Annex 16 Logistics labour market

Background information for the study 'Analysis of the trends and prospects of jobs and working conditions in transport'
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1 Introduction

This is Annex 16 to the Analysis of the trends and prospects of jobs and working conditions in transport, commissioned by JRC and conducted by Panteia in cooperation with PwC Italy. The Annex contains both detailed information and analyses on logistics and the transport sector at large which allow the report to be read as a stand-alone document along the main report.

This Annex covers the PESTLE-analysis, labour market trends, discrepancies in the labour market, options to reduce the discrepancies and main findings. These are treated in the consecutive chapters. The results of some specific research steps and on specific topics are not included as they are presented en block in the main report. This includes:
- Detailed assessment of the relative job quality (Task 4);
- Review of the human capital perspective aiming to draw a human capital map for 2010 and 2020 of the EU transport sector (Task 5);
- Findings targeted stakeholder consultation;
- (Anecdotic) evidence on social dumping, cabotage and other social problems;
- Lists of literature and internet sources.

The Annex does not aim to give a complete new overview of the labour market in logistics but gives the findings as were anticipated during the execution of the study. In itself labour market issues and its description are not of static nature and would require continuous updating.

1.1 Submodes and professions

The logistics comprises the following three subsectors:
- Supply Chain Management (SCM);
- Warehousing;
- Distribution.

The relevant job types in logistics considered in this report are:
- Drivers (truck, van, forklift and other equipment);
- Freight handlers;
- Logistics and storage staff;
- Supply chain management;
- Management;
- Back-office;
- Maintenance staff.

1.2 Analytical framework

The analytical framework that is applied in the study, comprises four interconnected labour market models: flow model, discrepancies model, PESTLE-analysis model and solutions model. It is presented in detail in Annex 1. On the basis of this analytical framework the research questions to be answered in this study are formulated. This can be described as follows:
The external factors influencing the development of the labour market can be identified by looking at six specific domains. The six dimensions are the political, economic, social, technological, legal and environmental dimension, together PESTLE. These six different dimensions can influence the situation on the transport labour market to a large extent, though some are obviously more important than others. The PESTLE-model provides, so to speak, a common language to describe the challenges faced by the different actors.

The EU transport labour market has a demand side and a supply side.

The demand for labour has a quantitative side (number of jobs) as well as a qualitative side (requirements on workers) and is being influenced by the specific (labour market) characteristics of the sector.

Likewise, the supply of labour has a quantitative side (number of potential workers) as well as a qualitative side (characteristics of workers, e.g. competences).

An ideal sectoral labour market knows completely balanced demand and supply. In the real world, however, this is mostly not the case: labour shortages and redundancies cause problems for market agents. Hence, at the centre of this analysis of the EU transport labour market is the discrepancies model: the EU transport labour market is analysed according to the three characteristics of market functioning: (1) quantitative discrepancies, (2) qualitative discrepancies and (3) information asymmetries due to lack of transparency of transport labour market.

The main disadvantage by addressing the logistics sector is that there is no clear definition of the logistics sector. Some authors take all transport modes together as the logistics sector. Others refer to a specific definition of some activities of which the most visible are warehousing and SCM-activities. Also the Express Carriers can sometimes be part of the logistics sector, especially in Business to Business (B2) delivery. This sector has in itself quite an impact on the European economy, it is estimated that 272,000 workers in Europe are directly employed by the express delivery industry. This amount is expected to grow to 300,000 by 2020.

This makes it difficult to define the labour market for logistics. One of the more useful definitions is that while most activities in transport modes are dynamic about moving goods physically from A to B, logistics can maybe be described as activities in one location (warehousing, sorting, order picking, etc.) which are sometimes dealing with peak periods. This makes jobs more accessible to more categories of employees, such as women and elderly people. As such this annex about logistics proved to be more difficult to find specific information targeted towards a specific logistics sector. Most of the finding reported in other annexes for those modes are applicable in the logistics sector too.

The chapters in this Annex follow this structure, first the PESTLE analysis is carried out. This is followed by description of supply and demand. This is followed by a description of the discrepancies in the labour market. Thereafter strategies to reduce discrepancies are discussed. The main conclusions and recommendations at mode level are presented in the last chapter.

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1 Oxford economics, The economic Impact of Express carriers in Europe, November 2011
2 PESTLE-analysis on EU logistics labour market

This section describes context factors influencing the EU logistics labour, the so-called PESTLE-factors: political, economic, social, technological, legal and environmental factors.

2.1 Political factors

2.1.1 General context EU transport labour market

As discussed in the main report, the following political factors play an important role for the EU transport labour market as a whole:

- **EU Enlargement, Single Market and Market liberalisation**: Transport companies increasingly make use of more affordable labour from new Member States and establish subsidiaries in those countries.

- **Remaining protectionism**: Some Member States show in specific areas a poor record of transposition and effectuation of EU market liberalisation policy.

- **Integration of transport system**: The EU’s political objective is to transform the European transport system into an integrated, sustainable and efficient mobility network.

- **Central role of social dialogue in EU transport labour market**: Social dialogue figures as a central instrument of governance in the transport labour market in the European Union and its Member States. At EU-level Sectoral Social Dialogue Committees play a central role.

- **Political priority of Life Long Learning (LLL)**: LLL helps employees to adapt to the changing circumstances in and requirements of their respective professions.

- **Europe 2020 and “Flexicurity”**: Flexicurity consists of ensuring no longer a job for life (“job security”) but of ensuring “employment security” thanks to active employment policies and an appropriate safety net when one has lost his/her employment.

- **Political priority of ecological focus**: Emphasis on decarbonisation and energy security leads to a modal shift and the introduction of alternative energy and propulsion systems in transport means.

2.1.2 Specific context EU logistics labour market

**Market liberalisation**
Continuous outsourcing and lowering of compensation, and pressure on wages due to liberalization is taking place in the logistics sector.

**Experience/view of individual logistics companies**

"In very busy/demanding periods for the sector there is some competition. However because our sector has a negotiable market, companies can communicate with each other and make mutual agreements that benefit all parties involved. There have been times when all of a sudden a large amount of applicants came to our company and it turned out that these workers..."
were all from the same competitor. This happened because people talk to each other and when they have it to their liking they will share this experience with ex-colleagues of their previous company. We, the companies make agreements preventing such ‘migrations’ to take place”.

Source: Enterprise survey by Panteia/PWC

Social dialogue
State of the art
As yet, there is no Sectoral Social Dialogue Committee for the logistics sector. To a limited extent it is covered in the road sector dialogue. Many logistical functions are carried out in non-transport sectors however. At the same time, logistical functions are carried out in specific transport sectors. For example, in the road transport sector where a social dialogue exists, there are non-mobile warehousing workers active.

This contrast is reflected in the recruitment practices, as qualification is not always the main recruitment criterion for the target jobs of the study, usually the motivation and attitude of the candidate higher rated than the candidate's qualifications or training. As this report states in the cases of good practice, some companies attach particular importance to training and qualifications, which enable these workers to enhance their employability and career prospects in the company and the economy. In most countries, the forklift driver's licence is required for this profession and as evidence of training.

2.2 Economic factors

2.2.1 General context EU transport labour market

As discussed in the main text of this report, the following economic factors play an important role for the EU transport labour market as a whole:

- **General economic growth and the crisis**: The current economic and financial crisis lowers demand for transport services and leads to the postponement or halting of investments in transport, infrastructure and business in general. It also leads to rationalisation and outsourcing. Furthermore, it creates high unemployment in some countries which puts pressure on labour markets.

- **Geopolitical changes and globalisation**: Geopolitical changes and globalisation of economies and trade lead to redistribution of transport flows, increasing transnational recruitment and impact on transport prices and wages.

- **Regional differences in economic development & specialisation**: Successful regions specialise in a number of economic areas, leading to specific development in transport.

- **Congestion hampering and redistributing growth**: Congestion of road transport routes, but also specifically in urban areas, will increase and seriously affect accessibility.
2.2.2 Specific context EU logistics labour market

The logistics sector is highly sensitive to the business cycle. When the economy flourishes, labour demand in logistics is substantially higher than in economically less prosperous times.

As a result of the economic crisis, for many years the logistics sector realises low margins. As a result, emphasis is on costs reduction and necessary investments are under pressure.¹

A decline of activity in 2008-2009 took place due to the crisis, however the demand for logistics occupations is expected to grow over the next years. Nevertheless, a distinction is to be made between occupation categories. This increase is expected in particular for forwarding clerks, logistics workers and warehouse logistics workers, while the demand for warehouse occupations is expected to decrease.

One of the main factors determining this decrease is automation in warehouses. This will lead to a decrease in the demand for pure warehouse workers and to an increasing demand for warehouse workers with computer and software skills. In these circumstances, the challenge for transport and logistics companies will be to attract candidates for the jobs offered in the sector, and the challenge for training centres will be to develop and provide the adapted training schemes in line with the evolving requirements on the labour market.

