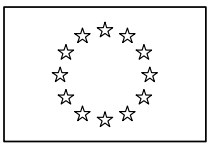

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Accompanying document to the

COMMUNICATION FROM THE COMMISSION

Freight Transport Logistics Action Plan

IMPACT ASSESSMENT

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IMPACT ASSESSMENT

Lead DG: Directorate-General Energy and Transport

Other involved services:

SG, DG EAC, DG COMP, DG ECFIN, DG EMPL, DG ENTR, DG ENV, DG INFSO, DG MARKT, DG REGIO, DG RTD, DG SANCO, DG TAXUD and EUROSTAT

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EXECUTIVE SUMMARY

This document reports on the results of the assessment of a series of actions the European Commission is considering carrying out to improve the efficiency of services for freight transport logistics in the EU and to secure that these develop in a manner that is in accordance with the concerns over the health of our natural and social environments. These actions may be incorporated in an EU Logistics Action Plan, as called for in the June 2006 Communication on Freight Transport Logistics.

The logistics industry is in constant evolution and of growing importance to Europe's economies. Due to the size of the logistics component in the cost of the final product the performance of freight logistics in part determines the competitiveness of manufacturing industries and of the economies at large. While it has facilitated the emergence of leaner, geographically distributed organisations of production, the growth in freight logistics also means that manufacturing is increasingly dependent on transport infrastructure and vulnerable to its disruptions.

The present document considers the trends that – if left unchecked – could call into question the efficiency and even the functioning of logistics. Foremost among these is the expected growth rate in freight transport which will put Europe's transport infrastructure under considerable strain. Other sources of instability are the wide-spread dependence on oil imports and the industry's growing difficulties in recruiting appropriately trained personnel. While industry needs to develop strategies against these, the public sector should help by setting a framework that is conducive to drawing the most from each of the transport modes.

The formulation of the proposal for the Logistics Action Plan was preceded by an intense effort to consult industry actors and other interested parties over the choices for action. The Action Plan does not conclude the discussions but rather consolidates these around practical proposals on how to deal with the challenges facing the logistics industry and its customers.

The analysis considered a number of actions grouped among four themes – e-Freight and Intelligent Transport Systems, Sustainable Quality and Efficiency, Simplification and, fourthly, Vehicle Dimensions and Loading Standards – and addressing two priority areas for application – urban environments and "green" transport corridors.

Although the impact assessment considered these as alternative scenarios, the present report comes to the conclusion that the Action Plan would achieve maximum benefit if these measures were jointly implemented, due to the internal links between each of the groups of measures. It notes that – taken together - these measures could have a significant impact on the efficiency of transport logistics.

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1. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

1.1 Background

This impact assessment (IA) examines the options for action in favour of freight transport logistics in the EU and considers their likely effects. It reasons the choices made by the Freight Transport Logistics Action Plan which the European Commission is due to adopt in autumn 2007.

The framework for the options considered here was set by the Communication on Freight Transport Logistics of June 2006[1]. This noted that developing freight transport logistics is primarily a business-related activity and a task for industry and that the authorities should concentrate on improving the preconditions that Europe can offer for logistics innovation whilst leaving the internal running of company logistics to the companies themselves.

The orientations of this Communication were broadly endorsed by the Council of Transport Ministers in December 2006[2].

The Communication was accompanies by an impact assessment[3] which covered a wide scope of areas of action with their economic, environmental and social impacts at the level that these could be assessed at that time. Several actions in the Freight Transport Logistics Action Plan arise from those areas of action and can be considered to have impacts that correspond to those already assessed in 2006.

1.2 Consultation

1.2.1 Consultation of industry, public authorities and other interested parties

In 2005, the European Commission launched an extensive consultation exercise on the orientations of EU policy for logistics. In the course of this an online-consultation was carried out and a conference organised in April 2006. The responses which were received during this exercise[4] were reflected in the Commission Communication on Freight Transport Logistics. The Communication concluded on a number of areas for action that should be considered in order to ensure the continued competitiveness of the logistics sector, suggesting that these should be developed in an action plan, to be adopted in 2007.

Following the adoption of the Logistics Communication in June 2006, the Commission services launched a second round of consultations with the intention to take forward work on the areas of action and prepare the ground for the Logistics Action Plan. (Please refer to the annex for relevant documentation.)

– The kick-off for these discussions was given by an expert seminar, co-organised with the Finnish Presidency of the EU Council. This took place on 5 October 2006 and lead to a further position papers being submitted.

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1 Freight Transport Logistics in Europe – the key to sustainable mobility, COM(2006)336.

2 Council Conclusions on the Commission Communication on Freight Transport Logistics in Europe, 12 December 2006.

3 Commission staff document on the impact assessment of the Communication on Freight Transport Logistics in Europe, SEC(2006)818, http://ec.europa.eu/transport/logistics/index_en.htm

4 For more details see the Commission staff document referred to in footnote 3.

– In December 2006, the European Commission launched an open call to industry and other interested parties to identify and report impediments to the efficient provision of logistics services. By early June 2007, 500 bottlenecks had been reported, and a first meeting of industry and public authority contact points (the so-called focal points) had taken place.

– On 7 February 2007, the Commission organised a seminar on the issue of multi-modal loading units in order to evaluate the opportunities for progress on a proposal for a European Intermodal Loading Unit (EILU) issued by the Commission in 2003 but which had not progressed in discussions in Council.

– On 26 February 2007, a meeting dedicated to the subject of ICT in logistics was organised with representatives of a number of EU-financed projects addressing the uptake and roll-out of information and communication technologies in freight transportation.

– In March 2007, stakeholders were asked to respond to a questionnaire-based survey on specific measures in support of freight logistics in Europe and their perceived benefits. The results of the survey helped prepare the final step in the consultation process, a public conference.

– The conference on logistics which was co-organised by the European Commission and the German Presidency of the EU Council took place on 8 May 2007 and provided a platform to discuss the orientations for the Logistics Action Plan[5].

Throughout the consultation phase, Commission services have kept an open-door policy and have listened to and taken note of all views expressed, gathering as much information as possible from different players. In all, during the second phase of the consultation which went from October 2006 (coinciding with the creation in Directorate-General Energy and Transport of a unit dealing with logistics) to the end of May 2007 the Commission actively participated in more than 20 external events and twice that number of bilateral meetings with industry and public sector representatives.

1.2.2 Consultation of other Commission services

An inter-service group composed of representatives of the Directorates-General concerned[6] was created to accompany the impact assessment. The group met monthly in the period January to April 2007 and provided valuable guidance on the content of the Logistics Action Plan.

1.2.3 Main results of the consultations

By way of general remark, the consultations confirmed that policy recognition of the importance of logistics is highly valued by industry actors. There is also a shared perception that efficiency as well as the sustainability of the logistics industry cannot be taken for granted.

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[5] See the logistics-related website of the European Commission, http://ec.europa.eu/transport/logistics/index_en.htm.

[6] This was composed of the Secretariat General, Directorates-General COMP, EAC, ECFIN, EMPL, ENTR, ENV, INFSO, MARKT, REGIO, RTD, SANCO and TAXUD as well as EUROSTAT.

In terms of the measures proposed, the views of respondents have generally been positive with, however, marked differences between the different actions and certain nuances between categories of respondents, rooted in their specific interests. Thus, industry in general attaches particular importance to transport infrastructure requirements and to the need to render rail more efficient for freight transport. By and large, it also endorses measures to facilitate take-up of information and communication technologies and in support of training in logistics. As compared to this, differences of view appear between transport operators on the one hand and shippers on the other over proposals to introduce quality recognition schemes. Views on issues such as liability regimes or the limits for vehicle dimensions are more difficult to attribute to industry categories.

The survey of industry representatives and other interested parties generated a ranking of measures on the basis of their perceived benefits (see chapter 0). While this cannot claim to be representative of the views of all those concerned it does give an indication of certain trends in the logistics' industry's policy demand. The following conclusions can be drawn from the analysis of these results:

– The logistics sector places the priority for action on measures to resolve infrastructures inefficiencies and reduce the costs of administrative compliance costs.

– On a certain number of measures (vehicle dimensions, loading units, quality) views can differ strongly by industry sector.

– Logistics and transport operators tend to take a short-term view on policy, favouring measures with an almost immediate impact on their operational problems.

– While acceptance of measures in support of the application of information and communication technologies (ICT) to the logistics has increased, there is a degree of concern over how this might affect the sensitivity of commercial information

– There is a concern that new standards may induce additional costs and that – at least in certain cases – they should be set internationally, not at the level of Europe.

Independently of the actions discussed, it can be noted that industry actors have shown a clear interest in having a unique point of reference within transport administrations to express their concerns and expectations. In this respect, the prevailing organisational structures which tend to be mode-oriented might need to be adapted.

1.3 Expertise

In order to help it consult the parties interested in the subject matter and to assess the implications of the range of actions considered, the European Commission signed a specific agreement with the Rome branch of PriceWaterhouseCoopers Advisory under framework contract TREN/A1/46-2005. Under this specific agreement, which ran from January until mid-June, PriceWaterhouseCoopers and the *Institut für Wirtschaftspolitik und Wirtschaftsforschung* (IWW) of the University of Karlsruhe provided methodological advice, drafted a number of input papers, ensured practical support in carrying out surveys and conference and contributed to the assessment of expected impacts of the proposed actions.

