DELIVERABLE D.T 1.1.1

METHODOLOGY FOR THE ANALYSIS ON TRENDS AND SCENARIOS

Subtitle

Version 1
MM YYYY

Activity A.T 1.1

UNDERSTANDING OF MEDIUM & LONG TERM GLOBAL TRENDS OF FREIGHT TRANSPORT IN FUA'S

Content

1. The ratio of the analysis on trends and scenarios of freight transport in FUA's

Freight transport in FUAs will develop along medium long-term global trends affecting CE in changing consumption (including e-commerce) & production, spatial organization, supply chain management & distribution, technologies & equipment. Policies need to understand trend. Understanding of them will be possible by desk work & experts surveys. After the research work will be possible development of long-term vision as well as preparation of   output O.T1.1: **»**Transnational Open Trainings for the knowledge & competences of CE FUAs Authorities Policy makers**«**. In the project is planned joint preparation & implemention of 2 days webinar. The webinar will be focused on improving FUAs authorities knowldge on trends & scenarios in the following core topics with transport & territorial impacts on FUAs: changing consumption (including e-commerce) & production, spatial organization, supply chain management & distribution, technologies & equipment. Materials of training are transferable to non partner Authorities as based on joint policy challenges for CE.

2. Analysis on trends and scenarios of freight transport in FUA's

Analysis will cover such areas like:

1. **Consumption and production:**
   - How the consumers' behaviours (e.g. frequency, volumes in the different sectors, buying at retail shops in the center or hinterland) will influence logistics.
   - How e-commerce will impact on consumers' behaviours and consequently on logistics and distribution processes.
2. **Territorial organisation:**
   - How urban sprawl will impact on logistics patterns.
   - How territorial planning will impact on freight transport demand (concentration versus sprawl).
3. **Distribution and supply chain management:**
   - How the companies' settlement choices and their multimodal and supply chain management strategies will impact on logistics in Functional Urban Areas.
4. **Technologies and equipment:**
   - Which impact Clean Fuels infrastructures and vehicles uptake will have in Functional Urban Areas.
   - Which impact Intelligent Transport Systems will have in optimizing freight fleet management and traffic management.

Questions included in the expert delphi survey will be related to selected drivers grouped in topics. Topics will be result of litretaure review.

3. Definitions

Functional Urban Area (FUA)

By the definition, Functional Urban Area (FUA) consists of the city and its commuting zone[i] and is identified as polycentric cores and the hinterlands of FUAs identified on the basis of commuting data, including all settlements from where at least 15% of the workers commute to any of the core settlement(s).[ii]

Trends in Functional Urban Areas

Freight transport in Functional Urban Areas (FUAs) is expected to develop along global trends having important impact on the Central Europe logistics efficiency. Main aim of the Deliverable D.T1.1.2 "Desk work on trends and scenarios in FUAs in CE" is therefore to identify and summarize the most important trends in order to understand their influence on development of FUAs supply chains in the future.

Report should contain summary of trends originating from strategic/political documents, industry driven initiatives, scientific articles and research papers. Trends and initiatives identified through deskwork analysis can range from very general/global trends towards specific initiatives relevant for particular supply chains. Only trends that might have direct or indirect influence on regional freight transport flows are to be considered.

Identified trends has to be divided into the following 4 main categories:

❏ changing consumption (including e-commerce) & production,

❏ spatial organization,

❏ supply chain management & distribution,

❏ technologies & equipment.

Scenarios in Functional Urban Areas

Identified trends should be summarized, grouped on 4 different categories and shortly described with additional assessment on their potential impact on FUA freight transport. Impact assessment should be made based on indications identified in the literature and should range from low, medium to high impact and divided into short term (less than 5 years) and long term (more than 5 years) category.

4. Inputs to other WP's

The analysis is an input:

❑ In Thematic Work Packages n. 1 (Understanding urban freight transport and training authorities) to the training of Output O.T1.1.

❑ To the Thematic Work Packages n. 2 (Building governance in urban freight), by giving policy makers and stakeholders understanding to be shared within the Freight Quality Partnerships meetings.

