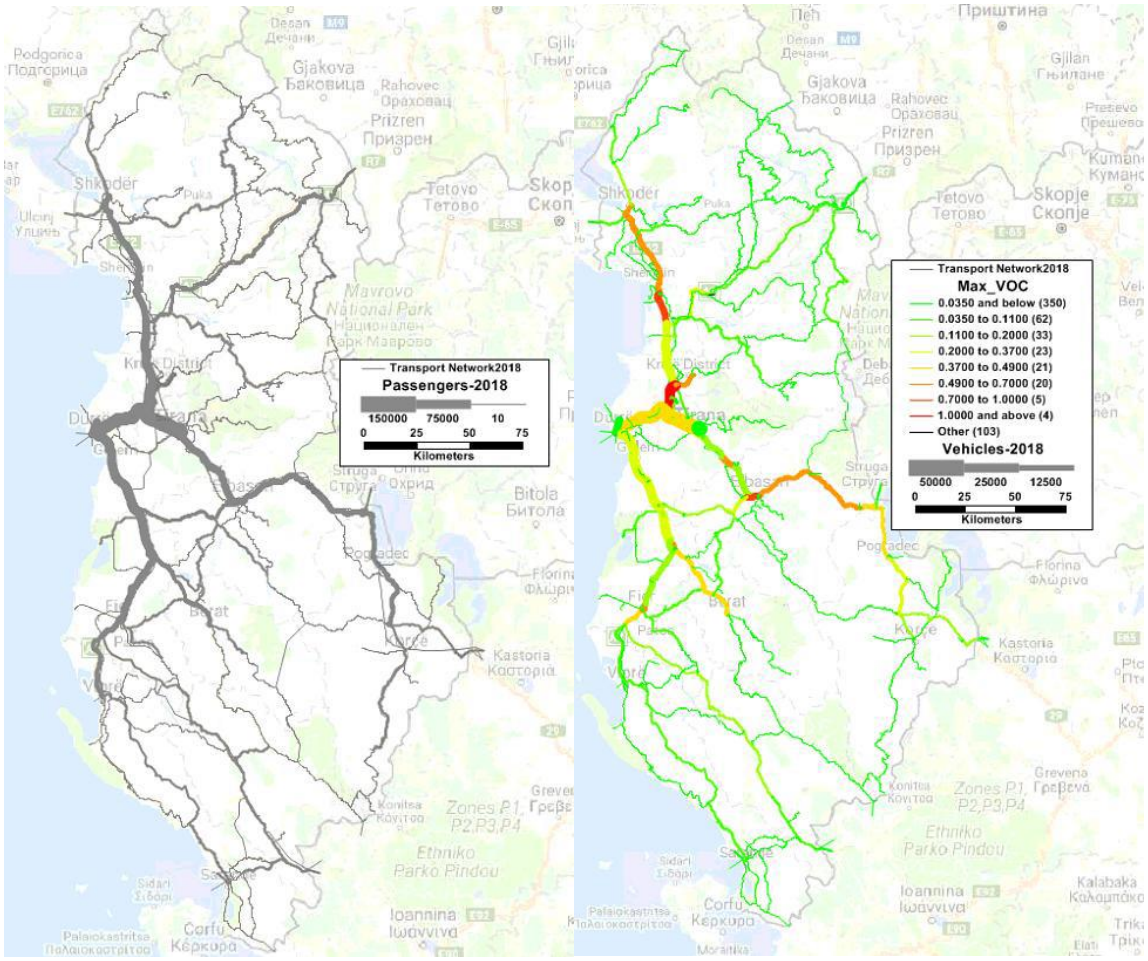
In ANTP3 the resulting growth of the number of passengers is set in 5.5% annually in the period 2014-2018 and 4.8% from 2010. At the same time the number of passengers x km had an annual growth of 9.2% in the period 2014-2018 due to a continuous increasing of the trip distance.

Regarding the number of passengers by type of vehicle, the increasing in passengers by car have experienced an annual increase of 9% in the period 2010-2018, and a continuous growth of 10.8% in number of cars in the Albanian roads. People travelling using minibuses have experienced a slight annual decrease of 1.8% in the same period. The decrease showed in the number of mini buses is close to the 14%, due to an increase in occupancy of this type of vehicle. In the other way, the number of passengers travelling by bus has increased 2% annually during 2010 to 2018 with a reduction in the number of vehicles of 3.5%, increasing the occupancy also. The following table shows a summary of the results obtained.

Table I - 5. Total number of passengers and number of vehicles by type in the Base year 2018. Comparison with the versions of the Plan

	2010 ANTP 1		Base year 2018 ANTP 3	
Type of vehicle	Number of vehicles	Number of passengers	Number of vehicles	Number of passengers
Passenger Car	39,862	95,669	90,837	190,843
Minibus	7,598	56,989	2,352	49,329
Bus	2,324	57,412	1,738	67,254
Total passengers	49,784	210,070	94,927	307,426

Figure I - 4. Total daily (passenger and vehicles) flow in the Base Year 2018.



It can be seen how the main problems occur in the Tirana-Durres zone, along with the northern segment of the Adriatic-Ionian Corridor and the southeastern connection with Greece and FYROM. All these bottlenecks are considered in the investment plan, with new constructions and rehabilitation of existing roads. Moreover, the enhancement of the bus and rail public services will add capacity to the road, aiming at creating an impact in the modal split of the Country.

TRANSPORT PERFORMANCE YEAR 2038

In the same way that in the base year, network performances have been estimated. The following table summarizes the main results for the base year and for the projected year 2038.

