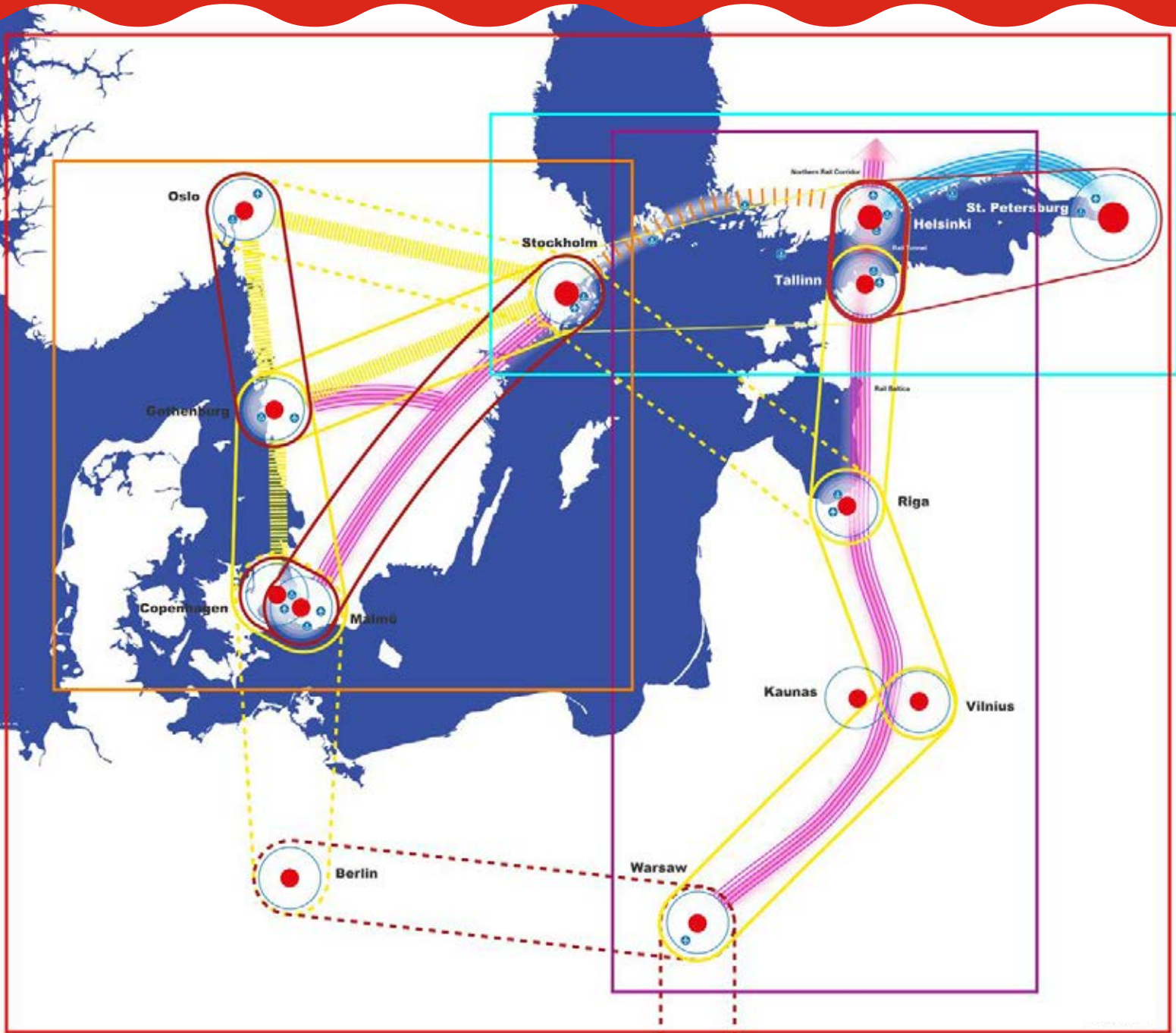


Nordic-Baltic Space Transnational Development Perspective



Macro-Regional Analysis of the Nordic-Baltic Space

Nordic-Baltic Space Transnational Development Perspective

Participating Cities and City-Regions

Lead Partners – Helsinki and Stockholm:

Helsinki

Douglas Gordon – Architect. International Coordinator. City of Helsinki, Urban Environment Division, Strategic Planning. Joint Coordinator of the Nordic-Baltic Space project.

Ilona Mansikka – Architect. Regional Planning Manager. Helsinki-Uusimaa Regional Council, Regional Land Use Planning.

Stockholm

Jessica Andersson – Architect/Spatial Planner. Head of the Department for Regional Planning. Region Stockholm. Regional Growth and Planning Administration. Joint Coordinator of the Nordic-Baltic Space project.

Michael Erman – Regional Planner. Joint coordinator of Nordic-Baltic Space, but seconded to Swedish Ministry of Economy during the course of the project.

Partners – Gothenburg, Riga, Oslo and Akershus, and Tallinn:

Gothenburg

Per Kristersson – Senior Regional Planner, Gothenburg Region (Gothenburg Region Association of Local Authorities)

Riga

Guntars Ruskuls - Riga City Council, City Development Department, Acting Head of Strategic Management Board

Justīne Pantelējeva -Riga City Council, City Development Department, Board of Strategic Management, Strategic Planning Division, Acting Chief Expert in Strategic Planning and Deputy Head of the Division

Oslo-Akershus

Peter Austin – Planning Advisor. City of Oslo. Urban Development Department.

Eli Nakken Lundquist – Project Coordinator. Akershus County Council. Urban Development.

Tallinn

Endrik Mand – Chief Architect. City of Tallinn. Urban Planning Department.

Warsaw-Mazovia

Ewa Balanicka – architect. Warsaw-Mazovia office for Regional Planning in Warsaw was initially involved in the project, but due to Ewa transferring to the Regional Office for Spatial Planning of Westpomeranian Voivodship, Mazovia were unable to complete the project, but feature in the Nordic-Baltic Maps.

Special thanks to Sari Yli-Tolppa for the layout of the Report.



Nordic-Baltic Space Transnational Development Perspective

Urban Environment Publications 2019:9

Publisher | City of Helsinki/ Urban Environment Division
Cover design | Douglas Gordon
Layout | Sari Yli-Tolppa
Printing | Edita Prima Oy
Print run | 200
ISBN | ISBN 978-952-331-573-0 (web publication)
ISBN | ISBN 978-952-331-572-3 (printed version)
ISSN | 2489-4230 (web publication)
ISSN | 2489-4222 (printed version)

Documentation page

Publisher	Urban Environment Division of City of Helsinki
Editor	Douglas Gordon
Title of publication	Nordic-Baltic Space Transnational Development Perspective
Publication number	2019:9
Date	April 2019
No. of pages	135
No. of appendices	1
ISBN	ISBN 978-952-331-573-0 (web publication), ISBN 978-952-331-572-3 (printed version)
ISSN	2489-4230 (web publication), 2489-4222 (printed version)
Language	English

Summary:

The Nordic-Baltic Space project is a macro-regional analysis that aims to coordinate regional policies and processes with the city-regions across the Space in order to manage growth and the city-region structures in a coordinated way, working together, to strengthen spatial planning solutions for the overall benefit of the wider macro-region.

The project is under the auspices of METREX, the Network of European Metropolitan Regions and Areas, with the aim of interpreting the ESPON's ET2050 European Territorial Vision in practice. This will be achieved through polycentric clusters and corridors and to make a transnational development perspective for the area and joint framework for action.

The transnational development perspective aims to use spatial planning as the means to guide future development in our cities and regions in the Nordic Baltic Space. It involves cooperation at the macro-region level and gain a wider understanding of the main driving forces behind change.

The challenge is to build a network of city-regions working together across the Space that complements the EU's vision of a sustainable and cohesive European Territory 2050.

The lead partners of the report are the City of Helsinki, the Helsinki-Uusimaa Regional Council together with Region Stockholm. The participating city-regions include Gothenburg, Oslo, and Riga, with Tallinn as an observer.

The Nordic-Baltic Space supports the EU's Territorial and Urban Agendas through greater cooperation between the city-regions to move towards being polycentric in structure by implementing a joint vision and framework for the future.

By working together, the Nordic-Baltic Space Outcomes aim to improve functional cooperation across the Space and the city-regions in the project have agreed a joint scenario, a joint vision, a joint set of intentions and a series of strategic maps. The 'Next Steps' sets out how the transnational development perspective Outcomes can disseminate its findings, promote initiatives at the relevant levels of the EU and coordinate strategies across the Space to improve economic, social and spatial cohesion for its cities and regions.

Key words	Transnational, macro-regional analysis, city-region, polycentricity, Metrex, regional policies and processes, spatial planning, managing change, spatial city-region structures, EU Territorial and Urban Agendas, Vision and Framework, Joint Outcomes for Action
-----------	--

Contents

1. Introduction	11
Metrex	11
Transnational Development Perspective.....	12
Central Strategy: a macro-regional approach.....	12
Members of the Project.....	13
Key AIMS of the Nordic-Baltic Space:.....	13
Outline Framework	13
Methodology	13
Transnational Level.....	13
Urban Agglomerations - new European network of City-regions.....	14
State and Perspectives	14
What is Spatial Cohesion?	16
What is Polycentricity?.....	17
EU and Spatial Development	19
Spatial Planning and the EU	20
Structural Drivers & macro-regional analysis	20
2. Transnational Drivers of Change.....	21
Structural Drivers.....	21
What are the Key Drivers?.....	21
3. Transnational Key Challenges	24
Key Challenges.....	24
Key ISSUES:	25
City-regional Challenges: impact at the metropolitan level.....	25
4. Transnational Strengths and Weaknesses.....	26
5. Transnational Scenarios and Vision	28
Scenario	28
Joint Vision for the Nordic-Baltic Space	29
6. Transnational City-region Future Perspectives	31
 STOCKHOLM	
Stockholm Region: future perspective 2050	34
New regional development plan adopted.....	34
Stockholm Region 2050 Climate neutral	38
Climate neutral	
Stockholm Region:	38
SWOT.....	39

GOTHENBURG

Gothenburg's Future Perspectives.....	42
No new regional development plan!	42
Political targets	42
Population growth	43
Labour market and regional territorial increase	44
Regional agreements	45
Regional Core Developing River City Gothenburg	45
The attractive city – a green and tight city open for all - Ambition for Gothenburg development	45
Strategies for developing Gothenburg, three integrated documents	46
Urban Station communities	46
The west Sweden Infrastructure Package	47
The Swedish negotiation not finalised:	47
K2020, A long term Strategy for Public Transport in the Gothenburg Region.....	47
Gothenburg: Regional and municipal climate strategies	48
1. Västra Götaland region.....	48
2. Municipalities in the Gothenburg Region	48
3. The Gothenburg Region (GR)	48
SWOT.....	49

RIGA

Riga metropolitan area – future perspectives	52
Riga planning region sustainable development strategy 2030	53
SWOT.....	55
Future Scenarios:Riga	57

TALLINN

Tallinn and city-region: Future Perspectives	62
Fast Growing City	62
Connectivity	63
Twin-city concept	64
Helsinki-Tallinn Rail Tunnel.....	64
The Economy	64
City	64
City-region spatial priorities	65
Key Drivers of Change:	66

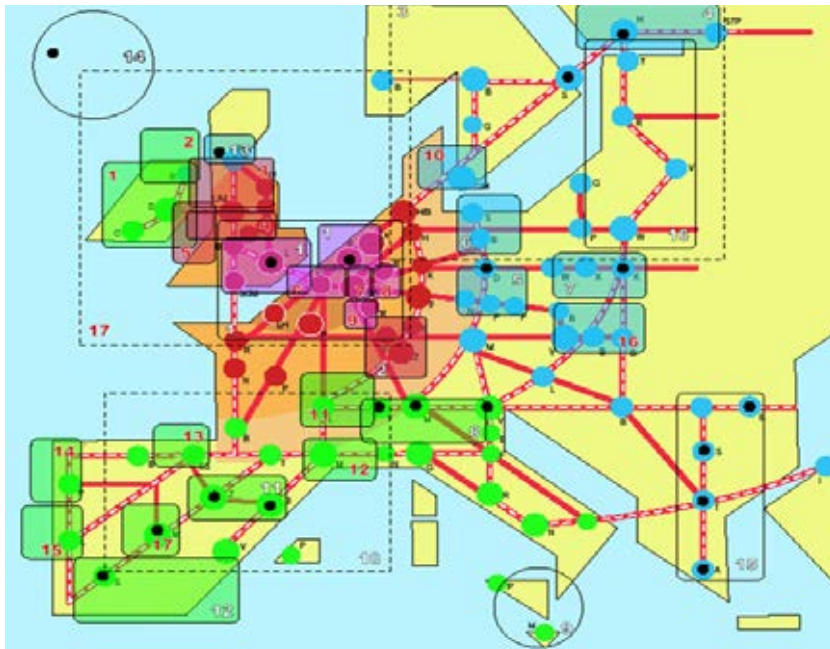
OSLO

Oslo and Akershus: City and Region Future Perspectives	68
Driving forces for the future development in Oslo and Akershus.....	68
Oslo and Akershus – Regional plan and future perspectives for spatial regional development	70
Oslo and Akershus: Climate change – mitigation and adaptation.....	72
SWOT.....	73

HELSINKI

Future Perspectives.....	76
1. Macro-regional analysis of the Helsinki Region.....	76
2. Climate Change carbon-neutral City-region:	81
3. Public Participation	82
4. Strengths and Weaknesses.....	83
4.1 Positioning Helsinki-Uusimaa metropole in a global context	83
Global Helsinki-Uusimaa region.....	83
Helsinki-Uusimaa as a 'Stop' between continents	84
Helsinki-Uusimaa: International Communications network.....	85
As a World Tourist Metropole	85
International Harbours - a growing success within the EU.....	86
Gulf of Finland development triangle	87
Stockholm - Helsinki.....	88
Twin-City Helsinki-Tallinn	89
4.2 Helsinki-Uusimaa Metropole within the EU.....	90
Helsinki Region's Strength as part of the EU.....	90
Helsinki-Uusimaa Regional Structure Plan 2050 and its impact upon the Helsinki city-region's international perspective.....	92
4.3 Helsinki city-region Strengths and Weaknesses: SWOT summary.....	93
Key Strengths.....	93
Key Weaknesses.....	96
Key Threats.....	97
Key Opportunities	98
SWOT.....	100
5. Scenarios & Vision	102
OUTCOMES.....	109
Nordic-Baltic Space OUTCOMES.....	110
Conclusion on a macro-regional analysis of the Nordic-Baltic Space: competition or complementarity?	110
Conclusion on 'drivers of change'	111
Conclusion on 'key challenges'	111
Conclusion on Strengths and Weaknesses (SWOT)	111
Joint SWOT Analysis for the Nordic-Baltic Space	112
Joint Scenario for the Nordic-Baltic Space	114
Joint Vision 2050	119
Joint Set of Intentions.....	120
Nordic-Baltic Space Strategic Maps.....	122
Comparison.....	130
Next Steps.....	132
References	134
Appendix:	135

1. Introduction



Framework for a polycentric Europe. Image: Metrex.

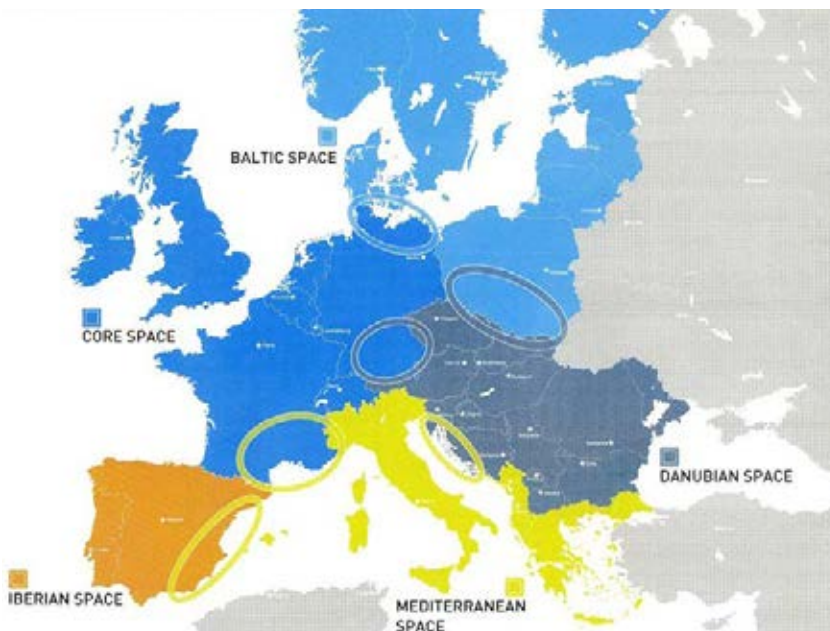
Metrex

METREX, as the Network of European Metropolitan Regions and Areas, with a core interest in the achievement of Territorial Cohesion through the function of spatial planning, has always recognised the value of a European context to its activities. It supported the concept of a European Spatial Development Perspective (ESDP 1999). Metrex became actively involved in giving spatial expression to the concept of Territorial Cohesion through the EU Interreg III PolyMETREXplus project (2004-2007) and the Territorial Agenda (2007).

ESPON (European Territorial Observatory Network) produced in 2015 a long-term Vision for a sustainable and cohesive European Territory (ET2050).

The Metrex Network participated fully in the ET2050 to produce a European Territorial Vision. Metrex wished to translate the ET2050 into practice through polycentric clusters and corridor levels within five European Macro-Regions as part of the spatial planning process.

The Nordic-Baltic Space was selected to act as the initial macro-region to assess the potential for creating a 'trans-national perspective' for the area and to make a joint 'framework for action'.



European Macro-Regions. Image: Metrex.

Transnational Development Perspective

A Transnational Perspective aims to guide the future development and structural planned development changes in Nordic-Baltic Space cities and regions. It is a macro-regional approach to the Nordic-Baltic Space as part of the European network of city-regions.

The EU's territorial cooperation consists of supporting its cohesion policy and providing a framework for joint action between its members. Such action focuses on policy exchanges at the regional level.

The Nordic-Baltic Space project aims to support such regional development processes as well as offering cooperation between cities and regions forming the Baltic Sea Region.

A Transnational Development Perspective aims to contribute to the overall Vision for the Nordic-Baltic Space through determining the strategic direction of City and Regional resources that shape the city-region structure and embodies the wider Transnational Vision for the 'Metropolitan-Future'.

This introduction focuses upon the importance of the EU's policy on territorial cohesion. This level explains what

is spatial cohesion and its process, polycentricity, and that a polycentric approach in Europe is centred round the city-region, which in turn, is likely to produce new patterns of development across Europe.

Central Strategy: a macro-regional approach

The purpose of this Transnational overview for the Nordic-Baltic Space is to recognise the international significance of using spatial planning to guide future development in our cities and city-regions and to manage growth and the city-regional structure and to adopt a macro-regional approach for the analysis.

What is a macro-regional approach? Macro-regional strategies aim to coordinate regional policies and processes with city-regions at a macro-region-level as a tool to streamline and prioritise the implementation of actions to strengthen solutions to the overall benefit of the wider region. These include -

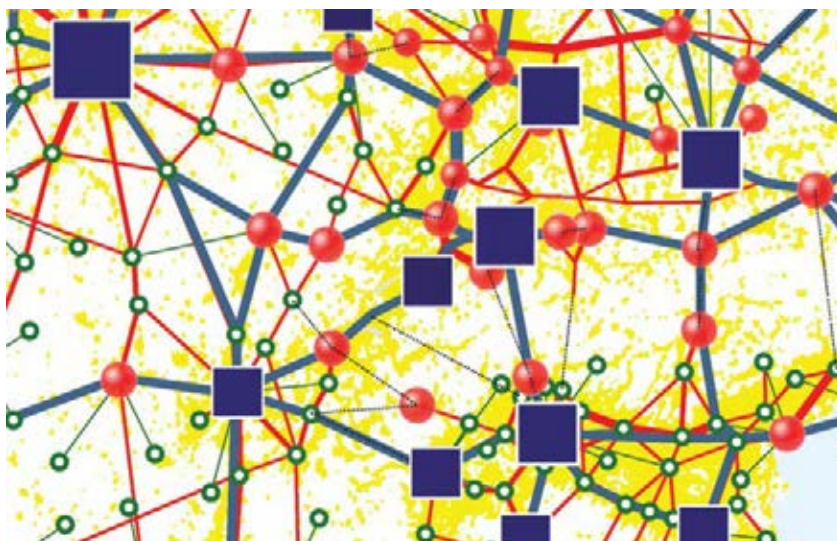
- Cooperation at the macro-regional level may provide a wider understanding of the key issues to be addressed and the driving forces behind change at the macro-regional level.

- Macro-regional strategy addresses common actions to tackle the key challenges and problems at a larger level, such as improving national or inter-regional connectivity.
- A macro-regional level approach provides a clear framework to meet those challenges and an important political arena that links the macro-region together.
- A macro-region approach also offers a Transnational approach to promote cross-border cooperation, combining resources and greater visibility at a national level.
- Best example is the EU Baltic Sea Region Strategy (2009) that is used as the template for macro-regional cooperation and has inspired other macro-regions to follow suit, such as the Danube Strategy, the Adriatic and Ionian Region, and the EU strategy for the Alpine Region.
- The Challenge is to build future networks that complement the EU's 2020 strategy and ESPON's (European Territorial Observatory Network) Vision for the EU to have a sustainable and cohesive European Territory 2050.

The role of the Transnational level impacts on connectivity and infrastructure to the rest of Europe, the Nordic countries together with the Baltic Space.

Part of the Nordic-Baltic Space initiative is also to analyse the results of ESPON's ET 2050 'Making Europe Open and Polycentric' Vision for Europe in relation to the Metrex territorial Framework in order to place the Nordic-Baltic Space in context with the rest of Europe.

ESPON polycentric urban fabric. Image: ET2050 – Territorial Scenarios and Visions for Europe. Final Report. Making Europe Open and Polycentric. EU. 2015.



Members of the Project

Metrex offered a wide cooperation network to undertake the project and made it easier to find partners. Stockholm Region and Helsinki-Uusimaa Regional Council together with the City of Helsinki were the lead partners of the project. Gothenburg, Oslo, Riga were the key participating members, with Tallinn and Warsaw-Mazovia as observers.

Key AIMS of the Nordic-Baltic Space:

- A better understanding of long term challenges and possibilities for metropolitan and city-regions in the Nordic-Baltic Space within a macro-regional context
- To explore common spatial strategies to improve sustainable regional competitiveness
- ET ESPON analysis of the Nordic-Baltic Space to be taken into account
- To strengthen ties with all Nordic-Baltic Space city-regions, share work methods and learn from other's experiences
- To work towards complementarity within the joint Space and find common issues to work together
- Each city-region to work together to create a joint Space future vision

ESPON integrated territorial development. Image: ET2050 – Territorial Scenarios and Visions for Europe.



- To work together to provide a key set of scenarios and to make a Vision and framework for the participating city-regions, as well as a spatial map for the whole of the Nordic-Baltic Space
- To have a shared 'Joint set of Intentions' for how to implement the Vision and goals
- To make a joint report of the Vision and strategies for the Nordic-Baltic Space 2050 as an end product

Outline Framework

A Transnational Development Perspective may be viewed differently by each partner in the project. However, the Nordic-Baltic Space project focuses on bringing each city-region together within an agreed framework to produce a collective approach to city and regional development.

Methodology

The working method was based around Expert group meetings at Metrex conferences twice a year, usually 3-4 hour seminars. Thematic discussions at the Conference were followed-up with continuous input from partners throughout the year. The key was a spatial planning approach, which followed a common way forward using the step-by-step work plan and included the main key issues:

- i. Drivers of Change at the Mega-regional level
- ii. Key Challenges
- iii. Strengths and Weaknesses
- iv. Future Scenarios and Joint Vision
- v. Joint set of Intentions and Strategic Maps

Transnational Level

A territorial approach provides a spatial perspective on local and regional development and helps structure policies, practices and processes in territorial terms (ESPON DeTeC 2014).

