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Item 7 (b) of the provisional agenda

**MODERN TRANSPORT CHAINS AND LOGISTICS**

**Logistics and the role of Governments**

**Note by the Chairman of the Working Party**

**I. MANDATE**

1. The present document is being submitted in accordance with the mandate of the Working Party on Intermodal Transport and Logistics (WP.24) as defined in the annex to document ECE/TRANS/WP.24/117, paragraph (d), the objective of which is to analyse modern transport chains and logistics, to review technical and legal issues and to develop regional implementation tools and measures. The document is also being issued in accordance with the programme of work 2006-2010 of the Inland Transport Committee, adopted at its sixtieth session, in 2006 (ECE/TRANS/166/Add.1, section 02.9 (d)).

**II. DESCRIPTION AND DEFINITION OF LOGISTICS**

2. Logistics can be described by numerous approaches (for example related to economics, management and policy). It is a strategically important aspect of the competitiveness of companies, and one which works by its own set of rules. Action by the State, and by public authorities in general, would at first glance seem to have nothing to do with such private

activities. However, since logistics is spatial, and since logistics decisions taken in private can have such an impact on public spaces, the authorities have a legitimate role to play. The stakes involved in logistics transcend mere private interests (they include for instance environmental nuisances, transport externalities, saturation of infrastructure and employment issues). An inventory should be taken of these convergence points between public and private activities.

#### **A. Role and scope of logistics**

3. Logistics has now become a corporate process aimed at minimizing costs in the manufacturing and distribution chains while maintaining customer service at a high level. It is broader than merely transporting finished products to the customer and managing stocks, which is how it was originally defined. Logistics also involves managing semi-finished products, organizing the supply chain and rethinking the whole supply, production and distribution system as part of supply chain management.

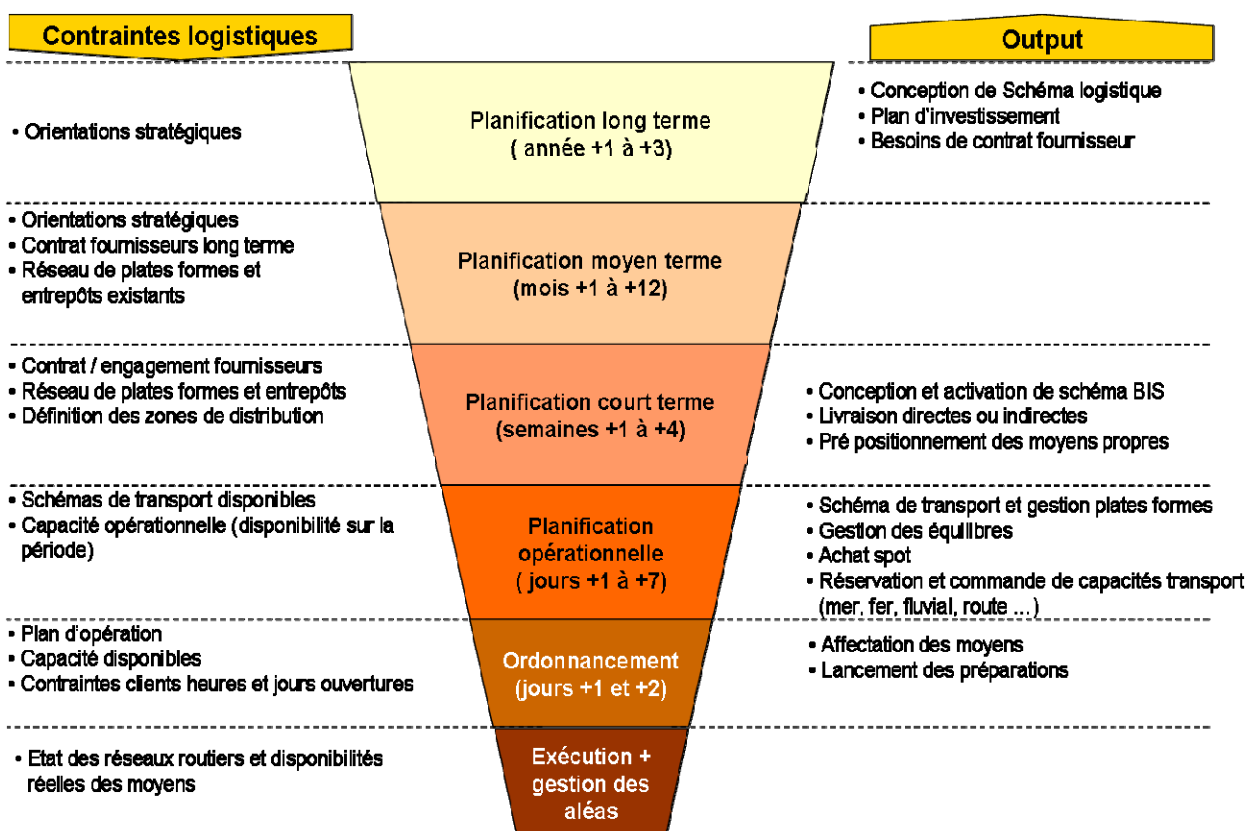
4. At the same time as logistics has taken on new importance, it has also grown in scope. In a context of growing competition fuelled by the globalization of markets and increasing customer demands, logistics is crucial to a company's competitiveness from the standpoint of both customer satisfaction (in particular, delivery times) and the reduction of costs. Logistics is key to the success of company strategies; the major corporations have thus given high-placed, powerful positions to their logistics managers.

