Can a major transport infrastructure become a local development opportunity for Alpine areas?
POLY5
Can a major transport infrastructure become a local development opportunity for Alpine areas?
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INTRODUCTION

POLY5 - Polycentric Planning Models for Local Development in Territories interested by Corridor 5 and its TEN-T ramifications is a transnational project grouping 10 partners and financed under the European Cooperation Programme Alpine Space 2007-2013 (ASP).

The ASP 2007-2013 is the EU transnational cooperation programme for the seven Alpine countries, aiming at promoting regional development in a sustainable way. During the previous programming period, the ASP invested 130 Mio € in impact-oriented projects covering three thematic fields of cooperation, called “priorities”: “Competitiveness and Attractiveness”, “Accessibility and Connectivity”, “Environment and Risk Prevention”.
POLY5 was financed under the second priority, “Accessibility and Connectivity”, which objectives were:

- securing a fair access to public services, transport, information, communication and knowledge infrastructure within the programme area;
- promoting and improving access and use of existing infrastructures, to optimize economic and social benefits and reduce environmental consequences;
- enhancing connectivity for the reinforcement of polycentric territorial patterns and for laying the basis for a knowledge-driven and information society;
- promoting sustainable and innovative mobility models with specific regard to environmental, human health and equality related issues;
- mitigating the negative consequences of traffic flows crossing the Alps.

For the new programming period (2014-2020), the ASP aims at improving what achieved in the past and contributing to the Europe 2020 strategy for smart, sustainable and inclusive growth. The budget is almost 140 Mio €, distributed on four main priorities:

- “Innovative Alpine Space”, aiming at improving the framework conditions for innovation in the Alpine Space and increase capacities for the delivery of services of general interest in a changing society;
- “Low Carbon Alpine Space”, aiming at establishing transnationally integrated low carbon policy instrument and increasing options for low carbon mobility and transport;
- “Liveable Alpine Space”, aiming at sustainably valorise Alpine Space cultural and natural heritage, enhance the protection, the conservation and the ecological connectivity of Alpine Space ecosystems;
- “Well-Governed Alpine Space”, to increase the application of multilevel and transnational governance in the Alpine Space.
INTRODUCTION

POLY5 was conceived since the beginning as a bridge between these two programming periods, as all partners were aware of the long processes needed to achieve POLY5 objectives.

Involving 10 partners and 10 observers coming from Italy, France, Austria, Slovenia, Germany and Switzerland, the main project objective is to enhance accessibility, connectivity and competitiveness of alpine territories interested by major transport infrastructure granting, at transnational level, a balanced and polycentric local development. This overall project objective is achieved through the implementation of local development models able to take advantage of the opportunities offered by the infrastructure in all phases of its life-cycle: design of the infrastructural project, implementation during its building, and management, once the infrastructure is functioning.

The project specifically aims at:

• increasing participation and the influence rate of local communities into the decision making processes (local empowerment);

• providing local administrators with easy-to-manage tools and information able to support their choices at territorial level;

• improving Alpine areas competitiveness through a tutoring of local SMEs (Small and Medium sized Enterprises) and a perspective sustainable management of major transport infrastructures, also in order to attract investors.

The project started from data collection to define a shared cognitive framework of the territorial resources, values and risks related to the major transport infrastructure impacting on the partnership area. Stemming from this first analysis, transnational solutions to common problems were provided, through the definition of specific tools for local polycentric development and the implementation of pilot actions to test them. The last step was the evaluation of the efficacy of the toolkit developed and its generalization and transfer to decision makers at European, National, Regional and local level.

In other words, the POLY5 project was specifically dedicated to the construction of a planning toolkit to deal, in Alpine areas, with the presence of major transport infrastructures and, in particular, with the realization of the Mediterranean Corridor (former Corridor 5).

To reach this goal, POLY5 developed 4 main activities:

1) Build and share a common knowledge base on the areas involved in the project and the problems they address when dealing with major transport infrastructure;

2) Build a toolkit for polycentric local development, made of single instruments (studies, workshops, analysis…) that together offer a comprehensive solution to common problems;

3) Test some of these tools at local level, through specific pilot actions;

4) Transfer project results at transnational level.

The project total budget was 1.996.161,00 € of which 1.517.076,00 was co-financed by the ERDF (European Regional Development Fund).

The project lasted 38 months, from 1st September 2011 to 31st October 2014.
POLYS5 JOURNEY
ASP Priority 2 "Connectivity and accessibility"

The toolkit for polycentric local development, made of single instruments (studies, workshops, analysis...) that together offer a comprehensive solution to common problems

2010

Project preparation; Proposal submission; Award under the 3rd call for proposal of the Alpine Space Programme 2007-2013.

2nd step

2012

Test of some of these tools at local level, through specific pilot actions

3rd step

2013

Transfer of project results at transnational level

4th step

2014

The project total budget was 1,996,161,00 € (1,517,076,00 co-financed by the ERDF)

The end

Project closure

2014

The project lasted 38 months, from 1st September 2011 to 31st October 2014.
ENHANCE ACCESSIBILITY AND CONNECTIVITY OF ALPINE TERRITORIES

The website, www.poly5.eu was launched in February 2012. Since its first layout and concept, the website has grown, both in content and in visitors. Analyzing metric and data for the website, we learn that most visitors come from the Alpine Space area, but a certain number also from other countries in Europe and beyond.

Of around 2500 visitors, half are new visitors and half are returning ones, with an average session duration of over 3 minutes per visit.

The website is actually the main means of communicating outside the project our achievements and it includes the project advancements (with a 6 months update), all projects main activities and outputs and some pages to better know the partners and how they worked during POLY5 to spread the news on the project.

Together with the website, in September 2013, we launched our Twitter account @POLY5_EU counting more than 120 followers, a lot of retweets and preferences.

Last but not least: watch the video prepared by our partner Transpadana presenting the project in 5 minutes! http://youtu.be/su1Kk3b9Hec or www.poly5.eu
Cooperation among project partners is based on their previous experience in addressing issues related to major transport infrastructure impacts. This experience has matured at different administrative levels and is the expression of different instances at local, regional and national level.

The project Lead Partner is the Province of Turin. Its area is directly interested by the HS/HC (high speed and high capacity railway) Turin-Lyon railway which, within the overall Mediterranean Corridor, is a prerequisite for the strategic development of Piedmont and Italy. Thus the Province of Turin, and the Department for Spatial Planning and Transport, has developed a Strategic Plan for the areas interested by Lyon-Turin HS/HC line. To be exploited and become an opportunity, the infrastructure cannot be conceived and built as a pipeline that crosses the territory, but as an integrate work that can generate added value for local communities. This is exactly the aim addressed by the Province of Turin through its participation to POLY5, so that a strategic infrastructure as a Corridor, can be seen in interaction with what is already existing and thus minimize its impact while, at the same time, maximizing the opportunities.

When the Province of Gorizia has been involved in the project, in 2010, the reasons to participate laid in the possibility to open a very interesting confrontation about the "delicate" topic of major transport infrastructure (European corridors), in terms of spatial planning in a transnational area and from an economic, social and environmental point of view.

The Alpine Space Programme allowed the Province of Gorizia to create a share path on mobility, enabling a participatory process in which the concept of quality of life became fundamental for the proper planning of the area. Moreover, it provided the Province with the opportunity to debate with geographically distant countries (France, Germany…) on issues, experiences, methodologies and solutions suitable for the implementation of the system for major infrastructure, expanding cultural baggage.

POLY5 gave the opportunity to identify how a large infrastructure as the Mediterranean Corridor could be used to generate local development and/or to stimulate the rethinking of our transport networks.
These three partners express the administrative link between regional and local needs, whereas Veneto Region and the Regional Development Agency of the Ljubljana Urban Region act as regional actuators of national decisions and they have addressed issues linked to major transport infrastructures and how they impact locally.

Veneto Region represents a binding link of the Mediterranean Corridor, consenting the communication between the eastern and western part of Europe. Thus, the management and realization of infrastructures represent one of the main topics to be faced in order to extend a more intense dialogue with the international markets that are already aware of the potentiality of this area. Fulfilling this aim means taking into consideration the problems connected to the realization of new transport infrastructures: a wider and multifunctional approach is necessary to correctly evaluate the social acceptance and the environmental sustainability of such an investment.

Therefore, considering the peculiarities of this area, POLY5 represents an interesting occasion to work on new approaches and tools, with the aim of filling up some of the gaps still present in the infrastructural planning process. The implementation of the project was managed by the Logistics Section of the Veneto Region which has a huge experience in EU projects: in fact, since 2008, it managed 14 EU projects founded by 7 different EU Programmes both as Leader and partner, working with more than 200 partners and managing directly over 20 million euro on a total of 47.

The Regional Development Agency of the Ljubljana Urban Region plans, coordinates and implements regional development programmes and projects which create opportunities for a high quality life within the region. Together with the municipalities and other stakeholders it connects all the regional development efforts, ideas and subjects to create and provide the necessary educational, financial, entrepreneurial, environmental and social infrastructure for harmonized development of the region.

Among the top priorities of the Regional Development Agency of the Ljubljana Urban Region is the promotion of sustainable mobility policy with an emphasis on improving the public transport in the region. Through involvement in the POLY5 project, it had a possibility to explore new opportunities for a better accessibility at the fringes of Ljubljana metropolitan region, based on the sustainable mobility paradigm and employing in particular the new tools of mobility management.

Photocredit: U. Hočevar
The Municipality of Šempeter - Vrtojba has participated in the project POLY5 in order to verify the possibility of revitalization and development of the wider degraded area in Vrtojba due to the potential of its direct location near the 5th Corridor and the hub of railway and highway infrastructure. The main question of the pilot project is whether and how the major transport infrastructure, of which two parts are joined together in the Municipality of Šempeter-Vrtojba, becomes a development opportunity in the field of logistics, as from the point of view of providing services to respective regional economy as well as the capture and the processing of cargo flows as an inseparable part of the major transport infrastructure. Within the pilot project a dedicated logistics platform has been developed that will bring added value to both, the major transport infrastructure as well as the broader regional context of the Municipality of Šempeter-Vrtojba.

The University of Udine is deeply involved on territorial issues. Since its founding, by people’s will, after the 1976 earthquake, it contributes to the cultural, social and economic development of Friuli, a small but strategic region located on the eastern edge of Italy between the Alps and the North Adriatic Sea.

The Department of Civil Engineering and Architecture (DICA) works together with local actors to address the strategic interests of Friuli as well as the issues of local territories in relation with the impacts of the globalisation processes. POLY5 project particularly stimulated this Department on the integration between infrastructure systems and local and regional territories characterised by a mountainous geography and by a polycentric socio-economic structure. Furthermore, this project favours some new decisional approaches and methodologies to promote cooperation between local territories and communities and analyse the transformations deriving from major infrastructure systems.
The Centre of Regional Planning and Regional Development is one of the seven centres building up the Department of Spatial Development, Infrastructure and Environmental Planning of the Vienna University of Technology. Its strength is certainly grounded in the interdisciplinary structure, bringing together experts and knowledge from different spatial disciplines (planning law, regional sciences, infrastructure and financing, local planning, traffic and mobility, sociology, regional planning and regional development).

The innovative approach of the Alpine Space Project POLY5, clearly lies in grasping the emerging opportunities in conjunction with major transport infrastructure. The Vienna University of Technology seeks to contribute to this project by building on its broad interdisciplinary knowledge base (in research and practice) in terms of planning for the sensible and fragile Alpine Space.

Finally, the partnership benefited from the important input represented by a committee which, since the early ‘90s, promotes and raises awareness around this Corridor.

Transpadana was formed in March 1990 with the aim of raising awareness of the public and of the relevant Italian, French and EU authorities of the strategic importance of a fast, high capacity rail link with the potential to transport goods and passengers between Western and Eastern Europe through the Po Valley, linking the most industrialised regions in Italy and the ports of Genoa, Venice and Trieste with the European Networks.