The transnational level addresses spatial issues across national spaces, particularly where the opportunity exists for developing joint cross-border and transnational territorial development strategies with neighbouring countries, such as Norway and Sweden, or Russia and Estonia in Helsinki's case, and Latvia and Lithuania.

The ESPON strategic map on integrated territorial development explains the cross-border priority areas in red along the Eastern borders and the West and East Mediterranean borders for co-development in order to reduce the economic gap in peripheral regions. The Nordic-Baltic Space is included and closely resembles the Metrex EU Interreg North-South Interface conclusions.

The EU has three main strategies, called Agendas. The first is the Lisbon Agenda. This contains the main economic objectives for the EU. The EU aims to be highly competitive within the global economy.

- The Lisbon Agenda (2000) places the key emphasis on economic growth. Growth, however, needs to be sustainable and promote social and territorial cohesion and to reduce disparities between the regions.
- The Gothenburg Agenda (2001) complemented the Lisbon Agenda by adding an environmental dimension, namely, sustainability, thereby supporting the UN efforts on climate change back then on the Rio and Kyoto protocols.

- The EU Territorial Agenda (2007) completed the trilogy by adding a spatial dimension to economic and sustainable growth. The Territorial Agenda outlines the aim of cross-border collaboration between member states to achieve sustainable, smart and inclusive growth. It supports strong integration between city-regions in order to pursue spatial cohesion and polycentric development. It acts as a vision and framework for spatial planning in the EU.

The Territorial Agenda provides advice on how cities and regions should be developed in the future so that they are no longer viewed as independent from their surroundings but represent a new network of polycentric city-regions across Europe. By working together partners are able to build on solidarity and support each other to achieve win-win situations and the level of desirable growth. The aim is to develop the best opportunities for each region and to achieve strategic spatial visions and joint-views in seeking agreed aim and policies. The EU, through its Territorial State and Perspectives (2011), seeks to create more dense urban networks, which can develop into a highly integrated regional polycentric system. Metropolitan areas are viewed as the motors of development. They are able to generate the relevant critical mass, which in turn enables balanced growth with high connectivity, strong economic markets and high social capital to support strong integration between city-regions. The future spatial cohesion policies will be a key planning instrument in achieving balanced growth (2011. p.64).

The Territorial Agenda 2020 goes further by creating an ‘action orientated policy framework’ that aims to bring together all three Agendas into a compact set of strategies that operate in tandem with one another. The key principle of 2020 is ‘cohesion’, primarily spatial cohesion. The key framework is **Interreg** (European Territorial Cooperation) which oversees joint actions and policy exchanges between Member states at the transnational, cross-border and regional levels.

The Nordic-Baltic Space fits into the Territorial Agenda through greater cooperation with the cities and regions to move towards a polycentric city-region structure by seeking joint scenarios and a joint vision for the future.

Urban Agglomerations - new European network of City-regions

In terms of Europe as a whole, the aim is to create an innovative network of polycentric urban agglomerations at a city-region level. The network of city-regions is expected to evolve through a new potential of complementary of functions and cooperation. This takes place where previously independent cities and regions agree to work together in terms of economic development or create new fast corridors of rail infrastructure, and are good reasons why the Nordic-Baltic Space is working in partnership with one another. In the case of Oslo and Gothenburg, Stockholm – Riga, or Riga and Tallinn, or Helsinki and Tallinn, it is highly relevant to set-up cross-border co-operation and deal with common objectives. Some examples for the Nordic-Baltic Space are as follows:

1. Exchange of Knowledge and Experience: The resultant increase in synergy of interactive growth through exchange of knowledge and experience. This may benefit cities and their regions working in tandem with one another. In the future, such cooperation may be able to transfer added-value from the transnational level down to the city and regional levels that allows for a greater sharing of equity whilst improving the internal network dynamics of each city-region.

2. A network matrix of city-regions. This expected to lead to ‘new patterns of development’ in the EU over the next 50 years. It is unlikely that this transformation will result in a uniform and cohesive urban network; more than likely it will be a diversified and uneven level of territorial cohesion. Each city-region has a different set of resources. This is

why a macro-region analysis of various scenarios will enable a better structural description of whether the cities and regions within the Nordic-Baltic Space fit into this forming EU network. It also has to be asked as to whether Nordic and Baltic city-regions sit neatly within the elite concentration of GIZ cities such as London, Paris and Milan. Alternatively, the Nordic-Baltic Space may instead be part of a city and regional network whereby regional disparities are increasing between the core GIZ and the peripheral regions. Therefore, it is even more important that the Nordic-Baltic Space partners work together to minimize future risks of this nature.

State and Perspectives

The spatial planning process is seen as the primary method to deliver spatial cohesion (Territorial State and Perspectives of the EU, 2011, 87). The common spatial planning objectives at the city-regional level are:

- Increasing demographic mass within city-regions
- Improving connectivity between and within city-regions
- Environmental sustainability
- Social cohesion
- Spatial balance
- Balanced economies, especially between the EU Pentagon and city-regions on the periphery, such as the Nordic-Baltic Space



The Pentagon

City-regions, as motors for development, play a key role in strengthening territorial cohesion. The basic elements of the European urban system are functional urban areas (FUA's) defined on the basis of travel-to-work areas. The picture of Europe is dominated by metropolitan agglomerations within its core, i.e. a 'pentagon' of defined corners between London, Hamburg, Munich, Milan and Paris. Outside of this area there are only a few FUA's with potential to counterweight the Pentagon's dominance. Such areas, which include Madrid and Athens, also feature the Nordic-Baltic Space in the North, such as Stockholm and Helsinki, Oslo and Gothenburg and down to Tallinn, Riga and Warsaw. Urban regeneration will help maintain European competitiveness.



EU Pentagon. Image: Europa EU Maps

The ESDP (European Spatial Development Perspective) has attained the status of being a standard reference across spatial policy and city planning in the EU, from a national to a local scale. The ESDP was produced by all EU governments and represents a consensual view of what is required to achieve sustainable development within the EU territories by spatial planning tools.

The Territorial Agenda on the other hand, is having even more widespread implications in that it deepens the axis of influence amongst city-regions. The intention is one of 'application' rather than a programme of 'implementation' and acts as a frame of reference for spatial policy and governance in the coming years. In future, there is likely

to be a more 'European dimension' to the Nordic and Baltic planning systems than in the past.

The Territorial Agenda is beginning to influence the physical as well as social structures in Europe. Without doubt, polycentricity is beginning to emerge as a powerful concept that cannot be ignored. In this respect, polycentricity can be viewed as being much more than simply a physical set of ideas for a city-region. It promotes transnational planning between city-regions in neighbouring countries such as Russia and Estonia, Sweden and Norway, or Poland and the Baltic States.

The need to develop beyond regional boundaries becomes more important as cities and regions develop and expand. Polycentricity becomes more relevant when critical mass is greater than 2 million. For example, Stockholm is well on its way to achieve a polycentric structure. Helsinki, however, is only partially polycentric and requires additional critical mass to achieve such an objective. Inter-regional spatial planning within the Nordic-Baltic Space may contribute towards greater complementarity and work closer together to become a major force in Europe. It intends to explore the inter-relationships between urban settlements with

in a metropolitan area and attempts to help set up a more balanced approach within a city-region in order to achieve greater unified competitiveness. This principle forms, for example, a major plank of Helsinki's city-region Strategic Plan for its metropolis. A polycentric approach will impact structurally in a more direct way and affect the strategic planning of a city-region. The aim is to prevent further sprawl within city-regions, making the outer rings more compact and dense, thereby allowing high-quality public transport to spread-out in relation to new developments within a region.

The Territorial Agenda State and Perspectives promotes polycentric spatial development not only to improve territorial competitiveness but also to encourage city-regions to form networks in an innovative manner as a key element to improve performance in European and global competition and towards sustainable development. Polycentric spatial development policy aims to add value as centres contributing to the wider development of a city-region. By doing so, the EU aims to foster greater spatial competitiveness outside the core 'GIZ Pentagon area' (global integration zone) and thereby offer better competitive balance throughout Europe.

EU Interreg North-South Interface: Connectivity



Nordic-Baltic Space and the EU Agendas

The European Agendas and their impact on spatial planning within the Nordic-Baltic Space can be understood in the context of economic growth and the need for the EU to be a World leader, whilst at the same time promote social cohesion within a sustainable framework. The EU recognises that there is a strong territorial (or spatial) dimension to resolving these competing objectives. The need for Europe to perform with strong economic challenge and prevent a widening level of social disparities is prevalent within EU doctrine. Furthermore, the use of the EU Structural Funds to oversee spatial cohesion will ultimately affect how large urban areas succeed and funding goes towards implementing the TEN-T connectivity goals across the Baltic Space to achieve greater EU cohesion.

Spatial planning is seen more and more as an essential component for an economy to succeed. Globalisation, technological advances in IT and traffic and communications suggest that greater emphasis will be placed in the future to cities needing to widen their franchise beyond their limited boundaries, require a more balanced regional approach and implies a wider context at a trans-national level if city-regions are to be at the forefront of economic and societal development.

To summarise, the key priorities of the Territorial State and Perspectives of the EU are to:

- Promote polycentric and balanced development;
- Encourage a network of integrated city-region development;
- Promote cross-border transnational functions; and
- Improve spatial connectivity, primarily through increased rail infrastructure (TEN-T)

What is Spatial Cohesion?

Spatial Cohesion recognises the spatial understanding of polycentricity by taking account of economic and social objectives. These objectives are translated into the physical environment through spatial planning strategies and policies, which themselves become action programmes and projects for implementation.

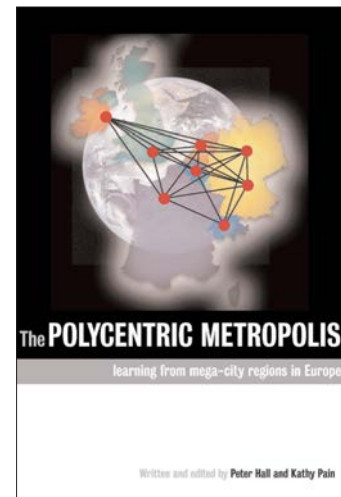
Spatial Cohesion is viewed as 'a balanced distribution of human activities across the Union' (Third Cohesion Report, EU). The Committee of the Regions claims that spatial cohesion is about 'reducing of development disparities...by means of spatial planning...with a territorial impact' (Duhr et al. *ibid.* 188).

The EU set of three Agendas aim to overcome 'disparities' through strengthening of regional competitiveness. The Territorial Agenda is more explicit. Its objective is 'balanced development'. So, spatial cohesion represents spatially balanced regions.

The Fifth Cohesion Report (2010) promotes city-regions as the 'engines of regional development'. The Lisbon Agenda promotes 'territorial capital' as a means for each city-region to develop its own kind of economic investments. This 'capital' is realised through spatial development, which aims to increase 'synergies' and 'added value' for each city-region. Regional Strategy therefore, is based on the 'organisation of space', which the Territorial Agenda translates as being territorial (i.e. spatial) cohesion, or, in other words, balanced development. Spatially balanced regions are therefore achieved through polycentricity, as explained in the Territorial Agenda.

The Territorial Agenda interprets spatial cohesion as being a polycentric process of development.

Achieving social cohesion is equally one of the EU's main objectives. Social cohesion involves building on shared values, reducing disparities in well-being and wealth and avoiding polarisation. Social cohesion is based on social capital, which is established through a network of well-functioning relationships based on trying to achieve a balanced and equal society.



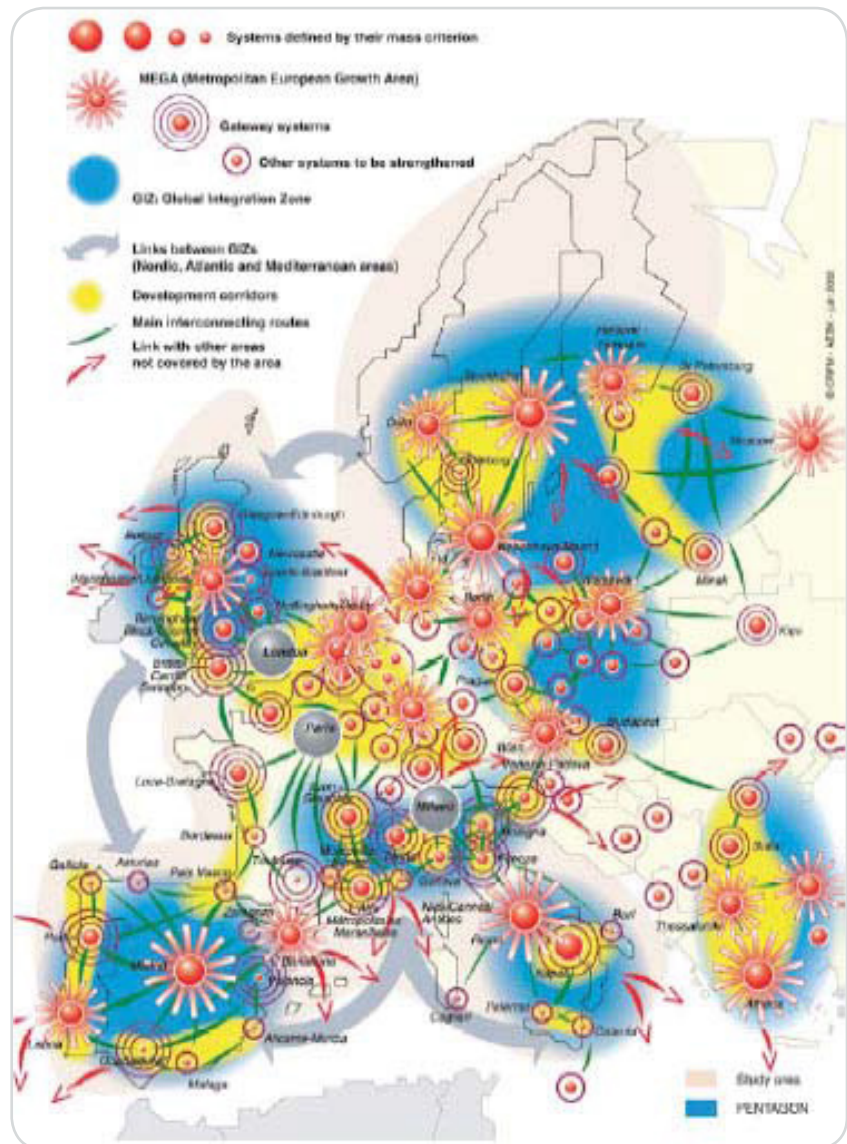
What is Polycentricity?

Polycentricity is a key theory by which the development of a hierarchy of city-regions plays a complementary role to one another (Territorial Agenda, 2007). The Territorial Agenda balances central needs of a city as well as developing a more polycentric city-region through 'corridors' of development towards the periphery. Spatial cohesion and polycentricity are not physical blueprints. Spatial cohesion and polycentric development in the Territorial Agenda are considered to be 'processes' (TA:2007, *ibid*).

Polycentricity means 'many centres'. Polycentricity is a hierarchy of centres at a city-regional level closely associated around a primary central core, the key city, in a spatial structure that allows complementarity and connectivity between the centres and the core form. However, polycentricity comes in many forms and may have more than one primary centre within the region.

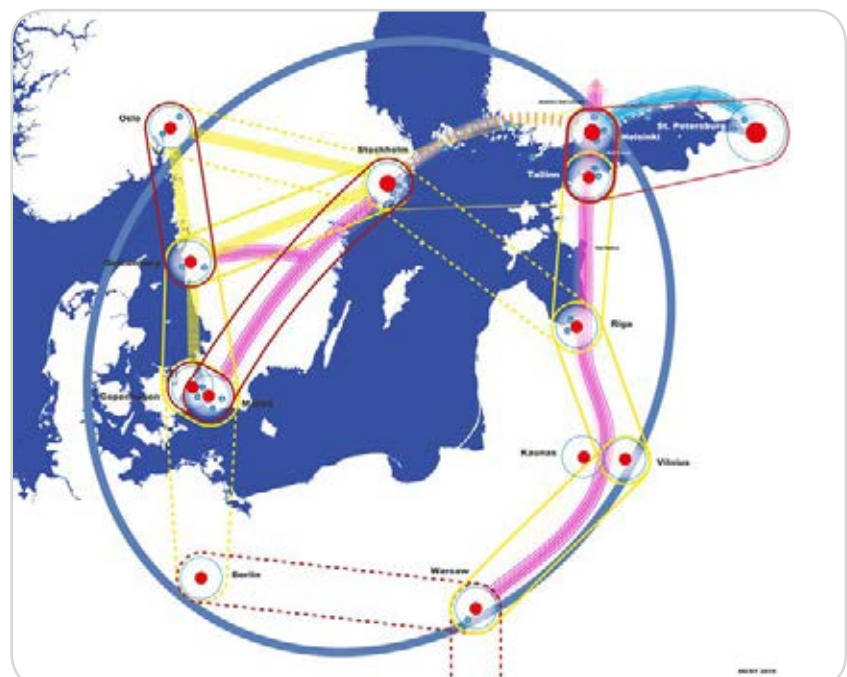
1

Transnational Scale: European / Transnational (Global Integration Zones) GIZ



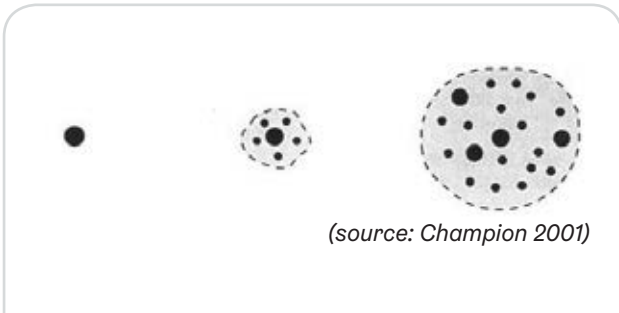
2

Macro-regional Scale: the Nordic-Baltic 'Blue' Loop
 Image: Gordon/Yli-Toppa 2019



3 A

City-region Scale/ (a) One dominant centre



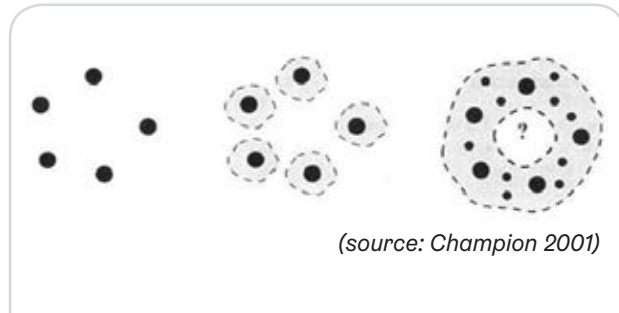
Helsinki. Image: City of Helsinki Media Bank/Paul Williams



Berlin. Image: dg

B

City-region Scale/ (b) Two or more major centres



Randstad



Oeresund Region

EU and Spatial Development

At the EU level, regional governance is not a key policy.

EU Structural funds and their programmes contribute to achieving increased territorial cohesion and polycentric development. EU Cohesion Policy has direct territorial impacts, for example, on:

- EU policies with spatial impacts, i.e. EU Energy, ICT, R&D, Internal market and Competition Policy.
- EU Transport TEN-T policies impact territorially, e.g. development of infrastructure.
- ESDP strategy: improving economic competitiveness through global integration zones (GIZ).
- GIZ in the EU: wedge radiating out from London through Amsterdam, Paris, Munich down to Milan and up to Hamburg. The quest is to link cit-

ies and metropolitan regions with each other via infrastructure and strategic cooperation and to form clusters of a polycentric nature. In theory, the competitiveness of these city-regions will improve the overall dynamic in Europe thereby enabling more GIZ's to be formed (TA.2007).

- Urban and rural restructuring, riverbank development, the creation of new business parks and infrastructure and the development of tourism and recreation areas.

Thus, the EU aims to create more dense urban networks, which, in turn, can develop into a highly integrated regional polycentric system. A wide range of cities and regions have the potential to increase their sustainability through increased cooperation with neighbouring areas, and ultimately, between neighbouring cities at the international as well as national level.

Spatial Planning as a Development Tool

In the future, spatial cohesion policies will be a key planning instrument in achieving balanced growth (Territorial State and Perspectives, 2011, 64).

Spatial Impact Assessment can help evaluate the different territorial impacts of spatial strategies (2011, 65). Urban planning policies in city-regions needs to reconcile the challenge of urban sprawl with future transport initiatives (2011, *ibid.* 66 and 71). Transport policy has to re-solve problems in coordination with climate, energy and spatial strategies and not in isolation of these issues.

The Nordic countries (Finland, Sweden, Denmark and Norway) have traditionally been at the forefront of the welfare society models and there is already a strong ideal of social equality, social justice and income equality. Nordic Welfare Cities and Regions generally have active social policies and extensive public services.

The centrality of landownership, long-term land use planning and a consensus in urban development policies is a major driving force of a socially balanced city structure with relatively low levels of socio-spatial segregation.

However, in recent times there have been indications that some of the Nordic Capitals, mainly Stockholm and Oslo, are at risk of increasing social segregation if strategies to actively try to prevent it are not implemented. This kind of trend is counterproductive to the idea of the 'common good'. It is thus the responsibility of the public sector negotiators to find solutions to retain the welfare city principles, which can still be implemented in the environment of rising global economic competition and fragmented societies.

ESPON's Vision for Europe 2050. ET2050 – Territorial Scenarios and Visions for Europe. Final Report. Making Europe Open and Polycentric. EU. 2015.





ESPON 2nd tier cities important engines of growth. ET2050 – Territorial Scenarios and Visions for Europe. Final Report. Making Europe Open and Polycentric. EU. 2015.

Should the Nordic countries manage to retain its position as welfare states, they will carry on distinguishing its society from the increasingly competitive Europe and act as one of the ‘drivers of change’ when thinking transnationally. Good services, clean environment, high standard of education, equal opportunities and low levels of social segregation will attract people and businesses to locate here. On the other hand, the challenge of spatial segregation and polarization between the city core and the periphery is self-evident and both will require strong policies. It may be the case that by supporting a central core strategy with polycentric sub-cores it may be possible to increase benefits to the peripheries in the long-term.

Spatial Planning and the EU

Spatial Cohesion & new patterns of development form part of the future Nordic-Baltic Space.

The Lisbon Agenda contains the main economic objectives for the EU. This means that the EU aims to be highly competitive within the global economy. The Nordic-Baltic Space supports economic growth, but it has to be sus-

tainable and promote social and territorial cohesion (Lisbon Agenda, EU report.2000).

It is within the framework of the Nordic-Baltic Space that spatial planning is viewed as the key tool to oversee economic development. However, the spatial element cannot be interpreted as having been explicitly included in the Lisbon Agenda. Nonetheless, the key objectives contained within the ESDP aim to ‘avoid growing disparities of prosperity and well-being across the territory of the European Union’ (Metrex Framework.2007:8). In that respect, this covers the social and spatial elements which are held as key elements in the Nordic-Baltic Space framework.

Duhr et al take this further in their book ‘European Spatial Planning’, in that they argue the spatial dimension of the Lisbon and Territorial Agendas - economic competitiveness, social and territorial cohesion and sustainability - are ‘self evident’ since ‘they concern spatial disparities’ (Duhr et al:2010:17).

The ESDP and the Territorial Agenda clearly aim to achieve a ‘better balance between city-regions’. The Territorial Agenda is a Vision and Framework

for spatial planning in the EU as to how city-regions in the future should be developed. This means that spatial planning is the key tool to make cities become city-regions, given that the city no longer being viewed independently from its surrounding region.

Summing up, the EU Vision aims to achieve polycentric and balanced development between the city centre and the region.

Structural Drivers & macro-regional analysis

A macro-regional analysis offers an integrated framework to better understand the common challenges the Nordic-Baltic Space is confronted with in the future and aims to improve functional cooperation across this Space. Strengthened cooperation on an agreed geographical area hope to improve coordinated strategies to achieve economic, social and territorial cohesion.