In elaborating the impact assessment the European Commission also drew on the results of a range of studies carried out under the general title Integrated Services in the Intermodal Chain

(ISIC). The present document in particular refers to some of the findings of the cost benefits analysis of a set of measures carried out in the context of task G of the study[7]. Further useful input has come from EU-financed projects in the field of logistics and freight transport, such as BESTUFS, FREIGHTWISE, PROMIT or BRAVO[8].

2. PROBLEM DEFINITION

2.1 Background

Logistics includes the process of planning, implementing and controlling the movement of raw materials, half-finished products and finished goods. About ¾ of these services are estimated to be purchased on the market while the remaining ¼ are produced internally.[9]

Because the activities of the logistics industry span a range of activities traditionally associated with other sectors it is at times difficult to delineate or quantify its economic, social or environmental dimensions. Its overall importance to the economy tends to be expressed in the industry's contribution to GDP or its share in employment.

The logistics sector also shows a very high degree of interdependence with other economic sectors, providing for high multiplier effects. This interdependence has two components.

– Firstly, logistics activity is required whenever production is distributed in space. The process of decomposing the production process and organising the work flows world-wide has been accelerated by the political changes in the early Nineties. Since then, industrial exchange and trade have grown at an unprecedented speed, relying on logistics activity to construct international supply chains.

– Secondly, the logistics sector is increasingly taking over parts of production and servicing activities in just-in-time or just-in-sequence processes. This includes simple sorting activities as well as high-tech assemblies prior to delivery to the final product assembly. Third or fourth party logistics (3PL or 4PL) providers specialise in the analysis of work flows and the development of more efficient, distributed production schemes.

With the exception of the railway market, the supply side of the logistics market is dominated by medium- and small-sized enterprises. It is estimated that around 77% of operators in the freight and/or logistics market employ less than 10 staff.[10] If transport operators and notably road hauliers are taken into account, the preponderance of small enterprises is even more marked. While this renders the industry particularly flexible, fragmentation of the industry can make it difficult to roll out new technologies. The intensity of competition in particular in sectors such as road haulage can make it difficult to introduce socially and environmentally sustainable working practices.

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7 Integrated Services in the Intermodal Chain (ISIC), Final report Task G: A socio-economic CBA for the ISIC actions. The study was carried out by Ecorys on behalf of the European Commission.

8 http://www.bestufs.net/, http://www.bestufs.net/, http://www.promit-project.net/, http://www.bravo-project.com/

9 Finland – State of Logistics 2006, Ministry of Transport and Communications Finland, Helsinki 2006.

10 Based on 2004 Eurostat data for enterprises engaged in cargo handling and storage, other supporting transport activities and activities of other transport agencies.

2.2 Nature of the problem

2.2.1 Mobilising untapped efficiency potentials

A number of factors are converging to put pressure on the transport-related costs of logistics services in Europe and to threaten the sustainability of the practices of the logistics and freight transport industries. Currently, logistics represents between 10 and 17% of GDP in the OECD[11] countries. The important share of logistics in the economy means that these trends may have wide-spread repercussions

In the US, price pressure was mainly due to cost rises in transportation, in turn caused by rising fuel prices and by wage increases in the trucking industry[12]. In Europe, rising fuel costs[13], the introduction of the digital tachograph (which is facilitating enforcement of social legislation in road haulage), driver shortages[14] and a certain degree of market consolidation are being cited as cost drivers that may drive up logistics costs. However, increases in these components of logistics costs are not necessarily passed on to customers. For example, although crude oil prices rose steeply in 1999-2000 (+182% in USD/barrel in nominal terms), the final increase in diesel prices ranged only from 43% (Greece) to 13.6% (Portugal) in the EU 15. [15]

Other factors may add to the upward pressure on prices, including the effects of transport on the environment and human health and the costs incurred due to congestion. Internalisation strategies will likely lead to higher transport costs, and although this topic is the subject of a separate initiative,[16] the following observations can be made:

– According to some estimates, congestion is already causing costs of up to 1.5% of GDP in certain countries[17] and are predicted to increase substantially in the years to come, due to the expected growth rates in air and containerised transport

– Social costs of logistics, which are caused by the effects of accidents, noise and damage to health have been estimated to constitute close to two thirds of the so-called external costs of transport, i.e. costs which are not reflected in the price of transport.[18]

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11 Quoted from: Finland – State of Logistics 2006. The report points out that the figures are based on different types of estimates as there is no established method of estimating logistics costs in the accounts of either businesses or the economy.

12 Refer to Logistics Management (http://www.logisticsmgmt.com/article/CA6352889.html) and Forbes (http://www.forbes.com/logistics/2006/07/18/logistics-costs-soaring-cx_rm_0718costs.html).

13 While electricity prices have increased on average by around 19% between 2001 and 2006, prices for diesel, the main source of energy used in road transport have gone up by between 60 and 77% in the major European economies.

14 Thus, in Germany alone it has been estimated that 50000 additional drivers are required (Source: FAZ, 8.6.2007). In France, 240000 truck drivers will need to be recruited by 2015, 47000 more than currently employed (Source: Le transport routier de marchandises, document d'orientation du Centre d'analyse startegique, March 2007).

15 See impact assessment of the proposed directive amending Directive 2003/96/EC as regards the adjustment of special tax arrangements for gas oil used as motor fuel for commercial purposes and the coordination of taxation of unleaded petrol and gas oil used as motor fuel (SEC(2007)170/2).

16 The European Commission will present a model for the assessment of these so-called external costs for transport and an impact analysis of their internalisation for all modes of transport.

17 Briefing paper for the ECMT conference on congestion, Sofia, May 2007.

18 "Externe Kosten des Verkehrs in Deutschland", INFRAS, March 2007.

– A second dimension of the evolution of logistics is its environmental impact and specifically its contribution to greenhouse gas emissions. At a time when the environmental performance of many industries is improving, the transport-related emissions of CO_2, of which one third are attributed to freight transport[19] are increasing and could jeopardise the EU's greenhouse gas emission targets.[20] This trend is clearly not sustainable and needs to be checked.

– The development of freight markets in Europe is characterised by a rapid growth of international transport originating in, destined for or transiting the EU. The mid-term review of the White Paper of 2001 of the European Commission forecasts a growth of freight transport activity for EU-25 (in terms of tkm) between 2000 and 2020 of 50%. Road freight is expected to grow by 55%, inland waterway shipping by 28%, short sea shipping by 59% and railways by 13 %. Recent studies on the evolution of freight transport in Germany[21] go so far as to predict a doubling of freight transport by distance by 2050.

– The transport sector consumes almost 31% of total energy consumption in the EU and has grown by more than 20% between 1995 and 2005.[22] It is also heavily dependent on fossil fuels and on oil in particular.

Both trends, the economic and the environmental, call for the mobilisation of untapped efficiencies in logistics in order to make more judicious and more effective use of freight transport operations. This need is all the more pressing seen against the backdrop of expected freight transport growth and the evolution in fossil fuel prices.

2.3 Affected parties

Freight transport logistics affects all Europeans to varying degrees - whether they are citizens, employees or entrepreneurs but the intended target group of the measures proposed are the logistics operators and shippers.

2.4 The case for EU action (subsidiarity test)

2.4.1 The need for public sector action

If left unchecked, the trends described in the previous chapter may call into question the efficiency and sustainability of logistics in the EU and have repercussions for European competitiveness. This makes logistics a cross-cutting concern for policy-makers.

Growth in freight transport is also causing disquiet over the effects on the environment, in particular climate change, and thus on the longer term viability of today's transport practices. Recent reports have underlined the possible economic consequences of a deterioration of the natural environment and have suggested mechanisms to address these.[23] Public policy must demonstrate that there is no contradiction in pursuing efficiency and sustainability.

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19 Cutting Transport CO_2 Emissions – What progress?, ECMT, 2007

20 EEA Report on Transport and Environment: On the Way to a New Common Transport Policy, 2007

21 Study of the Progtrans Institut, cited in Frankfurter Allgemeine Zeitung, 12.6.2007.

22 Eurostat: Total energy consumption of transport for EU-25

23 See for example Stern Review on the Economics of Climate Change, October 2006, and the Eddington Transport Study, December 2006.

Considerable potential for efficiency gains still exists within Europe's freight transport systems, especially when it comes to linking the different transport modes. However, for a number of reasons these will not be mobilised without public sector action. These reasons reflect one the one hand the fragmentation of commercial actors and the "compartmentalisation" of these by transport mode which renders coordination difficult, for example in support of common standards. They also reflect certain differences between national transport policy approaches which may need to be addressed in the light of the growing importance of cross-border freight transport.

2.4.2 The right of the EU to act

Three principles determine the EU's right to act. First, the European Union can only act within the limits of the powers given to it by the Treaties and the objectives assigned to it (principle of conferral). Secondly, if the problem falls under a competence shared by the Union and the Member States, the Commission needs to show that the problem cannot be properly solved by the Member States (this is the first condition set by the subsidiarity principle, also called the "necessity" test). Thirdly, fundamental rights may pose legal limits to the Union's right to take action on the problem (proportionality principle). The actions proposed in the Logistics Action Plan respect these principles.

According to the principle of conferral, "the Union shall act within the limits of the competences conferred on it by the Member States in the Constitution to attain the objectives set out in the Constitution. Competences not conferred on the Union in the Constitution remain with the Member States".

