

TERRITORIO DELLA RICERCA  
SU INSEDIAMENTI E AMBIENTE

RIVISTA INTERNAZIONALE  
DI CULTURA URBANISTICA

12



il mare e  
la città

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abstract

## "Superport" and local contexts

*Chiara Nifosi*

### *Abstract*

The ability of ports and related infrastructure project to structure territories and cities has been the subject of studies for a long time. According to a more recent idea instead, major infrastructural projects, while responding to sectoral logics and super-local interests, can become occasions and resources for urban reclamation and redevelopment on a local scale. The infrastructure/territory link can no longer be solved as a cause-and-effect relationship, but considers major infrastructures as an opportunity to start interconnection processes, to redevelop or enhance local contexts in search of the positive potentials, opportunities and possible synergies that the implementation of the intervention provides to local planning capability.



*fig.1- Monfalcone today, satellite view, ©GoogleHeart*

Within this general framework, the reflection proposed here is aimed at analyzing in depth the relationship between local contexts and new major infrastructural interventions, clarifying whether and by what cross-scale means or projectual actions major infrastructures can truly become an opportunity to promote local development.

The feasibility study “The Port of Monfalcone as a factor of attraction and an engine of development” proposes a set of policy options to enhance the contribution of these infrastructures to economic and social future development in Italy and in the crossborder territories. The Study shows how a “sustainable” coexistence between the development of the port and the city can generate a positive impact at both an urban and regional scale and analyze the effects induced by the development on Monfalcone’s context defining socio-economics, technical feasibility, environmental feasibility aspects.

### **“Superporti” e contesti locali**

La capacità delle grandi opere infrastrutturali di strutturare territori e città, è stata oggetto di studi da lungo tempo. E’ più recente invece l’idea che i grandi progetti infrastrutturali, pur rispondendo a logiche settoriali e interessi sovralocali, possano diventare occasioni e risorse per lo sviluppo e la riqualificazione urbana a scala locale. Il legame infrastruttura/territorio, non si risolve più come un rapporto di causa-effetto, ma considera la grande infrastruttura come occasione per avviare processi di interconnessione, di riqualificazione e valorizzazione dei contesti locali alla ricerca delle potenzialità positive, delle occasioni e delle possibili sinergie che la realizzazione dell’intervento offre alla progettualità locale.

All’interno di questo quadro generale, la riflessione che qui si propone vuole approfondire il rapporto tra contesti locali e interventi infrastrutturali, chiarendo se e attraverso quali strumenti o azioni progettuali di tipo transcalare la grande infrastruttura possa realmente divenire occasione per promuovere lo sviluppo locale.

Lo studio di fattibilità “Il porto di Monfalcone come attrattore e un motore di sviluppo” propone una serie di scelte strategiche per migliorare il contributo che queste infrastrutture potranno dare al processo di sviluppo economico e sociale soprattutto in Italia e nei territori di confine. Lo studio mostra come una convivenza “sostenibile” tra lo sviluppo del porto e la città può generare un impatto positivo sia a scala urbana che regionale e analizza gli effetti indotti dallo sviluppo del contesto di Monfalcone definendo gli aspetti della fattibilità socio-economica, tecnica e ambientale.

### **Keywords:**

*Superport; local context; intermodality; landscape quality; participation*

## **"Superport" and local contexts**

*Chiara Nifosi*

### **Introduction. "Superports" and local contexts**

International gateways and trade corridors deliver services important to national and regional competitiveness, productivity, employment, quality of life and a sustainable environment.

The future growth in passenger and freight demand will lead to rapidly increasing volumes that will likely be concentrated along the major inter-regional passenger and trade routes with increasing shares carried by extra-large aircraft and container vessels able to carry high volumes at lowest cost. For these reasons, each country's key international gateways and inland trade corridor infrastructure will become even more important to their national economies in future years to come (OECD Report 2012).

The ability of ports and related infrastructure project to structure territories and cities has been the subject of studies for a long time; likewise, the intentional use of this planning ability has been theorized and partly also tested. According to a more recent idea instead, major infrastructural projects, while responding to sectoral logics and super-local interests, can become resources for urban reclamation and redevelopment on a local scale. This happens when these projects are integrated in a decision-making process of negotiated planning, in which people belonging to different levels of territorial hierarchy are involved, from strictly local to the European Union or even globally.

If interpreted as an opportunity to set local development processes, infrastructural actions take the form of territorial works (Dematteis, Governa, 2013), not only in relation to the geographical scale that justifies their implementation, but also for the structuring action, whether direct or indirect, actual or potential, that the work itself can perform on lower hierarchical scales. The infrastructure/territory link can no longer be solved as a cause-and-effect relationship, but considers major infrastructures as an opportunity to start interconnection processes, to redevelop or enhance local contexts in search of the positive potentials, opportunities and possible synergies that the implementation of the intervention provides to local planning capability (Dematteis, Governa, 2013). Within this general framework, the reflection proposed here is aimed at analyzing in depth the relationship between local contexts and new major infrastructural interventions, clarifying whether and by what cross-scale means or projectual actions major infrastructures can truly become an opportunity to promote local development.

The feasibility study “The Port of Monfalcone as a factor of attraction and an engine of development” proposes a set of policy options to enhance the contribution of these infrastructures to economic and social development at home and abroad in the years to come. The project aims on recognition of strategic infrastructure (including gateways, hubs and key connections) in national policy frameworks and comprehensive measures to strengthen approaches and support the infrastructure development required. The Study shows how a “sustainable” coexistence between the development of the port and the city can generate a positive impact at both an urban and regional scale and analyze the effects induced by the development on Monfalcone’s context defining socio-economics, technical feasibility, environmental feasibility aspects.

