



# The National Logistics Plan and co-modal transport

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## Abstract

During the last decade a structural change has taken place in the demand for transport essentially brought about by:

- internationalization processes of the supplying and distribution markets with a redesigning of the production locations;
- a tendency towards reduced bulk goods transfer (raw materials and semi-finished goods) and a relative growth in transport of manufactured goods, parts and components changing the “economic profile” from transformer country to assembler country;
- re-engineering of the logistics and production processes, more especially of the large manufacturing and distribution firms (lean manufacturing & distribution), as strategic factors of competitiveness.

These processes require integrated mobility systems supported by efficient co-modal transport, more especially through the Ways of the Sea development.

*Keywords:* Logistics, Supply Chain, Ways of the Sea, Co-modality.

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## Premise

Among the determinants of the competitiveness levels of the economic-territorial systems present in the national context, the inadequacy of systemic assessments of correlation links existing between logistics efficiency of the country-system and degree of competitiveness expressed is becoming increasingly burdensome. A “short-sighted” approach has limited both the public and private efficacy of policies, aimed at rendering the supply of transport and logistics more respondent to demand exigencies: sufficient account has not been taken of the differentiations present in the logistics behaviour of the firms deriving not only from the size factor, even if this is the most macroscopic aspect.

The adoption of analysis techniques appears ever more necessary which grant bringing together reciprocal relationships among value-generating activities of a logistics chain supply, not of a firm-dimension typology, but rather that of a given territorial area.

From this viewpoint essential contributions for understanding the needs of the industrial systems for what regard the logistics and transport of goods may derive from

a re-composition on a territorial basis of the manufacturing specializations by monitoring their evolution not only from the dimension basis, but also, and more especially so, in terms of technological changes and sub-supply relationships.

Interest for the industrial district (more than for the economic district) in the debate on the role regarding the small- and medium-sized business firm in the Italian economy is associated with the affirmation of a industrialization model – founded on differentiated production: for the production process carried out principally through integration and “inbound” coordination ( of the business firm) has been replaced by a different one, founded on the integration and “outbound” coordination (territorial) of single small- and medium-sized production units.

The “new” economic geography, which in contrast with space upgrades territory as the integrator among business enterprises, production sectors and companies, associates the global dimension with the local one, allowing us to interpret the Italian economy to be interpreted as a multiplicity of local systems characterized by various types of production activities, and more especially by various degrees of socio-economic development.

The methodological strategy of singling out the Industrial Districts allows us to identify and locate them almost exclusively in Central-North Italy, deriving their marginal presence in the Mezzogiorno regions from the industrialization differential existing between South and Centre-North of Italy, and which through an analysis on a national basis prevents district-type industrialization processes from emerging in the Mezzogiorno.

In interpreting the changes in the Italian industrial set-up on a territorial basis, while focusing on the world of medium-sized firms and their relative performances great confusion in the forward and reverse trends also generally arises still in keeping with the business firm sizes, but with negligible effects on the universe of the medium-sized firms which are confirmed as being the hard core of the Italian economic system.

In order to obtain as accurate a picture as possible and an “aggregate” interpretation on a supra -regional territorial scale, a socio-economic interpretation has been defined for all the 7 logistics platforms singled out with the 2006 National Logistics Plan.

In this phase in order to give the logistics platforms an institutional structure as defined by the Government Bill regarding “dry port reformation” the roles, competences, functions and governance of the Platforms have been carefully defined.

### **1. The value of the transport services supply**

Over the last few years a real attempt has been made in Italy to upgrade transport and logistics supply, in order to support the traditional quantitative analyses (based on the quantities handled and on the flows in terms of tons and tons-km), evaluations of a specifically economic character based on the calculations of prices which the goods either produced or consumed on the Italian market, as well as those exported or imported, pay for their logistics (transport included).

The total turnover achieved by the transport and logistics sectors in 2016 reached 176 bln Euro, 52% for transport and the remaining 48% for logistics; but while transport, except for that on an urban and local scale is largely tertiarised, in the logistics compartment they reached still modest tertiarisation levels, of some 18% (Table 1).