With regard to the Logistics Action Plan, articles 70, 71 and 72 of the Treaties of Rome establish the importance of a Common Transport Policy.

Article 5 of the Treaty (subsidiarity principle) states that Community action is justified only when the question has trans-national aspects which cannot be satisfactorily regulated by national measures (necessity test I), national measures alone or lack of Community action would conflict with the requirements of the EC Treaty or would otherwise significantly damage Member States' interests (necessity test II) and when action at Community level would provide clear benefits compared to national measures (clear benefit test).

The EU Action Plan respects the principle of subsidiarity because:

– its actions concern trans-national aspects that cannot be satisfactorily regulated by Member States;

– lack of Community action in implementing actions proposed within the Freight Logistics Action Plan could significantly damage Member States' interests;

– carrying out the proposed actions at EU level will provide clear benefits compared to national measures. National policies may not produce the interoperable transport solutions that are needed for a Europe without borders.

3. OBJECTIVES

3.1. General objectives

The general objective of the Logistics Action Plan is to help industry move towards a more efficient use of freight transport, mitigating the factors that are driving up prices in the logistics industry and jeopardising the sustainability of its practices. Its does this by pursuing the principle of co-modality, i.e. improving the efficiency of each transport mode and overcoming interoperability obstacles between modes in order to help mobilise capacity reserves in Europe's transport systems and put these on a path towards sustainable growth.

3.2. Specific objectives

The sustainable functioning of the logistics sector is dependent on factors such as transport infrastructures, vehicles and containers, logistics personnel and the availability and quality of the information that the sector needs to operate in and base its decisions on. However, the full contribution of each of these cannot always be mobilised at company level and requires policy attention. This is in parts due to the fragmentation of the logistics industry and the absence of coordination between actors, the different practices that have evolved over time within the various transport modes which render their integration at times difficult, the commercial pressures that encourage industry to neglect the long-term over the short-term and differences between national transport policies.

Therefore, the Logistics Action Plan proposes to pursue the general objectives identified above by translating these into a number of specific objectives, namely

– a better utilisation of transport infrastructure, including through vehicle management and loading factors, and the pin-pointing of infrastructure investments that would benefit freight,

– improved cross-border management of freight flows and the associated administrative reporting requirements,

– better integration of transport modes and the reduction of friction costs affecting intermodal transport,

– more emphasis on quality criteria in modal choices and

– higher competence levels, mobility and attractiveness of the logistics professions.

The urban environments and high-density transport corridors are priority areas of implementation of these actions.

3.3. Consistency of these objectives with other EU policies

As was stated in the impact assessment of the June 2006 Communication on Freight Logistics, enhancing the efficiency of freight transport logistics is fully in line with the objectives of the Lisbon agenda (prosperity and competitiveness, more and better jobs), improving the regulatory environment (minimising costs of regulation to the business community) and the mid-term review of the White Paper on European Transport Policy (co-modality,

competitiveness, environmental and social sustainability, safety, and security). Improving modal choices will also contribute to the sustainability of freight transport by making modes of transport that are less harmful to the environment more attractive.

4. POLICY OPTIONS

4.1. Background

In developing the options for the Logistics Action Plan a three-step approach was followed that took as its point of departure the areas of action identified in the Logistics Communication of June 2006 and developed these into a list of possible actions. This preliminary list was further refined with the results from the exercise to identify logistics bottlenecks and used to survey the views of concerned parties. These were asked to comment in particular on the perceived benefits of the proposed actions in terms of level of service (reliability, punctuality), operational costs and time savings. The analysis of the results of this work and additional proposals coming from other discussions were then assembled in a final short-listing which was taken into in-depth impact assessment with the help of an external contractor, PriceWaterhouseCoopers.

4.2. Policy alternatives

The policy alternatives presented here are between "business as usual" and the adoption of some or all of a range of proposed measures addressing various aspects of freight transport logistics. The challenges confronting the logistics industry require a mix of measures and a range of instruments. In what follows, the areas in which action is proposed are presented as sub-options, and chapter 0 includes a ranking of these in terms of expected effects.

4.2.1. Scenario 1: Business as usual

In the business-as-usual scenario, it is assumed that none of the actions proposed in the Logistics Action Plan are adopted. That is not to say, however, that the scenario describes a stand-still. A number of measures with relevance for freight transport logistics are in fact on-going or about to be launched, including inter alia the TEN-T and Marco Polo programmes and Galileo.

4.2.2. Scenario 2: Mix of measures

The Logistics Action Plan scenario assumes the implementation of the 27 measures proposed in the areas e-Freight/ITS, sustainable quality, simplification, vehicle dimensions and urban transport. Since the actions described under the title of “green corridors” are exploratory in nature and since the notion of “green corridors” is more of an implementation principle than a separate action, it was decided not to evaluate the effects of this at the current stage.

4.2.2.1. Sub-option e-Freight and ITS

In the logistics and transport domains, information and communication technologies (ICT) are being implemented in intelligent transport systems (ITS) and in freight-centred management and communication systems. ITS can contribute to enhancing infrastructure utilisation and intermodal efficiency, improving vehicle (rail, road, ship) and container utilisation, tracking and tracing, improving security compliance, simplifying administrative procedures and providing e-based solutions (“paperless environment”).

The roll-out of seamless intelligent transport services can improve capacity utilisation and reduce congestion through effective management of demand (e.g. charging for road use) and automating the payment systems on toll roads, active traffic management and control e.g. through speed regulation or ramp metering in order to keep traffic in a stable state, better pre- and on-trip information via variable message signs and in-vehicle equipment, as well as reduce the number of primary and secondary accidents by introducing active safety devices in the vehicles such as electronic stability control, lane and distance keeping systems, collision avoidance systems, etc.

4.2.2.2. Sub-option Sustainable Quality and Efficiency

Under this heading, the Logistics Action Plan proposes measures in four distinct areas in order to enable a better understanding of the issues that the logistics sector is trying to come to terms with (bottleneck exercise), improve employment-related aspects (training), encourage the emergence of a culture of quality (performance indicators and benchmarking), promote best practice and improve the information base of policy makers (statistical data).

4.2.2.3. Sub-option Simplification

A major focus of actions under this heading is on facilitating the interactions between businesses and administrations. The Logistics Action Plan also proposes to consider establishing a single transport document for all carriage of goods as an optional EU model. Furthermore, it proposes to reduce friction costs in intermodal transport by improving liability in multi-modal transport and to enhance security capabilities of logistics operators by providing for European standards for the secure interconnectivity in the logistic chain. A specific action is on the improvement of security requirements for port access.

4.2.2.4. Sub-option Vehicle Dimensions and Loading Standards

Standardisation of loading units is key to the development of intermodality. Currently, however, container standards differ from swap bodies and purpose-built units. Identifying and adapting to the handling requirements of any single intermodal loading unit can require effort and time, and the handling equipment has to be frequently adjusted or even changed for certain configurations.

4.2.2.5. Sub-option Urban Freight Transport

Although urban freight transport constitutes only a small proportion in the total freight transport length it generates a high proportion of the transport costs. More efficiency could be achieved if deliveries/pick-ups were organised, with obvious positive consequences also for the natural and social habitats.

5. ANALYSIS OF IMPACTS

5.1. Methodological considerations

In determining the benefits of a specific action for transport operators it is useful to apply the notion of total logistics costs (TLC). The main assumptions of this are that

– there is a continuous flow of goods between each shipper and recipient that could be divided into various shipment sizes;

– shippers and recipients agree on the minimum total cost situation for both partners (cooperative situation).

The TLC concept thus assumes a situation in which goods are exchanged between industries that have a production process schedule. This means that the commodities should be available on the recipients' ramp at a certain point in time. As a consequence, TLC assumes the need for safety stocks to protect against the effects of delays or material shortages on the production process. Delays can be caused by the supplier or by the mode of transportation and be the result of technical problems, weather, congestion, industrial action, etc.

The cost components considered by the TLC concept include:

(1) ordering and communication costs, comprising the ordering of the good and of the transport arrangements.

(2) inventory, storage and risk costs, including the cost of the cycle stock, the cost of in-transit inventory, and the cost of safety stock. Keeping safety of stock is necessary for a variety of reasons (demand fluctuation, risk of bankruptcy of the supplier, delays in the provisioning of supplies).

(3) the costs of loading, unloading and transhipment. If a haulage company carries out the transport, this cost component is already part of the transport costs.

(4) the transport costs proper, which will be the charges paid to the carrier or the shipping firm. Transport costs are a function of the mode used, the volume of the flow and the size of the shipments.

With the help of an external consultant (PriceWaterhouseCoopers), the Commission assessed the expected impacts of the policy measures retained in the Logistics Action Plan. To review the monetary effects of these actions the TLC model described above was applied.

For a number of actions, a quantitative assessment of the economic, environmental or social effects could not be carried out, due to the lack of data (behavioural data at a micro-level and structural data at a macro-level). In these cases, the analysis is limited to qualitative considerations.