❑ To the Thematic Work Packages n. 3 (Developing Sustainable Urban Logistics Plans as part of Sustainable Urban Mobility Plans and roll out of results) by informing and helping policy makers on technical issues to be considered in their policies.

5. Sources of the information

Analysis will be based on the following sources:

❑ Desk research

❑ DELPHI survey

❑ Technical sources (including capitalizing Scientific Committee experiences)

6. Desk research

6.1. Methodology

The report should starts with introduction to the topic. Each of following chapters should concentrated on one of the before mentioned category, presenting existing situation and expected trends. Based on these findings, potential future scenarios are to be drafted at the end. Final chapter should give conclusion of the report stressing important aspects that have to be taken into consideration by public authorities when developing Sustainable Urban Logistics Plans to support FUAs freight transport services in the future.

6.2. Technical templates

Templates for desription of scenarios and trends are presented on the next page:

Templates for description of scenarios

Topic	N.	Trend	Short description	Impact on FUA freight transport * low; ** medium; *** high	
				Short term < 5 years	*Long term > 5years*
1. Consumption and production	1.1.	Title			
			Short description		
	1.2.	Title			
			Short description		
	1.3.	Title			
			Short description		
	1.4.	Title			
			Short description		
2. Spatial organization	2.1.	Title			
			Short description		
	2.2.	Title			
			Short description		
	2.3.	Title			
			Short description		
	2.4.	Title			
			Short description		
3. Supply chain management & distribution	3.1.	Title			
			Short description		
	3.2.	Title			
			Short description		
	3.3.	Title			
			Short description		
	3.4.	Title			
			Short description		
4. Technologies & equipment	4.1.	Title			
			Short description		
	4.2.	Title			
			Short description		
	4.3.	Title			
			Short description		
	4.4.	Title			
			Short description		

Template for description of trends

Trend	*Title (name) of the identified trend*
Category	**Select among:** *Changing consumption and production* *Spatial organization* *Supply chain management and distribution* *Technology & equipment*
Origin	**Select among:** *Strategic documents* *Industry driven* *Scientific/research driven*
Status	**Select among:** *Emerging* *Existing* *Future*
Short description	Short and concise – to understand the initiatives and possible influence on freight transport flows.
Example	If existing, short title of example + link to some best practices or references for further reading

6.3. Actions for the implementations of the Activity deliverables

Following actions are needed for implementation oft he activity report:

1. Literature review
2. Definition of existing situation and expected trends.
3. Identification of, potential future scenarios
4. Preparation of conclusions from desk research analysis
5. Elaboration of the report

7. Delphi research

7.1. Methodology

Freight transport and logistics in Functional Urban Areas (FUAs) will develop along medium long-term global trends affecting Central Europe. The understanding of these trends is a fundamental input to build public policies, which should include medium and long term visions. The DELPHI analysis has the goal of improving the understanding of authorities of these trends and scenarios. The DELPHI analysis is not expected to give policy makers specific indications on how to tackle transport and logistics issues in the Functional Urban Areas. It should have a more strategic, medium and long-term perspective and vision on trends and scenarios to be considered in policies building. Following steps are forseen in Delphi research methodology:

❑ Selection of relevant topics and identification of survey's questions;

❑ Selection of experts and contact modalities;

❑ Characteristics of the panel of respondents;

❑ Analysis of results;

❑ Experts' workshop.

Selection of relevant topics will be result of the review of the literature in the field of urban logistics, research & innovation in freight transport and clean fuel transport.

Experts selected for Delphi analysis should be geographically distributed and should maintain a balance between four categories of respondents:

- ❑ Business sector
- ❑ Authorities
- ❑ Research
- ❑ Others

7.2.   Technical templates

Topics and drivers will be presented in the following manner:

Area	Topic	Driver
Area 1	Topic 1	Driver 1
Area 2	Topic 2	Driver 2
Area 3	Topic 3	Driver 3
Area n	Topic n	Driver n

The way of presentation of survey's questions is ilustrated on in the table below:

Driver	Category	Question
Driver 1	Introduction	
	Impact	Question 1
	Time horizon	Question 2
Driver 2	Introduction	
	Impact	Question 3
	Time horizon	Question 4
Driver n		

Each driver representing one particular area should be evaluated by experts from two perspectives:

Area	Time horizon	Impact
Area 1	Before 2020	Very low impact
	Before 2030	Low impact
	After 2030	Moderate impact
	never	High impact
		Very high impact

Description of survey results for each factor should include following information:

- ❑ Quote of the question
- ❑ Description of impact
- ❑ Description of time horizon
- ❑ Additional findings

In conclusions drivers should be clustered and described according to their level of impact.

