

STISE – Sustainable Transport Infrastructure in the Strategic urban region Eurodelta

Targeted Analysis

Inception Report

Inception Report

This targeted analyses activity is conducted within the framework of the ESPON 2020 Cooperation Programme.

The ESPON EGTC is the Single Beneficiary of the ESPON 2020 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway and Switzerland.

This delivery does not necessarily reflect the opinion of the members of the ESPON 2020 Monitoring Committee.

Authors

Stefanie Van Den Bogaerde, Pierre Van De Leemput, Tractebel (Belgium)

Luuk Boelens, Robert Van der Bijl, Tim De Vos, Loren Aernouts Ghent University (Belgium)

Matthijs Otten, Jacobine Aalberts-Bakker, Arno Schroten, Stefan Grebe (CE Delft)

Martijn de Kievit, Bas Govers (Goudappel Coffeng)

Information on ESPON and its projects can be found on www.espon.eu.

The website provides the possibility to download and examine the most recent documents produced by finalised and ongoing ESPON projects.

© ESPON, 2020

Printing, reproduction or quotation is authorised provided the source is acknowledged and a copy is forwarded to the ESPON EGTC in Luxembourg.

Contact: info@espon.eu

Inception Report

STISE – Sustainable Transport Infrastructure in the Strategic urban region Eurodelta

Version 27/11/2020

Disclaimer:

This document is an Inception Report.

The information contained herein is subject to change and does not commit the ESPON EGTC and the countries participating in the ESPON 2020 Cooperation Programme.

The final version of the report will be published as soon as approved.

Table of contents

1	Introduction.....	1
2	Proposed Methodology	2
2.1	Introduction.....	2
2.2	Task 1: Methodological framework and needs analysis.....	2
	2.2.1The Three Market Arena model	2
	2.2.2Prioritising the European Targets for sustainable growth and related indicators	6
	2.2.3The Three Market Arena model as guideline throughout the study.....	6
2.3	Task 2: Analysis of the network and policies of the SURE area	8
	2.3.1Introduction.....	8
	2.3.2Task 2.1: Baseline scenario	9
	2.3.3Task 2.2: From the main bottlenecks to possible solutions per corridor.....	11
	2.3.4Task 2.3: Identification and selection of policy measures per corridor	13
	2.3.5Task 2.4: Analysis of the effects of a selection of policy measures per corridor	15
	2.3.6Task 2.5: Stakeholder consultation in regional roundtables per corridor.....	18
2.4	Task 3: Towards implementation	19
2.5	Task 4: Proposals for cross-border and inter-metropolitan Cooperation	20
	2.5.1Task 4.1: Analysis of possible cross-border and inter-metropolitan cooperation ...	20
	2.5.2Task 4.2: Proposing specific cooperation arrangements.....	20
3	Timing.....	22
	List of Annexes	24
	Annex 1: Detailed description data collection for the baseline scenario	25
	Annex 2 : Sources and data to be collected and used	27
	Annex 3: Overview of the partner stakeholders' (policy) needs, bottlenecks and problems...	33
	Annex 4: Start of list of possible policy measures	35
	Annex 5: External trends	36
	Annex 6: First overview of the data visualisation tools to be developed in the framework of the project.....	37
	Annex 7: Stakeholder consultation – timing and (digital) approach	41

List of Maps

Map 1: Corridor focus of the study	9
Map 2: Average travel time per panel member per modality	39

List of Figures

Figure 1: Three Market Arena Model.....	3
Figure 2: Timeline.....	23
Figure 3: Modal shift from week 10 to week 14 (lockdown)	38
Figure 4: Google Mobility trends: side by side comparison.....	39
Figure 5: Apple Mobility trends: side by side comparison	40

List of Tables

Table 1: A start of longlist of Policy documents – provided by the partner stakeholders so far - regarding the structure of the (regional) mobility system, expected growth of mobility flows towards 2030, 2040, 2050, reaching sustainability goals in mobility towards 2030, 2050, cross-border issues for persons/goods	27
Table 2: Accessibility to relevant traffic models.....	31
Table 3: Overview of the partner stakeholders’ suggestions for (other) stakeholders to involve	31
Table 4: Overview of the partner stakeholders’ political objectives and policy needs – provided by the partner stakeholders so far	33
Table 5: A start of list of possible policy measures for sustainable transport (infrastructure) – proposed by the partner stakeholders so far	35

Abbreviations

EC	European Commission
ESPON	European Territorial Observatory Network
ESPON EGTC	ESPON European Grouping of Territorial Cooperation
EU	European Union
MaaS	Mobility as a Service
NST/R	Nomenclature uniforme des marchandises pour les Statistiques de Transport, Révisée (Standard goods classification transport statistics)
NUTS	Nomenclature of Territorial Units for Statistics
SDG	Sustainable Development Goals
SURE	Strategic Urban Region of the Eurodelta

1 Introduction

The main objective of this study is to provide an answer to the question to what extent the SURE area is moving towards greener mobility that contributes to the EU sustainability goals, and thus to more attractive and sustainable urban regions.

This targeted analysis deals with the sustainable transport infrastructure in the SURE area, and covers the following aspects:

- Quantitative aspects of interregional flows and the effects on sustainable development: To which extent are the local, regional, national and international flows of persons and goods affecting the sustainable growth of SURE region? How could cross-border movement of people and goods develop regarding different scenarios of societal, economic and political trends?
- Transport and spatial policy impacts on sustainable growth: To which extent do current or expected transport infrastructure and spatial policies (national complemented by regional) in the SURE contribute to EU (transport) targets for sustainable growth?
- Policy answers: What could be done policy wise, but also with concrete actions to better contribute to EU (transport) targets for sustainable growth? By which policies and actions, at which level and scale?
- Concrete solutions: In particular, how can cross-border and inter-metropolitan cooperation contribute to achieving these targets?

Starting from a clear focus on the – for this study – most relevant EU targets for sustainable growth, an overview of the current and future transport flows within the SURE area, and their impact on the sustainable growth in the area is provided. A baseline scenario, including the relevant policies and strategies in the SURE area, and more in particular in the 3 focus corridors (Lille-Brussels, the Rhine-Waal Euroregion and the Rhine-Scheldt delta), will serve as the reference for comparing other scenarios. After looking into the main bottlenecks and challenges – and possible solutions - in each of the 3 focus corridors, a set of relevant policy measures to be assessed in detail will be selected. Finally, we synthesise the results of the analysis and look ahead towards implementation, and study and propose, more particularly, interesting cooperation opportunities.

In principle, this study covers all modes of transport. Obviously all modes are included in the methodological framework, however, the extent to which all modes can be reasonably included in the various tasks of the project, in the tools and in the analysis will depend on the availability and accessibility of data. The main focus will in any case be on rail, road, water and air. For pipelines, for instance, the availability of data needs to be checked (e.g. BO MIRT).

2 Proposed Methodology

2.1 Introduction

The Three Market Arena model developed by Ghent University is the starting point and the structure on which the approach in this project is built. In the following sections, the model itself is explained and also how it can be applied in practice in the case studies in the corridors.

2.2 Task 1: Methodological framework and needs analysis

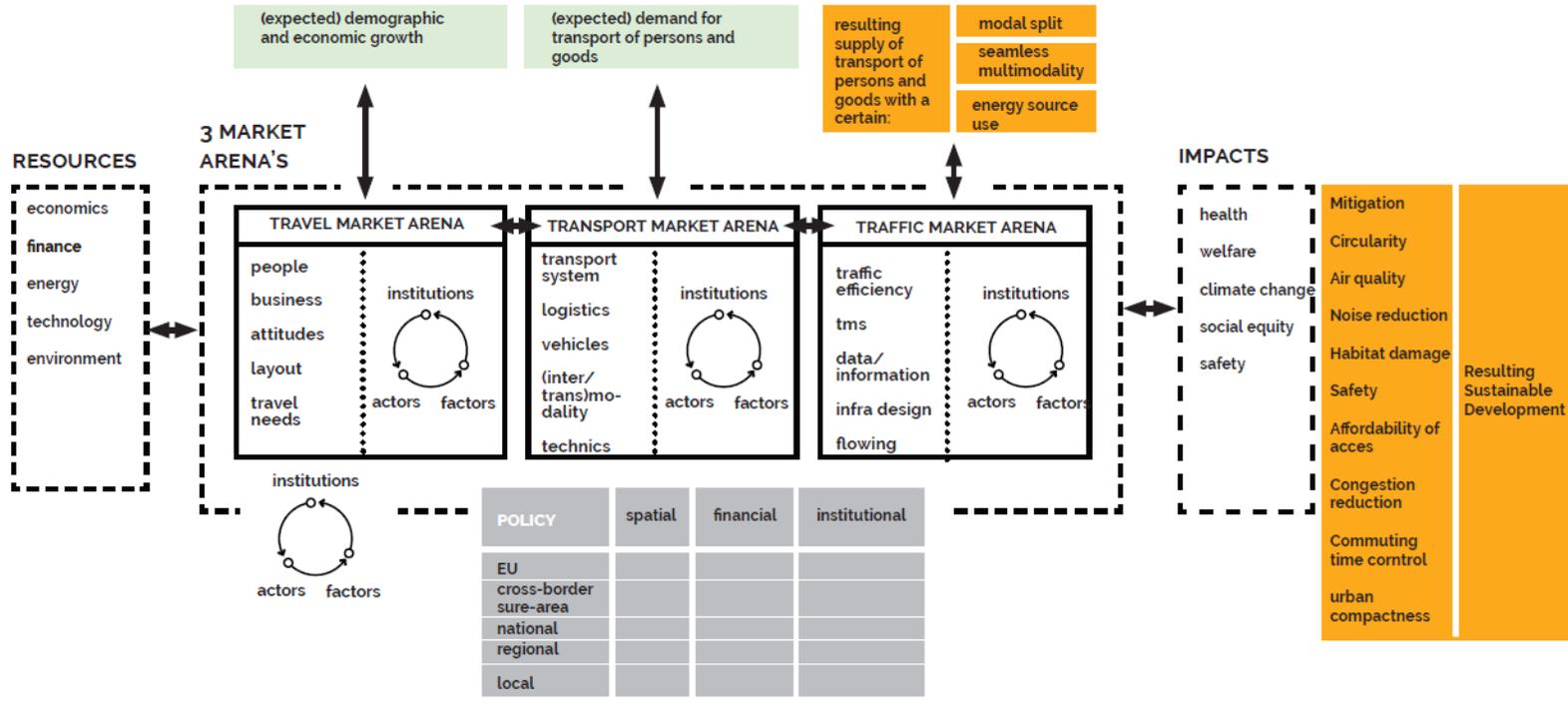
2.2.1 The Three Market Arena model

The central framework of this study is the **Three Market Arena Model** as presented in the figure below. This model was composed taking into account existing and state-of-the-art academic research and is adapted to the specific needs of the stakeholders in the Strategic Urban Region of the Eurodelta (SURE). The core framework is based on:

- The conceptual model as put forward in the ToR for this research project (ESPON 2020),
- The three-market model of mobility and space (Egeter & van de Riet, 1999; Lauwers/Allaert, 2012; Witlox/Boelens, 2016), and
- The actor-relational approach to planning and the market arena approach (Boelens, 2009, 2015, 2019; Loris 2020)

Below is explained more in detail how the Three Market Arena Model is built and what it is composed of.

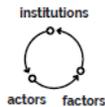
Figure 1: Three Market Arena Model



LEGEND



Three market model of mobility and space
(Egeter & van de Riet, 1999; Lauwers/Allaert, 2012; Witlox/Boelens, 2016)



Actor-relational approach to planning
(Boelens, 2009, 2015, 2019; Loris 2020)



Conceptual model of the research questions as formulated in the call
(based on Schroten, A. et. AL (2019) Sustainable Transport Infrastructure Charging and Internalisation of Transport Externalities: Main Findings, Delft, CE Delft)

Of major importance within this framework are the following aspects:

THE RELATIONAL TURN IN SPATIAL THINKING

(Massey 1991, Thrift 1998/2004, Amin 2002 etc.)

