



D.T1.1.5 BASELINE STUDY - TRIESTE

Work Paper

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1. Introduction

Based on Deliverable D.T1.1.3: Methodology for baseline study prepared by the University of Applied Science Erfurt, this report aims at analysing the status-quo and the policy framework of rail freight infrastructure and services in the Friuli-Venezia Giulia Autonomous Region, focusing in particular on Trieste area and the Port of Trieste.

Section A) - Territorial Analysis (Ports, Regions) will briefly illustrate the main characteristics of the Friuli-Venezia Giulia Autonomous Region paying particular attention to the most significant nodes and hubs both in the region and in Trieste area. In addition to this, the regional railway infrastructure, intermodal facilities and transport flows will be described.

Section B) - Policy Analysis will analyse the policy framework and the most significant documents adopted both on national and regional level as well as their main goals and strategies.

Section C) - Regional Stakeholder Mapping will map out stakeholders by classifying them according to their influence on the project and their level of interest in the project. Stakeholders are also mapped according to their role and their benefit (or conflicts) their involvement could bring, taking in consideration current involvement and strategies to improve their support.

Section D) - SWOT Analysis will report the strategic evaluations about the Port of Trieste and the Friuli-Venezia Giulia Autonomous Region using this analysis instrument.

Section E) - Recommendation/Outlook will briefly summarize the main results and findings of the baseline study.

2. Methodology and structure for baseline study

A) Territorial Analysis (Regions/Ports)

Friuli Venezia Giulia is an Italian autonomous region, governed by a special act, which lies in North-Eastern Italy. Trieste is its main city.

With an area of 7,845 square kilometres and roughly 1,218,000 inhabitants, Friuli-Venezia Giulia borders with Austria to the north, with Slovenia to the east and with the Italian region Veneto to the west. Morphologically, the region may be divided into four natural areas: alpine, hilly, flat and coast.

A Confindustria FVG (regional Industry Association) survey provides an overall positive picture of the regional industry: in the fourth quarter of 2018 industrial production increased by 3,9 points, equal to 4,1% compared to the 0,2% increase of the previous quarter. In addition to this, sales reported good performances both on internal market as on foreign markets and new orders registered a sharp increase, too.

The Port of Trieste is the main port of the Region dealing with a vast range of traffic. The public body in charge of its management is the Port Network Authority of the Eastern Adriatic Sea, whose primary task is to direct, plan, coordinate, promote and control port operations and commercial and industrial activities in the port (according to the Law no. 84/1994 as amended by the Legislative Decree no. 169/2016).

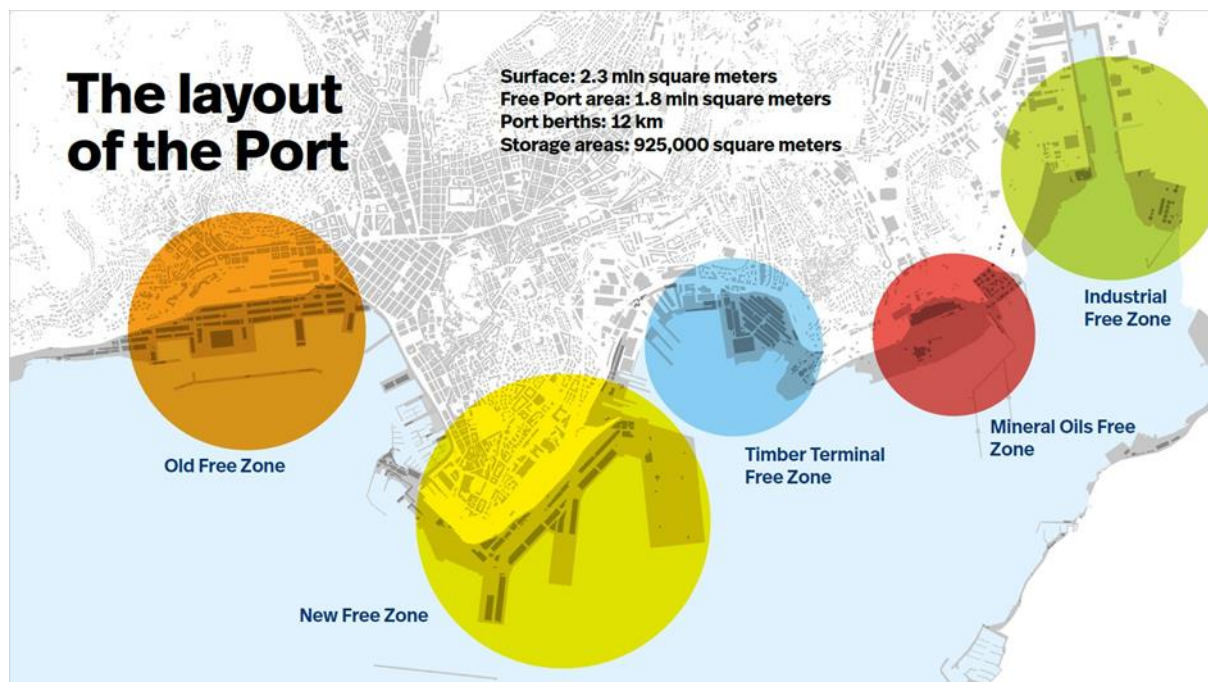


Figure 1: Layout of the Port of Trieste

Located in the heart of Europe, at the intersection between shipping routes and the Baltic-Adriatic and Mediterranean TEN-T core network corridors, the Port of Trieste is an international hub for overland and sea trade with the dynamic market of Central and Eastern Europe.