The on-going trend, however, borne out by the increase in logistics tertiarisation occurring between 2012 and 2016 (from 17,8% to 18.6%) outlines an operational

profile oriented towards assembling the opportunities of a “more open” market also in function of the impetus coming from the world of production towards externalizing outwards the supply chain the optimization of which requires adequate and capitalized structures.

*Table 1: The contribution of one’s own account and that of third parties towards the FISLT (Fattura Italia Servizio Logistico e Trasporti, 2016)*

Sector	Billions of Euro 2012			Tertiarisation	Incidence
	Total (a)	C/one’s own (b)	C/Third party’s ©	(c/a)	(c/Total c)
Local Haulage	25	20	5	15.0%	8.47%
Regional	30	21	9	43.0%	15.25%
Interregional	12	2	10	79.1%	16.94%
International	6	1	5	100.0%	8.47%
<b>Total Haulage</b>	<b>73</b>	<b>44</b>	<b>29</b>	<b>43.4%</b>	<b>49.15%</b>
Sea	14	2	12	<b>85.0%</b>	20.33%
Air	1	0	1	<b>100.0%</b>	1.69%
Rail	2	1	1	<b>50.0%</b>	1.69%
Freight trains	0	0	0	<b>0.0%</b>	0.0%
Internal Navigation	0	0	0	<b>0.0%</b>	0.0%
<b>Total Transport</b>	<b>96</b>	<b>47</b>	<b>43</b>	<b>47.77%</b>	<b>73.0%</b>
Logistics Transport Excluded	<b>86</b>	<b>70</b>	<b>16</b>	<b>18.60%</b>	27.0%
<b>Total Logistics</b>	<b>176</b>	<b>117</b>	<b>59</b>	<b>33.52%</b>	<b>100.0%</b>

### 1.2 “Logistics: value by segments

During the 1980s with the advent of “logistics” industrial and commercial activities experienced a real revolution. For the aims of the competitiveness of the business firms, logistics” introduced the comprehension of the relevance of an integrated “supply chain” management, or that of the entire process which starts out from provisioning raw materials, then production, and finishes with distribution. The advantages in terms of operation costs, efficiency and competitiveness, which business firms readily adapting themselves to this revolution received from them, have been considerable.

A further, and even more relevant, “evolution” took place during the 1990s. In many business firms with an “outsourcing” process the integrated management of the warehousing and transport activities which make up the “supply chain” (which affects between 9 and 13 per cent of the final cost of the business firms’ industrial products), have been given over to third parties, both with contracts service as well as with real and proper spin off of segments of the business firm’s activity. Not all the industrial and commercial world has followed this trend, but the firms that have done so and are still doing so are showing exceptional competitive advantages over their rival competitors.

In this field an influence is exerted on “Italian hesitancy” both by a certain overall “cultural backwardness” of our industrial and commercial world management – except for several but always restricted “specimen cases” – as well as by an overall fragility and inadequacy – also in this case with several but always limited exceptions – of the

supplies of “logistic outsourcing” placed at the disposal of the business firms by third-party operators known as ‘logistics service providers’.

However, it is useful to bear in mind that it is precisely the “supply chain management” that is the most important element in the entire logistics process. It is in fact the process’s “brain”, which allows the programming, management, coordination, and control of the entire logistics-production process, in that directed towards the synchronization, standardization and coordination of physical and informative flows among various actors of the same supply chain.

Warehousing (which is estimated to represent between 3% and 5% of the final cost of the products of the various sectors) in fact represents an activity (comprising storing goods, organizing and preparing orders, packing and accessory activities) wherein it is possible to obtain large economies only through improved functioning of the other two items of the logistics activity, namely transport and “supply chain management” real and proper, through the effects for what this may have in terms of reduction in capitalizing the stock, better planning of the operational activities (loading/unloading, controls, preparation of orders, etc.), and hence of less space for goods storage.

Regarding transport (which is estimated as representing between 5 and 10 per cent of the final cost of the products), since it represents the transfer phase of the goods to the end consignee, or to the intermediary storage/transit infrastructures (deposits, logistics platforms, interchange modal nodes), it is essential that its optimization is pursued in relationship with the specific exigencies of the demand, both on the territorial level ( the origins /destinations of short-medium-long and very long distances to be covered), as well as of the service which must guarantee (in function of weights, volumes, urgency, perishables, etc.). This activity, expressed in the various modalities, may be realized with the maximum efficiency only if guided by precise organizational logic of coordination and control through real and proper “supply chain management”.