5. To cite some examples, the following fields are addressed by logistics:

- (a) Adaptation to customer expectations;
- (b) Supply, production and distribution chain structure, siting of factories, number and siting of warehouses, size and layout of warehouses;
- (c) Stock management, handling at warehouses, order preparation;
- (d) Optimization of various kinds of transport (in terms of cost, timing and risk of accidents);
- (e) Improvement of information flows (customer requests, response times, planning, product traceability, improved accounts management);
- (f) Organization of semi-finished product flows, optimization of intermediate stocks and raw material stocks;
- (g) Management of product returns (after-sales service) and of spare part supplies;
- (h) Order forecasting, required for proper production and transport planning.

Logistics is thus a factor in decisions at various levels, from the strategic (looking a few years ahead) to the operational (day-to-day management), as can be seen in the following figure (*Source: CAT Logistique*).

### Various levels of logistics planning



#### B. Types of logistics platforms

6. Market analysis shows that each industry has its own characteristics, which, combined with the location of the existing production sites and the major transport infrastructure, determine the number and overall location of the platforms (the “overall space”). It is then necessary to consider more precisely the “local space” in the light of the following factors, which are more related to the accessibility of transport, services and information:

- (a) Transport service for the selected modes of transport: roads, proximity to a motorway;
- (b) Proximity of the necessary qualified workforce;
- (c) Proximity of other required actors;
- (d) Distance to market: When this is for a distribution warehouse in a populated (urban) area, an effort is made to locate the facility as centrally as possible so as to avoid superfluous transport;
- (e) Possible existence of return flows in the vicinity;
- (f) Of course, availability of space, and price;

(g) Polarization of logistics facilities: this is also a factor that adds value for warehouse developers, but it is not a decisive factor in selecting a location.

7. All these factors, the diversity of industries and the multiple roles played by platforms in the logistics chain mean that such facilities can take very different forms depending on market geography, the industrial fabric and the transport infrastructure.

### **C. Service providers**

8. Transport and logistics include five main basic operations:

- (a) Road: Full-load transport and truck service, or “point-to-point” break-bulk deliveries;
- (b) Grouping-courier services: Transport in 24 or 48 hours of pallets using a network of collection and delivery agencies united by a transport plan;
- (c) Courier-express services: Transport in less than 24 hours of packages or pallets;
- (d) Overseas delivery services: International transport service;
- (e) Logistics: Warehousing services.

### **D. Actors**

9. As logistics has become more important, there has been a degree of subcontracting or outsourcing of such activities. This makes it possible for industrial companies to concentrate on their core activities, but it means they have to share information with their logistics providers. There has been growth in the specialized providers of such services.

10. The degree of outsourcing can vary. Providers of logistics services may be classified as follows:

- (a) 1PL (first-party logistics): Transport subcontracting;
- (b) 2PL (second-party logistics): Outsourcing of transport and warehousing;
- (c) 3PL (third-party logistics): Conventional outsourcing, consisting in entrusting logistics operations to a specialist and establishing the necessary tools, competencies and systems to improve performance (with increasingly varied tasks);
- (d) 4PL (fourth-party logistics): A more extensive form of outsourcing. The provider is no longer responsible for distribution of a product in a given region, but is tasked with optimizing the whole chain, including the customer, the customer’s clientele and suppliers;
- (e) 5PL (fifth-party logistics): Logistics providers who design, organize and carry out logistical solutions (in particular relating to information systems) for a client by making use of the appropriate technologies.

**1. Developers**

11. Developers are generally public entities or community bodies which develop a logistics site with several objectives, such as ensuring the economic development of the district in question, implementing a land-use planning project or adding value to an existing or future infrastructure, etc.