The aim of the Committee is to promote, facilitate and accelerate the implementation of a system of corridors for high speed/high capacity rail transport through Europe. Its participation to POLY5 seems thus natural contributing in particular through its network and constant contact with homologues organizations in France and Slovenia and with the UE General Directorate for Transports while operating an every-day monitoring on TEN-T corridors in Northern Italy.
CHAPTER 1
The Network

The partnership is completed by Observers, institutions and authorities supporting the project and/or interested in its development and results achievement.
LOCAL EVENTS

02 May 2012, Udine (IT) 14 May 2014, Chambéry (FR)
17 April 2012, Gorizia (IT) 28 May 2014, Ljubljana (SI)
16 October 2012, Ljubljana (SI) 29 May 2014, Turin (IT)
16 November 2012, Turin (IT) 30 May 2014, Ljubljana (SI)
22 March 2013, Padova (IT) 04 June 2014, Gorizia (IT)
05 April 2013 Chambéry (FR) 05 June 2014, Venice (IT)
18 June 2013 Udine (IT) 11 June 2014, Šempeter-Vrtojba (SI)
24 June 2013, Munich (DE) 03 September 2014, Gorizia (IT)
09 July 2013 Chambéry (FR) 30 October 2014, Portogruaro (IT)
01 August 2013, Venice (IT)
01 October 2013, Chambéry (FR)
09 October 2013, Venice (IT)
15 October 2013, Trieste (IT)
07 November 2013, Chambéry (FR)
13 November 2013, Venice (IT)
15 November 2013, Turin (IT)
13 December 2013, Chambéry (FR)
15 January 2014, Venice (IT)
03 February 2014, Turin (IT)
05 February 2014, Chambéry (FR)
10 March 2014, Chambéry (FR)
Since the 1990’s the European Union has been involved in huge programmes for the realization of transport infrastructures, under the policy framework called Trans-European Network for Transport (TEN-T). More recently, in order to take greater account of the impacts of the global financial crisis on national and European budgets and of the new political and economic priorities, the framework has been revised and updated as the Connecting Europe Facility (CEF). Notwithstanding a general situation of great uncertainty, the European infrastructure network remains a great deal for the whole continent and for its future competitiveness and cohesion.

Map of the TEN-T network – European Commission – Mobility and Transport: Infrastructures – TEN-T – Connecting Europe, with a focus on the Alpine area.
Territories of the POLY5 partners differ from each other on important and fundamental spatial structures, such as population density, urban dimensions, land use and so on.

<table>
<thead>
<tr>
<th></th>
<th>SAVOIE</th>
<th>TURIN</th>
<th>VENICE</th>
<th>GORIZIA</th>
<th>OBÉINA S/V</th>
<th>UMBRIJA</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATION</td>
<td>France</td>
<td>Italy</td>
<td>Italy</td>
<td>Italy</td>
<td>Slovenia</td>
<td>Slovenia</td>
</tr>
<tr>
<td>ADMIN</td>
<td>Region</td>
<td>Province</td>
<td>Province</td>
<td>Province</td>
<td>Inter-municipal.</td>
<td>Urban Region</td>
</tr>
<tr>
<td>SQ. KM</td>
<td>6.267</td>
<td>6.830</td>
<td>2.463</td>
<td>466</td>
<td>3.369</td>
<td>2.555</td>
</tr>
<tr>
<td>POPUL.</td>
<td>405,535</td>
<td>2,302,353</td>
<td>863,133</td>
<td>142,441</td>
<td>228,919</td>
<td>533,213</td>
</tr>
<tr>
<td>DENSITY</td>
<td>COMPACT</td>
<td>STRONG</td>
<td>DENSE</td>
<td>SPARSE</td>
<td>SPARSE</td>
<td>COMPACT</td>
</tr>
<tr>
<td>URBAN</td>
<td>LINEAR VALLEYS</td>
<td>METROPOLITAN</td>
<td>POLYCENTRIC</td>
<td>RURAL</td>
<td>RURAL</td>
<td>MONOCENTRIC</td>
</tr>
<tr>
<td>LAND</td>
<td>85% PASTURES</td>
<td>71.4% AGRICULT.</td>
<td>67.7% AGRICULT.</td>
<td>44.2% AGRICULT.</td>
<td>82% GREEN</td>
<td>63.7% FORESTS</td>
</tr>
</tbody>
</table>

The main structural differences in the territories of the POLY5 partners - BUILDING THE FUTURE: A COGNITIVE FRAMEWORK TO PLAN LARGE SCALE TRANSPORT INFRASTRUCTURES - Alpine Areas Case Study along the Mediterranean Corridor (DICA - University of Udine)
CHAPTER 1
The Network

THE COOPERATION AREA
The Province of Turin area, with over two million inhabitants, accounts for about half of the total population of Piedmont Region and it is located along the axis of the Mediterranean Corridor, and thus strongly affected by two infrastructure projects that characterize the mobility of people and goods along two Corridor sections: High Speed/High Capacity (HS/HC) Turin-Lyon and Turin-Milan. The territory is characterized by three distinct macro-systems: mountains (57%), hills (15%), and plain (28%). The settlements and human component follows this macro-structure, assuming different forms depending on the specificity of the land and in turn shaping the territory according to its needs. At different geomorphological features correspond different levels of human activity, detectable even by the demographic distribution, with a strong concentration of the activities along the plain and the valley floors and sparse settlements in the Alps. In the Province of Turin, the areas “built” for urban, manufacturing, infrastructure, service, etc. are concentrated in the metropolitan area, and then spread to the valley floor along the main linear infrastructure systems (roads, railways, ducts).

The industrial sector in the province of Turin has always been characterized by a strong dependence on the mechanical sector, which, since the eighties, has entered a fluctuating phase of crisis and recovery. The gradual decrease in employment in the field of large-scale industry (mechanical, hardware and informatics) caused, at least in part, the start of that process of economy redefinition and redistribution and, in the last fifty years, the economic structure has changed dramatically, reversing the relationship between industrial and service sectors. The surface area of the Province of Turin is covered by protected areas established at national, regional and provincial level, covering 82,496 hectares, or 12% of the territory. The province is also rich in cultural heritage, making tourism an important economic driver. In the Region and in the Turin metropolitan area, transport demand has grown at a fast pace, due to the change in consumption patterns and processes of decentralization and outsourcing of business.
CHAPTER 1
The Network

THE COOPERATION AREA

Photo credit: M. Šon
The Ljubljana Urban Region (LUR) is located in the central part of Slovenia and it is the second largest Slovenian region including 26 municipalities, which cover 13% of the country. The region lies at the junction of two Trans-European transport corridors (Mediterranean and Baltic-Adriatic) and serves as a bridge from Slovenia to the wider cross-border and international area, connecting Central and Eastern Europe.

The functional centre of the urban region is the capital, Ljubljana. The city is the most important public transport hub, where all functions, institutions, businesses, cultural, service and supply activities are concentrated, serving the whole country.

LUR is characterized by a marked centrality of the city of Ljubljana which is star-shaped along major transport corridors. Inside the ring motorway, Ljubljana has already largely developed into a compact city. The centrality of the urban area of Ljubljana is reflected in the transport network and settlements design as it plays the role of junction of road, bus and rail transport. From here out, the settlement spread in the form of five development directions. Larger settlements lay on the flat part of the Ljubljana basin while surrounding areas, with higher altitude, are difficult to access and therefore less populated, characterized by green areas with villages and small hamlets. On average, the population density in most of the settlements in the LUR area is quite low, which makes it difficult to establish economically viable transport services within local centres.

The natural environment in the region is relatively well preserved and comprises a variety of habitats, from the karst and mountain meadows, forests and wetlands. The region has many areas with important ecological values, but the environment is threatened, mainly due to intensive urbanization and suburbanization, land drainage, regulations and intensification of agricultural activities. Mountainous areas in the region are vulnerable because of harsher climatic conditions and grasslands in the higher parts of the Alps are threatened by the abandonment of grazing and subsequent overgrowth.

Ljubljana urban region is the most economically developed region in Slovenia, with a number of economic zones and two business incubators. Ljubljana urban region has also a rich cultural heritage. The highest concentration of cultural heritage sites is in the Municipality of Ljubljana, especially in the old town and its immediate vicinity.
CHAPTER 1
The Network

THE COOPERATION AREA
VENETO REGION

Veneto Region area is located in a strategic position within the Mediterranean Corridor axis towards Eastern Europe. The province of Venice is particularly interested by the transit of this Corridor also because of the high variety of nodes and available transport solutions related to the multi-modal characteristic of this territory.

Veneto Region belongs to the so called “Nord Est” region of Italy, a macro-area with an high economic value, where the development of the transport infrastructure system plays a fundamental role for the management of trades in a really dense entrepreneurial texture of the area.

Most of the province is represented by agricultural land, but the province of Venice, as well as the entire region, was also subjected to a wide process of urbanization that created a series of clusters, evolved with a high degree of spontaneity, while all major cities in Veneto, including Venice, are evolving towards an urban structure characterized by specific spatial and functional components.

In spite of the wide and stretched urbanization of the Province of Venice, its landscape can be described as a mosaic alternating both natural and human-made tiles.

The economic structure of the province of Venice is based essentially on SMEs representing 99.9% of the total number of firms of the area.

There are several sites of significant cultural and archaeological interest related mainly to the Romanic presence in the area, in addition to the City of Venice itself and of some churches and villages with a special historical value.

The internal transport network of the Province of Venice is divided into highway and streets managed both by the Province and by other local administrations. The higher flows is registered within the highway A4 Venice - Trieste which is the only direct line for the heavy traffic to and from eastern Europe. The road infrastructures at provincial and local level are mostly used by commuters and marginally affected by heavy traffic. The actual railway line Venice - Trieste represents a link to and from Eastern Europe too, both in terms of passenger and freight traffic. The area accounts also an international airport and an international port and several tourist marinas.
CHAPTER 1
The Network

THE COOPERATION AREA

Photo credit: Dabigben73 (own work)
THE DEPARTEMENT OF SAVOIE

The département of Savoie has a privileged geostrategic position for two reasons:

• It constitutes a core element of the major east-west axis, being one of the major access points for crossing the Alps both for flows between the Iberian Peninsula, Italy and Central Europe and for those between the northern parts of France and Italy;

• It is at the heart of the north-south axis between Switzerland (Lausanne and Geneva) and Grenoble, France. This area benefits from a strong economic and demographic dynamic. Here again, Savoie is a major access point into Italy.

Modern Savoie has been deeply marked by the implementation of major infrastructure projects, with a strong local commitment to assume at least part of the initiative and funding.

Tourism development, since the creation of the first resort in Courchevel in 1948, largely demonstrates a local desire to enhance Savoie’s many strengths and is rooted in the clear commitment of the territory and of its inhabitants to their environment.

The operations and dynamics of Savoie are based to a large extent on the quality of its natural resources and its natural heritage is rich and diverse.

Natural and rural areas constitute an important and recognized element of the territory, and contribute in large part to its high attractiveness and economic wealth creation. They support a tourist industry which is the main driver of economic activity within Savoie, which also includes a dynamic agricultural sector orientated towards quality production as well as an important logging sector to commercially exploit local timber.

Savoie is a relatively wealthy department with a GDP (Gross Domestic Product) per capita of 24.1 K €, placing it 8th in the national ranking and the highest for this indicator among départements with no regional capital.

The main economic sectors are therefore agriculture and tourism, but Savoie has also adopted a strategy to promote new industrial clusters in two key fields: solar energy and mountain jobs.

Savoie has a wide range of transport infrastructure ranging from the motorway network, national highways, local roads, high speed and local rail networks, rail freight network and a modal shift platform to an airport. Historically, Savoie was a privileged terrain for the implementation of major planning policies by the state: the Mont Cenis railway tunnel (1871) and the Frejus road tunnel (1980) are just two of many examples.

The proposed freight and passenger rail link between Lyon and Turin, part of the Mediterranean Corridor, is another example of these major projects which strongly mark the territory and contribute to its economic attractiveness.
CHAPTER 1

THE COOPERATION AREA

The Network
THE MUNICIPALITY OF ŠEMPETER-VRTOJBA

The municipality of Šempeter-Vrtojba was established in 1998. It is made up of two settlements, Šempeter pri Gorici and Vrtojba, located on the border with Italy and lying south of Nova Gorica, which is the administrative, economic and cultural centre of the Goriška region, also known as the North Littoral (Primorska) Region.