In the next part of this report the drivers of change will be examined. This will be followed by key challenges, a SWOT analysis and then looking at scenarios with the intention of creating a joint vision and framework for the Nordic-Baltic Space. Each city-region will then outline its macro-regional analysis through a series of ‘Future Perspectives’ and an understanding of the different levels of scale associated with each geographical layer. These ‘Future Perspectives’ are undertaken to provide a better understanding of the socio-political economy of spatial planning within each city-region.

Douglas Gordon, Ilona Mansikka and Jessica Andersson



2. Transnational Drivers of Change

CITY-REGIONS AS DRIVERS OF CHANGE:

Spatial Planning evaluates the spatial impacts of all activities. Planning is about managing growth of the spatial structure and assessing how to steer distribution of investment spatially in a balanced manner.

Structural Drivers

The 'drivers of change' is an approach with which to analyse the spatial implications of a changing world. The key drivers, such as population and economic growth, create manifest changes to the spatial planning process, which translates physically onto the ground in terms of how many new housing developments are needed, or how many workplaces are required. In planning terms, it provides a working knowledge of what the Nordic-Baltic Space city-regions should be in the future.

The structural drivers clearly provide a dimension as to how change may come about and what needs to be done about it spatially. This could come in the form of trying to minimise the growing income-gap effect spilling over into a spatial manifestation of creating more elite neighbourhoods and spatial segregation. By synchronising housing tenure, housing type and mix in the City and Regional Plans, it may be possible to address such a major issue of spatial segregation in the future. Similarly, the need to build more work hubs around new rail connections may help reduce energy use by reducing the amount of time and distance between home and workplace.

Future energy needs and the impact of climate change needs to be tackled in

City and Regional Plans and act as key drivers of change that require innovative solutions.

The key drivers of change are taken into account when analysing the central questions surrounding the City and Regional Plans from a Transnational perspective. A Transnational overview provides a better understanding of the political economy of spatial planning in the wider international context.

What are the Key Drivers?

The key drivers of change from a Transnational perspective are population growth and its relationship to immigration flows together with how the growth of jobs will impact on the economy. In addition, the new flows of investment and new technology, which materialise in new homes and workplaces, also require to be connected through new forms of public transport, preferably metro, trams and commuter rail.

In doing so, it is imperative to be aware of the impact key drivers may also have upon the environment and people. In terms of how 'drivers' affect people, it is relevant to take account of social justice from an EU point of view and how the 'drivers' can be a key aspect of positive change.

The Nordic-Baltic Space city-regions will aim to develop towards a low-carbon and resource-efficient direction. The driving force is climate change. Mitigation and attention to environmental problems is the key. A low-carbon city-regional structure requires a decrease of emissions from industry, dwellings and traffic. In addition, new urban development demands greater energy efficiency and use of resources.

The ecosystems network will continue to have a significant role in mitigating climate change (carbon sinks) and in moderating the consequences (floods, storm water). The role of ecosystems in the economy will grow (bio-economics, travel, food production) to the betterment of the living environment (recreational areas, impurities of the air) and in securing biodiversity (ecological connections and nature areas).

It is essential that the Nordic-Baltic Space metropolitan areas remain attractive as they grow. Agglomeration benefits will be accrued through increases in population, enterprises and services. At the same time, spatial planning must be aware of the contradictions and problems that growth may bring. The national and international role of each metropolitan area will increase in significance. The core areas of Nordic-Baltic Space city-regions will become denser and the formation of integrated polycentric structures for the city-regions becomes paramount. Problems of segregation could increase whilst the tensions between urban and rural may be exacerbated. An ageing population will transform demand for services in growing cities.

Growth may be unevenly distributed within the region and also between regions. It is essential that regional disparities will be reduced within the Nordic-Baltic Space. The role of polycentric structures may contribute to resolving such imbalances through greater spatial balance of growth.

The city centres will reflect such changes in their metropolitan central core of activities. These activities will include mixed uses with a strong state character and international influence. Parks and environs will need to be safeguarded. Strategic opportunity ar-

areas will reflect the clear transnational architectural and investment influences in the shape of new investment in development 'areas of change'.

The district centre network for city-regions will need to be re-evaluated and key regeneration areas prioritised for intensification, taking account of poverty and exclusion, dependency, education, health, environment, housing and accessibility.

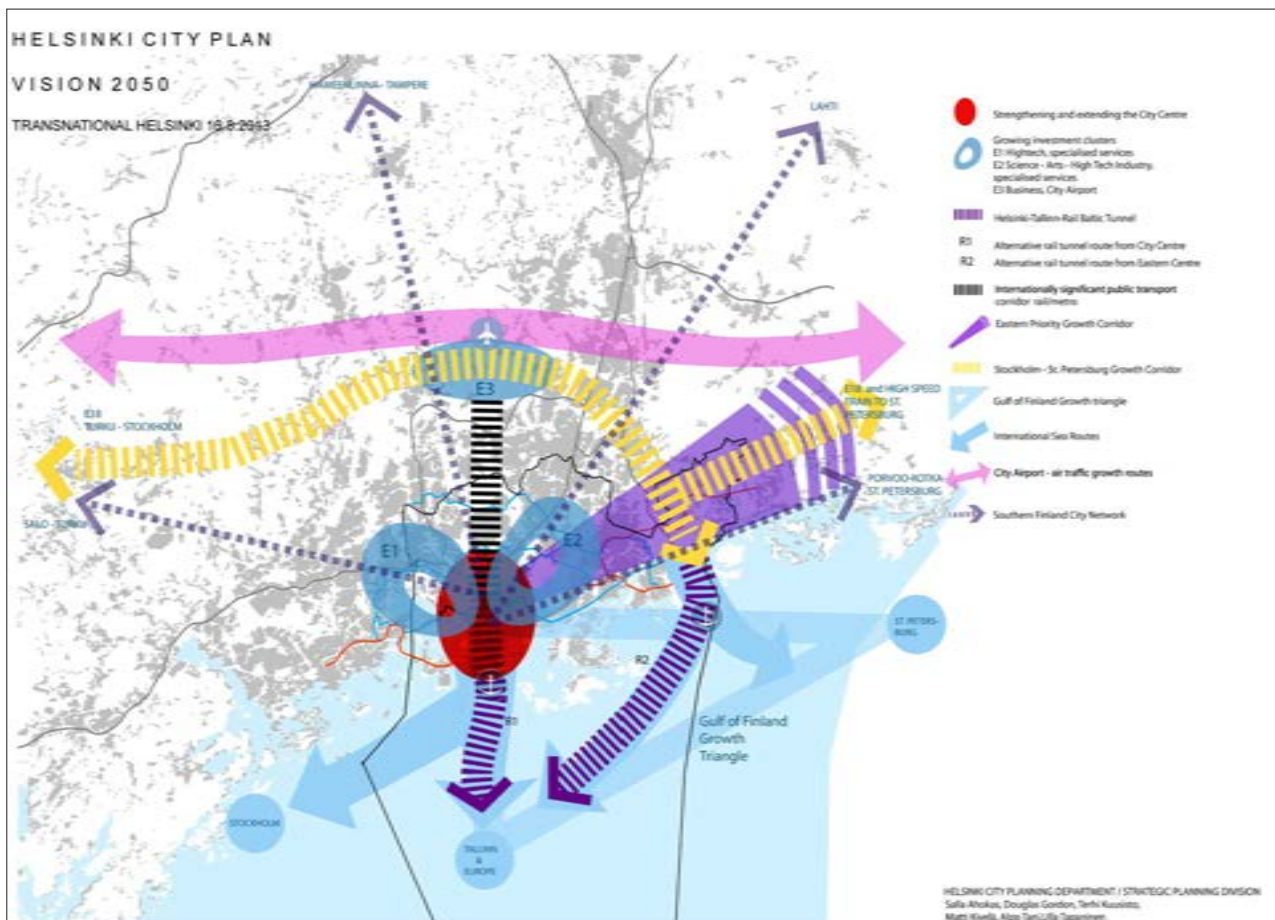
Spatial priorities require to be identified. Polycentric development, taking account of the hierarchy of centres within each city-region, will identify new opportunities for land-use transport coordination and also regeneration and redistribution of resources.

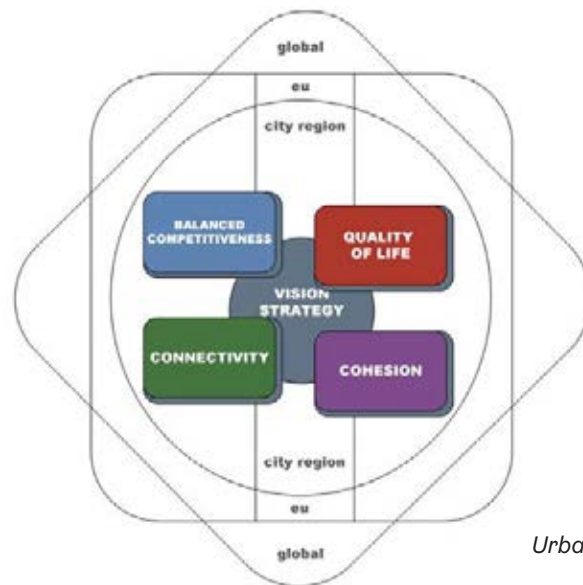
The Helsinki City Spatial Vision 2050 Map (below), for example, shows the transnational growth corridors and

key planning 'wedges' of environment, regeneration opportunity areas, and main public transport axes. It looks at the relationship to the transnational development priorities to neighbouring international cities of St. Petersburg and Tallinn. Every city-region within the Nordic-Baltic Space requires a similar scale of analysis.

A transnational vision 2050 for the Nordic-Baltic Space becomes a 'framework for innovation', taking account of strategic infrastructure, climate change, new development areas and regeneration. Transversal new public transport links will re-emphasise the commitment to more capacity for public rail transport, whilst aiming to create better facilities for walking and cycling, particularly in city centres. Land-use and transport will be coordinated to link in with the new development 'hubs' transversally and for the

improved district centres. Cargo transport flows will have to be planned carefully, as every city-region in the project are located by the sea. City-regions need to take into account increasing volumes and evaluate new logistic delivery centres. Localised supply of energy will be in keeping with the city-region's 30% and the EU's targets of decentralising energy networks. Still, this will require further strengthening targets on energy, with support for wind farms, biomass, renewables and supporting district central heating with these alternative sources.





Urban Environment Division. Image: DG

A low-carbon city-region and hydrogen economy needs to be the new central force of driving the city-regions into the future and achieved by 2050, and preferably earlier.

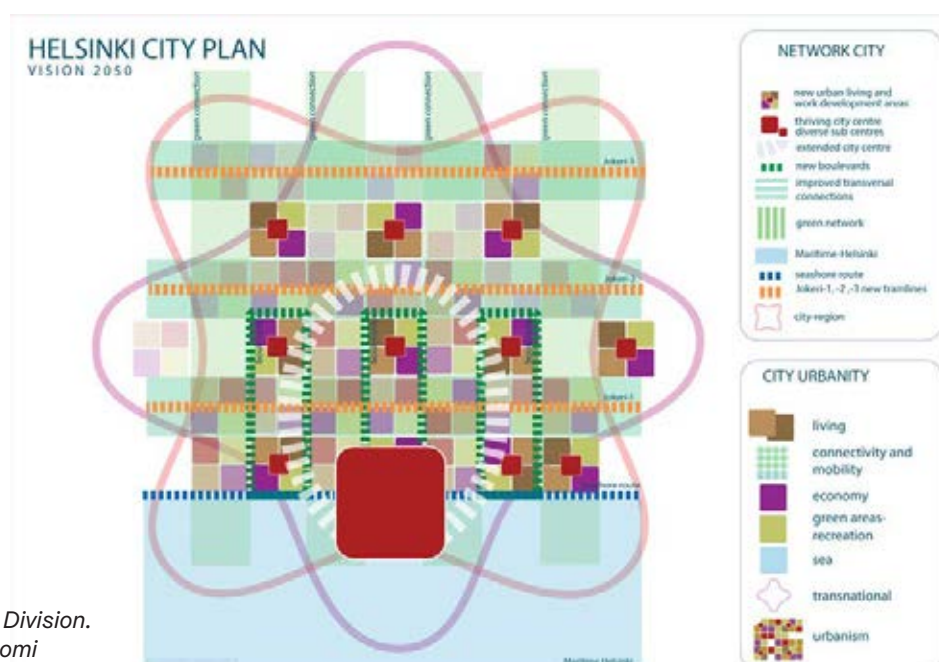
metros, or trams or local train networks. Transversal high-speed trams and metro will be essential to uplift the regeneration of the Space's city-regions towards a polycentric structure.

connectivity form part of the key core strategies, along with containment of traffic growth and minimising income-gap growth and spatial segregation.

Innovation in the implementation of city-regional priorities will require to be acknowledged through the need to tackle regional imbalance. New 'zones of change' will be identified, such as new employment locations around

Effectiveness for the spatial priorities will be delivered via the Nordic-Baltic Space core strategies. Delivery of growth and regeneration, improvement towards carbon-low city-regions and an increase in public transport

The Key Drivers form into five pillars of change, namely, the economy, living, connectivity, climate change and environment and the city-region structures.



Urban Environment Division. Image: Christina Suomi

3. Transnational Key Challenges

KEY CHALLENGES: NORDIC-BALTIC SPACE CITY-REGIONS 2050

Key Challenges

The key challenges centre round the management of plan-led growth together with the need to create polycentric networks of city-regions and their hierarchy of regional centres across the Nordic-Baltic Space.

The starting point is the Transnational Perspective outlining the role in Europe of the Nordic-Baltic Space. The perspective addresses what city-regions have to offer as part of the Nordic Solution for the EU's Future.

One of the key challenges for the Nordic and Baltic city-regions is how to be dynamic and competitive. Managing change through the creation of an urban city-region dynamic requires that cities and municipalities agree to promote workplaces evenly and in a balanced manner in the regions. This will not be easy to achieve as many municipalities are competing against one another for people, resources and jobs.

Critical mass is an essential component for all of the city-regions and this challenge can only be met through high density living. Households in the outer periphery, however, prefer to live at lower densities with gardens in an attempt to achieve the urban-rural dream. This contradiction requires considerable resources and a change of attitude in order to reduce sprawl on the fringes. Only by investing in an integrated network of rail mobility throughout the Nordic-Baltic Space will this be possible to achieve. This will enable the concentration of new development into regional corridors in order to have sufficient critical mass.

Connectivity is an important element in meeting challenges of urban sprawl and accessibility. Improving connectivity transversally & radially is essential to tackle such issues. This will allow people to get around easily by public rail networks and develop new development areas round rail hubs, but also recognise that regular bus services to the fringes of the region are very important.

Urbanisation of the city-regions is another major challenge. This will need to be in stages in an outward radial and transversal pattern. Only through high-density development corridors integrated into a rail network will this be possible for the Nordic-Baltic Space to be spatially cohesive city-regions.



Land ownership offers the challenge of cities with high levels of public ownership of land being pro-active in steering future development. The lead partners, Stockholm and Helsinki, do have significant amount of land in public ownership within their cities but much less so in the regions.

Spatial Planning in the Nordic-Baltic Space needs to be more pro-active to enable more homes for rent at reasonable levels and build affordable homes for ownership. This involves the city-regions being 'drivers of change' by integrating spatial planning with land practices in leading the way forward. In

practice, it means that all of the Nordic-Baltic Space city-regions should be capable of being one of the key 'Drivers of Change'.

The relationship between the State and the city-region in terms of coordinating new development potential with public transport network investment creates a special challenge. New investment opportunities in the region for more homes and workplaces require additional rail investment. The cost of such investment means that the cities cannot do it by themselves. It requires the State to be a formal partner. Hence the rise of the new 'urban growth agreements'. This refers to a negotiated planned agreement between the State and the city-regions so that the State will promote additional funding for new rail lines in the city-region based on the need to build at much higher density levels to accommodate the future growth of the metropole.

Perhaps the greatest challenge of all is climate change. It is beyond reasonable doubt that climate change is due primarily because of human levels of production and consumption that leads to excessive CO2 emissions that in turn, are causing the earth's medium temperatures to rise. The warming of the earth could jump to rise as much as 3C by 2100 (UN report 10/2017). A carbon-neutral region by 2050 will require more bioenergy, more wind/solar power (GHG emissions -30% 1990-2020; Renewables share from energy production 20% in 2020), and it is important to create a carbon-free 'path' that aims to minimise carbon reductions as soon as possible by utilizing existing structures to the best possible advantage.



City Mobility. Image: City of Helsinki, City Plan team/Heikki Salmikivi

Key ISSUES:

- Economy: new workplaces / firms located near rail hubs/ work nearer homes/
- Social Cohesion: reasonable rent and price levels of homes /minimise spatial & social segregation
- Connectivity: integrated spatial planning and transport / high quality public rail transport/ minimise car usage and city centre parking
- Spatial Cohesion with the City and Environment to create a balance of land-uses

An ageing population suggests significant problems could be on the horizon if this challenge is to be averted. Otherwise, there will be consequences in terms of taxation and pensions for the next generation.

Excellent public transport may exist in the Space's cities but there is a clear need to improve public rail transport networks of metro and trams in the city-region. Further new investment will be required to confront the issue of sprawl and accessibility.

Carbon-neutral by 2050 is a major challenge, both in terms of materials used to create energy and also how

re-fit older blocks of flats to modern standards and be carbon-free.

Achieving changes in the way we live and build in order to have a carbon neutral future will be extremely challenging to spatial planning.

Key issues need to be prioritized to take account of resources and clearer criteria used in the process. Spatial, social and environmental assessments must be integrated into the planning process. There is also a need for better monitoring through key indicators to measure outcome of Regional Plans.

City-regional Challenges: impact at the metropolitan level

The city-region challenges raises a number of key issues that require to be analysed. Urban sprawl in the city-region is a growing problem and needs to be contained. In that respect, regional governance may offer improved solutions in addressing such a major issue. It may also help promote urbanisation of the city-region and possibly assist in reducing spatial disparities between municipalities. Regional governance could offer better spatial balance in allocating concentrations of jobs.

Social cohesion is another major challenge. Some cities within the Space have good to reasonable social housing but the regions have a shortage of social rented accommodation and moderate priced housing.



Image: City of Helsinki Media Bank/ Matti Tirri

4. Transnational Strengths and Weaknesses

NORDIC-BALTIC SPACE CITY-REGIONS: SWOT

STRENGTHS AND WEAKNESSES

This section evaluates the various transnational strengths and weaknesses that apply in determining what trends and information are relevant today amongst the Nordic-Baltic Space city-regions and what key factors may come into play to change the future.

SWOT is a strategic technique in urban planning through strategic analysis. It enables strategic issues to be better defined and can reveal what key factors need to be addressed in relation to future objectives.

The Outcomes provide the joint summary on the strengths and weaknesses of all the Nordic-Baltic Space city-regions in the project. There are notable differences between the Nordic and Baltic city-regions and these have been taken into account in the preparation of this joint SWOT analysis in order to integrate the collective picture.

The SWOT analysis is based upon the 'drivers of change' themes of spatial, economic, social, connectivity and climate change, which aim to provide a global perspective.

The SWOT is a spatial analysis guide which is then used to prepare a joint scenario for the Nordic-Baltic Space, taking account of complementarity and competitive aspects of the macro-region as a whole, set within a long-term framework based around the 'drivers'.

The joint 'outcome' of the SWOT analysis represents a summary of the main individual city-regions outlook who are participating in the Nordic-Baltic Space project. The integrated SWOT

framework creates the foundations in the next section to build a range of alternative scenarios and evaluate the best strategies for the future.

The joint SWOT summary can be found in the final chapter, OUTCOMES.

Image: Materialbank/J. Holsten



5. Transnational Scenarios and Vision

NORDIC-BALTIC SPACE SCENARIO 2050

Scenario

Scenarios are a useful tool. The aim is to create several scenarios built upon the various points raised from the SWOT analysis using the same drivers and taking account of the key challenges.

Scenarios create the opportunity to manage growth and the city-region structures in a sustainable way by formulating and reviewing the key issues surrounding the Nordic-Baltic Space's future. Ultimately, the options covered in the scenarios enable the dynamics of each city-region to explore potential alternatives, identify spatial development opportunities and assess social and economic benefits and problems in moving towards compact, networked, polycentric city-regions within a set of competing demands.

The key driving forces within the scenarios, 'drivers of change', are a collection of criteria or variables as to how to assess the future as well as creating 'the bigger picture'. The drivers are grouped into five coloured clusters. From this is derived the framework for understanding trends and uncertainties better.

The scenarios are not a 'straight line' in what needs to be done from the present to the future. A range of plausible scenarios aim to take account of a wide set of circumstances, possibilities and desirable outcomes as well as contingencies.

The key drivers influence the scenarios by analysing significant changes that may take place. In doing so, it was

agreed to adopt three scenarios. The three scenarios were then produced set against the key drivers. The three scenarios were: (i) a fast growth World Metropole, (ii) a medium growth analysis 'Network City-Region', and (iii) a slow-growth ECO-alternative.

Joint Scenario Outline –

The key question for the Joint Scenario was what should be the Nordic-Baltic Space long-term strategy to meet future challenges in the economy, in social cohesion, the city-regional transport infrastructure, climate change and the overall balance of development within the city-regions and between the cities and their regions.

The timeframe is 2050. Since it is impossible to predict what will actually happen, the aim is to gain a better understanding of what kind of cities and regions within the Nordic-Baltic Space is desirable.

The three alternative scenarios by themselves do not represent the 'best' choice. Instead, the process is to gauge what may happen in each different scenario set against the five drivers. The process then centres upon selecting the most appropriate ideas from each scenario to create a single, joint scenario.

This then formulates into a long term Vision for the future of the Nordic-Baltic Space. This is done by interpreting the joint agreed scenario into a set of key objectives. These in turn form the joint Vision for the whole of the Nordic-Baltic Space.

In practice, the key objectives, being linked into the management of the city-regional structures across the Space, will adapt to changing circumstances, such as during growth peri-

ods the aims will be achieved quicker, whilst during downturns, it will take longer to implement the goals. However, the relationship between the overall objectives and the city-regional structure remain the same irrespective of the economic climate.

In summing up the process of reaching consensus within the project on the joint scenario, the economy is considered the main driving force in the way that regional and city structures advance. This in turn determines how much funding is available for expanding the rail infrastructure across the Nordic-Baltic Space and within each city-region and to Europe. It is essential therefore, to have a clear Vision for the Nordic-Baltic Space generally.

Hence, in order that the implementation of the drivers accommodate the swinging changes within the economy, it is essential that a clear path for the way forward is made in cooperation through working together across the Space.

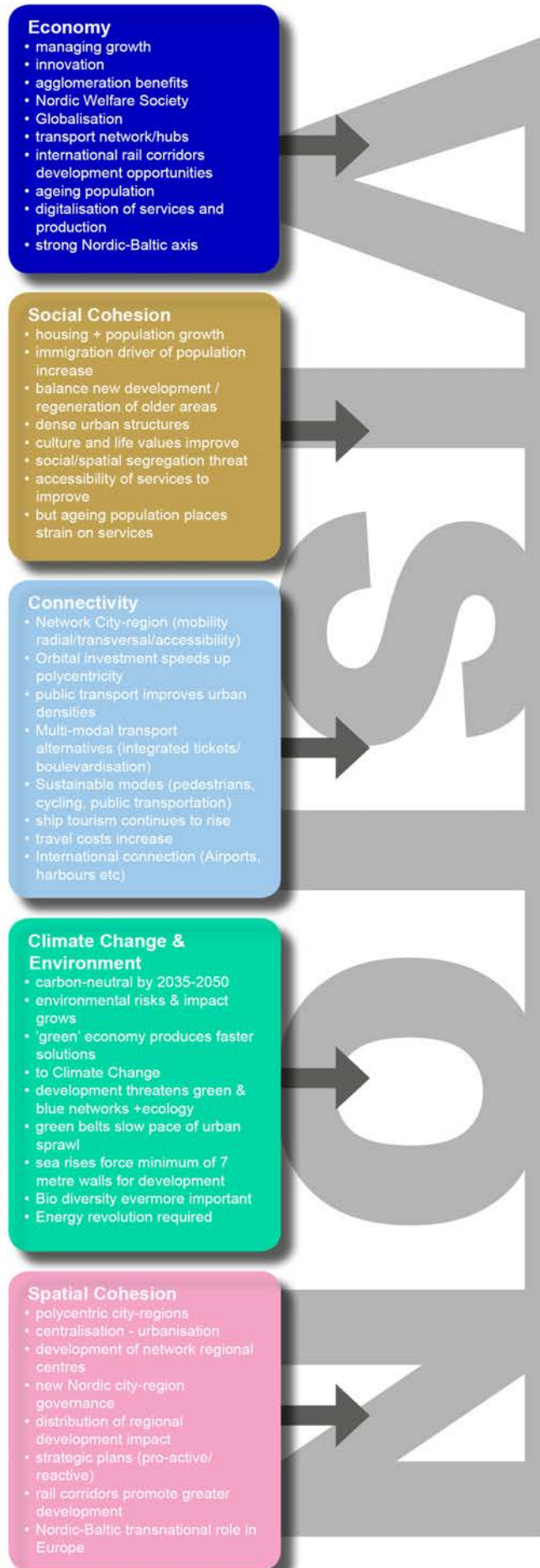
The Nordic-Baltic joint scenario is presented in the final chapter on 'Outcomes' together with the Joint Vision.