Space is no longer seen as a pre-given abstract platform on which people, animals or other subjects act. Space is a dynamic entity made by humans, the climate, fauna & flora etc. and in turn influences the behaviour of these subjects. The interaction between all living things and space is mutually dependent, and is - in other words - always relational.

In the context of this study, mobility and space are relational as well. Better accessibility, for instance, makes certain spatial developments possible, just like a specific spatial layout can enhance the amount, the direction or even the mode of mobility; they continuously interact. The Three Market Arena model indicates clearly that relations are not linear. In a linear methodological framework it is assumed that a specific economic growth would lead to a specific transport demand, which would enhance the need for additional transport means, which in turn would have an effect on energy demand and environmental issues etc. It also works the other way around, in that sense, for instance, that (1) traffic and mobility can also enhance economic growth (not only directly for car manufacturers for instance, but also as a spin off), (2) air quality demands can restrict certain traffic patterns or even enhance other transport modes, and (3) innovations in technology and energy resources can make some mobility patterns redundant etc. This also means that policy measures can influence this mobility-space interaction from everywhere: not only at the (linear) relation from the demand of transport towards the supply of transport, but also e.g. in the realm of spatial planning. The Three Market Arena Model takes these considerations into account.

A SYSTEMATIC VIEW ON COMPLEXITY

(Luhmann 1992/1997; Assche et al., 2016; Boelens, 2016)

The specific mobility-space interaction is dependent on the interrelations within that interaction itself, as well as on (political) changes in its surrounding, e.g. the economic realm, financial resources, changing ideas with regard to safety and air quality, technological innovations etc. In other words, a specific mobility-space interaction is made of multiple relations, inside as well as outside that interrelation. That makes the mobility-space interaction highly complex. There is no point in this complexity where the mobility-space interaction can be observed in its entirety. For that purpose, it is more workable to distinguish - within that complexity - various sub-systems which are more or less operating as a whole. These subsystems are in a way 'markets', or better 'market arena's'. Within each of these arena's all involved actors (e.g. stakeholders, agents, etc.) strive for a certain equilibrium of demand and supply. 3 markets are distinguished: (1) the **travel market arena** (in which the travel behaviour of people and businesses are at work, dependent on personal features and influencers in this regard, but also on demographic changes, spatial densities, functional diversity, geographic particularities etc.), (2) the **transport market** (in which intermodal transport choices are at work, based on path dependent

travel patterns from the above, but also and specifically on the policies of public transport & logistic providers, and the price and efficiency of certain (inter)modal transport systems etc.), (3) the **traffic market arena** (where the *offered traffic* means for travel and transport are at work, dependent on the efficiency, price and quality of the vehicles and infrastructure, TMS or ERTMS technology, IT and innovative energy facilities, online and just-in-time, MaaS etc.). Each of these subsystems, market arena's, operate more or less operationally closed, by reducing the complexity in its surrounding according to the internal structure and the financial possibilities, needs and (institutional) codes of that market arena. Nevertheless, that wouldn't mean that the mobility-space interaction is highly fragmented, on the contrary. On regular basis each of these market arena's interpenetrates or irritates the other market arena's: for instance when an infrastructure provider - for instance the Dutch ProRail in the traffic market arena- can't comply always and at every moment to the needs of the public transport providers, for instance Dutch Railways, Arriva, the Thalys Alliance or DB etc. in the transport market arena, or when the transport product of one or several transport providers do not comply to the smooth (inter)modal demands of the travellers or freighters from door-to-door (in the travel market arena). As such, the 3 market arena's do need to respond to each other.

AN ARENA APPROACH TO MOBILITY MARKETS

(OECD, 2015; Boelens, 2017/2019; Loris, 2020)

Moreover, and as such the three markets cannot be regarded as only specific systems or organisations, but as arenas wherein lots of actors operate, compete and interact. Different types of actors can be distinguished: *business actors* (such as entrepreneurs and companies), *public actors* (such as policy makers and public servants) and *civic actors* (such as the travellers, commuters and the like). When the input and interests of all three are apparent, the specific operation or action is the most robust or resilient, since at the same time, money, law and sufficient support is guaranteed. Furthermore, in each of the mobility-space markets a specific set of actors operate, such as the commuters, tourists etc. in the travel market; freighters, port authorities etc. in the transport market, and vehicle manufacturers, infrastructure providers etc. in the traffic market. And also here, the more these mobility-space arenas are interconnected and compliant with the available resources and environmental impacts, the more resilient and balanced the mobility flows will be. Nevertheless, actors don't act in a void, but in specific settings of time and place. Institutional settings (as the various and place dependent rules of the game, such as law, (mobility) culture, norms and the like) can be distinguished, but also factors of importance (such as geographical features, financial, economic or energy crises, or specific hazard as the Covid pandemic, floods etc.). Especially in border-crossing challenges these settings have to be taken into account, to come up with robust policy measures and effective space-mobility proposals.

2.2.2 Prioritising the European Targets for sustainable growth and related indicators

At an early stage of the project the European targets for sustainable growth that should be taken into consideration throughout the study and more in particular in the following Task 2, should be listed and prioritised. By analysing relevant policy documents¹ and consulting the leading stakeholders an overview of the European targets relevant to this project can be provided. Taking into account the particularities and geographic scope and focus of this project, not all EU targets for sustainable growth will be equally important, which is why a prioritisation is needed: CO₂ reduction and air pollution emissions seem to be the most important targets for the scenarios to 2030 and 2050 and corridors/case studies.

Other relevant EU targets for sustainable transport will be considered as well, but a prioritisation of targets at the start of the study is useful and brings focus and structure for the following Task 2. Also the indicators - linked to these targets - which will be further used in this study (Task 2) need to be defined. E.g. the level of CO₂ emissions is the indicator linked to the leading relevant EU target of 55% CO₂ reduction by 2030 compared to 1990; e.g. unemployment rate can be an indicator linked to a target focussing on strengthening the European economy...

A discussion with the leading stakeholders regarding this matter will be held at a first work session. The aim is to (1) provide an overview of the EU targets for sustainable growth (long list) and indicators relevant to this project, and also to (2) determine a hierarchy in these which are the most important ones for this project. Criteria for importance are e.g. the level of urgency for the SURE area and the 3 corridors, the link with/impact on other targets, the extent by which the impacts of the policies on the targets could be quantified within the scope of this study, the extent to which the existing policies and strategies are aligned with the targets envisaged... The result of this subtask must result in a brief clarifying framework regarding EU targets for sustainable growth, which can be referred to in the further course of this study.

The most important indicators, i.e. CO₂ emissions and air pollution emissions, will be further analysed in quantitative terms, while for the indicators linked to the other targets a more qualitative assessment will be provided in Task 2.

2.2.3 The Three Market Arena model as guideline throughout the study

The Three Market Arena model is composed of various strands of academic concepts and professional research, and is highly relational as everything is interconnected to each other, and is dependent on - and at the same time a cause for - other space-mobility interest or actions. Nevertheless, the framework is also very much operational and can even be applied for specific policy measures and define implementation pathways in this respect, by following the 3 market arenas and the actor-networks within. In addition, the model makes interconnected

¹ The list of relevant policy documents – relevant for the corridors - suggested by the partner stakeholders in Annex 2 are a starting point, to further elaborate.

quantitative and qualitative research possible, enhances cross-overs and structural couplings and can include existing mobility-space models for specific research items.

The example below explains – in a first draft outline - how the Three Market Arena model works for one policy measure “No Fly Zones < 700km”, which is a policy measure that concerns the whole Eurodelta region instead of one corridor in particular.

Three Market Arena Model on the Policy measure “No Fly Zones < 700km”

*For this measure the **travel market arena** is the first to take a look at, since the measure mainly focusses on influencing travel patterns with SDG and airport capacity in mind. Based on existing data (before Covid) an analysis should be made of who and what is concerned: How many passengers are traveling from and to the major airports in the SURE (Amsterdam, Brussels, Düsseldorf, Dortmund, Eindhoven, Rotterdam, Oostende, Charleroi, Lille...) within 700 km – on a day to day basis? And who specifically is involved – what type of travellers (business people, leisure/tourism, connecting flights, transfer flights, other reasons)? Maps representing this data can be made. Afterwards possible solutions and measures that can lead to behavioural change of travellers need to be looked for (e.g. tax, landing restrictions, mitigation measures etc) and/or simulated where possible and useful: which numbers are dissolving, which are diehard. In this respect there is also a need to delve into existing legislation, in order to check whether the proposed measures are possible at all, in a range of probabilities – e.g. Open Skies treaty, the deregulation agreements since the '80s, and the level playing field agreements within EU, respectively the landing rights at the airports. Moreover, a rough simulation of the potential impacts of the proposed measures on the global competition of the SURE region are useful, as e.g. the Open Skies agreement was of major importance for the mainport policies and their economic success. If needed, a selection of possible measures can be made for which the volume that might be affected can be analysed.*

*Secondly the **transport market arena** should be analysed. This raises the following questions: Can the concerned volumes hypothetically be shifted to the high speed rail network, and/or any other network - for instance the Flixbus services, or another transport mode? Rough estimations should be made, for instance, of what such a shift would mean for the day to day logistics and schedules of the High-Speed Trains in the various directions. Moreover, a rough estimation of what would be the impact on climate and energy needs (plusses and minuses), as well as on travel time, and therewith possible economic impact. Furthermore possible changes in focus of real estate can be mapped as well. Consultation of the concerned stakeholders (Thalys, Deutsche Bahn for ICE, Eurostar, SNCF, Flixbus and/or others) will be key here, in order to know whether or not they think such a shift is feasible and what it would mean for their organisations. Another check of existing legislation and institutional hick ups for implementation is required as well: e.g. are there possibilities to connect HST and air ticketing again as well as ticketing between the HST TOC like DB, Eurostar and SNCF, given the bad experiences with the FYRA, and under which condition?*

*Next, these impacts also need to be confronted with the **traffic market arena**, vice versa: Could the existing “hardware” cope with the extra volumes mentioned above, and/or would there then be a need for extra links for - or an upgrade of - the existing HST stations? Which links are already included in the existing mobility investment plans, and which are not? And how can alternatives be improved if needed? Furthermore, it needs to be checked if the current safety measures in the respective countries and regions are connected, and if – for instance - there is still a need to adapt and expand ERTMS.*

Based on existing experiences, a rough estimation of the finances involved can be made. Stakeholders to be consulted here are the respective operation departments and infrastructure providers, in order to find out which are the major bottlenecks for implementation.

From this backdrop, various policy roadmaps (minimum-maximum) can be formulated over time and discussed in a roundtable with all the stakeholders mentioned above, based on a preliminary cost-benefit analysis.

However, such an endeavour is highly time consuming, which makes it impossible to explore everything - especially in regard to this SURE area, and its vast mobility-space challenges. Therefore, after building the baseline scenario, a preliminary sensitivity analysis is required on the vast amount of proposals selected by the stakeholders, in order to define priorities during the course of this study in close cooperation with the stakeholders, based on rational arguments. The tasks described below highlight the various steps to be taken, the moments for mutual discussions with the stakeholders, and the moments for interviews and roundtables with external (other) stakeholders to explore possible pathways for implementation. The steps below are complementary to the working scheme present before.