### **Keywords for the integration of large infrastructure and territory**

*Intermodality: competitiveness and connectivity in the new global space. The Italian situation*

The European politics consider the modal integration among the different transport infrastructures (road, railway, air and maritime networks) needed to build network that ensures efficiency and competitiveness for the transport of goods and passengers, as well as greater cohesion among member countries. In particular, rail and maritime transport also acquire a role of eco-friendly alternative to road transport<sup>1</sup>. In addition to the execution of new works, the availability of resources to be also invested in projects of modernization of the existing infrastructures is required as well as a more streamlined regulatory framework consistent with the rapid evolution of the transport system.

The national political and strategic design, consistent with the European Commission assumptions, places at the centre of the cultural, economic and political development competitiveness and connectivity as the cause and effect of interventions of “territorialisation” based on the strengthening of the system of networks and nodes along the corridors that make up Europe’s infrastructural framework. The possibility of re-founding urban territories starting from new centralities is strongly linked to this combination (competitiveness and connectivity). The former hierarchizes space in terms of “specialization” and exclusivity (e.g. the revitalization of historic centres, or the recovery of waterfronts), while the latter turns instead to the relational properties of stakeholders in an interconnected system of flows of people, tangible and intangible property, in which hierarchy concerns the network nodes, from the central to the peripheral ones (e.g. the system of freight villages in the various inlands).

It is obvious that the two perspectives are interdependent. It is hard to think of a strong attractiveness outside a network, and being part of the latter promotes competitiveness.

Italy, due to its geographical features, absolute needs to support this policy: on the one side, the Alps separate it from the rest of Europe, but at the same time it is favoured because it allows the EU to be linked to the system of the emerging countries bordering the Mediterranean Sea. However, maybe as never before in Italy, the idea of system ap-



peared to be more distant from the projects for the region and the city that are actually being implemented.

It is necessary to broaden our gaze towards strategic system visions that guide politics stakeholders and citizens to assess in a deeply concrete manner the economic and formal choices to be enforced on each territorial individuality. The risks associated with these political and strategic decisions are very high. For example, within the scope of European corridors, Italy could find itself being connected through a major railway infrastructure for passengers and goods to the heart of Europe, say to Helsinki across the bridge over the Messina Strait (corridor 1, Helsinki-Palermo) or say to Lyon, through a tunnel 50 km long (corridor 5 Algeciras-Kiev), but without any goods or passengers to transport (Pugliese M., 2010). For this reason it is necessary to integrate the planning and construction of transfrontier and national infrastructure to the local network. It could risk investing in projects Pharaonic unnecessary... In order that the situations in progress can be exploited to the utmost, an indispensable condition is that there should be a continual change of scale in considering infrastructural actions. The case covered by the Study on Monfalcone collide based on this condition.

*Impact compensation: Building landscape quality*

Ever-growing attention to environmental protection is required for the purpose of a growth capable of combining the development of the transport system with environmental protection. We tend to go beyond the logic of standard or burden as a guarantee of quality, and to control the formal effects of regulatory choices as well as to simplify the legislation itself. The compensations and environmental mitigation works become instead.

Compensations project are often improperly considered as the remedy to lower conflictuality and build local consensus, providing benefits to the players contributors the most to the realization of the project. If not inserted in the whole pictures, compensation, can sometimes bring an increase in cost of construction and enhance distorsive phenomena leavings environmental issue insolved.

An obvious criticality is the absence of a rule that guides the implementation of the various compensations vis-à-vis the construction of a unitary and structural project (Pucci P., 2013) capable, based on its size, to reorganize degraded fabrics, redistribute and systematize functions.

For this reason, the compensation should be an integral part of projects since the beginning.

The so-called "preventive environmental compensation<sup>2</sup>" (Pileri P., 2007), recognized from the Provincia di Milano and the Regione Lombardia, may favour the realization and the sale of real estate (land), landscape works to the public heritage recreasing the environmental balance, the lanscape quality of the open spaces and their usability<sup>3</sup>.

Finally, the possibility of realizing in advance, related to the project itself works, could promote an atmosphere of trust and confidence between stakeholders and the user territories and therefore it could be promoted on the fiscal level or during the negotiations.

The project described below to investigate the more technical issues concludes with a description of integration between the infrastructure, the nature, the city and tries to act as a guide to the negotiation process<sup>4</sup>.

The compensation actions necessary to respond to the impact of a new infrastructural intervention and related mitigation, require that the work is closely connected to the recovery of environmental quality standards and the protection of the landscape (and cultural heritage) of the territory of reference.

The infrastructures we are analyzing are considered among the works that determine the most significant transformations in the landscape.

The design culture that has prevailed until a few years ago comes from the general consideration of the infrastructure as a concluded technical fact, whose only function is to convey/sort the flows of goods or passengers as quickly as possible: a “trivial” hydraulic image (Secchi B., 1989).

The prevalence of technical issues, derived from the exclusive purposes of solving traffic, mobility and speed problems, led to a separation of knowledge and competences, as a consequence of which the processes of infrastructure building showed an abstraction from the context and its dynamics that, in the best case, we tried to mitigate and compensate for a posteriori with often unsatisfactory results (ISPRA, 2010).

It is common place, as common as wrong, to think that the realization of an infrastructure that is valid in terms of landscape is more expensive: this is almost never true if the project is built right from its preliminary stages through the instruments peculiar to the landscape.

There are two opposed approaches, which lead to quite different results both in terms of economy and overall performance. In this perspective, it is essential to adopt techniques and reference models for infrastructural projects as well as for those related thereto (concerning urban and agronomic transformation and soil conservation) that interact with the environmental components and the landscape and that must be coordinated with the latter according to the characters, diversities and sensitivity degree of the landscape and environmental system itself.

### *Governance and participation*

The instruments of governance, which may presage a different ratio of mediation between public interests and private freedom, are strengthened. Essential for the construction of consensus is the resolution of the territorial conflicts through the inclusion of f-users in decision process.