Joint Vision for the Nordic-Baltic Space

The Nordic-Baltic Space 2050 is a Vision and Framework for the Baltic Sea Region that promotes spatial and social cohesion and better connectivity between its city-regions. The joint Vision of the Nordic-Baltic Space for 2050 is based around the joint scenario, which can be viewed in the final chapter, 'outcomes'.

Drivers & macro-regional 'Future Perspectives'

The next section outlines the 'Future Perspectives' for each city-region through a macro-regional analysis and presents a summary of how the city-regions aim to mitigate against climate change.



6. Transnational City-region Future Perspectives

Stockholm

Gothenburg

Riga

Tallinn

Oslo

Helsinki



Stockholm

Stockholm Region: future perspective 2050

New regional development plan adopted

Stockholm has, during the last years, finalized the new regional development plan for the Stockholm region, RUFSS 2050. There is strong support among stakeholders in the region for the former plan, RUFSS 2010, and there will not be any major changes, but rather a further elaboration of the planning intentions in RUFSS 2010. The time perspective is put forward from 2030 to 2050, the approach to sustainable development is further developed with social sustainability in focus, and there is also a new focus on the urban-rural relationship and its sustainable development. The wider territorial perspective with a greater Stockholm region, including neighbouring counties in the East central Sweden that was introduced in RUFSS 2010, is now firmer established as planning co-operation within the East central Sweden territory. The concern for climate change is enhanced and prioritized.

Population development

Recent studies and assumptions on future population development indicate a strong growth for the Stockholm Region but also for the neighbouring counties. The baseline alternative shows a growth from 2,2 million inhabitants in 2015 to 3,4 million in 2050 for the Stockholm Region and from 4,15 to 5,7 million inhabitants for the East Central Sweden (including Stockholm Region). In the high alternative a high net migration is assumed.

Six challenges for the Stockholm Region

In RUFSS 2010 six challenges for the region were identified. The planning process for RUFSS2050 has verified these challenges still being valid and maybe even more relevant.

To facilitate population growth and simultaneously improve the region's environment and the health of the residents.

1. To be a small metropolitan region and at the same time an international leader.
2. To increase security in the region at the same time that the world is seen as unsafe.
3. To reduce climate impact and at the same time enable greater accessibility and economic growth.
4. To tackle capacity deficiencies at the same time as needs continue to grow.
5. To remain an open region and at the same time strengthen inclusion.

The goal and measure structure consists of:

- ▶ A long term vision
- ▶ Overall objectives until 2050
- ▶ Targets for 2030
- ▶ Prioritised measures for implementation 2018- 2026

Long term vision for the Stockholm Region

The long term vision is still: Europe's most attractive metropolitan region

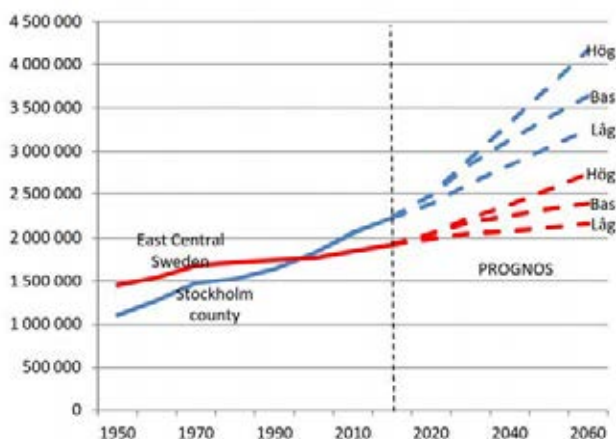
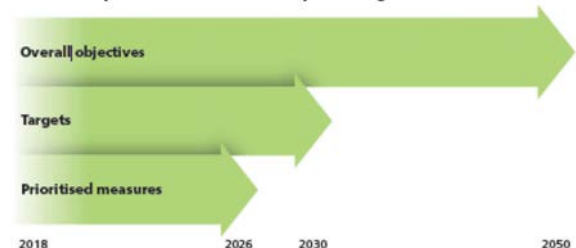


Figure 2. The goal structure in relation to the time perspective in RUFSS 2050

Vision: Europe's most attractive metropolitan region



The overall objectives until 2050 are:

- ▶ An accessible region with a good living environment
- ▶ An open, equal opportunity and inclusive region
- ▶ A leading growth and knowledge region
- ▶ A resource-efficient and resilient region

Targets to be achieved until 2030

In order to achieve the overall objectives, the consultation proposal points out targets with concrete levels that shall be achieved by 2030.

An accessible region with a good living environment

- ▶ At least 9,000 and up to 16,000 homes shall be completed every year until 2030.
- ▶ At least half of the region's residents shall reach at least 55 per cent of the region's labour market within 45 minutes with public transport.
- ▶ The percentage of cycling shall increase to 20 per cent of all journeys in accordance with the Regional Cycling Plan for Stockholm Region.
- ▶ The percentage of public transport shall increase
- ▶ by 5 percentage points compared with today.
- ▶ At least 70 per cent of new homes shall be added within walking distance of the main public transport network.
- ▶ All residents, businesses and the public sector shall have access to fixed and mobile broadband connections with high transmission speeds.
- ▶ Half of the region's residents shall have a maximum of 1000 metres to urban green spaces in the green wedges.

An open, equal opportunity and inclusive region

- ▶ All boys and girls shall achieve quali-

fication for upper secondary school.

- ▶ The employment rate among those born abroad, excluding the Nordic region, in the age range 20-64 years shall exceed 75 per cent for both men and women.
- ▶ Men and women shall have equal pay for equal work.
- ▶ The gender distribution among senior agency officers and politicians as well as management positions shall be 50-50 between men and women, and an equal representation shall be strived for.

A leading growth and knowledge region

- ▶ At least 90 per cent shall graduate from upper secondary school, year 3 in national programmes according to GY11.
- ▶ The employment rate of the population in the age range of 20-64 shall be well over 80 per cent for both men and women.
- ▶ The percentage of employees with higher education and employees in knowledge-intensive professions shall be at least 55 per cent for both men and women.
- ▶ R&D investments as a share of GRP shall exceed 4.5 per cent in total.
- ▶ GRP per employee shall be in the top 5 in the EU.

A resource-efficient and resilient region

- ▶ The direct emissions of greenhouse gases shall be less than 2.3 tonnes per resident.
- ▶ Greenhouse gas emissions shall be cut in half from a consumption perspective.
- ▶ The total energy consumption in the Stockholm region shall be a maximum of 40 TWh.
- ▶ The percentage of renewable energy shall be at least 75 per cent.
- ▶ Household waste shall have decreased to a maximum of 400 kg per person and year and at least 40 per

cent shall be recycled for materials.

- ▶ The average journeys per person and day by car shall be a maximum of 6.5 kilometres.

Prioritised measures

These are the actions that the various actors in the region need to take lead on, during the period 2018–2026, in order to reach the long-term goals agreed. In the adopted version of RUF2050 these are being presented as nine regional priorities.

Connect the region and build densely, variedly and close to public transport
Making the region's areas more dense and tying them together with businesses, housing and service provides the possibility of breaking down barriers, creating accessible and attractive residential environments, improving public transport and creating energy-efficient solutions that increase accessibility, people's possibility of meeting and increasing the residents' well-being.

Secure assets by living climate smart, safeguarding natural resources and developing efficient systems
Develop efficient technical systems and transport systems, take care of and develop valuable natural and cultural environments and build a society that uses natural and social resources in a way that does not destroy them, make it possible to safeguard and develop the assets that the region has without unreasonable investments and future expenses.

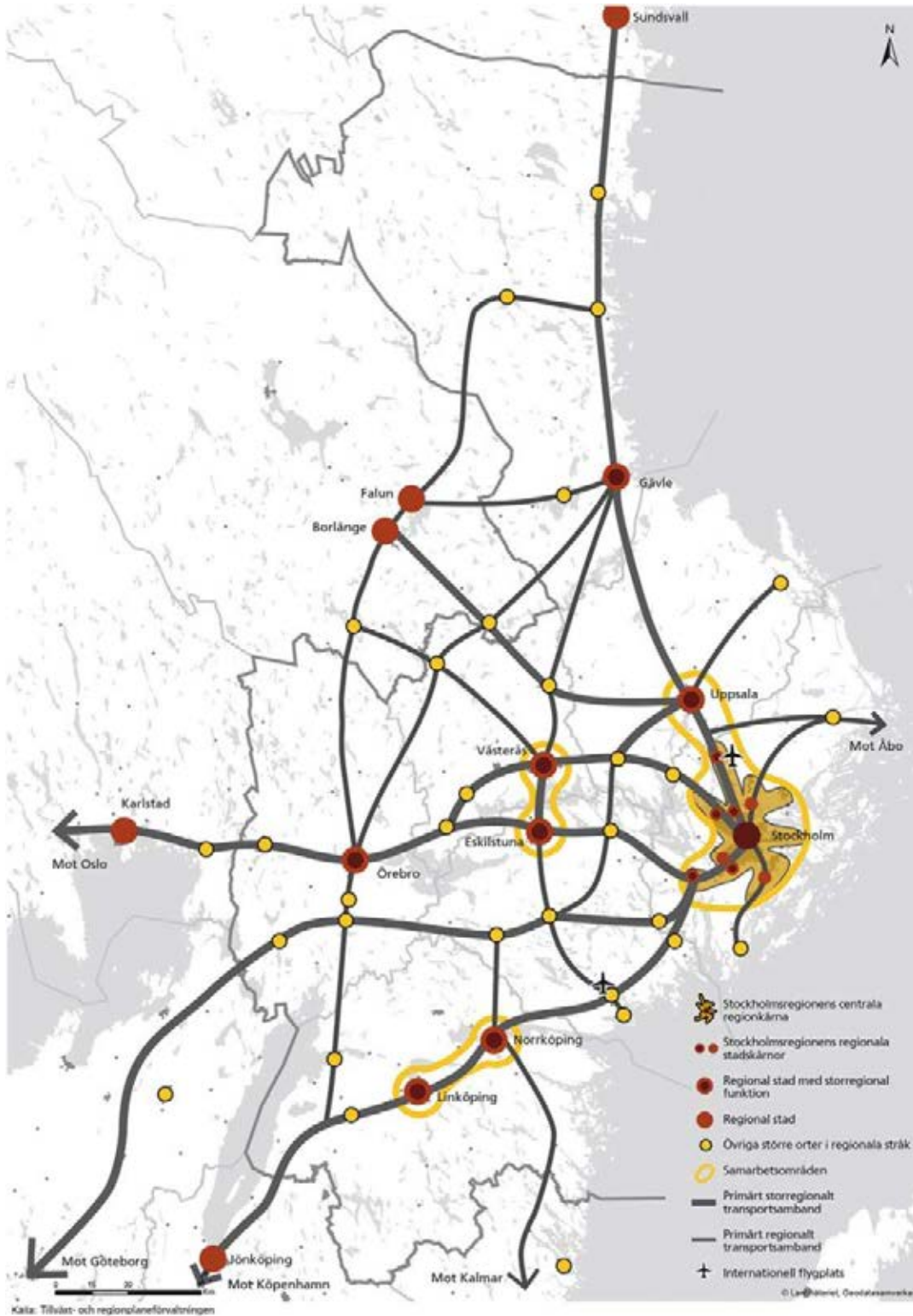
Strengthen competitiveness with smart, green and inclusive growth
The public sector, academic community and business community need to work more together to support a dynamic and intercultural business climate that utilises expertise, develops climate- and energy-smart solutions and innovations.

Spatial structure 2050

The spatial structure laid out in RUFSS 2010 with a more densely built up intra-regional polycentric structure with a number new regional cores is kept and integrates with the polycentric structure in Eastern Central Sweden.

- ▶ Urban development through densification close to public transport
- ▶ Interconnected regional cores
- ▶ Stronger connections between city and countryside
- ▶ More efficient transport systems for a region without climate impacts
- ▶ Regional economic structure that creates sustainable growth
- ▶ A cohesive green structure and a robust water environment
- ▶ Social cohesion in the entire region

Long term spatial structure for the Eastern Central Sweden



Two structure illustrations for the Stockholm Region

Climate change

Currently the Stockholm Region works on two fields regarding the climate change challenge:

- ▶ Leading the work on a Regional climate roadmap 2050 with the aim of a climate neutral region (county) in 2050.

It concerns the entire region (all sectors) and its direct GHG-emissions. It includes a wide range of stakeholders.

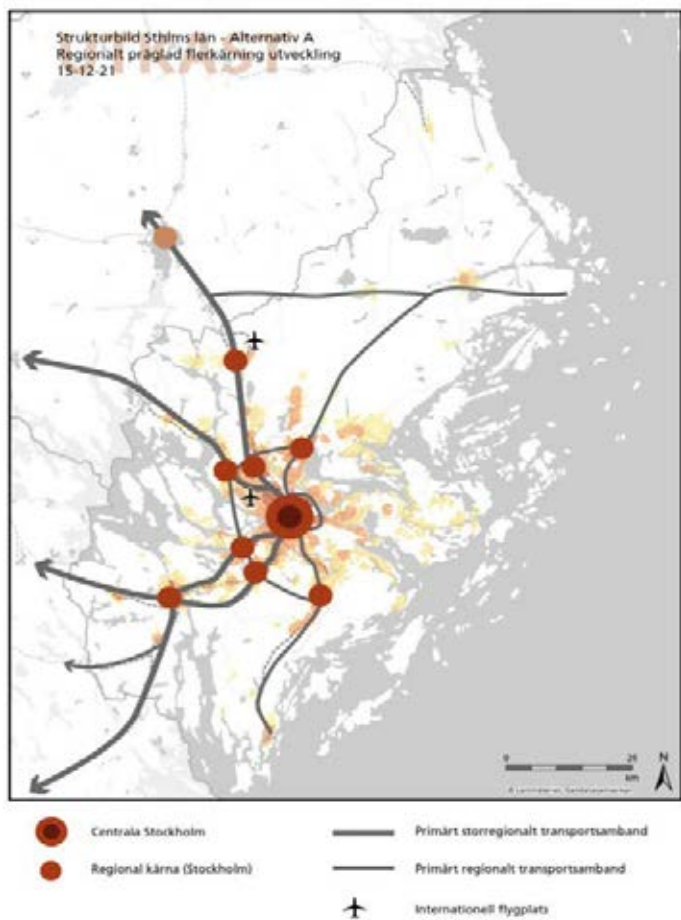
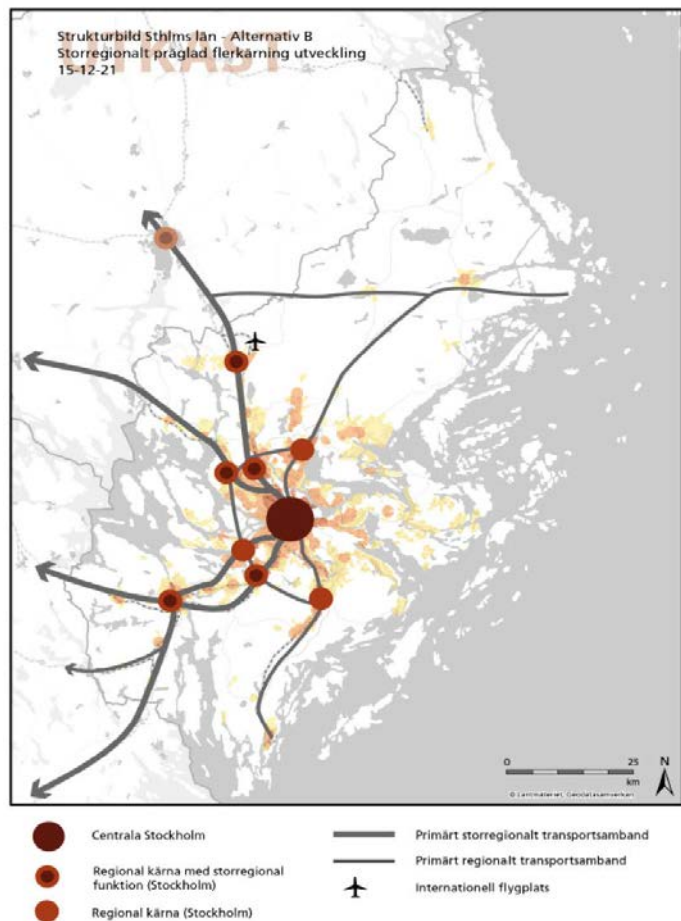
The biggest challenges are to

- find new ways to both fulfil accessibility/mobility and climate mitigation goals.
- deal with the region's global climate footprint (indirect emissions due to consumptions etc.)

- ▶ Reinforcing the work of regional climate adaptation necessities, work is done in project form

Both initiatives are of course imbedded into the work and processes of RUFSS 2050.

Jessica Andersson
 Head of the Department for Regional Planning
 Region Stockholm
 Regional Growth and Planning Administration



Two alternative spatial structures for the Stockholm Region during the consultation process

Stockholm Region 2050

Climate neutral

Climate neutral Stockholm Region:

Climate neutrality:

- ▶ Goal for 2050: decarbonized, no direct climate impact anymore i.e. climate neutral county with certain compensation measures necessary outside the County
- ▶ Settlement structures are “climate neutral”: dense, cohesive and economically/socially well-functioning as well as with low transport demands, walking/cycling and public transport since a long time as a norm for all spatial and urban planning
- ▶ Energy refurbished housing stocks (buildings from 1950-2000)
- ▶ Only passive or energy plus buildings (since 2030)
- ▶ Fossil free district heating network including carbon capture and storage (negative emissions)
- ▶ Decentralised, smart energy systems with highly increased local energy production (solar, wind, geothermal, water/wave)
- ▶ Smart, low carbon and energy technical systems adapted to client needs

- ▶ Traffic system in general: climate neutral (except aviation and international shipping)
- ▶ Road traffic: in big parts electrified, otherwise renewable fuels
- ▶ Considerably reduced global climate footprint achieved by clear global standards and altered consumption patterns and taking global responsibility

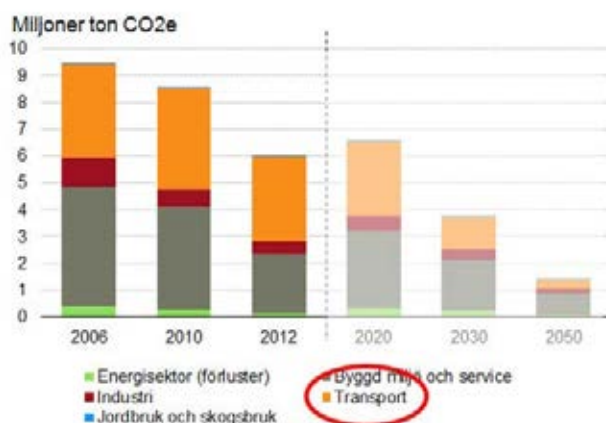
Climate adapted region

- ▶ Robust urban systems (technical systems, traffic system and building stock)
- ▶ Stable eco-systems and high number of regional eco-services (water, energy/fuels, food)
- ▶ Increased regional food production adapted to new climate situation (comparable with today's climate of Northern Germany)
- ▶ Important single measures: start of big scale installations to protect Stockholm from sea level rise and ensuring lake Mälaren's function as fresh water reservoir for 3 million people (in the Stockholm Region alone)

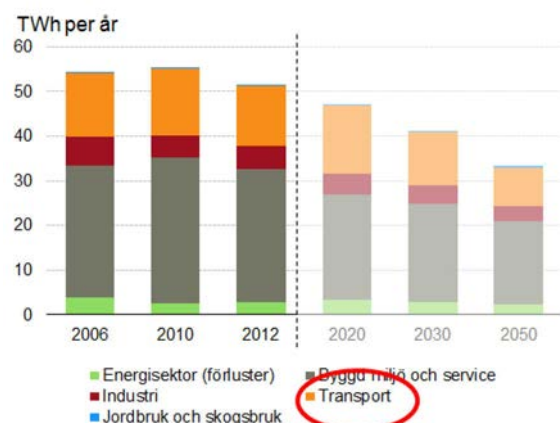
Jessica Andersson, Stockholm

Figure: Stockholm Region's emission and energy trajectories

GHG in total



Energy use



SWOT

SPATIAL	
Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Stockholm is an important and integrated metropole in East Middle Sweden and in the BSR with many functional relationships ■ Stockholm is one important IT-server hub in Sweden and the BSR 	<ul style="list-style-type: none"> ■ Peripheral region in a European and global context ■ Spatially isolated metropole with long distances and spatial hind-ers (Baltic Sea) to other big cities in the BSR
Opportunities	Threats
<ul style="list-style-type: none"> ■ Stronger polycentric integration of the Stockholm region (with a strong central node Stockholm) in Middle East Sweden 	<ul style="list-style-type: none"> ■ A failing EU cooperation would make Stockholm even more pe-ripheral and isolated
DEMOGRAPHICAL	
Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Strong population growth due to immigration (and birth surplus) opens for new connections and relationships ■ A good work-life-balance (work-family reconciliation policies) for both men&women due to good public child and elderly care ■ Free education (excluding students from outside of the EU) ■ Certain demographic advantages (relatively high share of young population compared to other European regions) ■ Net-surplus immigration of people in working age due to attrac-tive job opportunities ■ International language skills of the population are very good 	<ul style="list-style-type: none"> ■ Aging population ■ High number of immigrant population groups (especially from world crisis areas) who need extra health care to reach Swed-ish living standards
Opportunities	Threats
<ul style="list-style-type: none"> ■ Immigration of high educated labour force groups give contin-ued advantages for the regions tax base (lower education costs) ■ Continued decent dependency ratio (between young and elderly related to population share in working/productive age) ■ Growing share of healthy elderly who can engage themselves and require also new services 	<ul style="list-style-type: none"> ■ Continued strong influx of non-educated, low skilled refugees and migrants ■ Lack of housing creates segregation, difficulties for students and labour force to establish themselves in the Stockholm re-gion
ECONOMIC	
Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Continued strong economic growth decoupled of energy use and with decreasing climate ■ The Stockholm region is a major economic hub in the BSR with a great number of international companies' head quarters ■ Some of the leading ICT-enterprises in the world are located in Stockholm (also called as "Silicon Forest") ■ High number of high-qualified jobs related to the global econo-my (IT, robotic, life-science, media, gaming, financial sector) an international context ■ Wide range of different economic branches (700 branches) in-cluding a big number globalized branches ■ R&D hub with internationally recognized and successful univer-sities in many areas (life science, ICT, clean tech, environmen-tal science) ■ One of the major tourist and business meeting destinations in Europe 	<ul style="list-style-type: none"> ■ Lack of labour force in many branches that would require inter-national immigration of qualified work force ■ Small number of simple working places (for non-educated or low qualified people) ■ Little home market which requires an export oriented business sector dependent on stable global trade rules and political con-ditions

Opportunities	Threats
<ul style="list-style-type: none"> Extended cooperation of Stockholm's and Middle East Sweden's universities in high-tech and future branches Sustained European economic integration gives Stockholm even good future economic relationships and export opportunities Sweden and Stockholm can enlarge its affinity to Central Europe (politically and economically) 	<ul style="list-style-type: none"> Uncertainty in global economic development (Sweden/Stockholm is a highly globalized and dependent on stable markets) EU and Russian relationships continue to be frozen (St. Petersburg and Leningrad Oblast would be big markets) IT and cyber space criminality increases
SOCIAL	
Strengths	Weaknesses
<ul style="list-style-type: none"> Stockholm and Sweden have, in an international context, low corruption and high levels of trust EU/Schengen gives Stockholm its necessary influx of competent and highly educated EU citizens (students/labour force) Cultural metropole of international rank Cultural affinity with Anglo-Saxon sphere (cultural and business) 	<ul style="list-style-type: none"> Strong socio-economic and ethnic segregation, especially of non-EU-immigrants/citizens Discrepancy of neighbourhood narratives and mindsets (e.g. self-image and perceived images of different inhabitant groups) which means problems of understanding and integration among residents and public servants, majority population and minorities
Opportunities	Threats
<ul style="list-style-type: none"> Stockholm Region and its stakeholders can strengthen its position as a globally "responsible region" in terms of social and socioeconomic requirements/standards Stabilizing geo-political presence in the BSR (strengthening various neighbourhood alliances) Attraction of immigrants/refugees from e.g. Lebanese, Iranians, Chileans, etc. who chose to stay on in Sweden/Stockholm 	<ul style="list-style-type: none"> Inward migration of a big number of low skilled people from non-EU countries facing difficulties in the labour market; this generates uncertainty, social tensions, risk for exclusion with criminality and extremism The social capital and trust can erode due to a split-up society and internationally based criminality as well as social despair among citizens' subject to effects thereof
MOBILITY	
Strengths	Weaknesses
<ul style="list-style-type: none"> The Stockholm region is an important international and national transport hub (25 million flight passengers and 12 million maritime passengers annually) Virtual mobility is highly developed due to good IT-networks to the world 	<ul style="list-style-type: none"> Low spatial accessibility in a European context TEN-T networks are not fully developed (e.g. ScanMed corridor) Missing high speed railway connections to Norway and Denmark/Central Europe Few flight connections to Asia from Stockholm
Opportunities	Threats
<ul style="list-style-type: none"> New highspeed railway connections planned from Stockholm to the southern Sweden/Denmark related to TEN-T network (ScanMed corridor) and even to Oslo Global trade routes for commodities can change again and make Stockholm's ports and airports more attractive Freight harbors are integrated part of TEN-T network, but needs to be further developed (also priority for one harbor) More integrated networks and mobility solutions in Middle East Sweden including smart ICT 	<ul style="list-style-type: none"> Continued dependency of flight connections, both in Sweden, BSR, Europe and globally (flight regulation can change and make flight travelling much more expensive due to climate mitigation) External conditions (world security, etc.) can negatively impact the Stockholm region's mobility settings

SWOT Analysis for Stockholm Region/ Nordic-Baltic Space project

This is step "3" in the BS project: a SWOT analysis from a macro-regional perspective

Authors: Hans Brattström, Michael Erman, Cecilia Lindahl, Roberg Nordevi, Roland Engkvist, all from Stockholm county Council, Growth and Regional Administration

Contact: Michael Erman, michael.erman@sll.se



Gothenburg

Gothenburg's Future Perspectives

No new regional development plan!