2.3 Task 2: Analysis of the network and policies of the SURE area

2.3.1 Introduction

This task consists of several sub-tasks and cooperation with the leading stakeholders is key. First, a baseline scenario is built, as a reference to compare other scenarios. Already in the baseline, we zoom in on the 3 corridors that are central to this study, and the case studies are kicked-off. Afterwards, the existing policy measures and strategies in the corridors will be the starting point for further research. First, the main bottlenecks that hold back sustainable growth of each corridor are mapped, as well as possible solutions. Finally, the relevant policy measures are screened and a selection of measures are selected to further analyse in detail.

Simulations will be used in this task (see next chapters) and these will be accompanied by literature, already done simulations and impact assessments, other research², statistics... where relevant to fill the gaps.

The case studies are built throughout this task. In each step, the case study corridors are further mapped and analysed in more depth. In Task 2, the foundation is also established for Task 3, where the synthesis of the analysis is made, and for Task 4, in which possible forms of cooperation are investigated and proposed.

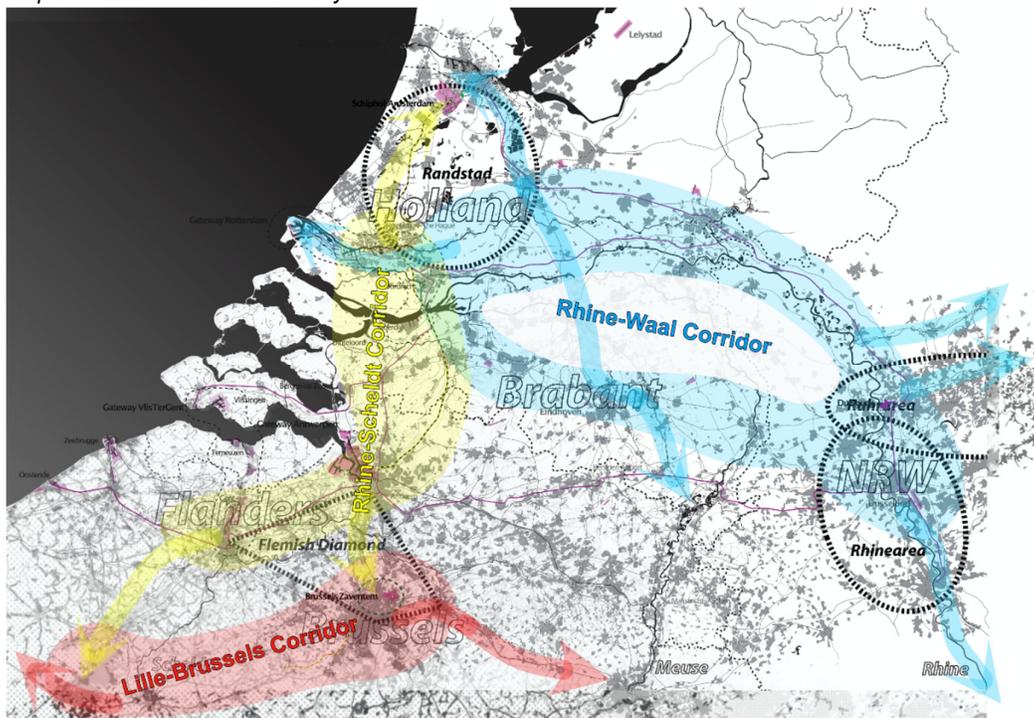
² The ongoing ESPON research project IRiE (Interregional relations in Europe), for instance, deals with quantitative visualisations of interregional flows of goods, people & services and thus could be of complementary use to this task in this targeted analysis.

2.3.2 Task 2.1: Baseline scenario

The starting point is to build a baseline scenario for the development of the mobility flows in the SURE area towards 2030 and towards 2050. This baseline scenario will serve as the reference for comparing the other scenarios, and will include all the existing and relevant policies, strategies and decisions already taken in the SURE area - and more in particular the 3 corridors. The focus here is on the 3 key corridors considered in this study.

- **Lille-Brussels corridor**, focus on this cross-border core area, including the relations to bordering regions of London-Paris-Liège;
- **Rhine-Scheldt corridor**, focus on the cross-border core-area between Rotterdam-Antwerp-Gent, and bordering regions towards Lille-Brussels-Amsterdam;
- **Rhine-Waal corridor**, focus on the cross-border core-area between the Randstad-Ruhr area through Arnhem-Nijmegen, including the side-corridor over Eindhoven and the Eastern region of the Ruhr metropolis, and the relations to bordering regions of Weert/ Sittard-Frankfurt-NRW

Map 1: Corridor focus of the study



The main aim of this assessment is to provide a clear overview of the size and composition of the transport flows and related impacts on the EU targets for sustainable development within the SURE area (and to bordering regions) and the expected developments of these indicators.

First of all, **data about the main origin-destination (OD) relations** will be **collected** in Excel from existing traffic models - existing model runs, no new runs will be made.³ A database will be constructed with transport flows between and within NUTS 2 zones within the SURE area and on a more aggregated level to regions outside the SURE area. This will be done at two levels:

1. At the level of the entire SURE area, mainly data on the size of the transport flows with only a few breakdowns (cf. Annex 1) will be collected for OD relations within this region and with bordering regions outside this area.
2. At the level of the 3 corridors more detailed data will be collected, e.g. on travel purposes for passenger transport and NST/R-type⁴ for goods transport (using the existing information from the regional models, which is sufficiently detailed, and no new model runs will be made).

Case studies in the 3 corridors – geographic focus

The case study in each corridor will be elaborated step by step throughout the project.

In this data collection step the geographic focus of the case studies is shaped.

The *Transtools3* model will be used as the main model and the results of this model will be validated with regional and national models. In case of inconsistencies, the *Transtools3* results will be scaled to match with the other sources **to one consistent baseline scenario** - see Annex 1 for more details. For this purpose, the assumptions used in the regional models will be checked and documented, and in case of large deviations, data will - as far as possible - be modified or complemented based on evidence from the literature or expertise of the consultants. All steps will be documented. In this respect, it will also be checked whether the relevant policy plans and measures are already included in the regional models - if not, specific modifications to the data will be made where possible and useful.

Maps (e.g. GIS-visualisations) and graphs will be drafted for **the current situation, 2030 and 2050** for the SURE area as a whole, as well as – in more detail – for the 3 corridors. Afterwards **the extent to which the EU targets on sustainable development are met on the corridors** in the baseline scenario is **assessed**. Based on the findings regarding the size and composition of the transport flows⁵ in the 3 corridors, the indicators (e.g. CO₂ emissions, air

³ The existing model runs do not consider recently implemented policy decisions, e.g. the new Green Deal. The models will contribute to the development of local and national policies that have to be implemented to realise the Green Deal, e.g. which adjustments in travel costs have to be implemented. The reference scenario should only contain fully implemented policies, as it is the reference point for all possible improvements.

⁴ NSTR is the update version of the NST classification for goods

⁵ The transport models only have vehicle types like passenger car or heavy truck. The models do not take into account the switch to electric vehicles. There are additional fleet models that predict the composition

pollution emissions) relevant for the most important relevant EU targets for sustainable growth previously defined and prioritised (in Task 1), will be assessed. For the indicators of CO₂ emissions and air pollution emissions this will be done in quantitative terms, while for the other indicators (to be defined in Task 1) a more qualitative assessment will be provided.

An **assessment of the robustness of the baseline scenario** is the next step. An analysis of the impact of plausible developments - more in particular of up to 6 relevant (external) societal, political and/or economic trends on the baseline scenario as developed above – will be performed. The suggestions on external trends of the partner stakeholders in this regard (cf. Annex 5) will be taken into account. For each of these trends it will be studied - in qualitative terms - what their most likely impacts on the baseline scenario will be, providing in this way some kind of a robustness check of this baseline scenario (i.e. it will show how 'sensitive' the baseline scenario is for changes in important external trends. It will show whether the findings will change significantly (and in which direction) if some trends will be different than anticipated for the baseline scenario).

Finally, a first **general analysis** of the **main institutions/organisations and leading actors** will be carried out - according to the market arenas in the Three Market Arena model: travel, transport, traffic - within mobility planning of the 3 corridors.

The baseline scenario will be **discussed with the partner stakeholders per corridor**, in a work session per corridor.

2.3.3 Task 2.2: From the main bottlenecks to possible solutions per corridor

Case studies in the 3 corridors – key issues and possible solutions

The partner stakeholders will be consulted in order to first identify the main bottlenecks at stake in each corridor and also to discuss and propose all possible solutions. In a group session - per corridor - the main bottlenecks and solution will be identified and explained. Afterwards, some targeted interviews will be organised afterwards to gain more insights. Interviews are arranged at a convenient time for the (leading) stakeholders and will be carried out by phone or video-conferencing, according to a semi-structured questionnaire.

At first, the **bottlenecks, or key issues, within each of the 3 corridors - and related urban centers and regional cross border corridors** – will be identified. Based on the baseline scenario for 2030 and 2050, desk research and input from the partner stakeholders, the main mobility-space challenges for each corridor will be listed the specific (cross-border) institutional hick ups, leading actors and/or factors of importance for each of the identified bottlenecks/challenges. In Annex 3 (stakeholder needs) a first overview is provided of the key

of the fleet. For the transport flows we will limit the information on the general categories of the transport models. When reporting emissions in the this study we will take the shifts in the fleet into account.

issues the partner stakeholders in each corridor are struggling with and would like to resolve in one way or another:

- For the Rhine-Scheldt Delta and Rhine Waal corridors some of the main bottlenecks are, for instance: (1) transport at the range of 250-300 km is dominated by passenger transport by car due to the lack of reliable and time-competing rail connections on this corridor, (2) the marginal market for cross border transport of persons by train... The market perspective would be much better with shorter frequencies and more direct cross-border rail links linking not only Gelderland and Limburg with the Rhine region but also with central and eastern parts of the Ruhr area.
- For the Lille-Brussels corridor some major issues are, for instance (i) the lack of proper view of flows between Lille and Brussels (not only rail by the way but also road and other means...), for passengers (and also for freight), (ii) the difficulty to commit the concerned rail operators to sustainable growth in the Brussels-Lille corridor (“policy driven interest”)....
- In general, bottlenecks as consequence of insufficient levelled policies.

Building further on the general stakeholder analysis in a previous step, an **in-depth analysis of the main institutions/organisations, leading actors and key factors** will also be performed for all major bottlenecks - according to the actor relational approach in the model and according to the market arenas: travel, transport, traffic. A specific institutional, factor and actor analysis for each main problem at hand will be carried out, including the specific institutional barriers/opportunities and the underlying (spatial) causes.

As mentioned earlier the **partner stakeholders will be consulted** at this stage to further update and complete the list of bottlenecks where necessary, to help specify and clearly describe them, as well as to prioritise the issues in order to identify the major issues. Targeted (groups) interviews (max. 15 interviews in total) will be organised afterwards. To evaluate the relevance of the key issues the stakeholders will be asked, for each key issue to share their positive and negative experiences: (1) On the one hand, good practices will be identified where policies functions well, and the reasons for this success (organisational, technical, infrastructural, political, communicational...). This allows to identify some key success factors to further elaborate in the next steps. (2) On the other hand the main barriers within every region will be identified, so a further brainstorm on the policies and policy measures which are needed is possible.

Afterwards the **main bottlenecks** will be described and categorised according to the Three Market Arena framework, respectively in terms of resources, impacts, as well as in travel, transport and traffic. At the same time the **possible solutions for each identified major issue** will identified as well. This aspect is also discussed during the interviews with the stakeholders. From this backdrop not only possible solutions will be identified, but also with or for whom these solutions need to be implemented.