Transport infrastructures, even more than other projects with a significant impact on the territory, create local opposition and conflict. The territorial conflict - which involves the stakeholders, governments, civil society, economic actors - is now regarded by many as one of the main causes of the infrastructure gap in Italy (Leftovers, TRT, Metis Consortium, 2012).

In the long process that lies behind the projects of this magnitude causes of territorial

conflicts are manifold:

- the degree of irreversibility of the work, bound to create a physical impact for a potentially infinite period;
- the crisis of the forms of representation (formal political representation, representation of specific interests);
- the lack of culture to the collaboration and the participation;
- the settlements' density and the topography of the territory in Italy that make it objectively difficult to position such large artifacts;
- the uneven distribution of benefits and costs;
- Citizens' ignorance on current laws and regulations that govern the major national strategic choices from which the infrastructure choices derive
- the lack of culture to the transparency of decisions and the inclusion of the actors.

The field where these differences are significant concerns the benefits' and costs' distribution resulting from the implementation and operation of the infrastructure. Environmental and territorial conflicts arise because, among other things, determine an uneven distribution between the beneficiaries and who bears the costs, in particular the damage. An important contribution to overcoming them by local authorities and local populations concerned could derive from the definition, transparent and shared, of transport and mobility planning's tools at national level. (Leftovers, TRT, Metis Consortium, 2012).

To facilitate the negotiability, infrastructure projects must become integrated territorial projects and involve end users. Integration comes not only from in-depth feasibility studies, but also from the ability to dialogue with local actors, often holders of knowledge and interests that would otherwise go unnoticed<sup>5</sup>.

Very important aspect in this process is the function of planners in the guidance of the local Administration, the project holder and actual actuator of the ecological compensation and guarantor of the realization thereto.

The conflict generated by such process could be greater than the capacity of an Administration to manage and solve various problems. The Municipality often does not have the appropriate tools for opposing a strong design to the concrete intention of those who have building interests and go so far as to jeopardize the territories not yet built with processes of real estate pulverization free of any reference territorial scenario.

### **Study Case. The port of Monfalcone as attractor and development prime mover**

**Promoters**\_Ministry of the Infrastructure and Transportation/Province of Gorizia

**Date**\_August 2011

**Planners**\_One Works S.p.A.-Architecture Infrastructure Urban Engineering with the collaboration of the University of Trieste and the Politecnico di Milano

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 Politecnico di Milano-D.P.A./One Works, Arch. Chiara Nifosì, masterplanning and general co-ordination

### *Promoters*

The city of Monfalcone is the northernmost port of the Mediterranean and is located at the centre of gravity of the consolidated markets of central Europe and the emerging markets of the East. The history of the city of Monfalcone is profoundly connected to that of its port, which over time has been the object of various regeneration projects to reclaim growing amounts of land designated for productive activities linked to the port, which are still considered the economic engine of the region (Fincantieri, Ansaldo, A2A, fig.1).

In recent years, the Ministry of the Infrastructure and Transportation and the many local governments involved have, within the programmes “Progetto S.I.S.T.E.M.A” and “Progetti di Territorio- Progetti Snodo 1–Snodo 2” , defined a framework of structural projects for the functional renewal of the entire national territory. These programs have created a new form of scheduling and planning based on local potential, identifying “Strategic Regional Platforms”, districts with a vocation for logistics and industry in relation to the infrastructure corridors at the European scale. The Provincial Government of Gorizia has supported all the studies regarding the Northeastern Platform.

### *North Adriatic Ports strategy*

The Provincial Government of Gorizia promoted the study on the Port of Monfalcone starting from the interest expressed by APM Terminals<sup>6</sup> along with Unicredit Logistics in February 2010, to transfer some of their Central Europe’s market share to the northern ports of the Adriatic and of the Tyrrhenian arc (Vado Ligure), fig.2.

The port of Monfalcone in Maersk general strategy could in fact become the centrepiece of this system, even though it is not a large port, it is located in a strategic position relatively to the affected markets and also presents a high degree of transformability. Among the Italian regional ports Monfalcone is the one offering the greatest opportunities for physical development, it enjoys a position and a synergy with the productive apparatus which can promote the development of a major industrial and logistics Hub (Porto Nogaro), as integrated as it is with the industrial area, it is still a port of a regional nature). It also allows for an innovative and dynamic governance, not being home to the any Port Authority and therefore being (still for the moment) under the jurisdiction of the Regione Friuli.

The idea of drawing up a large container port in the Monfalcone is a realistic possibil-

ity, as shipping companies are now interested in finding new gate of European penetration allowing for:

- Shorter sea routes to save resources - fuel in particular, (fig.3).
- Bigger ships, capable of strong scale economies of scale, with slower speed routes;
- Railways connections to inland hubs (connection to two Pan-european Transport Corridors, fig.4).

- New and modern terminal, designed according to the most advanced lay-out and technologies (eg, semiautomatic) in large spaces, with no technical constraints.

These characteristics are available in Monfalcone thus explaining the maritime operators' and shipping companies' real interest in the project

The port of Monfalcone therefore offers a substantially different prospect of infrastructure than the one available or feasible in Trieste which has been, since the 70s, a deep-water container port and that, due to the possible future "demands" could pose some problems:

- from the difficulty to design without physical constraints, to the need of new structures of the back dock as, for instance, a dedicated rail terminal;
- higher expenses for the new quays further enlargement, given that it would need piling structures in deep water, whereas in Monfalcone an approach based on the excavation and the carryover of the reclaimed material could be used according to Northern Europe prevalent techniques;
- availability of railway capacity, if exceed the threshold of one million TEUs was to be exceeded (Torbianelli V., 2010).

On the contrary Monfalcone is much similar to Koper: close to Central Europe emerging markets, shallow waters to dredge, new rail links and quay landside spaces. For these reasons Koper is the true competitor of the project.