**2. Promoters**

12. Promoters get involved later, when the ground has been prepared for the transaction. Promoters may be specialized in logistics equipment, or may be from a department of a promotion concern active in various types of markets.

**3. Investors**

13. Investors work to a long-term time frame. The largest investors are now international in scale, both in terms of their knowledge of the market and their concern for risk diversification.

**4. Tenants**

14. Tenants are most often logisticians who seek leases that do not exceed the periods of their service contracts, i.e., generally three years.

**5. Marketers**

15. Marketers play an important role in the major rental markets; they provide knowledge of the market, and ensure transparency.

**6. Logistics operators**

16. Logistics operators are the investors' clients, who lease the facilities that they then put to use.

**7. Consignors**

17. The consignors are the operator's clients. They are the main customers, and the driving force, from the beginning of the supply chain through to delivery to the customer, for changes in the logistics chain, as it is they who define what is appropriate for their own economic needs.

**E. Employment**

18. In France, in 2004, there were 811,000 jobs in logistics (22 per cent outsourced) and 705,000 jobs in transport (67 per cent outsourced). These jobs can be broken down as follows:

(a) 77 per cent were task-specific jobs (warehousemen, truck operators, fork-lift operators, sorting, packaging, shipping, warehouse manager, planning and scheduling), while for freight transport the corresponding figure was 80 per cent (truck drivers, delivery staff, couriers, supervisory staff, goods transport operation managers and employees);

(b) 23 per cent were “support” jobs (secretarial, accounting), while the figure was 20 per cent in freight transport.

### **III. LOGISTICS IN ITS ECONOMIC AND INDUSTRIAL CONTEXT**

19. Logistics is an industrial sector that is rapidly growing. It is an economic activity that generates added value and creates employment and tax revenue for communities. Those are the two main economic factors related to logistics.

20. Apart from its own growth, logistics also makes other activities that use its services more efficient. Efficiency enhancements in supply and distribution play a major role in gains in productivity and competitiveness throughout the chain of production. Logistics infrastructure is critical to the economic vitality of an area, as it makes it possible to draw in other economic activities. An area that lacks logistics will have a hard time developing.

#### **A. Logistics and warehousing**

21. In this context of permanent and rapid change, warehouses have taken on a new role. Logistics operations, which have to function in a context of multiple constraints, have placed stationary logistics infrastructure at the heart of their activities, entrusting to them not only the task of safeguarding their products in the conventional sense, but also that of carrying out increasingly complex production, quick sorting and order preparation operations, and assigning to them responsibility for managing increasingly numerous return flows.

22. Thus, corporate strategies have been transposed into logistics strategies. This is particularly visible in the changes and growth that have taken place in warehousing.

#### **B. Aims of logistics: from supply chains to service guarantees**

23. At its base, logistics involves managing the entire supply chain, along with associated information on the supply and distribution of finished products, including returns of all kinds.

24. Logistics is thus above all aimed at providing a service at the least possible cost by ensuring constant adaptation to suppliers’ markets upstream and to those of consumers downstream. The aim is to produce services, an aim which is all the more important given the growing number of products on the market for which the customer expects not only a physical product, but also a “service” component. When a customer purchases a product, it is logistics which ensures that the terms of the deal are kept. By placing an order, the customer expects the product to perform its task, and also expects that the required service will be provided to ensure that that task will in fact be delivered.

#### **C. Dynamics and trends**

##### **1. Dynamics in redesigning logistics systems**

25. There are two main reasons that there has been such growth in stationary logistics infrastructures:

(a) Logistics patterns have been challenged by changes in industrial strategies. Distances have increased, which means that more storage space is now required at ports and airports, for both inbound and outbound traffic;

(b) Logistics patterns have been challenged by changes in distribution strategies. Concentration, globalization and segmentation of networks require more logistical flexibility on the part of distribution companies.

**2. Trends in warehousing**

26. In the ways in which warehouses and the logistics zones containing them have developed, the following is worthy of note:

(a) Logistics solutions have become increasingly sophisticated, which means that a range of diverse warehousing solutions are now in use. Warehouses are now more than just brick and mortar; they are industrial facilities that require significant support systems in order to operate properly. This support is provided by qualified staff and companies that can handle the maintenance and upkeep of such buildings;

**Types of warehouses**

Functions	↑	Geographical coverage
	Industrial	Worldwide
Manufactured products	↕	Continental
Storage	Storage	National
Order preparation	↕	Regional
Shipment consolidation, break-bulk operations and returns	Transit	Periurban
Order distribution and returns	↕	Urban
Stock of finished products, local after-sales services	↓	City block

*Source:* Becker Report, March 2003.