The Gothenburg Region has a different form of regional planning. More focus on process than traditional planning. This Regional Governance structure was established in 2001 with regional consultation rounds involving the local municipalities' assemblies. The issues discussed during these up to date 5 consultation rounds has been, (2004) identification and agreeing on what are the regional issues to be discussed, (2005) under what format should these regional issues be discussed, (2006) Agreement on goals and strategies for the regional development, (2008) Structural Illustration and (2013) Review and progress report. To conclude, it is the local municipalities that "conduct" the regional planning in accordance with the regional agreements in their masterplans and detail plans for land use planning. Another important observation is that the Gothenburg region work with an endogen development strategy, i.e. Gothenburg believes that the regional destiny is in the hands of the people and organisations in the region. The vision set out in the Västra Götalands region document "The good life" of importance for the development in the greater territory of western Sweden.



Political targets

"We want to stimulate further population growth and at the same time make the most of the opportunities presented by further enlargement of the region"

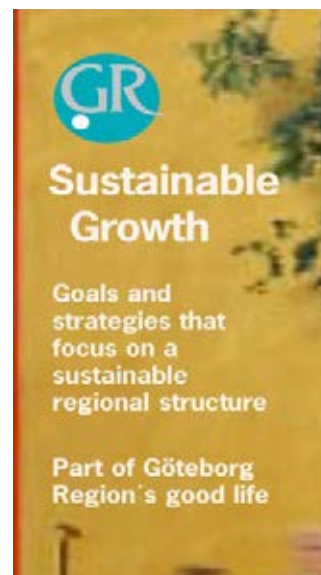
An attractive environment, balanced delivery of new housing and improved infrastructure across the region are some of the important factors required to support development. An attractive living environment embodies everything from the physical and outdoor environment, access to community care services, opportunities in education and even the staging of cultural events.

We want to strengthen those qualities that lead us to want to live and work in the Gothenburg Region

- ▶ We will make use of the regions proximity to the coast, sea, woods and lakes as an attractive force. At the same time we will ensure that these environments remain widely accessible.
- ▶ The planning and design of our cities and towns will stimulate vibrant urban environments and a richness in daily life.
- ▶ Our everyday environment will be protected from harmful influences – everyone will be assured clean air and fresh water.

This means a holistic approach to planning based on openness and the basic qualities of responsibility and participation.

Sometimes there may be conflicts between what is considered a good solution in the long-term and the strict application of rules in the short term.



We want to create a strong and sustainable regional structure based on the opportunities of the metropolitan area

- ▶ The Gothenburg Region will develop a strong and attractive regional core with corridors to several strong and attractive regional centres.
- ▶ The regional core will be strengthened by a further 40,000 jobs and 30,000 residents by 2020. At the same time the regional centres will be strengthened by at least a further 40,000 jobs and 90,000 residents.
- ▶ This long-term approach will lead to a balance in population between the north and south, along the central axes of the Göta and Sävån rivers. The core and its surrounding areas will be developed in symbiosis. A strong core both presupposes and contributes to the strengthening of surrounding areas. The size of the core, and thereby the region, is dependent on the capacity of the region's transport network. The region-

al core is made up of the central districts of Gothenburg: Centrum, Linéstadén, Majorna and parts of Lundby (including the North River Bank). This core area possesses a third of the region's workplaces and is home to a seventh of the region's population. As well as the question of the balance between north and south, attention also needs to be given to the balance between the coastal zone and inland areas.

We want to develop a long-term sustainable infrastructure and an attractive public transport service

- ▶ The Marieholm Link and the West Link railway lines will be completed by 2015 and the Götaland Line by 2020.
- ▶ The K2020 transport strategy will be implemented by 2020. By 2025, at least 40 per cent of journeys in the Gothenburg Region will be made by public transport.
- ▶ The Port railway line will be completed along its new route by 2020.
- ▶ Gothenburg's Landvetter Airport will have at least 6,000,000 passengers per year by 2020.

A number of other infrastructure projects, aside from those stated above, need to be carried out in order to support these goals. Houses must be built and businesses established if public transport routes are to be developed effectively. Transport infrastructure must develop in a way that does not harm the other basic qualities of the region.

We want to intensify co-operation between all the players

- ▶ Growth and structural issues will be given priority in the work of GR and BRG.

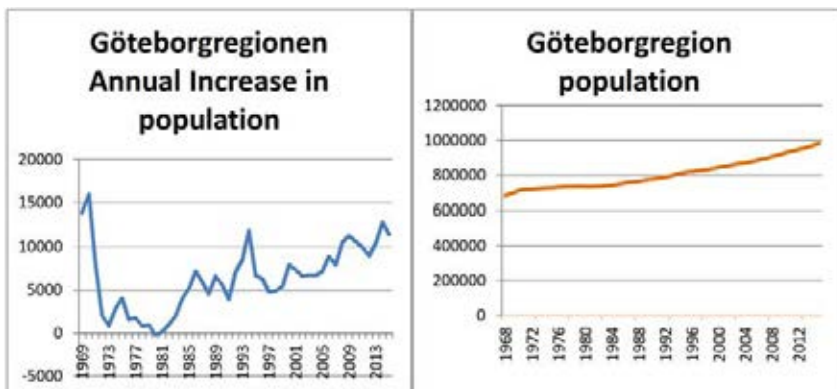
- ▶ Existing forms of co-operation between Västra Götaland Region and Region Halland will be developed further, and with the other joint authorities/associations of local authorities on selected matters.
- ▶ The network of organisations dealing with transport infrastructure issues will be strengthened. New networks will be established in those areas identified as important for the development of the Gothenburg Region.
- ▶ Co-operation will also take place at a national and international level. Further dialogue with the other joint authorities/associations of local authorities in Västra Götaland and Halland will be necessary on the question of further regional enlargement. HUR 2050 is a network that seeks to increase knowledge and awareness around the development of a sustainable transport system in the Gothenburg Region.

Population growth

The political targets for the population growth is set at 10 000 new inhabitants a year. (An increase in ambition from the previous target set 2006 at 8 000 per year). Recently discussions have been raised politically to increase the planning target for the population growth to a 1.5% annual increase.

The population increase is partly due to natural causes but primarily due to increase in migration and for new job opportunities in the region.

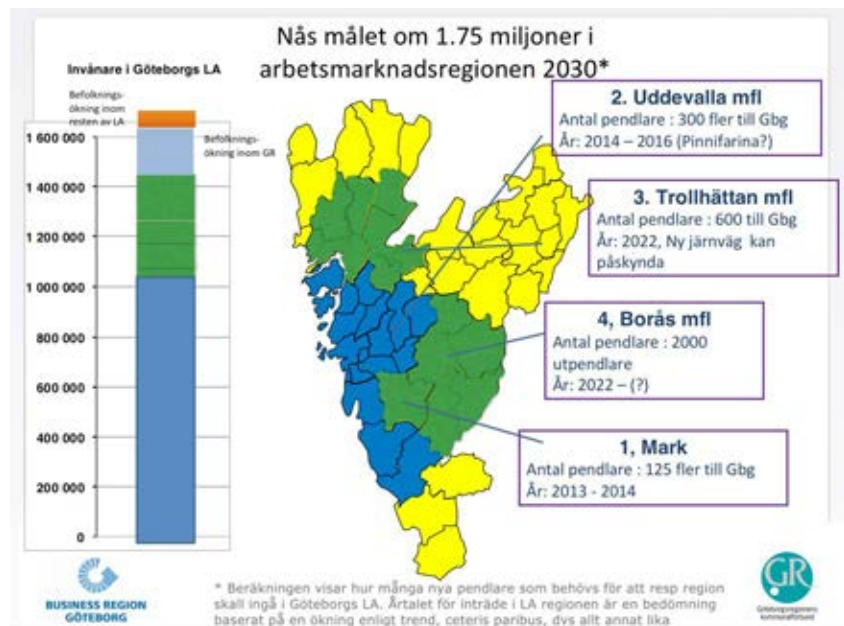
Possible population in 2030 and 2050 with 1.5% annual increase is 1.22 million and 1.65 respectively.



Labour market and regional territorial increase

The labour market will increase due to investments in infrastructure projects, such as the high-speed train between Gothenburg and Stockholm.

In 2030, the commuting area is expected to increase from the present 1.1 million inhabitants to 1.75 million.



How to achieve the political targets that have been set...



Regional agreements

We agree to take joint responsibility for a sustainable regional structure. Each party takes local responsibility for their parts of the regional structure and supports other municipalities in developing their parts.

- ▶ The development of the regional core is of essential importance for the development of the Gothenburg Region as a whole. To create an attractive and accessible regional city core is a joint task.
- ▶ The already built-up parts of the metropolitan area will be completed when opportunity arises. Development will be based on an attractive system of local public transport with a strong connection to the main corridors via assigned nodes.
- ▶ The main corridors constitute the spine of the Göteborg Region and will be strengthened in order to make all parts of the region long-term sustainable. Developments are planned with the support of an attractive and efficient regional commuting rail service.
- ▶ The qualities of the coastal area will be safeguarded and maintained in order to strengthen the Gothenburg Region as a whole. We pay particular attention to land use issues in the vicinity of the shoreline.
- ▶ The green wedges will be safeguarded and maintained in order to strengthen the Göteborg Region as a whole. We pay particular attention to land use issues in the intersection between urban and countryside/green areas.
- ▶ The many qualities and functions of the river Göta Älv will be safeguarded. We will endeavor to minimize the negative barrier effects caused by



the river. We pay particular attention to the consequences of climate change.

Regional Core Developing River City Gothenburg

River-City Gothenburg is central Gothenburg along the river. Major areas of our city are

waiting to be transformed into a living, attractive inner city. River-City Gothenburg is open – inwards towards Gothenburg and West Sweden – and outwards to the world. It is a meeting point for old and new; the known and the unknown. In the city, people feel a strong sense of community and there is always scope for new initiatives. The area is vibrant and inviting as well as unique and individual. One of the challenges the River-City addresses is the growing segregation both within the region and between different parts of Gothenburg.

OPEN TO THE WORLD

CONNECT THE CITY

- ▶ Build the city together
 - ▶ A city at eye level
 - ▶ Get more people involved
- Embrace the water

- ▶ Meeting places along the water
 - ▶ Shipping in harmony with the city
 - ▶ Climate adaption as a driver
- Reinforce the centre

- ▶ An accessible regional centre
- ▶ Innovative networks
- ▶ An attractive city environment

The attractive city – a green and tight city open for all - Ambition for Gothenburg development

- ▶ Rail link connecting radial rail infrastructure
- ▶ Cable Car linking south and north shore of Göta River
- ▶ New Bridge and new tunnel crossing the river
- ▶ Plenty of Housing projects but not enough
- ▶ Close to water/River
- ▶ Densification on previous brown fill areas

Tillsammans utvecklar vi en grön och nära storstad.

2015 2016 2017 2018 2019 2020 2021 Göteborgs 100-årsjubileum! 2022 2023 2024 2025 2026 Vår tättningsambition!

Strategies for developing Gothenburg, three integrated documents

- ▶ Traffic/Mobility
- ▶ Green structure
- ▶ Housing



- ▶ Integrated planning
- ▶ Common understanding about planning conditions
- ▶ Joint developing strategies
- ▶ Accessible regional core
- ▶ Attractive city life, walkability



Urban Station communities

Both the railway and railway stations has historically had a significant impact on communications and prosperity, not just in Sweden but globally. The future role of station communities is crucial for urban and regional development. A development of these communities can enable a transport-efficient urban planning, a sustainable economic development and an attractive region. Densifying station neighbourhoods is a common challenge for many actors and stakeholders.

The project participants have via workshops identified seven focus areas that they see as the main challenges to develop station communities.

- ▶ These focus areas are:
- ▶ Noise, vibration and risk
- ▶ Dialogue and collaboration
- ▶ Flexible and sustainable transport
- ▶ Structure and design of a sustainable society
- ▶ Lifestyle values, identity and place marketing
- ▶ Land use and land values
- ▶ The station's role for the surrounding area



The west Sweden Infrastructure Package

The West Swedish Package encompasses a series of major investments in public transport, railway and roads in the Gothenburg region. The package is based on a collaboration between the City of Gothenburg, Region Västra Götaland, the Gothenburg Region Association of Local Authorities (GR), Region Halland, the Swedish Transport Administration and Västtrafik. Scheduled to be completed by 2028, it includes Västlänken and the new Hisingen bridge. The financing of the investments are through a Congestion tax in Gothenburg, Regional funding and national funding. The purpose is to

- ▶ improve accessibility on our roads
- ▶ Improve our environment
- ▶ Part-finance the West Swedish Package.

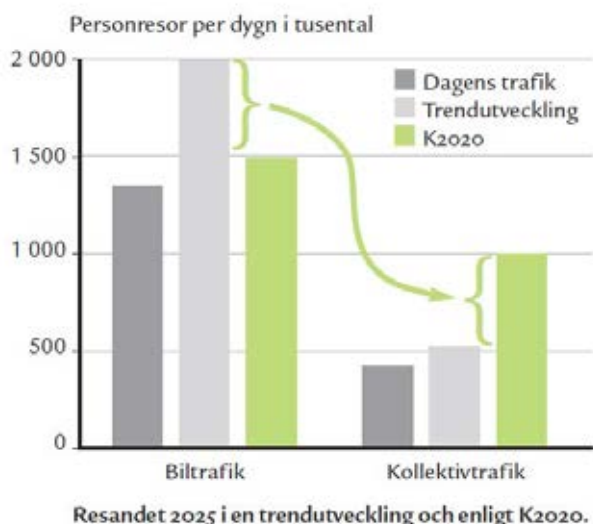
The Swedish negotiation not finalised:

- ▶ High speed connection from Stockholm to Gothenburg
- ▶ Increase in building houses as payment for investments
- ▶ 70-80 000 new dwellings next 20 years 2016-2035
- ▶ Local investments in infrastructure for Public Transport
- ▶ BRT, Cable Car and bus-lanes, New tram connections and other infrastructure

K2020, A long term Strategy for Public Transport in the Gothenburg Region

The long term vision of Gothenburg Region as an attractive, sustainable and growing region recognises that a functioning public transport system is essential in achieving overall development goals. A substantial shift to public transport is required. The share of regional and local trips made by public transport needs to increase and the aim is to have 1 million public transport trips per day by 2025

Per Kristersson, Senior Regional Planner, Gothenburg Region (Gothenburg Region Association of Local Authorities)



Gothenburg: Regional and municipal climate strategies

1. Västra Götaland region

At the regional level, Västra Götaland region and the Västra Götaland County Administrative Board have jointly issued the climate strategy Climate 2030 – Västra Götaland in transition. The document is intended to be a mobilisation of efforts where actors in the region can commit to specific actions connected to the strategy's four themes and approaches. Climate 2030 highlights synergies between the climate transition and achieving the region's vision of a good life for all in Västra Götaland. The strategy affirms the goal of removing the regions fossil fuel dependency by 2030, specifically in terms of an 80% reduction in regional greenhouse gas emissions compared with 1990 levels. An additional goal is that greenhouse gas emissions caused by the consumption of the residents of western Sweden, no matter where in the world they occur, will decrease by 30% compared with 2010.

Climate 2030 has four prioritised focus areas: 1) "Sustainable transport", including increased cycling, walking and use of public transport; faster transition to fossil-free vehicles; efficient transport of goods; and climate-smart meetings and holidays. 2) "Climate-smart and healthy food", including reduced food waste; promoting sustainable agriculture; more vegetarian food consumption. 3) "Renewable and resource-efficient products and services", including a larger market for bio-based materials and fuels; focus on services and circular products; and design for a sustainable lifestyle. 4) "Healthy and climate-smart homes and buildings", including flexible and climate-smart homes and buildings; effective and climate-smart renovation.

2. Municipalities in the Gothenburg Region

The majority of the municipalities in the Gothenburg region have their own climate strategies and many have joined the Covenant of Mayors. These strategies have often focused on some or all of the following:

- ▶ renewable energy production (especially biofuels, solar);
- ▶ energy efficiency in homes and buildings;
- ▶ municipal food consumption (waste reduction/prevention, purchasing policies, vegetarian and locally produced food in schools);
- ▶ infrastructure and mobility management to promote cycling, walking, and use of public transport; municipal planning (urban infill, station communities); charging infrastructure for electric cars.

3. The Gothenburg Region (GR)

GR is in the process of formulating a strategy focusing on climate issues specifically. These are currently interwoven in many of our projects, processes and strategies, but there is a need to increase the tempo and focus on prioritised issues specific to our metropolitan region. An analysis has been conducted in terms of the role GR can play in achieving the regional goals in Climate 2030, together with our member municipalities. In terms of local climate impact, issues related to regional planning and transport are particularly important in the short term. Aside from the concentration of ETS-regulated industry in three of our municipalities, the main contributor to local greenhouse gas emissions are cars, trucks and heavy vehicles. Infra-

structure, housing and land use planning, as well as mobility management measures are key to reducing these emissions.

We also see a need to stimulate and support climate change adaptation measures within our metropolitan region, which have tended to be under-prioritised.

Contact: Sarah Johnstone, regional planner sarah.johnstone@goteborgs-regionen.se

SWOT

SPATIAL	
<p>Strengths</p> <ul style="list-style-type: none"> ■ Territorial positioning, ■ Connection transoceanic via the harbor ■ Varied hinterland, Forrest, sea, very green wedges ■ Low densely populated area ■ Water supply of good quality 	<p>Weaknesses</p> <ul style="list-style-type: none"> ■ Peripheral region in a European and global context
<p>Opportunities</p> <ul style="list-style-type: none"> ■ Connecting to Oslo and Copenhagen regions ■ GO cooperation 	<p>Threats</p> <ul style="list-style-type: none"> ■ Climate change, Sea water rising ■ Water supply Göta River ■ A failing EU cooperation would make Gothenburg even more peripheral and isolated
DEMOGRAPHICAL	
<p>Strengths</p> <ul style="list-style-type: none"> ■ Strong population growth due to immigration (and birth surplus) opens for new connections and relationships ■ A good work-life-balance (work-family reconciliation policies) for both men&women due to good public child and elderly care ■ Free education (excluding students from outside of the EU) ■ Net-surplus immigration of people in working age due to attractive job opportunities ■ International language skills of the population are very good 	<p>Weaknesses</p> <ul style="list-style-type: none"> ■ Segregated communities due to difficulties for young and newly arrived to establish into the housing market ■ Aging population ■ High number of immigrant population groups (especially from world crisis areas) who need extra health care to reach Swedish living standards
<p>Opportunities</p> <ul style="list-style-type: none"> ■ Ageing healthy and wealthy population ■ Immigration of high educated labour force groups give continued advantages for the regions tax base (lower education costs) ■ Continued decent dependency ratio (between young and elderly related to population share in working/productive age) ■ Growing share of healthy elderly who can engage themselves and require also new services 	<p>Threats</p> <ul style="list-style-type: none"> ■ Continued strong influx of non-educated, low skilled refugees and migrants ■ Lack of housing creates segregation, difficulties for students and labour force to establish themselves in the Gothenburg region
ECONOMIC	
<p>Strengths</p> <ul style="list-style-type: none"> ■ Trans ocean capacity harbour ■ Car industry cluster ■ Industrial strong cluster ■ Events ■ Tourist destination ■ Innovation cluster for future solutions ■ Innovative and adaptive educational system ■ Chalmers cooperation with industry. Triple helix ■ 1000 mdr investments next 10 years ■ Lowest unemployment figures ■ Voluntary regional governance model 	<p>Weaknesses</p> <ul style="list-style-type: none"> ■ Low capacity infrastructure ■ Workforce volume ■ Lacking in national priority of infrastructure investments, university funding, etc ■ Little brother complex ■ Lack of labour force in many branches that would require international immigration of qualified work force ■ Small number of simple working places (for non-educated or low qualified people) ■ Little home market which requires an export oriented business sector dependent on stable global trade rules and political conditions

Opportunities	Threats
<ul style="list-style-type: none"> ■ Cruise ships destination ■ Competence through newly arrived ■ Even distributed economy within the region 	<ul style="list-style-type: none"> ■ Ranking from entrepreneurs perspective is low ■ Union unrest resulting in use of alternative harbors ■ Low capacity rail connections ■ Lacking competences in volume for building and infrastructure ■ The Gothenburg spirit “Muteborg” can be turned into something very negative ■ Global unrest. Gothenburgregion is export dependent
SOCIAL	
Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Very strong cultural affine with Anglo Saxon sphere “little London” ■ Healthcare parental leave ■ Long holiday periods ■ ■ Gothenburg and Sweden have, in an international context, low corruption and high levels of trust ■ EU/Schengen gives Gothenburg it’s necessary influx of competent and highly educated EU citizens (students/labour force) 	<ul style="list-style-type: none"> ■ Gothenburgregion even more segregated within the Swedish population than national average but we believe that Stockholm has higher amplitudes ■ ■ Strong socio-economic and ethnic segregation, especially of non-EU-immigrants/citizens ■ Discrepancy of neighbourhood narratives and mindsets (e.g. self-image and perceived images of different inhabitant groups) which means problems of understanding and integration among residents and public servants, majority population and minorities
Opportunities	Threats
<ul style="list-style-type: none"> ■ Upcoming cultural metropole ■ Ej global Samvete ■ Ej direkt stabiliserande för blt ■ Attraction of immigrants/refugees from e.g. Lebanese, Iranians, Chileans, etc. who chose to stay on in Sweden/Gothenburg 	<ul style="list-style-type: none"> ■ Inward migration of a big number of low skilled people from non-EU countries facing difficulties in the labour market; this generates uncertainty, social tensions, risk for exclusion with criminality and extremism ■ The social capital and trust can erode due to a split-up society and internationally based criminality as well as social despair
MOBILITY	
Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Nordic logistic hub ■ Car mobility ■ Public transport program K 2020 ■ Volvo ■ Next generation mobility development and solution centre lct 	<ul style="list-style-type: none"> ■ Restricted connectivity to European hubs. Fair accessibility ■ Public transport low modal split ■ Public transport administration covers VGR territory causing confined in priorities. ■ Low rail capacity
Opportunities	Threats
<ul style="list-style-type: none"> ■ Increasing patronage of international cruising ships destination ■ Increase in direct destination for air traffic ■ Infrastructure invest for transition towards sustainable mobility 	<ul style="list-style-type: none"> ■ Decrease in hub solution causing more direct flights for larger regions. ???? ■ ■ Car dependence causing urban sprawl from a resilience perspective

SWOT Analysis for Gothenburg Region / Nordic-Baltic Space project
 This is step “3” in the BS project: a SWOT analysis from a macro-regional perspective
 Authors: Per Kristersson, Pia Arnesson, Joanna Friberg, Anna Gustavsson
 Contact: Per Kristersson, pek@grkom.se, tel 46 707355171

A decorative graphic on the right side of the page, consisting of a solid pink area with a wavy, scalloped border on its left edge that separates it from the white background.