5.2. ITS AND EFREIGHT

5.2.1. Business as usual

5.2.1.1. e-Freight

According to a report issued in 2005, IT capabilities of third party logistics providers are considered insufficient by the majority of their customers.[24] Without EU action, the problems hampering the broad diffusion of ICT/ITS applications in the logistics chain such as the cost

[24] The 2005 Annual Third-Party Logistics Study reports that 90% of 3PL users agree that IT capabilities are a necessary element of overall 3PL provider expertise, while only 38% are satisfied with their providers' capabilities.

threshold for ICT equipment, the lack of technological standards or the existence of competing standards and the large number of non-harmonised administrative processes would continue to persist. These obstacles particularly affect SMEs and have generally detrimental effects where intensive data exchanges are required[25].

As far as e-Freight is concerned, present practices would mean that freight transport would continue to have to manually deal with the plethora of documents required by the public authorities and by private contracting parties or implement their own IT applications to automate data exchanges where this is possible. The monitoring of goods along their transport chains, too, would have to rely on bespoke solutions (as implemented by large logistics service providers, in particular for their express services) to permit operational responses to events such as delays on specific transport routes.

5.2.1.2.2. ITS

Under the business-as-usual scenario, continued roll-out of intelligent transport systems (ITS) in rail (ERTMS - European Rail Traffic Management System[26]), maritime transport (AIS – Automatic Identification System[27]) and inland waterways (RIS – River Information Services[28]) is assumed. The ensuing capacity gains for rail are calculated to lie between 2 and 15 % and up to 20%, but no comparable capacity effects have been calculated for other transport modes. No Europe-wide standards exist that would allow for seamless road traffic management.

5.2.2. Implementation of the logistics action plan

5.2.2.1. e-Freight

The Logistics Action Plan proposes to encourage the development of e-Freight and the roll-out of ITS services, in particular in road transport. Specifically, it calls for the following measures to be undertaken:

– Mandate work on a standard data set to describe freight, including for regulatory requirements (such as hazardous goods, live animals, etc.) and for use over technologies such as RFID;

– Develop a roadmap for the implementation of e-freight and identify the problem areas where EU action such as standardisation is required;

– Seek consensus on an open, robust data architecture and mandate standardisation of information flows to ensure the integration and interoperability of modes at the level of data exchanges.

– Mandate a standardisation for electronically describing the services offered by freight transport operators.

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25 Frans Cruijssen, Martine Cools and Wout Dullaert, Horizontal cooperation in logistics: Opportunities and impediments, Transportation Research Part E 43, 2007.

26 Commission Communication on the deployment of the European rail signalling system ERTMS/ETCS, COM(2005)298.

27 Directive 2002/59/EC establishing a Community vessel traffic monitoring and information system.

28 Directive 2005/44/EC on harmonised river information services (RIS) on inland waterways in the Community.

5.2.2.2. ITS

The Logistics Action Plan includes a set of measures that will prepare the ground for seamless vehicle and traffic management. These are:

– Establish a detailed roadmap for ITS development and deployment for freight transport in Europe, covering inter alia cross-border traffic management plans for goods transport, ability to track and trace dangerous goods and interfaces between goods transporters and the authorities;

– Propose a regulatory framework for the development of specific digital maps for truck drivers;

– Mandate a standard for an in-vehicle telematics platform that facilitates the integration of different services on board trucks.

5.2.2.3. Expected benefits

These actions are largely preparatory and will therefore not themselves have any immediate impact on the efficiency of logistics operations. However, they are necessary elements of a strategy to promote the take-up of information technologies in logistics and will therefore lead to long-term beneficial effects. In the terms of the TLC model, these can be expected to reduce the costs related to

– ordering and communication: a standard description of logistics services that can be used over the Internet will create the basis for added value services, including electronic reservation systems for freight transport;

– inventory, storage and risk costs: better predictability of freight movements through the monitoring of progress in freight transport and through improved management of the transport systems mean that shippers can reduce their safety stocks;

– the transport costs proper: greater load factors and more efficient use of vehicles should allow for the reduction of costs related to transport.

Environmental and social benefits of the actions outlined above can be expected to the extent to which they not only help improve efficiency within each of the transport modes but also raise the attractiveness and performance of modes such as rail and short-sea shipping. As a general trend, the widespread use of information and communication technologies will raise the profile of professions in the logistics sector.

5.2.2.4. Administrative costs

For business, the introduction of new standards may entail costs related to the adaptation of existing information systems.

Public authorities will have to bear the costs of standardisation itself.

5.3 Sustainable quality and efficiency

5.3.1 Business as usual

5.3.1.1. Bottleneck exercise

The high response rate to the call for the identification of obstacles to logistics and freight transport services – close to 500 to date – is indicative of the need and interest of industry actors to voice their concerns and for public authorities to review the opportunities for specific measures that could alleviate these.

Without EU action, the logistics and transport industry would continue using existing channels to give voice to its concerns and let know its requirements. While it is inappropriate to pass judgement on the mechanisms implemented nationally to provide the logistics industry with a contact point in the public authorities, the majority of issues that have been flagged to the European Commission in the course of the bottleneck exercise surpass the national dimension and require a multinational or even European approach. These issues might therefore remain unaddressed if no action is taken at EU level.

5.3.1.2. Training

Because of the fast pace of technological and economic change it is confronted with the logistics industry needs well-trained staff that can adapt to the evolving requirements. The strong growth rates mean that the industry will continue to need to recruit in coming years.

The ISIC study on the requirements in the logistics industry[29] noted that only half of the European training institutes have specific education on intermodal transport and that often the training courses do not meet the requirements of industry.

This reduces efficiency for the industry, due to the lack of adequately skilled staff. It also diminishes the prospects of career advances and mobility[30] and thus the attractiveness of the profession.

5.3.1.3. Performance indicators and benchmarking

Performance indicators for transport logistics chains can strengthen the importance of quality hallmarks in an industry where the overriding criterion for procurement is still very often the price. Such indicators would allow transport operators and shippers to place greater emphasis on quality, including environmentally sound and socially responsible behaviour. The efficiency of transhipment facilities is particularly important for multimodal transport chains and therefore merits a separate effort in benchmarking.

With some exceptions, performance indicators[31] are not generally available in rail freight, liner shipping or for transhipment terminals (and, unlike in passenger transport, compensations for sub-standard performance are not the rule in freight transport). Thus, information on performance aspects such as the timely arrival of shipments, their condition

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29 Intergrated Services in the Intermodal Chain, Final report Task E: Certification and Training, 2005.

30 The 2003 study on Freight Integrators revealed that logistics staff is relatively aged and has a rather low job mobility.

31 This is notably the case for rail operations in combined transport on which the Union internationale des sociétés de transport combine Rail-Route provides summary information in its annual reports.

upon arrival and compliance with regulations is often not available. This means that it can be difficult for the customers of logistics and transport services to discern between operators.

In road transport, a number of quality schemes exist but tend not to be known beyond the national context[32]. Where national or local quality schemes are combined with regulatory rewards, this can lead to unwanted restrictions for the Internal Market for logistics and transport services.

5.3.1.4. Promotion of best practice

Multimodal freight transport can be complicated to arrange, and therefore preference can be given to mono-modal transport arrangements. Evidence suggests, in fact, that transport choices are not always made on the basis of full knowledge of the modal alternatives[33]. These short-comings can be addressed by a European initiative to share good practices and provide practical assistance. Under the business-as-usual scenario, it is assumed that the short-sea shipping promotion centres continue to operate but that no measures are taken to promote modal alternatives at European level.

5.3.1.5. Statistical data

The public authorities but also private businesses need reliable information on the evolution of logistics industry in order to take the proper policy or investment decisions.

The statistical information available does not permit a reliable picture of Europe's logistics market, due to the incompatibility of units of measurement used to describe the evolution of the various transport modes as well as to the absence of data for certain components of transport chains. Under a business-as-usual scenario public authorities would continue to be limited in their policy-making and monitoring capabilities.

5.3.2 Implementation of the Logistics Action Plan

5.3.2.1. Bottleneck exercise

The Logistics Action Plan suggests that a permanent mechanism is put in place to invite the logistics industry to submit reports on so-called bottlenecks and deal with these in industry-private sector working groups. The effects of this will be dependent on the nature of the issues flagged and on the capacity to address and resolve these. Of the more than 400 reports analysed by early April, 64 related to infrastructure bottlenecks, 77 to operational bottlenecks and 114 to administrative obstacles. Approximately a third of the reports related to purely national issues.

5.3.2.2. Training

In line with the recommendations of the ISIC study on training requirements, the Logistics Action Plan proposes the development of a European Transport Logistics Qualification

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32 The International Road Union's work in progress on an international standard for tourist buses could, however, inspire similar initiatives for goods vehicles.

33 See for example the study which TNO undertook on behalf of the Dutch government ("Het basispotentieel voor binnenvaart, spoor en kustvaart - een verkenning bezien door een logistieke bril", November 2006) in which it compared actual transport choices against modal alternatives on the basis of current market conditions.

Framework (ETLQF) as a voluntary effort to harmonise levels of logistics competence at the European level through a certification system. Through this mechanism a correspondence would be achieved between national logistics degrees. At the same time, minimum standards for training could be set, and new opportunities for certification of non-managerial training would emerge. The beneficial effects for mobility[34] would enhance the sector's attractiveness at a time when it is finding it increasingly difficult to recruit.

5.3.2.3. Performance indicators and benchmarking

The Logistics Action Plan suggests developing European performance indicators for transport logistics, based on existing standards and creating a framework for mutual recognition of national or local quality schemes. It also proposes to elaborate, together with industry, a set of generic benchmarks for terminals and to incorporate these into a voluntary code of best practice.