(b) Because of the tasks assigned to certain warehouses, their size has increased. The consolidation of suppliers' deliveries at cross-docking warehouses requires vast floor space;

(c) Operational logistics solutions are reached by combining stationary logistics infrastructure, transport modes and management rules;

(d) The tightening of deadlines and the elimination of stocks at sales points mean that stationary logistics infrastructures are being brought closer to the function of marketing;

(e) Warehouses are increasingly being grouped in areas specifically set aside for such activities;

(f) Growing investment in logistics and the changes required for systems to adapt to new constraints are increasingly encouraging corporate managers to seek solutions in which they share warehouses, by contracting warehouse operations to logistics service providers.

**D. Implications for land-use planning, the environment, transport policy and employment**

27. Logistics works by its own set of rules. In company competitiveness, it has a strategic and decisive influence on both prices and customer preferences (quality, delivery times), and all this in a context of globalization. Actions by the public authorities therefore have no direct impact on logistics per se. But they can have an influence:

(a) Downstream, for the consequences of the set of rules that logistics follows; and

(b) Upstream, for transport infrastructure needs, possible incentives for multi-modal transport and the need for a qualified labour force.

**1. Competing sites**

28. The main impact of logistics is on the competitiveness and attractiveness of sites, which include considerations of land-use planning and development. A site's competitiveness depends on the efficiency of the activities carried out there, which in turn may be dependent on the efficiency of local conditions.

**2. Economic implications**

29. Logistics is an industrial sector that is growing fast. It is an economic activity that creates added value and employment, and a source of tax revenue for the community. Those are the two main economic factors related to logistics.

30. The availability of logistics facilities sets areas into competition with one another, and conversely, logistics influences the attractiveness of a territory.

**3. Territorial stakes**

31. The massive offshoring of recent years, in particular to Asia, has led in France to explosive growth of nearly 47 per cent in sea transport since 1990. This trend should continue, and should amplify the important role played by the country's shipping gateways.

32. Globalization does not just fuel intercontinental trade. It is also reflected in continental trade flows, if only because national and continental shipping gateways must be serviced for the world market.

33. At the same time, European integration has produced a genuine European market. Distribution networks transcend national boundaries; logistics regions are now European in scale. While not necessarily altering Europe's logistical centre of gravity, the opening up of Europe to the east should bring about a migration of economic activities to its new members, which will in turn have increasing needs.



34. Another dimension of the impact of logistics on the spatial organization of economic activities is reflected in the availability of logistics services at the level of an economic region. Services must be easily accessible. Logistics providers tend to concentrate in metropolitan areas, where it is less risky to set up shop; that is where the main customers, the customers' own clientele, the transport infrastructure hubs, the workforce and a dynamic real-estate market are to be found.

35. Thus, logistics is above all of interest to the public authorities insofar as it relates to spatial planning.

#### **4. Environmental implications**

36. Logistics is a transport-intensive sector, and carriage by road - which is among the most polluting modes of transport - predominates in the transport of goods. Heavy goods vehicles cause a number of inconveniences (air and noise pollution, road safety issues, etc.), which are increasingly unacceptable to the population.

37. The range of products is constantly growing, and consignments are now of smaller sizes and are increasing in number. Stocks are being eliminated at sales points, just-in-time delivery is imposing constraints. All of this boosts demand for road freight transport and encourages the use of smaller vehicles

38. For local elected officials, a logistics platform brings with it benefits (job creation and new activities attracted by the logistics base) and disadvantages (nuisances from site-related transport and possible hazards of products stored at the site).

### **E. Development of the logistics warehouse market**

#### **1. Trends in warehouse floor space**

39. In France, the proportion of small warehouses has constantly declined over the past 10 years, while that of large warehouses has increased. The proportion of warehouses measuring over 10,000 m<sup>2</sup> rose from 20 per cent in 1997 to 40 per cent by 2000. In 20 years, permits were issued for nearly 84 million m<sup>2</sup> of floor space, or around 1.44 m<sup>2</sup> per capita.

#### **2. The stationary logistics provider as a specialized professional**

40. Loaders, industrialists and distributors are increasingly outsourcing all or part of their logistics. Loaders may opt for leasing arrangements rather than owning property, even if they retain ownership of other logistics services.

#### **3. Location of warehouses**

41. Many of the authorities in France's regions or departments are aware of the economic impact of a logistics zone. The number of jobs in a 10,000 m<sup>2</sup> warehouse may range anywhere from 50 for a conventional distribution facility to 200 for a delivery service, with many variants in between, for example when post-manufacturing tasks are carried out at the warehouse. Thus a 500,000 m<sup>2</sup> zone occupying around 150 hectares can represent between 2,500 and 4,000 jobs.