Table I - 6. Total number of passengers and general performances in the base year and the year 2038

	Base year 2018 ANTP 3	Year 2038 ANTP 3
Passengers	307,426	658.914
Passengers x Km	32,855,095	76.921.494
Average trip length in km.	107	116.7

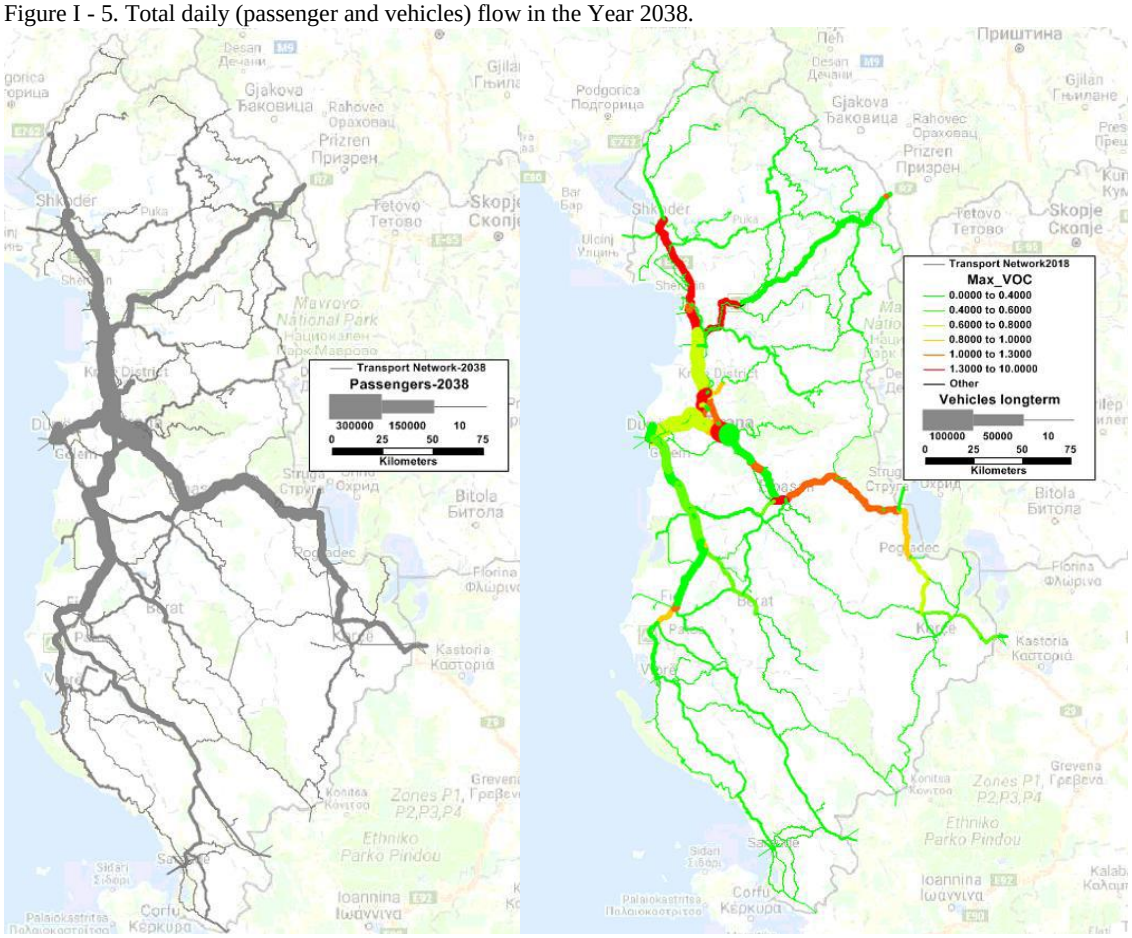
In this version of the Plan, the resulting growth of the number of passengers is set in 3.9% annually in the period 2018-2038. At the same time the number of passenger x Km presents an annual growth of 4.9% in the same period due to a continuous increase of the trip distance in 0.4%.

Regarding the number of passengers by type of vehicle, the expected increasing in passengers by car have an increase of 4.4% in the period 2018-2038, growth in mini buses and buses is set in 4.1% and 4.7% respectively. Projections for further years have been undertaken taking into account the final proposals of the present Plan considering the future network development.

Table I - 7. Total number of passengers and number of vehicles by type in the year 2038.

	Base year 2018 ANTP 3		Year 2038 ANTP 3	
Type of vehicle	Number of vehicles	Number of passengers	Number of vehicles	Number of passengers
Passenger Car	90,837	190,843	153,212	399,520
Mini bus	2,352	49,329	4,799	100,627
Bus	1,738	67,254	4,102	158,765
Total passengers	94,927	307,426	160,047	658.914

Figure I - 5. Total daily (passenger and vehicles) flow in the Year 2038.



2.8The case of Belgrade, SB

2.8.1 Belgrade in a nutshell

Belgrade, meaning "white city", is the capital and largest city of Serbia. It is located at the confluence of the Sava and Danube rivers, where the Pannonian Plain meets the Balkans. The urban area of the City of Belgrade has a population of 1.23 million, while nearly 1.7 million people live within its administrative limits.

Regarding touristic attraction, City of Belgrade itself is the main touristic attraction. Also, in the area of 150-200 km from the Belgrade there is a lot of historical, sport and Spa, countryside, ski tourism as well as mountains and national parks.