The intensification of trade and maritime traffic between the Far East and Europe along with the EU enlargement process have revived the importance of the Upper Adriatic, opening up new growth and development opportunities for Trieste maritime industry. In this context, Trieste plays a decisive role in two separate supply chains: long-distance intercontinental maritime transportation and short/medium-distance intra-Mediterranean trade. The convergence of the TEN-T strategic axes of the “East Mediterranean Motorways of the Sea” with the “Baltic-Adriatic and Mediterranean Corridors” is resulting in the growth of port multimodal services and the development of innovative solutions in the field of rail-based intermodal transport nodes and operations.

With regard to the medium and long-term development strategy, the Port of Trieste, as a key node of the EU’s TEN-T, has the ultimate objective to fully integrate its maritime industry into the local, regional, EU and global multimodal logistics service network.

In the light of this objective and having regard to the current exceptional port traffic positive growing trend, PNAS EAS is focusing on its multimodal related infrastructures and management procedures to adapt their functions to incorporate inland node terminals, utilising existing inland facilities and designing innovative further solutions able to ensure additional advantage in terms of port connectivity.

For these reasons, as detailed in the following sections, various policy initiatives and a substantial amount of investment in port capacity, both from the perspective of management optimization and infrastructure expansion projects, has been undertaken in the last years.

The Port of Trieste enjoys the benefits of excellent multimodal connections to major mainland centres of consumption and production including local, regional and EU inland logistics systems and multimodal links.

Therefore, the railway connections represent one of the fastest growing freight transport segment and the most important development policy priority of the Port of Trieste maritime industry, with a significant competitive asset to further enhance the port’s perspectives to expand its catchment area while contributing to limiting port operations impact on externalities.

Also, the port of Trieste is the first Italian port for intermodal connections, with more than 200 trains a week connecting Trieste port to the Italian North-East industrial sites, Belgium, Luxembourg, Germany, Austria, Hungary, Slovakia and Czech Republic, totalling 8,681 trains in 2017.

Having regard to the technical specifications, the Port of Trieste has an internal rail network (70 km of track) that connects with the national and international network and allows all the docks to be served by rail with the possibility of shunting and/or assembling freight trains directly in the various terminals; a direct junction and a flyover (within the Port) connect to the outside road system, which leads directly to the motorway network, ensuring ease of access to the national road network.

The main terminals of the Port of Trieste in terms of multimodal connections, where the port is concentrating its investment priorities, are located in the New Free Zone are connected to the Campo Marzio railway station:

- Ro-Ro Terminal - Pier V, Samer Seaports & Terminals S.r.l.
- Ro-Ro Terminal, Pier VI, Europe Multipurpose Terminal (EMT)
- Container Terminal, Pier VII, Trieste Marine Terminal (TMT).

These three private operators have independent movement of trains and they are all equipped with modern technology for handling, transportation and storage at the service of all types of traffic: Ro-Ro, Ro-La, containerized cargo, fruit and vegetables (potatoes, onions, oranges, and nuts), coffee, grains, metals, engines, steel and chemical products, timber, dry and liquid bulk, crude oil and derivative products.

Ro-Ro Terminal - Pier V

The terminal can host three vessels simultaneously with a 12 metres natural draft and a storage area of 150,000 m². Operations are carried out 365 days a year with no interruption, including customs formalities enabling a movement of over 200,000 heavy units per year to be managed seamlessly.

A section of this terminal is devoted to rail operations, with regular services to strategic destinations in central Europe and the target to allow for each and every cargo handled here to leave and reach the terminal by train, with a significant reduction of carbon dioxide emissions and the consequent lower carbon footprint.

Europe Multipurpose Terminal (EMT) - Pier VI

Pier VI is located in the centre of the Port of Trieste with a total area of 70,000 m², 1500 metres berths, one Ro-Ro berth, draft between 9 and 10 metres, four rail tracks and one 5,000 m² warehouse.

It is equipped with four reach stackers with piggy-back, 10 tug-master Ro-Ro tractors and over 20 forks lifts.

The main connection involved in the service line of Ro-Ro services leave from Pier VI of Trieste heading to Istanbul.

Container Terminal (Trieste Marine Terminal, TMT) - Pier VII

Pier VII is equipped with an internal Rail Park that guarantees trains loading and discharging during the vessels operations offering all the services of a modern Container terminal. The Rail Park consists of five rail tracks of 600 metres each served with three rail mounted stacking cranes able to operate up to five trains at the same time, ensuring the efficiency of the terminal rail connections.

Trieste Marine Terminal has a capacity of 11,500 trains per year granting a further opportunity to achieve a strong growth of the rail traffic volumes in the coming years.

The Legislative Decree no. 169/2016 reformed the governance structure of the Italian port system, by aggregating existing port authorities into 15 new “Port Network Authorities”. This reform entails a new role for port authorities, passing from port administrations at local level, to the central focus of new aggregation, also with other regional ports or inland terminals. In fact, the art. 6 of the above-mentioned decree foresees that the new Port Network Authorities “promote coordination with nearby hinterland and railroad terminals”. This approach was endorsed by the Port of Trieste within its Three-year Operational Plan, adopted in August 2017.

Also, this setting seems to partially borrow the “Proximity terminal network” concept , at least as far as public administrations are concerned.

Friuli Venezia Giulia Autonomous Region boasts the presence of several multimodal logistic platforms - as defined in Article 3 (r) of the TEN-T Guidelines - i.e. four railroad terminals (RRTs) and three ports, a significant infrastructural endowment for a region of only 1.2 million people.