2.3 Social factors

2.3.1 General context EU transport labour market

As discussed in the main text of this report, the following social factors play an important role for the EU transport labour market as a whole:

- **Demographic development**: Growing population (even if slowly, means more demand for transport of passengers and thus more demand for labour) and an ageing workforce (less supply of labour)
- **High level of unemployment in many EU countries**: This puts a downward pressure on wages and working conditions and may make that past training and formation of the unemployed becomes obsolete or forgotten.
- **Underrepresentation of women in the workforce**: As a result of difficult working conditions, stereotypical masculine image of the transport sector and disadvantageous work-life balance not many women are attracted to the transport sector.
- **Continuous monitoring of employee performance**: Increased control over employees’ performance - made possible by IT developments – can lead to perceived pressure and possibly create stress.

¹ ABN AMRO (2013). *Logistieke waarde creëer je samen*. This study has been carried out by Panteia in commission of ABN AMRO.
• **Violence in the public domain:** Violence has also manifested in the transport sector and is particularly reported in the passenger transport sector.

• **Organized crime:** The transport sector suffers from crime increasing organized crime, especially in road freight transport and maritime transport (piracy).

• **Development of a liability culture:** Transport employees are facing legal action when incidents occur under their responsibility.

2.3.2 Specific context EU logistics labour market

As other transport sectors, the logistic sector is characterised by an ageing workforce and an underrepresentation of women.¹

<table>
<thead>
<tr>
<th>Experience/view of individual logistics companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Considering social factors, we see that people nowadays attain more value to money and quality of life (work-life balance). They want to have more time to enjoy life and work less. In logistics jobs, it is difficult to meet these wishes as an employer since these jobs require longer and irregular working times (e.g. drivers)&quot;</td>
</tr>
<tr>
<td>Source: Enterprise survey by Panteia/PWC</td>
</tr>
</tbody>
</table>

2.4 Technological factors

2.4.1 General context EU transport labour market

As discussed in the main report, the following technological factors play an important role for the EU transport labour market as a whole:

- **Increasing use of IT**
- **Technological innovations**
- **Faster and larger transport means**
- **Intermodality:** Making use of the advantages of different transport modes (e.g. between rail and road) that are neatly tuned to each other, thus keeping transfer time and cost (for passengers and freight) between the different modes at a minimum.

These technological developments lead to:

- **Efficiency & productivity gains, economies of scale and smarter mobility & logistics** (less demand for labour or more demand if activity grows as a result of lower prices)
- **Diversification of requirement leading to specialised jobs**
- **Upgrading of labour** (more complex job requirements).

2.4.2 Specific context EU logistics labour market

Technology, especially ICT, is becoming an ever more important factor in logistics. Amongst others, the following developments are noticeable:

- Logistic work is increasingly automated.
- The risks shift more and more from the customer to the logistics company. Therefore, the importance of risk management increases. This also means the necessity of better management-information systems.
- As a result of relocation of production locations, supply chains are becoming longer and more complex. Warehousing takes profit from this. Efficient supply chain management and just-in-time deliveries to keep stocks low are becoming increasingly important. Logistics companies want to keep their working capital to standard. This asks for the development and implementation of innovative solutions by warehousing companies.
- Many solutions in the field of ICT have been and are being developed for the logistics sector that support better (exchange of) information offers opportunities to further optimizing the logistic process, for instance by the implementation of synchromodality.
- Furthermore, there are developments in the implementation of ICT in the sphere of GPS, Enterprise Resource Planning (ERP), E-commerce, E-recognition, E-customs et cetera.\(^1\)

2.5 Legal factors

2.5.1 General context EU transport labour market

As discussed in the main report, the following legal factors play an important role for the EU transport labour market as a whole:

- **Different social regimes between Member States**: In general wages, working conditions and social security are less favourable in new Member States compared to the other Member States. As discussed in the main text, this may lead to social dumping of which little evidence, but a great number of actual suspicions and cases is available.

- **Different social legislation between transport modes**: Besides horizontal EU social legislation, transport modes have their own social regulations (especially in the field of (harmonisation of) training and certification and working times). EU specific regulations on the phenomenon of false self-employment are still lacking. A problem remains the enforcement of the EU Directives at national level.

- **Non-EU workers under lower standard legal regime**: The co-existence of non-EU-workers carrying out intra-EU transport, who may choose as State of Residence a Member State with less favourable legal and social regimes, has an impact on average working conditions and remuneration packages. Although non-EU workers must always be subject for a start to the legislation of a Member State, they easily fall prey to illegal practices. Their weight on labour supply reduces the negotiating position of the other workers.

• **Safety regulations to protect both transport workers and society:** As a result of EU safety regulations the safety conditions for transport workers and society at large (i.e. passengers and other road users) have increased.

2.5.2 **Specific context EU logistics labour market**

**Social legislation**

*EU regulations concerning (harmonisation of) training and certification*

At the moment, there is no specific EU legislation concerning (harmonisation of) training and certification in the logistics sector. According to the project bestLog, at EU level there is no clear international contender for an overall standard and certification of logistic competence and performance. Whilst there are several helpful international standards in parts of the field which might contribute more fully than they do at the moment, there seems to be no strategic candidate applying to the whole. There is no single champion for greater focus on and the coherence of standards in the logistic field. This is a result of its scale, scope and diversity, as well as the nature of its growth.

There are some evident gaps in the present range of schemes: some overlook specific logistic issues or important areas, and there is no clear scheme to link qualifications and standards for people to performance.

Notwithstanding these deficiencies, in the view of bestLog the range of existing standards is robust and capable of improvement.

*EU regulations concerning working conditions*

To protect workers’ health and safety, minimum rules are needed on working time in all EU Member States. For all the sectors, the basic Directive is Directive 2003/88/EC of the European Parliament and of the Council of 4 November 2003 concerning certain aspects of the organisation of working time (in short: the Working Time Directive, see main text). European Community has set specific regulations on driving time and rest periods in road transport, railway transport and air transport. In logistics there are no specific regulations.

*Achievements, difficulties and deficiencies in EU social legislation*

At the moment, in logistics there is no specific sectoral EU social legislation.

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Experience/view of individual logistics companies

"The position of the Netherlands of the labour market is weak. The implementation of EU legislation is not uniform across the member states. The Netherlands implements and enforces EU and national legislation, while other EU members don't. This leads to restrictions for Dutch companies, worsening their position. This creates

Changes in legislation also has consequences for the workers of certain member states to enter the labour market in other member states, for instance Polish workers currently stationed in The Netherlands leaving the Netherlands and workers from other member states entering the labour force."

Source: Enterprise survey by Panteia/PWC

2.6 Environmental factors

2.6.1 General context EU transport labour market

As discussed in the main report, the following environmental factors play an important role for the EU transport labour market as a whole:

- **Implementation of (EU and national) sustainability policies**: Emphasis on sustainability increases and affects job requirements in the transport sector.
- **Modal shift and clean power transport**: There is shift towards cleaner modes of transport and cleaner technologies within each mode with an increasing demand for public transport and electromobility.
- **“Eco-driving”, consolidation of flows and smarter logistics**: These developments affect both job requirements and labour demand in the transport sector.
- **Employment potential of “Green transport”**: Europe needs to change to a green, low carbon and resource efficient-economy. Transforming the economy in this direction will provide an important source of jobs if the right skills are provided. The Commission has developed this subject under its "Towards a job-rich recovery" Communication¹. The Commission also participates in THE PEP: This UNECE partnership aims at exploring new options for job creation and economic development, and maximizing at the same time the potential gains for environment and health through innovative transport policies.

2.6.2 Specific context EU logistics labour market

In the coming decennia oil will be ever more scarce. By increasing the cargo level and a smarter use of the existing infrastructure, logistics can positively contribute to social challenges in the field of climate and energy.

Sustainability is more than CO2 reduction alone. It also concerns other important criteria: decreasing negative effects such as congestion and noise pollution, efficient use of public space and reuse of resources. Logistics can contribute to

sustainability by a social sound, environment-friendly and future-proof organisation of flows of goods by:

- Better timing of flows of goods (choosing the most effective and sustainable modality and bundle cargo in transport and storage)
- Better utilizing of and tuning between the various modalities by which less often unnecessary empty trips/voyages/ﬂights are made and emissions of CO2, NOx and ﬁnd dust are reduced
- Better tuning between the parties in de chain, by which unnecessary transport kilometres are avoided, the transport speed can be adapted to the expected moment of arrival and waiting times can be reduced
- Applying retour logistics and waste management on a larger scale tot reuse components and materials (closing the loop, cradle2cradle)

Furthermore, it is important to develop and use climate-friendly warehouses and distribution centres with the right capacity\(^1\).

\(^1\) [http://www.top-sectoren.nl/logistiek](http://www.top-sectoren.nl/logistiek).
3 EU logistics labour market trends

This section describes trends in demand for and supply of labour on the EU logistics labour market.

3.1 Trends in demand

3.1.1 General trends in demand

As discussed in the main text of this report, the following trends hold for the EU transport labour market as a whole:

- **Employment (number of jobs):** Following upon a long period of employment growth, in 2009 and 2010 in the EU 27 the transportation and storage sector showed a decrease in employment. In 2010, the total number of occupied persons in the transportation and storage sector (excluding postal and courier activities) amounted to 9,344,700 (against 9,433,500 in 2009 and 9,571,00 in 2008). In 2010, more than half of the occupied persons (56.4%) worked in road transport and nearly a third in logistics (29.0%).