#### *Goals and approach*

The Study has a double objective: the first is to analyze the "large scale" impact on the region caused by the future development of the Monfalcone-Trieste-Porto Nogaro port system in the context of the "Alto Adriatico" Strategic Regional Platform that runs along European Corridors V (Algaciras-Kiev) and Adriatic-Baltic (Helsinki-Ravenna) and the "local" impact in terms of the number of new productivity and new facilities.

The second objective is to verify the "technical feasibility" of a port system that can compete with the greatest ports of the Northern Europe, confirming the interest in investing in the Monfalcone port expressed by APM Terminals (Maersk) and Unicredit Logistics in February 2010.

The SDF has used different methodological approaches: a projectual approach that introduced a plan of concreteness allowing to give a form, to construction a unitary vision of container terminal and supporting infrastructure; an analytical approach that has allowed us to substantiate the choice of settlement; a specialized approach to engineering issues (maritime, traffic).

*Context's structure*

In the following diagrams, the infrastructure system and the reference environmental system(fig.5).

Highlighted the A4 motorway; the existing railway and the route of the future pan-european high-speed corridor n.5; the Ronchi dei legionari Airport and its future inter-modal hub in connection with the High speed railway (Italian TAV); the main ports and inland ports: Cervignano (to be revitalized), Gorizia Sant'Andrea and its enlargement Ferneti, the ports of Trieste and Porto Nogaro in addition to that of Monfalcone, upgrading and modernization projects planned on the road infrastructure.

Alongside the main infrastructure system the environmental system: the Karst region (Italian side), the Isonzo alluvial plain, the terminal course of the the rivers Isonzo and Timavo, the coastal areas of the Baia di Panzano, the lagoon, the system of constrained urban areas (fig. 8).

*Scenarios and program*

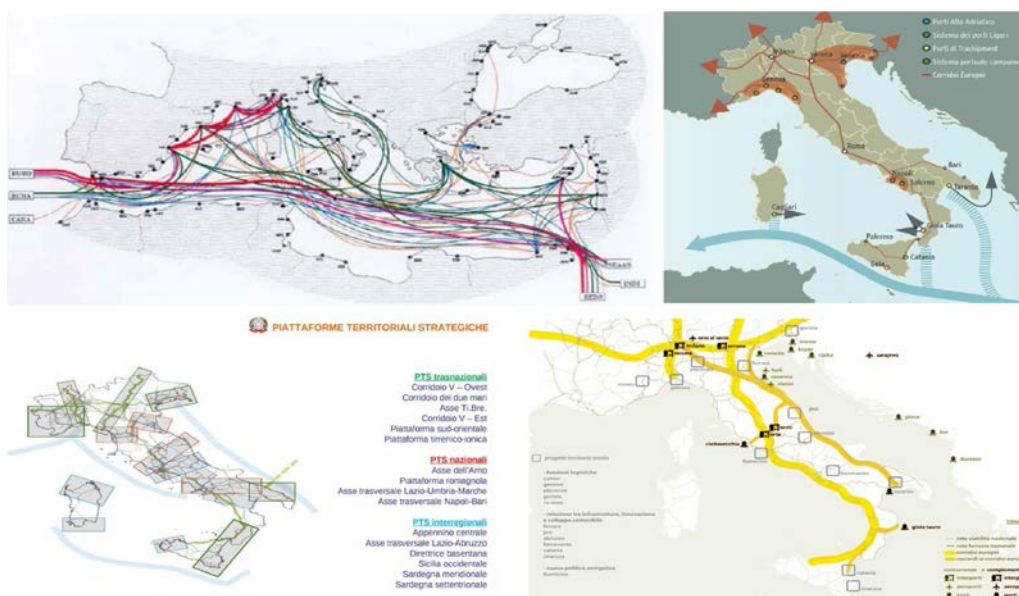


fig.2 - Main maritime flows in the Mediterranean sea; strategic Italian Port System and territorial platforms

- The cognitive phase of this study allows to define different options and development stages through a background projection (2016-2020-2025-2030<sup>7</sup>) that gauges the methods of optimizing the positive spin-off on the territory (creation of added value and job on the territory) and counterbalancing the negative ones, basing itself on a possibility of general masterplan(fig.8).

- To each phase corresponds a development of the port both in terms of infrastructure and flows.

Trough different identified stages the planned works consist of:

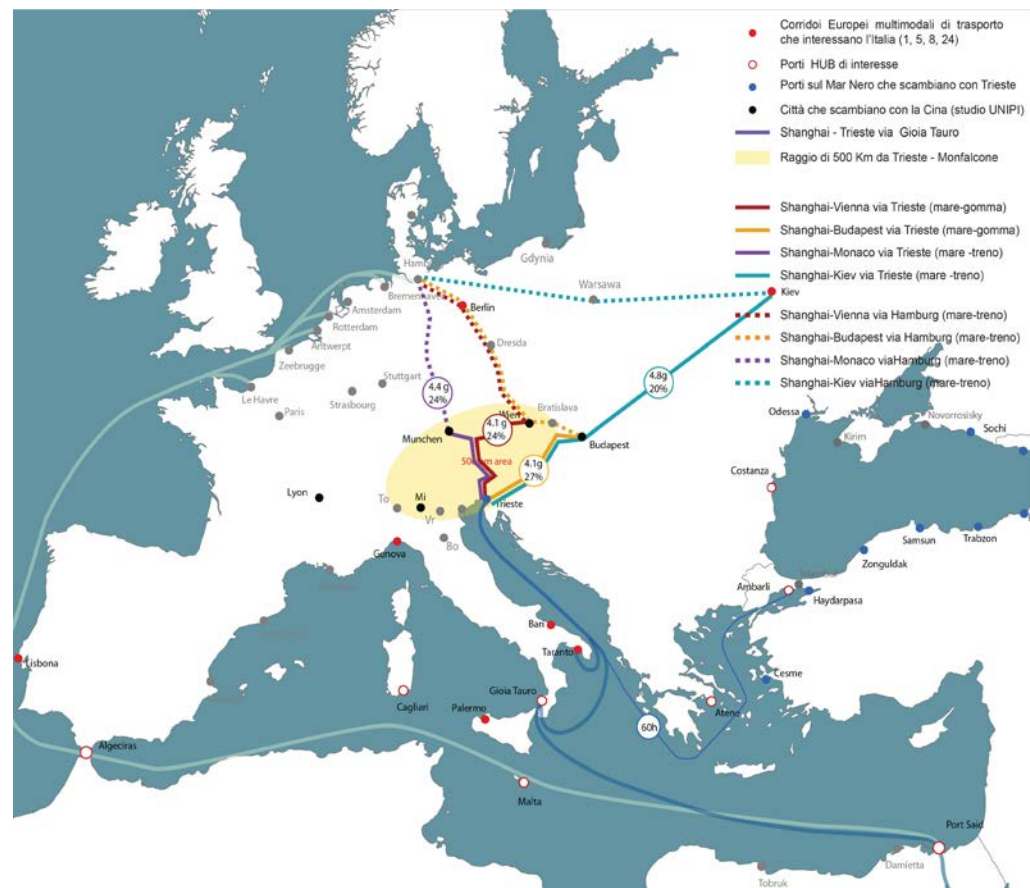
- Port dredging to allow the landing of superpost-panamax ships (penultimate generation);
- Implementation, in two separate phases, of two container quays (Lot A 1.6

mil. Teu + Lot B 1.6 mil. Teu) for a total 3.2 million Teu and a new Ro -Ro and Ro-Pax terminal dedicated to short sea shipping traffic;

- Construction, in 2 stages, of a rail terminal with 4 + 4 track lines;
- Expansion of rail and motorway links ;
- Construction, in 2 stages, of 2 lots intended for production and logistics (distribution park);
- Implementation of mitigation (noise barriers) and compensation (a large urban park area) works.

### *The Container Terminal and RO-RO terminal*

The construction of the new wharf for the container terminal will take place in two



*fig.3 - Saving days of navigation compared to traditional routes (across the Suez Canal and Gibraltar Strait to North european ports)*

phases and in two different sections, the second section will be built when the expected growth trends have been achieved.

The layout was determined by the decision to use the most modern systems of cargo handling available for container terminals of this size.

The master plan includes the realization of a new Ro-Ro and Ro-Pax terminal coherent with the anticipated development of the local agencies. A maritime station will also

be built for passenger traffic. With these requisites, the Port of Monfalcone will also be able to participate in the European Programme for Highways on the Sea and build an innovative and competitive intermodal system.

*Terrestrial strategical connections*

*fig.4 - Transport Core network with pan-European corridors at July 2010*



**Road System.** The construction of the new terminal, in development scenarios starting from a minimum expected target of 350,000 TEUs, will require interventions both on the networks connecting the port to the motorway internal distribution and on the harbor's. The project will therefore resolve conflicts related to 'road and rail access to and from the port and to the capacity road system's from the motorway to the port ; in addition it will define new distribution's paths capable of establishing new "hierarchies" inside the port and in the relationship with the context.

It fits into this picture the interventions proposed an underwater tunnel crossing the Baia di Panzano whose opening would be scheduled in the last Scenario (2030). This infrastructure would ensure the construction of a "ring" with the aim of relieving the A4 motorway in the stretch Redipuglia-Lisert of 50% of the traffic and of connecting the port with both the Panzano industrial areas, not yet implemented, and with the Ronchi intermodal hub (fig.5,7).



*Raylway.* Another good result in terms of environmental sustainability at the macro-scale would be reached thanks to a substantial reduction in the traffic of goods traveling by road.

The proposed infrastructure, in different time intervals, pursues the objective of ensuring a modal split between rail transported and road transported TEUs equate respectively to 60% and 40% of the total handled by the new port; the bulk goods and the Ro-Ro see an almost exclusive use of the road. This hypothesis is the base assumption that supports the subsequent processing. Thanks to the new terminal a share equal to 60% of the traffic would be routed on railway lines, with sensible drops in CO2 emissions, in accidents, etc.8.

Once Exceeded the 350,000 TEUs scenario, one needs to carry out two key interventions: the construction of a railway terminal and the upgrading of the network and its extension to the Monfalcone's station up to the "Pontebbana" Railway. Construction works can be carried out in subsequent batches, parallel to the growth of the port. The masterplan involves the construction of a railway terminal with 2 track lines (4 rail tracks each) for a length of 750 m, allowing the parking of trains up 710 m and two locomotives. These two modules are arranged at right angles to the container terminal, in a central position with respect to the second phase of the wharf construction, thus