Figure 2: Ports and RRTs in Friuli-Venezia Giulia

PORT	TOTAL THROUGHPUT IN TONS (2018)	%
Trieste	62,676,502	91
Monfalcone	4,537,278	7
Porto Nogaro	1,343,600	2
TOTAL	68,557,380	100

Figure 3: Ports in Friuli-Venezia Giulia: total throughput 2018

2.1. Regions/Ports and their Hinterland/catchment area

Customs procedures and freight consolidation services, as well as facilities and security services for carriers (mainly road haulers) are available in all four regional RRTs. The table below summarizes their respective infrastructure and intermodal services.

TRIESTE	<ul style="list-style-type: none"> Managed by Interporto di Trieste S.p.A. - public-owned company Located in Ferneti - near the border with Slovenia, 18 km from the Port of Trieste Total area: 232,000 m², out of which: 35,000 m² roofed warehouses; 80,000 m² parking area 6 railway tracks, 450-meter long (North side) and 350-meter long (South side) respectively RoLa shuttle service connection w/ New Port terminals <p>Development projects: 320,000 m² area (out of which, 70,000 m² storage) located in the industrial zone - 10 km from the Port area, directly linked to the road and railway networks; it will have free zone status</p>
CERVIGNANO	<ul style="list-style-type: none"> Managed by Interporto Cervignano del Friuli S.p.A. - public-owned company Located in Cervignano del Friuli, 48 km from the Port of Trieste Total area: 460,000 m², 24,000 m² warehouses, plus 600 m² for cold storage; 50,000 m² parking area 8 railway tracks (six 750-meter long, two 450-meter long) <p>Planned extension of operational yard in the adjacent area for 40,000 m²</p>
GORIZIA	<ul style="list-style-type: none"> Managed by SDAG S.p.A. - only shareholder: Municipality of Gorizia Located in Gorizia, on the Italian-Slovenian border Total area: 600,000 m², the intermodal terminal areas cover 20,000 m²; storage area: 28,000 m², out of which 2,800 m² cooled warehouses The terminal connects with the Gorizia-Nova Gorica international line that links Gorizia (I) railway station to Vrtojba (SI) railway station 5 railway tracks whose length range between 340 and 500m Trains from and to Trieste need additional shunting and a change of locomotive upon arrival in Gorizia RRT <p>A further 4,400 m² cooled storage area is under construction</p>
PORDENONE	<ul style="list-style-type: none"> Managed by Interporto Centro Ingrosso di Pordenone S.p.A. - public-owned company Total area: 836,000 m², out of which 67,000 m² warehouses and 1,000 m² for cold storage; 28,000 m² parking area 7 railway tracks (4 for operations, length ranging from 560 to 830 m) <p>No rail traffic so far, despite the substantial infrastructure</p>


RRTs of Friuli-Venezia Giulia - data on infrastructure and services.

<p>Industrial clusters/branches</p>	<p>The main industrial braches in Trieste area are the following:</p> <ul style="list-style-type: none"> • Logistics. • Coffee. • Ship engines.
<p>Industrial sites</p>	<p>The most important industrial sites in Trieste area are listed as follows:</p> <ul style="list-style-type: none"> • COSELAG is a Local development consortium whose function is to promote and encourage the development of productive and industrial activities in the Trieste area. <p>To this end, it manages the industrial infrastructure located in Trieste, Muggia and San Dorligo della Valle covering about 810.5 ha.</p> <p>Within this framework, Coselag cooperates with the Friuli-Venezia Giulia Autonomous Region and manages the Industrial Free Zone, as well.</p> <ul style="list-style-type: none"> • ILLY CAFFE' SPA is a large international company selling its coffee-related products in approximately 140 countries worldwide. Its headquarter is located in Trieste. <p>In Trieste, Illy Caffè S.p.A. has a modern industrial area covering about 8,800 square meters. It has both warehouses and the factory where coffee and its related products are produced.</p> <ul style="list-style-type: none"> • WÄRTSILA ITALIA SPA is part of Wärtsila Corporation, a Finnish company, leader in complete lifecycle power solutions for the global marine and energy markets. <p>Wärtsila Italia S.p.A. develops, sells, manufactures and provides service solutions for a wide range of medium speed engines with unit outputs from 1.9 MW to 23 MW.</p> <p>The Trieste plant owned by Wärtsila is a modern multi-product factory employing 1,100 people. It covers an area of about 300,000 square meters, 100,000 of which are covered, and is one of the largest Wärtsila Group engine productions plants.</p>



	<p>The current range of products assembled in Trieste includes four-stroke engine series and components for propulsion. In Trieste, there is also the Land Sea Academy, centre for the training of experts in the motor field and the Contract Management Expertise Centre, remote operational support to customers with maintenance contracts O. & M. of the SEAF area (Southern Europe and Africa).</p>
Rail infrastructure	<p>The regional railway network in Friuli-Venezia Giulia currently comprises 670 km of tracks, 480 km of which are electrified and 190 km are non-electrified, including also freight lines and sidings to ports and industrial areas.</p> <p>Throughout the railway network, with the exception of the Udine - Cividale line, the company Rete Ferroviaria Italiana S.p.A. (i.e. Italian Railway Network) manages the infrastructure. Railways undertakings, in a system of free competition, operate the freight services.</p>
- lines	<p>The railway lines cross the whole region and are listed as follows:</p> <ol style="list-style-type: none"> Core double-track lines: <ul style="list-style-type: none"> • (Mestre) - Latisana - Cervignano - Monfalcone - Trieste • Monfalcone - Gorizia - Udine • Aurisina - Villa Opicina • Udine - Pordenone - Sacile - (Mestre) • Udine - Tarvisio Secondary single-track lines: <ul style="list-style-type: none"> • Udine - Cervignano • Gemona - Sacile • Casarsa - Cordovado - (Portogruaro) • Gorizia - state border (Nova Gorica) • Udine - Cividale Freight lines and sidings: <ul style="list-style-type: none"> • Trieste Centrale - Trieste Campo Marzio • Bivio Aurisina - Bivio Viadotto • Trieste Campo Marzio - Villa Opicina • Trieste Campo Marzio - Aquilinia • Udine Parco - Bivio Vat • Monfalcone - Porto Rosega • San Giorgio di Nogaro - Porto Nogaro

