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POLICIES, REGULATIONS AND DEVELOPMENT ACTIVITIES RELATED TO URBAN FREIGHT DISTRIBUTION IN THE EUROPEAN UNION

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Abstract

Presently, in Hungary does not exist any special regulation in the field of urban freight transport and distribution. The new transport policy that has not yet been in force does not contain detailed regulations about the urban transportation because a new urban transport strategy is under development. For creating better and efficient strategy it is necessary to analyse the EU regulation system. However, there is not an all-embracing single urban freight transport policy on the EU level. Instead, there are many urban freight transport policies, for many different territorial units. In addition, in one city there is a much stricter policy than in another, or in one region, there is a well-balanced system of policies and in another region, no policy whatsoever exists in urban freight transport. The aim of this short contribution is to overview the EU policies, regulations and development activities in the area of urban freight distribution.

Keywords: freight distribution, policy, development, land use.

1. Introduction

More than 80% of the today performed road freight trips in European conurbations are on distances below 80 km and can be defined as urban or urban-regional transport. Urban areas are characterised by a concentration of residential, trading and commercial activities. Due to heavy trade and commerce activities, there is an important urban economy that needs a well functioning logistic system for freight and passengers.

The delivery and collection of goods within urban and metropolitan areas, especially in the core areas of cities with old and established centres has a major impact on the local community concerning the economic power, quality of life, accessibility and attractiveness of a city. Especially the retail industry is a dominant player in urban areas. Because of the nature of the retail industry (direct selling of goods to consumers), they need an adequate goods transport system that provides them with their merchandise. From an economic point of view, the urban freight transport system is therefore very important for the urban area. Nevertheless, it is

clear that there is a number of problems caused by goods transport operations in urban environments, such as:

- Pollution
- Noise
- Congestion
- Safety and hindrance of pedestrians
- Time losses and energy wastage
- Dominance by road transport using fossil fuels
- Damage and intrusion into the urban core of cities

Although trucks account for only 10 percent of all transport operations in urban areas, they produce over 40 percent of the pollution and noise caused by local traffic (COST 321 Action, 1997). From the environmental and traffic safety point of view, freight traffic is not welcome in urban areas. However, the truck industry is rapidly improving the trucks and engines in order to reduce their negative image and negative impact on the environment.

Considering the improving of vehicles quality, problems with pollutants will perhaps decline in the nearby future, but it will slow because of the increasing the number of vehicle fleet. The CO_2 emission is not expected to decrease but is expected to show an increase of 10% between the years 1995 and 2005.

The main problem in the future with urban freight transport on local level will be congestion, danger to other road users and visual intrusion. Many urban areas are already facing severe congestion problems due to passenger car traffic (commuters, shopping public, etc.) and freight transport operations (e.g. by road blockage due to loading/unloading vehicles). Because the capacity of the road transport system cannot be expanded much and mobility will grow further, the congestion problems are very difficult to solve.

The challenge for future urban transport systems will be to meet the demand for accessibility for people, including people with reduced mobility and goods, while at the same time minimising the impacts on the environment while safeguarding the quality of life [2].

2. What Does European Union Do?

Environmental concerns have underpinned the drive towards efficient transport technologies including cleaner vehicles/fuels and non-technical measures to reduce emissions. The European Union is working toward the definition and implementation of a strategy to promote sustainable mobility in an urban context which would include a range of actions such as:

- promoting market take-up of lower-consumption vehicles and new propulsion technologies to reduce emissions,
- promoting the use of improved combined and non-motorised modes in conjunction with mobility management schemes,