From the aspect of Adrion area, Belgrade is main hub for touristic movements from Serbia to sea-side. Highest number of Serbian tourists having summer vacation in Greece and Montenegro, while Croatia and Italy are after Black Sea destinations concerning summer vacations. On the other side as a one of leading trade partners, Italy, Slovenia and Croatia generates huge number of business travels, mostly from Belgrade.

On the other side, regarding the air transport, City of Belgrade is the central hub nationwide and even more (regional) regarding that Belgrade airport “Nikola Tesla” is the biggest airport in the region with near to 7 million passengers annually and widest offer of connections in the region.

2.8.2 Belgrade catchment area (c.a.)

Catchment area is defined on about 150 km from Belgrade, where most of passenger movement on local and transnational level is done. Counties and area itself are given by following picture:

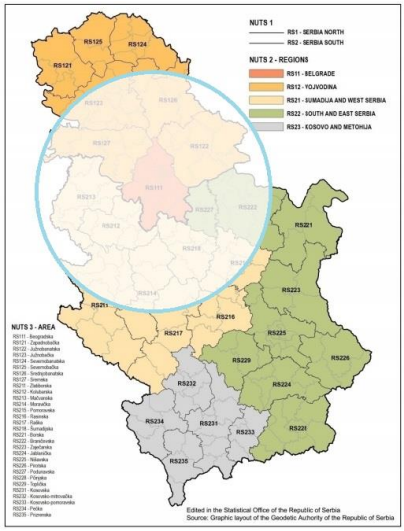


Figure 32: Belgrade catchment area (c.a.)

Table 20: Belgrade catchment area data

Country	Name - NUTS 3	Population	GVA (billion €/year)	estimated GDP share	estimated GDP (billion eur)	Area (km 2)	VoT - Value of Time(€/h)	Inter-Connect hub/case	Catchment Area
Serbia	Belgrade county-RS111	1.639.121	11.6	39.59%	14.05	3,227	n/a	YES	

Serbia	Južnobačka county - RS123	615,371	3.2	10.92%	3.88	4,016	n/a		YES
Serbia	Srednjobanatska county - RS126	221,253	0.63	2.15%	0.76	3,256	n/a		YES
Serbia	Sremska county - RS127	309,981	1.1	3.75%	1.33	3,486	n/a		YES
Serbia	Južnobanatska county - RS122	328,428	1.01	3.45%	1.22	4,245	n/a		YES
Serbia	Mačvanska county - RS213	339,644	0.76	2.59%	0.92	3,268	n/a		YES
Serbia	Kolubarska county - RS212	200.560	0.54	1.84%	0.65	2,474	n/a		YES
Serbia	Zlatiborska county - RS211	335,826	0.93	3.17%	1.13	6,140	n/a		YES
Serbia	Moravička county - RS214	230,748	0.74	2.53%	0.90	3,016	n/a		YES
Serbia	Šumadijska county - RS218	312,160	1.06	3.62%	1.28	2,387	n/a		YES
Serbia	Pomoravska county - RS215	312,160	0.56	1.91%	0.68	2,614	n/a		YES
Serbia	Podunavska county - RS227	226,589	0.35	1.19%	0.42	1,248	n/a		YES
Serbia	Braničevska county - RS222	253.492	0.59	2.01%	0.71	3,865	n/a		YES

2.8.1 Belgrade c.a. main terminals

Table 21: Belgrade c.a. main terminals

Inter-Connect case: Belgrade Main transport Terminals			
RAILWAY	AIRPORT	PORT	BUS
Belgrade new Central Railway Station "Prokop" (existing)	BEG	Port of Belgrade at Danube river	Belgrade new BUS Central station (under construction)
Railway station "New Belgrade" (existing) near to new bus station	…	…	Old Central Bus station

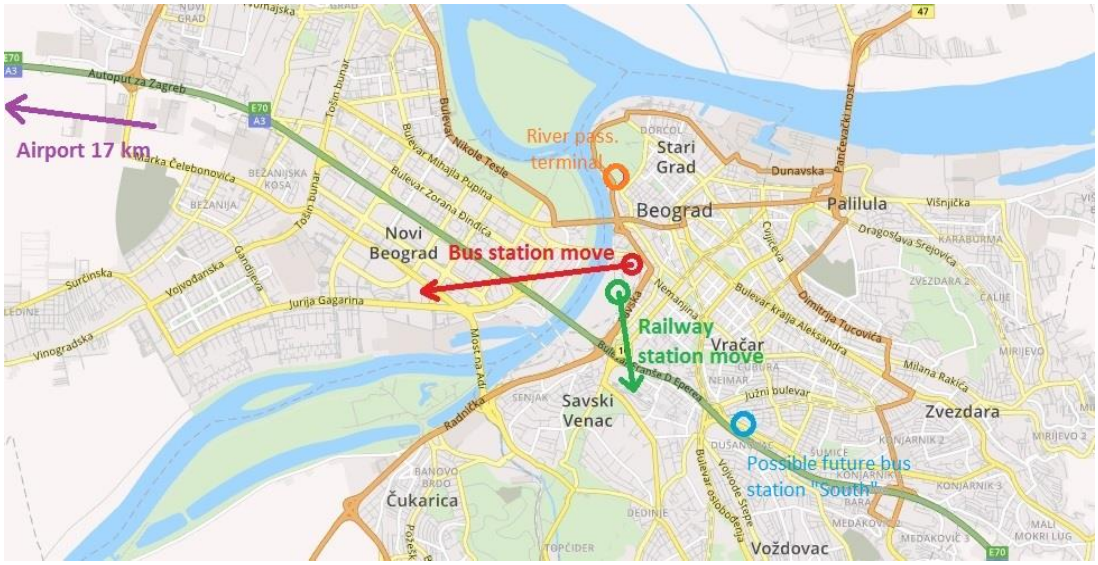


Figure 33: Belgrade terminals

Belgrade in numbers is given below:
Demographics & Socio-Economic data

- 1,639,121 residents (density 521 res. per km^2)
- 42.2 average age of residents
- 606,433 household with 2.7 average number of household members
- 722,108 persons who are economically active
- 593,021 employed persons