5.3.2.4. Promotion of best practice

To promote the exchange of best practice, the Logistics Action Plan intends to expand the role of the Shortsea Promotion Centres and their European network to inland logistics, as well as to establish a network between logistics institutes to exchange experience, and disseminate best practice.

5.3.2.5. Statistical data

Rather than call for additional statistics, the Logistics Action Plan suggests that the availability of statistics should be reviewed and additional requirements for data on freight logistics be determined.

5.3.2.6. Expected benefits

The bottleneck exercise and the activities to promote best practice will by their nature improve every one of the components of the TLC model. Additionally, the measures outlined above can be expected to reduce the costs related to

– ordering and communication: improving logistics training will mean that operators in the logistics business will have a better understanding of the industry;

– inventory, storage and risk costs: performance indicators will allow shippers to more easily chose operators who have good track records in terms of timeliness and integrity of freight;

– the costs of loading, unloading and transhipment: benchmarking transhipment platforms will help improve their performance and efficiency, thus opening the possibility of lower charges for transport operators.

– transport proper: putting more emphasis on modal options in the training of logisticians will help these chose more efficient transport solutions.

[34] The 2004 CEDEFOP report on "Systems and procedures of certification of qualifications" notes that the lack of generally recognised qualifications reduces the ability of people to move between jobs.

In terms of social benefits of the proposed actions the introduction of a certification scheme for logistics training will formalise training, ensure its recognition throughout the EU and thus facilitate mobility of people working in the sector. A secondary effect of this may be to increase the attractiveness of the logistics professions. As regards environmental benefits, these can be expected to result from a stronger training focus on transport modes and best practice promotion leading to more informed decisions on modal transport choices. More certainty as regards the performance of modal chains in general and that of transhipment platforms specifically will render multimodal transport chains more attractive, thus facilitating the integration of environmentally friendly transport modes.

5.3.2.7. Administrative costs

Costs repercussions for businesses may come from the actions on training and from benchmarking and performance indicators. For both the costs may be substantial and unavoidable if customers begin expecting these from logistics operators. The ISIC report calculated that a benchmarking scheme for transhipment platforms would require 15% of a platform's employee's time to implement and 5% to maintain (corresponding to about 6750 and 2250 euros respectively). Public sector investments for the setting-up of the benchmarking scheme were calculated at close to 2 million euros, annual recurring costs for its maintenance are assumed to lie at 400000 euros.

As participation in the bottleneck exercise will be voluntary it is not considered here. Reporting on statistical data, too, potentially has strong repercussions for private sector actors, depending on how this will be implemented.

5.4 Simplification of transport chains

5.4.1 Business as usual

5.4.1.1. Simplification of administrative compliance

Under the business-as-usual scenario it is assumed that there will not be a concerted effort towards the streamlining and automation of data submissions required in the course of a freight transport by public authorities. Although the European Commission's initiative to introduce an electronic, paper-free customs environment in the EU[35] includes measures to implement a single administrative interface for regulatory data requirements, no agreement has yet been reached on this in Council.

The costs of administrative compliance have been variously assessed, particularly as regards the costs of customs clearance, which is estimated to lie at around 30 to 40 euros per transaction[36]. Where companies are active in more than one country, it has also been noted that there is a trend to concentrating customs-related activities within one Member State in order to avoid complexity and costs of interacting with several authorities, even though the final destination of the goods may be elsewhere. However, such mitigating measures are generally not available to small and medium-size enterprises who suffer disproportionately from legislative and administrative burdens as they have more limited resources and expertise.

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35 Proposal for a Decision of the European Parliament and of the Council on a paperless environment for customs and trade, COM(2005)609.

36 Impact assessment of the proposal for a decision of the European Parliament and of the Council implementing a paperless environment for customs and trade, SEC(2005)1543.

5.4.1.2. Single transport document

Under the "business as usual" scenario it is assumed that no changes are made to the current regimes of transport documents that differ by mode. These documents have a number of purposes, including providing documentation of and acting as receipt for the goods they describe, laying down conditions of carriage or indicating the persons entitled to receive the goods. They may also contain other information, such as related to the place of delivery and the charges payable.

As far as administrative requirements for customs declarations are concerned, the so-called single administrative document has brought about a substantial simplification in trade with third countries. Furthermore, consecutive programmes have been launched in support of a trans-European exchange of customs-related information, and the extension of these efforts beyond 2007[37] has recently been agreed. Under the "business as usual" option it can therefore be expected that substantial improvements to regulatory documentation requirements in customs will occur.

5.4.1.3. Liability

Currently, claims for loss, damage or delay incurred during freight transport are governed by the rules applying to the particular modal leg of transport. While in certain cases these may be inappropriate for multi-modal transport (due to the rights and duties having been designed for unimodal transport), these arrangements also leave a degree of uncertainty over who is liable. This increases friction costs which have been estimated to amount to around 50 million per year.[38]

Under the "business as usual" scenario it is assumed that this situation will not change. While discussions are ongoing within the context of the United Nations Commission on International Trade Law (UNCITRAL), this has not yet lead to an agreement on a multi-modal liability regime. Furthermore, for the future convention to be applicable it will have to be ratified by the Member States.

5.4.1.4. Security

Security threats against logistics operations include terrorism, crime and banditry and can lead to the disruption of commercial activities and threaten life. The "business as usual" scenario assumes that while logistics operators are already implementing security-enhancing measures, the situation across industry will remain uneven. This is largely due to the predominance of micro-size companies and the relatively high average costs associated with the introduction of security management systems.[39]

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37 Proposal for a Decision of the European Parliament and of the Council establishing an action programme for customs in the Community (Customs 2013), COM(2006)201.

38 ISIC, Final Report Task E.

39 The Commission's impact assessment for a proposal for a regulation on enhancing the supply chain security (SEC(2006)251) notes that close to 90% of supply chain operators have 10 or less employees and that for these average security-related costs would amount to €5000 per company.

5.4.2 Implementation of the Logistics Action Plan

5.4.2.1. Simplification of administrative compliance

The Logistics Action Plan calls for common functional specifications for one-stop submission of data. This proposal is in line with the European Commission's proposal for a paperless environment for customs and trade ("eCustoms"), and the estimates of its benefits largely draw from the impact assessment that accompanied the eCustoms proposal. This estimated that the introduction of paperless processes required for the import and export of goods could create direct savings for the economic operators of between 30 and 40 euros per transaction. It would also lead to lower delays for clearances and thus reduce inventory holding costs.

Recent studies on the beneficial effects of reductions in the administrative burden suggest that such savings have a particularly large spin-off when affecting the transport industry, due to the high price elasticity of world demand for its services[40].

5.4.2.2. Single transport document

Given the commercial dimensions to the use of the transport documents, the Logistics Action Plan proposes to consult with interested parties on the added value and the modalities of establishing a single transport document as an optional EU model for the carriage of goods that would probably also integrate the proposal for a voluntary liability regime.

5.4.2.3. Liability

Several preparatory studies on the feasibility of a European multi-modal liability regime have already been undertaken. The Logistics Action Plan proposes to pursue the discussions on the available options with interested parties. The ISIC study quoted earlier has drawn up a draft regime that could be used as the basis of further discussions.

5.4.2.4. Security

The Logistics Action Plan suggests developing European standards that will help companies raise their security performance.

5.4.2.5. Expected benefits

In the terms of the TLC model, the measures proposed under the title "Simplification" can be expected to reduce the costs related to

– inventory, storage and risk costs: a multimodal liability regime has been calculated[41] to save around 113 million euros per year in friction costs as of 2010, based on an adoption rate of 25%;

– the transport costs proper: according to the Commission's assessment, the administrative simplification of trade-related customs procedures is directly proportional to the number of transactions and could increase from well above 4.300 million euros to close to 5.000

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[40] See Impact assessment of the Action Programme for Reducing Administrative Burdens in the European Union, Commission Communication, SEC(2007)84.

[41] Intergrated Services in the Intermodal Chain, Final report Task B: Intermodal liability and documentation, October 2005.

million euros by 2013.[42] According to traders' estimates, it can be expected that these costs will be slashed by half through central clearance and electronic declarations. No comparable figures exist on the costs of other compliance with other regulatory requirements (such as public safety considerations, animal welfare concerns, immigration or taxation).

In terms of the environmental impact of the measures considered above, it is probable that simplifying documentation requirements and legal coverage of multimodal transport will make modal combinations more attractive and facilitate the integration of environmentally friendly transport modes.

5.4.2.6. Administrative costs

The simplification of administrative compliance implies a major cost for public administrations. Thus, it has been estimated[43] that the implementation of a single administrative window for customs and trade-related reporting requirements will average between 90 and 110 million euros per year over eight years (total for the European Commission and Member States). The Commission's proposal for a Decision on a paperless environment for customs and trade includes a financing proposal for this.

It can be assumed that the introduction of a multimodal transport document will generate one-off costs for businesses adapting their internal processes to the new standard.

While the costs for formulating a multimodal liability regime will fall on the public administrations, its implementation will also generate costs for businesses. The ISIC study has assessed the effects of higher liability rates and insurance premiums for certain operators to amount up to € 52 million yearly.