	<p>Friuli-Venezia Autonomous Region: railway network - main (red) and complementary (blue) lines</p>
- tracks	As stated before, in Friuli Venezia Giulia Autonomous Region there are both double-track and single-track lines.
- electrification	The regional railway network in Friuli Venezia Giulia Autonomous Region currently comprises 670 km of tracks, 480 km of which are electrified and 190 km are non-electrified, including also freight lines and sidings to ports and industrial areas.
- freight suitability	<p>The rail infrastructure is freight suitable. As far as the railway accessibility from the Port of Trieste to the main connections towards current and potential Italian and foreign hinterland markets, it can be described as “highly qualified”. All tracks are characterized by the maximum possible loading gauge (“gabarit”) available for all types of intermodal transport, which is the “P/C 80” loading gauge.</p> <p>The figure below shows a recent map of railway loading gauge in Europe. The lines of interest for the Ports of Trieste and Monfalcone, which connect them to the Central and Northern Europe (including the Baltic geographical area), are all characterized by the maximum loading gauge (P/C 80, dark blue color). Tracks that serve the hinterland of the foreign ports of the upper Adriatic basin are shaped between the standards P/C 32 and P/C 50, and the lines that serve the Tyrrhenian ports are between the standards P/C 25 and P/C 45.</p> <p>Also about the loading gauge, the interventions foreseen by the Italian Railways Network (Rete Ferroviaria Italiana S.p.A.) Programme Contract and the related plan, agreed with the Italian Ministry of Infrastructure and Transport, will enable the PC/80 standard to be reached in the system of entire North East before the deadline set by the European Union.</p>

	 <p>European railway network: loading gauge of the main lines</p>
<p>Network classification</p>	<p>The Port of Trieste represents a core network node of the Mediterranean and Baltic-Adriatic Corridors crossing the Region Friuli Venezia Giulia. It is linked to the national railway network, and therefore to the TEN-T network, through the nodes listed below:</p> <ol style="list-style-type: none"> 1. Campo Marzio, serving Piers V, VI (RoRo) and VII (containers), where most of the traffic is currently concentrated. 2. Servola, serving the industrial port, i.e. a general cargo terminal and one of the most important steel production sites in North Italy. 3. Aquilinia, serving the Trieste industrial area. <p>According to the Decree N.57 of the President of the Republic dated March 29th 2018 and entered into force on June 14th 2018, the Port of Monfalcone is now operating within the Port Network Authority of the Eastern Adriatic Sea.</p>
<p>Intermodal facilities</p>	<p>Firstly, the facilities of the PORT OF TRIESTE are the following:</p> <ul style="list-style-type: none"> – Port areas: about 2.3 million sq. m of which about 1.8 million sq. m of free zones. – Storage areas: about 925,000 sq. m of which about 500,000 sq. m under cover. – Length of docks: 12 km – Number of berths: 58 (for break bulks, conventional ships, multi-purpose vessels, container ships, Ro-Ro/ferries, oil tankers, chemical tankers, passenger ships etc.) – Maximum depth: 18 m. – Length of rail track: 70 km. <p>Secondly, the RAIL ROAD TERMINAL (RRT) OF TRIESTE is located only 15 km from the Port of Trieste. Its main features are the following:</p> <ul style="list-style-type: none"> - Managed by Interporto di Trieste S.p.A., a public-owned company. - Located in Ferneti - near the border with Slovenia.