fig.5 - Existing and future infrastructures

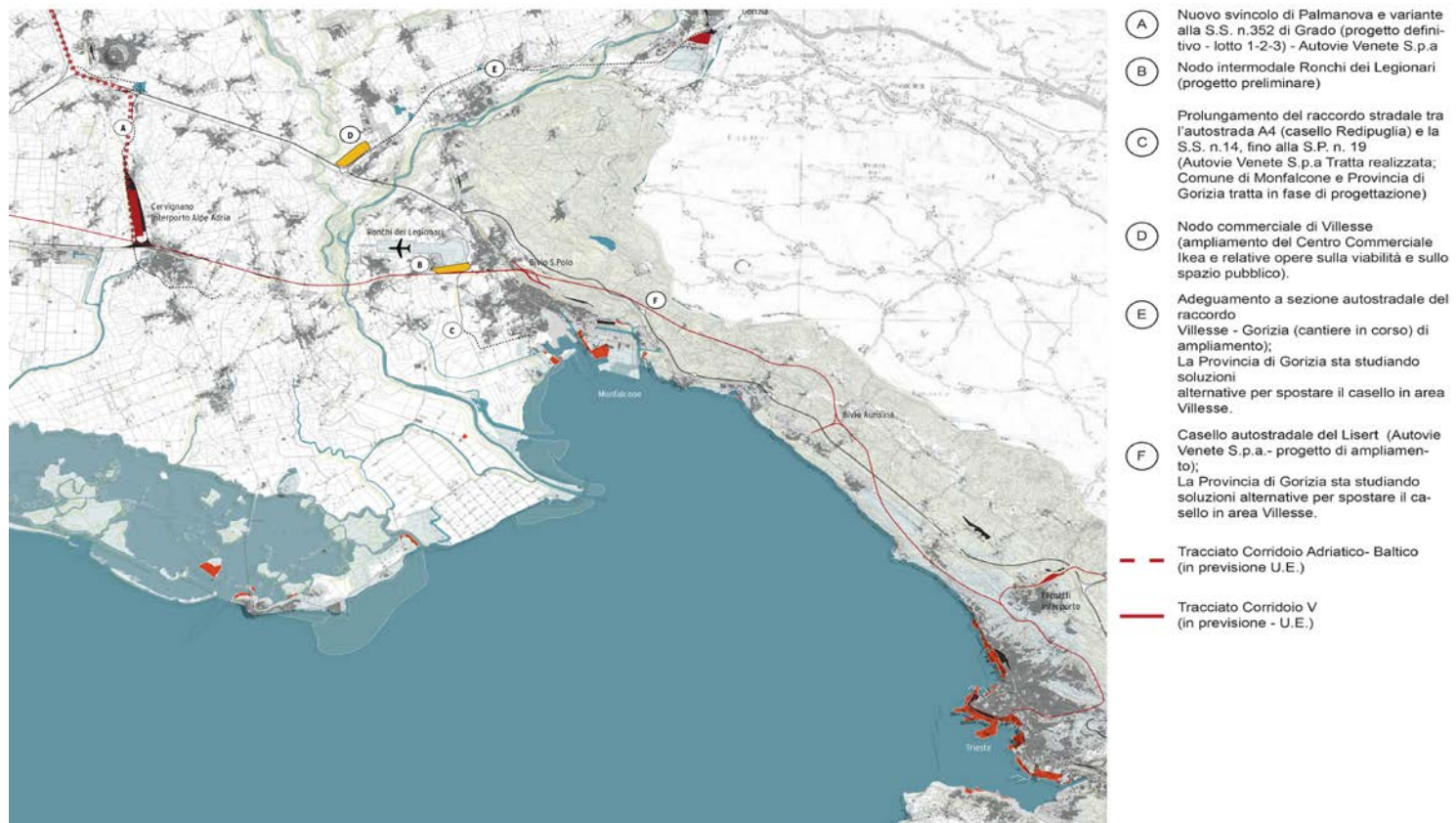




fig.6 - View of the Monfalcone Port Project



reducing the use of free areas towards the mouth of the Timavo River.

*Induced revenues on local markets*

The logistics activities' localisation strategy inside the port follows the dual need of both

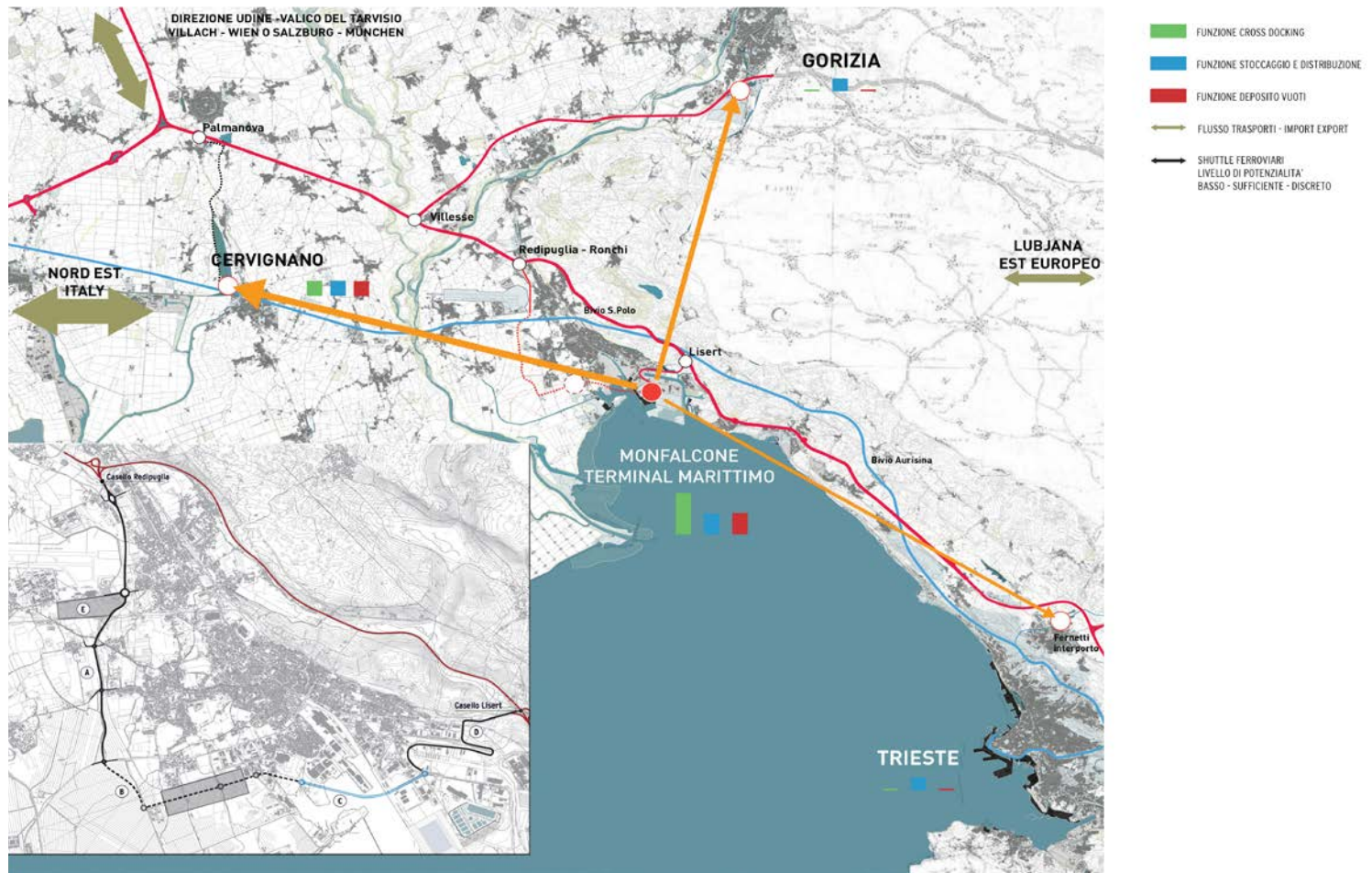
developing high added value activities9 within the port withand guaranteeing the hub competitiveness. The true wealth does not in fact consist in direct employment, modest as a result of strong automation of handling activities, but in a port with an attached Distripark (distribution park10, fig. 6,8) much more competitive than other hubs and less replaceable along the transport chain, centre of attraction for less geographically constrained activities , clean industrial processes, scientific and technological activities.