Transport network & Operations data

- car ownership is 314 per 1.000 people in 2016
- total number of daily person trips is 3,031,715
- average number of daily (weekday) trips per person is 1.94, with peak in the morning between 7 and 8 AM
- 64.5% of all trips are under 30 minutes, 15.8% of trips are less than 10 minutes, 9.5% trips take longer than one hour
- the main modes of transport are public transport (47.9%), private car (25.7%) and walking (23.8%) which represents 97.5% of all trips. Typical car occupancy is 1.35
- bicycle and motorcycle are nearly 1.3%

2.8.2 Belgrade regional and local transport data

Since there are no data such as O - D matrix at the level of the Republic of Serbia, it was necessary to search information about the availability of the relevant traffic demand, at least by one mode of transport.

On the basis of interviews with stakeholders, it was established that the most reliable data that can be used to obtain data on the transport of passengers is bus transport. All lines of intercity traffic in the selected area have been taken into account. A research was carried out on the number of bus departures from Belgrade to the rest of the catchment area and from these areas to Belgrade. Based on the data on the average number of bus passengers in interurban traffic and the average length of registered routes, the number of passengers, i.e. the indicators of performed transport work expressed in pkm were obtained. Data obtained this way and modal split analysis of the number of pkm have been used for calculation of the number of car passengers and the number of rail passengers. The

demand data described herein refers to passenger journeys by all means of transport from and to Belgrade and are shown in the following tables.

Table 22: Demand data in passengers per average day from hub to catchment area of Belgrade

Demand Data in Passengers per Year from Hub to Catchment Area					
From	To	Air	Car	Rail	Bus
Belgrade	Novi Sad	0	8.770	142	3.231
Belgrade	Zrenjanin	0	2.295	0	766
Belgrade	Sremska Mitrovica	0	1.469	18	455
Belgrade	Pančevo	0	9.075	170	2.944
Belgrade	Šabac	0	3.587	0	1.137
Belgrade	Valjevo	0	3.564	47	1.023
Belgrade	Užice	0	2.981	37	754
Belgrade	Čačak	0	2.518	0	712
Belgrade	Kragujevac	0	4.425	0	1.400
Belgrade	Jagodina	0	2.589	36	826
Belgrade	Smederevo	0	5.524	0	1.562
Belgrade	Požarevac	0	3.013	0	921

Table 23: Demand data in passengers per average day from catchment area to hub of Belgrade

Demand Data in Passengers per Year from Catchment Area To Hub					
From	To	Air	Car	Rail	Bus
Novi Sad	Belgrade	0	10.247	166	3.776
Zrenjanin	Belgrade	0	2.384	0	796
Sremska Mitrovica	Belgrade	0	2.493	30	772
Pančevo	Belgrade	0	10.219	192	3.315
Šabac	Belgrade	0	4.550	0	1.442
Valjevo	Belgrade	0	3.543	47	1.017
Užice	Belgrade	0	4.637	57	1.173
Čačak	Belgrade	0	4.464	0	1.263
Kragujevac	Belgrade	0	5.087	0	1.610
Jagodina	Belgrade	0	2.458	34	784
Smederevo	Belgrade	0	5.735	0	1.622
Požarevac	Belgrade	0	3.267	0	999

Data on bus transport were taken from publicly available sources as well as internal database on new ineter-city time tables (concerning that CCIS is authorized by the State to regulate inter-city bus market). The number of departures shown in Table 11 represent the average values for all departures in one day for certain County. The cost of transport is the one-way transport cost expressed in the middle exchange rate of the National Bank of Serbia (NBS). The travel time shown in the table represents the average travel time for all departures in one day.

Table 24 Regional supply in BUS transport

Supply Data from Hub to Catchment Area				
From	To	Bus		
		Cost (€)	Time (min)	Frequency (daily)
Belgrade	Novi Sad	6.06	87	90
Belgrade	Zrenjanin	5.39	85	19
Belgrade	Sremska Mitrovica	n/a	68	18
Belgrade	Pančevo	1.13	34	79
Belgrade	Šabac	5.14	86	34
Belgrade	Valjevo	6.86	110	24
Belgrade	Užice	11.12	208	28
Belgrade	Čačak	7.85	159	30
Belgrade	Kragujevac	5.94	129	38
Belgrade	Jagodina	7.61	113	19
Belgrade	Smederevo	n/a	74	39
Belgrade	Požarevac	6.70	76	24

**n/a - Not available*

The data for car transport are obtained from the website www.viamichelin.com. The specified web page has a function that calculates the distance and travel time between individual locations. The price of the transport includes the fuel prices and the cost of tolls taken from the website of Public company Roads of Serbia (National Road Managing Company).