42. Setting aside large areas for logistics zones or parks, in the order of 100 hectares, helps streamline their operation. Equipment and services can be organized and funded with ease, and transport can be arranged by making use of either conventional public transport, or innovative solutions such as car-sharing.

43. A study conducted by students at the University of Evry in France estimated the scale of traffic flows generated by warehouses.

44. Operations by tonnage (inbound and outbound):

Average tonnage per activity, 10,000 m <sup>2</sup>	
	Tons per day
Distribution	300 t
Logistics services	210 t
Delivery and transport	350 t

*Source:* University of Evry, France.

45. The spread between received and expedited tonnages per unit of floor space is actually much greater, and depends on the storage period. “Hard discount” distributors, which carry only a few items, for the most part foodstuffs, for which the average shelf life is seven days, issue over 500 tons, or 800 palettes, per day for every 10,000 m<sup>2</sup>, while a household appliance distributor, for whom storage periods are average 80 days, issues only 50 tons per day 10,000 m<sup>2</sup>.

Reasons for choosing a location given by the logistics providers surveyed	
Geographical location	68%
Customer's request	46%
Proximity to distributors, manufacturers	39%
Company history	36%
Available space	25%
Site quality	25%
Service provider quality	25%
Proximity to consumers	18%
Marketing	11%
Available manpower	11%
Economic attractiveness	4%

*Source:* University of Evry, France.

#### **4. Service life of a warehouse**

46. Assessments of the warehouse market indicate that the average service life of warehouses is probably about 30 years. Over such a long period, the functions and purpose of the building can change.

## **5. Major economic asset**

47. According to on-site surveys and information collected from professionals, the average employment density at modern logistics facilities is about 65 jobs per 10,000 m<sup>2</sup>. This figure varies significantly depending on the work performed, and can range from below 30 to over 160. Shortages (for recruitment) have begun to make themselves felt, and have become a source of concern for unit directors.

## **IV. LOGISTICS AND TRANSPORT**

48. Freight transport is by its very nature a spatial industry. The movement of goods solves the problem of separation between the sites where they are produced and consumed (be it for further processing, or by an end-user). At the same time, an effective transport system encourages the linking of sites that are increasingly far apart. The operating area is thus seen as a system of flows that is in correlation with the transport system.

49. When considering such links, emphasis has long been placed on the linear infrastructures (mainly roads and railroads) which are the backbone of the transport system and on their “structuring effect” on the economy. Today, though, the spatial effects of the freight system involve more complex processes, where the density and quality of economic operators also play a major role. Transport has in fact become the central element of a broader notion of logistics, one which responds to the organizational needs of an economy that strives to shorten production times, reduce stocks and ensure flexibility.

### **A. Trends in goods transport**

50. The stagnation - and even the drops - in tonnage levels, coupled with the greater distances involved, demonstrate that there has been a profound structural and geographic shift in the production system. While products are lighter, they are also being produced at facilities that are more specialized, more powerful and less numerous than in the past. The industrial and logistics system is being spatially polarized and markets expand. Generally speaking, total production costs (manufacturing and transport) have decreased, as the excess available transport has been more than offset by manufacturing productivity gains. The constant reduction of transport costs has of course encouraged this trend in the past. A substantial increase in transport costs in coming years - considered highly likely by some - could on the other hand encourage manufacturing and distribution centres to become less spatially concentrated.

### **B. Impact of logistics on transport**

51. In a report issued in 2007 by the European Conference of Ministers of Transport (ECMT) entitled *Cutting CO<sub>2</sub> Emissions: What Progress*, the impact of logistics on freight volumes is summarized as follows (p. 45): “The overall amount of freight movements is determined by the overall logistics of production and distribution. The globalization of sourcing raw materials and components and distributing finished goods together with a regional consolidation of distribution centres to reduce inventory costs has greatly increased freight movements. Both the distances carried and the number of movements between plants and distribution hubs and satellites have increased markedly.”

52. Furthermore, large warehousing parks are playing an increasing role in determining road flow patterns.

53. There have been other impacts on the characteristics of transport:

- (a) Loading units are smaller;
- (b) There are more stringent requirements in respect of reliability;
- (c) There are more stringent requirements in respect of speed;
- (d) There are information requirements, related to the need for reliability;
- (e) There are requirements in respect of responsiveness.