### *1.3 The current questions of criticism regarding logistics in Italy*

In order to describe the phenomena which generate criticism and are cause of the Italian firms’ reduced competitiveness both from the logistics demand viewpoint as well as from that of logistics supply, a purposely-designed Focus Group has been organized, whose main findings are briefly reported. The following set of problems for the most part has come to light:

#### Poor propagation of the “logistics culture” and lack of professionalized resources

The lack of adequately trained human resources on the market prevents many firms from fully exploiting the potentialities that modern logistics and appropriate goods handling can offer.

This poor “culture propagation” in question, moreover, more especially among the SME brings it about that logistics is understood as cost or, at the most, as client service rather than as a source of competitive advantages for the firm. In Italy there is a shortage of institutional training courses. Unlike France, Germany and England, where logistics is already an academic subject studied in the senior high schools, in Italy the figure of the “Industrial Expert in Logistics and Transport” does not exist.

Even today the logistician’s work is among the leading sources of national occupation for trained professional diplomates, after the commercial area, and unlike other professional categories he cannot be replaced either by machines or by computers, since

by definition he must be able to manage situations that vary from day to day which cannot be referred back to standard schemes.

One of all the factors is, namely the lack of development of the market services, that is characterized by a high-level fragmentation of the firms which are logistics services providers whose range of action is often limited to a few regional areas, which are neither stimulated towards aggregation nor by growth in size.

#### Poor propagation of logistics outsourcing

Although Italy is today the fourth largest European logistics market, recourse to tertiarisation of the logistics activities is but hardly propagated when compared with the rest of Europe. A good number of Italian firms show a low propensity towards the tertiarisation of logistic activities, for reasons which depend both on structural factors (prevalence of small-medium firms expressing a demand for logistics guided by the “cost factor”, which is highly fragmented and extremely personalized), as well as by cultural factors.

The demand for tertiarisation mainly concentrates on elementary services (e.g. haulage, warehouse renting, distribution spaces, etc.), and is rather low for more complex services (preparing orders, auxiliary processing).

#### Non-propagating and standardization of information technology and telecommunication systems for logistics

In many SME manufacturing and commercial firms the planning of the logistics-production activities, the management of the warehouse, of stock and transport is not adequately backed up by advanced information-technology systems. Likewise the transport and logistics companies show considerable resistance against investments in information technology, which is an indispensable condition for the development of logistics outsourcing and is enhanced through value-adding services.

The reason for this lies in the fact that the “cost” factor still predominates over the “quality of the service”. In other words the market does not recognize its value. Moreover, the low computerization level of the infrastructures and transport nodes, as well as the poor propagation of computerized procedures at the customs within seaports and airports is cause of operation delays and slowdowns, and at times leads to opting for having the goods unloaded/loaded abroad (containers rerouted to the Northern Range ports, and “trucked air cargo” flows towards the Frankfurt hub).

#### Propagation of “ex factory” delivery terms (as per Incoterms) clause

A large part of the national industry, and more especially the SME manufacturing industries have not hitherto felt the need to express firm control over the flows of materials and information, nor has it researched into the efficiency of the logistics processes for special sources of competitive advantage. The reasons for the backwardness of the logistics and transport services in Italy depend to a large extent on the demand, that is to say, on the habit of the business firms, especially SME, to neglect the organization of transport on entry and on exit, by selling in accordance with the ex factory clause, and likewise purchasing free home delivery. This implies that the imports to and from Italy are managed extra moenia by the logistics operators of our main trading partners, namely France and Germany, which have deliberately acquired our logistics firms over the last 10 years. The Italian operators, on the contrary, continue to withdraw from the exchange quotas with abroad for three reasons, namely the

troublesomeness caused in crossing the mountain passes (transit costs and time-consuming queuing times), the greater cost of road transport compared with transporters of the East, which “tends” to fall in line with that of the other European countries. The result of the poor competitiveness of the firms linked to the national logistics system is that Italy, with its high-level exportation vocation, is progressively purchasing transport services from foreign companies.