Primorska has an important geostrategic position within Europe. With the enlargement of the European Union to Eastern Europe and the Balkans and the establishment of trans-European corridors, this position becomes more and more strategic, in particular thanks to a modern infrastructure project as the Mediterranean Corridor. In fact, its construction and the development of high-quality logistics activities would have a direct impact on the Northern Adriatic ports since overseas market in Central and Eastern Europe is now directed towards the North-European ports on the Atlantic, mainly due to better transport links. The Primorska region would be central to this development, playing a significant role in the flows definition, since it establishes the shortest route from the Adriatic Sea to Central and Eastern Europe. The Primorska region would become a bridge between the intersection of corridors in Ljubljana and one of the most developed European areas (Po River Valley) and the door to Western Europe. The area is characterized by small rural settlements, mostly nearby high-quality agricultural land. Settlements are made up of several hamlets and in the foothills of the Alps there is a highly uneven distribution of the population, concentrated in the areas below the Soca valley in the form of compact villages on the edges of terraces suitable for agriculture. The area is also characterized by a large dispersion of industrial plants. Upon the demise of large enterprises after the fall of Yugoslavia, the area experienced a revival of private initiatives and in recent years, in almost every municipality, in small towns as well as in rural areas, economic zones have been established. There are also many and very extended areas of nature conservation. The Karst plateau and the Alps areas are among the rarest populated ones in Slovenia. On the other hand, in the coastal zone the overall population density is almost three times higher than other areas within the region.

Until 2008, the region was one of the most economic successful in Slovenia. After that year, it was hit hard by the financial and economic crisis. Now, the project area is mainly affected by a reduction in transport and warehousing, in the construction sector and industries, which before the crisis have not gone through the structural rebuilding. The favorable geographical location and transport are the reason for a high concentration of companies in the coastal area, but the distance from the main transport corridors and poor road links with strong economic areas, have not protected the region from the crisis, as one-fifth of the gross domestic value is created in the transport sector. A sector which has been important in the history of the area but is now in contraction due to its underdevelopment not meeting the market needs and expectations.
CHAPTER 1
The Network

THE COOPERATION AREA
THE PROVINCE OF GORIZIA

The Province of Gorizia area is located in a strategic position with respect to the Mediterranean Corridor, being the area close to the border with East Europe, in the north east of Italy. In addition, it borders the province of Udine, and it is thus directly connected to the transport axis Central Europe - North Adriatic.

From the point of view of the landscape the province presents a complex and composite pattern, linked, on one hand, to orographic conditions and geomorphological characteristics of the soil and, on the other hand, to the settlements that have very ancient origins. The river Isonzo (Soca) is the main waterway of the province of Gorizia and its basin strongly characterizes the area.

The province of Gorizia is organized in 25 municipalities and has a morphological structure comprising 408 square kilometers of plains and areas of reclaimed land and 58 square miles of hill.

The population density is much higher than the national average and that of the North-East: 45% of the population lives in the two municipalities with more than 20,000 inhabitants (Gorizia and Monfalcone) and since 1991 the trend of urbanization is decreasing.

The trend rate of production in the manufacturing sector has also confirmed the ongoing recovery in 2010, which has been mostly driven by the increase in foreign demand and export is now the main income for manufacturing local enterprises. Tourism is not only and important economic resources, but an institutional task, as the regional legislation delegates to the provinces the task of promoting and enhancing the area touristic appeal. The Province of Gorizia goal is to promote a tourist offer on the global market, without standardizing the products, but focusing on the specific territorial characteristics. For example, there are numerous ancient roman sites (the city of Grado), pre-Roman sites (forts), as well as sites of World War I. In addition, museums are scattered throughout the area with the highest concentration in the two main urban centers (Gorizia and Monfalcone).

The area of the Province of Gorizia is a crossroads of road networks, railways and waterways as it is a hub between West and East but also between North and South and it is therefore essential to monitor the flow of imported and exported goods. The Port of Monfalcone is the airport to the north of the Adriatic Sea and is an important outlet for commercial traffic between the Middle East and Northern Europe (Austria, Germany and Eastern Europe), vast continental areas that need an outlet to the sea for their current import and export.
Besides all the differences characterizing the cooperation area, all partners regions have in common one specific feature: they are crossroads for transport flows, regardless of the nature of traffic: freight, passengers, commuters, tourists...

In particular, all the territories, although at different levels, are intercepted by the Mediterranean Corridor. This corridor, also known as project 9 within the priorities of the “Core network corridors”, links the Iberian Peninsula with the Hungarian-Ukrainian border. It follows the Mediterranean coastlines of Spain and France, crosses the Alps towards the east through Northern Italy, leaving the Adriatic coast in Slovenia and Croatia towards Hungary. Apart from the Po River and some other canals in Northern Italy, it consists of road and rail. Key railway projects along this corridor are the links Lyon – Turin and the section Venice – Ljubljana.

“Core network corridors” were introduced to facilitate the coordinated implementation of the core network. They bring together public and private resources and concentrate EU support from the CEF, particularly to:

- remove bottlenecks;
- build missing cross-border connections;
- promote modal integration and interoperability.

They also aim at:
- integrating (as ongoing modal measure, these corridors shall be integrated into the multi-modal TEN-T) rail freight corridors;
- promoting clean fuel;
- promoting other innovative transport solutions;
- advancing telematics applications for efficient infrastructure use;
- integrating urban areas into the TEN-T;
- enhancing safety.

These corridors are strong means for the European Commission to not only boost investments but to also advance and showcase the achievement of wider EU transport policy objectives. The ultimate objective of infrastructure development along these corridors – and on the core network as a whole – is to complete seamless connections for the sake of efficient, future-oriented and high-quality transport services for citizens and economic operators.

Moreover, dealing with large infrastructure projects a great number of different challenges with very specific details have to be considered. The European Regulation No
1315/2013 takes account of this fact – especially in Art.50 – that these infrastructure projects need a certain involvement of public and private stakeholders to ensure:

a) the enhancement of regional mobility, thereby promoting access to the trans-European transport network, for all regions of the Union;
b) the promotion of cross-border projects;
c) the integration of urban nodes into the trans-European transport network (including promotion of sustainable urban mobility);

d) the promotion of sustainable transport solutions, such as enhanced accessibility by public transport, telematics applications, intermodal terminals/multimodal transport chains, low-carbon and other innovative transport solutions and environmental improvements;
e) the enhancement of cooperation between the different stakeholders.
POLY5 partners analysed the current situation of the project cooperation area, underlining their territories differ from each other on important and fundamental spatial structures, such as population density, urban dimensions, land use and so on. The partnership needed therefore to learn on the involved areas characteristic so that at least two domains could be explored:

a) knowledge of the existing order (referring to existing structures and systems), that is more explicit and systematic;

b) knowledge of the emergent order (referring to future structures and systems) that, instead, is inherently uncertain, subjective, diffuse, practical and implicit.

Partners believe that only through the construction of a strategic vision (that means a vision implemented through an appropriate strategy) of a certain territory, it is possible to appreciate the changes, and consequently the value, that can be generated in the territory through the implementation of a certain infrastructure.

This is why POLY5 first achievement has been to elaborate a “Strategic vision to measure the value of an Alpine territory with or without a major transport infrastructure”. This elaboration implies a methodological discussion about:

a) how to appraise the value of a territory with and without a new infrastructure, and

b) how to build strategies and visions in particular territories, such as Alpine areas.

To reach this goal, POLY5 decided to use three different approaches based on different planning tools: scenario, visions and spatial strategies.

Before this, however a knowledge base, referred to the existing order, needs to be realized. This task was carried out by means of a survey, supported by a specific “info-sheet”, data describing the situation of the areas of the POLY5 partners, during the beginning of 2012. The main purpose of the survey was that of reproducing, on a suitable “semantic web” platform, the situation of each area and to allow the project partners, as well as other end users, to generate scenarios from this information. The survey also aimed at depicting the problems that were encountered in those areas during the progress of the mega infrastructure realization and the possible solutions envisaged by the responsible authorities and other stakeholders.

After the completion of this first survey, a second was launched with the aim of
addressing possible effects produced by the foreseen infrastructures at the local and regional levels. While the first survey was dealing with the description of the area profile, the major features of the ongoing projects, and finally the decisional processes involved in the construction of the major transport infrastructure, the second survey was focused on the effects that the new infrastructures could produce on the involved territories.

It was also decided to support all the data collection and elaboration of the WP4 by means of a unique ICT platform, namely the Territorial Knowledge Sharing System (TeKnoSS).

**TEKNOSS**

The tool developed by University of Udine, TeKnoSS, is a web platform which main purpose envisaged by the working team was to construct a system that would provide decision makers and designers of the concerned infrastructure with reliable information about the processes that were going on the territories represented in the knowledge base and produce complex interregional scenarios. Using this system, it would be possible to learn what is actually happening along the corridor, what are the processes and actors involved, how do approaches change from territory to territory in dealing with this matter and, finally, what could be the desirable actions aimed at improving cooperation.

Summarizing, TeKnoSS has been built as a means to facilitate knowledge sharing and to raise interaction between those users that are involved, for different reasons, in the planning, evaluation and implementation of the European Project called Mediterranean Corridor (formerly known as Corridor 5) that is at the core of the POLY5 project. It is constructed with a “Semantic Web” technology, which enables to forecast alternative scenarios, to hypothesize visions and to elicit strategy building, composing and facilitating an accessible territorial knowledge base system. Furthermore, TeKnoSS finds its position in the emergent “smart planning” perspective, as intended to frame and feed new forms of public participation into difficult decisions in the field of territorial integration.
These three tools share a common characteristic: they are tools able not only to explore, but also to construct the far future. Moreover they necessarily involve, in that exploration as well as in that construction, all the interested communities and stakeholders.

As mentioned before, while knowledge of the existing order is more easy to gather (e.g. by filling the two boxes of strengths and weaknesses on the top of the well-known SWOT framework), the main problem towards the construction of the future order consists in the modalities to capture the implicit, hidden and dispersed knowledge (e.g. capable to fill the other two boxes of opportunities and threats on the bottom of the SWOT framework). Scenarios, visions and strategies are tools that help to grasp that implicit knowledge and to transform it in knowledge capable to produce structured action.

This implicit knowledge, through the implementation of cognitive and relational processes, can emerge becoming explicit and usable. This knowledge is really effective to understand future opportunities as well as future threats and in so doing it features the two opposite scenarios: that of opportunities and that of threats. This is not so much because they are synthetic and integrated representation of the reality (existing or emergent) as much as because they allow, at the same time, new knowledge to emerge and new action to be done. Consequently, they increase the possibility of finding new solutions to problems. For this reason we can define scenarios, visions and strategies as “cognitive mediators” as they favour processes of interaction and collaboration that require, to get started, the sharing of a certain knowledge base as well as the identification of new possible solutions to complex problems.

Thus, scenarios, visions and strategies are cognitive mediators between knowledge and action and also cognitive switches between them as they allow to transform factual knowledge in voluntary action, which are categories that normally belong to two completely different and separated ontological domains.

Thus, POLY5 partners tested them in three different areas belonging to the above mentioned systems. The Technical University of Munich has tested a spatial strategy approach in the small towns of St. Jean de Maurienne in Savoie and of Susa in the Province of Turin. The University of Udine has tested a scenario building tool in the Veneto Region; the Technical University of Vienna, with the support of the University of Ljubljana, has tested a visioneering tool in the Ljubljana Urban Region (LUR).
CHAPTER 2
A shared knowledge

SCENARIOS, VISIONS AND SPATIAL STRATEGIES

To uphold the future of connectivity within the European Union, the Commission had to reduce and simplify its transport policies. At the same time, large infrastructure projects need to be adequately tuned according to the macro scenarios developing at the European and global levels, while still interacting with the local territory. Decision makers and planners quite often lack the tools to put in relation the macro and the micro levels but, nevertheless, the contingency of a crisis situation by reducing available resources is also creating the conditions for a more accountable approach to programming. Thus, it also provides the occasion to develop frameworks of good governance, transparency and public participation to improve the process.

In this framework, the University of Udine presented a report aiming at providing not a solution to these issues, but a recognition of the reality in the attempt to draw a liaison between the macro and the micro levels, by analysing current scenario changes and their implications. The report was structured to provide an overview of scenario changes in corridor development firstly along the Po Valley and then specifically for the Veneto Region. It recognises how contingencies and bottom-up approaches are shaping the planning process of large infrastructure projects, diversifying outcomes in terms of layout, implementation timings and typology. Thus, more adaptive projects better integrated and with least impacts, even on public finances, seem to count most during uncertain times.