Below a list of examples of possible solutions, based on the discussion at the kick-off meeting:

Lille-Brussels corridor:

- Enhancing public transport between Lille, Brussels and Brussels Airport by (a) improving existing high-speed train services, (b) creating new Flixbus services Lille – Brussels Airport

Rhine Scheldt corridor:

- Fixing insufficient levelled policies with regard to e-commerce/ logistics
- Improving cross-border public transport by restructuring existing HST services Amsterdam – Brussels into: (a) Amsterdam – Brussels Midi with stops in Schiphol, Rotterdam, Antwerp Central and Brussels Airport only, (b) additional service Eindhoven – Breda – Noorderkempen – Antwerp Central

Rhine-Waal corridor:

- Creating through train services Amsterdam-Eindhoven-Ruhr area (e.g Duisburg – Essen – Dortmund)
- Fixing specific interregional missing links such as Nijmegen – Kleve

All corridors:

- Impact of Green deal for mobility-space developments in the SURE area (possibly already included in the baseline scenario)
- Fixing insufficient levelled policies with regard to maximum car-speed by creating common speed standard (80-100 km/h) for highways
- Shift short haul flights up to 700 km. from aviation towards rail services
- There are initiatives about realization of a hydrogen valley within the SURE region
- Combined or integrated solutions, such as multimodal strategies for corridors

Main cities/urban areas (within the corridors):

- Fixing insufficient levelled policies with regard to additional/personal transport services by creating common MaaS-platform(s)
- Fixing insufficient levelled policies with regard to road pricing and CO₂ reduced emission zones in inner cities by creating common platforms.

In the next task, the policy measures that can be linked to the list of possible solutions will be identified and further assessed.

2.3.4 Task 2.3: Identification and selection of policy measures per corridor

Case studies in the 3 corridors – selection of policy measures

As from this task, the case study in each corridor is developed in detail.

To ensure consistent and comprehensive coverage corridor analysis, a detailed template for the analysis of each case study will be prepared. The template will be based on the prepared methodological framework, and will define the scope (map), main problems (illustrations) and policy background (scheme) as well as an evaluation of the selected policy measures.

The partner stakeholders will be consulted twice – at corridor level – in order to identify and select the most relevant policy measures that can address the main bottlenecks and their underlying problems.

In order to **identify and select possible policy measures** to be further assessed per corridor, a 3 step approach is proposed:

1. A long list of policy measures per corridor:

Based on the input received from the stakeholders for the three corridors (cf. Annex 4) and an analysis of the policy documents collected for these three corridors (cf. Annex 2) a long list of potential policy measures per corridor will be composed. This long list will be complemented by the consultants with additional policy measures based on their own expertise. A first categorisation of the policy measures will be made based on three criteria: (1) the decision level (e.g. EU, national, federal state (NRW) regional, local) at which the policy measures should be implemented, (2) the type of policy (e.g. infrastructure related measure, financial measure, etc.) and (3) the challenges (as identified before) they may address.

2. Towards a shorter list of policy measures for a first (quick-scan) assessment:

Based on the long list, up to 10 policy measures per corridor will be selected that will be assessed in a quick-scan in the next step. This will be done in close cooperation with the partner stakeholders during a workshop per corridor. As input for the workshop an initial selection of measures will be prepared, as the starting point for the discussion. This initial selection will be made based on the expertise of the consultants. An important consideration in this respect will be to what extent the implementation of the policy measures requires cross-border cooperation or has cross-border impacts. After selecting max. 10 policy measures per corridor, a more detailed description of the selected measures in cooperation with the stakeholders is required.

3. Quick-scan analysis of the policy measures on the short list:

Based on the expertise of the consultants supplemented with desk study, a quick scan analysis will be carried out by assessing the (max.) 10 policy measures per corridor with the following criteria: (1) effectiveness in contributing to the main EU targets for sustainable growth, (2) (investment) costs, (3) public/political acceptability, (4) cross-border impacts and/or efforts required, (5) relevance for other corridors/parts of the SURE region. The policy measures will be scored on these criteria using a five-point scale (++ , + , 0 , - , --).

4. Selection of policy measures for more in-depth analysis:

The results of the analysis carried out in step 3 will be presented, challenged and discussed in a second work session with the partner stakeholders (per corridor). The objective of this work session is to select 2 to 4 most relevant policy measures for each corridor for further assessment in the next task. The actual number of policy measures that will be selected depends, among other things, on the level of detail that is required from the assessments that will be carried out in Task 2.4 (e.g. impacts could be assessed based on existing evidence from the literature, but in a more in-depth assessment also interviews with relevant stakeholders may be carried out). For that reason, we will discuss thoroughly with the stakeholders in these work sessions what kind of results they would like to receive on the (impacts of the) selected policy measures. For example, do they only expect information on the size of the impacts or also on barriers hampering the implementation of these measures. Based on this discussion, the preferred level of detail of the assessments to be carried out for each of the policy measures in Task 2.4 and hence the number of policy measures that will be selected for further research can be made.

In the selection of policy measures we will also consider whether the measures are only relevant for the specific corridor or also for other corridors (or even the entire SURE region). If possible, we will prioritise policy measures that are interesting for more than one corridor, as this will improve the added value of the study for all stakeholders involved.

2.3.5 Task 2.4: Analysis of the effects of a selection of policy measures per corridor

Case studies in the 3 corridors – analysis of the effects of the selected policy measures

In this task, an important step is performed in the case study in each corridor. The analysis of the effects of the selected policy measures will serve as a basis for conclusions and recommendations regarding pathways for implementations (cf. Tasks 3 in § 2.4 and Task 4 in § 2.5 below).

A further analysis of the effects of the selected policy measures is the main goal of the task. Where possible the effects will be quantified, but where this is not possible (e.g. due to lack of required data) a more qualitative analysis will be provided. This means that three steps will be performed with a different granularity, based on the quantity of measures selected. In other words, the less measures that are selected the more effort will be put towards quantification.

The three steps are:

- 1. An in-depth analysis of the selected policy measures (see previous steps), assessing the impacts of the policy measures on the indicators related to the most important EU targets for sustainable growth identified in Task 1 (e.g. CO₂ emissions, air pollutant emissions, etc.).** For each policy measure a targeted methodology will be developed to execute this analysis. Tools that may be used are desk study, assessment of statistics, rough simulations, etc.

2. An **in-depth analysis of the actor-factor-institutions networks** of the proposed policy measures, including identification of the leading stakeholders⁶.
3. To conclude, an **in-depth analysis of the policy measures, focused on particular elements of our framework**, i.e. resources, impacts, as well as travel, transport, traffic

Against the backdrop of the selection made in the task, an analysis in detail will be made of the impact of the proposed policy measures on the EU targets for sustainable growth with regard to (1) traffic and transport flows, (2) environmental and social impacts, (3) economic impacts. The final selection of impacts that will be analysed will be based on the prioritisation of the EU targets in Task 1. A preliminary analysis of the spatial impact/adjustments with regard to each policy measure will also be delivered, next to an in-depth actor-institutional analysis.

As mentioned before, for each policy measure a targeted methodology will be developed to analyse its impacts. In this way the specific nature of the individual policy measures can be taken into account. In addition, we will study the possible interactions between the selected policy measures and, where necessary (and possible) we will include any multiplier effects and correct for possible double counting. More in general, the **methodologies will all include at least the following three steps:**

1. Identification of the expected behavioral responses of travelers/companies to the implementation of the policy measure (will they choose for another route, another mode, travel less/more, etc.).
2. Analyse the transport impacts of the policy measures: for each of the behavioral responses identified in the previous step, its impacts on the volume and composition of the traffic flows in the baseline scenario will be analysed. For example, if travelers will chose more often for public transport instead of the car due to the policy measure, the impact on the modal split will be analysed and if possible (roughly) quantified.
3. Analyse the other impacts of the policy measures: based on the results of the previous step, the other relevant impacts will be estimated. For example, a change in the modal split will have an impact on the total CO₂ emissions, which can be estimated by using multiplying the changes in transport volumes per mode with relevant emissions factors.

The analyses carried out in this task will give some first preliminary insights on which measures will give the best possible outcome with regard to the most important relevant EU targets for sustainable growth. Moreover, the analyses will also give first insights in what institutional measures have to be taken to develop a smooth mobility transfer cross-border in a level playing

⁶ The leading stakeholders here are the ones who are willing and able to invest in their (economic and environmental) surrounding, in such a way that it serves also their businesses and interest on the long run.

field, and which real stakeholders need to be addressed to ensure a smooth pathway for operationalisation.

The depth of the analysis (e.g. the extent by which impacts could be quantified, whether assumptions could be based on evidence or expertise of the consultants, etc.) will depend on the number (and nature) of the selected measures. Note: More detailed analyses could be carried out if only 2 measures are selected for a corridor compared to the situation where 4 measures are selected.

The 2 examples below show more in detail how the assessment of the effects of a policy measure could be performed:

Example of the calculation of the effects of a policy measure:

“No Fly Zones < 700km by restrictions”

Considered below is the assumption of a policy measure defined as: “No landing or take-off permits are given anymore for flights with an origin or destination within 700km.”.

Step 1: *Starting point is the collection of information on the current transport volumes from and to airports within the SURE area below 700 km in the current situation (pre-corona). This will involve information on the number of passengers, the distances but also information on whether it concerns a transfer flight or not and, if available, the travel purpose. (data from statistics, airports).*

Step 2: *Estimate of the response of the passengers to the restriction, e.g.: shares of passenger not making the travel anymore, passengers moving to other modes to make the same trip, (transfer-)passengers taking a different flight (direct flight instead of transfer). These estimations will be made based on literature (on travel time- demand elasticities, case studies), information on current modal split from the transport models (excluding flights) on the OD relations (per purpose) and interviews with aviation economists if needed. In the end this will result in new volumes of passenger kilometres per transport mode. Bandwidths will be used to express the uncertainties.*

Step 3: *The passenger-km values with and without the restriction will be valued with emission factors (from literature) to calculate the first order effect of a no fly zone < 700 km. In this way estimation of the effect on the costs for the passengers (by ticket prices on the OD relations) is possible, as well as the lost income for aviation companies and the extra income for other modes (from literature).*

Step 4: *Second order effects will be considered, such as:*

- *Effect of free slots on the airport (will the slots be used by long- distance flights?)*
- *Effect of extra travel demand for road and rail on the need for extra infrastructure and congestion.*

For the second order effects, estimation of the emissions and costs will be done in a similar way as described above, and/ or discuss whether they can be avoided (if negative) by supporting policy.

Example of the calculation of the effects of a policy measure:

“Scale jump Public Transport”

Considered below is the assumption of a policy measure defined as “improvement of level of public transportation between two major cross border metropolitan areas (e.g. Eindhoven – Düsseldorf or Brussels – Lille)”

Step 1: *Starting point is the collection of data for the relevant metropolitan areas, hereby focused on the existing public transport network within that specific area. Based on the collected data, a closer look will be taken at the potential between the metropolitan areas and the formulate the need for cross-border public transport improvements. Then the possible connections will be identified that are available cross-border looking both at local, regional and national levels. All the relevant modalities will be taken into account (e.g. bus, tram and train in various gradients). Based on the available supply, the demand will also be looked at to see if there is a gap or not. This will be done for both the baseline but and also for the years 2030 and 2050.*

Step 2: *The demand and supply will be matched to identify the potential for more use of public transport and the number of travellers, as well as the necessary improvements to detail the policy measure as much as possible.*

Step 3: *Based on the available numbers volumes of travellers, passenger-km as well as vehicle kilometres, the impacts that the policy measure entail will be identified, based on literature review.*

Step 4: *After calculating the impact for the specific measure, second order effects will be assessed, such as additional growth of travellers due to increased attractiveness of the established connection as well as impact on the rest of the network and potential degradation of closely or related public transport connections. Other (more qualitative second order effects of the measure) such as economic development and spatial impacts will only be assessed on a qualitative basis.*

2.3.6 Task 2.5: Stakeholder consultation in regional roundtables per corridor

Case studies in the 3 corridors – regional roundtables

For each case study a regional roundtable will be organised in order to – together with all stakeholders - conclude Task 2 (the analysis part) and look forward to the next tasks: implementation pathways.