- **Labour mobility:** As concerns labour mobility, people can move from job to job within the same transport company, from company to company within the same transport (sub)sector, between different (sub)sectors and/or between different regions or countries (geographical mobility).

- **Number of vacancies:** Compared to employment figures, vacancies are much more vulnerable to cyclical factors and economic conditions and must be interpreted as such. For the EU-27 the figures point towards a decline of labour demand in transport for the period 2008-2011. No recent figures on vacancies are available. Expectations are that after the economic crisis labour demand will rise again.

- **Job requirements/job types:** In the transport sector, there is a general trend towards job polarisation (employers mainly look for highly or lowly qualified workers, not for medium qualified workers). Furthermore, demand for IT personnel and multi-skill jobs increases. At all skill levels, most jobs in demand will be more and more characterised by non-routine tasks which are not easily replaced by technology or organisational change.

- **Prognoses labour demand 2020:** Future employment trends in transport depend on a number of factors such as the development of trade and economic activities, an ageing population and people's mobility patterns, technological developments, energy availability and prices, measures towards sustainable transport, alternative transport modes etc. In the period 2010-2020 total employment in the transport and storage sector in the EU-27 is expected to decrease with annually 0.1%; the decrease being concentrated in non-transport related labour. Significant employment losses are expected in warehousing and support activities. Land transport is on average, whereas employment increases in water transport and air transport.

Overall, employment of transport-related occupations is expected to remain constant over the next decade. Results per occupation are closely related to the employment results for individual sectors of industry. Results per
occupation are closely related to the employment results for individual sectors of industry. For instance, the significant increases for air controllers, air traffic safety technicians, aircraft pilots, conductors (to some extent) and travel attendants are closely related to the employment increase in air transport. Similar reasoning applies to ships’ personnel. Conversely, employment of land transport related occupations is expected to decrease.

3.1.2 Specific demand trends logistics

Employment development (number of jobs)

The figure and table below illustrate the development of employment in logistics (i.e. warehousing & support activities for transportation).

Figure 3.1 Employment development (yearly change in occupied persons, in %) in logistics and transportation and storage (excl. postal and courier activities) as a whole, EU 27, 2003-2010

Table 3.1 Employment (occupied persons, in 1000s) in logistics and transportation and storage (excl. postal and courier activities) as a whole, EU 27, 2008, 2009 and 2010

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Change 2009-2010 (in 1000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>9571,7</td>
<td>9433,5</td>
<td>9344,7</td>
<td>-88,8</td>
</tr>
<tr>
<td>Warehousing &amp; support activities for transportation</td>
<td>2870,9</td>
<td>2729,8</td>
<td>2705,9</td>
<td>-23,9</td>
</tr>
<tr>
<td>Warehousing and storage</td>
<td>n/a</td>
<td>395,5</td>
<td>392,1</td>
<td>-3,4</td>
</tr>
<tr>
<td>Support activities for transportation</td>
<td>n/a</td>
<td>2334,3</td>
<td>2313,8</td>
<td>-20,5</td>
</tr>
</tbody>
</table>

Source: Panteia based on Eurostat
In 2010, logistics accounted for 29.0% of the employment in the sector transportation and storage (excl. postal and courier activities) as a whole in the EU 27. That year, in total 2,705,900 persons were occupied in logistics (against 2,729,800 in 2009 and 2,870,900 in 2008). A large majority (2,313,800) of the employment in logistics in 2010 is in warehousing and storage and a small minority (392,100) in support activities for transportation.

Figure 3.1 shows that, in general, employment development in logistics is more favourable than in the sector transportation and storage (excl. postal and courier activities) as a whole. However, this certainly does not go for the year 2009, in which a rather sharp decrease in employment can be seen.

Warehousing and support activities for transportation is the only sub mode of transport where the share of workers aged 15-24 is larger than the EU overall average: 9% of all employees are aged 15-24 (see figure 3.2). The share of workers aged 50 years or older (25%) is smaller than is for instance the case in land (31%) or water transport (30%).

**Figure 3.2** Age of employees in warehousing and support activities for transportation (2010)

*Bron: Panteia, based on Eurostat LFS.*
Warehousing is male-dominated: 75% of the employees are male (see figure 3.3).

**Figure 3.3** Gender of employees in warehousing and support activities for transportation (2010)

![Gender of employees in warehousing and support activities for transportation (2010)](image)

*Bron: Panteia, based on Eurostat LFS.*

Some specific trends in logistics, that are influencing the demand for labour in this sector, are the following:

- In the dispatch business ever more diversification (i.e. blurring of the distinctions between branches) takes place. Road transport companies try to offer their customers added value by playing a part of the dispatching agency’s role. On the other hand, dispatching agencies more and more are also carrier, because they possess their own fleet or other means of transport. As a result of this diversification, dispatching agencies and road transport companies have grown towards one another. This puts pressure on the margins. Dispatching agencies have to be more efficient and flexible to keep the margins up to standard.

- The increasing demand for warehousing for the purpose of e-commerce gives an impulse to this sector. In the Netherlands, for instance, in 2012 the number of purchases via internet increased with 13% in an ever more shrinking retail trade market. The share of online purchases in the total retail spending was 6%. In the future, this share is expected to increase further.¹

**Labour mobility**

No specific information available.

**Job requirements/job types**

The increasing complexity and automation of work in logistics ask for ever more better and higher skilled personnel. Also, employees must be broader deployable

in different logistics functions\(^1\). According to ETF, there is a need for two types of employees: 1) highly skilled workers, and 2) people with no specific education.

**Prognoses labour demand 2010-2020**

In the framework of this project an employment forecast for the period 2010-2020 by broad transport subsector has been prepared. The model used comprised 10 EU countries (called EU10 here): Poland, Germany, France, United Kingdom, Italy, Spain, The Netherlands, Sweden, the Czech Republic, and Slovenia. These countries have been chosen in view of data availability and being representative for the transport sector in the EU27 as a whole. The model has been designed from basic economic principles, i.e. by deriving factor demand from expected production – which is exogenous – and relative factor prices assuming profit maximising behaviour by enterprises.

Table 3.2 gives a summary of the results of the forecast for production, labour productivity and employment in EU10 for the transport sector as a whole and the subsector logistics.

**Table 3.2** Summary results employment scenario 2010-2020 for EU10, transport sector as a whole and subsector logistics

| | transportation and storage excl. postal and courier activities; NACE Rev. 2 49-52 | | | | warehousing and support activities for transportation; NACE Rev. 2 52 | | | |
|---|---|---|---|---|---|---|---|
| | 2010/15 | 2015/20 | 2010/20 | average annual change in % | 2010/15 | 2015/20 | 2010/20 | average annual change in % |
| real gross value added (f.c.) | | | | | | | | |
| | 1.2 | 1.3 | 1.2 | | 1.3 | 1.3 | 1.3 | 1.3 |
| labour productivity | | | | | | | | |
| | 1.4 | 1.3 | 1.3 | | 1.9 | 1.5 | 1.7 | |
| total employment | | | | | | | | |
| | -0.1 | 0.0 | -0.1 | | -0.5 | -0.2 | -0.4 | |

Source: Panteia

Compared to the expected decrease in employment in the transport sector as a whole (in 2010-2020 annually -0.1%), the expected decrease in employment in the subsector logistics is relatively strong (-0.4%).

The 10 countries under review make up 73% of total employment in the EUR27 transport sector. Considering this, employment results for EU10 have been inflated to EUR27 by applying EU10 occupational-specific growth rates to 2010 employment levels for EUR27 (see table 4.1 in section 4.1).

Overall, employment of transport-related occupations is expected to remain constant over the next decade (in the period 2010-2020 annually 0.0%). However, there are decreases for the most important logistics occupations: crane, hoist and related plant operators, freight handlers and lifting truck operators (annually -0.1%, -0.2% and -0.1%). This is closely related to the expected employment decrease in logistics.

\(^1\) Tempo Team (2012). *Logistics Labour Survey 2012.*
3.2 Trends in supply

3.2.1 General trends in supply

As discussed in the main text of this report, the following trends hold for the EU transport labour market as a whole:

- **Workforce EU transport**: Total labour supply in transport-related occupations amounts to 11.2 million persons in EU27 in 2010. On average, two third has a job in the transport sector, others are working in other sectors of industry or are unemployed.

- **Ageing and the gender issue**: **Ageing**: The demographic pattern in transport is worrying: within ten to fifteen years a substantial part of the labour force will move into retirement. **The gender issue**: The transport sector is largely male-dominated. Besides this male working culture, also the less favourable job quality (employment and work quality) is a hindrance for women to work in the sector.

- **Labour market reserves**: Labour market reserves comprise amongst others the following categories: unemployed, returners, potential employees currently working in other sectors (horizontal inflow) and labour migrants. As concerns labour migrants, apart from Eastern EU nationals working in Western Europe, an important development is the increasing deployment of 3rd country nationals in the EU transport sector.