	<ul style="list-style-type: none">- Total area: 232,000 m², out of which 35,000 m² are roofed warehouses; 80,000 m² parking area.- 6 railway tracks, 450-meter long (North-side) and 350-meter long (South-side) respectively, divided into two operational beams.- RoLa shuttle connection w/ New Port terminals. <p>Development projects: 320,000 m² area (out of which, 70,000 m² storage) located in the industrial zone - 10 km from the Port area, directly linked to the road and railway network; it has free zone status.</p>																																																																																								
Transport flows	<p>The Port of Trieste is currently the first Italian port for volume of goods in transit and concentrates 97% of regional maritime traffic. In particular, the table below shows the statistics referred to the last ten years:</p> <table><tr><th></th><th>2009</th><th>2010</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th><th>2016</th><th>2017</th><th>2018</th></tr><tr><td>TOTAL THROUGHPUT</td><td>44,393,322</td><td>47,634,188</td><td>48,237,977</td><td>49,206,870</td><td>56,585,708</td><td>57,118,804</td><td>57,161,201</td><td>59,244,246</td><td>61,955,405</td><td>62,676,502</td></tr><tr><td>Liquid Bulk</td><td>35,025,452</td><td>36,208,303</td><td>35,229,638</td><td>35,967,976</td><td>41,992,066</td><td>41,685,326</td><td>41,286,761</td><td>42,756,341</td><td>43,750,555</td><td>43,234,735</td></tr><tr><td>Dry Bulk</td><td>1,541,324</td><td>1,634,998</td><td>1,720,095</td><td>1,778,471</td><td>986,614</td><td>776,99</td><td>1,607,232</td><td>1,971,001</td><td>1,639,595</td><td>1,665,508</td></tr><tr><td>General Cargo</td><td>7,826,546</td><td>9,790,887</td><td>11,288,244</td><td>11,460,423</td><td>13,607,028</td><td>522,543</td><td>636,684</td><td>14,516,904</td><td>16,565,225</td><td>17,776,259</td></tr><tr><td>Number of Vehicles</td><td>181,719</td><td>213,334</td><td>223,716</td><td>212,633</td><td>271,519</td><td>296,7</td><td>301,114</td><td>302,055</td><td>315,705</td><td>309,424</td></tr><tr><td>Number of containers (TEUs)</td><td>276,956</td><td>281,643</td><td>393,186</td><td>408,023</td><td>458,597</td><td>506,019</td><td>501,276</td><td>486,499</td><td>616,156</td><td>725,426</td></tr><tr><td>Total TEUs (CTNRs, vehicles)</td><td>685,824</td><td>761,644</td><td>896,547</td><td>886,447</td><td>1,069,512</td><td>1,173,594</td><td>1,178,783</td><td>1,166,123</td><td>1,314,953</td><td>1,416,104</td></tr></table> <p>Statistics show a significant increase in the number of containers (expressed in TEU) both in global terms, with a double-digit growth within the four-year period, and in terms of full containers. This data, non-often mentioned in the official statistics, is a good indicator of the attractiveness of a port since it refers to containers containing goods that are loaded/unloaded and received/forwarded from the final destination. Empty containers and those in transshipment, on the other hand, do not particularly contribute to the development of the port and of its territory, in terms of benefit. From this point of view, it is interesting to note that in the four-year period 2015-2018 the number of full containers grew more than the general increase of the containerized traffic in the same period (+60.39% compared to +44.75%).</p> <p>Furthermore, a huge increase in intermodal traffic (+ 62.74 % over the last four years) has been recorded, confirming the Port of Trieste as the first Italian port in terms of number of trains.</p> <p>This positive trend reflects the significant investments in the port railway infrastructure made by the Italian Government, the Friuli Venezia Giulia Autonomous Region, Port of Trieste and especially by the terminal operators of the Port of Trieste (Piers V, VI and VII).</p> <p>Unlike other Italian ports, the Port of Trieste serves only in minimal part the regional and national territory focusing rather on markets in Central and Eastern Europe.</p> <p>The Port Network Authority of the Eastern Adriatic Sea and the terminal</p>		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	TOTAL THROUGHPUT	44,393,322	47,634,188	48,237,977	49,206,870	56,585,708	57,118,804	57,161,201	59,244,246	61,955,405	62,676,502	Liquid Bulk	35,025,452	36,208,303	35,229,638	35,967,976	41,992,066	41,685,326	41,286,761	42,756,341	43,750,555	43,234,735	Dry Bulk	1,541,324	1,634,998	1,720,095	1,778,471	986,614	776,99	1,607,232	1,971,001	1,639,595	1,665,508	General Cargo	7,826,546	9,790,887	11,288,244	11,460,423	13,607,028	522,543	636,684	14,516,904	16,565,225	17,776,259	Number of Vehicles	181,719	213,334	223,716	212,633	271,519	296,7	301,114	302,055	315,705	309,424	Number of containers (TEUs)	276,956	281,643	393,186	408,023	458,597	506,019	501,276	486,499	616,156	725,426	Total TEUs (CTNRs, vehicles)	685,824	761,644	896,547	886,447	1,069,512	1,173,594	1,178,783	1,166,123	1,314,953	1,416,104
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operators of the Port of Trieste have realized that the most suitable mean of transport to reach those markets is by train. It allows limiting the congestion of port terminals both in terms of reduction of road traffic and of emissions of polluting and greenhouse gasses.



The table below lists the number of trains per destination country (year 2018). Germany is the first country reached by rail freight flows. Only 28.5% of the trains are to/from Italy, while the remaining 71.5% are to/from foreign countries.

Port of Trieste – statistics trains per country (2018)			
Country	# trains	% on total	% full wagons
GERMANY	2,945	30.25	88.92
ITALY	2,776	28.52	87.96
AUSTRIA	1,683	17.29	81.06
HUNGARY	860	8.84	95.79
CZECH REPUBLIC	605	6.22	95.64
LUXEMBOURG	590	6.06	95.77
SLOVAKIA	265	2.72	90.01
BELGIUM	5	0.05	85.71
SWITZERLAND	5	0.05	100.00
TOTAL	9,734	100.00	88.74

The load factor - an average of about 89% - is very interesting: this shows that import and export are well balanced in trains, with strong and stable demand.

The Port of Trieste distinguishes itself also by the modal distribution of the traffic.

In particular, the percentage of full containers that passed through the Port of Trieste in 2018 and used the train is very high (59%). This is a particularly

	good data, also at European level.
Modal share development	<p>The modal share of freight transport is developed as follows:</p> <ul style="list-style-type: none"> • TEUs: road: 45%; rail: 55%. • Semi-trailers: road: 77%; rail: 23%. <p>The above-mentioned data refer only to hinterland transport of 2018.</p>
...	

B) Policy Analysis

This section will analyze the main policy documents adopted both on national and regional level focusing, in particular, on their goals and strategies.

“Connettere l’Italia” (i.e. Connecting Italy) is a document adopted in 2016 by the Italian Ministry of Transport defining goals, strategies and guidelines for a structural reform of the transport sector. Overall, its main strategic goals are the following: accessibility to territories, Europe and Mediterranean Sea; competitiveness and quality of life in urban areas; support to the industrial policies related to the supply chain; sustainable and safe mobility. The aim of these goals is to revitalize the competitiveness of Italy in the context of the global economy.

Within this framework, the modal shift from road to rail is highly promoted through ad hoc measures that aim at increasing the offer and the quality of the services.