The Main goal here, at the end of Task 2, is to get back to the stakeholders to check if they sustain the calculated effect, and if they have ideas on how to proceed and who else to include for an effective implementation.

1. Interviews or group discussions with leading stakeholders about the policy measures, their impact and also about possible pathways for implementation
2. Adjustment (if necessary) of solutions, and translation of these solutions in policies and related pathways to elaborated and/or adapted ideas, plans and projects.

Regional roundtables per corridor for meeting up co-governance - with all the involved business, public and/or civic stakeholders - will be organised, focused on solutions from the previous step, as well as discussion on draft recommendations.

2.4 Task 3: Towards implementation

Case studies in the 3 corridors – pathways for implementation and cooperation

For each case study individually – but also at cross-corridor level – pathways for implementation will be explored for the selected measures.

This means mapping the measures on the conceptual framework, with the aim to see to which extent these measures have generalisation potential for the SURE region and thus can be replicated in other contexts. At this stage, a stakeholder consultation is indispensable.

Task 3 runs largely in parallel with the majority of the work done in Task 2, which will allow us to identify in an early stage the relevant measures for implementation and replication and benefit from stakeholder discussions during the selection of the policy measures. Task 3 has specific steps identified below:

- As part of the policy measure selection, Task 3 will quantify the expected broader applications of the identified policy measures on a qualitative scale of 1 to 5 with 1 being very case study specific and 5 being highly generic. These results will be discussed together with the proposed selected measures with the partner stakeholders to indicate first directions of the analysis allowing early on adaptations where necessary.
- After the first round, when task 2.4 will be finalised, the second step starts looking at the involved stakeholders and their capabilities for implementation. This means we will look at which institutions are involved (based on input from Task 2.4) and who would be expected to logically implement this. This also focuses on the specifics of the market arena they are active in. This information will allow us to see if measures can be replicated to a certain extent. This will result in a descriptive text per measure identifying what is needed for replication and if and how in the other corridors this could be applied.

As a final step the measures will be put into perspective compared to each other, e.g. looking at estimated costs, lifetime, but also expected impact. The exact details will be discussed after the policy measures have been selected. This means we can also look at a larger geographical scope if necessary for a measure (e.g. freight trains towards the Alpes for the Rhine – Waal corridor). These perspectives will mainly be based on available information within the consortium or, when not, will be filed in as expert judgement. This final step requires again an active stakeholder involvement to allow them to learn from each other, but also allow them to elaborate on their measures for further detailing. Based on the feedback collected from the stakeholders, specific policy recommendations will be defined, implementation will be discussed (timing (short term vs long term), responsibilities, type of measure, impact, reflection to stakeholders needs...) and collaboration possibilities are already explored (cf. Task 4 in § 2.5 below).

Visual material (with maps etc) for each corridor, and for the whole SURE area, summarising and explaining the main results and recommendations, with maps etc.

2.5 Task 4: Proposals for cross-border and inter-metropolitan Cooperation

2.5.1 Task 4.1: Analysis of possible cross-border and inter-metropolitan cooperation

Via desk-research, the existing types of cross-border and inter-metropolitan cooperation in the SURE area will be investigated.

By using a suitable typology, an overview of different types of (existing elsewhere in Europe) cross-border and inter-metropolitan cooperation will be presented. Private initiatives will be in particular looked into. As an example the case is considered where in a specific area a number of producers of similar goods or products are clearly clustered. These producers put significant pressure on the existing mobility markets for transporting their goods individually. Therefore, policy measures should aim at alleviating pressure on the existing transport infrastructure. In the case at hand, a solution might exist in bundling the individual goods produced by combining transport.

It is expected that, via desk-research and various interviews with stakeholders to be performed (in prior tasks, and/or additional targeted interviews in this task), a set of clear use-cases as described by the example in the preceding paragraph can be established. Then it will be key to identify the core use-cases in concert with the stakeholders in order to elaborate full business cases.

2.5.2 Task 4.2: Proposing specific cooperation arrangements

Recommendations about the necessary cooperation arrangements to mitigate the impact of local, regional, national and international flows of persons and goods affecting the sustainable growth of SURE area will be drafted. These recommendations will be based upon extensive research and traffic modelling on how cross-border movement of people and goods could develop in the period until 2030 and 2050, taking into account different scenarios of societal, economic and political trends. During an internal project team meeting, these recommendations will be evaluated and validated by the experts of the consultant.

These draft recommendations will take into account to which extent current or expected transport infrastructure and spatial policies in the SURE area contribute to the most important EU (transport) targets for sustainable growth for 2030 and 2050.

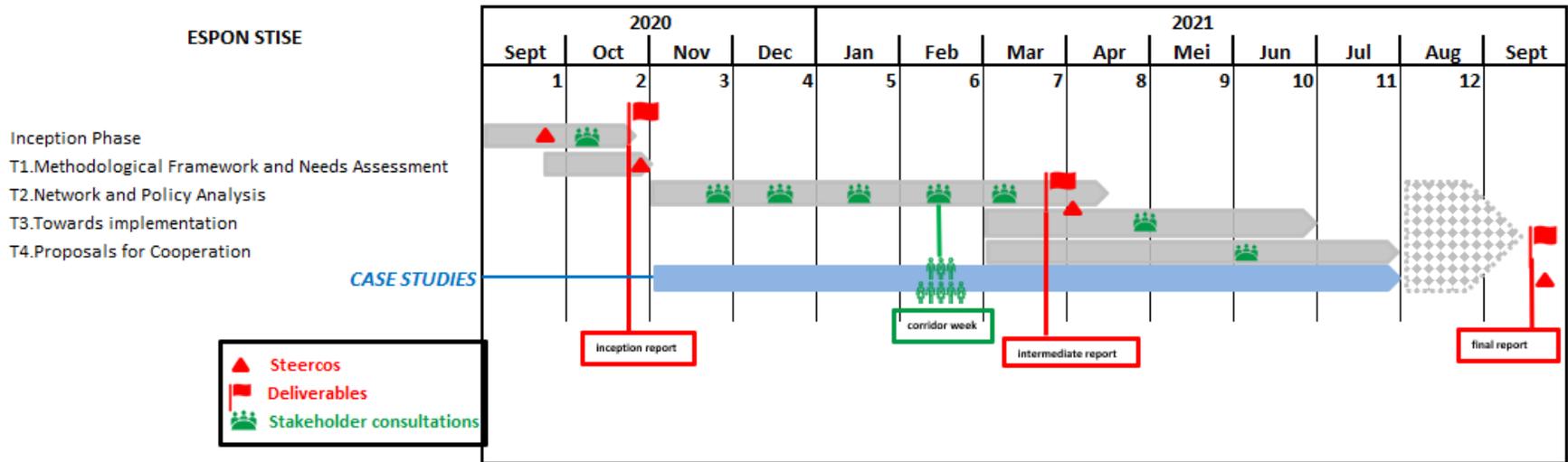
As indicated in the above paragraphs, an indication of what can be done not only at a global policy level will be provided, as well as a list of which initiatives can be taken up by the private sector. These insights will lead to a clear identification of the opportunities to improve cross-border and inter-metropolitan frameworks for cooperation.

The outcome will be structured by type of measure, responsible involved actors, short-mid-long term impact, etc., so that it is usable for policymakers in the SURE area.

3 Timing

Below an overview of the proposed timing. The deliverables and meetings with the steering group, as well as the consultation moments with the stakeholders are indicated.

Figure 2: Timeline



List of Annexes

Annex 1: Detailed description data collection in Task 2.1

Annex 2: Sources and data to be collected and used

Annex 3: Overview of the partner stakeholders' (policy) needs, bottlenecks and problems

Annex 4: Start of list of possible policy measures

Annex 5: External trends

Annex 6: First overview of the data visualisation tools to be developed in the framework of the project

Annex 7: Stakeholder consultation – timing and (digital) approach

Annex 1: Detailed description data collection for the baseline scenario

The baseline will be based on the European TRANSTOOLS3 model (<http://www.transportmodel.eu/>). TRANSTOOLS is the main model for policy analysis of the various Commission services addressing transport issues. The model provides passenger and freight demand on NUTS3 level for all EU countries for 2010, 2030 and 2050. For the future years one baseline scenario is available. Since the model covers the whole study area and the surroundings, it is suited to show the major developments within the study area in a consistent way. To validate the results of TRANSTOOLS3, passenger-kilometres and freight ton-kilometres per mode on national and regional levels will be compared to Eurostat statistics and the results of national and regional transport models. In the validation, the following models will be considered:

- Netherlands: Dutch national passenger model (LMS), if necessary, the deduced regional models (NRM), Dutch national freight model (Basgoed);
- Flanders: Flemish transport model for passengers and freight (Verkeersmodel Vlaanderen);
- Germany: regional model of North Rhine Westphalia (Landesverkehrsmodell NRW);
- Wallonia and France: to be decided, possibly EMME 4 (Regional Direction for Environment, Development and Housing) & Musti (Brussels Capital Region).

In case of inconsistencies, scale factors will be introduced to calibrate the TRANSTOOLS3 results on the other sources. Since the NUTS 3 level is too detailed for an overview of passenger and freight transport flows, the data will be aggregated on NUTS2 level within the SURE area (30 zones), to NUTS1 level for the remaining part of France and Germany (26 zones) and on national level for the rest of Europe (33 zones). For the base year and the future years (2030 and 2050), origin-destination (OD) matrix with 89 times 89 times 32 entries will be generated. The 32 dimension indicates the information that is provided per OD-pair for passenger and freight. In the following list the dimensions are explained:

- Passenger demand (12 = 3 x 4)
 - 3 travel purposes: commuting tours, business tours and private & vacation tours
 - 4 travel modes: car as driver, car as passenger, public transport (rail, tram/metro, coach/bus), slow (bike, walk)
- Passenger level of service (5)
 - Car distance
 - Free flow car time

- Rail distance (sum of access/egress length and onboard length)
- Rail time (sum of access/egress time and onboard time)
- Rail frequency (runs per day)
- Freight demand (12 = 3 x 4)
 - 3 modes (road, rail, inland waterways)
 - 4 categories (dry bulk, liquid bulk, general cargo, containers)
- Freight level of service (3)
 - Road travel time
 - Rail travel time
 - Inland waterway travel time

Use of the data collected in building the baseline scenario

The data collected in this task will be stored in one single Excel file. It gives an overview of the current volumes of passenger travel and freight transport and provides a baseline scenario for 2030 and 2050. The segmentation in modes, travel purposes and freight types provide additional insights. In addition, the travel and transport times provide clear measures for the accessibility of the regions and allow estimates of policies that affect travel or transport times.

The collected data is a helpful tool for policies that have significant cross border effects or affect the SURE area as a whole. However, for the estimation of effects of national or regional policies the advice is to use the data and transport models of the corresponding regions, since they are much better suited. This implies case studies or policies that geographically overlap with the study area of one of the national/regional transport models mentioned will be strongly preferred if this is the measure that is selected.