- **Prognoses labour supply 2020**: To forecast the labour supply for transport-related occupations in the period 2010-2020, two scenarios have been used. Scenario 1 keeps the current rates by age and occupation category constant. Scenario 2 assumes that for the 2010 cohorts participation rates do not change except for the oldest group. In scenario 1, total supply for transport-related labour decreases from 11.6 million persons in 2010, to 11.5 million persons in 2020, this is an average decrease of 0.1% annually. In scenario 2 the labour supply for transport-related occupations increases from 11.5 million persons in 2010, to 13.2 million persons in 2020, i.e. by 1.3% annually.

3.2.2 Specific supply trends logistics

**Ageing and the gender issue**

Compared to the transport sector as a whole, the average age of employees in logistics is low. According to the Logistics Labour Survey 2012, in the Netherlands in 2012 the share of employees in logistics younger than 50 years decreased while at the same the percentage of over-50 employees increased. This goes for most logistics professions/occupations. Apart from ageing, this has also to do with not extending annual contracts of younger employees as a result of the economic crisis. This type of contracts is less found amongst over-50 employees.¹

Labour market reserves
No specific information is available on this subject.

Experience/view of individual logistics companies
"We currently only have one employee from a different country. Dutch personnel is easier for communication purposes, however when crossing borders the working language is English. Thus, having more foreign employees would not be a problem."
Source: Enterprise survey by Panteia/PWC

Prognoses labour supply 2020
In scenario 1 the supply of the most relevant logistics occupations - crane, hoist and related plant operators, freight handlers and lifting truck operators - shows the same or lower growth rates (in 2010-2020 annually -0.1%, -0.3% and -0.2%) than average (-0.1%). In scenario 2 the picture is more diffuse. On average - across all transport-related occupations - supply increases by 1.3%. The percentages for crane, hoist-related plant operators, freight handlers and lifting truck operators are respectively 1.1, 1.3% and 1.5% (see table 4.1 in section 4.1).
4 Discrepancies EU logistics labour market

The section describes discrepancies on the EU logistics labour market. Successively, we go into quantitative discrepancies, qualitative discrepancies and information asymmetries.

4.1 Quantitative discrepancies

4.1.1 General quantitative discrepancies

We can speak of quantitative discrepancies where there are not enough sufficiently qualified school leavers or job seekers in (a subsector of) the transport sector as a whole (labour shortage) or where there are not enough vacancies to make use of the supply (labour surplus).

The following trends seem to hold for the EU transport labour market as a whole:

- Current labour shortages/surpluses: Many transport branches already report serious structural labour shortages, in particular for mobile jobs. As a result of the economic crisis, these shortages are temporarily mitigated.

- Prognoses labour shortages/surpluses 2020: In view of the ageing population in Europe and competition among transport branches and companies to attract (young) workers, labour shortages will cause serious problems for the transport sector in the future. Whereas the employment of transport-related occupations is expected to remain constant over the next decade, labour supply falls in both scenarios. The largest discrepancies are expected for aircraft staff, ship’s deck officers and pilots, and travel attendants and stewards. This is in particular cumbersome for the transport sector’s development because most of these specific occupations’ employment is found in the transport sector itself (by way of comparison: many drivers do not actually work in the transport sector).

4.1.2 Specific quantitative discrepancies logistics

Current labour shortages/surpluses

According to the Logistics Labour Survey 2012\(^1\) and Europhia Counsling\(^2\), logistics employers are not very much worried about labour shortages. About two third (67%) of the logistics employers (with 10 employees or more) do not consider it very likely that they will suffer from labour shortages in specific functions in the near future. This is remarkable as future shortages at the level of medium/higher vocational education are expected. A possible explanation is

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\(^1\) Tempo Team (2012). *Logistics Labour Survey 2012.*

\(^2\) Europhia Consulting (2009) *Global Survey on Outplacement Services within the Logistics and Supply Chain sector.*
that employers expect that the unsecure market situation still will hold on for a while and therefore shortages will not be probable.

**Experience/view of individual logistics companies**

"Just recently three vacancies were filled by 50 candidates. My expectations for 2015 and 2020 are that our company will grow with 10% each year. A difference is that these functions will mostly be occupied with full time workers. The amount of part-time workers is decreasing (10:5). It also depends on the job type.

In general, it is more difficult to recruit highly educated personnel (e.g. logistics/planning) compared to low educated personnel (e.g. forklift drivers). There is a big supply of low skilled job. The difficulty of recruiting highly educated personnel comes from lack of skills and experience. Currents educational programmes do not entirely match the companies' needs."

To address this problem we recruit interns and provide traineeships so the required skills and knowledge will be acquired on the job. The best way to recruit highly educated personnel is trough traineeships. Almost 50% of our trainee stays in the company. The rest of them go to similar companies where the same skills are required. Furthermore, good cooperation with educational institutes result in a positive image of the company among students/graduates and ensures that only the best students are recruited for traineeships/will enter the company. Besides these benefits, this is also a cheap solution"

Source: Enterprise survey by Panteia/PWC

**Prognoses labour shortages/surpluses 2020**

The table below compares the employment scenario for transport-related occupations in the transport sector with the supply of transport-related occupations in the whole economy. The results for the most relevant logistics related occupations are as follows:

- **Crane, hoist and related plant operators**: decreasing employment (in the period 2010-2020 annually -0.1%) and decreasing labour supply in scenario 1 (-0.1), and increasing labour supply in scenario 2 (1.1%).
- **Freight handlers**: decreasing employment (-0.2%), in scenario 1 decreasing labour supply (-0.1%) but in scenario 2 increasing labour supply (+1.3%)
- **Lifting truck operators**: decreasing employment (in the period 2010-2020 annually -0.1%) decreasing labour supply in scenario 1 (-0.2%) and increasing labour supply in scenario 2 (1.5%).
Table 4.1  Transport-related labour: employment in transport and labour supply in the whole economy, EU27, 2010 -2020

<table>
<thead>
<tr>
<th>occupational category</th>
<th>employment transport-related occupations in transport, EU27</th>
<th>supply of transport-related occupations, whole economy, EU27</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>employees (1,000s)</td>
<td>annual change</td>
</tr>
<tr>
<td></td>
<td>2010 2020 2010/20 (%) p.a.</td>
<td>levels (1,000s)</td>
</tr>
<tr>
<td></td>
<td>2010 2020 2010/20 (%) p.a.</td>
<td>annual change</td>
</tr>
<tr>
<td>supply, distribution and related managers</td>
<td>386 385 0.0</td>
<td>406 405 0.1</td>
</tr>
<tr>
<td>air traffic controllers</td>
<td>27 31 1.3</td>
<td>28 28 0.1</td>
</tr>
<tr>
<td>air traffic safety electronics technicians</td>
<td>13 15 1.7</td>
<td>40 39 0.1</td>
</tr>
<tr>
<td>aircraft pilots and associated professionals</td>
<td>39 46 1.7</td>
<td>50 50 0.1</td>
</tr>
<tr>
<td>bus and tram drivers</td>
<td>968 961 -0.1</td>
<td>1,326 1,341 0.1</td>
</tr>
<tr>
<td>car, taxi and van drivers</td>
<td>1,180 1,193 0.1</td>
<td>2,155 2,158 0.0</td>
</tr>
<tr>
<td>crane, hoist and related plant operators</td>
<td>24 23 -0.1</td>
<td>441 438 -0.1</td>
</tr>
<tr>
<td>freight handlers</td>
<td>295 290 -0.2</td>
<td>1,657 1,610 -0.3</td>
</tr>
<tr>
<td>heavy truck and lorry drivers</td>
<td>1,942 1,882 -0.3</td>
<td>3,314 3,284 -0.1</td>
</tr>
<tr>
<td>lifting truck operators</td>
<td>175 174 -0.1</td>
<td>684 672 -0.2</td>
</tr>
<tr>
<td>locomotive engine drivers</td>
<td>272 292 0.7</td>
<td>687 683 0.1</td>
</tr>
<tr>
<td>motorcycle drivers</td>
<td>58 57 -0.2</td>
<td>123 122 -0.1</td>
</tr>
<tr>
<td>railway brake, signal and switch operators</td>
<td>66 70 0.6</td>
<td>186 183 0.1</td>
</tr>
<tr>
<td>ships' deck crews and related workers</td>
<td>43 45 0.4</td>
<td>50 50 0.1</td>
</tr>
<tr>
<td>ships' deck officers and pilots</td>
<td>24 27 1.0</td>
<td>25 25 0.1</td>
</tr>
<tr>
<td>ships' engineers</td>
<td>25 27 0.8</td>
<td>69 69 0.1</td>
</tr>
<tr>
<td>transport conductors</td>
<td>174 186 0.7</td>
<td>183 182 0.1</td>
</tr>
<tr>
<td>travel attendants and travel stewards</td>
<td>168 196 1.5</td>
<td>177 176 0.1</td>
</tr>
<tr>
<td>total</td>
<td>5,879 5,899 0.0</td>
<td>11,601 11,514 0.0</td>
</tr>
</tbody>
</table>

Source: Panteia

4.2 Qualitative discrepancies

4.2.1 General qualitative discrepancies

Qualitative discrepancies occur where there is both sufficient supply of labour and a sufficient number of vacancies, but where the demands and wishes of employees and employers regarding level of qualification, content and organisation of the work diverge.