As far as the rail freight transport, in order to pursue the above-mentioned objectives, it has been considered essential to implement and increase the efficiency of the existing national railway network. Moreover, railway corridors toward North and Central Europe have to be improved in order to link these territories to the most significant logistics nodes and hubs, including ports. To this end and considering the industrial development as well as the logistics geography of the country, main national railway lines have been selected in order to implement their links to commercial ports.

Based on the general strategies highlighted in the document “Connettere l’Italia”, the railway and intermodal system plays an important role as interface between the national economic-productive system, the port system and Europe. Therefore, the Italian Ministry for Transport has adopted and presented a specific discussion paper called “Policies for the relaunch of rail freight transport”, containing a detailed analysis of the current state and the initiatives to be put in place for the revitalization of the sector. Indeed, the challenging objective pursued by the Italian Ministry of Transport is to reach, within five years, in 2021, a +50% of trains compared to 2014. Therefore, the existing gap will be removed and a modal share in line with the EU average will be reached. Keywords are lower complexity and incentives.

Within this framework, some operation and documentation related to the intermodal railway freight transport have been simplified. Moreover, measures for reducing the cost of intermodal transport have been foreseen. Ferrobonus and Sconto Pedaggio (i.e. toll discount) represent a

successful example of incentives for the railway freight transport since they support the use of rail services from and to the national logistics and port nodes.

In particular, beneficiaries of Ferrobonus, for which 60 million euro have been allocated over a two-year period, are rail customers (shippers and/or multimodal transport operators) for intermodal services/transshipped to a complete train. Beneficiaries of the Sconto Pedaggio, for which 100 million euro have been allocated over a five-year period, are railway freight operators. Ferrobonus had a positive impact on the market, and some Italian regions have integrated the incentives foreseen by Ferrobonus with additional financial incentives foreseen on regional level.

As regards the management, the company Rete Ferroviaria Italiana S.p.A. (i.e. Italian Railway Network) manages the railway infrastructure, while private railway undertakings (RUs), operating in a regime of free market, offer railway services.

Concerning ports and RRTs, according to the Legislative Decree nr. 169/2016 (Port Reform Law), the 15 Port Network Authorities (Autorità di Sistema Portuale) represent core nodes. They currently include 58 ports. The strategies referred to ports can be briefly summarized as follows:

- Upgrade of last mile rail and road connections.
- Development of technologies for speeding up the procedures.
- Improvement of sea accessibility.
- Extension of container and Ro-Ro terminals.

The above mentioned Port Reform Law is supporting further integration among ports and RRTs, as well. Further attention is paid to the management and maintenance of the State property, the digitalization in the logistics field and the implementation of innovative ICT tools. The improvement of the railway infrastructure plays a decisive role for the container shipping.

The Port Network Authority of the Eastern Adriatic Sea manages the railway infrastructure within the port area with a dedicated directorate. Adriafer Srl is the shunting company responsible for the rail maneuvers within the Port of Trieste and the Rail Road Terminal (RRT) of Trieste. In addition to this, it has recently acquired the authorization to become a RU (railway undertaking). Currently, eight RUs serve the Port of Trieste.

At regional level, the “Piano regionale delle infrastrutture di trasporto, della mobilità delle merci e della logistica” (i.e. Regional Strategy for transport infrastructure, mobility of goods and logistics), adopted in 2011, defines the transport policy of Friuli Venezia Giulia Autonomous Region according to the goals and strategies set by the EU White Paper on transport.

This policy identifies some actions whose aim is to develop an infrastructural and service network in order to promote the modal shift from the road to alternative means of transport, such as railway and maritime transport. Moreover, it pushes for further cooperation and integration of freight platforms at regional level.

Furthermore, Regional Law n. 15/2004 aims at realizing an effective modal integration of various transport systems and transferring, consequently, growing shares of freight transport from the road to alternative means of transport (such as railway and maritime transport). According to this law, Friuli Venezia Giulia Autonomous Region has been supporting the institution, the start and the realization of maritime and railway transport services articulated as follows:

- Intermodal railway transport services departing and/or arriving from the logistics and port nodes located in the regional territory and on the national and international transit axes. The aim of aid

measures is both to compensate the several external and infrastructure costs and cut extra costs concerning natural and structural penalizations. Such penalizations include physical barriers, borders of several Member and non-Member States, locomotors change, lack of interoperability of the railway equipment, restrictions on the use of the rolling stock and unequal conditions, between various countries, on access costs to railway infrastructure.

- New maritime services for the combined transport of goods arriving and/or departing from the ports located in the regional territory, according to the new EU guidelines for the development of the TEN-T network.

In particular, concerning the intermodal railway traffic the basic aid measure provided by the Law amounts to 33.00 EUR per transported intermodal unit, which corresponds to the difference between the external costs of the transport of goods between the road and rail modes over a distance of at least 100 km. Aid measures are not allowed for distances lower than 100 km. The basic aid measure can be adjusted by applying a coefficient that takes into account the length of the journey and the number of countries crossed. However, the measure aid can in no case exceed 30% of the costs of the intermodal transport service.

The above mentioned coefficient aims at adjusting the amount of the aid measure considering the additional structural costs related to the railway services which vary according to the distance and the number of crossed countries. Indeed, on international rail routes are these additional structural costs higher due to traction interchanges between multiple railway operators, lack of interoperability of railway equipment and non-homogeneous access conditions, etc...

- Concerning rail routes between 100 e 250 km, the applicable adjustment coefficient is 1.00 in case of crossing the territory of one country, 1.20 in case of crossing the territory of two countries and 1.30 in case of crossing the territory of three countries.
- As regards rail routes between 251 and 450 km, the applicable adjustment coefficient is 0.90 in case of crossing the territory of one country, 1.10 in case of crossing the territory of two countries and 1.30 in case of crossing the territory of three countries.
- Regarding rail routes equal or longer than 451 km, the applicable adjustment is 0.80 in case of crossing the territory of one country, 1.00 in case of crossing the territory of two countries and 1.20 in case of crossing the territory of three or more countries.