Annex 2 : Sources and data to be collected and used

Table 1: A start of longlist of Policy documents – provided by the partner stakeholders so far - regarding the structure of the (regional) mobility system, expected growth of mobility flows towards 2030, 2040, 2050, reaching sustainability goals in mobility towards 2030, 2050, cross-border issues for persons/goods

For the whole Eurodelta and specifically for the corridors Rhine-Scheldt Delta and Rhine-Waal
<p>The recently updated TEN-T work plans are important policy documents for the STISE project: https://ec.europa.eu/transport/themes/infrastructure/news/2020-11-03-update-ten-t-corridor-work-plans_en. Three TEN-T corridors run through the Eurodelta area: Rhine-Alpine, North Sea – Baltic and North Sea – Mediterranean.</p>
<ul style="list-style-type: none"> • Cross-border
<p>Greenlanes EU https://ec.europa.eu/transport/sites/transport/files/legislation/2020-03-23-communication-green-lanes_en.pdf</p>
<p>RH2INE https://www.rh2ine.eu/ pm: ipcei document RH2INE 22 September 2020</p>
<p>De Lage Landen 2020-2100. Een toekomstverkenning https://www.vlaanderen.be/publicaties/de-lage-landen-2020-2100-eeen-toekomstverkenning</p>
<p>Position paper Internationaal spoor https://www.rijksoverheid.nl/documenten/kamerstukken/2020/02/18/position-paper-internationaal-personenvervoer-per-spoor</p>
<p>Improving International Passenger Rail (in connection with sustainability). Very recently, the Dutch council for Environment and infrastructure (RLI) published a study on this issue. https://www.rli.nl/sites/default/files/advies_verzet_de_wissel_-_naar_beter_internationaal_reizigersverkeer_per_trein_-_def.pdf Together with their Belgian, German and European sister organisations, they informed the Commissioner of Transport of the European Commission, referring to the Green Deal: https://www.rli.nl/sites/default/files/letter_ec_improving_international_passenger_rail_-_final.pdf. The Dutch Government assessed the advice: https://www.rli.nl/sites/default/files/kabinetreactie_op_advies_verzet_de_wissel.pdf</p>
<ul style="list-style-type: none"> • National, regional, local
<p>Bundesverkehrswegeplan 2030 Bundesministerium für Verkehr und digitale Infrastruktur</p>
<p>Klimaatakkoord Nederland, especially the part on mobility https://www.klimaatakkoord.nl/mobiliteit</p>
<p>Goederenvervoeragenda 2019 https://www.rijksoverheid.nl/documenten/rapporten/2019/07/10/definitieve-goederenvervoeragenda</p>
<p>Schets mobiliteit 2040 https://www.rijksoverheid.nl/documenten/rapporten/2019/06/07/schets-mobiliteit-naar-2040</p>
<p>NOVI (policy choice sustainable mobility) https://www.denationaleomgevingsvisie.nl/publicaties/novi-stukken+publicaties/HandlerDownloadFiles.ashx?idnv=1760380 p. 31-32, 52-53, 126-129</p>
<p>BO-MIRT 2021 https://www.rijksoverheid.nl/documenten/rapporten/2020/09/15/mirt-overzicht-2021</p>
<p>Uitvoeringsagenda slimme en duurzame mobiliteit metropoolregio Amsterdam https://samenbouwenaanbereikbaarheid.nl/programmaliijn-uitvoeringsagenda/slimme-en-duurzame-mobiliteit</p>
<p>Havenvisie Amsterdam https://www.portofamsterdam.com/nl/over-port-amsterdam/missie-en-visie/visie-2030</p>
<p>Visie Noordzeekanaalgebied https://www.noordzeekanaalgebied.nl/visie/doorkijk-naar-2040/</p>

Omgevingsvisie Noord Holland
MRA agenda
Omgevingsvisie Provincie ZH (aspect sustainable mobility) https://www.zuid-holland.nl/actueel/omgevingsbeleid/ p. 34, 37, 57, 153-54, 186-87
Nieuw programma mobiliteit Provincie Zuid-Holland is in the making (in concept?)
Havenvisie Rotterdam https://www.portofrotterdam.com/sites/default/files/havenvisie-rotterdam.pdf?token=zK80juxe
Research Goederenvervoer over water https://www.zuid-holland.nl/onderwerpen/verkeer-vervoer/goederen-over-water/
Verklaring impulsagenda Greenport 3.0 https://greenportwestholland.nl/nationale-impulsagenda-greenport-3-0/
Hoofdlijnenbrief mobiliteitstransitie Den Haag https://denhaag.raadsinformatie.nl/document/7519664/4/RIS302361%20Hoofdlijnenbrief%20mobiliteitstransitie%20_
Structuurvisie CID Binckhorst Den Haag https://repository.officiële-overheidspublicaties.nl/externebijlagen/exb-2020-22387/1/bijlage/exb-2020-22387.pdf
Strategische visie Beleidsplan Ruimte Vlaanderen https://omgeving.vlaanderen.be/beleidsplan-ruimte-vlaanderen
Specifically for corridor Rhine-Scheldt Delta
• Cross-border
Actieplan Euregio Scheldemon https://www.euregioscheldemon.be/publicaties-ii/
North Sea Port District: Werkagenda https://www.euregioscheldemon.be/publicaties-ii/
Strategienota Vlaanderen-Nederland (2017) https://www.vlaanderen.be/publicaties/strategienota-vlaanderen-nederland-steunen-op-de-concurrentiekracht-van-de-delta
VNDelta 2040: Ruimtelijk-Economische logistieke analyse http://www.socool-logistics.eu/www.socool-logistics.eu/socool3/index.php/en/library/doc_download/Vlaams-Nederlandse-Delta-2040.pdf_%3B%20modification-date%3D_Fri%2C%2005%20Oct%202012%2012_22_15%20%2B0200_%3B%20size%3D1182451%3B
Gebiedsfoto Corridor Rotterdam-Antwerpen http://rhk.maps.arcgis.com/apps/MapSeries/index.html?appid=15b6c016adeb4f359fdeaf378dc5b6cb
Ruimtelijk-Economische Foto 2019 https://pzh-my.sharepoint.com/personal/m_hukema_pzh_nl/Documents/Chatbestanden van Microsoft Teams/20191128
Specifically for corridor Rhine-Waal
• Cross-border
One corridor one strategy paper EGTC Rhine-Alpine https://egtc-rhine-alpine.eu/nl/publications/one-corridor-one-strategy/
Recent study ETH Zürich on spatial development in connection with railway development (The purpose of this study is to identify the spaces of importance for the future spatial development along the Rhine-Alpine Corridor. The focus is set hereby on spaces with unsolved conflicts between spatial and railway infrastructure developments.)
EU did much research on the Rhine-Alpine corridor. Especially the recent working agenda is important. Publications can be downloaded via: https://ec.europa.eu/transport/themes/infrastructure/rhine-alpine_en
Programma /toekomstagenda topcorridors https://www.topcorridors.com/samenwerken/bibliotheek2/bo+mirt+2019/handlerdownloadfiles.ashx?idnv=1504021

Pipeline corridor Rotterdam-Chemelot – Ruhr https://www.1limburg.nl/provincie-trekt-tonnen-uit-voor-grote-kansen-waterstof (policy)
Actieplan militaire mobiliteit https://www.rijksoverheid.nl/documenten/rapporten/2018/05/09/mededeling-actieplan-militaire-mobiliteit
Working agenda mobility NL-NRW https://www.vm.nrw.de/presse/pressemitteilungen/Archiv-des-VM-2019/2019_02_25_Agenda-niederlaendische-Provinzen/20190225-Mobility-NL-NRW-Arbeitsagenda.pdf
Aktionsplan Niedrichwasser Rhein
<ul style="list-style-type: none"> • Regional
Uitvoeringsprogramma REOS https://zoek.officielebekendmakingen.nl/blg-774304.pdf
Kracht van Oost: research on the spatial-economic structure of Overijssel and Gelderland. Report will be delivered Autumn 2020.
Subsidieregeling Gelderland op duurzaam vervoer. Beleid Gelderland op XXL Logistiek. All accessible via: www.gelderland.nl (via search function)
Integral Urbanization strategy Food-Valley en region Arnhem-Nijmegen (by national, provincial and local government (in response to Omgevingsagenda Oost and additonal demand for 100.000 houses to 2040. Will be delivered in 2021.
RPW (regionale programmering werklocaties) in Gelderland: policy document for business parks (incl XXL logistics)
The current guideline for Regionalverband Ruhr (RVR) is the Regional Concept for the Development of Mobility in the Ruhr Metropolis (includes cross-border BE/NL) https://www.rvr.ruhr/fileadmin/user_upload/01_RVR_Home/02_Themen/Mobilitaet/Mobilitaetskonzepte/Entwurf_Endbericht_Regionales_Mobilitaetsentwicklungskonzept.pdf Management summary https://www.rvr.ruhr/fileadmin/user_upload/01_RVR_Home/02_Themen/Mobilitaet/Mobilitaetskonzepte/Entwurf_Kurzfassung_Endbericht_Regionales_Mobilitaetsentwicklungskonzept.pdf
Further information on transportation developments in the Ruhr region is in policy and research documents which have been attached at e-mails from RVR via lead stakeholder to STISE researchers: <ul style="list-style-type: none"> - Positionspapier Verkehr der Metropolregion Rheinland - Forderungen der Metropolregion Rheinland zur Finanzierung der kommunalen Verkehrsinfrastruktur durch das Land NRW und den Bund (2019) https://metropolregion-rheinland.de/wp-content/uploads/2020/09/MRR_Positionspapier_Kommunale_Verkehrsinfrastruktur_Juni.pdf - Zusammenfassung Teilabschnitt EVTZ Studie Deutsch https://metropolregion-rheinland.de/wp-content/uploads/2020/09/CODE_RHINE_ALPINE_D_mailversand.pdf - Datenatlas Metropolregion Rheinland 2020 (Seite 12-17, 24-25) https://metropolregion-rheinland.de/wp-content/uploads/2020/09/Datenatlas_20200810_Web_repro_opt225.pdf - ÖPNV Organisationsstruktur in NRW https://infoportal.mobil.nrw/organisation-finanzierung/oepnv-organisationsstruktur.html - ÖPNV Gesetze in NRW https://www.vm.nrw.de/verkehr/Oeffentlicher-Personennahverkehr/oepnv_gesetz/index.php - Stadtentwicklung und Mobilität im Rheinland (IHK Positionspapier) https://www.ihk-bonn.de/fileadmin/dokumente/Downloads/Standortpolitik/Verkehrspolitik/Stadtverkehr2025.pdf - Zukunftsnetz Mobilität NRW – Handlungsfelder https://zukunftsnetz-mobilitaet.nrw.de/handlungsfelder - Pendleratlas NRW https://www.pendleratlas.nrw.de/ - IT.NRW – Pendlerströme https://www.it.nrw/statistik/wirtschaft-und-umwelt/arbeit/pendler - Die Nachhaltigkeitsstrategie für das Land Nordrhein-Westfalen, 2016 https://www.nachhaltigkeit.nrw.de/fileadmin/download/nrw-nachhaltigkeitsstrategie_broschuere.pdf

- Agglomerationskonzept der Region Köln-Bonn
https://www.region-koeln-bonn.de/fileadmin/region-koeln-bonn/tx_dam/2019_Agglomerationskonzept_Region_Koeln_Bonn_KONZEPTBAND.pdf
and
<https://www.region-koeln-bonn.de/de/themen/integrierte-raumentwicklung/regionale-ebene/agglokonzept/index.html>
- Vital Nodes project, a lot of policy recommendations were formulated: <https://vitalnodes.eu/>

Table 2: Accessibility to relevant traffic models

<p>Province of South Holland</p> <p>The Province of South Holland possesses the NRW-west model and several subregional models, e.g. Midden-Holland, MRDH. The MRDH model is multimodal, all others are unimodal (only car).</p> <p>All regional models use the Omnitrans package (delivered by Goudappel Coffeng). All models are administered by Goudappel Coffeng, except for the model of Holland Rijnland, which is administered by 4Cast. Data are accessible via the administrators of the models (mostly Goudappel) after permission of the owners (South Holland and regions).</p>
<p>Brussels Capital</p> <p>The Brussels Capital Region runs its own traffic model Musti</p>