Riga

Riga metropolitan area – future perspectives

The Riga metropolitan area is a main driver for national economic growth generating about 60% of national GDP. Moreover, it is home to a third of Latvia's population. Therefore, policies that affect development in the metropolitan area play an important role for economic development and well-being in Latvia.

A large proportion of the Riga population has settled down in the city's surrounding municipalities. People may live outside the city but choose the capital city as their place of work and for getting an education. The city-region's population also use Riga's public services and leisure activities, thus having an impact on depopulation of Riga city and uncontrolled growth of neighbouring municipalities (shrinking central city vs growing metropolitan area). This tendency, as well as the lack of co-ordinated planning between Riga city and surrounding municipalities, creates inefficient cooperation between the central government and other regions. The absence of a formal or informal Metropolitan governance causes a whole spectrum of challenges for the future:

1) Deterioration of the transport situation. The current transport infrastructure and roads network linking Riga and its adjoining municipalities have not been able to adjust to the growing traffic and usage of private vehicles caused by rapid growth of population in Riga's city-region. This places an increasing load on the future infrastructure. For instance, since the year 2000, the number of private vehicles in Riga has increased by 60%, but the number of incoming vehicles from surround-

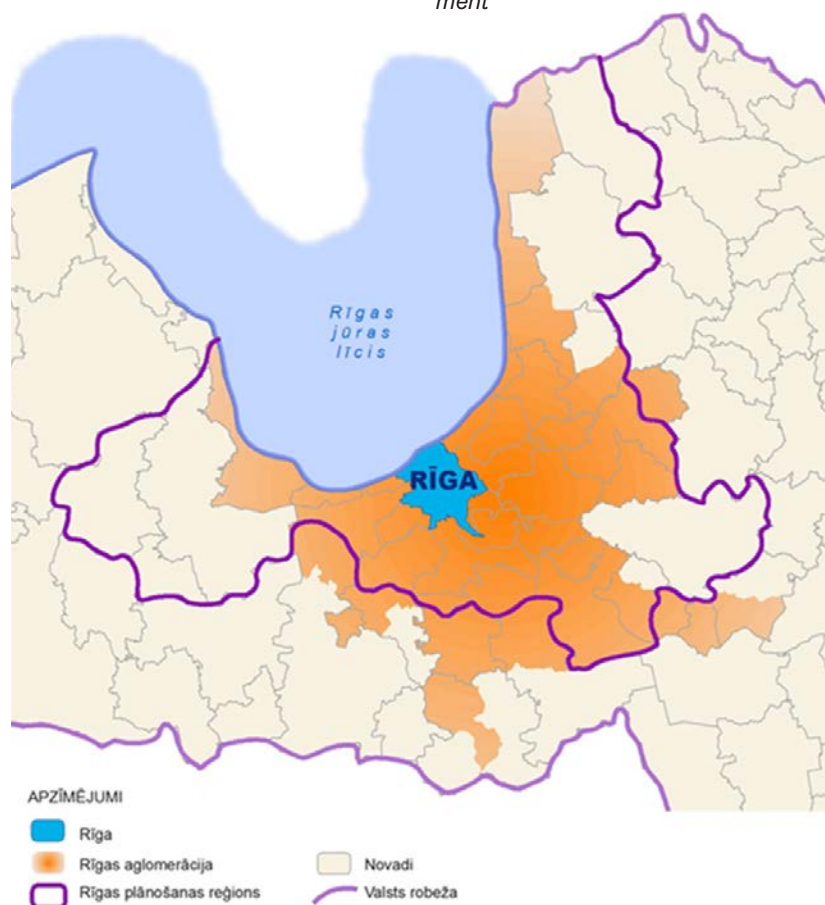
ings in Riga per day has doubled over the last decade. As a result, increased traffic jams can be observed prolonging the duration trip from surrounding areas to the capital city as well as polluting the surrounding environment.

The future requires for a much improved transport infrastructure within Riga and its surroundings (including park and ride) as well as for a better public transport system with higher transporting capacity. In turn, this will

provide better interlinkages among different types of vehicles and create sufficiently more traffic routes. It is essential that the limited capacity of transport infrastructure does not become a significant obstacle for further development of Riga and its metropolitan area.

2) Insufficient management of urban sprawl, inter alia, incomplete public infrastructure in the new constructing areas and there tends to be a lack of

Agglomeration of Riga
Source: Riga City Development Department



appropriate green and recreational territories in the areas outside of Riga city limits. Insufficient cooperation between neighbouring municipalities on planning of new dwelling areas is one of the main causes for in-effective land use and land degradation within the metropolitan area.

3) Inefficient organisation of public services in some parts of the metropolitan area, means that there are problems in providing sufficient water supply and water treatment equipment, waste management services, provision of fire brigades, placements of schools and kindergartens and other such levels of public services.

4) The lack of a common business environment, including common branding, placement of industrial and logistic parks, or insufficient use of natural resources for recreation (forests and waters) and tourism continue to be a key challenge.

The main 'drivers' of development for the Riga metropolitan area are the following:

1. strategically important location of the capital city and its surrounding city-region;
2. good international connectivity (international airport and sea port);
3. high population retention (the largest city in the Baltic States);
4. relatively high market capacity form the economic potential of the region and promote national growth;
5. Riga agglomeration holds the most significant cultural, educational, scientific, sports, healthcare, and transport infrastructure services of the state.

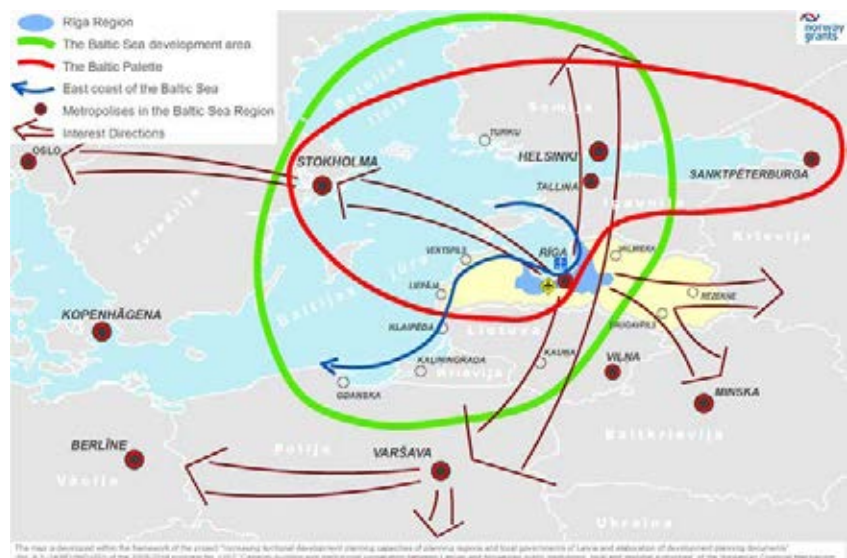
Riga planning region sustainable development strategy 2030

Riga Planning Region has a special and potentially increasable role on the international scale, primarily in the Baltic Sea Region. A big driving force for development of not only the Riga Planning Region but also the whole of Latvia can be found in the potential of Riga as an international metropolis, and this aspect should be taken into account more frequently in the future. In the network of metropolises – VASAB, Baltic Palette, Via Hanseatica, Via Baltica and Rail Baltica – it is possible to serve as excellent platforms designed for development of accessible infrastructure and tourism, as well as regional marketing.

Respecting the idea of polycentrism and increasing the role of 'place-making' in social planning are key issues to the success for Riga's future. It is essential that Riga's particular international scale in Latvia and the region are taken into account and that the strategy emphasises the ensemble of relationships between the city centre and the periphery in different spatial scales. Distribution of the population is viewed as an organising element of the spatial structure.

In the international context, fast connections to major metropolises in Europe are essential for Riga. Through integrated development of connections of the Rail Baltica railway, the international airport "Riga" and the Wester-Eastern railway, it is possible to establish the basis of the develop-

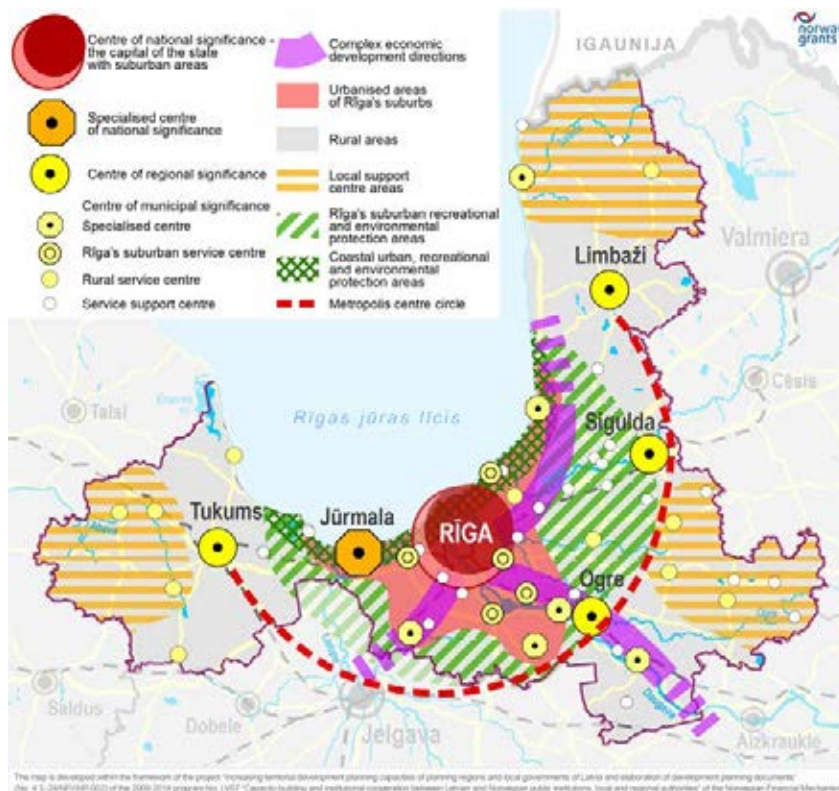
Cooperation in Baltic Sea Region
Source: Riga Planning Region



ment of Riga as a European and Eurasian mobility area. This would provide for the Latvian residents with quick access to different regions of the world. The Riga Port shall become an international focal point not only with regard to the sector of shipment of goods but also in the field of passenger transportation. In the regional context, the link between Riga and its city-region plays an important role.

Guntars Ruskuls, Riga City Council, City Development Department, Acting Head of Strategic Management Board

Justīne Panteļejeva, Riga City Council, City Development Department, Board of Strategic Management, Strategic Planning Division, Acting Chief Expert in Strategic Planning and Deputy Head of the Division



Source: Riga Planning Region



Transport infrastructure
Source: Riga Planning Region

SWOT

SPATIAL	
<p>Strength</p> <ul style="list-style-type: none"> ■ 39% of Riga's territory consists of blue-green structures (recreation, tourism) ■ Metropolitan area forests are owned and managed by Riga city ■ Skanstes Central business district development – strategic development of one of the city's most underdeveloped neighborhoods ■ Cultural heritage – Art Nouveau, Old City, Soviet housing blocks, wooden architecture 	<p>Weaknesses</p> <ul style="list-style-type: none"> ■ High suburbanization and urban sprawl have resulted in many monofunctional villages in Riga Metropolitan area ■ Post-Soviet land reform has resulted in fragmented estate ownership in postindustrial territories and big living neighborhoods - Microrayons ■ Historical center buildings are half empty, leaving a lot of commercial and residential spaces empty
<p>Opportunities</p> <ul style="list-style-type: none"> ■ Brownfield revitalization projects as a driving force for social, economic and environmental regeneration for the city ■ Participation in EU metropolitan networks ■ Gateway location in EU 	<p>Threats</p> <ul style="list-style-type: none"> ■ Adjusting future development for a shrinking city ■ Peripheral location in the EU
DEMOGRAPHICAL	
<p>Strength</p> <ul style="list-style-type: none"> ■ Strongest birth rate in the country in Riga metropolitan area¹ (in comparison with the rest of Latvia) 	<p>Weaknesses</p> <ul style="list-style-type: none"> ■ Forecasted inhabitant number is gradually decreasing² and society is aging
<p>Opportunities</p> <ul style="list-style-type: none"> ■ Riga metropolitan area as a place with good living standard can help to increase Latvian return migration ■ Metropolitan area can also help to anchor the young and educated generation to stay in Latvia 	<p>Threats</p> <ul style="list-style-type: none"> ■ Other growing cities and metro areas in Baltic states can diminish Riga's status and impact in the region ■ Free Europe market attract more skilled Latvian workforce for better salary
ECONOMIC	
<p>Strength</p> <ul style="list-style-type: none"> ■ Riga is regional and national economic driving force (Free Port, Biggest City in Baltics) ■ Skilled workforce ■ Blossoming tech start-up scene in Riga (Twino, Infogram, Tech-Chill event) ■ "Knowledge mile" – Left bank of river Daugava will be home to two university campuses, developing Life, Social and Technical science state of art infrastructure ■ Lowest unemployment rate in the country 	<p>Weaknesses</p> <ul style="list-style-type: none"> ■ Creative and tech specialist outflow to rural Latvia or Europe (IT infrastructure availability is changing urban and international mobility) ■ Decline of industry sectors
<p>Opportunities</p> <ul style="list-style-type: none"> ■ To attract international IT workers, start-ups to work in the heart of the Baltics (capitalizing on IT infrastructure, low apartment rents (in comparison with other EU capital cities), new start-up law etc.) 	<p>Threats</p> <ul style="list-style-type: none"> ■ Russia's geopolitical influence ■ Decline of cargo turnover in Riga harbor due global economic change

1 http://www.csb.gov.lv/sites/default/files/nr_11_demografija_2014_14_00_lv_en.pdf

2 http://www.sus.lv/sites/default/files/media/faili/demografiskas_prognozes_riga_un_pieriga_rd_lza_2012.pdf

SOCIAL	
Strength	Weaknesses
<ul style="list-style-type: none"> ■ 58 territorial neighborhoods have strengthened citizen affiliation with their neighborhood and the city and their involvement with city development plans. Furthermore, Riga also has benefited from district NGO initiated local activities (e.g., urban space renewal, historical center empty building reoccupying). ■ Riga is tourism, cultural event and lively nightlife hub in the Baltic states 	<ul style="list-style-type: none"> ■ Tourism associated with nightlife and partying creates dissatisfaction with locals and no added value to the city and won't put Riga in the map for young Europeans ■ Strong economic and social segregation tendencies ■ Lack of social infrastructure in some parts of Metropolitan area
Opportunities	Threats
<ul style="list-style-type: none"> ■ Refugees as a local cultural and economic catalysts for growth and innovation ■ Exploring neighborhoods and local, sustainable tourism would create diverse option portfolio for foreigners³ 	<ul style="list-style-type: none"> ■ Latvian – Russian integration is not properly working and could cause serious political and social issues in long term
MOBILITY	
Strength	Weaknesses
<ul style="list-style-type: none"> ■ Biggest International Airport in Baltic States; Airport Riga is located 10 km (15 min drive) from the city center. ■ 9 tram lines connecting densely populated districts (+electrical trolleybus lines) ■ Comparatively good train lines connection in Metropolitan area with Riga city 	<ul style="list-style-type: none"> ■ Increasing automobilization level in the city as well in the metropolitan area ■ Incoherent cycling path development ■ Metropolitan area is lacking overlaying public transportation and park and ride network ■ Road and street quality and safety – traffic accident number is still high
Opportunities	Threats
<ul style="list-style-type: none"> ■ Rail Baltica railroad infrastructure will connect Riga with other Metropolitan areas – Helsinki, Tallinn, Kaunas, Warsaw and Berlin. ■ Develop common public transport system for City and Metropolitan area (stops and tickets) ■ More green energy use in public transportation (i.e., biogas for bus) 	<ul style="list-style-type: none"> ■ Passenger Port will not achieve high flows because of geographical situation (Riga Bay) and successful neighboring ports (Tallinn). ■ The increasing level of automobilization is causing increased road infrastructure development, putting a strain on green zone ratio in Riga metropolitan area

Future Scenarios: Riga

	Scenario 1 Northern European metropolis	Scenario 2 Base scenario
Economy		
Managing growth	Strong growth GDP	Slow growth/possible stagnation
Innovation	Start-up Northern Silicon Valley Science innovation Baltic capital with strong connection with private sector	Missed opportunities to Tallinn, Helsinki as a start-up hub Science research with no strong ties with private sector
Technological development +new concepts	City develops on Smart city principles	Technological development is slow
Digitalisation of services and products	Digitalisation of services and easy-share rapid development	Digitalisation costs grow as digital sectoral fragmentation is still strong
Structural change impact on society	Growing middle class Inequality and poverty is declining	Most people live under middle class annual earnings. Due to that – unpredictable political atmosphere
Transportation network/hubs impact	Diverse transportation hubs densify job clusters	Transportation hubs mostly dominated by truck cargos, weakening rail network
Globalisation	Open co-cooperation and transit flow to regions in Asia	Few partnerships in the East, resulting in economic secludedness from global markets
Image, branding	Strengthens image of City world-wide as Northern Europe metropolis	Riga is associated with Eastern Europe and EU periphery
Climate change and Environment		
Climate change	Carbon neutral city and region achieved by 2050	Carbon neutral city and region achieved by 2100
Environment risks & impact	Environment risks due to Riga Freeport decrease as type of port cargo changes The implementation of the new mobility concept facilitates reduction of carbon emissions. Air quality and life quality increases.	Pollution and the environmental risks from the Freeport action are substantial and persistent. The air quality is unsatisfactory in the centre of the city. Overall CO ₂ emissions are not improving.
Green and blue networks + Ecology	Global warming elevates the risk of extreme weather condition, but the city is resilient – strategies are implemented in case of extreme floods, heat waves, storms City has established its green corridors and waterbodies are revitalised, improving resilience to climate change	Global warming elevates the risk is extreme weather conditions but the city has not implemented broad policies due to lack of funding The green corridors in the city have been established, but they are fragmented; Waterbody revitalisation is happening slowly
Energy revolution	Innovation leads to reduction of energy consumption	Energy usage continues to outgrow demand
Biodiversity	Biodiversity decreases as the Metropolis and the Metropolitan development area grows	Biodiversity remains intact

Social Cohesion		
Housing and Population	Slowly, but steadily inhabitant number increases	Slowly, but steadily inhabitant number decreases (depopulation)
Immigration	1/3 of population increase is from immigration Successful Latvian remigration plan also plays part in inhabitant number growth	Low work force immigration Not fully achieved remigration plan – Latvians reluctantly choose to move back
Demographic changes	Birth rate outweighs mortality rate Population age structure is distributed rather evenly (due to influx of highly skilled immigrants in work force and)	Mortality rate outweighs birth rate Society ages, putting pressure on the work force and tax system
Living and working together	Considerable new housing development, innovations in a form of sustainable co-living spaces in the city centre	Housing development concentrated outside main centres – great threat of urban sprawl 2.0
Density of urban structure	Compact city model and polycentric development in the greater Metropolitan area	Broad suburbanisation with monofunctional territories in the agglomeration
Balance new development/ regeneration of older areas Social segregation and safety	Proffered development areas are brownfields and other urbanised territories Strong gentrification leads to specific neighbourhoods with high criminality rate	Development mostly happens on greenfield areas Historically criminal neighbourhoods have stayed unsafe, little impact of gentrification
Culture life and values	Riga is a capital for cultural, architecture, urban quality, art and environmental synthesis	Different cultures are part of the city life, but inclusive synthesis is not happening
Accessibility of services	Public services are distributed in all neighbourhoods/ boroughs – closer to local communities	Public services are still centralised
Everyday living	Local communities have formed functional action groups and are a vital part of city development	Some local communities are active, but inconsistent
Spatial Cohesion		
City-region and regional structure	Compact metropolis and united development polycentric region	City and the agglomeration development isn't happening in a complex manner therefore resulting in conflicts
Centralisation/ urbanisation	Compact city model is challenged by a high development rate; densification of city-region through development corridors	Compact city model is challenged by continued urban sprawl in the agglomeration; suburbs are not willing to embrace intensification
Development of network of centres	Public transport and social infrastructure are available in new-developed centres	No new centres are developed. Parts of agglomeration lack services and infrastructure
Distribution of regional development impact	Improves city-region balance by directing investment to city centre and regional centres	State investments are directed more to regions than to metropolis
Strategic plans	Comprehensive Riga and Riga Metropolitan Area Investment plan	Fragmented and incoherent strategic planning documents result in frequent disaccord with neighbouring municipalities
Transnational role in Europe	European role strengthens though Rail Baltica, Port development and Airport transit passenger growth	European role undermined by lack of investment in transit infrastructure

Connectivity		
Network City-region (mobility radial/transversal)	United public transportation system in Metropolitan and its areal	Fragmented public transportation system between Riga and the agglomeration
Multi-modal transport alternatives	Park and Ride system is advanced, with intermodal points of transition	Multi-modal investment is low, concentration of resources directed to maintaining existing network's infrastructure
Sustainable modes (pedestrians, cycling, public transportation)	Preference in the city core is given to pedestrians, cyclists and public transport	Metropolitan area is still highly auto centric
Travel costs	United ticket and payment system in the agglomeration; tickets are being subsidized	Ticket pricing and payment options are differentiated due to various service providers
International connection (Airports, harbours, etc)	The airport continues to grow; the passenger port is reconstructed and modern	The airport turnover remains steady, growth is slow; passenger port is not able to compete with Tallinn port
Inter-regional connections (national level)	Establish railroad connection between the city centre and the airport; electrification of railroads New road bypass in the South of the agglomeration; new river crossing in the North	No new connection or extra infrastructure (connecting with region) have been built

Guntars Ruskuls,
*Riga City Council,
 City Development Department,
 Acting Head of Strategic Management Board*

Justīne Panteļējeva,
*Riga City Council,
 City Development Department,
 Board of Strategic Management,
 Strategic Planning Division,
 Acting Chief Expert in Strategic Planning and Deputy Head of the Division*

Tallinn

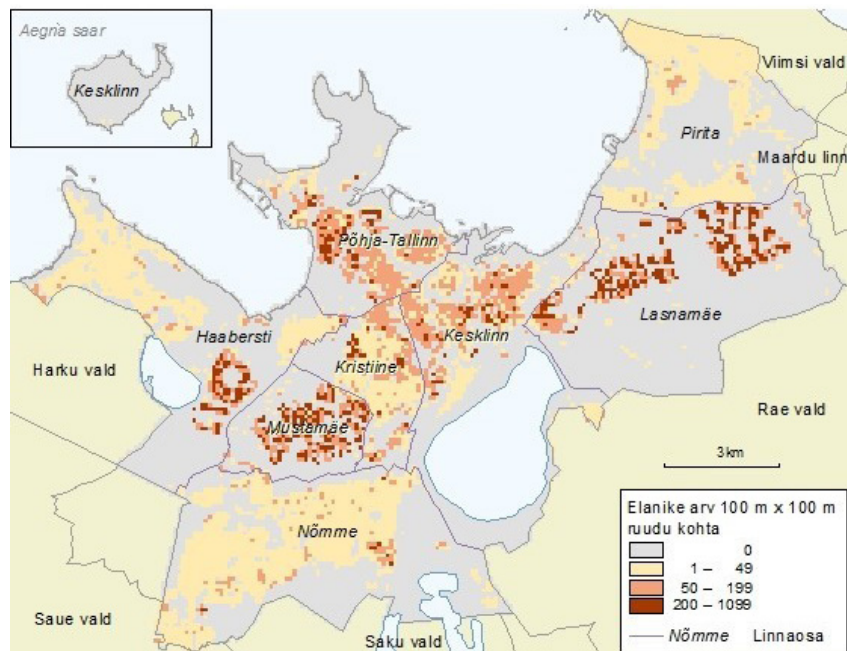
Tallinn and city-region: Future Perspectives

The significance of the EU's ESDP (European Spatial Development Perspective) and the Territorial Agenda has contributed to the upgrading of the city-region as an important element in the growth of cities and managing the city and regional structure. It represents a fundamental change in how to approach spatial planning of cities.