Table 25 Regional supply in CAR transport

Supply Data from Hub to Catchment Area				
From	To	Car		
		Cost (€)	Time (min)	Distance (km)
Belgrade	Novi Sad	10.71	66	95
Belgrade	Zrenjanin	8	85	72
Belgrade	Sremska Mitrovica	9.1	55	77
Belgrade	Pančevo	2.16	28	18
Belgrade	Šabac	10.01	72	87
Belgrade	Valjevo	10.71	124	93
Belgrade	Užice	22.39	213	196
Belgrade	Čačak	16.57	151	139
Belgrade	Kragujevac	16.1	96	139
Belgrade	Jagodina	16.04	87	138
Belgrade	Smederevo	8.2	58	63
Belgrade	Požarevac	9.66	63	81

Railway data were taken from official web pages of only railway operator in Serbia www.srbvoz.rs. Number of departures, duration of travel and prices for all offered classes are taken in consideration. Table 14 shows the data on ticket prices for one direction in the first class.

Table 26 Regional supply in RAIL transport

Supply Data from Hub to Catchment Area				
From	To	Rail		
		Cost (€)	Time (min)	Frequency (daily)
Belgrade	Novi Sad	4.77	119	7
Belgrade	Zrenjanin	n/a	n/a	n/a
Belgrade	Sremska Mitrovica	4.69	93	2
Belgrade	Pančevo	0.90	29	4
Belgrade	Šabac	n/a	n/a	n/a
Belgrade	Valjevo	5.50	90	6
Belgrade	Užice	8.44	213	6
Belgrade	Čačak	n/a	n/a	n/a
Belgrade	Kragujevac	n/a	n/a	n/a
Belgrade	Jagodina	6.31	168	6
Belgrade	Smederevo	n/a	n/a	n/a
Belgrade	Požarevac	n/a	n/a	n/a

**n/a – Not available*

Collecting travel data requires extensive surveys at many different locations (border crossings, resorts and hotels, terminals and public transport nodes, which was partly done, but not in the sufficient volume to have 100% reliable data. In addition, the address of residence is something that belongs to a very sensitive issue and concerns personal data. For these reasons, the picture of the movement of passengers between ADRION countries is based on data on tourist movements. The Statistical Office of Serbia carries out reports of all facilities that provide accommodation services, or mediate in the provision of these services. Data sources are guest books which obligations are based on regulations in the area of movement and residence of foreigners and regulations in the area of residence of citizens. Data that are not covered can be tourists who use the services of accommodation offered by private individuals.

Data on departures of passengers conducted by the Statistical Office of Serbia show the number of passengers who went to ADRION countries where the travel agency was engaged. Considering the common historical past of the inhabitants of the countries of the former Yugoslavia, a significant number of journeys are realized without intermediaries and records of such travel from Serbia, the final destination is not available. Data on the total number of passengers who traveled from Serbia to ADRION countries are taken from the records of ADRION countries. The following table showing the volume of tourist travel from Serbia to ADRION countries and vice versa.

Table 27 Travelers from Serbia to ADRION

From Serbia	by Air	by Rail	by Road	TOTAL
to Croatia	26,144	37,554	59,183	122,881
to Slovenia	31,16	19,744	61,347	112,251
to Italy	24	0	38,068	38,092
to Montenegro	254,846	103,325	47,255	405,426
to Albania	23,215	0	0	23,215
to Greece	35,889	1,857	690,185	727,931
to Bosnia and Herzegovina	0	0	77,852	77,852

Based on the data collected for all modes of transport, the complete picture of the offer (supply) for all modes can be presented. The offer presented refers to two criteria for all modes of transport, both for the duration of the travel time (min) and the one-way travel price (EUR). Complete offer with direct links for all types of transport exists only for Ljubljana and Zagreb. Offers for Igoumenitsa and Durres are not available for air, rail and bus transportation, which means that a passenger who wants to travel to these two nodes has the choice to use a passenger car or to use multimodal transport. Travelers who would have to travel to Bologna and Trieste would choose between a trip by a passenger car or a bus. For passengers which want to go to Bar, they would choose between a trip by a passenger car, a bus or a railroad. The following tables give an overview of the offer from Belgrade to each hub of the ADRION.

Table 28 Supply data from Belgrade to HUB - time (min)

	Air	Train	Bus	Car
Igoumenitsa	-	-	-	591
Bologna	-	-	935	512
Ljubljana	85	637	468	304
Trieste	-	-	598	357
Zagreb	75	474	345	229
Durres	-	-	-	484
Bar	-	696	600	596

Table 29 Supply data from Belgrade to HUB - travel cost (€)

	Air	*Train*	*Bus*	*Car*
Igoumenitsa	-	-	-	*94,5*
Bologna	-	-	*137,73*	*136,37*
Ljubljana	*108,67*	*49*	*41,44*	*80,56*
Trieste	-	-	*39,68*	*89,16*
Zagreb	*105,65*	*19*	*49,22*	*51,92*
Durres	-	-	-	*62,68*
Bar	-	*35*	*25,87*	*56,75*

Local data on the movement of inhabitants according to Masterplan presented in 2017 show that the largest number of trips in the city are carried out by public transport. The share of bus transport is 44%, trams 2%, trolleybuses 1.3% and rail 0.5%. The share of public transport can be considered high and is relatively stable in the last period. The average speed of public transport in the last 15 years has decreased from 14.78 km/h to 13.26 km/h. The frequency of providing public transport services is generally high.