In the same way it has occurred in hub contexts similar to Monfalcone (Valencia), a percentage of goods close to 5% could be involved in logistical processes of distribution and storage of goods (Torbianelli V., 2010 ).

The Masterplan for Monfalcone identifies an area that has all the appropriate features to the function of Distripark such as an advanced logistics platform, close to the terminal and to the multimodal transport system, able to add value to simple operations such as container's loading and unloading.

However, as far as all the operations not strictly related to the position of an hypothetical Monfalcone terminal are concerned, there would still be areas of potential market (Friuli Venezia Giulia Region and the eastern part of Veneto) that could use, under very strict conditions, the existing inland terminals which are not far from the port itself. Both Gorizia and Cervignano (once the link to the motorway is completed), and in a lesser

fig.7 - Logistic system scheme: specialisation of functions inland terminal and new infrastructural Ring



way Ferneti, smaller and too far east, could represent “drop points” for maritime and shipping companies. The latter might be interested in arranging here their container yards, especially for close markets. Of course the maintenance of low shipping costs is realistically possible only via rail shuttle buses, efficiently run, and terminal operations handled in the same manner (Spatti G., 2010).

#### *Impact compensation and environmental mitigation*

The issue of environmental sustainability is closely linked not only to the analytical phase - which highlighted the system of constraints and potential for development already in place - but also to the definition of the port's layout.

From the very beginning the project “makes room” for the mitigation and compensation measures -relatively to the impact of the built infrastructures on the environment - through the optimisation of the inner harbour's spaces and of the connection's infrastructure and through the recognition and strengthening of existing historical, environmental and landscape systems (fig.8).

The environmental strategy aims to strengthen the protection regime imposed by national and European regulations but also proposes low impact interventions so that the inhabitants are able to regain possession of a significant part of the territory. It proposes to broaden the context of action to the neighbouring areas, following the hypothesis of a progressive formation of ecological corridors complementary and supplementary to the S.I.C. (Site of Community Importance within the port's area, fig.8).

The design strategy suggests that the environmental mitigation works are mainly made up of interventions related to the infrastructure, while the environmental compensations are provided, in whole or in part, aside from the work itself with the main objective of increasing the overall value of the natural environment.

The urban scale actions that aim at the impact compensation and at the construction of a “quality” can be summarized as follows:

- the deviation of the existing railway line allows you to regain a relationship with the water and create a pedestrian/cycling route connecting what could be a real urban park (the park as compensatory action) to the rest of the city through the canale Lisert.
- rationalisation of traffic flows and of the accesses to existing industrial and port activities.
- the recovery of a route, largely coastal (along-channel), directly connected with the city centre and in continuity with other environmental systems;
- the creation of a green buffer zone that constitutes a natural barrier to mitigate the port and urban settlements port impact onto the existing Site of Community Importance (S.I.C.);
- the construction of a large naturalistic green area that can accommodate and enhance the coastal ecosystem's dynamics.

The new park will also be the place where one can accommodate projects of development of social economy, eco and ethical tourism, sustainable development and



environmental education to the point of becoming a catalyst for a hypothetical park / reserve at the mouth of Timavo River.

## Conclusion

National visions need to reflect wider objectives, including those related to economic growth or to decrease, to productivity, competitiveness and sustainability. National infrastructure plans adapted to new international settings will help establish future directions and guide detailed planning. Long-term strategic infrastructure (with consistent policies, co-ordinated developments and connected networks) is an essential element in project planning and evaluation. Planning horizons need to be long enough for full evaluations, and may well extend to 2030. Good projects can only be established on the basis of good planning and evaluation, with merit-based ranking.

Evaluation processes for strategic infrastructure need to be adapted to the changing objectives. Protecting the environment and improving sustainability have also become more important policy objectives: there is increasing support for green growth and a “greening of transport”. Important contributions can be made during infrastructure planning and development stages.

Evaluations need to be improved to capture the full range of benefits and costs that can be expected over the longer periods involved. These improvements should always include analyses undertaken from an international as well as domestic perspective; and accounting for dynamic changes generated by strategic infrastructure over short and longer periods, in addition to “static” effects (OECD Report, 2012).