## 2. The actors of the extended supply chain failing to optimize

Over the last few years one has spoken and will continue to speak in the near future – in addition to supply chain integration - about “collaboration” among business firms and among business firm systems.

In Italy, also for historical reasons, a “secretive” approach of the firm towards its business partners (suppliers, clients, outside contractors, etc., has always prevailed, thereby bringing about considerable difficulty in exchanging relevant information among the actors of the same supply chain (manufacturing and distribution firms, logistics operators and transporters). Only in certain advanced sectors, such as the pharmaceutical and automotive sectors, has the sharing of essential information for some time now come about for the logistical process such as consignment programming, production planning, and promotion plans, and so on. In this way shared benefits have been attained among all the actors in terms of reduction in costs of stock security, transport costs and storage costs, in accordance with the logic of network economies.

## 3. High incidence of transport inactivity times

In Italy little attention has been paid to the problems related to the inactivity times of the transport cycle, especially with regard to waiting-time delays or vehicle loading or unloading times. The lack of collaboration and coordination among firms’ logistics interlocutors and commercial interlocutors generates serious repercussions on the stop-off times, as well as being cause of continuous friction on interface costs (for managing interchanging pallets, for example); on this aspect the application of Law 127/2010 may give positive results.

Focusing on the emergent critical questions sector allows one to identify the “right directions” which public action must embark on in order to remove such forms of criticism, and which essentially refer to the following spheres:

- promoting the adoption of **logistics models that prove successful for the specific supply chains** (beginning with those already identified for the pilot projects) through the formation of supply chain committees or agencies of sector promotion for propagating the *best practices*;
- **stimulating logistics outsourcing**, not only in the distribution phase but also for provisioning raw materials a/o semi-finished products, extending the practice also on behalf of a third party for consignments within an urban sphere;
- developing **professional training** and research applied to the logistics sector and transport;
- encouraging the development of **standards for the exchange of information and goods** and creating a national data communication network in support of logistics and transport;
- reducing transport inefficiency in **loading/unloading phases** by spreading the “appointments” practice (or, in an extreme situation, by introducing a tariff-

fixing logic based on the “transport time cycle”) and improving the organizational efficiency of the logistics nodes of modal interchange (Law 127/2010);

- **cutting red tape and simplifying bureaucratic procedures** which reduce competitiveness of business firms operating in Italy and which delay - if not actually discourage - foreign investments.

One aspect which remains fundamental and is still far from being resolved is that of transport modality integration especially of the road sector and alternative modalities over long distances, on a national and international scale. The policy of interventions has been much more strongly “emphasized” by modalities on our networks and nodes policy by largely ignoring the network concept with its complex analysis of connectedness, which also efficiently measures the accessibility level to the territories from the long distance to the last mile.

#### **4. Modal Integration: inter-modality and co-modality**

In Italy the scarcity of the “territory” resource, the dispersion of production, the marked anthropization and the peninsular projection enclosed to the north by the Alps and extending into the heart of the Mediterranean are features which render it indispensable to aim at high co-modal and intermodal integration. Both the one and the other demand a changeover from sectoral to political policies for creating transport restrictions and an approach towards more functional markets in order to identify intervention priorities.

**Co-modality** is a concept introduced by the EU in 2006 expressing the organization of each modality in order to favour the best use of infrastructure and service resources. It responds to the objective of optimizing the overall performances of the system of goods mobility on the basis of a marked tendency towards operational integration, to realize the maximum “logistics saving” system. Co-modality is a dynamic concept that aims towards the best use of the existing resources. This policy sustained by both infrastructural and regulatory interventions may permit a structured inter-modality balance in the system’s logic.

The resources whose optimal use is searched for are all those which the forms of mobility intervene on, including economic, infrastructural, industrial and service, professional, energy, and environmental ones. Co-modality implies a realistic acknowledgement of the initial conditions and the construction of a course of gradual innovation aimed at increasing produced value and reducing costs.

The topicality of this approach arises in Europe and in Italy from at least three factors:

- traffic growth on the networks which, close to the entries to the territory and on increasingly numerous segments, is suffering from conditions of congestion that cannot be solved immediately;
- accelerated supranational policies which convert the inefficient use of climatic resources, environment and energy resources directly into economic difficulties;
- the total organization of the current mobility system, which presents wide margins of possible (gradual) optimization, useful for supporting the objectives of growth and competitiveness of the economies of the old continent in an international context.