Certainly, it is an arduous task to build relations between expectations and programming with potential risks of inconsistency into policy making. However, a different approach is emerging and it looms to point toward more cautious and incremental modalities of deciding and implementing large infrastructure projects.

The team of the University of Udine has consequently elaborated these four macro scenarios:

SCENARIO FOR THE VENETO REGION
identified by TEKNOSS (Territorial Knowledge Sharing System)
THE U-SHAPED SCENARIO

If flows from and to the Po Valley would bend North onto the Baltic-Adriatic Corridor to cross the Eastern Alps, it means that the Tarvisio pass could gain more attention as a relevant crossing. In this perspective, the problem for the Veneto Region would be to improve the connections from Verona to Udine, regardless if the service might not be high speed. Thus, bottlenecks between Treviso and Conegliano would require a faster solution than awaiting the doubling of the Cervignano – Udine.

Besides these direct transport implications, this configuration has some important territorial consequences. Strengthening connections toward the centre of the region could bring closer together the core cities with benefits in regional accessibility and polycentric integration. However, it needs to be noted that, in this configuration, there is a risk of leaving Eastern and Southern connections without proper consideration and under heavy road traffic.

THE E-SHAPED SCENARIO

If flows from and to the Po Valley would bend North along the Helsinki – Valletta and the Baltic – Adriatic Corridors, it means that the Brenner tunnel and the Austrian tunnels could open service and be operative at about the same time. In this perspective, the problem for the Veneto Region would be similar to the implications of the U-shaped configuration, adding the need to remove bottlenecks North of Verona.

This configuration moves the regional balance Westwardly. Territorially speaking, inner and core cities will need more attention to be integrated in the network, not to risk exclusion due to competition between the two Northward corridors.

THE K-SHAPED SCENARIO

If flows from and to the Po Valley would cross the Alps both through the Baltic-Adriatic and the Mediterranean Corridors, it means that an opening toward Ljubljana could be considered as important as toward Vienna. In this perspective, the problem for the Veneto Region would be the same as for the implications of the U-shaped configuration. However, considering that Eastern connections might not be realized shortly as high speed, it appears as though the eventual realization could be of a different sort than planned.

THE H-SHAPED SCENARIO

If flows from and to the Po Valley would include the Southern branch of the Baltic-Adriatic Corridor, it means that the North Adriatic ports could be better integrated into the railway system (Fig. 7). In this perspective, the problem for the Veneto Region would be to efficiently link the port of Venice by rail, improving connections on the hinterland and coordination with the other North Adriatic ports on the sea side. Currently, new tracks are planned at the Venice-Mestre station. It would be desirable that such implementation could include intermodal facilities.

Four macro scenarios elaborated by the University of Udine.
Source: Fabbro and Brunello, 2012.
POLY5 partners define a spatial strategy as a proposal for a sequence of impact oriented spatial interventions geared at transforming a designated area towards a positive and evidence-based alternative future that is set at a sufficient temporal distance.

![Impact Model developed by the TUM](image)

An impact model is used to make sense of and to visualize the assumed impacts of a new infrastructure or any other intervention. The model consists of impact chains. Impact chains consist of an activity and its impact. Following is an activity that once more has an impact and so on.

It aims at a broader understanding of the impact of the intervention and to consider the impacts in local and regional development strategies.
The designated area can be a region, a municipality or a part of it. To set up a spatial strategy the following steps are needed: spatial analysis, design of an alternative future and definition of a sequence of interventions to achieve the alternative future.

Within POLY5, the Chair for Urban Development at the Technische Universität München (TUM) concentrates particularly on the impact of higher accessibility within alpine regions and designed strategies based on a SWOT-analysis to strengthen the positive effects on an area derived from higher accessibility. The work focused on two specific project cooperation areas: St. Jean de Maurienne in France and the City of Susa in Italy.

In addition, the TUM-team developed "value chain stories". These stories are a colorful picture of how the town would look like in the future. They are a creative way of establishing an understanding for what is happening and this approach has been adapted to the POLY5 project. The foundation of these stories is the above mentioned impact model, developed within POLY5, which demonstrates and shows the possible benefits of the major transport infrastructure. Still, the model might be too complicated to explain the impacts to a local community - therefore TUM consequently propose value chain stories. The stories explain the benefits in a more creative as well as easier way, focusing on certain interrelating parts of the impact model, e.g. growing tourism in the region. The stories enable to transfer these topics into real life with demonstrating how fictive persons use certain new infrastructures – and how this affects the area.

Read one of the Value Chain stories: know how Roberto’s life changed thanks to the “Albergo diffuso” development

"Val di Susa doesn’t exactly trip off the tongue. Tucked away in a corner of Italy that is not wholly Italian, it is small, not very populated and not very visited of all the country’s regions – except for the higher winter resorts. Still, the city of Susa got a certain charm; it might be the ancient roman ruins or the narrow streets with little Italian coffee shops. And something has changed. Susa suddenly becomes “reachable” due to the new high-speed railway station, which just opened a bit outside the little town. So Roberto, the owner of a little restaurant with two guestrooms in the first floor of his house has an idea. Why not combining all sorts of empty guestrooms throughout the city within one hotel?

Albergo diffuso translates literally as “scattered hotel.” The principle is that rooms, decorated in a consistently authentic and local style, are scattered throughout different buildings within the town but overseen by one manager – in this case Roberto. A traditional breakfast is served at a local café or in the kitchen of one of the local houses, or delivered to the guest rooms. Roberto’s wife, formerly a housewife not able to find a job after she had three kids, is organizing typical dinners in Piedmont and slow food style. Men and women from all over the city come together, cook and bake and sell the many courses dinners to the tourists. Call it a B & B village. Like a holiday apartment, an Albergo diffuso allows travelers to embed themselves in village life, but the bonus is that it offers the basic services of a hotel. There is a reception to report to where Roberto is available to help with questions, recommendations or bookings. Since the new railway station was opened, winter visitors come to stay in Susa, and use the hourly ski buses to the nearby Bardonecchia, a famous ski region; in summer, Roberto offers walks, cycle- or horse-rides in the wooded foothills.

Roberto’s brother, who has a little farm, organizes the trips and also offers his help as a mountain guide. The reception is located in the old town hall of the city, beautifully restored. There, visitors are able to see the different levels of accommodation on a map and where within the city they are located. Nearly every third family house in Susa offers one or two rooms – some of them with bathrooms, some with a beautiful mountain view. Especially for the women in Susa, the scattered hotel is a great job opportunity as most of the men are employed in the shrinking industry sector. So offering a room with breakfast adds to the household income.

The credo, nevertheless, is “slow tourism” – basic but charming accommodation with nice extras as an open fire place or an orchard to wander through, home-made food and regional products and “soft” leisure facilities such as trekking, horse riding and mountain biking. Roberto’s other cousin, Sergio, opened a rental store in which the guests can rent out whatever sports equipment they need. In the evening, dinner for the guests is served in various locations within town, every location being specialized in a certain dish – typically for the region. As most of the guest book full board, they have the opportunity to eat out every night in a different restaurant being part of the scattered hotel. Most of the contributors of the Albergo diffuso are able to generate a second income now, but the most visible effect are the newly renovated houses and gardens, the enlivened streets and the dim candle light in the small cafes and restaurants at night full of guest who experience a truly Piedmont’s lifestyle”.

Read the other Value Chain Stories on the POLY5 website: www.poly5.eu
VISONEERING

During the winter semester 2012/13, a student workshop entitled ‘Tracking Ljubljana Region’ was held in Ljubljana, Slovenia, and in Vienna, Austria. The idea of the student workshop was borne out of the Alpine Space Programme project POLYS.

The main outcome of the workshop focused on the concepts and visions of the Ljubljana urban region development. In particular students examined the role and function of a special planning tool – Visioneering – within the planning cycle of a major transport infrastructure project. Visioneering operates by designing comprehensive and inspiring pictures of regions in order to stimulate the political, public and professional discourse. Visioneering certainly assists in grasping a region, but the role and function it has in a planning cycle are still underexposed in scientific and practical terms. This situation makes the master project ‘Tracking Ljubljana Region’ highly innovative, where the students got the chance to contribute to the scientific debate of planning.

In addition to the three tools, the shared knowledge has been completed by comprehensive analysis of the road and rail system of the area concerned by POLYS, provided by Transpadana.

Visioneering as a term is a construct of ‘envisioning’ and ‘engineering’. Visioneering means the engineering of visions with modes based on citizens’ empowerment, participation of relevant stakeholders and innovative use of social capital. It challenges spatial planners to translate stakeholders’ views into a suitable ‘language’ which is understandably quick and prompt for plural addressees, e.g. for politicians, citizens, planners.

Visioneering aims to create a future image of a region – in a wider time frame as well as in a wider area than conventional and usual planning tools do – by involving local peoples’ desires. It deals with regional challenges in an integrated, holistic manner. It helps to achieve clear mental pictures of what could be, fueled by the conviction that it should be.
CHAPTER 2
A shared knowledge

TOOL ON TRANSNATIONAL CORRIDOR
road and rail transport system

Transpadana, provided an analysis carried out with reference to both rail and road mode of transport. In order to provide a clear picture of the current traffic situation in the overall network a transport network graph has been developed. Thus a link by link representation of main relevant information concerning both the infrastructures and the traffic they are affected by was provided. It must be noted that, given the object of POLYS activities, the presented values refer to average conditions throughout the time of the year. Therefore an average condition assuming stationary condition and a macroscopic level of analysis has been adopted. Consequently neither specific day’s conditions nor dynamic simulation for assessing particular situations have been developed.

The geographical coverage of the road and rail model includes a transnational area, belonging to six different countries (Italy, France, Switzerland, Liechtenstein, Austria, Germany and Slovenia) which covers the major part of the Alpine Space area.

The activities have been carried out capitalising and updating the results of previous projects, in particular SoNorA (Central Europe 2007-2013 Programme) and AlpCheck2 (Alpine Space Programme 2007-2013). Moreover a careful desk work has been implemented for getting updated descriptions and representations of the infrastructures that have been included for constructing the supply side of the transport models. Indeed, this work has been based on updated rail and road maps concerning all the countries included in the modeling area.

Concerning the demand side, the updating procedure was carried out considering trends in the increase of traffic flows but also the specific characteristic of the recent years (economic downturn). On the other hand new traffic counts along with the consideration of new infrastructure allowed to improve the model.
Based on this analysis, Transpadana further explored the topic through the elaboration of a TTDSS (Transnational Transport Decision Support System) based on transport modelling and supporting transport planning. TTDSS is a tool providing shared quantitative elements supporting the decision making process at strategic level. Its results can be used by different categories of stakeholders, ranging from citizens to high level decision makers:

- Transnational/National/Local authorities;
- Transport operators;
- General public.

In the specific case, TTDSS was applied to transnational corridors crossing north-eastern Italy scenario evaluations related to the realisation of the TEN-T corridors linking North-Eastern Italy with Central and Eastern Europe (time horizon: approx. 2030) and it lead to the elaboration of three scenarios:

- Current situation;
- Future Scenario - Hypothesis A: Without the cross-border section between Italy and Slovenia of the Mediterranean Corridor;
- Future Scenario - Hypothesis B: With the cross-border section between Italy and Slovenia of the Mediterranean Corridor;

The simulation conclusion show that transnational corridors realisation and their development:

- will lead to a relevant modal shift (from road to rail) along the main cross-border axis;
- adequately supports the foreseen traffic growth;
- ensure further reserves of capacity thus eventually coping with stronger growth scenarios or longer time horizons;
- should be considered also in their operational lifetime, far beyond 2030 (e.g. Semmering Tunnel is expected to replace a line which is been operating as relevant connection since 1854).
The Alpine territory is a delicate space due to its environmental, ecological and social sensitivity, where, more than elsewhere, complex dimensions (juridical, political, financial, economic, spatial, environmental) must be acknowledged, recomposed and managed all together in order to answer to legitimate social concerns as well as to possible radical conflicts, with the aim of enhancing the overall quality of both the infrastructural projects and the alpine territorial systems.

The international meeting held in Udine on 28th February 2013 aimed at providing a discussion on the aforementioned complex dimensions of infrastructure planning and at presenting the preliminary results of POLY5, elaborated by the Department of Civil Engineering and Architecture (DICA) of the University of Udine.
With particular reference to the Alpine area, the discussion will be organized around three main themes and related sessions:

**Session 1 – Territories in transport policies and regulations at the national and European levels: active subjects or passive objects?**

Overview on the changes that the crisis is inducing in the transport and infrastructure scenarios. This evidence is preliminary to reframing crucial aspects of the infrastructure planning methodology.