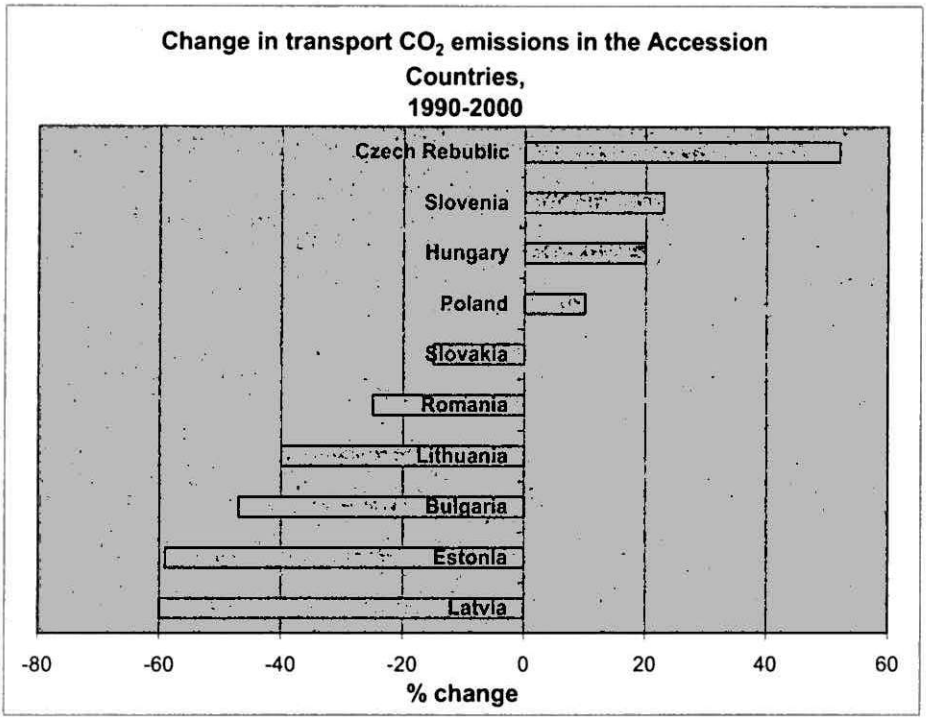

Fig. 1.

- demand management schemes such as parking controls and access restrictions,
- information systems for better traffic management and improving traffic flow,
- integrated intermodal freight and passenger transport systems such as city logistics and improved terminals,
- fair and efficient pricing regimes,
- supporting integrated land-use and urban transport planning to minimise the need to travel and facilitate combined transport,
- promoting efficient public transport modes to people with reduced mobility,
- supporting and promoting cycling,
- possible contribution of Teleworking [2], [3], [4].

3. Trends in Freight Policy

The rise of freight transport that has been going on in the last decades will not come to an end in the near future. Already, in many cases, the lack of (multimodal)

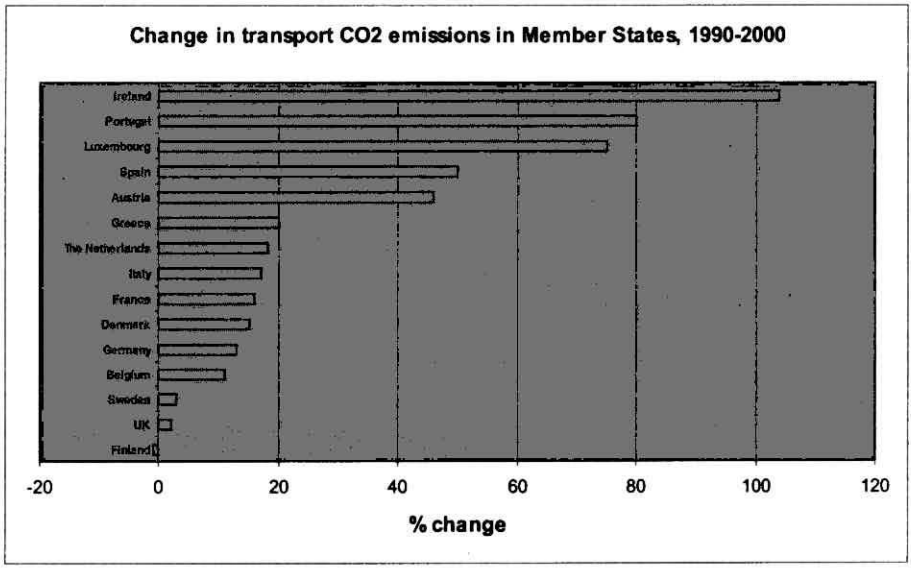

Fig. 2.