5.5 Vehicle dimensions and loading standards

5.5.1 Business as usual

Vehicle sizes are determined by Directive 96/53/EC which sets out the maximum allowable vehicle and loading dimensions in national and international road transport in the EU. However, the Directive permits different national rules on the maximum weights and allows Member States to deviate from the maximum dimension limitations in national transport in certain pre-authorised circumstances. A number of Member States are undertaking trials with larger vehicle combinations to assess and quantify the effects of the so-called modular concept in both international and national transport use. Under the "business as usual" scenario it is assumed that certain countries will make use of the exceptions granted under Directive 96/53/EC to admit oversize vehicle combinations to road transport – either on a trial or on a permanent basis. Cross-border usage of oversize vehicles and vehicle combinations will not be permitted, except under limited circumstances.

As far as loading standards are concerned, the "business as usual" scenario assumes that the proposal presented by the European Commission in 2003 will not be adopted and that there will therefore continue to be the predominance of conventional loading units (containers and

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42 SEC(2005)1543

43 Impact assessment of the Action Programme for Reducing Administrative Burdens in the European Union, Commission Communication, SEC(2007)84.

swap bodies). This division into two types of loading units and further non-standardisation within each of the categories results in significant inefficiencies in intermodal movements. The negative effects of this manifest themselves in terms of increased vehicle activity per tonne-km of net cargo, increased handling costs and increased asset costs for additional loading units and/or the use of sub-optimal modes and routes.

5.5.2 Implementing the Logistics Action Plan

In regard of vehicle dimensions the Logistics Action Plan proposes to analyse the trials that have been done or are ongoing, to gather key stakeholders opinions and to present recommendations as to whether the Commission should support the adaptation of Directive 96/53 so as to permit the use of the modular concept in international traffic. (The modular concept is a vehicle combination composed from vehicle units that are themselves within the statutory dimension limits but in combination could be longer than the maximum authorised length.)

As concerns a standard for intermodal loading units, the Action Plan intends to update the European Commission's 2003 standardisation proposal[44], taking into account technological developments and work undertaken by industry on the appropriate technical specifications.

5.5.2.1. Expected benefits

The proposal to assess the possibility of an adaptation of Directive 96/53/EC will not have any immediate benefits. The possible consequences of the modular concept being used in cross-border traffic will be the focus of an in-depth study.

As regards the definition of standards for intermodal freight transport units, these will provide for benefits only and to the extent that they will be used by logistics operators. It can be assumed, however, that such standards – once adopted – will positively affect the TLC costs related to

– loading, unloading and transhipment: according to a report[45] preparing the Commission's 2003 proposal for the European Intermodal Loading Unit, introduction and uptake of standard intermodal loading units will result in significant improvements in terminal productivity, primarily through more efficient use of handling equipment, estimated to correspond to between 10 and 25% of handling costs.

– transport costs proper: as the Commission's proposals for a small and large intermodal loading units are adapted to pallet dimensions, loading factor gains of 63 and 32% respectively have been calculated over ISO-containers and certain swap bodies. The benefits of this will depend on produce shipped and on the freight route assessed, with savings calculated in a range between 0.1% and 10%.

According to the above-mentioned report, once a critical mass of EILU have penetrated the market, efficiency benefits in the order of 0.5 to 1.5 percent in reduction of total logistics costs may be obtained.

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44 Proposal for a Directive on Intermodal Loading Units, COM(2003)155.

45 Economic Analysis of Proposed Standardisation and Harmonisation Requirements, Final Report, October 2003. The report was prepared by ICT Consulting.

5.5.2.2. Administrative costs

According to the 2003 by ICT Consulting study, the proposal for the European intermodal loading units may add between € 50 and 1000 to the costs of certain swap bodies as these will have to integrate certain technical requirements to facilitate transhipment.

5.6 Urban freight logistics

5.6.1 Business as usual

It is well known that the density of population, economic activity and traffic in urban environments causes transport-related problems such as congestion, noise and other health threats which are particularly difficult to solve. Freight transport is one of the major contributors to these. Thus, a recent study[46] found that total urban goods transport accounts for 14% of the vehicle kilometres, 19% of the energy use and 21% of the CO_2 emissions in urban areas. Transiting heavy goods vehicles travelling through the area add another 4% of the vehicle kilometres, 12% of the energy use and 10% of the CO2 emissions.

The specificities of city freight distribution, however, also take their toll on the logistics and transport operators, who are faced with higher costs and moves to restrict their operations. According to the Council of Logistics Management, this "last mile" in the transport chain accounts for 28 percent of total transport costs.

Without additional measures it would be assumed that the CIVITAS initiative[47] in support of cleaner and better transport in cities will continue promoting new concepts for the distribution of goods and that on-going projects such BESTUFS II continue to help cities to share good practices.

5.6.2 Implementation of the Logistics Action Plan

The Logistics Action Plan proposes to reinforce the focus on freight transport in initiatives such as CIVITAS, in order to achieve better co-ordination and integration between passenger and freight transport and between interurban (long-distance) and urban logistics. It also suggests that further steps should be taken to facilitate the exchange of experiences of urban areas and establish a set of recommendations on freight transport, as well as elaborate indicators or standards for urban logistics.

While solutions have to be adapted to suit the local context, the experience of actions undertaken by CIVITAS I demonstrate the importance of policy commitment as a driver for success.[48]

5.6.3 Expected benefits

In the terms of the TLC model, the work on promoting good practices in urban freight transport can be expected to reduce the costs related to

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[46] All subsequent figures are quoted from BESTUFS II, Report on the quantification of urban freight transport effects, October 2006

[47] http://www.civitas-initiative.eu

[48] CIVITAS 1 Cross-site Evaluation, METEOR Deliverable 6, November 2006

– the transport costs proper: Evidence suggests that more can be done to improve the efficiency of urban transport if deliveries and pick-ups were organised. While most shipments are combined in the Netherlands, a study in three cities in France showed that 75% of commercial vehicles accomplish direct trips as compared to tours. In Italy, 87% of freight vehicles circulating in urban areas are in own account and only 13% on account of third parties.

In terms of potential gains for the social and natural environments the evaluation of CIVITAS I projects has demonstrated that these have reduced freight distances in goods delivery transport and lead to lower exhaust emissions, noise, congestion and energy use.

5.7 "Green" freight transport corridors

5.7.1 Business as usual

Through the TEN-T programme work is on-going to implement a set of priority transport corridors crossing Europe. Initiatives such as the upcoming proposals for a freight-oriented railway network and the promotion of Motorways of the Sea and inland waterway transport will place greater emphasis on facilitating freight transport over these networks.

5.7.2 Implementing the Logistics Action Plan

Transport corridors are marked by a high density of freight traffic and by relatively long distances of transport. While these characteristics generate negative effects on the environment and the human habitat, intensity of transport activity also opens possibilities for the introduction of innovative solutions. For these reasons, freight transport corridors are ideal environments for the development and introduction of solutions that help promote environmental sustainability and energy-efficiency, so that they may become showcases of "green" freight transport. With this in mind, the Logistics Action Plan is proposing to reinforce the networking of actors along transport corridors and a corridor-centred approach to research and demonstration projects. This must include more than just the logistics and transport operators active along a specific corridor, as transport corridors also have an important industrial dimension. The challenge is, furthermore, to overcome unimodal implementations of freight-related services and to ensure the physical interconnections of corridors through strategic multimodal transhipment hubs.

5.7.2.1. Expected benefits

The actions outlined above are preparatory in nature as they aim to develop a common, mode-independent understanding among users of transport corridors of their common interests, as well as to assess the potential application of new technologies (traction, monitoring, communication, handling and transhipment).

In the longer term, a corridor-centred approach to innovation in freight transport will positively impact all dimensions of the TLC model, but the concept describes a strategy of roll-out of innovation rather than prescribing specific measures, rendering it difficult to quantify its effects.

6. COMPARING OPTIONS

The impacts of the actions put forward by the Logistics Action Plan have been described at micro-economic level, i.e. with respect to operators' total logistics costs. This chapter summarises these before advancing assumptions regarding the macro-economic and environmental impacts of the proposed actions.

6.1 Effects on total logistics costs

6.1.1 Benefits

As explained in chapter 0, total logistics costs are composed of the costs associated with ordering the goods and the transport services required to receive it, the costs associated with cycle stocks, in-transit inventory and of safety stocks, the costs induced through loading, unloading and transhipment activities and finally the costs associated with the transport effort itself. Each of the options presented in chapter 0 will positively impact one or more or all of these cost components (see table below).

Expected direct and indirect effects of the options on reducing total logistics costs

	Ordering and communication	Inventory, storage and risks costs	Loading, unloading and transhipment	Transport
E-Freight / ITS	+	+		+
Sustainable quality	+		+	+
Simplification	+	+		+
Vehicle dimensions and loading units			+	+
Urban Transport				+
Green corridors	+	+	+	+

In the subjective assessment of logistics operators and shippers, a clear differentiation by effectiveness of each of the options emerges (see table below). It is important to underline that the absolute values indicated express the perceived rather than the measured benefits. Furthermore, analysis of these results should take into account the general bias towards policies that have an immediate effect as opposed to measures which address long-term objectives.

Perceived benefits of actions proposed[49]

	Estimated financial savings	Estimated savings in time
E-Freight / ITS	8%	10%

[49] For the methodology applied by the survey, please refer to the document Preparatory Study for an Impact Assessment on a EU Freight Logistics Action Plan, Stakeholders' demand for policy measures, April 2007.