**Co-modality is** an essential part of the co-modal approach with implications on several fronts. The degree of effective integration of the services offered is in fact

directly influenced by infrastructural and regulating features for which reference is made to other parts of the document, including the competitive set-up of the services earmarked to interact, the planning and effective progression of the corridor networks, the power grid of the lesser infrastructures, the accessibility of the integration nodes and modal exchange, the efficiency of the accessory services, the location of the exchange platforms and the main relative vocations, etc<sup>1</sup>.

It clearly does not go unobserved that a good level of integration of the transport networks and services is one of the conditions for developing the logistics industry and promotion of the territory – one may consider the Mezzogiorno as a platform of interest for international flows. Nor likewise does it go unnoticed that the rationality of network development is a point of attraction for private capital, with reduced effects in public costs and increases in public welfare.

A realistic approach to the theme implies clear acknowledgement that inter-modality consists of a chain of services in which each of the providers involved responds to an economic logic of his own and participates therein if it is convenient for him to do so. Constructing conditions of convenience for the various actors of the chain requires finding a good balance between forms of inflexibility and the intermodal vocations.

It is well known that the economic character of the intermodal system is generally associated with a certain inflexibility: high minimum distances, flow symmetry, concentration of the loads along the main line, service frequency and reliability, relatively structured ordering (investments in UTI), accessibility of modal exchange nodes and good transit times, compatibility of national disciplines in international traffic, quality of infrastructure along the main line, and close coordination among service suppliers.

This does not exclude the economic sustainability of various services, such as the short rail connections between port and dryport/interport, on the basis of the frequency or optimization effects of the entire service.

On the other hand intermodality presents **advantages** with regard to the alternative to the all-road option:

- greater vocation towards the very long distance covered course and containerized traffic or at any unitized rate, developing into a progressively more integrated continental market;
- less air and sound pollution;
- reduced congestion of the road network, of cross-border and port transits;
- reduced consumption in energy resources;
- enhancement of Italy as gateway for goods earmarked for Central Europe;
- specialization of transport by distance and typology classes of transported goods;
- rationalization of use of personnel and vehicles utilized for road transport;
- optimal management of port spaces;
- extension of time bands (night-time usage) and every weekday.

All that has been said hitherto directs one to reflect on creating both the physical and economic conditions, so that on stating intentions or on implementing interventions the development of intermodal traffic may actually follow, two conditions for which are assumed:

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<sup>1</sup> Some of the above-mentioned themes are treated in other parts of the document, also with reference to territorial logic organized on platforms and logistic plates. Hence the evidence is summarized emerging from the in-depth studies carried out with specific reference to the inter-modality theme.



- hypothesizing a general organization model into which a supporting network of lesser plants or higher specialization is integrated, which are functional with area or supply logistics chains with a main network of lines and nodes tendentiously complete in its functions;
- guaranteeing in the various local situations an effective organized sense of unity of plants among its complementary activities (port systems, rail terminals, dry-port areas, logistic poles also able to manipulate traffic to be established on other plants, etc.) also through creating a special counter to guarantee all the services correlated to the transport chain to be instituted in the more important nodes of the network. For this it is necessary to ensure a pluralistic action for coordinating the investments on the various logistics platforms.

The solicitations emerging on the part of the economic actors are coherent with what has been said above and tallies with the following priorities, originating for the most part from the regrettable experience of opposing forms of practice:

- avoiding dispersion of resources and the proliferation of public or private infrastructures, outside a logic of system, such as to produce the cannibalization of traffic which require polarization and concentration, if necessary, focusing rather on the supply of quality logistics services for transport and industry;
- arranging the national addresses into a logical system with the territorial development plans of regional and local body competence together with works of census and coordination from the bottom upwards which are already available (mapping of the land connections through port systems, technical tables of the mobility Plan);
- including, among the priorities of the national design of intermodal development, the minor one, exact and last mile works, with high-level logistics impact, or that are capable of generating added value and with a better quality services supplied to the corridors according to the vocation of goods;
- upgrading the property installations for logistics capable of supporting re-organization of supply and transformation of demand;
- updating the normative picture governing interport activities which are now part of a European- level network scheme which albeit remaining as actors of regional development serve territories in accordance with a geography of flows which goes beyond the local administrative perimeters, also encouraging in this compartment both entrepreneurial aggregation and a policy of choice sharing of railway junctions and railway management services compatible with the entrepreneurial needs of sound industrial management accompanied by a financial economic equilibrium;
- correcting the effect of a national grid network disintegration of rail links among economic regions of the country consequent on the liberalization of the rail sector (a factor which, amongst others, has imposed the re-organization and rationalization of its own activities on Trenitalia Cargo) and on the unforeseen economic crisis, an effect which is leading to a fall in combined intermodal supply to the Centre and South;
- planning interventions on the rail infrastructure so as to have a system of quays/platforms loading docks and terminal plants capable of permitting the production of longer and heavier trains on the priority lines for intermodal traffic;

- removing the inefficiencies deriving from non-coordination among the various actors involved, especially in port transport, and also through the development of intelligent network systems.

Special attention is to be paid to the **stimulation regimes** for intermodality, which the market indicates at the present as determinants for directing a considerably relevant quota of demand towards various transport combinations from all-road (a modality subsidized in its turn), with the effect of ensuring to the maritime or railway vector regular cargo levels sufficient for offering the service and stimulating the loader or vehicle transporter to experiment and consolidate new transport solutions likewise by encouraging forms of aggregation of demand.

In both cases – maritime and railway intermodalities – public action must encourage traffic concentration on links suitable for a modal shift, for distances and goods typologies, with the objective of causing land and sea corridors to emerge and consolidate which have high logistics value, that is to say which respond effectively to the market flows, link up efficiently with the high and low networks, and may be tendentially accompanied towards self-sustainability.

With regard to sea transport, the national and international **Motorways of the Sea**, prove to have good development prospects. The Italian fleet is European leader in the sector of the ro-ro ships itself, with 450 weekly departures which regularly link the Italian ports together and with part of the Mediterranean countries. The Italian stimulus system, namely the ecobonus rewards road haulage travelling with relative frequency on ships on selected links, and at a European level is considered an optimal practice. Its extension is recommended even for the international links also with regard to the possibility of overcoming the negative externalities thanks to greater modal re-balance.

The positive attraction matured by this measure must find stable confirmation in public policies. Further short sea development however, also depends on the regularity both of the demand flows to ensure sufficient cargo rates of ships as well as on that of supply throughout the year to consolidate the perception of the maritime alternative as a component of the network. Measures useful for these aims are traced in a specific preferential earmarking of port financing where short-sea lines are witnessed which have shown to have been well received by the market, and for the organization of tendentially separate spaces for the forward and reverse fluctuations in the MoS service. Also the development of directed divulgation are not to be undervalued.

Likewise the re-organizations of the port spaces will be directed towards improving flow fluidity by separating the spaces dedicated to Schengen traffic with respect to non-Schengen traffic.

More complex, but which cannot be put off is the discussion regarding support regimes for the demand for **intermodal rail services** which presuppose a more structured purchasing and present greater rigidity. Italy is among the few countries which, until the recent “ferrobonus” decree, has not supported rail intermodality with public incentives for services a/o for investments, save for certain provisions of a regional character (Friuli Venezia Giulia, Veneto, Campania, Emilia Romagna). The restructuring of the Trenitalia Cargo service has reduced the operational perimeter over the last few years and has implemented the re-alignment of market prices. The economic-financial crisis has contributed towards bringing about both in Italy as well as in Europe a dramatic fall in demand and the re-routing of traffic in the opposite direction, in reverse from the railway to the road. The most significant statistic is the

drop of over 40% in the national production of the group of operators between 2006 (last year of the application of ex lege 166 incentives of 2002) and 2009.

The re-launching of rail goods transport together with the strengthening of the Ways of the Sea and air transport has been divided among the logics of transport re-balancing and a re-launching of the Italian logistics system. For this the theme is also set whether a large national logistics platform also requires the formation of a **great national logistics player** capable of operating on a network of integrated services, according to the co-modality principle.