An aid scheme whose aim is to foster the modal shift from road to rail through a reduction of access costs to the combined transport is foreseen. Its beneficiaries are logistics companies organizing combined transport services from and to railway yards or intermodal centers located in the Friuli Venezia Giulia Region. This aid scheme, based on the Regional Law nr. 1/2003 and its implementing regulation, reduces the road traffic in the Region by cutting the fees charged to road transport companies for the use of combined transport services.

Aid measures are provided in the form of direct grants and, in particular, for each single railway route not longer than 100 km, unidirectional, carried out by truck, trailer or semi-trailer, with origin or destination a railway yard or intermodal center located in Friuli Venezia Giulia Region. The amount of the aid measure is proportionate to the use of combined transport, the length of the rail route (if longer or shorter than 150 km) and the coefficient referred to the use of the railway services. This coefficient expresses the ratio between the number of units transported within the period taken into account and the capacity produced. The measures aid foreseen are the following:

- 33.00 Euro per transported unit if the utilization factor is between 71% and 100% and the length of the route is exceeding 150 km.
- 30.00 Euro per transported unit if the utilization factor is between 71% and 100% and the length of the route is between 100 and 150 km.
- 27.00 Euro per transported unit if the utilization factor is between 51% and 70% and the route is longer than 150 km.
- 25.00 Euro per transported unit if the utilization factor is between 51% and 70% and the length of the route is between 100 and 150 km;
- 22.00 Euro per transported unit if the utilization factor is between 25% and 50% and the route is longer than 150 km.
- 20.00 Euro per transported unit if the utilization factor is between 25% and 50% and the length of the route is between 100 and 150 km. If the utilization factor is lower than 25%, no aid measure can be recognized and the advances already paid must be returned.

Therefore, the maximum amount of the aid measure is 33,00 Euro per transported unit on a unidirectional railway route whose length is lower than 100 km.

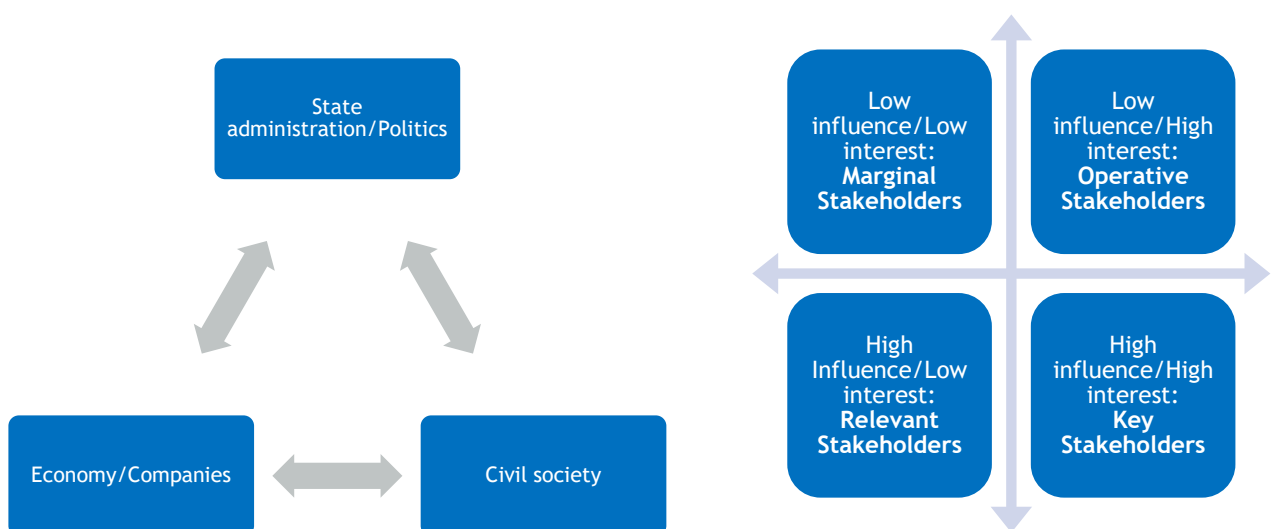
Moreover, at regional level the *“Piano Regionale delle Infrastrutture di Trasporto, della Mobilità delle Merci e della Logistica”*, i.e. Regional Strategy for transport infrastructure, mobility of goods and logistics, was adopted in 2011 (Decree of the President of the Regional Government nr. 300 adopted on December, 16th 2011). The aim of this strategy is to:

- Make the Region a competitive territory offering infrastructure and logistics services to a wider area including Veneto, Carinthia, Slovenia and Croatia having regard also to the infrastructures to be done within the TEN-T Network and the Baltic-Adriatic Corridor.
- Make Friuli-Venezia Giulia Region a hub for trade between Central-Eastern Europe, North Europe, the Mediterranean area and the Far East.
- Foster the modal shift from road to alternative means of transport (such as railway and maritime transport) also according to the EU guidelines in this field.
- Overall, promote functional recovery, identify critical issues and secure the existing road and railway infrastructure.

Within this framework, the above mentioned Regional Strategy identifies the most significant regional railway network as well as the exchange platforms for the modal shift from road to alternative means of transport (such as railway and maritime transport) of freight flows. Moreover, it recognizes the railway line Tarvisio-Udine, and its branches to Cervignano and the ports of Trieste, Monfalcone and Porto Nogaro as a part within the regional territory of the Southern Corridor Strategy.