**C. Adaptation of the transport system**

54. The new requirements have the following consequences for the transport system:

- (a) Road transport has to be qualitatively commensurate with the transport needs generated by the new logistics practices;
- (b) Consignments are getting smaller;
- (c) Greater speed is required;
- (d) There are demands in terms of reliability, responsiveness and information.

**D. Shipping sector and trends in supply chains**

55. Consignors expect the following from the shipping sector:

- (a) Physical feasibility;
- (b) Optimization of the supply chain (in terms of frequency, transit time, reliability and cost);
- (c) Ease of organization;
- (d) Logistics services.

56. Containerization is the backbone of globalization. It is linked to such factors as the efficiency of handling at ports, decreased transport costs per unit and the provision of services. It encourages the development of inland dry ports which can provide:

- (a) Additional services for shippers;
- (b) Services for shipping companies.

57. Faced with the growing importance of supply chain management, shipping companies face two constraints:

- (a) They must meet customers' needs;
- (b) They must stay competitive.

58. Shipping companies have three possible courses of action:

- (a) Reduce total transport costs;
- (b) Have a global network;
- (c) Provide door-to-door service.

59. They are thus encouraged to be more involved in the transport chain while maintaining a concentration on container logistics.

#### **E. Strategies in terms of transport modes**

60. Transport is a weak link in the logistics chain because it interrupts flows and is subject to external factors (such as weather, accidents and traffic congestion). The different transport modes offer various solutions in terms of price, reliability, flexibility, speed and accessibility; these must be considered by companies when they choose inbound and outbound transport mode options. The site selected for setting up a platform has to be served by all the chosen modes of transport.

61. The transit time is also very important. The fastest and most flexible mode is still road transport. It is still the only acceptable means of carriage for small volumes and short distances. Rail transport lacks flexibility, commercial responsiveness, traceability and interoperability at borders; it involves longer time lags for orders, minimum volumes and relatively long transit times, as passenger transport is given preference over freight.

### **V. LOGISTICS: IMPLICATIONS FOR PUBLIC POLICY**

#### **A. Forecasting for land-use planning purposes**

62. In the light of the specific concerns raised by logistics facilities in respect of land-use planning, consideration should be given to the place that they should have in urban planning, and thus also in the corresponding regulations.

63. The aim should be to determine how the laws and regulations that govern urban planning and operational land management take into consideration logistics, with its specific characteristics. Such an analysis will subsequently address environmental legislation, which may affect certain logistics activities (such as the handling and storage of dangerous goods), and statutory instruments covering classified facilities, which specify different authorization procedures from those required for land-use planning purposes.

64. It is theoretically possible to identify the suburban or periurban areas that can meet the French (or European) economy's needs for logistics facilities. But in order to forestall or slow the establishment of "uncontrolled" facilities - i.e., facilities that are legal, but undesirable - the public authorities must be able to mobilize and foster the development in such areas of a sufficiently large and well-serviced extent of land.

65. The selected sites must be both sufficiently large and an acceptable distance from residential areas. They must not jeopardize fragile nature reserves, but they still have to be well connected with the major road, rail and inland water transport networks. It is a tricky balance to strike. Sites should be set aside quickly, if that has not already been done.

## **B. The main implications of logistics**

66. There are three main logistics-related issues in land-use planning:

### **1. Spatial organization of transport**

67. While the location of bulk freight arteries determines where stationary logistics infrastructure is set up, at the local level, the specific siting of such logistics facilities in turn has a strong impact on traffic. It is therefore necessary to find the best possible spatial arrangement, so as to combine an acceptable distribution of intermediate reloading areas with traffic fluidity.

68. Urban planning must therefore make provision for platforms - multimodal if possible, but in any case bimodal - so that on the one hand there is ease of access from both the national transport network and the local services infrastructure, and on the other hand, their size is compatible with smooth traffic movement and adequate parking facilities.

### **2. Competitiveness and economic efficiency**

69. Logistics is first and foremost a factor that encourages companies upstream (manufacturers and processors) and downstream (distributors) to be dynamic. Furthermore, logistics facilities, often considered to be unwelcome and to generate too few jobs, are now key to the health of the French economy.

70. It is the strategies adopted by corporations, especially by the largest ones, that generally decide where facilities are set up and how they are sized.

71. When such facilities are set up correctly, the production chain is efficient, thus making it more competitive internationally. This also provides benefits at the other end, for distribution companies, meaning that consumers get a better price, and consequently have a higher standard of living.

### **3. Coherence and quality of urban sites**

72. This is at the very heart of urban planning. The way that logistics facilities are chosen is fraught with consequences for the local population. On the other hand, it should be borne in mind that such facilities are most often intended to meet the consumer needs and requirements of the population in this field.