Tallinn, in this respect, is experiencing such changes, more so because of its location and nearness to Helsinki in Finland, just across the water. These changes represent greater cross-border cooperation and trade and is further highlighted in recent times by consistent reference to the twin-city concept.

Tallinn is the capital of Estonia situated on the northern coast some 80 kilometres directly opposite from Helsinki across the water and south-east of Stockholm. St Petersburg is 370 kilometres to the east. Estonia became independent upon the collapse of the Soviet Union in 1991.

Tallinn is one of the oldest medieval cities in Europe and long established as a major hub of the Hanseatic League during those years from the 13th to the 17th centuries. Due to very little investment and development during the Soviet years from 1944 to 1991, the medieval Old Town has been preserved in its entirety and listed as a UNESCO world heritage site.



Fast Growing City

The city of Tallinn and its surrounding city-region is growing fast, primarily from internal migration within Estonia. Tallinn has a population of 450,500. This has increased by 6% over the past decade and in recent years by as much as 1-2% per annum. The city-region now has well over half a million residents. Women (55%) outnumber men and the number of elderly over 65 (22.5%) is also increasing.

Helsinki in 2018 is close to 650,000, whilst Tallinn is at the half a million mark. Both cities anticipate ever faster growth until 2050, with Helsinki some 900,000 and Tallinn over 650,000. The respective metropolitan regions could

increase to over 2 million in Helsinki, and Tallinn closer to 750,000.

Tallinn's population is more complex than most, given that the ethnic composition consists mainly of 53% ethnic Estonians, 37.5% of Russian stock (although 47% speak Russian) and the remainder a mixture of Ukrainians, Belarussians and Finns. Spatially, there has been historic segregation in terms of ethnicity, with areas like Lasnamäe having a clear majority, some 61.6% of Russian ethnic origin. Mustamäe, with 33.4% of Russian origin, is another example of segregated clustering.

Geographically, Tallinn is a relatively easy to get around, especially from the outer districts to the city centre. On av-

erage, the furthest outward lying district into town is less than 3 kilometres. Many of the housing areas are within walking distance of the old town.

The majority of households live in relatively modern flats that have been built in the past 30 years or so. There are some 197,000 households (2017), with nearly 39% living alone and 66% with one or two members in a household. Families of four or more account for 16% of households. The majority, 88%, live in apartment blocks and just under 12% in rows of terraces or detached and semi-detached single-family houses. If one compares this to Estonia as a whole, 32% live in detached housing.

In 1997, by general decree, some 97% of all dwellings in Tallinn were transferred from social ownership to private ownership, many for as little as 1 US dollar. This transferred the responsibility for maintenance and upkeep to the private individual. If the residents of an apartment block wish to refurbish the windows, roof or pipework, it requires a unanimous vote. A single vote can therefore prevent major repairs taking place. In this respect, the rate of restoration at the present time is therefore lower than to be expected.

Tenure is devoted mainly to private ownership. Social housing and its availability is limited.

In comparison, the average price of a new flat is approximately €1500 per m².

In the past decade, life expectancy has improved considerably and resulted in

a fast increase in the number of elderly. This is expected to place additional stress on the State pension limit. Children spend a longer time at school, enter the work-place later than previously, settle down to having a family later and live longer. The average monthly pension was estimated to be €350, which even in relative terms, presents a challenge. Nearly 11% of households, including the elderly, were considered to be living in material deprivation. This compares to 13% for Estonia.

The digital age has been embraced in Tallinn with over 90% of homes having a computer and connected to the internet.

Connectivity

Until recently most trips to the centre 52%, used the tram or the trolley bus. Tallinn has 4 major tram lines and 5 trolley bus lines. The tram service has

recently been extended to the Airport (tram no. 4) and a new connection to the Port of Tallinn will start construction soon.

Tallinn operates a unique free-public transport service for all its residents since 2013. Citizens are required to show their residence ID card and are entitled to use the tram, trolley-buses and buses free of charge. Visitors to the city have to pay two euros per trip.

The upsurge in people cycling reflects the increase in cycle routes available throughout the city, including the sub-urban routes.

In part, Tallinn's growth has been the result of greater linkages with its capital counterpart, Helsinki. Some 9 million passengers cross the Gulf of Finland annually, and contribute greatly to the rise of Tallinn, both through commerce and sharing of technology and digital competence.



Twin-city concept

The close relationships between the administrations of Tallinn and Helsinki as well as a significant increase in trade through freight and IT bring the two cities and regions closer together in the making of regional economies. Business opportunities have improved with constant growth in cargo volumes (Baltic Transport Journal - BTJ).

The HTTP (Helsinki-Tallinn Transport and Planning), was a collaboration between the planning authorities of Helsinki and Tallinn and stakeholders in the transport sector. This was an EU Interreg IV project. The aim of HTTP was that the fast and reliable ferry connections between the two capitals have made it possible for increased business, both in services and logistics, to suggest that the twin-city development is not simply a growing concept but is actually occurring in practice.

Since 2015, the twin-city concept has developed with the support of both cities.

In 2018, each City signed a declaration of agreement to promote the twin-city concept.

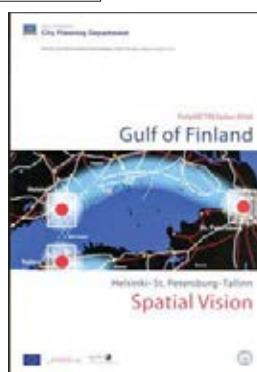
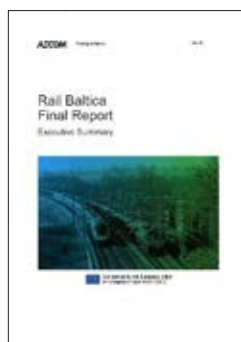
More companies are having offices in both regions and the overall increase in cargo volumes between the two has been increasing by 10% annually. The 'Ro-Pax' formula of integrating passengers and freight is considered a viable profit-making venture. In the future, due to limitations of noise, heavy traffic through the city centres and the need for even greater space for freight is placing pressure on this concept. Additionally, the Helsinki City Plan for 2050 has a vision of separating out passengers from freight and locating freight ferries to the eastern Port of Vuosaari in Helsinki and the Tallinn strategy aims to have freight within the development of the cargo port of Muuga in the Tallinn region. The conflicting views of the ship carriers and strategic planning will need to be addressed. One thing is certain: the present situation tends to limit the growth of freight traffic and new solutions are necessary (BTJ).

The conclusions of the HTTP project claim that the twin-city region as an integrated area for business operations and common labour markets is already a reality.

The Helsinki city-region boasts some 1.5 million inhabitants, and the northern city and region of Tallinn represents over half a million citizens. Together, 2 million promotes a significant 'cluster' within the EU network of metropolises.

Helsinki-Tallinn Rail Tunnel

The various EU Interreg projects for developing the Rail Baltica connections are systematically pushing the borders of Estonia and Finland closer together. The Rail Baltica integrated rail transport network has set up a company to oversee its development. The NSB CoRe – connecting of regions for the Eastern Baltic Sea Region – aims to further enhance the strategic aim of applying the TEN T infrastructural policy by supporting new rail development down through the Baltic to Warsaw and across to Berlin, thereby shifting the Baltic city-regions ever closer to the centre of the EU.



The Helsinki-Tallinn rail tunnel study by FIN-EST promotes the opportunity for both cities and their regions to enjoy significant agglomeration benefits from the tunnel. It would link Helsinki and Tallinn to Central Europe and improve their global competitiveness.

The Nordic-Baltic Space project under the auspices of the European Metropolitan Regions organization Metrex, coordinates a transnational perspective across the Nordic-Baltic space and aims to guide future development and structural planned development changes as part of a network of city-regions across Europe.

The Economy

Tallinn's GDP has grown significantly in recent years. It also reflects global trends. Tallinn and Estonia have fared relatively well during this decade, whereas Finland's GDP only started to expand in positive terms in 2016 (Helsinki-Tallinn kaksoiskaupunkikehityksen – 2018). Tallinn and Harju County account for as much as 64% of Estonia's GDP.

Comparing to the EU as a whole, the average GDP in the Tallinn-Harju city-region of €15,400 is well below that of the EU average €28,900. Helsinki-Uusimaa in contrast offered above average of over €50,000.

Tallinn contains a large proportion of Estonia's workplaces, almost 41%, primarily in industry (18%), building industry (8%) and the rest of the majority in services. Helsinki has over 80% of its 412,000 jobs in the service sector.

Unemployment in both cities measures between 4 and 5%.

City

Tallinn forms part of the larger Harju County region. All decisions within the city of Tallinn are regulated by the regional plan. The Harju County regional plan sets out the principle locations for infrastructure, major road and trans-



port networks, new residential districts and green areas.

Tallinn's City Plan was adopted in 2001. It is principally a land-use plan that covers the whole of the city. It protects the green areas and parks, aims to create a balance between land-uses whilst specifying what should happen to the residential areas. Business location is paramount to success. Road and public transport feature prominently, as does the need to achieve a more socially balanced living environment.

Today, the aim is now to make smaller local plans for each of the 8 major districts in Tallinn. The City Plan of 2001 has not been updated. Maintaining Tallinn's compactness and increasing land densities are at the forefront of making Tallinn more carbon neutral in the future.

In addition, special 'theme' reports are a key to creating policy for new development. Location of high-rise buildings is one of the key issues under scrutiny. Green Areas, Traffic Network, Protec-

tion of older wooden residential areas are considered highly important issues for the city's future.

Unlike Helsinki, where nearly 80% of land is in public ownership, Tallinn has retained approximately some 5% of land in public ownership, mainly green areas and lakes.

It is the private sector, which is the main driver in Tallinn and there is significant pressure by real estate developers on land-uses. This creates considerable pressure on urban planning to approve developments in times of change.

City-region spatial priorities

Estonia is an integrated country with high levels of urbanization. Harju County lies on the southern coast of the Gulf of Finland, and surrounds Tallinn. It is one of fifteen key regions in Estonia.

Harju County's population is currently 610,000 and includes the capital, Tallinn.

The number of people relocating to the County is growing fast. Immigration is primarily from the more peripheral regions of Estonia. Medium-income professionals are moving from Tallinn into the County, which in turn is contributing to a growing problem of urban sprawl in the region.

The low-level of mortgage interest has boosted the numbers away from the city into the region and commuting by car is the most common way to travel into the city centre since rail public transport in the city-region is underdeveloped.

The negative impact of growing traffic congestion and increased air pollution adds to the general concerns of the environment.

Harju's general plan 2030+ takes account of the best location for the Rail Baltica corridor and environmental impact assessments.

During the period 2000-15, many middle-class families opted to move outside Tallinn's borders into the neighbouring region. This is now being slowly reversed. A number of new residential developments inside the city centre have attracted the young and educated families back into the centre. It is anticipated that this trend will continue.

The opening up of the seaside and promenade is a key challenge. It includes the Port harbour area. An international competition for the Port was won by Zaha Hadid in 2017, with the AADG (Andres Alver/Douglas Gordon) spatial cohesion proposal a close second. The concept of opening the city to the sea will enliven the city and create metropolitan mixed land-use development opportunities.

One of the main priority areas is North-Tallinn district. It has industry, harbours and old railway lines and is one of the most densely populated areas of the city. Its diversity and social mix allows for major redevelopment, which is now well underway.

The next 30 years will see the main focus on the key development areas within the City of Tallinn and for Rail Baltica to act as a generator to achieve wider agglomeration benefits that will pull the city and region closer together. Connectivity, in this respect, is considered a key factor in turning the outlying region to be more accessible to the capital city in order to promote greater cooperation in line with the EU's Territorial and Urban Agendas.

*Endrik Mand
Chief Architect
Urban Planning Department
City of Tallinn*

*References
Tallinn Year Book 2018. City of Tallinn
Baltic Transport Journal, 1/2012
Gulf of Finland Spatial Vision – Tallinn city and city-region
Helsinki-Tallinn kaksoiskaupunkikehityksen – 2018. City of Helsinki.*

Key Drivers of Change:

- ▶ Business integration
- ▶ Enterprise location
- ▶ Cross-border clusters of trade
- ▶ Cities and Regional authorities in facilitating twin-city concept
- ▶ Competitiveness of the region within the EU
- ▶ Complementarity of strategic planning and traffic and transport solutions.



Oslo

Oslo and Akershus: City and Region Future Perspectives

Driving forces for the future development in Oslo and Akershus

The Oslo-Akershus region has several innate advantages and strengths:

- ▶ The Oslo-Akershus region is the location for most national company headquarters, government offices and a strong service-based economy for the growing population.
- ▶ The population of Oslo and Akershus have the country's highest levels of education and purchasing power, also measured against Norway's relatively high prices.
- ▶ Oslo's location at the head of the Oslo fjord makes it the main entry-point for the rest of the country, and a national and regional hub for logistics and freight.

The economy of Oslo and Akershus is dominated by service sector jobs, following a relatively successful transition away from manufacturing industry during the 1970's and 80's when shipyards and many companies rational-

ised or closed down. Today the main industries are within foods and printing, while the proportion of jobs in finance, management and hospitality is relatively high. An overview of the breakdown and development of employment in Oslo and Akershus is shown in the figure below.

The long-term expectations for the Norwegian and Oslo-regional economy and jobs remain positive. However, the fall in petroleum prices in 2014 signalled the need to adjust. Although some jobs were lost in the Oslo-region, the currency was weakened, which enabled other export-based sectors to benefit. According to Statistics Norway, the moderate upturn in the Norwegian economy is likely to continue, driven to a large extent by higher petroleum investments in 2019. The interest rate will continue to rise, wage growth will be higher and unemployment is expected to see a slight fall.

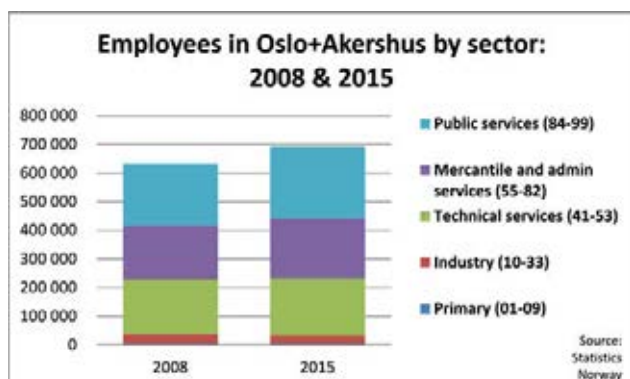
Norway's and the Oslo-region's economy follows international trends in a different way to most countries. High-

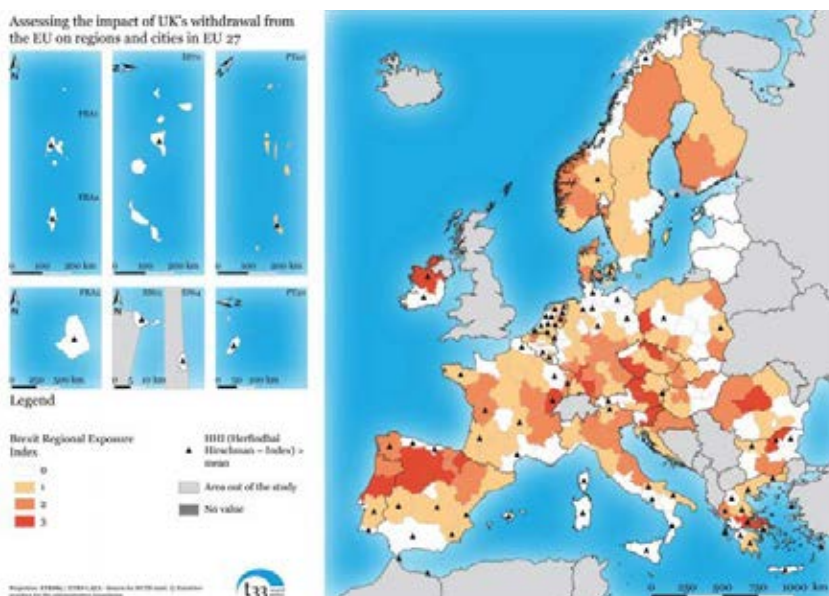
er petroleum prices stimulate investment, optimism and growth, while falling global demand for oil and gas has a negative effect. The Oslo-region's role is mutually interdependent with that of the other main regions, where industry and commodities, especially petroleum, offshore / shipping, metals and fish, are important.

There is wider uncertainty in the international economy which, in the short and medium term, is likely to impact Norway and the Oslo-region through the effects of the UK leaving the EU's internal market. Britain is one of Norway's largest markets, and uncertainties linked to both sales and supplies may particularly affect the regions where industry is still a key employer.

The map below, from the EU Committee of the Regions in 2018, shows how the potential impact of Brexit can be expected for European regions and cities. The regions adjoining Oslo-Akershus appear to be moderately exposed to economic losses, which may affect jobs and growth in the capital region.

Job-growth in a service based economy





Source: Assessing the impact of the UK's withdrawal from the EU on regions and cities in EU27, EU 2018

The Oslo region has a global position in certain economic sectors, in particular maritime and energy. Being both a major petroleum producer and reliant on hydroelectricity for domestic use, the Oslo region is a world leader in research, financing, strategic leadership and many supporting industries within these energy sectors. Norway's merchant fleet is still one of the world's largest, and technology and financing linked with shipping is highly developed in the region. There is also an important crossover between these industrial clusters, where technologically advanced engineering for offshore petroleum production is developed in the region by some of the country's major supply companies. Although Norway is not a world leader in ICT, there are some important companies in the region and a relatively high lev-

el of innovation for a region the size of Oslo.

According to the recent OECD territorial review for the Mega-region of Western Scandinavia (2018), Oslo and Akershus have the following strengths and challenges:

- ▶ High levels of well-being in the OECD context, Strategic policy challenges associated with supporting innovation and economic diversification, skills and inclusive growth, infrastructure and land use.
- ▶ Structural change due to lower commodity prices, where the Oslo region can play a key role in supporting this transition.
- ▶ Oslo and Akershus form a single labour market; while this is a high-productivity metropolitan region, challenges associated with promoting in-

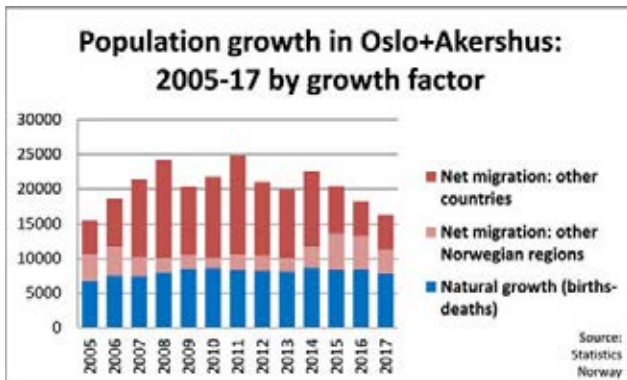
novation in high-value producer services, ensuring the supply of housing and provision of sustainable transport for a growing population, and the inclusion of new migrant groups into the economy, will need to be addressed.

Two main policy challenges exist:

- ▶ How to facilitate the creation of new jobs and business opportunities that are high value and take advantage of the economic transition that Norway is facing.
- ▶ How to equip people with the skills, and address mismatches in the labour market, to ensure that businesses have the capacity to take advantage of new opportunities and to grow.

The population in Oslo and Akershus has experienced record high levels of growth in the past 5-6 years. On top of an underlying natural growth rate with a young population profile, recent growth has also been driven by unexpectedly high levels of immigration from European countries following the EU enlargement in 2004. One in five residents in the Oslo-Akershus region currently has a non-Norwegian ethnic background. Poles and Lithuanians have been the largest national groups to move into the Oslo-region during recent years, filling jobs in a wide range of service and technical sectors.

The level of net immigration appears to have slowed down in the last year, mainly as a combined result of strengthened job opportunities in Central Eastern European countries, and the weakened oil price, leading to reduced pay differences between countries.



Population growth has been driven by strong natural growth and high immigration from EU countries

Looking ahead, current population projections reveal a high level of uncertainty for the Oslo-region. We can expect anything between 0.6 % and 1.2 % annual population growth, or from 9,000 to 18,000 additional residents each year. Future uncertainty is especially linked to the volatility of immigration, with factors such as economic developments in Europe and the scale of refugee arrivals and asylum seekers from more distant regions playing a role. In addition, the birth rate is unexpectedly slowing down, which could lead to both a reduced population growth and a higher rate of dependency for children and elderly people on those of working age.

In the diagrams below, the main high and low growth projections for the region are based on high and low growth scenarios at the national level. These take account of the regional demographic patterns in the recent years, as well as exogenous modelling of the levels of anticipated immigration.

Oslo and Akershus – Regional plan and future perspectives for spatial regional development

The regional plan for land use and transportation in Oslo and Akershus, approved in 2015, defines common challenges, opportunities, goals, and strategies for the capital region. The region is expected to have continued growth in population, and the main challenge is increase in transport demand. There is a national and regional cross-party political agreement that all future growth in passenger transport in the urban areas must be handled by public transport, cycling and walking. Oslo and Akershus also have a common goal to cut climate gas emissions by fifty percent. Other common goals for the region are:

- ▶ An economically competitive and sustainable region in Europe
- ▶ Efficient land-use, based on the principles of polycentric development

and preservation of the overall green structure.

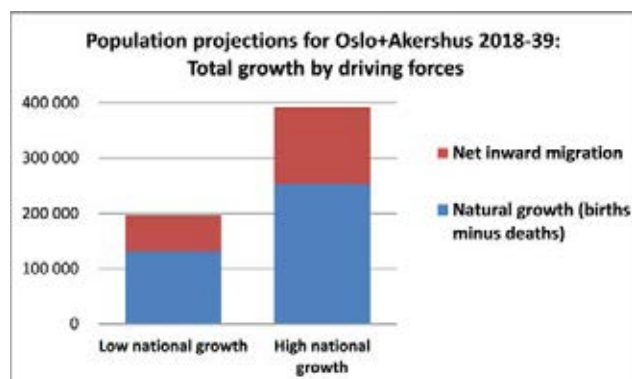
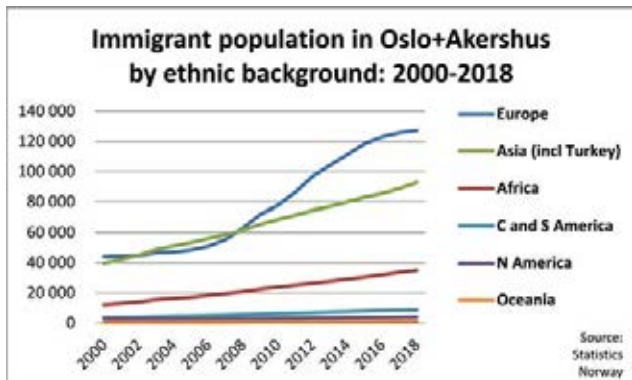
- ▶ A transport system that is effective, environmentally friendly, accessible to all, and with the lowest possible reliance on cars.