The old bus station's location and the main train station were suitable for travellers coming from a catchment area due to the proximity of the city centre. Old locations have also been favourable due to the large number of public transport lines passing by the stations. Old locations from the city centre (Republic Square) were only 17 minutes walking away. Displacement the station, the distance from the city centre increased significantly and became inaccessible for walking. In addition to the bus and train station Novi Beograd, there are 4 tram lines (7, 9, 11 and 13), and seven bus lines (60, 67, 85, 89, 94, 95 and Eko 1). The poorer connection exists with the Centre station (Prokop), where four bus lines (34, 36, 38A and 44) and two trolleybus lines (40 and 41) pass through, which require walking for about 10 minutes. What will be the subject of further research is the connection of new locations with other attractive zones of the city via public transport, the introduction of new lines or the improvement of existing ones.

The significance of Belgrade as a HUB is mostly contributed by Airport Nikola Tesla (BEG). The problem of connecting the airport is its connection to the city with public transport lines. The current situation is that the airports are connected to the rest of the city by bus lines 72, 607 and A1. According to Masterplan, it is envisaged to introduce BG train line which will connect the airport with the railway station Novi Beograd, which will significantly improve the state of intermodal transport in the observed area. In addition to the aforementioned BG train, the SMARTPLAN focus is also a possible metro project that will certainly change the picture of the distribution of transport at the local level.

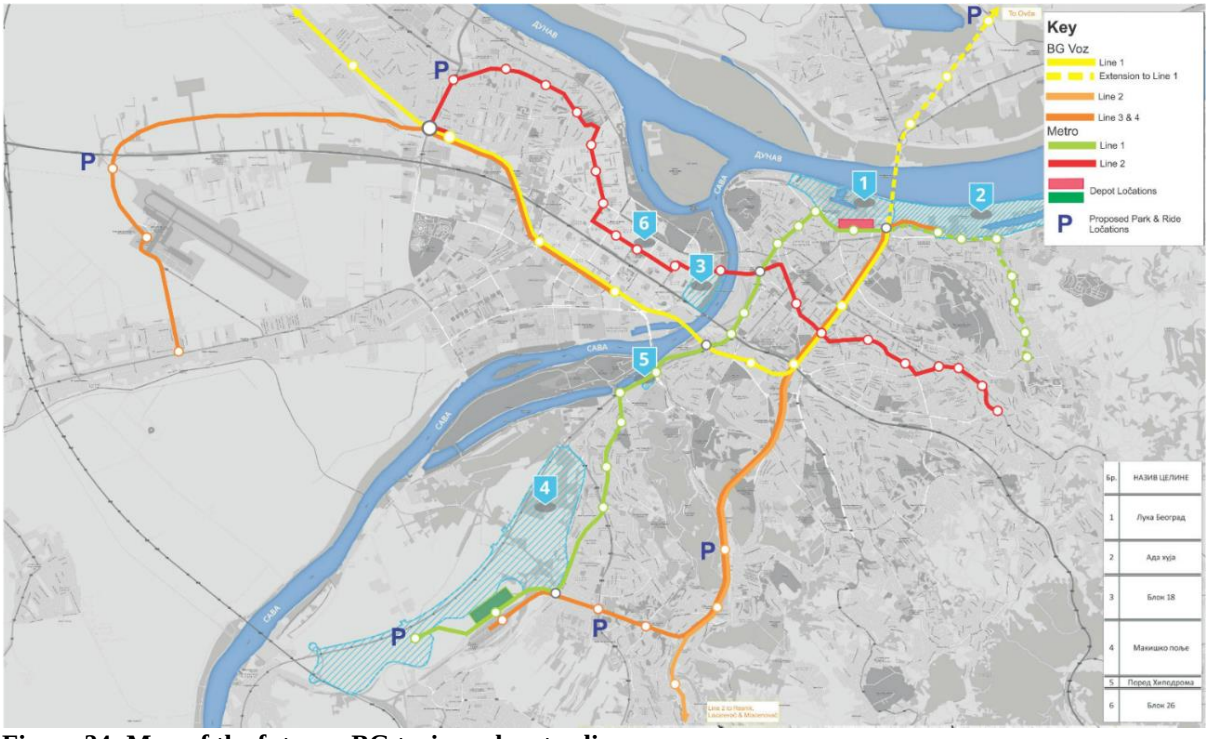


Figure 34: Map of the future - BG train and metro lines

According to SMARTPLAN and the development of mass modes of transport, locations for the Park & Ride system are foreseen. The locations of the Park & Ride system correspond to the entry directions of regional daily movements generated by the city of Belgrade, where passengers will be enabled to change mode of transport, move to some kind of railroad city transport.

3. Key messages

According to the data collected by partners in the framework of the current deliverable and also from deliverables in WPT1 (strategies, best practices) and to additional normalized sources (e.g. United Nations Statistics Division data), we can say that Inter-Connect cases present differentiations (population, growth rate, status e.g. EU member state – IPA countries, advanced multimodal services) that affect multimodality level.

Regarding the economic status we can say that Inter-Connect cases can be categorized as depicted in Figure 35.