**Session 2 – Integration approaches between large infrastructures and territories.**

Description of some methodological approaches, with related technical planning tools, implemented in the context of the POLY5 area and aimed at the integration of the corridor with local territories.

**Session 3 – Methods and tools for the territorialisation of mega transport infrastructures.**

Discussion of a “methodological protocol” and of a “technological platform” conceived to support and manage, in an integrated way, the territorialisation processes for large infrastructure projects. The methodological protocol for the “territorialisation” of mega transport infrastructures derives from the experience of the Observatory for the new Lyon-Turin line that will be presented by its very same Chairman. The platform, elaborated by the University of Udine and named TeKnoSS (Territorial Knowledge Sharing System), will give support to essential stages of a more collaborative infrastructure planning process.
The Alpine Space is affected, both directly and indirectly, by European corridors, providing opportunities for accessibility and connectivity to urban nodes, but leaving large Alpine areas likely to remain excluded from these benefits, when not penalized by environmental and social costs of these infrastructures.

The main problem addressed is the impoverishment and marginalization that a major transport infrastructure can cause to peripheral Alpine areas. This might affect negatively a balanced and polycentric development of the territorial structure.

From the analysis conducted as a result of a shared knowledge, it emerges that partner countries show a substantial homogeneity of the issues raised: common difficulties arise in relation to the involvement of local communities and authorities affected by the presence of major transport infrastructure and to make economic operators aware of opportunities they may grasp. The acceptance of major transport infrastructure by local communities is the first step to ease the process of implementation of these important infrastructures as common problems are expressed in the Alpine areas involved: the process of planning and implementing transnational major transport infrastructure suffers of an institutional gap which makes this process not homogeneous, causing overall delays. Therefore a policy change is needed because the risk of unbalanced implementation of major transport infrastructure has to be minimized.

The toolkit is built to suggest to the reader the most effective tools to face the challenges related to the design, implementation or management of a major transport infrastructure in a given territory. Selecting the desired criteria, the toolkit will respond by providing the reader with the list of tools. These tools are the solutions found by the system according to four main criteria (filters):

- **INFRASTRUCTURE DEVELOPMENT STAGE**, is the stage of development of the major transport infrastructure.
- **GENERAL CHALLENGE** into a given geographical, economic or social context.
- **TOOL TARGET**, is the public or private subject that will operatively put the tool into practice.
- **TOOL BENEFICIARIES** are all those who will benefit directly or indirectly from the implementation of the specific tool (citizens, SMEs, municipalities, etc.).
The «Polycentric development TOOLKIT» is designed for any public or private subject that needs to deal with the many challenges that the construction of a major transport infrastructure offers. In particular, it focuses on the ultimate goal of polycentric development based on the implementation of local development models able to take advantage of the opportunities offered by the infrastructure in all phases of its lifecycle: design of the infrastructural project, implementation during its building and management, once the infrastructure is functioning.

The content of the TOOLKIT is the result of practical experience of POLY5 transnational project partners that aim at providing innovative transnational solutions to common problems, which affect mountain areas at risk of marginalization because of the passage of a major transport infrastructure, providing instead development opportunities in a balanced and polycentric perspective.

Below a full list of the 15 tools developed and explained in the toolkit:

1. Definition of alternative major transport infrastructure layouts

The feasibility includes current state assessment, providing a detailed picture of rail and road transport networks situation in order to identify planning and development opportunities and thus a scenario evaluation in particular referred to different infrastructural hypothesis: how would the transport network respond to the future match between transport demand and supply with or without the accomplishment of the European Corridors specific section? These hypothesis also consider the territorial structure (urban, metropolitan, dispersed polycentric etc.).

2. Capitalisation Studies

Preparation of an integrated analysis of the state of the art in the area of planned major transport infrastructure, compiled from the individual partial studies and based on desk research. This includes collecting, obtaining, reviewing of existing literature and other data and selecting relevant information as the basis for analytics. Analysis of the state of the art is prepared for different topics (demography, settlement structure, mobility, environment, natural and cultural heritage, economic structure, employment analysis) using the most up to date available publicly available data.
3. Development workshops
This tool deals with the organisation of workshops with representatives of the most relevant stakeholders. Its aim is the identification and confrontation of needs, views and problem solutions of different stakeholders. The workshops are a "bottom-up" method of identifying priority issues and formulation of general and specific principles for further development. They should result in achieving a consensus on the goals of major transport infrastructure in relation to broader development goals.

4. Environmental impacts mitigation tool
It uses a Multicriteria Analysis (MCA) addressing main impacts on environmental and landscape in different considered areas (natural, agricultural, sprawl, urban) and how they actually affect the different territories. The aim is to identify available mitigation measures and analyse their feasibility from different points of view such as economic, financial, social and environmental.

5. Impact Model
An impact model is used to make sense of and to visualize the assumed impacts of a new infrastructure or any other intervention. The model consists of impact chains. Impact chains consist of an activity and its impact. Following is an activity that once more has an impact and so on.

6. Local Development Plan
It is the tool through which the promoters of a given infrastructural project (representatives of local and / or national governments) support its implementation by means of local development strategies able to improve economic competitiveness, territorial and urban valorisation, environment and landscape preservation, etc. The support is fostered through the involvement of all relevant local stakeholders, who, together with promoters, identify development domains (energy, environment, economy, urban renewal, etc.), which will represent the basis for intervention.

7. Observatory of a major infrastructure construction site
The Observatory is a tool for monitoring the local area, the construction sites and contracting companies and for anticipating their future evolution, using classic statistical data and specific, targeted indicators. The objectives are to measure and evaluate the effects of the construction project on the local area, to evaluate the effectiveness of public policy strategy in the areas of accommodation, public services, employment and training and to aid decision-makers to optimize conditions during the construction phase.

8. Plan for the use of excavated materials
The Plan for the utilization of excavated material should be prepared in accordance with the EU and local legislative and regulatory framework. In fact, the legislative and regulatory framework defines the possibility to manage the excavated material as waste or as a by-product. The Plan for the use of excavated materials should then be integrated with the information of how to effectively exploit this material as a by-product (location of production and destinations sites, identification of the industrial processes of use of excavated materials, etc.).

9. Questionnaire submitted to local enterprises
The questionnaire is a tool to involve local stakeholders and collect their feedbacks on a given topic. In this specific case it contains questions to be submitted to local enterprises to investigate their needs related to the topic of logistics. The information obtained serve to support an efficient design for logistics management on the territory.
10. Regulatory framework
Each infrastructural project need a regulatory framework. In this case, the “legislative tool” aims at promoting and connecting the European/national interest (present in the realization of strategic infrastructure) to local interests, favoring consultation methodologies and other forms of participation. The aim is to limit the impact of the infrastructure and make it convenient for local authorities, coordinating the various actions of compensation. The normative contents must be able to give greater attention to the processes of planning, financing and construction of infrastructure, considering them as a factor for shared development.

11. Shared Knowledge Base
TeKnoSS is a web platform with the aim of storing information on the web to make it accessible in a much easier manner than web sites built according to standard technology. This system has been built as a means to facilitate knowledge sharing and to raise interaction between those users that are involved, for different reasons, in the planning, evaluation and implementation of complex projects.

12. Spatial strategy and alternative futures
We define a spatial strategy as a proposal for a sequence of impact oriented spatial interventions geared at transforming a designated area towards a positive and evidence-based alternative future that is set at a sufficient temporal distance.

13. SWOT analysis
While Strengths (S) and Weaknesses (W) describe the current situation, Opportunities (O) and Threats (T) demonstrate the future by considering the impact of external factors, such as demographic change, economic change and of course certain activities, such as the introduction of new infrastructure. This tool provides the possibility of a synopsis of attributes describing the area of interest.

14. Territorial strategy on sustainable mobility
The definition of such strategy is based on the following standard activities: 1) reconstruction of infrastructural context and territorial mobility 2) survey on traffic flows and implementation of a simulation model 3) carrying out a sample survey addressed to the inhabitants of a given area.
15. Visioneering

Visioneering’s objective is the designing of comprehensive and inspiring pictures of regions in order to stimulate the political, public and professional discourse. This technique is used as a communication tool in order to open and exceed different existing perspectives. Besides the planning tools like scenario technique and strategic impact modelling – which are mainly based on quantitative and statistical data of a region – the visioneering tool unites place- and people-based qualitative research methods.

Some of these tools have been used and tested through pilot actions, i.e. local concrete implementations which will remain at disposal of local communities which thus benefit from their results. The pilot actions have mainly referred to three field of intervention:

- Economic and productive system, for the bordering territories of the Savoie General Council and the Province of Turin;
- Sustainable mobility, for the Gorizia territory and the Urban Region of Ljubljana;
- Environment and spatial planning, for the Veneto Region and the area of Šempeter-Vrtojba.
ECONOMIC AND PRODUCTIVE SYSTEM

The Lyon-Turin construction sites are considered, in the Maurienne Valley (département of Savoie) on the French side and the Susa Valley (Province of Turin) on the Italian side. These areas have many features in common, as well as some important differences. Similarities can be identified between the two areas in particular in terms of the economy and productive system.

It was prepared in accordance with the EU and local legislative and regulatory framework. In fact, the legislative and regulatory framework defines the possibility to manage the excavated material as waste or as byproduct. The Plan for the use of excavated materials aims at using natural resources more efficiently and minimize the production of waste during the construction of the infrastructure by achieving these main specific objectives:

1. Plan for the use of excavated materials

   - identifying the end-use of the excavated materials according to the construction of the infrastructure;
   - increasing, on the basis of lithological types, the value of the excavated materials produced during the construction of the infrastructure;
   - defining the management procedures of excavated materials produced during the construction of the infrastructure;
   - minimizing the impacts of globalisation and the economic crisis, with major industries in difficulty and abandoned brownfield industrial sites becoming more common on the valley floors.

Agriculture also makes a contribution to both local economies. Both valleys have keenly felt the impacts of globalisation and industrial activities on the valley floor while winter tourism in the higher areas is now the major economic activity. Agriculture also traditionally has been manufacturing, industry and construction in the lower valley, and tourism in the higher areas. Similarly, the economy of the Maurienne Valley has traditionally depended on industrial activities on the Susa Valley, while the economy of the Savoie Province is manufacturing, industry and construction in the lower valley.
lithological types (e.g. aggregates for concrete, construction of embankments, environmental restoration, disposal in landfills as toxic waste).

The Plan included the following information:

a. location of production sites;
b. location of destination sites and identification of the industrial processes of use of excavated materials;
c. operations of normal industrial practice to which excavated materials are subjected;
d. environmental characterization of excavated material performed during the design phase;
e. location of possible temporary storage sites, if present;
f. indication of the intended routes for the transport of excavated materials.

2. Local Development Plan

It aims at promoting polycentric development. The general objectives are the creation of a socio-economic system based on the connectivity of the valley, attractiveness, energy efficiency, eco-sustainability and security and the implementation and management of a system that can contribute to transforming communities affected by Major Transport Infrastructure from marginal areas to areas of polycentric development. Using this tool promoters support in front of representatives of local communities the implementation of local development strategies and the implementation of projects to promote the improvement of economic competitiveness, the territorial and urban valorisation, improve the environment and the countryside.

In particular, the Development Plan contains:

- Analysis of the economic and social context;
- Framework of planning tools and programming active in the area;
- The specific objectives to be achieved;
- The measures and projects to be implemented within the different areas of intervention;
- The specific requirements to be met by projects;
- Identification of subjects cofinancing and supplementary sources of funding (Structural Funds 2014-2020);
- Identification of technical partners needed to define the design of interventions;
- Definition of the mode of governance and time schedule of the Plan.

3. Regulatory Framework

This “legislation tool” aims at:

a. intervening in favor of the territories concerned by the implementation of strategic infrastructure through the consultation method and other forms of participation;
b. limiting the impact of the infrastructure and make it convenient for local authorities, coordinating the various actions of compensation;
c. promoting and connecting the national and Community interest (present in the realization of strategic infrastructure ) and local interest.
The normative contents must be able to give greater attention to the processes of planning, financing and construction of infrastructure, considering them as a factor for shared development.