73. Apart from the possible road traffic congestion that a poorly sited platform may produce, its neighbours, and more broadly speaking those living in the area, are also sensitive to what such a site can do to the environment and the landscape, and also to the possible adverse effects on public safety.

74. Environmental quality is in this case primarily related to noise and air pollution, and in some cases also to water pollution. Here too, such quality depends on the predominant mode of transport, as it is environmentally more sound to carry goods by rail or waterway than by road. However, the environmental quality depends also on the logistics activities themselves (storage of pollutants, trans-shipments, size and number of vehicles, operating hours) and their proximity to residential areas.

75. The quality of the landscape is less often cited by associations representing the population. It is rare for urban entry points and suburban areas to be exemplary in this regard; they generally are a poor reference to begin with. Nonetheless, people who are enticed to move to an area by promises of attractive surroundings are now more demanding when it comes to architecture and greenery. In addition, large warehouses located along arterial or ring-road motorways near towns provide shipping and logistics companies with a showcase; they have every interest in presenting a good image.

76. Lastly, safety is a growing consideration among city-dwellers, and first and foremost among those living near such facilities. The associations are aware of this concern, which often is bred by a lack of knowledge of the nature of the stored goods. Companies too have an increasing interest in safety concerns. A logistics platform that is well planned and properly set up is conducive to safer operation.

### **C. Influence of public policies on transport and logistics company strategies**

77. Studies have shown that trucking companies radically change their strategy when they move from mere transportation of freight to the provision of logistics.

78. Progress in computer services and the boom in information and communication technologies have also been important motors of change for centralized logistics. They have made it possible to manage central warehouses and supply chains.

79. However, it has been ascertained that, in the 1990s, some French laws which did not directly address the logistics strategies of distributors actually accelerated and consolidated the centralization of logistics, by encouraging the construction of warehouses. It has also been observed that some local communities encouraged warehouses to be set up in their areas, by dedicating zones for logistics activities.

80. Public policies have had a greater influence on the operational logistics and implementation decisions made by companies than they have had on strategy. The public instruments that have (intentionally or not) influenced the strategies of transport and logistics providers can be grouped as follows:

- (a) Transport policy;
- (b) Environmental policy;
- (c) Regulation;
- (d) Tax policy;
- (e) Financial incentives;
- (f) Labour policy.

81. The other main factors that have brought about changes in companies' logistics strategies are the following:

- (a) Economic factors;
- (b) New technologies;
- (c) Growth in demand for logistics;
- (d) Changes in company management.

**D. Influence of public policies on the logistics strategies of distribution companies**

82. There is a French law that makes the creation of any large-scale commercial enterprise subject to hard-to-obtain authorizations, with the aim of protecting small businesses. This law, which governs commercial urban planning, severely restricts possibilities for the expansion of commercial sales floor-space, and, by corollary, the growth of distribution companies. Another French law was originally designed to establish the loss-leader threshold, which at the time had been relatively poorly defined; it obliges the seller to be more transparent about costs associated with the sale of goods (sales costs, logistics costs and trade discounts).

83. Because drivers' waiting time is considered as work time in the contract for progress, it became necessary to organize and eliminate such waiting time in order to reduce the costs of road transport. This too encouraged the creation of warehouses and logistics platforms.

84. It can be argued that, in their public policies, local communities, by agreeing to set aside entire areas for warehouses, have influenced the logistics strategies of distribution companies using the centralized flow model. Urban movement plans and regulations relating to freight traffic in cities (access to the city centre and parking) have also influenced the way in which distribution companies operating in downtown areas have developed their logistics.

85. In the Ile-de-France region around Paris, since 1999, warehouses exceeding 5,000 m<sup>2</sup> have been subject to a tax on surface area. The tax has prompted some companies to flee the region. The effect has been an increase in vehicle flow into Paris and the adjoining suburbs from neighbouring regions where many of these warehouses moved, thus worsening pollution.



86. The reduction of the work week to 35 hours had a positive impact on distribution companies, as it obliged them to take a series of steps to ensure strong gains in productivity. In logistics, this resulted in a drive towards centralization.

87. However, as the abatements that accompanied the law, the “Allègements Aubry” gradually subsided, the law began to have a very adverse effect on employment.

#### **E. Public policy recommendations**

88. Companies interact closely with the public authorities. Public policy directly addresses companies and the market, with the aim of regulating it and dealing with externalities. For their part, companies take into consideration the regulatory and legal framework, and they incorporate public policy when they conduct their own affairs.

89. Logistics is space-related; it is also an undertaking where private decisions strongly influence the community, and which has implications extending far beyond private interests. Accordingly, the public authorities have to be involved, in particular when it comes to logistics facilities. More coherence is required to optimize the use of space and the transport flows that are produced.