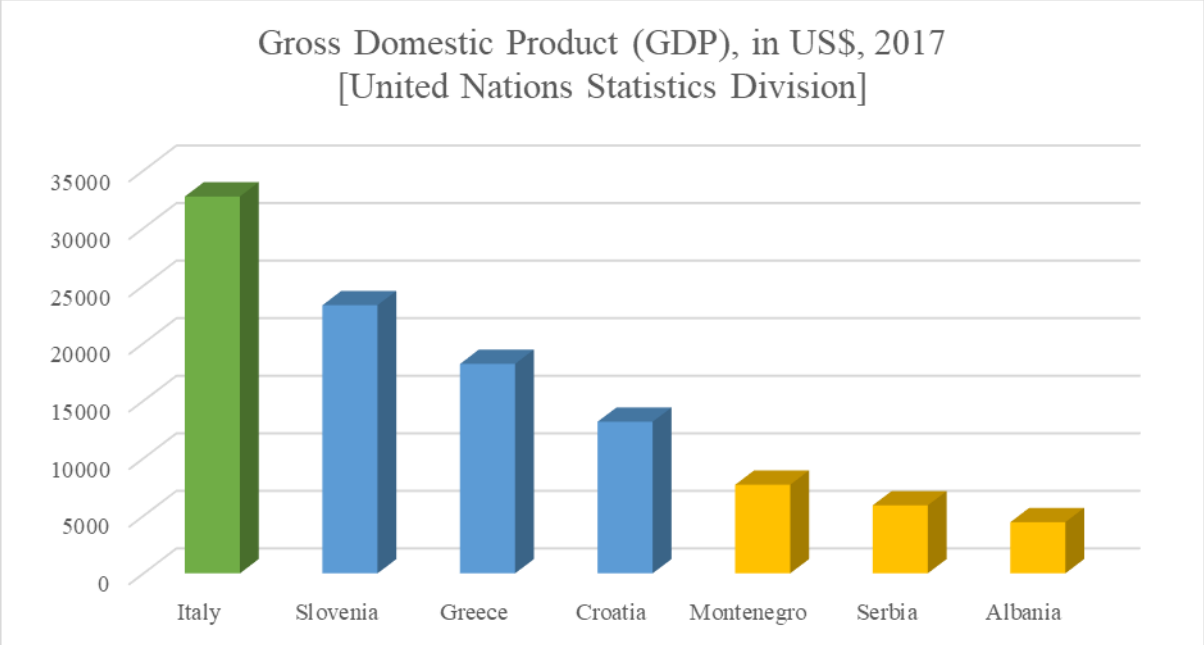


Figure 35: Gross Domestic Product (GDP), in US$, 2017

Since the c.a. of each case does not cover areas of same extent (Del. 1.3.1, Table 4), the population varies also significantly (Figure 36) which means that mobility needs differ also significantly (daily commuters, trip purposes, mode choice, seasonality – intra-regional tourism to coastal areas).

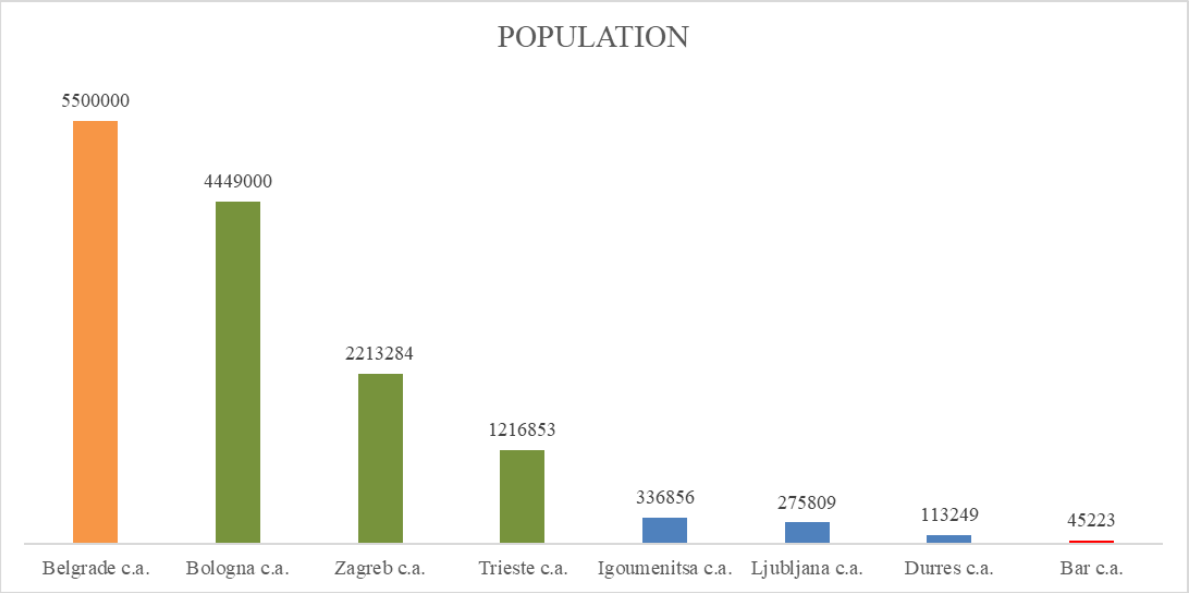


Figure 36: Population of Inter-Connect catchment areas

The modal split at regional level per case is depicted in Figure 37.