In conclusion, an integrated package of measures is needed to get investments in strategic infrastructure back on track, in countries whose strategic infrastructure is not rated highly enough. The strategic infrastructure package needs to include improvements across all major factors, encompassing: national policy frameworks; more commercial business models; better planning and evaluation; “assured” long term funding and financing; adequate gateway capacity; efficient international and inland connections; green growth.

Going Forward, while infrastructure is a key physical and technological asset of cities – representing critical capital investment – more important is the knowledge, shared ownership and collaboration that the next generation of urban infrastructure embeds in the Human Environment System. Successful public infrastructure is a legacy to the surmounted social dilemmas, collective action challenges and path dependencies resolved leading up to its construction (S.Muller, 2013). Rather it will emerge from shared learning, multi-sector coalitions, integrated planning, public-private partnerships, the skillful advocacy of civil society and good governance. This is how to best reframe urban development and economic growth to include green growth.

## ENDNOTES

1 The trans-European transport network (TEN-T), is based on a new approach that identifies two levels: A core network to be complete and fully operative by 2030. This network will facilitate connections and most important nodes of the TEN-T and will serve as a backbone of transport in the single market. - A Comprehensive network (global network) to be complete and operative by 2050. The comprehensive network will ensure full coverage of the EU territory and accessibility to all regions and will be funded primarily by the Member States. Both levels include all modes of transport: road, rail, air, sea, and intermodal platforms. The "strategic" infrastructures entire TEN-T European network must be developed providing the interconnection between the different modes of transport.

2 We refer in particular to a bill promoted by a group of researchers from the Polytechnic University of Milan concomitantly with other institutions for the implementation of a "preventive ecological compensation" for each type of urbanization or infrastructure building (Pileri P., 2007) and already experienced in some EU countries and in the United States. The compensation must be "precautionary o preventive" so as to avoid the risk of not seeing the completion of the ecological interventions provided for, or of seeing these completed only partially or with reduced quality. The research in question does not only propose ecological actions to compensate for the damage caused, but also proposes to equip surfaces that can no longer be transformed in the future, specific surfaces for renaturation, in addition to those transferred for secondary urbanizations. The most important question is, however, not so much the bond in itself, as the planning use of the bond.

3 The ecological compensation preventive proposes that for all the transformations of the territory that involve the transition from non-built land to urbanized areas are to be respected following criteria based on the principle of preventive ecological compensation. Article.b) refers to "for each square meter of floor space occupied by any kind of new infrastructural project or implant (with the exception of the energy and hydraulic infrastructure), must be sold and equip a green eco-friendly 2 square meters of floor area, reduced to 1 square meter in the case of rail infrastructure and health and social services and education" (Pileri P., 2007).

4 Some countries (USA, Netherlands, Germany) have dispose financial measures identified in "mitigation banking", instruments that consider the acquisition of land, involved in the compensation procedure. In the Netherlands the adoption (1993) of the compensations set of laws of the National Spatial Strategy, has established an instrument of management for both the environmental network and the infrastructures.

Another compensations' variable is the one related to the management and maintenance of the built works. It often happen that the realized compensation works become, in a few year, degraded and unusable or degrade due to neglect and lack of management. Even more strictly ecological interventions such as planted areas, reforestation, etc.. require maintenance exactly as infrastructure. It would be important to establish clear rules that define the responsibilities of each actor, entrusting the management of the compensatory works as well as the work (Leftovers, TRT, Metis Consortium, 2012).

5 Manchester Airport for example was one of the first to recognize the importance of consultation at local level: the Consultative Committee of the airport was born in 1969. In 1982 the Ministry of Transport has formalized the importance of this type of instrument and has published a Guidelines document for the establishment of local committees.

6 Moller Maersk Group (Danish) is one of the most important terminal operators in the world.

7 The project's numbers at 2030

- 6 km Length of port's access canal
- -16.0 m Depth of the dredged canal
- 1700 m Length of container platform
- 650 m Width of container platform
- 1.200.000 mq Platform container area
- 4 Berths for container ships of last generation
- 3.2 mln TEU/year Capacity
- 13.5 ha RO\_RO terminal Area
- 3 RO\_RO and Ro-PAX ships simultaneous berthing
- 600 Number of ships/year
- -12 m Depth of the RO-RO dock
- 8 Number of railway terminal tracks
- 750 m Length of track rail terminal
- 1060 m Length of the submerged tunnel

8 Actually in Italy, about the '80-90% of the goods currently travels on the road.

9 It is estimated that the mere transit of container create for the port city direct added value of only 150 - 170 € / TEU, compared with about € -1,200 1,000 / TEU generated by manufacturing activities inside the logistics areas (or Distripark). Also in terms of local induced revenues levels, a modern Distripark, while requiring 25 to 30 employees / acre for direct processing of containerized cargo (an attendant every 70-80 TEUs / year "worked"), it generates for a total of 110 - 130 direct employees and induced to hectare of Distripark. The added value of a direct Distripark is of the order of 1,500,000 € / ha / year, that induced in the local and national level is of the order of 5,000,000 € / ha / year. (Siviero, 2003).

10 The Distripark is an advanced logistic platform allocated close to the port terminals and integrated with an intermodal transport system, where you can add value to easy loading and unloading of containers (packaging, labeling, assembly, quality control and packaging, shipping). According to the EU regulation, the Distripark represents an area where the free handling of goods, benefits from custom taxes facilitation, as free area or free port. Distriparks are not just support areas for the container port's traffic activities, but are also placed at the service of companies and productive sectors - either local or external to the area - that show specific need of redesigning their production and distribution systems. Logistics operators (owners, tenants, or otherwise entitled to use buildings, space and equipment) can find, inside the Distripark, all the necessary services related to either transported goods, means or people (customs, finance, banking, mail services, etc.).

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