The following trends hold for the EU transport labour market as a whole:

- **Current skills shortages and deficiencies in training and career opportunities**: Training employees is required in order to meet up with increasing requirements. Training opportunities for employees are limited (especially for low-educated and old workers), but improving.

- **Human capital perspective: prognoses skill shortages 2020**: For this element it is referred to the Working Document containing job quality.

- **Job quality**: Job quality contributes to the working image of a sector and/or profession and by that to the possibilities to recruit and retain personnel. A distinction can be made between employment and work quality. Employment quality: Pay is relatively low in most transport professions and occupations. Delocalisation of transport jobs and social dumping practices occur. To cut costs, pension and early retirement schemes are being restructured. Working times are often irregular and in particular mobile workers have to cope with regular and (very) long absences from home. Possibilities for part-time work are less than in other sectors. Work quality: Work autonomy in transport is relatively low. Problems caused by heavy physical work have been replaced by stress derived from time-pressures and efficiency improvements, thereby shifting from physical to social or psychological problems. Transport is with reason considered a dangerous activity (occurrence of accidents, public violence, organized crime/piracy). Work intensity has increased (due amongst others to increased traffic congestion and the use of ‘lean’ strategies or increasingly tight scheduled transport services)
• **Job attractiveness**: The satisfaction of transport workers with working conditions (2.88 on a 4-point scale) and their motivation to perform (3.42 on a 5-point scale) are higher than their satisfaction with wage (2.97 on a 5-point scale). The three variables influencing satisfaction with working conditions the most are: 1) job giving the feeling of work well done; 2) working hours fitting in with family or social commitments; 3) feeling of possibly losing job. The three variables influencing satisfaction with wage the most are: 1) satisfaction with working conditions (another main indicator); 2) wage; 3) job giving the feeling of work well done. The three variables influencing motivation to perform the most are: 1) having good friends at work; 2) satisfaction with working conditions (another main indicator); 3) feeling of doing useful work.

• **Quality of life**: In general, a strong relationship exists between job quality and life satisfaction of workers.

4.2.2 Specific qualitative discrepancies logistics

**Current skills shortages and deficiencies in training and career opportunities**

The increasing complexity and automation of work in logistics ask for ever more better and higher skilled personnel. Also, employees must be broader deployable in different logistics functions. Therefore, according to Logistics Labour Survey 2012 training of employees is at the top of the HR-agenda of logistics employers (72% of the employers stated that training is on the HR-agenda).

In the view of ETF, in practice the training of logistics employees is not sufficient. In most transport companies a basic form of training takes place, most companies educate their own employees. In addition in some countries in Europe training is organised. However it should be mentioned that regarding the provision of training for non-mobile warehousing workers in road transport companies, the characteristics show extremely pronounced differences in the various countries visited, ranging from a poor supply of training courses to a highly developed training scheme with courses recognized and referenced in national qualifications frameworks.

<table>
<thead>
<tr>
<th>Experience/view of individual logistics companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational programmes do not seamlessly connect with the desired skills required on the work floor; theory is not equal to practice. However, these specific skills differ within each company thus I believe it is good that a broad and general range of knowledge is provided.</td>
</tr>
<tr>
<td>Students/graduates learn the specific set of skills on the job. In my opinion, it is not useful if we demand changes in the current educational and training programmes.</td>
</tr>
<tr>
<td>In our company, interns or trainees are considered to be fully fledged employees. They will make mistakes, but are allowed to. We believe this is the most effective and efficient way to translate theory to practice.</td>
</tr>
</tbody>
</table>

Source: Enterprise survey by Panteia/PWC

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3 IRU, ETA, AEFT-IFTIM, Starts project, http://starts.iru.or,2009
Research into training and education courses has revealed the existence of a wide variety of logistics training programmes in a number of countries. This has also inspired and improved vocational training.

Notably the countries, that created sectoral job nomenclatures in order to give more consideration to logistics from an employment and training perspective, may also benefit from these tools supporting their efforts of defining, establishing and assessing training for logistics jobs.

The data collected in various countries prove that access to the "basic" logistics jobs (unskilled workers, ISCO 933 group - handlers, order pickers) is possible without any specific diploma. In the recruitment for these positions, two situations emerge: in the first case, companies prefer to recruit candidates who have no previous experience in logistics and to train them in house. This may be explained by some specificities of the activity and the willingness to avoid some adverse effects of previous experiences or the employee's resistance to change; and those preferring to recruit only people with prior logistics experience even for the basic jobs want to make sure the personnel is immediately deployable and financial investments in training are not necessary. Warehouse activities within companies may be performed by warehouse workers without a nationally recognized vocational training. Some companies offer their own initial or further training courses for warehouse workers, which are tailored to their specific needs. These training courses are not nationally recognized but categorized as a kind of trained activities or semi-skilled activity. In most cases, the training for elementary logistics jobs (handlers, helpers and unskilled workers) is done in the companies and taught by an internal trainer. Beginners are trained on safety rules, goods movements and work postures, fire prevention and first aid at the workplace. Even if no certificate is required to perform these elementary occupations, the employee might be asked to sign a disclaimer form at the end of the probationary period confirming that he/she attended the course and that he/she is properly informed about safety and health rules.

Notably a certificate of forklift truck operator can be the first stage to move from an elementary occupation towards a more qualified job, yet the certificate is not considered as a qualifying diploma. It can be integrated in training programmes for vocational training of longer duration - 2-3 years (like Skilled workers for store logistics, Skilled store assistants, Master craftsmen etc.). Training to become a forklift driver is usually provided at external training centers, but the trainers can also provide the theoretical courses for a group in the company's premises. A specific certificate is provided after passing the examination including theory and practice. The certificate might require a renewal or refreshing course every year or every 5 years.

**Human capital perspective: prognoses skill shortages 2020**
For this specific element it is referred to the Working Document on job quality.

**Job quality (excl. training and career opportunities)**

*Employment quality: Remuneration and benefits*

The potential earnings are an important determinant of the attractiveness of the logistics sector for employees.
Table 4.2 shows the average wage per employee in 2009, for four broader transport sectors compared to the total business economy (excl. financial and insurance activities) in the EU 27 (based on EUROSTAT’s Structural Business Statistics – SBS).

**Table 4.2 Average wage per employee by broader transport sector in the EU 27, 2009 (in Euro’s)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Total business economy except financial and insurance activities</th>
<th>Land transport and transport via pipelines</th>
<th>Water transport</th>
<th>Air transport</th>
<th>Warehousing and support activities for transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Union (27 countries)</td>
<td>23.666</td>
<td>21.351</td>
<td>n/a</td>
<td>49.503</td>
<td>27.992</td>
</tr>
</tbody>
</table>

Source: SBS (Eurostat)

Compared to the total business economy (excl. financial and insurance activities) average wage per employee in the logistics sector is higher (€23.666 against €27.992).

**Employment quality: Job flexibility (working hours, working time arrangement, time flexibility)**

Logistics, as transport in general, is becoming a 7/24 business where extreme flexibility is required in order to cope with the ever changing circumstances in logistic transport chains. It requires specific personal skills to deal with ever changing conditions and alertness over long periods.

**Employment quality: Job security**

According to the Logistics Labour Survey 2012, logistics companies often have an extensive – and still increasing - ring of flexible employees (i.e. employees without a permanent employment contract). In the Netherlands, at the moment this flexible ring amounts to about 30 to 40 percent of all employees. In that way, logistics companies can adapt to the labour demand, which heavily fluctuates as a result of the business cycle. By that, they are less vulnerable in case of an eventual structural drop in business. The trend in logistics is to stay flexible to the max, by means of a differentiated workforce: next to young and old employees on permanent contracts also people who prefer to work part-time and temporary. This asks, however, for an adequate management of the in- and outflow of employees, Knowledge and experience have to be retained/ transferred, training and settling-in processes have to be standardised. A qualitative fit of employees with the company is crucial to maintain the company culture.¹

Employment quality: Employee participation
Limited information is available on employees participation of workers in the logistics sector. Representation in Sectoral Dialogue is less prominent than in the real transport sectors.

Work quality: Work autonomy
Working in logistics requires a high level of work autonomy although levels of control are increasing, which is made possible by various IT-technology.

Work quality: Physical working conditions, health variables and risks of accidents
Physical working conditions, health variables and risks of accidents in logistics are typically not optimal, although this varies widely by region or company.

Work quality: Psychosocial risk factors
Limited information is available on the psychosocial risk factors of work in the logistics sector.

Work quality: Intensity of work
The intensity of work in the logistics sector is typically high and frequently requires work in shifts and night-time.

Work quality: Meaningfulness of work
Limited information is available on the sense of meaningfulness of work in the logistics sector.

Job attractiveness
The attractiveness of jobs in the logistics sector depends strongly on the quality of the jobs in this sector. As described above, job quality is a multidimensional concept that covers many different aspects, varying from wages, formal training and (flexibility in) working hours to health implications of work, work autonomy and the meaningfulness of work.