Table 1. Overview of management integration tools in the Accession Countries [2]

	Integrated Transport and Environmental (T&E) strategy	Institutional Cooperation	T& E Monitoring	Strategic environmental assessment
Bulgaria		☼		☼
Cyprus				
Czech Republic		☼		☼
Estonia		☼		
Hungary	Under development			☼
Latvia		☼		
Lithuania		☼	Under development	
Malta				
Poland	☼		Under development	☼
Romania				
Slovakia	☼	☼		☼
Slovenia			Under development	
Turkey				

Table 2. Overview of management integration tools in Member States [2]

	Integrated T&E strategy	Instutional Cooperation	T&E Monitoring	Strategic Environmental assessment
Austria	☼	☼	☼	
Belgium	Under development	☼		
Denmark		☼		☼
Finland	☼	☼	☼	
France	Under development	☼	☼	☼
Germany	☼	☼	☼	
Greece	?			
Ireland	☼	☼		
Italy	?	☼		☼
Luxembourg	Under development			
Netherlands	☼	☼	☼	☼
Portugal	–			
Spain	Under development	☼		☼
Sweden	☼	☼	☼	☼
UK	☼	☼	Under development	

infrastructure is increasingly becoming a problem. Although alternative freight modalities like inland shipping, rail transport and pipeline transport are providing possibilities to realise a modal shift, supplying an excellent road infrastructure will remain of prime importance.

Congestion situation becomes an increasingly essential criteria for Logistic Service Providers, distribution centres and related logistic activities. The situation in the (near) future might even be more important. With the rise of E-commerce, the digital infrastructure also deserves attention. As a consequence, *policy* actions generally centre on three main goals:

- *Improvement of accessibility and circulation:* policies' goal is achieving an infrastructure that complies with certain quality demands. Measures can consist of building infrastructure, using infrastructure more efficiently and imposing regulation on infrastructure use. What is positive for one traffic sector, however, can work out negatively (speed, flexibility) for other sectors within or outside the traffic and transport world. These days, many debates arise on whether provision of adequate infrastructure can follow the demand

and what is an 'adequate' level of infrastructure.

- *Improvement of environment and safety:* reducing emissions and enhancing the safety of the traffic system. In this case, too, the definition of sustainability, the trade-offs between optimal and maximal safety, and the impacts of environmental questions on the transport and logistics sector will give rise to debate. The determination of the principles for calculating and internalising the external costs (negative environmental and social impacts) caused by transports has been tipical in discussions and studies within the EU.

- *Strengthening of competitive position:* creation of the right conditions to maximise competition of the sector as a whole and to increase the competitiveness of transport companies and logistic service providers. Employment in the logistics sector and its contributions to the GDP and tax returns are dependent on its competitive position. Further, an efficient logistic sector helps to increase the productivity and competitiveness of the whole economy.

These three 'channels' of government policy are interconnected. In this triangle of relationships, there can sometimes be pressures or lack of co-ordination.

On the national scale, the actual government policy-led intervention to reach the three named goals can take various shapes.

- *Economic intervention* mainly consists of financial incentives for using processes or products that help to minimise or avoid the occurrence of a negative impact, or lead to strengthening the position. These incentives could be positive (financial aid, subsidies, fiscal deduction,...) or negative (taxes, fines...). This type of intervention is always policy-related: the negative impact is (politically) judged harmful and through a (political) decision-making process, the financial incentive comes about. Examples of economic intervention mechanisms are road taxes, toll collecting, or imposing a system of tax-per-kilometre.

- *Regulation-related intervention:* This can consist of normative (rules, specifications) or active (based on a regime of authorisations) regulations. Regulations are imposed upon the sector when an impact is (politically) judged being harmful, or when some forms of regulation are expected to improve the sector's competitive position. Through a (political) decision-making process, regulatory tools are established.

- *Intervention by communication:* a public authority judges a certain negative impact as harmful and (politically) decides to start a communication process in order to stimulate a behavioural adaptation. This way, a given socio-economic activity will be executed in a less harmful way, or be reduced altogether [1].

4. Policies and Policy Initiatives at the Community Level

The initial problem is that there is not an all-embracing single urban freight transport policy on the EU level. Instead, there are many urban freight transport policies, for many different territorial units. In addition, in one city there is a much stricter policy than in another, or in one region, there is a well-balanced system of policies and in another region, no policy whatsoever exists in urban freight transport . On the EU level common objectives for regional urban freight policies should be defined.