90. It can be argued that public policy has never directly influenced the logistics strategies of companies. However, public policies not directly addressing the logistics sector have influenced the way in which distribution companies have organized their logistics.

91. The main public tools identified above which have had an influence on companies' logistics in recent years would also appear to be the most appropriate ones to influence companies' logistics strategies in the years to come.

92. Economic factors have been the main engines of change in logistics; the development of information and communication technologies has also played its part. It would be very difficult for public policy to reverse the concentration of logistics, given the economies of scale that the large corporations have been able to realize.

93. However, a few steps can be suggested:

##### **(a) Organizational measures**

- (i) There is a need to adopt an approach based on consultation and public-private partnership so as to avoid a major waste of resources. Competitiveness and attractiveness can suffer when logistics infrastructures and service facilities are not suited to the task;
- (ii) A single administrative contact point should be set up so as to simplify procedures for private investors, speed the site permit authorization process, provide for greater coherence at facilities and avoid red tape (creation of a regional logistical site commission to receive authorization applications and possibly to issue the corresponding decisions). The contact point may consist of locally elected officials, trade representatives, trade organizations, members of the chambers of commerce and industry and local government officials;

- (iii) The existence of a single contact point would facilitate the work of private investors and reduce waiting times for permits. The fact that a single public office would be approached for a site authorization would make it possible to ensure from the outset that the administrative work was coherent and efficient. The regional body responsible for site permit authorizations would also cut back on red tape. At present, it is the communes that take these decisions, and they take into consideration only their local interests in adjudicating and issuing decisions. Such a commission would make it possible to ensure coherence and an optimization of sites and of transport flows at the regional level. To handle conflicts, it may be necessary to establish a national commission. It is at the regional level that common interests will be defended, but some redistribution should be foreseen;
- (iv) At the level of each territorial unit, training should be developed for the various logistics occupations, which should be promoted. Another suggestion consists in encouraging and guiding research. Researchers must constantly be on the lookout for ways to take on board changes in company practice and to incorporate new ideas.

**(b) Land-use and urban planning measures**

- (i) Logistics should be integrated into land-use management and development, in particular by placing special emphasis on the rehabilitation of old facilities, as many small warehouse zones are currently underused, poorly placed, badly organized and sometimes of insufficient size. Some such zones could be transformed into areas suitable for urban logistics services which cannot be easily accommodated in our cities. In the cities, certain disused railway rights-of-way afford incomparable opportunities for this, and should therefore be given special attention before they are decommissioned. More generally, it is advisable, to the extent possible, to keep spaces already dedicated to logistics reserved for such activities, as it is always more problematic to find new sites than it is to upgrade existing ones;
- (ii) Transport and logistics trends should be monitored to provide an understanding and analysis of such activities and to foresee possible changes in the sector in respect of employment, new information and communication technologies and urban planning for such infrastructures;
- (iii) In respect of logistics sites, urban planning and safety regulations should be streamlined, so that a single, simple and easily interpreted instrument can be applied;
- (iv) Regional and national logistics plans should be drawn up to define strategic orientations so that sites are smoothly integrated into the existing, high-density urban or more periurban network, and to ensure that logistics operations and other urban activities can be carried out harmoniously. Such plans should take into consideration specific lines of goods that could make use of alternative transport modes. They should also make provision for linkages between

networks at the various territorial levels so as to ensure better connections with the major freight corridors. In this framework, the logistics plans of Germany and Portugal can serve as examples.

**(c) Measures relating to transport**

- (i) Transport policy is a prerogative of the State, which has the important responsibility of meeting the expectations of those engaged in logistics, and at the same time for responding to broader concerns of general interest, in particular by striking a balance between transport modes and the environmental benefits that they can bring;
- (ii) It is necessary to push the logistics chain towards efficiency through a set of measures which internalize externalities, so as to make the transport market efficient;
- (iii) Some thought should be devoted to devising public strategies to encourage the development of one or several components of centralized logistics: consolidation of flows, reduction of stocks, approaches based on the supply chain and outsourcing, etc. (for example, in Switzerland, the massification of flows to encourage rail transport has been supported by the application of appropriate public instruments).

**(d) At the European level**

- (i) The European Commission issued a communication on logistics in June 2006, and it currently has a plan of action in which logistics is clearly given its due;
- (ii) The European Commission issued a communication on 31 January 2007 entitled “Extension of the major trans-European transport axes to the neighbouring countries and regions, Guidelines for transport in Europe and neighbouring regions”.

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