Table 3: Overview of the partner stakeholders' suggestions for (other) stakeholders to involve

Stakeholders to involve	Concerned corridor
<p>STAKEHOLDERS to be involved in case studies Rhine-Waal AND Rijn-Scheldt:</p> <ul style="list-style-type: none"> • STISE stakeholders Amsterdam, The Hague, South Holland • Province of North Holland • Metropole Region Rotterdam – The Hague • Rotterdam • City of The Hague • Economic Board of South Holland • Public Transport Company of Rotterdam (RET) • Port of Rotterdam • Dutch Entrepreneurs Organization (VNO-NCW), • Dutch Railway Company (NS), • Dutch Ministry of Infrastructure (I&W beleidskern Thorsten Wege vanuit Directie) • Dutch Ministry of Internal affairs /spatial planning / cross border (BZK afdeling GROS (Willemieke Hornis) • Dutch Ministry of Economic affairs and climate (Klimaatakkoord) • EGTC Rhine-Alpine • DG REGIO • DG MOVE 	<p>Rhine-Scheldt Delta (A'dam-R'dam-A'pen)</p> <p>And</p> <p>Rhine-Waal (A'dam-R'dam via Gelderland/North Brabant to Rhein-Ruhr area)</p>
<p>STAKEHOLDERS to be involved in case study Rhine-Scheldt:</p> <ul style="list-style-type: none"> • NMBS, Infrabel • Region of Flanders, Departement Omgeving • Region of Flanders, Departement Mobiliteit en Openbare Werken • Vervoersregio Gent • Stad Gent • North Sea Port • Provincie Oost-Vlaanderen • Stad Antwerpen • Haven Antwerpen • Provincie Antwerpen • Gemeente Terneuzen • Provincie Zeeland • Euregio Scheldemond • Acelor-Mittal, DOW • Smart Delta Resource • Other companies • Logistic companies • Joachim Declerck (AWB and UGent), who made the first version of the working agenda NSPD and contributed to the ESF project Regionetwerk Gent • Vlaams-Nederlandse Delta 	<p>Rhine-Scheldt Delta (A'dam-R'dam-A'pen)</p>

Stakeholders to involve	Concerned corridor
<p>STAKEHOLDERS to be involved in case study Rhine-Waal:</p> <ul style="list-style-type: none"> • STISE stakeholders Gelderland, RVR and Metropolregion Rheinland • Euregio Rhine-Waal • Logistics Valley (triple helix organisation, which supports improvement of the logistic ecosystem on the corridor parts in Gelderland) 	
<p>STAKEHOLDERS to be involved in case study Lille-Brussels:</p> <ul style="list-style-type: none"> • <u>Engineering – Expertise</u>: Cerema (Centre d'études et d'expertise sur les risques, l'environnement, la mobilité et l'aménagement), ADULM (Agence de Développement et d'Urbanisme de Lille Métropole), Bruxelles Mobilité and SPF mobilité • <u>Rail Operators</u>: SNCF, SNCF Réseau, SNCB/NMBS, Infrabel, Eurostar, Thalys (which are about to merge, see: https://www.latribune.fr/entreprises-finance/services/transport-logistique/thalys-le-projet-de-fusion-avec-eurostar-est-confirme-pour-2021-856771.html)... • <u>Other sectorial actors</u>: Ports de Lille, Norlink Ports, aéroport de Lille, Port de Bruxelles, vlaamsewaterweg, voies-hydrauliques.wallonie • <u>Institutions</u>: Hauts-de-France Region, DREAL (Direction Régionale de l'environnement, de l'aménagement et du logement), French State, Hauts-de-France Mobilité, EGTC Eurometropolis Lille Kortrijk Tournai... Region of Flanders, Departement Omgeving and Departement Mobiliteit en Openbare Werken ; region of wallonia, Bruxelles Mobilité and SPF mobilité <p><u>Economic actors</u>: CCI (Chambre de Commerce et d'Industrie) Hauts-de-France, Hello Lille, Entreprises & Cités, Club Gagnants, Comité Grand Lille, visit.brussels, hub.brussels... BECI, Brussels metropolitain association...</p>	<p>Lille-Brussels</p>

Annex 3: Overview of the partner stakeholders' (policy) needs, bottlenecks and problems

Below an overview of the partner stakeholders' needs and ideas provided so far. This list is a mix of bottlenecks, (policy) needs and suggestions, questions, problems and bottlenecks they struggle with... Together with the documents sent by the partners stakeholders to the Consultant so far, this a basis to start from in this study.

Table 4: Overview of the partner stakeholders' political objectives and policy needs – provided by the partner stakeholders so far

Political objectives / policy needs	Concerned partner stakeholder(s)
<p>Traffic assignments - concern regarding missing data, especially in a cross-border context Lille-Brussels.</p> <p>For example rail operators don't communicate data on climb-descents in trains, because transport is a highly competitive sector. Therefore there is no proper view of flows between Lille and Brussels (not only rail by the way but also road and other means...), for passengers (and also for freight). There is a need to get a right scope of the issues at stake.</p>	Lille-Brussels
<p>There is a need to measure the border effect for Lille-Brussels:</p> <p>Between Lille and Brussels most of the infrastructure is there (especially the high speed rail line), but it seems it doesn't work as efficiently as it should: (1) the frequencies are not adequate (*), (2) the tariffs are high and ticketing is not integrated (no real operability between the different rail operators, and between the rail operators and the urban transport operators) (**), (3) the flows do not seem to correspond to the genuine needs.</p> <p>(*) Brussels is a gateway to North West Europe by high speed rail. But Lille is also a gateway to high speed rail from its neighbouring regions (Hauts-de-France, West Flanders, Western Hainaut, UK...). Lille Metropole (MEL) and Brussels Capital Region are about the same demographic weight, of course with different background, and with a much smaller area for Brussels capital region than for the Métropole Européenne de Lille (MEL). And that, within a 100km distance, which is very small from a French point of view. Journey takes just 35 min by High Speed train. But frequency is inadequate.</p> <p>(**) Cost, tariff and time are not the only variable, but... are very important ones, although:</p> <ul style="list-style-type: none"> • Lille – Brussels: 35mn by high speed train → for # 30 €. And then need to commute in Brussels South to get to the airport (not practical with luggage...) • Direct Flixbus Lille (starting from the High Speed railway station)–Brussels Airport # 2hrs 15 → 12€. Longer but more practical and much cheaper... So ?... Cf. the remark of Dagmar Keim (Amsterdam) about Flixbus. 	Lille-Brussels
<p>What is the real potential of travels between Lille and Brussels? For what trip purpose? Social benefit: leisure, tourism, culture, business, shopping, social relations, employment,...</p>	
<p>What is the interaction of the case study Lille-Brussels with the other case studies – in particular the Rhine Scheldt Corridor - as part of the global SUREurodelta system: flows of persons and of goods (especially sea and inland ports, waterways... in a modal shift perspective</p>	Lille-Brussels
<p>Research into the accessibility of the two metropolises Lille and Brussels: (1) between themselves but also (2) in relation to the north west European urban network - and (1) as gates as much as (2) 2 poles of a sub-regio</p>	Lille-Brussels
<p>How can the concerned rail operators be committed to sustainable growth in the Brussels-Lille corridor? ("policy driven interest"?) The rail operators must absolutely work with the local actors so that they take</p>	Lille-Brussels

Political objectives / policy needs	Concerned stakeholder(s) partner
their full place in the development of the Lille-Brussels corridor: on frequencies, on attractive pricing - especially during low attendance during periods when conferences and exhibitions are less present in our respective destinations (February / July / August / December).	
<p>Tactical urbanism: it highlights the question of the necessary (but not evident) interaction between the different scales (local, regional, cross border, macro regional ...) and above all the fact that the mobility / transport chain has to be considered as a whole.</p> <p>Cf. hypothesis formulated by Helmut Thoele (province South-Holland): "local, regional, national and international flows of persons and goods are affecting the sustainable growth of the SURE region".</p> <p>The mobility "culture" - or "behaviour" , cf. Henk Bouwman's remarks and METREX proposition - is essential. It is important to find the same culture on your destination, e.g. bicycle self-serve rental system, or at least think about offering a coherent service during the whole trip.</p>	<p>Lille-Brussels</p>
<p>What is modal split in the Eurodelta? How to make the car and air dominated transport in a range of 250-300 km more sustainable in a proactive way?</p>	<p>Rhine-Scheldt Delta (A'dam-R'dam-A'pen) And Rhine-Waal (A'dam-R'dam via Gelderland/North Brabant to Rhein-Ruhr area) Lille-Brussels</p>
<p>Why is the market for cross border transport of persons by train so marginal, in this area with 3-4 top regions within that distance? Compared to the domestic markets for the same distances? Which institutional factors are at play?</p>	<p>Rhine-Scheldt Delta (A'dam-R'dam-A'pen) And Rhine-Waal (A'dam-R'dam via Gelderland/North Brabant to Rhein-Ruhr area) Lille-Brussels</p>
<p>How can we respond on these issues for the connections Cologne-Rotterdam and Duisburg-Antwerp? Do we need more cross border programs like RH2INE?</p>	<p>Rhine-Scheldt Delta (A'dam-R'dam-A'pen) And Rhine-Waal (A'dam-R'dam via Gelderland/North Brabant to Rhein-Ruhr area)</p>
<p>How many examples of this kind of cross border projects (excluding cross border bike lanes and bus lines) do exist already? If there are, on which situations are chances for those kind of projects. If not, why would they not work (enough) and what could be directions for solutions?</p>	<p>Rhine-Scheldt Delta (A'dam-R'dam-A'pen) And Rhine-Waal (A'dam-R'dam via Gelderland/North Brabant to Rhein-Ruhr area)</p>
<p>Big cities are not able to facilitate car traffic more yet. Further broadening of motorways is running up against spatial and safety limits. Possible solutions are stricter parking policies and facilitating shared mobility by mobility hubs. To which extent could implementation and upscaling of such solutions contribute to sustainability of mobility in this area?</p>	<p>Rhine-Scheldt Delta (A'dam-R'dam-A'pen) And Rhine-Waal (A'dam-R'dam via Gelderland/North Brabant to Rhein-Ruhr area) Lille-Brussels</p>

Annex 4: Start of list of possible policy measures

Table 5: A start of list of possible policy measures for sustainable transport (infrastructure) – proposed by the partner stakeholders so far

Policy measure	Category
Financing of infrastructure at European level	Policy
No-fly-zones < 700 km	Policy
Improving weak/missing cross border links	Technology
Maut / truck tax	
Measures from the Dutch klimaatafel on mobility https://www.klimaataakkoord.nl/mobiliteit and Dutch Green deal measures https://www.greendeals.nl/sites/default/files/uploads/2016/03/Progress_report_Green_Deals_ENG.pdf , p. 26-31 (most of them are included in this list)	
Development of rail terminals e.g. rail terminal Gelderland	
Extending highways across borders (e.g. A15 from Netherlands to Germany)	
Cooperation between port terminals	Policy
Connected transport corridors	
Scale jump public transport (upscaling urban metro system to interregional metro system, upscaling national intercity train system to international intercity train system)	
Regulation of use of infrastructure, e.g. by pricing and strict standards	
Harmonisation of rules and data/digitalisation	Policy
Stimulating smart mobility	Policy
Stimulating development of (infrastructure for) clean fuel (transport means) like hydrogen and electric cars	Technology
Stimulating demand driven transport (e.g. MaaS)	Market reorganisation
Enlarging agglomeration force by improving intercity connections or by enlarging biggest cities (research Van Oort)	
Creating transport hubs (parking facilities, transit services , distribution centres) at agglomeration fringes	Technology
Tactical urbanism	policy
Establishing European corridor authority for passenger transport by rail, which should coordinate two elements of the rail system: traffic control and capacity management	
EU Regulations on travel information, ticketing and passenger rights	

Annex 5: External trends

Suggestions for external economic or societal trends that (1) are not naturally included in existing traffic models (e.g. population growth, GDP etc.), (2) have a major impact to transport volumes towards 2050, (3) are external, not the direct consequence of new (to be taken) policy measures in the mobility system itself.