It is worth mentioning a few figures on urban Europe. Around 20% of the EU population lives in large conurbations of more than 250,000 inhabitants, a further 20% in medium-sized cities of 50,000 to 250,000 inhabitants, and 40% in smaller urban areas of 10,000 to 50,000 people. Important differences in economic structure and functions, social composition, population size and demographic structure as well as geographical location shape the challenges faced by urban areas. National differences in traditions and culture, economic performance, legal and institutional arrangements and public policy have an important impact upon cities and towns. There is no single model of a European city and this heterogeneity strongly influences (attitudes towards) urban freight policies [1], [4].

5. Past Policies: until 2001

In the early 1980s, debate on solutions to the growing political problem of urban freight transport was started. At that time, the focus in urban transport was almost only on passenger transport. The other aspects of the general transport policy were almost completely directed at transport conditions outside cities - transport corridors, rail, road, intermodal transport etc. Intermodal freight transport policies did not include a city perspective at that time.

At the European level, the most important policies on freight transport in urban areas come from the European Conference of Ministers of Transport (ECMT), the European Commission and the European Economic and Social Committee.

The reports from the three Round Table Meetings on urban freight transport, organised by the European Conference of Ministers of Transport (ECMT, 1976; ECMT, 1984 and ECMT, 1998), present interesting overviews. A comparison of these three reports should give a reasonable insight in the evolution of the thinking in the field of urban freight transport. A number of policy recommendations for the urban freight transport from this Round Table were:

- It is far *more efficient*, even in environmental terms, *to use heavy, fully loaded goods vehicles* rather than a large number of light goods vehicles. Large numbers of light goods vehicles in traffic flows generate far more CO_2 emissions and result in higher levels of congestion.
- It is *better to locate freight depots in the centre of the city* rather than on the periphery. If depots are located in peripheral areas, the flow of commercial

vehicles is added to traffic flows in and out of the city centre during peek hours. When depots are located in the city centre, however, goods vehicles traffic flows are in the opposite direction to those of private cars.

- In practice, *designated parking spaces* for vehicles making deliveries *serve no useful purpose since nobody complies with the regulations*; they are either used as parking spaces for private cars or they are used by retailers for other purposes. It makes far more sense, as soon as planning permission has been granted for businesses, to make provision for small goods reception areas near shopping centres. A car park or free space available within an enterprise could be used for this purpose and converted into a multifunctional reception area where retailers could come to collect their deliveries. The areas immediately surrounding the delivery centre would have to be designed in such a way that manual handling equipment (trolleys, for example) could be used for final deliveries to shops. Town planners therefore have to take proper account of delivery interfaces.
- The idea of *night deliveries* must not be dismissed, since such deliveries allow infrastructure to be used more rationally. Advances in vehicle design and technology mean that silent lorries are now available. Loading and unloading areas or centres can also be soundproofed.

This round table conference concluded that the *issue of freight transport* in urban areas *needs to be considered* in terms of the entire urban conglomeration/region and not just the central city, given the complexity of the different decision making powers involved. It is essential to see the issue of freight transport in urban areas as a whole, at the level of a region.

In conclusion, contrary to the 1980s, when little attention was paid to urban traffic and freight transport, the opinion of the Economic and Social Committee on this topic is the following:

Urban traffic might appear to pose the most serious problem. Actions must be taken on traffic flows and congestion, taking appropriate decisions at local level on a case-by-case basis (intelligent traffic lights, park and ride facilities, sensible use of personal vehicles). This aspect is crucial and will probably lead to the use of small power units that offer limited speed.

Moreover, road transport has by far the highest external costs. It is therefore essential to promote public transport and make it more attractive. A major effort must be made with the freight companies and their customers to rationalise logistics and commercial facilities, and thus distribution procedures.

Specific town planning measures (loading and unloading points) are also needed. Actions must be taken to rationalise and regulate physical distribution for freight transport in urban areas. The damage is caused not so much by traffic as by stop-and-go driving, random parking for unloading, and distribution schedules. For instance, goods deliveries during rush hours are a source of pollution and congestion.