This process may facilitate the specialization of the services regarding traffic relationships to serve and support the project by adopting the FOB formula, desired by all, on the part of our business firms operating on international markets.

It is necessary to invert the tendency immediately which is one of the Plan's most urgent objectives.

The actions aimed towards rail intermodality must concentrate on three priority segments, namely the Alpine transit, the non-utilized cargoes in port transit, and the national combination of medium-long distance covered.

### **5. Combined Sea-Road Transport**

The analysis of road-sea combined transport concentrates primarily within the limits of the information sources available on the identity of the structural connotations of the market on the basis of the traffic that has occurred during the 2000-2010 decade, both with reference to international as well as to national relationships.

From this reconstruction the consolidation emerges of a market which has undergone a sharp slowdown during the final investigation year (2010), even if the signs of a recovery of the traffic had already appeared to be taking shape in the latter part of 2010.

With regard to international relationships the two sides of the Tyrrhenian and Adriatic are committed to serving linking lines with the Iberian peninsula and North Africa, and with the Balkan area, Greece and Turkey, respectively. The distinction between self-propelled and non-self-propelled traffic leads one to think that the choice does not depend so much on the relationships between nations as much as on the structural characteristics of the terminals of single relationships, such as on the level of the organizational-managerial structures of the hauliers.

On the national traffic front, hence exclusively regarding the relationships among the Italian ports, it is seen that apart from the few exceptions it is a matter of compulsory (coastal navigation) cabotage services, i.e. links between the islands and the mainland; albeit such relationships like those between Salerno and Sicily are present, capable of attracting demand by presenting themselves efficaciously as an alternative to road transport.

On the supply side, the service supplied in many cases is of a mixed type, that is to say one capable of meeting the goods and transport demand expressed by the passengers, and the ro-ro ships assigned to the transport of cargo only appear most akin to the substitution, in relation to which a replacement with ro-pax ships is tendentially prospected.

Since no official statistics have been hitherto published for the single line of sea transport, as an estimate on the total volumes with regard to the transport capacity supplied, it seems plausible to consider that the current demand levels may have increased, also in the light of the scenarios of growth predicted by recent studies (i.e.

Marine Environmental Dept. of Italian Port Authorities), without necessarily having to have recourse to increases in supply, since the current remaining capacity should be able to meet the additional demand, thus without (all conditions being equal) a national rail and maritime increase, estimates at about 50 million tons, to which the demand in international cabotage sea transport is to be added which will be brought about following progressive economic development of the countries looking on to the southern shores of the Mediterranean.

In order to make the combined sea-road transport ever more competitive in view of the findings of a direct investigation into a sample of road haulage firms, it is necessary to maintain the ecobonus measure, if necessary by modulating according to cargo type (self-moving or otherwise), and to act in order to make the sea terminal crossing more fluid by avoiding the passage of vehicle flows through the urban areas and by guaranteeing fast links with the motorway network, in addition to developing terminals dedicated to ro-ro traffic, or alternatively loading yards for managing flows (more especially of non-self-propelled cargoes).

On the supply side, the points of criticism may be summed up as follows:

- poor accessibility to ports;
- absence of purpose-built quays, alternative designed routes, land services for the providers;
- lengthy loading/unloading times;
- overlapping of roles and duties of the personnel operating in the ports;
- lack of standardized and computerized procedures;
- poor operational co-ordination with the customs service activities.

It is essential to counter these criticisms with a view to making the transport chain efficient, in terms at least comparable with container transport, but also in order to be able to improve the reliability of the service and to guarantee certainty of the conditions for returning goods, which is the “historical” prerogative of all-road transport.

On the demand side three specifications emerge from traffic structure and composition analysis:

- The sea ways are utilized for products which present fewer needs from the viewpoint of the conditions for returning goods;
- Flows with Sicily are skewed in favour of arrivals;
- Weak Sicilian production system (poor supply chain integration, isolated business firms, inadequate commercial organization) does not favour utilizing the combined system.
- On the structure and organization side of the operators of goods transport by road, a complement of which is necessary, there emerge:
  - Excessive supply;
  - Fragmentation;
  - High brokerage;
  - Outdated vehicle parking facilities;
  - Self-exploitation ;
  - Inefficiency in the logistics organization of journeys.