Suggestions are:

1. **Health/economic crises** after Covid effects: the actual and future health crises could have structural impacts on the demand for mobility of persons, e.g. less demand for (long distance / cross border) travel because of teleworking, less demand for public transport, more use of cars and bikes
2. **Climate change/energy transition**
3. **Food production:** more local and regional production of food, which could have structural impact for the demand for (long distance) transport of goods
4. **Technological evolutions** - e.g. new discovery, development and successful implementation of cleaner fuels (e.g. hydrogen), smart mobility, futuristic means of transport)
5. **The future of growing globalisation in the field of transport** - e.g. increasing worldwide transport, increasing transport competition from China (buying up European ports, the New Silk Road project...)
6. **Possible (dis)integration in the EU and its effects on cross-border traffic and travel**
7. **Circular economy** that could lead to more local (re)production of commodities and less production of goods, which, in turn, could have structural impact on the demand for (long distance) transport of goods (a trend that may be comparable to - and as a trend combined with - food production and/or climate change)
8. **Teleworking (home office)** that could lead to less demand for (long distance / cross border) travel (a trend that may also be considered as a part of long term effects of health crises)
9. **E-commerce** that could have a major impact on transport and landscape (XXL DC)

Annex 6: First overview of the data visualisation tools to be developed in the framework of the project

The project will of course use geographical means to visualise the results of the project, this will mean (online) maps will be created for the total region, the specific corridors and where possible of the measures. However, the selected measures also need to be combined into graphical interesting tools. Below a couple of graphical representations are presented based on analysis performed in the past month. Pictures i.e. relate to depiction of changes in modal shift, changes in travel time and overall trends regarding travelling EU-wide.

Within the consortium the expertise is available to create respective graphical representations to show the impact of measures and allow for appealing interpretation of the project results. The specifics will be developed in the cause of the project in close cooperation with the leading stakeholders.

Figure 3: Modal shift from week 10 to week 14 (lockdown)

Modal Shift from week 10 to week 14 (lockdown)



Modal Shift from week 10 to week 14 (lockdown)



Map 2: Average travel time per panel member per modality

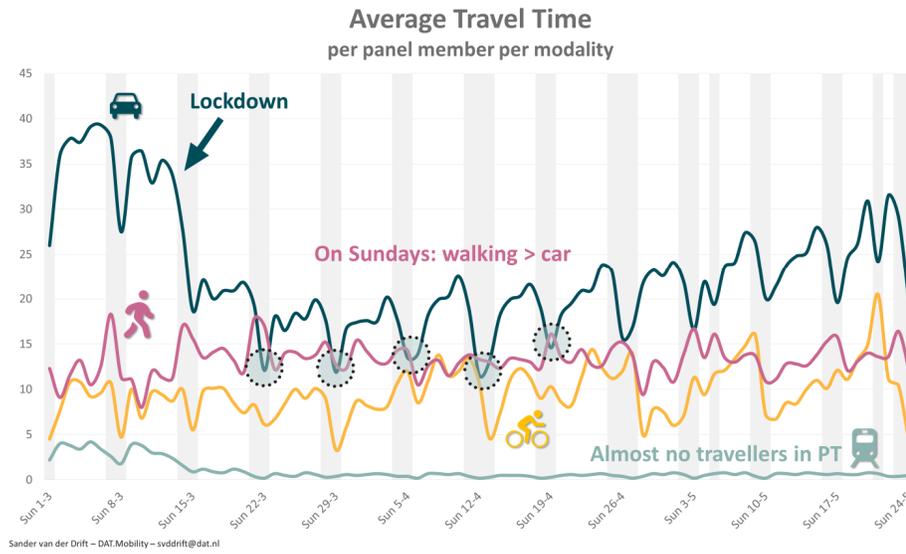


Figure 4: Google Mobility trends: side by side comparison

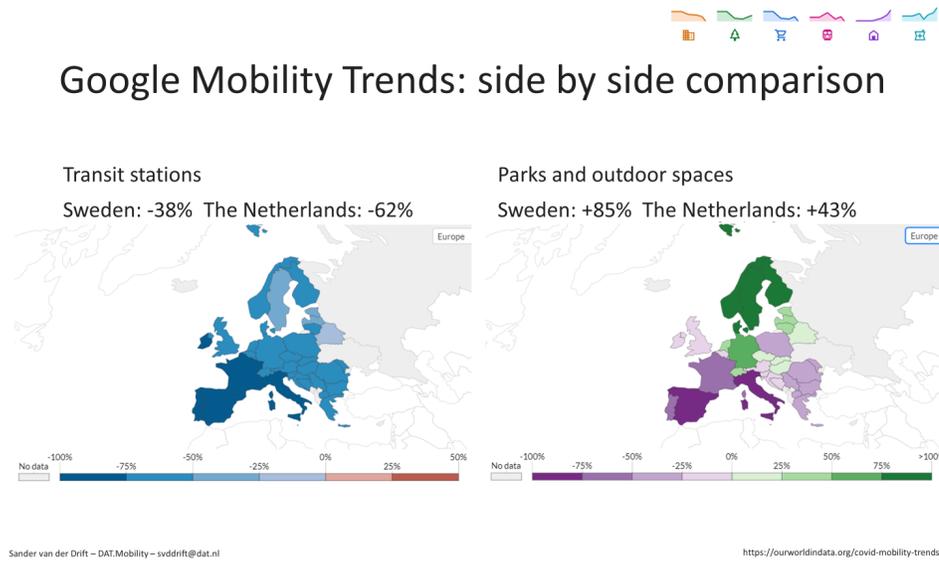


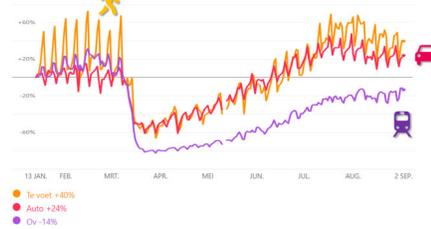
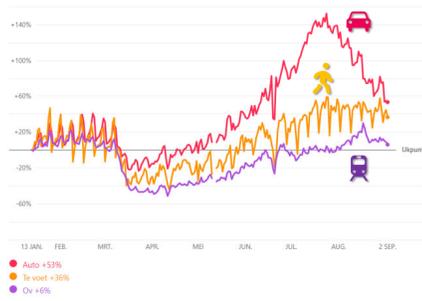
Figure 5: Apple Mobility trends: side by side comparison



Apple Mobility Trends: side by side comparison

Sweden

The Netherlands



Sander van der Drift – DAT.Mobility – svddrift@dat.nl

<https://covid19.apple.com/mobility>

Annex 7: Stakeholder consultation – timing and (digital) approach

Close cooperation with the partner (and other) stakeholders in the 3 corridors is key in this project. Their expectations and needs are central to the project and need to be taken into account and included throughout the entire project: from the early beginning where (policy needs) and main bottlenecks are harvested until the end where a carefully selected set of policy measures are assessed in detail and linked to policy recommendations and proposals for collaboration.

At various moments in the project, the stakeholders - whether or not per corridor - are interviewed or brought together in working sessions and round tables to, for example, provide information, brainstorm together, validate certain proposals or results, etc.:

Task(s)	Topic(s)	Type of consultation	Date or indicative timing
1, 2	Basis for partner stakeholders policy needs, stakeholder mapping, main bottlenecks	Written consultation	October 2020
all	Inception Report	Steerco #2	Date: 21 October 2020
1, 2.2	Relevant EU Targets for sustainable growth Main bottlenecks & possible solutions... looking ahead to the policy measures where much is expected	Online Work session: plenary per corridor	Date: 30 November 2020
2.2	Interviews – deep dive bottlenecks & solutions	Online interviews (up to #15)	December 2020-January 2021
2.1	Presentation and discussion baseline scenario	Online work session (partially per corridor)	January 2021
2.3	From long list to short list (up to 10) policy measures for the quick-scan	(short) online work session (partially per corridor)	Early February 2021
2.3	Discussion results quick scan / selection policy measures to study in-depth (in Task 2.4)	Online work session (partially per corridor)	2 nd half of February 2021
Interim Report			Date: 22 March 2021
all	Discussion draft results of in-depth analysis (Task 2.4)	Steerco #3 – after submission Interim Report (end of March)	Early April 2021
2.5	Presentation and discussion results of in-depth analysis (Task 2.4) with larger group(s) of stakeholders	Regional Roundtable	End of April 2021

3	Implementation policy measures	Work session (partially per corridor)	May 2021
4.1	Use cases cross-border and inter-metropolitan cooperation	Interviews	June/July 2021
Final Report			Date: 21/09/2021

In view of the restrictions that currently apply - and are likely to stay in force in the coming months - with regard to physical meetings, certainly in the context of international projects, an alternative digital approach will be proposed, if necessary, that responds to this, without compromising the inherent quality and added value of sessions in which discussions among different stakeholders lead to new ideas, better understanding and synergies.

Virtual interviews

Virtual - one to one or group - interviews can easily be conducted via Microsoft Teams.

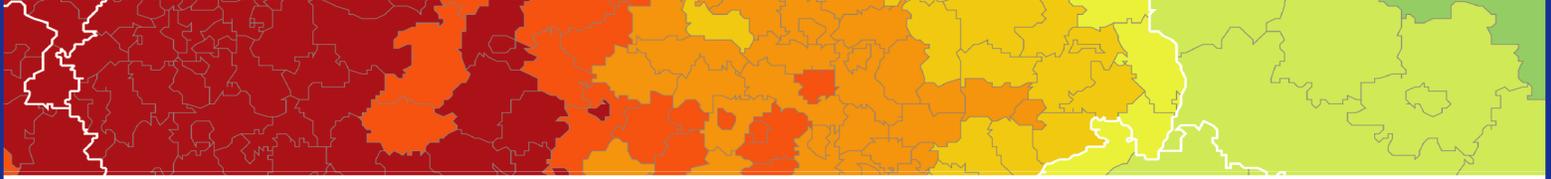
Interviewees who do not have access to the Microsoft Teams software can also be interviewed simply by phone, or if possible via video conference devices in the consultants' offices.

Virtual workshops

Also for larger groups and more interactive sessions, Microsoft Teams offers sufficient possibilities to serve as a comfortable platform for workshops and round tables with larger number of participants:

- Organising new Teams meetings can easily be scheduled from Outlook
- The chat, video ("gallery view"), and screenshare options are the most common features providing communication options and "collaborative space" feeling
- The use of Breakout Rooms - Teams sub-channels with a Meet now functionality - are useful for activities where people need to be broken up in groups by tables or go to separate rooms

As for face to face interviews and stakeholder consultations, it is ensured that invitations to workshops are sent on time so that those involved can save the date. For the organisation and facilitation of the session, a flipbook will be prepared, which will be submitted to the Client in advance. A specific methodology will be proposed for these workshops, depending on the number of participants, (e-)facilities, the content and the objectives of the meeting.



ESPON 2020 – More information

ESPON EGTC

4 rue Erasme, L-1468 Luxembourg - Grand Duchy of Luxembourg

Phone: +352 20 600 280

Email: info@espon.eu

www.espon.eu, [Twitter](#), [LinkedIn](#), [YouTube](#)

The ESPON EGTC is the Single Beneficiary of the ESPON 2020 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway and Switzerland.