One interesting thing to notice is the *contradiction* between the Economics and Social Committee that *advises to use small power units* offering limited speed and the European Conference of Ministers of Transport (ECMT), which advises to

use heavy, fully loaded goods vehicles rather than a large number of light goods vehicles. This shows the problem in the diversity of the policy mainstream in the area of freight transport in urban areas [1], [4].

In the past, plenty of transport policies have been carried out affecting urban transports such as:

- development programmes of intermodal transports (PACT and MARCO POLO),
- harmonisation policies (regulations, transport vehicles),
- emission standards for vehicles,
- green paper on transport and CO_2 (infrastructure charging) etc.

6. Clean Urban Transport

As illustrated above, European policy making is increasingly focusing on urban freight transport. But the policy actions mentioned have not yet reached the concept of intermodal urban freight transport directly - but in very indirect ways only. They are mainly concerned with urban freight transport in a general way. Therefore, there is a need for guidelines and policy actions in this area. Recently, this focus has increased further and the Commission has introduced the Clean Urban Transport concept. The Commission through its Clean Urban Transport is working its way towards a definition and implementation of a strategy to promote sustainable mobility in an urban context.

Furthermore, different initiatives and studies have been launched in relation to this concept, which might or might not aid the development of a specific policy in the area of intermodal urban freight transport. At the European level, several projects have been initiated.

7. European Transport Policy 2010: The White Paper

On September 12, 2001, the European Commission published its White Paper 'European Transport Policy for 2010: time to decide'. In this White Paper, the EC concludes that a large number of political measures and instruments needs to be launched in the next 10 years in order to realise the kind of sustainable transport system we might hope to achieve. The White Paper proposes some 60 specific measures to be taken at Community level under the transport policy. It includes an Action Programme extending until 2010, with milestones along the way, notably the monitoring exercises and the mid-term-review in 2005 to check whether the precise targets (e.g. modal split or road safety) are being attained or whether adjustments need to be made. The Action Programme is organised around the following four themes:

1. Shifting the balance between modes of transport: bringing about a regulated competition between transport modalities, as well as linking up the modes of transport;
2. Eliminating bottlenecks: unblocking major roads and finance of improvements;
3. Placing the users at the heart of transport policy: traffic safety, mobility pricing, socio-economic aspects and urban transport
4. Managing the effects of transport globalisation: EU enlargement and the relations of the EU with the outside world.

Both intermodality and sustainable goods transport in metropolitan areas play a crucial role within the White Paper. Intermodality is regarded as being of fundamental importance for developing alternatives to road transport. The EC concludes that action must be taken to ensure better integration of the modes offering considerable potential transport capacity as links in an efficiently managed transport chain joining up all the individual services. The priorities must lie in the technical harmonisation and interoperability between systems.

An essential point is that the EU cannot use regulation as a means of imposing alternative solutions (subsidiarity principle). That is why the commission confines itself to promoting good practises aiming at making better use of existing infrastructures. Investments in cleaner and innovative fuel/engine technologies need also be stimulated [1], [4].

8. Land Use Policies

One of the main European Union policies linking land use and transport dimensions is the development of the Trans-European Network for Transport (TEN-T) as specified in the Treaty on European Union. The development of TEN-T can influence the arrangements of city freight distribution at least on national and inter regional level (for example national strategies of logistic companies are affected by the location of the 'best' transport infrastructure).

The legislation affecting land use and spatial planning in urban areas has a more direct impact on urban transports. EU legislation on environmental matters in particular is the most consistent factor directly influencing spatial and land use planning in member states. For example the 42/2001/EC Directive on environmental impact assessments has markedly influenced national land use regulations and planning. An example of more indirect European influence is the increased attention on strategic planning at regional level. The European context in spatial planning has brought up problems with inconsistencies of national spatial planning systems and land use regulations with European Union and other funding programmes.

In 1999, the European Spatial Development Perspective (ESDP) was drawn up by the member states and the European Commission. This document is merely a guideline for spatial planning policies in member states and does not impose any

requirements on them. The ESDP acts as a policy framework in the European context for sectoral policies with spatial impacts (such as transport). ESDP recognises congestion as a major challenge faced by freight transport. Multimodal transport is expected to be one of the solutions, but its current potential is considered to be restricted due to its uncompetitiveness in comparison with direct road transport [1], [2], [4].