7.3. Actions for the implementations of the Activity deliverables

1. Questionnaire definition

Topics and questions details:

- ❑ Topics will be pre-analysis to better prepare questions to experts.
- ❑ The questionnaire will include questions on possible policies' expected impacts.

Structure of the questionnaire:

- ❑ Multiple choice and open questions will be included.
- ❑ Quantitative and qualitative answers will be made.

Questionnaire test with 5 experts

2. **Experts selection**

Categories:

- ❑ Businesses
  - ✓ Freight transport and logistics demand, including main supply chains of Functional Urban Areas (e.g. SMEs, large companies, their associations).
  - ✓ Freight transport and logistics supply (e.g. Multimodal Transport Operators, couriers and logistics operators, logistics nodes, logistics real estate companies) .
- ❑ Public authorities
  - ✓ National, local and regional authorities (departments of transport, economy, territorial planning, environment).
  - ✓ International institutions.
- ❑ Research
  - ✓ Universities and research centres.
- ❑ Others:
  - ✓ International associations and thematic networks

Criteria:

- ❑ Representativeness of territorial areas similar to the SULPiTER FUAs in demography (population & density), sectorial and economic traits (industries), orography (maritime cities, presence of rivers – elements which can influence logistics).
- ❑ Level of expertise in Sustainable Urban Logistics Plans (while ensuring thematic expertise).
- ❑ Non territorial criteria: global and EU experts.

3. **Questionnaire sending and elaboration**

- • E-mail sending in excel format.
- • First qualitative and quantitative elaboration of answers.
- • Conference call - workshop with selected experts to discuss the outcomes
- • Report and summary (including filled in questionnaires).

The DELPHI technique foresees a re-iterative process (e.g. workshop) to get to shared answers of experts. This means finding out the trends and scenarios and not having a compilation of heterogenous answers.

8. Training materials for CE FUA's policy makers

8.1. Technical templates

Trainings will be conducted in 2 sessions. Each session will last 1,5 half hour and will cover presentation of results of 2 surveys:

1. Desk research on understanding trends & scenarios of freight transport in FUAS
2. Delphi analysis

Technical template for presentation of desk research results:

Description	Scope of the presentation
Introduction	2-3 slides introducing survey topic
Methodology	2 slides presenting methodology oft he survey
Presentation of main logistic trends **(for each trend)**	1 slide – description of the area:
	2 slides for each trend: - Short presesentation of trend - Example
Presentation of possible future scenarios	1 slide – overview of all trends in each area
	1 slide – description of each scenario identified in the area
Conslusions	2 slides – 1 slide presenting the most important conclusions from the analysis

Technical template for presentation of Delphi research:

Description	Scope of the presentation
Introduction	2 slides presenting scope of work and structure oft he survey
Methodology	3-4 slides presenting methodological approach oft he survey
Overview of trends and factors and their timeline	2 slides overview of overall results of drivers impact analysis
	2 slides presenting overview of all drivers time horizon
Public, business and research: similarities and differences in their perceptions	Each category (business sector, authorities, research and other) presented on 2 slides
Analysis pf Expert Survey's results with focus on identified drivers	Each driver will be presented on 4 slides: - Question asked tot he experts - Estimated impact - Estimated time horizon - Additional findings
Main outcomes oft he experts workshop	2 sides presenting findings from experts workshop
Conclusions	5 slides presenting clustering of drivers according to impact strenght and time horizon

8.2. Actions for the implementations of the Activity deliverables

Main actions planned for implementation of Activity deliverables are:

1. Analysis oft the results of desk research results
2. Preparation of training materials presenting desk research results
3. Analysis oft the results of Delphi research results
4. Preparation of training materials presenting Delphi research results
5. Elaboration of webinars agendas
6. Conducting oft he webinars