In the framework designed by these tools, the Province of Turin has developed three pilot actions:

- Study on excavated material exploitation, focusing on the need to identify a methodology for the correct definition of the economic value “ex yard” of three different lithological classes of excavated material;

  Drilling operations and the entrance of the construction site of Chiomonte (Italy) geognostic tunnel.

- Study on the potentiality of tourism, aiming at proposing, identifying and implementing, through a field work, a set of actions and tools to meet the residential needs of the workers employed in construction sites of the Lyon-Turin new railway link. At the same time, the action tended to favor the recovery and enhancement of the local building heritage to be used for long-term tourism;

Example of an hotel which can host the workers and the cultural heritage of the Susa valley. In the last picture, Municipalities of the Susa Valley at a distance of about 20 minutes form the construction site, which is considered.
- Tutoring and support to local SMEs, to develop and test a methodology enabling companies, enterprises and workers to catch job and income opportunities when operating on the territories interested by the construction sites of a major work such as the Lyon-Turin new railway link.

In particular, the last two give practical effect to the purposes indicated in the Regional Law n. 4 of 2011 - “Promotion of measures in favor of the territories concerned by the implementation of major infrastructure projects. Construction sites -Development-Territory” and are linked to the project Smart Susa Valley, which intended to compensate relating the construction of the Lyon-Turin outlining a common strategy of the valley with a view of connectivity, energy efficiency, eco-sustainability, safety and attractiveness of the region.

The Savoie General Council, on its side, worked on one tool, the Observatory of a major infrastructure construction site, to monitor the local area affected by construction of a major infrastructure and to anticipate its future evolution. The Observatory involves using qualitative and quantitative analysis of classic statistical data and specific, targeted indicators.

The first phase of observation comprises a situation analysis of the socio-economic aspects of the local area prior to the start of the construction work, to provide a baseline study. The Observatory will then monitor a range of targeted indicators during the preparation and implementation phases of the construction work and for several years post-construction when the infrastructure is operational. Comparisons with the baseline study will enable an evaluation of the impacts of the infrastructure on the local area (to the extent that these can be distinguished from its underlying evolution).
The objectives of the Observatory include:
- To measure and evaluate the effects of the construction site on the local area over time;
- To provide a decision-support tool to facilitate decisions made by local stakeholders and to help optimize conditions (employment, accommodation and local economic and social support) during the different phases of construction;
- To evaluate the effectiveness of public policy strategy in these areas.

From this starting point, the General Council of Savoie developed two pilot actions:
- Support of the local economy, which aimed to assist local businesses, in particular small and medium sized enterprises, in adapting to the presence of the Lyon-Turin construction sites. The action involved developing an additional section of the Observatory, the ‘Construction site’ section, to monitor indicators such as employment and training requirements, tender offers and contract awards to help the local businesses make the best of opportunities generated by the MTI construction work. An important feature of the action was the stakeholder participation sessions held with local business stakeholders to understand how best to facilitate their relationship with and involvement in the construction project.
Accommodation of workers of the Lyon-Turin construction site within the “Démarche Grand Chantier”, which aimed at making the best use of available housing resources in the local area to host the personnel employed on the construction site, whilst at the same time respecting the endogenous accommodation needs of the area (accommodation of the local population and tourists). The action involved evaluating the amount and the condition of long-term vacant residential accommodation in the Maurienne Valley and the potential renovation costs necessary to bring it to the rental market. Starting from existing housing support programmes, a concrete, operational scheme was proposed to encourage the renovation and letting of these properties to future Lyon-Turin construction site employees.

Vacant residential properties in Saint Jean de Maurienne, the principal town of the Maurienne valley (Photo credit: Pierre Dompnier, PACT Savoie)
Today 70% of European population live in urban areas and their numbers increase daily. While the cities are well connected to each other on a global scale, mobility within cities and urban conurbations is increasingly inefficient and problematic. Urban sprawl, suburbanization and urban agglomeration are spatial phenomena to which the mobility issues are firmly linked to. The need to transport people and goods is increasing day by day and while urban mobility is tightly linked to the use of private vehicles and consequently, to the development and promotion of road traffic system, the consequences are manifested in traffic congestions, delays in travel, air quality problems, noise disturbances and poor traffic safety. Despite its obvious benefits, road traffic has become a serious threat to the carrying capacity of the environment and also to the quality of life in cities. Therefore approaches aimed at managing only transport infrastructure (mostly roads) have reached their limits. It is necessary to find new solutions, which are addressing transport in a holistic way, with all its complexity while giving due consideration to environmental, economic and social requirements. The dependency on the private car needs to be reduced and a better modal split in favour of public transportation and non-motorised mobility needs to be achieved, if cities are to obtain cleaner and better transport. To provide environmentally and socially sustainable mobility development several aspects should be considered, in particular: integrated spatial planning, sustainable mobility policies and mobility behaviour change. Since there is a close relationship between travel patterns and the physical form of cities and conurbations, integrated spatial planning is one of the basic tools. But the extent to which spatial planning can contribute to sustainable mobility is not clearly detectable, especially because of broader social, cultural and economic trends. In the field of sustainable mobility policies many guidelines, trainings and best practices exist, which are well supported by European Union. To tackle urban mobility challenges not only integrated planning and sustainable mobility plans are needed, but also effective measures and the policy to facilitate their implementation. The traditional transport managing instruments should be complemented and reinforced by “soft” measures to achieve the desired mobility behaviour change. These include promotion, education and motivation measures.
which raise awareness of urban mobility without a private car, as well as innovative mobility solutions such as car pooling, car sharing and public bicycles or bike sharing. For what concerns this topic, Regional Development Agency of Ljubljana Urban Region (RDA LUR) and Province of Gorizia developed three tools. RDA LUR has conducted Capitalization Studies in the field of transportation and its future development on a regional level. The integrated analysis of the state of the art in the area of planned major transport infrastructure, compiled from the individual partial studies and based on desk research was prepared. This included collecting, obtaining, reviewing of existing literature and other data and selecting relevant information as the basis for analytics. Analysis of the status quo was prepared for different topics using the most up to date publicly available data.

RDA LUR has also organized Development Workshops with representatives of the most relevant stakeholders. Their objectives were to identify and confront needs, views and problem solutions of different stakeholders. In a preparatory phase, an analysis of the territorial situation for different topics (demography, settlement structure, mobility, environment, natural and cultural heritage, economic structure, employment analysis) has been prepared, using the most up to date available statistical and other data. The attempt was to provide also an illustration of the regional situation in comparison with other EU regions, including a SWOT analysis and identifying the development potentials in the Municipalities.

The pilot action linked to this tool is called Sustainable Accessibility and it is dealing with providing better accessibility at the fringes of the metropolitan region of Ljubljana where public transport is not economically viable. It is based on the sustainable mobility paradigm which takes into account large internal and external costs of individual transport and is employing ‘soft’ mobility measures in particular encouragement and promotion of a more sustainable use of the car in form of car pooling.

*The pilot action deals with increasing the accessibility at the fringes of the metropolitan region of Ljubljana, based on the sustainable mobility paradigm and employing soft mobility measures.*
Province of Gorizia, on the other hand, developed a Territorial Strategy on Sustainable Mobility, which definition is based on three standard activities: reconstruction of infrastructural context and territorial mobility, survey on traffic flows and implementation of a simulation model and carrying out of a sample survey addressed to the inhabitants of the territory. All this should bring to the integration of the infrastructure in the area and in the social and economic context, creating opportunities for sustainable development and the achievement of the following objectives:

- identification of critical issues to be addressed and identification of opportunities and development scenarios resulting from the insertion of large-scale infrastructure in the territory;
- get useful data on traffic flows for the implementation of a traffic simulation model;
- to assess the degree of interest concerning specific categories of sustainable mobility.

The related pilot action is called Solutions and Guidelines on Sustainable Mobility, aiming at implementing infrastructures and services on “sustainable mobility”, able to attract portions of the mobility generated by former Corridor V railway and by developments on the most important sub areas of province and the actual mobility in the province.

Examples of Express lines. Ronchi dei Legionari – Cormons/Collio and Ronchi dei Legionari - Grado
Examples of Express lines. Ronchi dei Legionari – Cormons/Collio and Ronchi dei Legionari - Grado

Photo credit: M. Šorn
The main thematic field addressed by the topic “Environment and spatial planning” is the definition of the most suitable ways to create a strict dialogue between a major transport infrastructure and the territory it has to be developed in. Dialogue can reduce significantly the marginalization of territories, valorising them through shared solutions with direct and indirect stakeholders that can be involved in the decisional process with the aim of ranking the different priorities and needs claimed by that territory. Furthermore, merging these necessities with the spatial connection of local transport infrastructure and major transport infrastructure might influence the regional economy through the definition of optimal solutions for setting targeted and dedicated spaces for the development of transports activities.

The main challenge of this theme has been to find solutions able to merge together the necessity to respect and verify the binding rules settled down by territorial planners with limits and restrictions related to the physical characteristics of an area and on the other side the more specific requests coming from the socio-economic texture living in that area and from the more active actors performing economical and productive activities.

The approach has been developed with a special attention to regional and local levels, analyzing into detail the territorial plans and identifying potential solution in an objective way in order to confront and implement those solutions through a constructive dialogue with regional and stakeholders stating their specific priorities from a social, economic and environmental point of view.

In this framework, Veneto Region developed an environmental impact mitigation tool, named L.I.M.E. (Landscape Impact Mitigation Efficiency Decision Makers Matrix), which is a multicriteria analysis (MCA) composed by an Impact Matrix (Alfa matrix and its Beta versions) to point out main impacts on environment and landscape in different homogeneous areas considered (natural, agricultural, sprawl, urban), a Couple Matrix to confront and weigh the different impacts on the different territories and a Feasibility Matrix to identify available mitigation measures correlated with their feasibility from different points of view such as economic, financial, social and environmental. The aim was
to define an instrument supporting local decision makers in prioritizing their opinion/suggestions towards the realization of major transport infrastructure in their territories, also thanks to the knowledge/identification of the best technical and logistical solutions to make the infrastructure passing over their territories with the lowest impact on landscape.

As pilot action, Veneto Region identified the Best Solutions to Mitigate Landscape Environmental Impacts and realized a technical, economic and financial feasibility study of the best solutions to mitigate impacts of large transport infrastructures.

The Municipality Šempeter-Vrtojba, on the other hand, built a Questionnaire to be submitted to local enterprises to investigate their needs related to the topic of logistics and used the information obtained to support an efficient design for logistics management on the territory and for projects based on the needs of local enterprises. Related to this, the pilot action developed was named Logistic Nodes and its main objective was testing development vision presented as logistic node within area that lies in the vicinity of major transport infrastructure.

The Logistic node of Vrtojba is connected with the major economic flows, while it also provides capacity for logistic services to meet the need of the regional economy.
CHAPTER 3

The tools and the actions to address a common problem

Tool-Kit

- Local Development Plan
- Plan for the use of excavated materials
- Regulatory framework
- SWOT analysis
- Impact Model
- Spatial strategy and alternative futures
- Territorial strategy on sustainable mobility
- Observatory of a MTI construction site
- Capitalisation Studies
- Visioneering
- Development workshops
- Questionnaire for local enterprises
- Definition of alternative MTI layouts
- Environmental impacts mitigation tool
- Shared Knowledge Base

Territorial Partners

- Turin
- Savoie
- Ljubljana Urban Region
- Sempeter
- Gorica
- Veneto
Pilot Actions

- Tutoring and support of local economies
- Exploitation of extracted material
- Regulatory Framework
- Support of the local economy
- Accommodation of workers
- Sustainable Accessibility
- Spatial analysis of intermodal node area
- Guidelines on sustainable mobility
- Feasibility Study on optimal solutions

Connection between the POLY5 tool-kit, the territorial partners and the concrete pilot activities
SUPPORT MEASURES FOR MAJOR INFRASTRUCTURE PROJECTS IN ALPINE AREAS

A DAY OF TESTIMONIES AND DISCUSSION ORGANISED AS PART OF THE ALPINE SPACE PROJECT POLY5
**Technical morning session**

Progress of the POLY5 project and update on progress and results achieved so far.

Major infrastructure case studies:
- Managing major infrastructures in complex territories: Pedemontana highway case study;
- Matching environmental sustainability with major infrastructures: case-study of project MO.SE in the Venetian Lagoon.