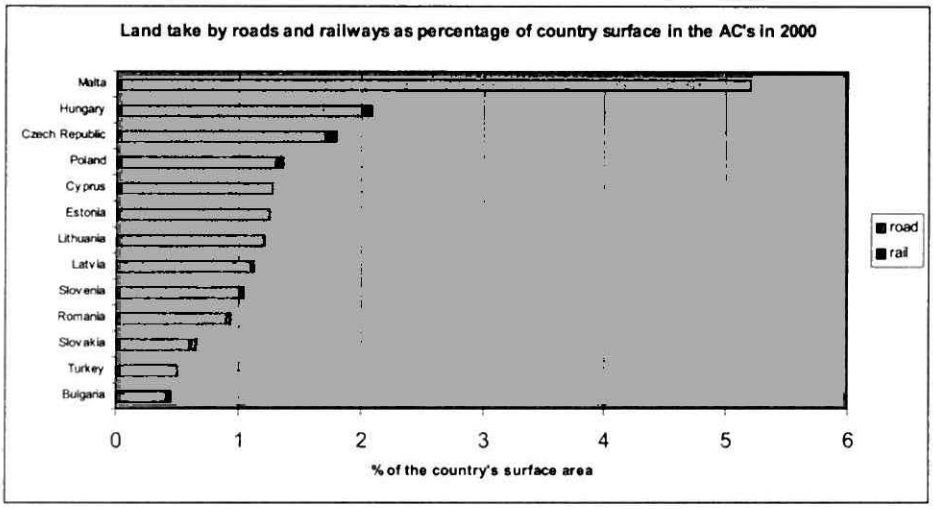

Fig. 3.

9. Major Influences on Policies

Many factors influence policy making in the area of freight transport in urban areas. Their impacts are variable, but they all need to be considered when investigating urban freight transport with the intention of showing best practice data and information for future policy making. Some of the most important developments and policy aspects are listed below:

- The *Treaty of Amsterdam*, which establishes sustainable development as an explicit EU objective and strengthens requirements for policy integration as new fields of action;
- The *Agenda 2000* and the proposed new Structural Fund regulations which emphasise urban areas in difficulty, local development and social inclusion as well as growth and competitiveness in the lagging regions; the adoption of reinforced pre-accession strategies for candidate countries;
- The EU's commitment to the *Kyoto Protocol* of 1997, adopted by the Third Conference of the Parties to the UN Framework Convention on Climate

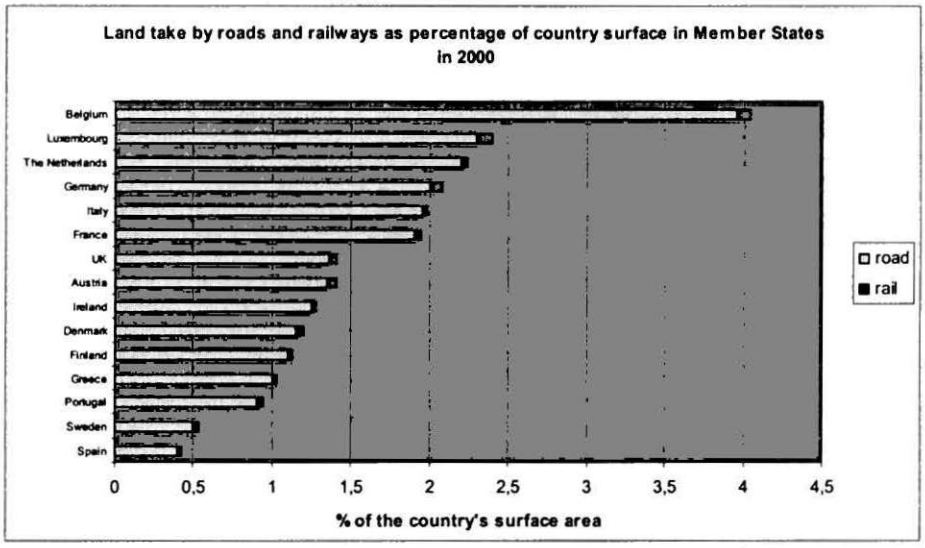

Fig. 4.