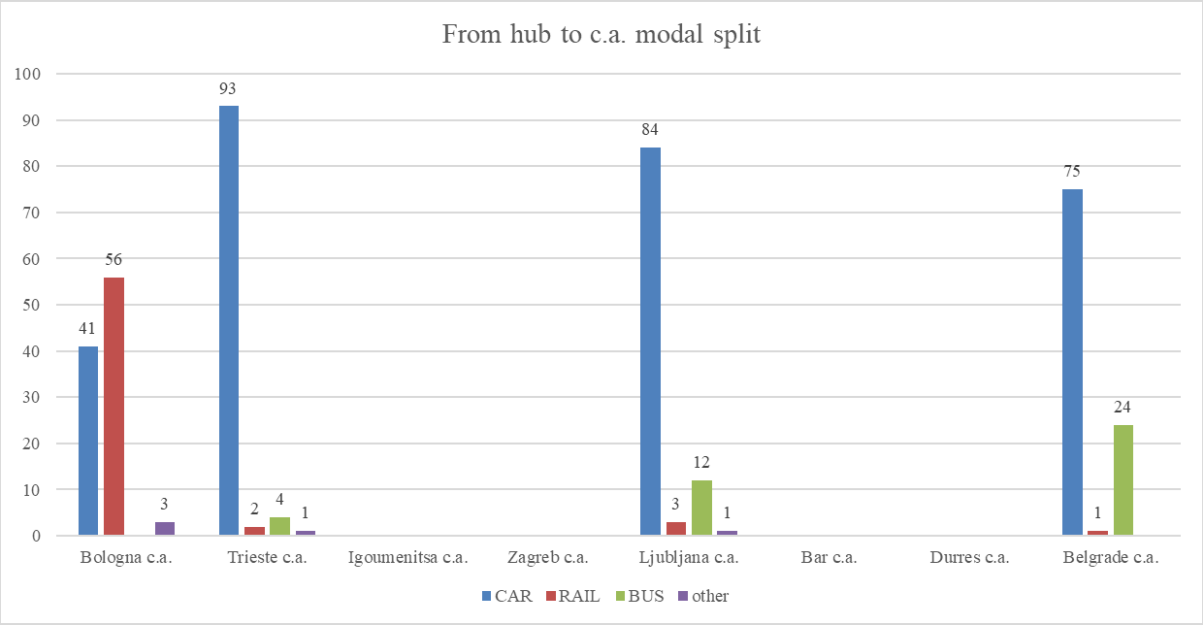


Figure 37: Intra-regional modal split (from hub to c.a. and vice versa)

Car use is significantly high in almost all cases where data are available. The only exception is met in Region Emilia Romagna case (Bologna c.a.) where rail keeps a high percentage in modal split.

When it comes to intra-city modal split, private cars still keeps a predominant position (Figure 38) in Trieste, Bologna, Igoumenitsa and Ljubljana, in Zagreb we have an equal percentage for private cars and Public Transport while in Belgrade the situation seems more encouraging according to the EPOMM Modal Split Tool (49% for PuT).

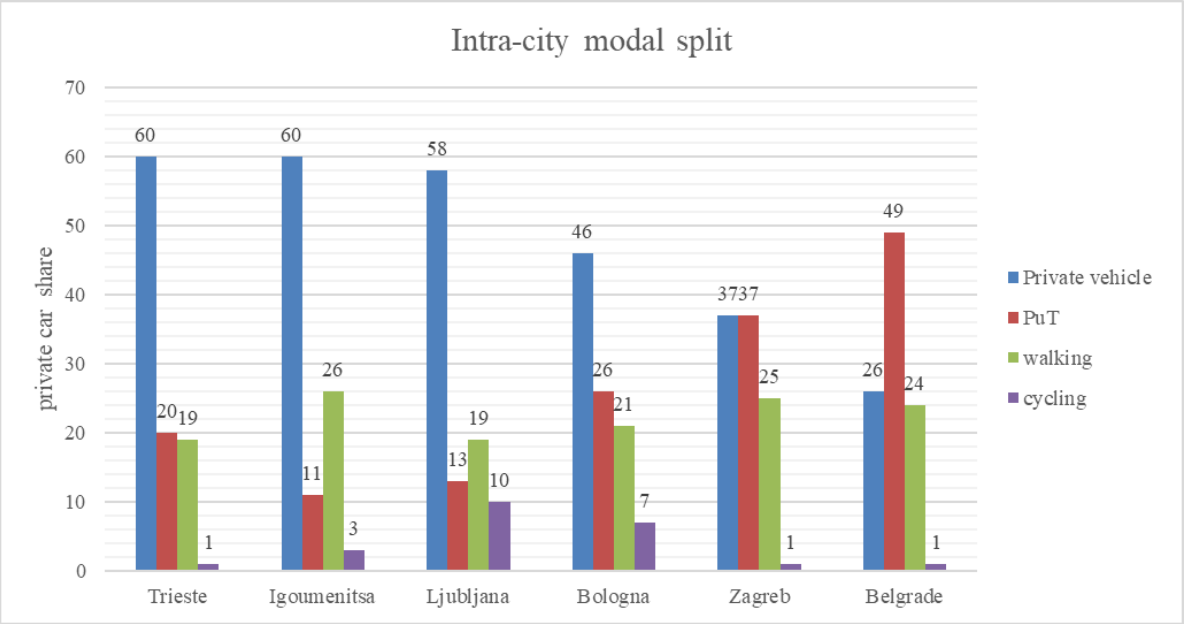


Figure 38: Modal split in Inter-Connect cities, The EPOMM Modal Split Tool

Based on the above, there are many opportunities for Inter-Connect cities to get in a more sustainable path by investing in intermodality and Public Transport services upgrade. From the best practices review (Del. 1.2.1) as well as from the strategies orientation (Del. 1.1.1), soft actions can be a key to promote sustainability even in cases where the economic background is not so stable or of high level. As also supported through the findings of the previous deliverables, governance and coordination issues facilitation and stakeholders' engagement and cooperation as well as capacity building activities for sustainable mobility planning can act as major contributors for area's growth.