**Afternoon round table discussion session**

“What best practice measures for supporting major rail infrastructure projects in alpine areas?”

Moderator: Pierre OSTIAN, journalist

Participants:
- Eric JALON, French state representative for Savoie
- Jean-Pierre VIAL, Senator, Vice president of the Savoie General Council
- Mario VIRANO, Special commissioner of the Italian Government, President of the CIG Lyon-Turin
- François VUILLEUMIER, Project leader, Lötschberg Base Tunnel (Switzerland)
- Louis CLIMENT, member of the Regional Chamber of Commerce and Industry of Franche Comté and the Doubs Chamber of Commerce and Industry, CEO of Climent Travaux Publics
A TOOLKIT TO FACILITATE POLYCENTRIC DEVELOPMENT

One of the key parts of the project is the development of the »Polycentric development toolkit«. Its objective is supporting planning, design and implementation of major transport infrastructure in Alpine areas. In computing, a toolkit is a set of widgets that display an information arrangement changeable by the user. Similarly, in POLY5 project, the toolkit provides the user, in our case the target groups addressed by the project, with the possibility to manipulate specific elements in order to generate solutions tailored to each territory having to deal with the presence of a major transport infrastructure (MTI). The tools, constituting the toolkit, can be very diverse: for instance, they can be studies, participative techniques or legislative solutions.

The conference, discussing the outcomes of this work, had two parts. In the first part, the framework for strategic and detailed planning on the example of the Ljubljana urban region was presented, including cases of key transport projects in the region. In the second part of the conference, partners of the POLY5 project presented the tools, used in the processes of planning, design and implementation of major transport infrastructures.
1. **Set: Strategic and detailed planning at the regional level**

The design of major transport projects in the urban environment;  
Regional planning in Slovenia – Past experiences and future challenges;  
Regional planning – Theoretical basis and application in the Ljubljana Urban Region;  
Spatial and transport planning in the Ljubljana Urban Region;  
Transport expertise for the Ljubljana railway hub within the RAILHUC project.

2. **Set: Presentation of Polycentric development toolkit**

POLY5 Toolkit and the tools of the Province of Turin;  
Development workshops as a tool for development programs;  
Integrating major transport infrastructures in complex territories – A weighted programmatic approach;  
A territorial observatory for the ‘Grand Chantier’ site of the Lyon – Turin rail link;  
Transnational corridors crossing north-eastern Italy: analysis and possible developments;  
Survey of regional economy in connection with logistics activities on corridor 5;  
Province of Gorizia: Tools and Methodology.
The event, hosted in “Grandi Stazioni” building in Venice, was aimed at presenting the project to a wider public, with a special focus on the territorial integration of Major Transport Infrastructures (MTI) in the Alpine Space. One of the main topic addressed during the conference was the presentation of the results obtained by the implementation of Pilot Actions conducted by the different territorial partners of POLY5: the French Conseil General de la Savoie, the Italian Province of Turin and Veneto Region, the Slovenian Municipality of Šempeter Vrtojba and Regional Development Agency of the Ljubljana Urban Region.

So, several approaches performed by public actors acting at different decisional level were presented, all with the common aim of fostering the integration of MTI on their territories, minimizing the marginalization effects.

The different presentations of the partners gave an interesting overview of the potential synergies that public actors can perform in order to create a common constructive environment in order to plan the future of the Alpine Space connectivity.
The final aim of the POLY5 activities was to transfer its findings into a transnational framework: in other words, to what extent the POLY5 results can be integrated into the EU development policies.

As we have seen in the previous chapters, ten international partners worked out 15 tools within the last four years. Based on three strategic approaches (contexts, scenarios and visions) the tools offer the territorial partners different perspectives and opportunities for their local and regional implementation of the Lyon-Ljubljana track of the Mediterranean Corridor (former Corridor 5).

Integration of public and private stakeholders during the different major transport infrastructure implementation phases, optimising local and regional transports services based on new trans-European connections, motivating local and regional SMEs to take an active part at the development of new transport infrastructure or get involved into the construction site, on-line environmental impact analyses for the public are just some POLY5 examples carried out. The experiences done on the pilot activities within their spatial frame as well as recommendations out of the project should be accessible for other European municipalities and regions facing the challenges of major transport infrastructures.

Facing very specific challenges in the different project areas some aspects are not transferable to other European regions - but some are. To arrive at a practical assessment instrument, able to support this transferability and considering the different contexts and languages used by partners, additional challenges have to be recognized:

- Language and local understanding: e.g. the French understanding of a local development plan is different to the Italian one - based on the special local and regional experience. By generalising the POLY5 results these aspects have to be considered; a readable and understandable explanation has to be provided to “filter out” this local and regional background, not losing important information in the same moment.

- Feedback from different target groups: the target group of the assessment process are the people involved in the implementation of the pilot actions. Being aware of the fact that from professionals to interest citizens a very heterogeneous group of person is working with the assessment tool the design has to take this into account.
• Transferring sectorial (policy) approach into more holistic and trans-disciplinary perspective: using the tool to raise awareness for EU policies on the one hand and to get feedback from the experiences related to this EU policies some details have to be included into the assessment.

The result of this approach is a standardized quantitative and qualitative questionnaire which is discussed with and by the partners. The key-element of the POLYS assessment is the “Round Tables”. This flexible workshop format allows all territorial partners to organise the “assessment meetings” with the involved target group on-site. Different meeting with 10 to 40 participants are done, the questions are discussed and the different inputs are filled in the on-line questionnaire. During this discussion of the questionnaire the idea of the Open Letter is developed. This letter presents a communication tool for the territorial partners to transport their requirements as well as some chosen results of this report and should be sent to European and national representatives.
ROUND TABLES OVERVIEW

Chambéry, 14 May 2014

Turin, 29 May 2014

Ljubljana, 30 May 2014
Gorizia, 04 June 2014

Venice, 05 June 2014

Šempeter-Vrtojba, 11 June 2014
A set of indicators have been used during this transferability assessment process. The indicator set consists in two groups. The first one deals with specific transport policy related aspects. The second group questions the project as well as the Alpine-Space-Programme related objectives.

Seven key-topics have been identified by the POLY5 partnership which should enable the transferability to the European context in terms of the Regulation 1315/2013, White Book Transport as well as experts points of view and should foster the implementation of this policy on local and regional level:

(1) EU Policy awareness: transport, as the heart of the supply chain, is a primary creator of jobs and essential for generating and accelerating growth. Affordable, accessible, reliable, safe and secure networks are needed to achieve these goals. In transport, a fully integrated single market and more efficient networks that allow easy switching between different modes, would bring huge benefits to citizens and companies, including in urban areas. This approach includes a various number of highly technical, strategic and political activities, not only effecting ‘transport issues’. A lot of sectorial European, national, regional and local policies are affected. Being discussed on European level the importance of the common transport policy has to be ‘grounded’ on the administrative and political levels where the implementation takes place. To explain the necessity of this policy to the European citizens fosters the understanding of the ‘project EU’ and is – especially for European funded projects like POLY5 – nearly a self-evident task.

(2) Interoperability means the ability, including all the regulatory, technical
and operational conditions, of the infrastructure in a transport mode to allow safe and uninterrupted traffic flows which achieve the required levels of performance for that infrastructure or mode. Particularly, the cooperation with neighbouring and third countries is necessary in order to ensure connection and interoperability between the respective infrastructure networks seems for an Alpine-Space-Programme project a considerable task.

(3) Integrated spatial thinking: in order to avoid (a) the marginalisation of rural areas and to foster (b) the enhancement of regional mobility, thereby promoting access to the trans-European transport network, for all regions of the Union and (c) to optimize the integration of urban nodes into the trans-European transport network (including promotion of sustainable urban mobility) a spatial approach is necessary. Not focussing only on urban agglomerations spatial thinking has to include all area of the EU. The concept and strategic orientation of the project POLY5 follows this paradigm of a balanced polycentric development of the union.

(4) Spatial flexibility: the promotion of cross-border projects and the promotion of sustainable transport solutions, such as enhanced accessibility by public transport, telematic applications, intermodal terminals/multimodal transport chains, low-carbon and other innovative transport solutions and environmental improvements for good practice approaches within the European funds framework are related to the transferability of activities. The special spatial context of local and regional activities makes appropriate solution for a problem but not useful for another European region. Therefore, spatial flexibility or spatial transferability of transport related actions can be a meaningful indicator.

(5) Legal Framework: some POLY5 tools focus on a legal implementation of their results (regional development plan etc.). The legal framework has to be clear before the implementation of the tool in order to have the desired effects. This indicator like (6) Spatial Flexibility helps to ensure the transferability of POLY5 activities from a legal point of view.

(6) When transparency is reduced, the losers are ordinary citizens whose possibilities for holding government accountable are diminished. The winners are politicians and officials who prefer to carry out their activities without public scrutiny and interference. Therefore transparency is a key issue for the acceptance of major public projects whether it is defined in law dealing with transport infrastructure implementation or not. The POLY5 pilot activities are very strong related to compensate too late and/or too less transparency along the Mediterranean Corridor implementation as well as starting with transference activities of those projects at the very beginning.

(7) The cost-benefit ratio for the POLY5 tools – in a qualitative and general understanding – is an important feedback after the activities done – especially for the partnership being involved. Some POLY5 tools are costly in order to provide them locally and focus on small but very important aspects of major transport infrastructure implementations. The conscious decision on what for the tool is needed at which time is – regarding financial scope of public budgets – the basement for an effective use.

Next to these ‘EU policy related’ aspects some more POLY5 project as well as Alpine-Space-Programme relevant indicators have been carried out. They support the understanding of the used tools regarding:

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3ibit. (25)
5ibit. Art.50 §a, c
6ibit. Art 50 b, d
The target groups: the suitability for different target groups to promote and support their intentions/agendas should be estimated:
- Associations
- Educational bodies
- Enterprises/companies
- Public Authorities (PUB)
- Research centres
- Not for Profit Organizations.

Purpose within the planning cycle: each of the developed POLY5 tools can be used for different phases within the planning cycle. The knowledge about the specific suitability to use the different tools should help further implementation:
- Developing/planning
- Analysing/data collection
- Consensus building
- Managing/monitoring/implementation.

Phase within the major transport infrastructure life cycle: the right instruments used in the different phases of the major transport infrastructure project life cycle can support the successful implementation:
- Design of the infrastructural project
- Implementation during its building
- Management, once the infrastructure is functioning.

Technical requirements to use the POLY5 tools: for spreading the tools all over Europe, the technical level of the potential user is important. Some POLY5 tools require a high technical level to prepare and use the tools. Other needs a high level of input as well as information but can be used easily by different target groups (low-threshold level):
- Non-professional (tool can be used because of its intuitive handling)
- Semi-professional (based on guidelines the tool could be used)
- Professional (high experience and qualification).

According to this first assessment step, project partners chose a set of tools to discuss them with local stakeholders (the more relevant for each tool/pilot action).

In summary the assessment of the tools out from the POLY5 tool-kit illustrate that - based on the reason why they have been chosen from the partners - they fulfil their main requirements.

The Regulatory Framework in combination with the Local Development Plan ensures a transparent approach and according to a strategy can reduce the negative impact of a major transport infrastructure.

The Environmental Impact Mitigation Tool offers the possibility for everybody to understand the challenge of finding the “best” solution for a major transport track based on comprehensive data – a
knowledge which is withheld for experts in general.

Capitalisation Studies are a useful tool to develop a common knowledge base for a topic. Doing this in an open-minded and professional way can contribute to raising awareness of a major transport infrastructure project as well as to de-emotionalize a public discussion.

Development workshops are a constructive initiative to bring people with different interest together. At the moment when people in charge for major public transport infrastructure start to inform, consult and even cooperate with people affected by such a project, new ways can developed – for the benefit of both parties.

New business possibilities which can be realized by a Questionnaire submitted to local enterprises are in line with the European policy of an integrated Europe and its common market.

Proactive initiatives like the Observatory on the construction site can help to avoid people’s residence of major transport infrastructures or – if implemented later – to calm down the situation. Each change always includes new perspectives which have to be developed together.

Developing a Plan for the use of excavated materials based on elaborative studies should be standard in the European Union. Next to the economic aspects for local SMEs and environmental issues it can support to produce a positive climate in the local population for a major transport infrastructure project.