C) Regional Stakeholder Mapping

This section will map out stakeholders by classifying them according to their influence on the project and their level of interest in the project. Given that REIF project refers mainly to the field of the rail freight transport, the main stakeholders involved in it are listed below. The following tables report their role and contribution to the project.



In the following tables, the list of stakeholders has to be filled-in. The first table (matrix) maps out the important stakeholders by classifying them according to their influence on the project (low or high) and their level of interest in the project (low or high). This will show which stakeholders have to be involved in project activities (key stakeholders and operative stakeholders), which stakeholders the PP would like to involve (relevant stakeholders) and which stakeholders are less important (marginal stakeholders) for the project activities. In the second table the stakeholders should be listed and described according to their role and benefits or conflicts their involvement could bring.

The stakeholder mapping serves also as a basis for the establishment of the market player working groups as an important element of all pilot actions in WP T2 (Deliverables D.T2.1.3, D.T2.2.4, D.T2.3.4). They will be composed of public and private stakeholders relevant to the chosen topic of the pilot action and the regional context.



		INTEREST	
		Low	High
INFLUENCE	Low	Marginal Stakeholders: Importance = low	Operative Stakeholders: Importance = medium/high
	High	Relevant Stakeholders: Importance = medium/high	Key Stakeholders: Importance = high <i>RFI S.p.A., railway Undertakings, RRTs, Terminal Operators, Freight Forwarders, Customs Agency</i>

Matrix of relevance of stakeholders.

Stakeholder	Role	Importance/ Relevance (High/medium/ low)	Contribution to the project	Benefits from the project	Conflicts (Potential, existing, former)	Current level of support	Strategies to improve the support
RFI S.p.A.	Company that manages the railway infrastructure	High	Implementation of the infrastructural works on RFI side.	Adequate funds and coordination at local level.	Lack of implementation of their works.	High	Continuous and regular meetings and feedback. Signature of specific MOUs.
Railway Undertakings	Operators	High	Commitment to exchanging data on trains.	Reciprocity in data exchange.	Possible filtering data.	Med	Showing the added value of data exchange.
RRTs	Operators	High	Commitment to exchanging data on trains.	Reciprocity in data exchange.	Possible filtering data.	Med	Showing the added value of data exchange.
Terminal Operators	Operators	High	Commitment to exchanging data on trains.	Reliability and continuity of data exchange.	Possible filtering data.	High	Showing the added value of data exchange.
Freight Forwarders	Operators	High	Commitment to exchanging data on trains.	Reliability and continuity of data exchange.	Fear for privacy of commercial data.	High	Showing the added value of data exchange.



Customs Agency		High	Support in the implementation of fast corridors.	IT infrastructure supporting fast corridors.	Not implementing fast corridors.	High	Continuous and regular meetings and feedbacks.
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Classification of stakeholders

D) SWOT Analysis

This section will report the strategic evaluations about the Port of Trieste and Friuli-Venezia Giulia Autonomous Region using this analysis instrument. The conclusions based on this baseline study and the role of the above-mentioned stakeholders are summarised in the following chart:

<p>Strengths</p> <p>FVG Region boasts the presence of several multimodal logistics platforms (3 ports and 4 RRTs), a consistent infrastructural endowment for a region of only 1.2 people.</p> <p>Overall, the level of the infrastructure is good without criticalities in terms of operation and maintenance.</p> <p>The level of cooperation among institutional players and private operators is generally good with a constant exchange and sharing of opinions and experience.</p>	<p>Weaknesses</p> <p>The governance of the regional logistics infrastructure is still fragmented.</p> <p>The last mile connection (linking to the national railway network) must be strengthened due to the increasing volumes of traffic.</p> <p>High costs for last mile connections among nodes.</p>
<p>Opportunities</p> <p>Increase of the volumes in the next fifteen years.</p> <p>Strong interest expressed major international investors interested in investing in the infrastructure of the Port of Trieste.</p> <p>Availability of European and national funds for the strengthening of port and inland port infrastructure.</p>	<p>Threats</p> <p>Strong competition at national and international level in the field of maritime and intermodal transport - e.g. RFC Alpine-Western Balkan</p> <p>Weak awareness of the possibility of using intermodal transport units (ITU) and considering intermodality as a possible alternative, essential for modal shift.</p>

E) Recommendation/Outlook

To sum up, this baseline study highlights the following conclusions that should be taken into consideration for the further implementation of the REIF project:

- Friuli Venezia Giulia Autonomous Region boasts the presence of several multimodal logistics platforms - i.e. four rail-road terminals (RRTs) and three ports, a consistent infrastructural endowment for a region of only 1.2 million people. However, this logistics system needs more coordination in the operational-, governance- and ICT field.
- The Port of Trieste is the first Italian port for maritime and intermodal traffic. This is a considerable advantage in terms of competitiveness of the regional territory, as well.
- Compared to other Italian ports, the Port of Trieste already has a relevant modal shift - 55% for TEUs on trains in 2018.
- Intermodality plays an important role in the medium and long-term development strategies carried out by the Port Network Authority of the Eastern Adriatic Sea and the private terminal operators of the Port of Trieste. Moreover, it is essential for implementing the catchment area of the Port of Trieste in order to reach the Central and Eastern European markets.
- Infrastructural bottlenecks hindering intermodality related, in particular, to the shunting yard of Campo Marzio in the Port of Trieste have to be eliminated.
- Administrative bottlenecks have to be removed as well by developing innovative ICT tools and solutions whose aim is to optimize the use of the existing infrastructure.
- In order to optimize the use of the existing infrastructure, it is advisable to invest in new technologies.
- The subsidy regime for intermodal transport should be extended even to the short distances, in order to allow a better connection between regional logistics nodes and, overall, support the modal shift.