The European Working Conditions Survey (EWCS) contains indicators of aspects of job quality/job attractiveness. The table below compares the for the four broader transport modes to the total of all sectors.
### Table 4.3 Employees’ experience/perception of aspects of job quality/attractiveness by broader transport mode, compared to the total of all sectors (2010, EU27)

<table>
<thead>
<tr>
<th></th>
<th>Land</th>
<th>Water</th>
<th>Air</th>
<th>Warehousing and support activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes of work schedule (no)</td>
<td>-</td>
<td>o</td>
<td>-</td>
<td>o</td>
</tr>
<tr>
<td>Involvement in work organisation/processes (always)</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Employee representation (yes)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Raising issues with employee representative (yes)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>On-the-job training (yes)</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>More secure jobs because of training (yes)</td>
<td>0</td>
<td>n.s.</td>
<td>n.s.</td>
<td>+</td>
</tr>
<tr>
<td>Better employment prospects because of training (yes)</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Solving unforeseen problems on one’s own (yes)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Exposure to vibrations form machinery etc (never)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Exposure to loud noise (never)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Exposure to breathing in vapours (never)</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Involvement of tiring or painful positions (never)</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>o</td>
</tr>
<tr>
<td>Involvement of repetitive hand/arm movements (never)</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Health or safety at risk because of work (no)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Health affected by work (no)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Short repetitive tasks (no)</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Ability to choose/change speed/rate work (yes)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Feeling of doing useful work (always)</td>
<td>-</td>
<td>o</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Emotionally involved in work (always)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

+ = above average; o = average; - = below average
n.s. = not significant

Source: EWCS 2010

The EWCS also contains the following indicators of overall job quality/job attractiveness:

- Satisfaction with working conditions (how satisfied respondents are with working conditions in their main paid job; measured on a 4-point scale).
- Satisfaction with wage (the extent to which respondents find that they are well paid for the work they do; measured on a 5-point scale).
- Motivation to perform (the extent to which respondents feel motivated by their organisation to give their best job performance; measured on a 5-point scale).
Table 4.4 Indicators of overall job quality/job satisfaction by broader transport sector (2010, EU27)

<table>
<thead>
<tr>
<th>Transport sector</th>
<th>Satisfaction with working conditions (4 point scale)</th>
<th>Satisfaction with wage (5 point scale)</th>
<th>Motivation to perform (5 point scale)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>St.dev.</td>
<td>Mean</td>
</tr>
<tr>
<td>Land transport and transport via pipelines</td>
<td>2.89</td>
<td>0.72</td>
<td>2.91</td>
</tr>
<tr>
<td>Water transport</td>
<td>3.14</td>
<td>0.75</td>
<td>3.74</td>
</tr>
<tr>
<td>Air transport</td>
<td>3.18</td>
<td>0.66</td>
<td>3.4</td>
</tr>
<tr>
<td>Warehousing and support activities for transportation</td>
<td>3.01</td>
<td>0.66</td>
<td>3.22</td>
</tr>
<tr>
<td>Total transport sector</td>
<td>2.94</td>
<td>0.72</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: EWCS 2010 (Eurofound)

The satisfaction with working conditions of employees in the transport sector as a whole and their motivation to perform are higher than their satisfaction with wage. This also goes for logistics employees. Logistics employees score (somewhat) higher on satisfaction with working conditions and satisfaction with wage than the total group of transport employees. The score on motivation to perform is more or less comparable to the score of the total group of transport employees.

4.3 Information asymmetries

4.3.1 General information asymmetries

In the case of labour market information asymmetries, the demand and supply should actually be balanced, but employers and job seekers are unable to find to one another due to job search and recruitment strategies that do not respond to each other. This may also be induced by flawed images of the (sub)sector or of (groups of) job seekers (or groups thereof) which prevent a better match of supply and demand.

The following trends hold for the EU transport labour market as a whole:

- **Working image**: In general, the working image of the transport sector is less favourable, mostly related to job quality (employment- and work quality). The sector is also seen as male-dominated and old-fashioned and conservative. Partly, the negative image is a matter of perception and/or lack of knowledge.

- **Comparability/compatibility**: As the labour market is becoming more and more international, it becomes a problem if qualifications used in various countries are difficult to compare.

- **Recruitment**: Many modes still use traditional types of recruitment. In general, in recruitment the transport sector does not focus on specific target groups, such as women.
### 4.3.2 Specific information asymmetries logistics

**Working image**
The logistics sector suffers from a weak working image. This is partly due to unawareness with the actual work in the sector.

A Dutch study by IPN/KidWise amongst lower educated youngsters working in this sector, showed that they miss appreciation and recognition of their jobs. They also miss career opportunities as often are not aware of the possibilities to move up within the company. All in all, at the moment the sector is not attractive for the new generation ('Generation Y'). According to this study, at the moment employers seem to underestimate this problem. Unless they try to be more attractive to youngsters, they will be in trouble when in the coming years the baby boomers will leave the sector en masse.

Also amongst higher educated younger people, the image of the logistics sector is not very positive. An international survey by Euphoria amongst European and Asian 'young professionals' graduated in logistics, showed that not even half of them (47%) was working in a logistics company. To the question where they prefer to work in the future, only 31% mentioned logistics. The young professionals prefer a job at a production company (38%) or a consultancy agency (39%). They think that those sectors are more interesting and challenging to work in. Furthermore, just as lower educated youngsters, students and graduates in logistics lack insight in career opportunities in the sector (only half of them are more or less aware of these opportunities).

**Comparability/compatibility**
Jobs in logistics are mostly comparable with in Europe however most are not yet looking across national borders to recruit. Some companies are already hiring highly experienced specialists and managers from competitors and in some cases even from other industries for which expertise is necessary. This type hiring can work in both directions, so it becomes important to retain skilled staff that is already on board.

For younger generations in Europe in general, a specific diploma is not seen as determining factor for recruitment. The lack of a diploma is not an impediment to hiring. However, having a diploma may make a difference, when several candidates are considered for the same position. A career in logistics can be started from the lower employment ranks and in general no blockade into the higher echelons of a company exists.

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1. PWC 2012 Transportation & Logistics 2030 Volume 5: Winning the talent race
3. IPN/KidWise (2010) *Onderzoek naar werken in de productie logistiek*; Article 'Alleen losers blijven in de logistiek', ON: Logistiek.nl, 1 June 2011
5. Euphoria (2008)
Recruitment
For logistics more business and finance professionals are required, the skills they need requires much knowledge about regulations and environmental issues, but also about finance, trade including new types of trade like energy exchanges and environmental issues. For the development of markets in international logistics it is important that more sales professionals are employed, the following skills are becoming more important: communication, networking, language skills and intercultural understanding.

Still for the lower ranks the minimum recruitment requirements are a minimum age of 18 and good physical and mental abilities of the candidate. When talking about age, another aspect is that candidates with an age beyond 45-50 in general it is not preferred recruit candidates for warehousing jobs and particular for jobs requiring physical strength (handler, order picker).

Among the skills a good orientation in an enclosed space, knowledge of the work specificities in a warehouse, the adaptation of posture, movements and speed, the ability to handle heavy loads manually as well as the tools and lifting equipment available in the warehouse and stress resistance, awareness of occupational health and safety and quality awareness. Even if these jobs are very demanding physically, recent trends in the automation and computerisation of logistics processes show a growing demand for skills in computers and warehouse software but also knowledge of foreign languages (to facilitate communication with truck drivers, to read product labels, etc.). These results show that almost a third of the required skills for a logistics operator concern computers and new technologies. Beyond being able to carry out the physical handling, it is important to be able to generate and receive information flows.

In this context, being able to carry out a multitude of tasks and the associated flexibility seem to be important criteria but differences exist. Depending on the warehouse sizes and hierarchical structures of companies (the smaller the warehouse, the more flexible the hierarchical boundaries and the higher the range of skills).
5 Reduction of discrepancies EU logistics labour market

5.1 Introduction

Theoretically, the following strategies for reducing discrepancies on the transport labour market can be distinguished:

1 More **general solutions influencing the context** of the (transport) logistics labour market
2 Promoting inflow:
   - **A. Targeting labour reserves** in order to attract new employees to the sector including the recruitment of the unemployed and other groups currently not working in the transport sector, existing immigrant groups and labour migrants.
   - **B. Stimulating and facilitating education for potential employees** among others the creation of new specific learning paths, of campaigns stimulating people to choose for an educational and occupational path in the sector and of an institutional improvement of the connection between labour market and education in general.
3 Preventing outflow/ diminishing labour demand:
   - **A. Improving the situation of current employees** in order to optimize their potential as well as prevent them from leaving the sector for instance by the introduction of (re)training programs, professionalising the sector and providing more career perspectives for existing employees and improving the working conditions.
   - **B. Improving the operational management/ labour productivity** of organisations for example through the use of new technologies, treatment methods etc. and/or (innovative) changes in functions and organisation.

As discussed in the main text of this report, solutions in all of these categories are relevant for the EU transport labour market as a whole.

5.2 General solutions to discrepancies in logistics

*Political and legal*

*EU policies, programs and regulations*

Liberalisation is ongoing in most sectors and specifically in the logistics sector which is accessible for many companies from different background (postal services, railway undertakings, road hauliers, etc.) and even in an international context. This will lead to a flexible labour market that will be difficult to develop policy for. This is one of the challenges in order to create level playing field in Europe. This can lead to productivity differences in Europe for similar activities. For example, in some countries in Europe parcel services are allowed to operate with 25.25 metre trucks (Long and Heavy Vehicles-LHV). This gives a logistics sector in a country an advantage over where countries where LHV is not allowed.
Social dialogue
A social dialogue for logistics would be advisable. However this starts with a clear definition of which sectors would clearly encompass the logistics sector. One unified definition would be advisable as this creates level playing field in Europe.