This assessment approach utilizes the strength of the transnational POLY5 partnership and combines a lot of different opinions and backgrounds.

The aim is to detect at least three tools which support different aspects of EU policies and point out the added value.

Generally all POLY5 tools can be used in other regions to support infrastructure implementation. But those described in the guidelines seems to be the one which can be transferred easier to the local and regional context of another European region for a special “main purpose”.

The transferability of the POLY5 results excludes the local and regional contexts where they have been used. But the focus on essential topics which helps to push forward the European Cohesion process and on highlighting the usability for other municipalities and regions which deals with the implementation of European major transport infrastructure points out the added value of POLY5 and the necessity of the project.

Whether these tools are ranked differently by the territorial or university partners, all tools can support the implementation of major transport infrastructure. Nevertheless they have to be adapted carefully by other municipalities and regions based on their challenges. The topic of major transport infrastructure implementation is too complex to offer one tool-kit which fits to all local and regional needs. But the work done by POLY5 helps stakeholders in all European regions to have first approaches – already tested and assessed – to start directly.
As a result of the 4 year of work carried out by the partnership, an Open Letter seeking greater support for local and regional implementation of European major transport infrastructure has been signed by the representatives of the project partners.

This letter contains the main findings, the identified gaps, the most immediate needs POLY5 partners identified when dealing with the impact of a major transport infrastructure at local level.

The aim of the Open Letter is to let higher administrative levels (namely the EU Parliament and Commission and the National governments) know how regional and local territories are willing to catch the opportunities offered by European corridors, but also that they need support to better integrate these infrastructure in the local systems.

The Open Letter is also a starting point to plan further project proposal as the partnership is willing to maintain the cooperation and exploit POLY5 result.

Below is the full text of the Open Letter signed by the political representatives of the POLY5 partners.

Transport and transport infrastructure in Europe are a fundamental part of European cohesion, helping to create a sense of belonging to a single space. The policies of the European parliament and commission are focused on removing the obstacles at the borders between member states to promote the free flow of people and goods. These policies are articulated within the strongly-held commitment to the sustainable development of transport networks, for the benefit of society as a whole and the well-being of all Europeans. To this end, the EU promotes the development of ‘multi-modality’ and, for the biggest projects, the creation of alternatives to road transport.

The main themes of these policies are: helping to bring about the completion of the internal market; promoting sustainable development; setting up the major European networks; reinforcing security; and developing international cooperation. Ever since the white paper of 2001 (revised in 2006), these policies have focused on the harmonious, coherent development of different modes of transport, in particular through ‘co-modality’, i.e. the use of whichever mode of transport (land, air or sea) is the most efficient.

The European Union, notably in its last budget of November 2013,
reaffirmed its commitment to supporting the construction of the transnational sections of major transport infrastructures. However, this commitment alone does not adequately convey to the populations concerned the importance of these major infrastructures.

A common vision of the European area needs to be built and shared with the European people and the inhabitants of the regions crossed by these major corridors. This is why it is in the common interests of Europe, the member states and their institutions to develop not only a coordinated transport policy but also a coordinated development policy for the affected regions: it is a question of accompanying these areas in dealing with the sometimes radical changes that major construction projects or major infrastructures can bring about and also of helping them to take advantage of the potential opportunities such projects present. At the end of the day, a comprehensive policy perspective could be one which considers that, over and above the service of transport itself, the major communication infrastructures should be drivers of territorial development regardless of the geographical situation: major cities, urban areas, rural areas, alpine valleys.

The Alpine Space is particularly affected, both directly and indirectly, by these European transport corridors, which provide valuable opportunities for greater accessibility and connectivity to urban hubs. However, large expanses of the alpine area are likely to remain excluded from these benefits, if not also penalised by the environmental and social costs associated with the infrastructure construction. In particular, alpine regions might suffer from marginalisation because of their distinct social, economic and environmental characteristics. The main challenge is to ensure that as many areas as possible can benefit from the accessibility gained through the transport corridor.

In view of this, six local and regional authorities – the Ljubljana Urban Region, the Province of Gorizia, the Department of Savoie, the Province of Turin, the Veneto Region and the municipality of Šempeter-Vrtojba – decided to develop together specific approaches to deal with the local and regional challenges presented by the implementation of the European Corridor network. They seized the opportunity to develop their ideas in the POL5 project, co-financed by the ERDF through the European Union’s Alpine Space Programme.

The approach adopted by the partners, which began with an overall study and comparison of the different socio-economic contexts, has resulted in a range of tools aimed at:

- improving the effectiveness of existing institutional procedures for supporting infrastructure implementation;
- proposing specific new legislative and regulatory provisions to support affected areas;
- promoting the exchange of experiences between the different alpine regions regarding their initiatives and policies for implementing major transport infrastructures.

Out of this transnational cooperation the six local and regional authorities together with the other four project partners (Technical University of Vienna, Technical University of Munich, University of Udine and TRANSADANA,) have formulated seven spatially-related policy recommendations which are considered necessary to support their actions in the implementation of local and regional major transport infrastructures:

**I. Firmly anchor the project in the local territory**

Major transport infrastructures and their construction sites need to be firmly anchored in and accepted by the local communities they impact. The EU is therefore requested to put in place the necessary measures to galvanise municipalities and local authorities into action so that a global procedure for supporting these infrastructure projects can be adopted, developed from and built around the major construction site and the transport infrastructure itself, in order to take full advantage of the potential opportunities.
II. Provide concrete support as much for the local area as for the construction project

The EU is also called upon to provide tangible support to the affected areas on two aspects which call for different responses and means:

- Support for the construction site with procedures and policies targeted to meet the specific needs of the contracting authorities and of local businesses
- Support for the local area with the establishment of a territorial development plan articulated around the major construction site and the transport infrastructure.

Taking into account the different functions that major transport infrastructures perform within regional, national, transnational or European spatial systems, the European transport corridors cannot be considered as uniform, one-size-fits-all infrastructures projects. Rather, the support provided to individual infrastructure projects should be adapted to the needs of the particular spatial systems they serve along the corridor.

Through such local involvement, the EU would have the opportunity to explain the wider context of its policies relating to such major infrastructure projects and to highlight its solidarity with the local areas affected by them.

III. Make available a bi-national exchange platform for each major transnational infrastructure project

In order to avoid obstructions in the implementation of the European networks in the trans-national border sections, it is recommended to develop a specific policy to accompany the two member countries concerned by the construction of the transport infrastructure, to strengthen their bi-national exchanges, encourage the sharing of experience between elected officials and other stakeholders in the two countries and identify areas of cooperation and complementarity in their local projects. This policy could extend or run alongside the European Grouping of Territorial Cooperation (EGTC) regulations already in operation.

IV. Establish in advance appropriate monitoring and evaluation mechanisms

The setting up of monitoring systems should be encouraged not only at the macro-economic, European level but also at the regional or micro level of the local areas which will host the construction sites and infrastructures. These systems should be put in place before any construction work commences, so that the effects of that work can be evaluated over time, both at the local level and at the European level.
V. Address from the application stage the territorial integration of the project
The territorial integration of a major transport infrastructure included in a European transport corridor is essential to ensure its sustainability at the local level. This specific aspect of the infrastructure project should therefore be considered at a sufficiently early stage. It is a topic that member states should actively address in their application for co-financing from the European Union. It should be appropriately acknowledged that major transport infrastructures of European importance can also serve national, regional and even local transport flows and that this is beneficial both in terms of efficient use of the infrastructure and of local acceptance of the major transport infrastructure.

VI. Integrate sustainability criteria in project design and construction
The concepts not only of economic and environmental sustainability, but also of social sustainability should be integrated into the decision-making process of a major transport infrastructure. Through the representation and involvement of local communities, it should be possible to identify a project typology able to maximize development opportunities for local territories affected by the presence of a major transport infrastructure. This objective should also be targeted through the adoption by each member state of legislative instruments appropriate to their national framework.

VII. Build a European territorial development strategy around the major infrastructure projects
Given the importance of European corridors and their related transport infrastructure for territorial cohesion at a transnational level, a common regulatory framework should be implemented in order to provide a homogenous background against which to operate. The concept of an integrated European territorial development strategy would enable local and regional decision-makers to refer to the European dimension during national discussions and to have a clear, communicable perspective regarding their level of intervention.
In summary, these proposals meet the challenges of sustainable economic and social development which the European Union needs during these times of crisis. Above and beyond that however, they underline the values and the key concepts which we support and which the European Union, in our view, should share: the values of solidarity and cooperation between regions and the dimension of instilling a European identity. The signatories count on your backing to support their ongoing contribution towards the socially, economically and environmentally-balanced implementation of the European Corridor Network.
After the welcome speeches and a brief presentation of the project as a whole, Vienna Technical University (TUW) presented project partners round tables overall results in a summary diagram and in the form of a public discussion panel with partners in order to understand, from their point of view, which lessons were so far learned through POLY5. TUW moderated the discussion through a series of questions on the role played by every institution, what has improved and what still remains to be done.
Here are some interesting statements…

“Thanks to the mobility study we undertook within the project, a lively and active debate on these topics started, focusing especially on the dialogue between public and private stakeholders on how a major transport infrastructure can impact at local level”

“POLY5 made it possible to address the topic of the Turin-Lyon new railway link with accompanying measures and focusing on two main topics, which can be defined as keywords: ANTICIPATION and CONSULTATION”

“The project made it possible to intensify the dialogue on the importance of logistic nodes and their planning in connection with an major transport infrastructure”

“In these 3 years something has changed: we moved from a situation where the problem was where and how to build the ex-Corridor 5, to a situation where the problem is to save money. With POLY5 we tried to look at the topic from a different angle, not considering it from a “linear” point of view, but with a programmatic approach, aimed at identifying the best solutions to integrate the infrastructure into the local context”

“Being quite early on the planning phase of the major transport infrastructure, we didn’t deal with any kind of protest, but we felt the need to reach consensus and achieve transparency in the decision making processes. And in this, POLY5 is very useful as we are learning from others”

“Transparency and clarity of objectives (why a major transport infrastructure is going to be built) have to be made clear at the beginning and at EU level”

“The topic of the utility value of an infrastructure is also very relevant and not perceived at local level: such major projects are an opportunity to change a territory and lead to permanent advantages”.
ALPINE SPACE AREAS INFLUENCED BY EUROPEAN MAJOR TRANSPORT INFRASTRUCTURE

INSTRUMENTS TO IMPROVE LOCAL AND REGIONAL COMPETITIVENESS

The European Commissionaire for Regional Development Johannes Hahn raises the key question of this conference and of the POLY5 project in his video message: can a major transport infrastructure become a local or regional development opportunity for Alpine areas? He points out that the successful implementation of the trans-European major infrastructure is one main issue to foster the European Cohesion process.

The Vienna University of Technology and the Department of Spatial Planning represented by Vice-rector Johannes Fröhlich and head of department Michael Getzner underline the importance of the active involvement of universities together with international partners form different fields of expertise and institutional background in this process.

Based on the knowledge of the importance of this European infrastructure initiative Thomas Spiegel from the Austrian Ministry for Transport, Innovation and Technology explains that involving people’s interests in the practical implementation of the TEN-T is one of the main targets for the Austrian government.

Underlining the challenges of public involvement Klaus Kunzmann explains the spatial relation between connecting
cities and marginalizing rural areas – especially in the Alpine area – by the implementation the trans-European major infrastructure at the same time. This local and regional perspective of affected areas – cities as well as rural areas – and how to handle these implementations are the key-topic and main motivation of POLY5 and its transnational cooperation – the main message of Susanne Nilsson’s the POLY5 project manager presentation.

The representatives of the POLY5 university partners Alain Thierstein, Sandro Fabbro and Thomas Dillinger go into more details concerning the difficulties of major transport infrastructure impacts from the scientific and practical POLY5 perspective.

Next to the presentation of the final results of POLY5 including a guideline to transfer the POLY5 outputs to other European regions the territorial partners (Ljubljana Urban Region, Slovenia | Municipality Šempeter - Vrtojba, Slovenia | Province of Gorizia, Italy | Province of Turin, Italy | Savoie General Council, France | Veneto Region, Italy) sign an Open Letter. This letter helps to communicate the main requirements for local and regional administrations and authorities to optimize the implementation of the trans-European major infrastructure.
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