Despite the above-mentioned constraints, the Ways of the Sea for unaccompanied “Ro-Ro” traffic, still today represent a competitive alternative in terms of tariffs applied even if according to the points of criticism of the system their competitiveness is reduced considerably in accordance with the “returned goods” parameter.

## 6. The intervention programme

From the analyses carried out through the National Logistics Plan 2012-2020 and with the evidence of the criticism to be found, certain priority interventions have been singled out:

**1. Accessibility to ports.** It is inconceivable to attract new demand that has not yet been expressed where penalties however exist, which are not totally surmountable, while the situations of good accessibility are to be evaluated, and the works already being completed or anticipated are to be speeded up.

**2. Ports.** The currently existing “ADM” services are mainly characterized by the shortage of services given over to “All-goods” traffic, with significant features such as:

- Ship departure timetables;
- High number of departures, also multi-daily departures on single traffic relationships;
- specialized intermodal port terminals;
- transport of commercial vehicles loaded with dangerous goods;
- security system management/sealed control.

Hence it is necessary to guarantee:

**a)** Reduction in port services costs through the issue of new ordinances of the Port Authorities a/o Maritime Authorities for:

- Piloting Service;
- Mooring Service;
- Towage Service;
- Waste-Removal Service.

**b)** Reduction in terminal costs through agreements with the single individual holders of state-owned maritime concessions for applying special tariffs for the unloading and loading operations for the ships involved in regular cabotage line services;

**c)** Optimization of the maritime intermodal cabotage service through integrated services offered by the present ship-owners and by those who in future will decide to begin operating within the *System*.

**d)** Apposite berths and quays (adequate spaces for the vehicles’ ports of call ; facilities for drivers and vehicle maintenance ).

**e)** Telecommunication portals and buildings connected to the computerized control (warehouses for the consolidation of the loads, etc., where agreements among the operators can be activated; possible commercial support services).

**3. System Services.** For transport procedures and organization it is necessary to arrive at fully evolved models, like those already in progress for containers.

In a system’s view of combined road-sea transport it cannot be hypothesized that such a flow of information may be managed autonomously by individual ports. It will be necessary to install and activate the national information data-processing system of the Ways of the Sea (almost as though it were the air transport radar system) directed towards guaranteeing all the functions indicated. This initiative could be developed by the company deliberately founded to promote the Motorway of the Sea (RAM) in agreement with the shipping companies, the Port Authorities and Companies, and the Customs Office.

**4. Reconversion of the land vehicles car park.** As has been seen, the solution of sea transport being able to develop over long distances effective competitiveness with road transport is the one relating to unaccompanied transport.

Providing incentives for the reconversion of the park is therefore a prerequisite for developing the sector.

**5. Implementation of the equipment apparatus (office furniture, etc.), technological innovation and professional training of the businesses firms.** This is set in the same terms as the problems of the vehicle car park.

**6. Fleet** – Despite the current excess in supply the problem is posed of the dedicated ships and the implementation of their performances. Set before a demand made credible by an efficacious promotion activity, the problem of the depreciation of the investments necessary for arranging for a first experimental fleet of dedicated ships is doubtlessly to be tackled.

a) Financing of the “start up” period might be anticipated for the first three operative years for the “All- goods” innovation lines on traffic relations of national alternative cabotage. This intervention becomes necessary to depreciate the losses that the maritime vector should necessarily undergo during the “start up” period estimated reasonably within a time span of no less than three years from the beginning of the service, consequent on the necessity for the haulage contractor to reorganize his intermodal transport system by transforming the organization from the “one tractor/one semitrailer/one driver” module into the “one tractor/one driver/six semitrailers” module.

a) For the transport of commercial vehicles loaded with dangerous goods a functional law should be modified regarding an already existing analogous set of rules for the transport of the former with the “intermodal rail system” and the “all-road” system”<sup>2</sup>.

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<sup>2</sup> The normative aspect relating to the transportation of dangerous goods, by road, rail and sea is however of international derivation, originating from Recommendations UNO, which represent the reference for all the European regulations regarding the different modes of transport, namely : ADR for road transport; RID for rail transport; ADN for transport on navigable internal waterways; ICAO Technical Instructions for air transport; IMDG Code for sea transport.

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