Economic and social
As woman participation in logistics is higher than other parts of the transport market, it still is a pool where recruitment can take place. Also elderly employees are more fit for the logistics sector than other parts within the transport sector.

Technological and environmental
There is a need for a greater emphasis on technical skills development, including critical e-skills (ICT-related skills and competencies). The increasing use of ICT in Operations will increase efficiency: ICT will infiltrate the sector and increase productivity.

Safety and security is in some cases a specific issue in logistics. For a good practice the Shell’s Quality Health Safety Security and Environmental (QHSSE) system in Denmark for the outsourcing of deliveries to petrol stations and safety is referred to. This system has been described in “Managing risks to drivers in the road transport sector”

5.3 Promoting inflow

Targeting labour reserves
As mentioned previously, women are largely underrepresented in the workforce. Actions could be targeted towards certain gender aspects.

Stimulating and facilitating education for potential employees

Improving the image of (study and) work in the sector
A way to improve the image of the sector is to address internal aspects of the logistics sector; by improving internal conditions the image of the sector will improve as well. Additionally, where media and information campaigns are held (also in aid of improving the image of the sector), these should be wide spread and broad in scope, reaching new pools of workers and looking beyond the usual sources of employees. Image campaigns should also be more focused on the logistics sector and students of logistics, rather than the transport sector as logistics is far broader than transport alone.

According to Europhia Consulting logistics companies should better promote the career opportunities within the sector.

2 ABN AMRO (2012), Logistieke Arbeidsmarkt: Úw Uitdaging.
Initial VET/ VET standards
A relevant organisation in this field is the European Logistics Association (ELA). The goal of the European Logistics Association is to provide a link and an open forum for any individual or society concerned with logistics within Europe and to serve industry and trade. ELA formulates European Logistics Standards and encourages the acceptance of these standards on an international basis.

At the moment, ELA is in the middle of restructuring the ELA Standards on the European Qualification Framework, short EQF. This framework is an initiative from EU DG Education and Training and offers this translation device to make national qualifications more readable across Europe, promoting workers’ and learners’ mobility between countries and facilitating their lifelong learning\(^1\).

5.4 Preventing outflow/ diminishing labour demand

Improving the situation of current employees

Training and career opportunities
As logistics in general is a dynamic market segment characterised by mergers and acquisitions. The fact that the workforce in transport and logistics is male and old leads to the conclusion that something needs to be done. In 2005 only 21.1% of the people working in transport were women. Only 17.5% of the workforce is in the age group 15 to 29. Training and career opportunities can keep the motivation high.

Employment quality
Logistics is a growing sector with increasing productivity due to increasing ICT applications. At the same time it is a sector that requires besides knowledge about complex global networks also knowledge about practical issues in high-level jobs. So career can opportunities will rise. Most of the time the logistics is about connecting different transport opportunities to one supply chain and is thus not very physical work. Moreover in warehouses a lot of automation is applied. Recently messages have spread that work in physical distribution centres in peak periods can be very stressful as productivity is accurately measurable.

Work quality
Creating ‘elder-friendly’ workplaces will be a challenge. With older workers making up a greater part of the workforce, companies will need to rely on them more. The question is whether transportation and logistics companies can adapt work environments to the needs of older workers in order to avoid losses in productivity and quality.

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2 http://www.elalog.eu.
Improving the operational management/labour productivity
Deploying smart ICT solutions contributes to a good organisation of transport and logistics. Companies use ICT to improve the efficiency and to maximize returns. The need for ICT solutions in logistics has increased, good and timely information are more important than ever. Logistics companies see ICT as crucial. However, according to ING at least in the Netherlands an end has come to many years’ growth automation level. ¹

According to ABN AMRO, strategic partnerships between shippers and logistic service providers are a prerequisite for a better performance and a greater profit potential of logistics companies. This means that they have to tag along intensively in order to innovate the logistics sector and to be distinguishing. To realise this, both parties should seriously invest in developing the ‘simple’ client relation into a full strategic partnership.

Another trend that is seen is social innovation. The term "social innovation" is relatively new, but the concept itself is not. There are many examples of social innovation such as a personal budget for an employee for skills development.

What is social innovation exactly: “Social innovations are new ideas (products, services and models) that simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations”³.

The solutions are both social in their ends and in their means. They can take the form of genuine innovations or of improved solutions. In some parts of Europe, the term "social innovation" refers to what the European Commission calls workplace innovation. In some cases it can be shown that social innovation leads to productivity gains in logistics. Notably in the Netherlands there is attention paid to this aspect⁵.

¹ ING Sectormanagement Transport & Logistiek (2012). ICT in transport en logistiek. Voorsprong door initiatief en focus. This study has been carried out by Panteia in commission of ING.
² ABN AMRO (2013). Logistieke waarde creëer je samen. This study has been carried out by Panteia in commission of ABN AMRO.
³ Open Book of Social Innovation, Murray, Calulier-Grice and Mulgan, March 2010
⁴ Personeel en Arbeidsmarkt, Sociale innovatie, vertrouwen creëert waarde, December, 2013
6 Conclusions and recommendations

This Chapter presents the main conclusions drawn from this study with regards to the maritime labour market, including ports. It is based on the information in this Annex 12 and on information presented in the main report. The last section presents a set of recommendations.

6.1 Sub-sectors and job types

There is no clear definition of the logistics sector. Some authors consider all transport modes together as the logistics sector. Others refer to a specific definition some activities of which the most visible are warehousing and SCM-activities. Express Carriers (272,000 workers (full-time equivalents) in Europe in 2010) are a good example of a service that can either be included or excluded. One of the more useful definitions is that while most activities in transport modes are dynamic with regards to moving goods physically from A to B, logistics are activities in one location (warehousing, sorting, order picking, etc.).

In this study, logistics comprises the following three sub-sectors:
• Supply Chain Management (SCM);
• Warehousing;
• Distribution.
It should be noted that it is not the activity as such, but rather the nature of the enterprise (basically: the main activity) that defines the sector.

The relevant job types in logistics considered in this report are:
• Drivers (truck, van, forklift and other equipment);
• Freight handlers;
• Logistics and storage staff;
• Supply chain management;
• Management;
• Back-office;
• Maintenance staff.
Many logistical functions are carried out in non-transport and transport sectors alike. All transport modes know logistical functions. For example, non-mobile warehousing workers are working in the road transport sector. Many of the problems and solutions in this study are therefore, relevant for both logistics and all other transport modes. Vice versa, the same is (in part) applicable. As a reminder, the following table for the transport sector as a whole.

<table>
<thead>
<tr>
<th>Table 6.1</th>
<th>Overlap between transport occupations and transport sectors, for EU (number of observations in EWCS 2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation</td>
<td>Sector</td>
</tr>
<tr>
<td>Transport occupation</td>
<td>948</td>
</tr>
<tr>
<td>Other occupation</td>
<td>592</td>
</tr>
<tr>
<td>Total</td>
<td>1,540</td>
</tr>
</tbody>
</table>

Source: EWCS 2010 (Eurofound)
In 2010:
- logistics accounted for 29.0% of the employment in the sector transportation and storage (excl. postal and courier activities) as a whole in the EU 27;
- in total 2,705,900 persons were employed in logistics (against 2,729,800 in 2009 and 2,870,900 in 2008);
- a large majority (2,313,800) of the employment in logistics in 2010 was in warehousing and storage and a small minority (392,100) in support activities for transportation.

6.2 Data and literature

As discussed, data on logistics suffers from statistical problems with regard to defining modes and professions. There is some data available, however, more often than not, it is incomparable.

Literature on the logistics labour market is rare, at least in the international context.

Given the findings above, it is clear that the lack of information and definition problems hampered this study. The results on logistics are meagre. With focus on the importance of logistics – in the sense of modes, professions and activities alike – it is highly advisable to do a series of labour market studies focussed solely on logistics. This should cover all three dimensions and preferably combined, as it is clear the labour market of neither employers nor employees can be singled out in policymaking.

6.3 Social dialogue

As yet, there is no Sectoral Social Dialogue Committee for the logistics sector. To a limited extent, logistics are covered in other transport modes, specifically the road sector.

6.4 Logistics undertakings and policies

As discussed, logistics can cover many sectors, professions and activities. A relatively large part of the work requires little training. In addition, many logistic undertakings have to deal with peak periods. Logistics companies often have an extensive – and still increasing - ring of flexible employees in order to be able to adapt to the heavily fluctuating labour demand. This makes jobs more accessible to more categories of employees, such as women and elderly people, than in the other transport modes.

The logistics sector (narrowly defined) has been realising low margins as a result of the economic crisis for many years. Consequently, business operations know a strong emphasis on cost reduction. (Necessary) investments are under pressure.