	Estimated financial savings	Estimated savings in time
Sustainable quality	10%	12%
Simplification	4%	5%
Vehicle dimensions and loading units	11%	9%
Urban Transport	14%	14%
Green corridors	N/A	N/A

6.1.2 Administrative costs

With the exception of the single administrative window, the administrative costs of implementing the Logistics Action Plan will be limited, both for businesses and for public authorities. For the public authorities, the major costs elements are expected to be related to the work on new standards, the introduction of a qualifications certification scheme and the possible adaptation of national training curricula, the implementation of benchmarking and performance measurement and the operation of multimodal promotion centres. For businesses, the major cost factors are the adaptation to new standards (including as a consequence of new requirements for loading units) and the compliance with certification and benchmarking demands.

6.1.3 Mix of actions

Although the results from the survey of concerned parties and the analysis of industry position papers indicates that there is a hierarchy of preferences between the different scenarios, the assessment of likely costs and impacts of these would suggest that a mix of actions should be retained for the Logistics Action Plan. No single action will suffice to achieve the overriding objective of the Action Plan, efficiency and sustainability of freight logistics. Furthermore, the long lead times for technological change in transport need to be considered.

Whether these are vehicle or information and communication technologies, infrastructure or administrative requirements or employment-related matters, the evolution of any one of these areas will have a bearing on freight logistics' capacity to continue deliver efficient and sustainable services in a context that will be marked by strong growth in freight and inflationary pressures. Every potential improvement should be exploited. The administrative costs of such a multi-action approach are justified by the expected benefits.

6.2 Macro-economic and environmental effects

For reasons related to the modelling methodology and data availability, this chapter considers the likely effects of the complete set of measures described in the various scenarios. The estimations of micro-economic logistics benefits presented in chapter 5 can be used as a baseline for a rough estimation of the supply side changes for the transport market. The overall supply side changes will influence demand and the equilibrium positions of the market, expressed by transport volumes, distribution of flows, modal split, allocation to shipment types and assignment to the networks. From these figures a final assessment of socio-economic impacts can be derived.

The assessment of these was carried out using the ASTRA model[50]. ASTRA is one of a set of analytical tools that each has a specific focus. In the case of ASTRA, this is on the economic implications of transport. Input parameters were derived from an extrapolation of the results of the micro-economic analysis and on expert rating. Due to the close relationship between several of the actions, the action plan was assessed as an integrated entity.

Results are calculated for 2020 and on the assumption that implementation of the Action Plan starts in 2007/2008. The input parameters used for the ASTRA calculations assume that:

– the Action Plan will improve productivity rates in the logistics sectors by 3-4% in inland transport, by 5-10% for auxiliary transport services and 3% for communications,

– freight logistics costs will decrease by between 2-3%,

– freight transport times will decrease by 3-5%,

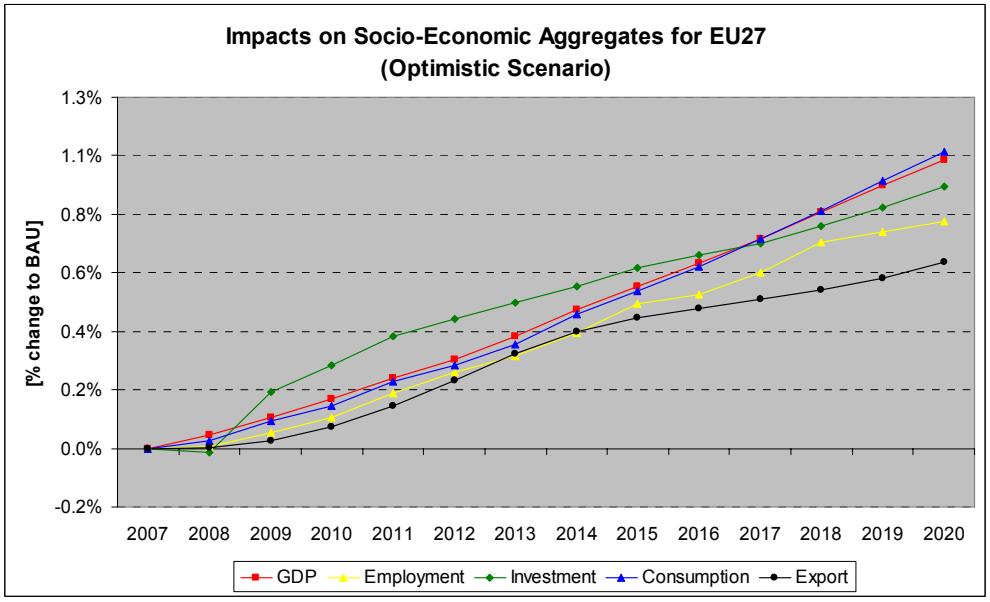
– load factors will increase between 3-5%.

The optimistic and realistic scenarios described below apply the respective low and high values as input. Both lead to positive outcomes, in part due to the high complementarity of the Logistics Action Plan's measures to the TEN-T investments and national transport plans. Galileo, too, can be fully integrated and will yield further substantial additional benefits if bottlenecks for freight transport are removed (e.g.: dedicated freight tracks for rail). Private industries will follow with specific investments such that strong multiplier effects are expected. Finally, the strengthening of Europe as a logistics hub will mean that there is less of a shift to other international logistical platforms.

6.2.1 Optimistic scenario

Compared with the reference scenario the average yearly GDP growth rate for the EU27 will increase +0.08% by 2020. Thus, with a reference scenario that assumes an average yearly GDP growth rate of +2.54%, the implementation of the Action Plan will bring about growth at the level of +2.62%.

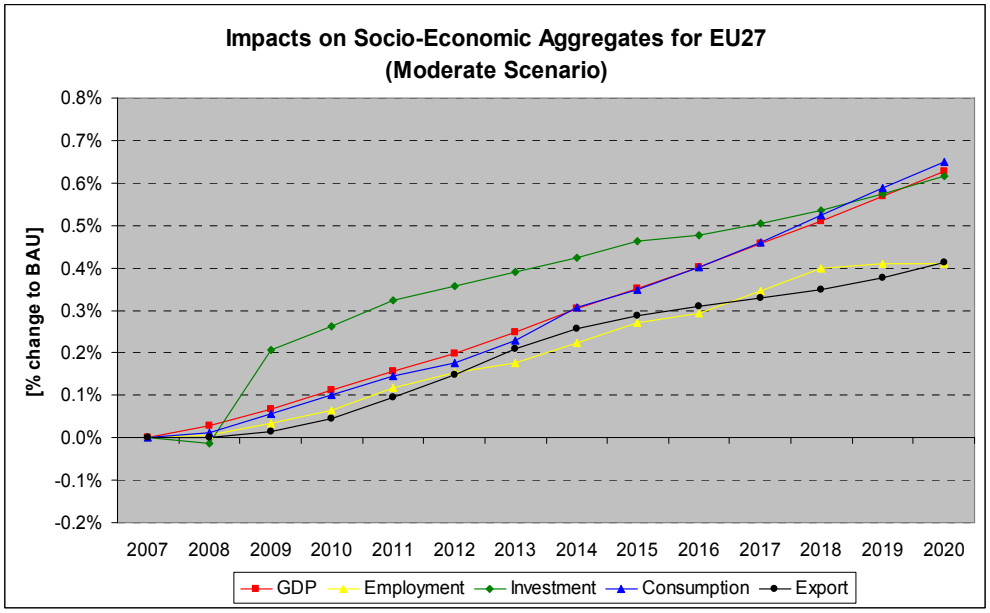
[50] More information on ASTRA is available at http://www.iww.uni-karlsruhe.de/ASTRA/summary.html.



Under this scenario, it is expected that investments will increase strongly in the phase between 2008 and 2015 while slowing down slightly in the second phase (2015 to 2020). Exports show a similar development on a lower trajectory. Employment effects are low at the beginning because rationalisation and use of higher productivity potential is dominating. In the second phase employment is expected to increase, due to secondary effects, foremost due to the link between the logistics sector and high technology sectors like electronics and communication. This creates substantial spin-offs which drive the technical progress and which in the long run become a main driver of economic growth.

6.2.2 Realistic scenario

Under the realistic scenario, input parameters at the low end of the spectrum are assumed. According to the ASTRA model computations, this will lead to an increase by +0.04% of the average yearly GDP growth rates for EU27 compared to the reference scenario. Despite the smaller growth rates compared to the optimistic scenario, this would still result in several billion euros additional growth per year.



6.2.3 Environmental impacts

At a time when the environmental performance of many industries is improving, the transport-related emissions of CO_2, of which one third are attributed to freight transport are increasing and could jeopardise the EU's greenhouse gas emission targets. Furthermore, high concentrations of pollutants are a problem in urban environments. The mix of actions proposed will help address these concerns by helping to reduce unnecessary transport activity, improving the integration of transport modes and the attractiveness of those which are more environmentally friendly and by facilitating the consideration of qualitative criteria – including environmental impacts – in customer choice. The notion of "green transport" and the priority area urban transport will help apply new, environmentally friendly technologies to where their impact will be greatest. Specifically, the Logistics Action Plan will be environmentally beneficial because

– efficient routing, especially in road transport will reduce CO_2 emission levels by relieving congestion and improving load factors;

– electronic monitoring of freight movements improves predictability of deliveries, helps avoid unnecessary freight runs and energy-intensive "quick fix" supply solutions for disruption-sensitive production or distribution;

– the utilisation of multimodal loading units will improve interoperability of different transport modes and facilitate a move towards the less polluting modes;

– administrative and legal simplification will lower the costs of multimodal freight transport and thus render it more attractive;

– the spread of good practice and improvements to logisticians' training will ensure that freight transport decisions are fully informed about alternatives and about their environmental and social as well as economic repercussions.