Change, which contains legally binding targets for the reduction and limitation of greenhouse-related emissions. The EU and its Member States are parties to the Convention and intend to be parties to the Protocol;

- The *review of the 5-th Environmental Action Programme*, providing for the development of a comprehensive approach to urban issues with special emphasis on the assistance required to support actions by local authorities to implement the Programme and Local Agenda 21;
- The *proposal for the 5th Framework Programme for RTD (Research and Technological Development)*, which sets out a number of thematic programmes relevant for urban policies, including the Key Action 'The City of Tomorrow and Cultural Heritage', where emphasis is placed on the integration of the full spectrum of urban issues, including economic development, competitiveness and employment, resource efficiency of building and efficiency of urban transport;
- The Commission Communication proposing a *Framework Programme for European Culture for 2000–2004*;
- The *European Spatial Development Perspective* (ESDP) emphasising the need for balanced and polycentric urban development;
- The TEN-T (*Trans European Network for Transport*) where the Commission intends to conduct studies regarding the urban impact of the TEN, especially in the less developed regions and accession countries.
- Developing the *Citizens Network* (Commission, DGVII, 1997), proposing an integration of different means of transport modes for public passenger

transport. This work may also be the basis for a coming urban freight transport Green Paper because of the strong urban focus it proposes;

- The existing *Common Transport Policy*, which seeks a better integration of transport modes and a greater use of environmentally friendly and energy-saving modes; stimulation of new technologies; promotion of a 'Citizens' Network' to provide high-quality combined transport of all kinds; fair competition between the different modes; and improvement of road safety [1].

10. EU Projects Related to City Freight Distribution and Examples of Initiatives in Some Countries

Until the 1990s, there were no main political initiatives in the area of urban goods transport. In the 4th Framework Programme, there were no dedicated programmes specifically devoted to urban transport. However, the part of the Transport RTD programme (DGVII) is aimed at developing urban transport. The R&D work mostly focused on organisational aspects (e.g. management of public transport, collection of data for policy planning) and on the testing of various policy tools (e.g. public awareness, land use planning, regulatory and physical measures, pricing instruments and urban distribution). The main objective in the urban transport aspects remained passenger transport, though there was funding for some activities regarding urban freight transport.

An updated list of relevant projects can be obtained from the website of *BESTUFS*, a thematic network in the area of city transports, or the website of the European Commission's Transport Research Programme, under theme Urban transport. The *BESTUFS* thematic network aims at identifying and disseminating best practises with respect to urban freight transport.

A great number of various development measures and initiatives in the field of urban goods transport have been identified, evaluated or further developed. One of the main project was the *LEAN* project (Integration of Lean Logistics Urban Multimodal Transport Management to Reduce Space Demand and Optimise Use of Transport Modes), there was concluded in it that integrated strategies, which combine both development of transport infrastructure, usage of information technologies and the provision of adequate freight services, are the most efficient to serve the needs of different stakeholders.

The *LEDA* project (Legal and Regulatory Measures for Sustainable Transport in Cities) developed an Internet database covering experiences with more than 200 legal and regulatory measures used in 41 European cities.

The major research work in the field of urban freight transport was carried out in the period 1994-1998 for the European Commission within the framework of the *COST* (European COoperation in the field of Scientific and Technical Research) programme. It was carried out in close co-operation with national research institution in some member states, such as France, Denmark and Germany. This way, the foundation was laid for the forthcoming policy making in the area of freight

transport in urban areas. The aim of the project is studying the design and operation of innovative measures to improve the environmental performance of freight transport in urban areas. Analysing how air pollution, noise and energy consumption are reduced by optimising the use of trucks in city traffic through the application of modern logistical devices and appropriate administrative measures [5].

References

[1] The city freight project – www.cityfreight.org
[2] Paving the way for EU enlargement, Indicators of transport and environment integration, TERM 2002., Environmental issue report No. 32, European Environmental Agency.
[3] www.oecd.org
[4] www.europa.eu.int
[5] www.bestufs.net