In the dispatch business more diversification is taking place. As a result, dispatching agencies and road transport companies have grown towards one another, putting pressure on the margins.
6.5 Demand and supply of labour and skills

6.5.1 Panorama 1: Current situation

The logistics sector is highly sensitive to the business cycle. When the economy flourishes, labour demand in logistics is substantially higher than in economically less prosperous times. A decline of activity in 2008-2009 took place due to the economic crisis.

The results of the targeted stakeholder consultation indicate that, in logistics, labour shortages are common. Close to half of the enterprises indicate they are currently experiencing skill or labour shortages.

One of the main factors determining labour demand characteristics is automation in warehouses. The increasing complexity and automation of work in logistics requires better and more highly skilled personnel. In addition, employees must be broader deployable in different logistics functions\(^1\). The challenge for transport and logistics companies will be to attract candidates for the jobs offered within the sector and the challenge for training centres will be to develop and provide the adapted training schemes in line with the evolving requirements on the labour market.

The increasing demand for warehousing for the purpose of e-commerce gives an impulse to this sector.

6.5.2 Panorama 2: Window 2015-2020

The demand for logistics occupations is expected to grow over the next years. Nevertheless, a distinction is to be made between occupation categories. In particular, this increase is expected for forwarding clerks, logistics workers and warehouse logistics workers, while the demand for warehouse occupations is expected to decrease as a consequence of the automation mentioned above. Slightly more than half of the enterprises in the consultation expect shortages in 2015-2020. Roughly one third is expecting redundancies, that can of course happen at the same time in one enterprise, in case of qualitative mismatches.

According to the Logistics Labour Survey 2012\(^2\) and Europhia Consulting\(^3\), logistics employers do not seem to be worried about labour shortages. Roughly two thirds (67%) of the logistics employers (with 10 employees or more) do not consider it very likely that they will suffer from labour shortages in specific functions in the near future. This is remarkable, as future shortages at the levels of medium/higher vocational education are expected. A possible explanation is

\(^1\) European Commission (2011) Transport and logistics Comprehensive sectoral analysis of emerging competences and economic activities in the European Union, y TNO et al.


\(^3\) Europhia Consulting (2009) Global Survey on Outplacement Services within the Logistics and Supply Chain sector.

that employers expect that the unsecure market situation still will continue on for a longer period and therefore, shortages will not be probable.

In comparison to the expected decrease in employment in the transport sector as a whole (in 2010-2020 annually -0.1%), the expected decrease in employment in the sub-sector logistics is relatively high (-0.4%). There are decreases in employment expected in the period 2010-2020 for the most important logistics occupations: crane, hoist and related plant operators, freight handlers and lifting truck operators (annually -0.1%, -0.2% and -0.1%). Labour supply is expected to decrease slightly in scenario 1 (general trends’ and to increase (around 1.3% annually) in scenario 2 (assuming increasing participation older workers). However, the possible impact of further automation has most likely been underestimated.

6.6 Attractiveness of working in the sector

The satisfaction with working conditions of logistics sector employees and their motivation to perform are higher than their satisfaction with their wages. Logistics employees score (somewhat) higher on satisfaction with working conditions and satisfaction with wages than the total group of transport employees combined. In comparison to the total business economy (excl. financial and insurance activities), the average wage per employee in the logistics sector is higher. Motivation to perform is more or less comparable to the score of the total group of transport employees.

Some specific aspects of working in logistics relevant for its attractiveness are:
- Low wages for some professions;
- High work pressure; notably stress of order picking in peak periods can be very stressful and physically demanding
- Social dumping may occur. Payment per object rather than per hour is an example of a risk in this context.

The severe competition in postal and other markets and the unclear situation of the definition of the logistics sector that allows multiple firms to operate on the logistics market, this hampers Social dialogue.

Logistics is said to suffer from a weak working image, partly due to unawareness with regards to the actual work and the career opportunities within the sector. Lower educated young employees miss appreciation and recognition for their jobs and in addition, amongst higher educated younger people, the image of the logistics sector is not seen as positive.

In warehousing and support activities for transportation 87 fatal accidents occurred in 2011, 14% of all fatal accidents in transport in EU27\(^1\). The fatal incidence rate in warehousing was 3.41. So, on average more than 3 out of 100,000 workers in warehousing died in a job-related accident. This is well below the fatal incidence rate of all EU27 transport in 2011 (5.75).

\(^1\) Non-fatal and fatal incidence rates of individual transport modes in 2008-2010 are not available.
Nearly 68,000 non-fatal accidents occurred in warehousing in 2011. In 87% of those accidents male workers were involved. The number of non-fatal accidents in warehousing is fluctuating in 2008-2011: the number decreased in 2009, increased in 2010 and again decreased in 2011. The non-fatal incidence rate of EU27 warehousing was nearly 2.700 in 2011 mirroring the non-fatal incidence rate of all EU27 transport.

In postal and courier services 19 fatal accidents occurred in 2011, 3% of all fatal accidents in transport in EU27. The fatal incidence rate in postal and courier services was 1.09. So, on average approximately 1 out of 100.000 workers in postal and courier services died in a job-related accident. This is well below the fatal incidence rate of all EU27 transport in 2011 (5.75).

Approximately 44.500 non-fatal accidents in postal and courier services occurred in 2011. In 57% of those accidents male workers were involved. The number of non-fatal accidents in postal and courier services is decreasing since 2008. The non-fatal incidence rate of EU27 postal and courier services was just over 2,500 in 2011; slightly beneath the non-fatal incidence rate of all EU27 transport.

6.7 Education, training and certification

Qualification is not always the main recruitment criterion for the logistic jobs. Usually, motivation and attitude of the candidate are higher rated than the candidate’s qualifications or training. This is probably due to the fact that no high levels of qualification are required to practice professions like freight handlers and lifting-truck drivers.

Member States have not provided sufficient data to delineate any EU-wide trend or define any EU-level state of the art in qualification granting for logistics-related professions. It is worth considering that the limited number of responses received is probably due to the fact that the required training is often supplied directly by the employees. This statement is supported by the results of the Logistics Labour Survey 2012: training of employees is at the top of the HR-agenda of logistics employers (72% of the employers stated that training is on the HR-agenda). However, non-mobile warehousing worker characteristics show extremely pronounced differences in various MS, ranging from a poor supply of training courses to a highly developed training scheme with courses recognized and referenced in national qualifications frameworks.

According to the limited data supplied by Member States, the professions like Freight handlers, crane, hoist and related plant operators, present a quite limited duration of educational and training path. These professions present an increasing trend in the last three years concerning qualifications granted, which is nevertheless in contrast with the lowering demand over time across Europe.

6.8 Conclusions: bottlenecks and risks

The main problems in the logistics sector labour market that have been identified in this study are:

- Many logistic jobs are outside the logistic sector and even outside transport.
- The nomenclature of jobs is problematic. Consequently, the same holds for training, job mobility, etc.
- Almost no data and studies are available.
- There is no social dialogue at EU level.
- Some professions: bad working conditions.
- High work pressure.
- Risk of social dumping.
- Possible shortage of better and higher skilled employees.

6.9 Policy suggestions

6.9.1 Definitions and knowledge

As discussed, many logistic jobs and activities are found outside the logistic sector, or even outside the transport sector in general. The nomenclature of jobs is problematic. As a result, the same can be said about training, job mobility, etc. In addition, there is a likely relation with the general lack of data and labour market studies. Even the missing social dialogue at EU level may find its ground in this.

Although the definition problem cannot be solved as such, it is however, recommendable to find ways to work around this in order to increase insight in the sector and create room to implement policies. One of two choices can be made here, depending on the context:
1. Include only the logistics sector, narrow definition.
2. Include all sectors (modes) that represent a substantial share of logistic activities.

6.9.2 There is no social dialogue at EU level

A social dialogue for logistics would be advisable. However, this starts with a clear definition of which sectors would clearly encompass the logistics sector. One unified definition would be advisable as this creates a level playing field throughout Europe.

6.9.3 Some professions: bad working conditions.

The information collected is insufficient to enable drafting policy suggestions.

6.9.4 Risk of social dumping

The information collected is insufficient to enable drafting policy suggestions.
6.9.5 Possible shortage of better and more highly skilled employees

Transparency of the quality of training could be enhanced. More general, the trans-national recognition of vocational qualifications should be improved. The European Logistics Association (ELA) is currently restructuring the ELA Standards on the European Qualification Framework (EQF), making national qualifications more readable across Europe, promoting workers' and learners' mobility between countries and facilitating their lifelong learning.

Co-operation in sector-specific training measures stimulates the development of flexible and up-to-date training offers; joint training facilities reduce costs, especially for SMEs. Support is needed from national training bodies and sectoral social partner organisations. It is possible that best practices already exist in some Member States.

Vocational education and training (VET) could be adapted and modernised, first on a national basis followed by the EU as a whole. Courses should be developed that are dedicated to sector characteristics and for older workers, women and (other) labour reserve, given the potential the sector has to employ such workers. In addition, the possibility to up-skill of low skilled technical production workers should be ensured.

To make the sector a more attractive employer, image building appears useful:
- Media and information campaigns, wide spread and broad in scope to reach new pools of workers and look beyond the usual sources of employees;
- Image campaigns more focused on the logistics sector and students of logistics, rather than the transport sector (as logistics is far broader than transport alone);
- Better promotion of the career opportunities within the sector.