These environmental effects cannot be quantified. This is due mostly to the difficulty of assessing the outcomes of the individual actions (absence of data, difficulty in predicting

industry reactions). However, despite the unavailability of quantitative data there is a growing recognition in the logistics industry and beyond, that efficiency and environmentally sustainable business practices are complementary.

More substantial impacts on the environmental performance of freight transport logistics can be expected where attractive modal alternatives are available. This closely links the success of the Logistics Action Plan to other policy initiatives in the transport domain, notably the promotion of a freight-oriented railway network and of the Motorways of the Sea. Their implementation and the reinforcement of freight transport in TEN-T financing will create the conditions that allow the logistics and transport operators to provide services that are not only economically efficient but also environmentally sustainable. Furthermore, an added impetus for the usage of environmentally friendly transport modes can be expected from the internalisation of external costs for which work on methodologies is on-going.

6.2.4 Social impacts

The Logistics Action Plan will affect those employed in the industry and those who are concerned by its effects (noise, exhausts, emissions, congestion).

While the industry's growing importance for employment in the EU is recognised, relatively little detailed information is available. In Germany, the Member State with the biggest logistics sector, estimates put the number of those employed in logistics at 2.6 million or 7% of the total labour force. Work has been undertaken to classify job descriptions in the industry, and the Action Plan's proposed initiative to create a certification scheme for logisticians will further help provide recognition to those working in related services. Furthermore, it will help improve training levels and create new career perspectives for its employees. The introduction of new technologies, particularly in the field of IT will increase the logistics sector's need for specialists and add value to the competencies of staff.

As far as the public at large is concerned, the effect of the Action Plan's measures on the social habitats is likely to be positive in the long term, due in particular to measures to promote good practice in urban environments. However, much will also depend on the technological evolution in transport technologies, and initiatives such as the promotion of "green corridors" should also consider how to render freight transport more compatible with our notions of quality of life.

6.3 Added value of EU Action

While a certain amount of legislation applicable to logistics is under Community competence, there are additional arguments why the actions proposed in the Logistics Action Plan should be taken at the level of the EU. These have to do with the nature of the challenges in freight transport, with the need to secure the functioning of the Internal Market and last but not least with the opportunities for synergies with other Community actions.

– Freight transport is increasingly crossing borders. Some estimates suggest that cross-border freight transport will rise to 80% by 2020. This calls for a concerted policy response to avoid that measures such as those in support of infrastructure or information system interoperability do not stop at borders but ensure instead that logistics can maximise efficiency from point of entry to final destination of the transported goods.

– Secondly, adopting European-wide standards will ensure that the market for services and products implementing these is sufficiently attractive and that the economies of scale reduce the implementation costs for each operator. Conversely, a patchwork of national standards would lead to the fragmentation of the market for new technologies and thus deter innovation as well as raise overall costs.

– Certain measures may also counteract the principles of the Internal Market if they are taken at national or local level and create barriers to the free movement of goods and services. An example of this might be local certification schemes that bestow access preferences on local transport operators.

– Finally, the many ties between logistics and Community programmes such as TEN-T, the Research and Development Framework Programme or structural funds offer opportunities for the development of synergies with actions in favour of logistics which are not available at national or local level.

6.4 Conclusions

The key conclusions are summed up below:

1. There is a clear argument to be made – and great expectancy – for EU action in support of logistics. For policy-makers, the challenge lies in facilitating the reconciliation of requirement for efficiency of logistics services (as a key factor in European competitiveness) and the sustainability of the industry's practices.

2. While there are clear differences in terms of expected effects between the various options considered, it is recommended that all actions outlined above should be pursued, due to the synergies that can be developed between these and to the characteristic of freight logistics, which are affected by developments in a range of technology and regulatory fields.

3. A large number of actions are preparatory in nature. They will not themselves have any immediate effects on the efficiency of logistics services in the EU but are necessary steps on the way to improving the framework of logistics.

4. The impact of actions in favour of logistics can be captured in the concept of total logistics costs. This takes into account that logistics costs are not limited to transport and storage activities but also include the costs of upstream activities such as ordering, as well as of measures undertaken to mitigate risks to disruption of supply chains.

5. Directly or indirectly, the mix of actions now proposed should have a positive effect on industry's total logistics costs (TLC), reducing the costs of ordering and communication, the costs associated with stock keeping and risk management, the costs associated with transhipments and finally the costs of transport itself.

6. Small and medium-sized enterprises stand to benefit specifically because standardisation (in information systems and vehicle technologies) as well as administrative simplification will allow them to disproportionately reduce their operational costs. Reinforcing the quality factor in freight logistics decision-making will open new market opportunities.

7. According to results obtained from computation using the ASTRA model, the likely macro-economic and environmental effects of the Logistics Action Plan will be positive and are expected to add between 0,04% and 0,08% to annual GDP growth until 2020.

8. The proposed actions can be expected to have beneficial environmental effects by helping to reduce unnecessary transport activity, improving the integration of transport modes and the attractiveness of those modes which are more environmentally friendly and by facilitating the consideration of qualitative criteria – including environmental impacts – in customer choice.

9. The mix of actions will also have a positive social impact in that they will reinforce the quality of training and improve mobility opportunities. For citizens at large, more efficient freight transport logistics will help secure the quality of life that we have come to expect as consumers while reducing its negative effects on our habitats.

7. MONITORING AND EVALUATION

In the course of this impact assessment a series of actions have been evaluated which should improve the efficiency of freight logistics and help the EU to accommodate the expected strong growth in freight transport as well as to mitigate its negative effects on the environment and on society at large. Many of the actions are preparatory in nature and will only unfold their full effects in years to come. Monitoring will be required not only to assess whether the actions defined in the Action Plan are on track but also to review the evolution of the global context and to determine whether additional measures will be required.

7.1 Monitoring the implementation of the Action Plan and evolution of logistics

The following table gives an indication of the core indicators of progress towards meeting the general and specific objectives pursued by the Logistics Action Plan. Not all indicators are operational today, and one of the aims of the Action Plan is to enhance policy-makers' ability to monitor the evolution of the logistics industry and the impact of policy measures. The Action Plan proposes that a report on progress in its implementation is made 2010 and that this report should also provide the opportunity to possible further actions.

General objective	Indicators
Efficiency	total logistics costs to shippers
Sustainability	variation in CO_2 emissions, pollutants and noise attributable to freight transport
Specific objectives	Indicators
Better utilisation of transport infrastructures	variation in hours lost due to congestion capacity utilisation rates
Improved management of freight flows	adoption rate for freight-monitoring systems availability of service level guarantees
Simplified administrative reporting	variation of administrative costs
Pin-pointing of infrastructure investments	returns on transport infrastructure investments
Better loading factors	variation of vehicle load factors
Better integration of modes	variations in costs and duration of transhipments number of transhipments travel time of intermodal freight transport
More informed modal choices	number of people consulting promotion centres number of logisticians obtaining European training certificates
Reduced friction costs	variation in logistics providers' insurance and legal costs
Improve qualifications levels and mobility	number of logisticians obtaining European training certificates

7.2 Outlook

Because of its transversal character, freight logistics is sensitive to the evolution of the industries that it serves and the services that it relies upon. As regards the latter, the evolution of the performance of the various modes of transport will greatly influence logistics efficiency. In this respect, proposals to implement a freight-oriented rail network (which are to be issued in parallel with the Logistics Action Plan) are of particular importance, as is the review of the TEN-T corridors in 2010. A further impact could result from the on-going work on the internalisation of external costs, which may affect the competitiveness of the transport modes.

These developments will be additional to technological changes, the emergence of new commercial practices as well as of new policy prerogatives. Jointly, they imply that the context for logistics will evolve and with it the basis on which the Logistics Action Plan has

been drawn up. Their implications need to be reviewed and discussed in an on-going dialogue on the future of logistics policy.

8. INTERNAL REVIEW

In view of its commitment to producing high quality and rigorous impact assessments the Commission has established an Impact Assessment Board whose task it is to support and monitor the quality of individual impact assessments prepared by the services. The Board reviewed the present document and delivered its opinion on 23 July 2007. In view of these remarks the document has undergone a general review and been shortened. Among the changes made, the following points should be highlighted:

– Chapter 2 has been reworked in response to the Board's recommendation to render the formulation of the problem statement and the objectives of the Action Plan more precise, focussing in particular on the efficiency potential that needs to be tapped but that requires public sector action.

– The Board's concern that the current policy context is fully reflected by the Logistic Action Plan will be addressed in a separate document as the Logistics Action Plan is one of a series of cross-linked policy initiatives.

– Where the described actions can be expected to have environmental and social impacts the relevant text in the document has been strengthened, in particular in chapters 5 and 6. As explained in the document, quantification of these impacts poses particular methodological and data availability problems.

– More explanatory text has been given on the macro-economic modelling undertaken with the help of ASTRA. For a detailed discussion of the model's assumption the reader is referred to the relevant website.