To reach the goals for regional development the plan has a defined land-use and transport structure, and a set of strategies for spatial planning. The regional plan defines a hierarchy of prioritized growth areas (figure 1):

- ▶ The capital (big red)
- ▶ Regional towns (small red)
- ▶ Priority areas for commercial activity (blue)
- ▶ «The urban belt» (yellow area)
- ▶ Selected local towns and centres (orange)

The City of Oslo will be strengthened as the national capital and hub for transport, as well as centre for economic growth.

Future population growth is uncertain, due to variation in migration and birth-rate



To create a more polycentric structure, six regional towns will take on a stronger economic role and absorb a large proportion of the growth in the region.

Priority areas for commercial activities with knowledge-based/work-intensive workplaces will enable concentration of economic activity and a more effective utilization of the public transport infrastructure.

The continuous urban area which stretches through Oslo and the closest regional towns ("The urban belt") inhabits 75 percent of the population in Oslo and Akershus. This area will be developed through further densification and redevelopment into a fine-meshed urban fabric. The residual growth in Akershus is located in selected local towns and centres.

More compact development and less urban sprawl

The overall urban strategy is to give priority to some towns and centres and the concentration of housing and jobs around the public transport net-

work. 80-90 percent of the growth in new housing and jobs within the municipalities are to be located in the defined growth areas (the capital city, regional towns, areas for commercial activity, local towns and centres).

Within areas prioritized for urban development, growth goes before conservation of farmland and green spaces, whilst conservation is strengthened outside these areas.

Pedestrian accessibility is fundamental to any urban development strategy. Figure 2 shows the guideline for walking distances for new developments for housing, jobs or urban functions like retail or services.

By concentrating growth in a few towns, these should keep their vitality and ensure high quality of life. Place-based policies encourage multifunctional centres with high quality, efficient land-use and attractive neighbourhoods, which will appeal to a broad cross-section of society, and with most functions within easy walking distance. New businesses and shops should strengthen the centres. Pedestrians, cyclists and use of public transport will be prioritized, at the same time as keeping accessibility for road users.

BYU/ PA / 2019

Walking distance to public transport	
Urban functions:	Within 500 meters
Work places:	Within 600 meters
Housing:	Within 1 km, 2 km in regional towns

Figure 2: Directional walking distance to public transport for new developments.

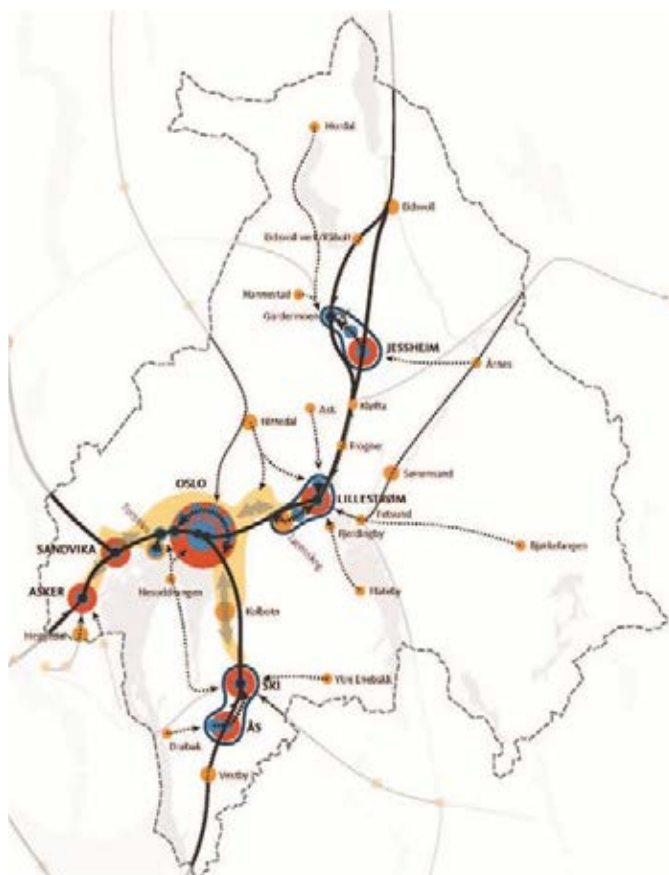
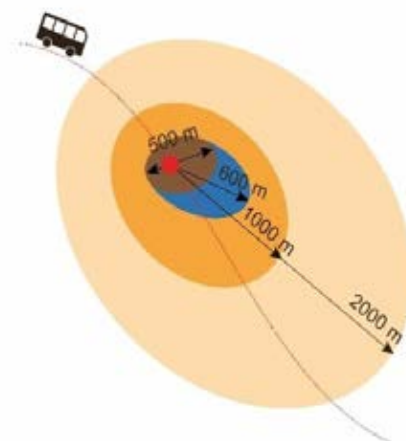


Figure 1. Strategic map: land-use and transportation, Oslo and Akershus

Oslo and Akershus: Climate change – mitigation and adaptation

Direct greenhouse gas emissions (GHG) from Oslo amount to 1.43 million tonnes of CO₂ equivalents. This equals 2.3 tonnes of CO₂ per capita, down from 2.5 per capita in 1990. In absolute numbers Oslo's GHG emissions have increased by 25 % from 1990 to 2013, largely due to a population increase of 36 %, or approximately 165,000 people. In June 2016, the City Council passed the Climate and Energy Strategy for Oslo. This lays out targets to cut emissions by 50 % by 2020 and 95 % by 2030, compared to the 1990 levels (figure 1). The main source of GHG is transport, followed by waste, landfill and wastewater (figure 2).

Population growth is expected to continue. Thus, to reach its target, Oslo needs to implement rigorous measures. The focus is on improved green governance, more green innovation and increased green dialogue. In July 2016 the Agency for Climate was established, and its main function is to ensure and facilitate the attainment of Oslo's climate goals – both mitigation and adaptation. The establishment of the Agency substantiates Oslo's political commitment and holistic approach to climate action.

The proportion of passenger transport covered by public transport, cycling and walking must be increased con-

siderably. Oslo is planning substantial infrastructure investments, including upgrading the metro infrastructure, a new metro tunnel, a new metro line, new tram lines and upgrading existing cycling lanes and building 60 km of new lanes. Electrification will be an important solution for the bus fleet in Oslo, of which 60 % is expected to be electric by 2025. For private cars and taxis, the city has initiated various measures to increase the share of renewable fuels, like environmentally differentiated tariffs in the toll ring, 400 new public charging points, charging points in apartment buildings, and establishment of low emission zones. The measures to reduce the car traffic and to phase in low-emission/zero-emission cars, buses, taxis and light freight vehicles are estimated to reduce emissions by 250 000 tonnes of CO₂ from 2013 to 2020.

Figure 1: Oslo's historical GHG-emissions and targets as well as historical and projected population growth.

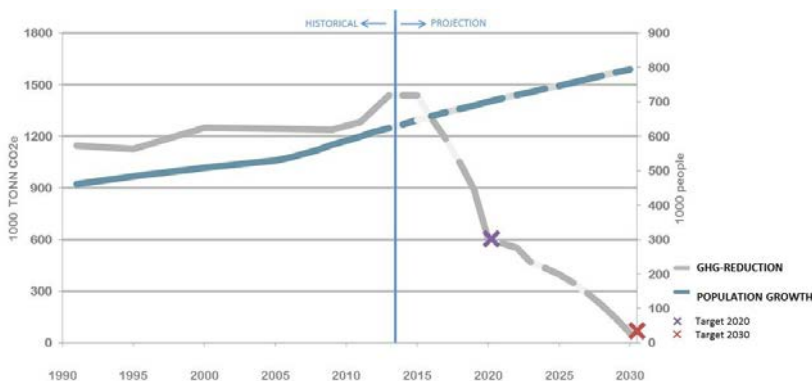
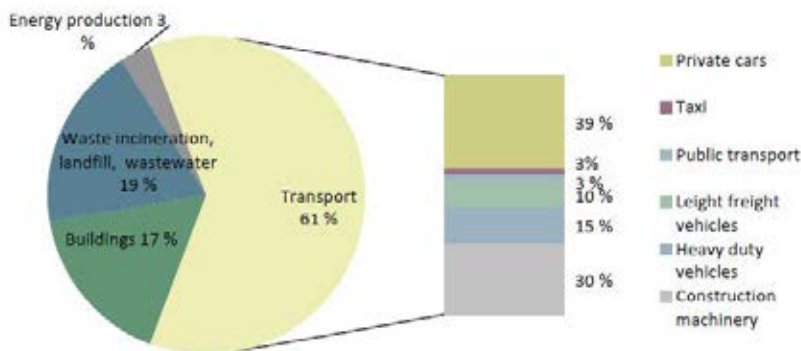


Figure 2: Main sources of GHG emissions in Oslo in 2013, total.



Other climate strategies include increasing the share of renewable fuels in heavy duty vehicles, phasing out fossil fuels for heating, and carbon capture and storage (CCS) from a city-owned waste incineration plant at Klemetsrud. The Klemetsrud Plant is now in the last phase of a national program to put in place a full CCS value chain in Norway.

The City of Oslo has also developed a climate vulnerability analysis, and a climate change adaptation strategy. It includes increased focus on green infrastructure. The City already experiences climate change, especially with higher frequency of extreme precipitation events causing storm water challenges. Oslo is making room for more rain and surface water through opening waterways, green roofs, rain beds, and holding pools. These measures both reduce Oslo's vulnerability to climate change and also yield access to green recreational areas.

SWOT

SPATIAL	
Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Excellent public transport framework for development and growth ■ Good and adaptable planning law ■ Strongly supported regional plan ■ Development at PT nodes strongly supports economic players 	<ul style="list-style-type: none"> ■ Large distances to other cities and markets beyond the Oslo region ■ Strong land-owners and municipalities vs regional policy ■ Market dominance of building and development process ■ Dependency on petroleum sector
Opportunities	Threats
<ul style="list-style-type: none"> ■ Mutual interest between market players and planning strategy ■ Consensus about climate challenges ■ Strong demand 	<ul style="list-style-type: none"> ■ Reorganisation and subsequent weakened / poor responsibility at regional level
DEMOGRAPHICAL	
Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Attractive region for domestic and international immigration ■ Young population – strong “natural growth” ■ Strong social mobility ■ Good welfare provision for caring, birth etc ■ Equal opportunities ■ Internationally oriented population with global networks 	<ul style="list-style-type: none"> ■ Certain ethnic minority groups which are highly dependent on welfare provision and struggle in the labour market
Opportunities	Threats
<ul style="list-style-type: none"> ■ Young population 	<ul style="list-style-type: none"> ■ Ageing ■ Falling fertility ■ Emigration of skilled workers after oil-price crisis ■ Centralisation of population, leading to decentralized focus at national level.
ECONOMIC	
Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Strong innovation capacity ■ High proportion with high education ■ Competitive salaries for professionals ■ Low pay difference ■ Tripartite system ■ High level of permanent employment ■ National HQs ■ Trust and transparency ■ National airport, incl shuttle transport ■ Ability to discuss and negotiate ■ Free education for all 	<ul style="list-style-type: none"> ■ Poor ability to use innovation ■ Few with practical work skills ■ Kuwait economy ■ High rate of investment in real estate

<p>Opportunities</p> <ul style="list-style-type: none"> ■ Coordinated region with good accessibility ■ A lot of capital – incl PFO ■ Change ability – green growth ■ EEA agreement 	<p>Threats</p> <ul style="list-style-type: none"> ■ Uncertainty in petroleum market ■ Uncertainty linked to automation ■ Ageing population in relation to working population ■
SOCIAL	
<p>Strengths</p> <ul style="list-style-type: none"> ■ Small socioeconomic differences – low GINI index ■ Strong welfare state ■ High real incomes and pension agreements ■ Equal opportunities – gender equality ■ Relatively little segregation 	<p>Weaknesses</p> <ul style="list-style-type: none"> ■ Low tolerance of non-integrated minorities ■ Fragmented family structures ■ Small society in total
<p>Opportunities</p> <ul style="list-style-type: none"> ■ International competency ■ Many special welfare provisions 	<p>Threats</p> <ul style="list-style-type: none"> ■ Fail with integration ■ Housing segregation increasing ■ Possible economic / employment risk due to falling petroleum market and increasing automation
MOBILITY	
<p>Strengths</p> <ul style="list-style-type: none"> ■ Excellent internal mobility ■ Increasing cycling and more compact development ■ More PT and less cars ■ National airport ■ Toll ring system – for financing and regulation ■ High level of data-mobility 	<p>Weaknesses</p> <ul style="list-style-type: none"> ■ Long way to next cities ■ High car dependency and culture outside Oslo ■ High rate of flying ■ Regular drives to private cottages
<p>Opportunities</p> <ul style="list-style-type: none"> ■ Automatiserte ■ Car sharing systems ■ Smart City ■ Electric bikes? 	<p>Threats</p> <ul style="list-style-type: none"> ■ Capacity limits stop ■ Do not succeed in changing attitudes ■ Social norms and coordination limits flexibility

SWOT Analysis for Oslo&Akershus / Nordic-Baltic Space project

This is step “3” in the Nordic-Baltic Space project: a SWOT analysis from a macro-regional perspective

Author: Peter Austin / Oslo

Contact: Peter Austin peter.austin@byr.oslo.kommune.no / +47 45263688

Helsinki

Future Perspectives

Helsinki as part of a European network of city-metropolises

1. Macro-regional analysis of the Helsinki Region

KEY PRINCIPLES FOR HELSINKI CITY AND REGION

Helsinki to be part of a European network of city-regions through greater economic and spatial planning co-operation

- ▶ Network City - Connectivity: to make Helsinki city-region a connected metropole to Europe and Russia through St Petersburg by HST (high-speed train) & rail tunnel to Tallinn as well as to build increased levels of cooperation and logistical corridor to Stockholm and to the Rest of Europe.
- ▶ To strengthen a polycentric Helsinki city-region that is economically competitive, dynamic, with Nordic social justice welfare at its core that will be part of a new European Transnational Vision.
- ▶ To promote a Gulf of Finland economic development triangle between Helsinki, St. Petersburg and Tallinn as a polycentric set of city and regional clusters which will provide sufficient levels of critical mass in order to strengthen Helsinki's economic and spatial standing internationally.
- ▶ Spatial Cohesion (& Land Practices): to create a spatially integrated & cohesive polycentric metropole of world significance with improved economic competitiveness spatially within the region and to achieve a carbon neutral balance by 2035.

As a city-region, which is the engine of development, Helsinki promotes intensified land use together with the improved low carbon mobility within

the city-region and smart transition towards a carbon free energy and efficient use of energy.

Macro-region Helsinki

Helsinki is Finland's window to the world. The city-region has an overall significant role to play in implementing the strategy and creating an international profile. For Helsinki, its image is split between improving the urban identity of its city and at the same time to urbanise the city-region. This dual causality creates tension between competing modes for new investment in attracting people and jobs to the different parts of the city-region.

Helsinki is not yet a metropolis in the true sense of the word. In order to facilitate the making of the future metropolis there is a need to analyse the regional structure from several different macro-region levels. First is the city-region level. The second level refers to Southern Finland, the third level being the Gulf of Finland and the fourth level the 'Baltic Loop'. The city-region is growing and it needs critical mass to enable better public rail transport to be extended into the region, preferably through 'development corridors' of sufficient density and intensity to warrant new rail corridors, both to the centre and transversal, that is required for the city-region to develop sustainably and achieve greater spatial cohesion and reduce urban sprawl.

A. City-region Level:

Greater Helsinki is one of the most dynamic city-regions in Europe going

through significant structural change. By 2050 the population is expected to grow from the present 1.34 million to over 2 million.

There are three joint municipal organisations delivering public services in the Helsinki Region. Each of these public authorities have their own political and administrative bodies, which together, have an impact upon the possible options to the regional governance challenge.

The Helsinki region is complicated, as it has three constituent layers, consisting of the wider (i) Helsinki-Uusimaa region, (ii) Greater Helsinki region, and (iii) the metropolitan area.

A.i Helsinki-Uusimaa region (NUTS 3) 1.64 million

- ▶ The overall formal layer for spatial planning is the Uusimaa Regional Council.
- ▶ This has 26 municipalities, including the capital, Helsinki.
- ▶ The highest decision-making body of Uusimaa Regional Council is the Council.
- ▶ The main operational tasks of Helsinki-Uusimaa Council are regional development, regional land use planning and international cooperation.
- ▶ The Council is engaged in coordination and consensus building, i.e. in mobilizing actors and resources at governmental, regional and local levels to set common priorities for regional development and to optimize the use of regional strengths and assets.
- ▶ Uusimaa Regional Land Use Structure Plan is general in nature, and

covers the entire region and serves as a guideline for the preparation of city-wide development plans as well as detailed land use plans in the individual municipalities.

- ▶ The key elements of the Regional Plan are urban areas, traffic network, green structure and business as well as retail entities.
- ▶ The Municipalities are responsible for the development and implementation of the city-wide development plans, local plans for municipalities and detailed land use plans in each municipality.

A.ii Greater Helsinki (LAU 1) 1.46 million

The Greater Helsinki Region is the only metropolitan area in Finland. Within the existing municipal local government structure, a working partnership has been formed with 14 of the municipalities surrounding the capital city of Helsinki that form part of the Uusimaa region, including the cities of Espoo and Vantaa. The Helsinki metropolitan area has since 1970 a long history of cooperation in planning matters, which serves today as the basis for the existing Helsinki Region Transport (HSL) and Helsinki Region Environmental Services Agency (HSY).

The Greater Helsinki Vision 2050 brought together the key objectives of 14 municipalities in the city-region in a joint venture to develop the region's overall structure. The aim was to strengthen the region's competitiveness and sustainability in the future and adopt strategic outlines of land-use, housing and traffic for 2050.

Helsinki's Functional Urban Region

(FUR) reflects the spatial stature of Greater Helsinki's 14 municipalities.

HSY and HSL

Helsinki Region Environmental Services Authority is a regional authority (HSY) providing environmental services for residents and companies in the Helsinki area. The principal duties comprise water and waste management as well as providing regional information services.

HSY is the most prominent environmental body in Finland. It brings together the waterworks of Espoo, Helsinki, Kauniainen and Vantaa as well as the waste management services and the regional and environmental information services for the metropolitan area.

HSL is the Helsinki Regional Transport Authority (HSL). It is responsible for the planning and organization of public transport services in its member municipalities, as well as for the preparation of the Helsinki Region Transport System Plan. The member municipalities of the joint local authority are Helsinki, Espoo, Vantaa, Kauniainen, Kerava, Kirkkonummi and Sipoo. Later on, the rest of the municipalities in the Helsinki region may join in. These municipalities include Järvenpää, Nurmijärvi, Tuusula, Mäntsälä, Pornainen, Hyvinkää and Vihti.

The tasks of HSL comprise planning and organization of public transport in the region, improving operating conditions for public transport, procurement of bus, tram, metro, ferry and commuter train services and preparation of the Helsinki Region Transport

System Plan. HSL is also responsible for public transport marketing, passenger information and ticket inspection and approves the fare and ticketing systems as well as ticket prices.

HSL creates long-term strategic public transport planning for the entire Helsinki city-region. A new fare zone comes into being in 2019.

A.iii Metropolitan Area (City of Helsinki LAU 2) 1.15 million

The third level consists primarily of an informal working relationship between the four main authorities within the metropolitan area consisting of the cities Helsinki (650.000), Espoo (275.000) and Vantaa (223.000), together with the small municipality of Kauniainen (9.000).

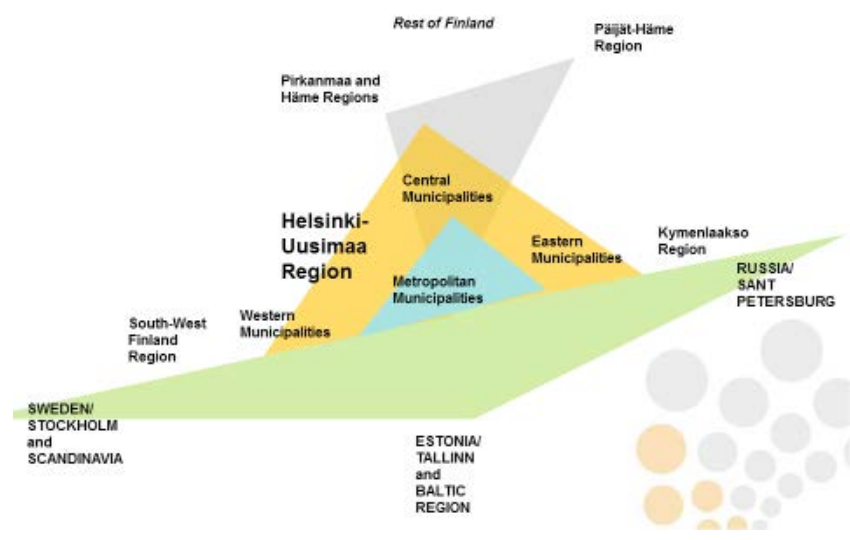
There is, however, a contradiction between Helsinki's compact urban form and the more suburban sprawl of Espoo, which until recently, has been based upon car-dependence. This dispersed pattern of urban development is now being addressed with the new metro western line serving both Espoo and Helsinki, which opened in Autumn, 2017. The city structure of Vantaa is a mixture of Helsinki's compactness and Espoo's fragmented spatial character. Vantaa is essentially two wings, east and west, with a heavy proportioned central frame. This too is being urbanized within the regional framework.

B. Southern Finland Macro-region

- ▶ growth triangle of Helsinki-Turku-Tampere
- ▶ South-West Finland (Turku) Region, Pirkanmaa (Tampere) Region, Hel-

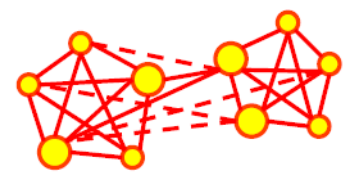
sinki-Uusimaa Region, Kymenlaakso (Kotka) Region, Häme and Päijät-Häme Regions form a growth triangle of Southern Finland.

- ▶ The regions are already well connected to each other with good public rail transport connections and these will be developed even further by the year 2050. The infrastructure projects that will improve connectivity between these regions include fast rail connections from Helsinki to Turku in the West and to Kotka in the East. Additionally, a fast rail connection to the Helsinki Airport from the city centre and a Rail Tunnel project to Tallinn are primary projects. This will include a hi-speed connection between St Petersburg and Helsinki and Europe. Together the South Finland macro-regions (including the neighbouring Tallinn and Harju region in Estonia) will form a population of over 3 million people and open up the labour markets to improve competitiveness.
- ▶ The main target for the year 2050 is to create a real and functioning macro-region for Southern Finland. This will aim to support further improvements to a sustainable life-style, create better living conditions and provide



Growth and Cooperation Triangles. Map by Helsinki-Uusimaa Region

vide greater accessibility to working places. By implementing such changes over the next 30 years, the aim is to improve overall well-being and competitiveness for the whole of Finland. The main benefits for the regions will be the agglomeration effects of the extended and integrated market region. The macro-infra projects will be used as 'drivers of change' in managing the agglomeration benefits to improve the regions of this Southern Finland macro-region.



Southern Finland Macro-Region: development corridors. Map by Helsinki-Uusimaa Region



C. Gulf of Finland Macro-Region development triangle

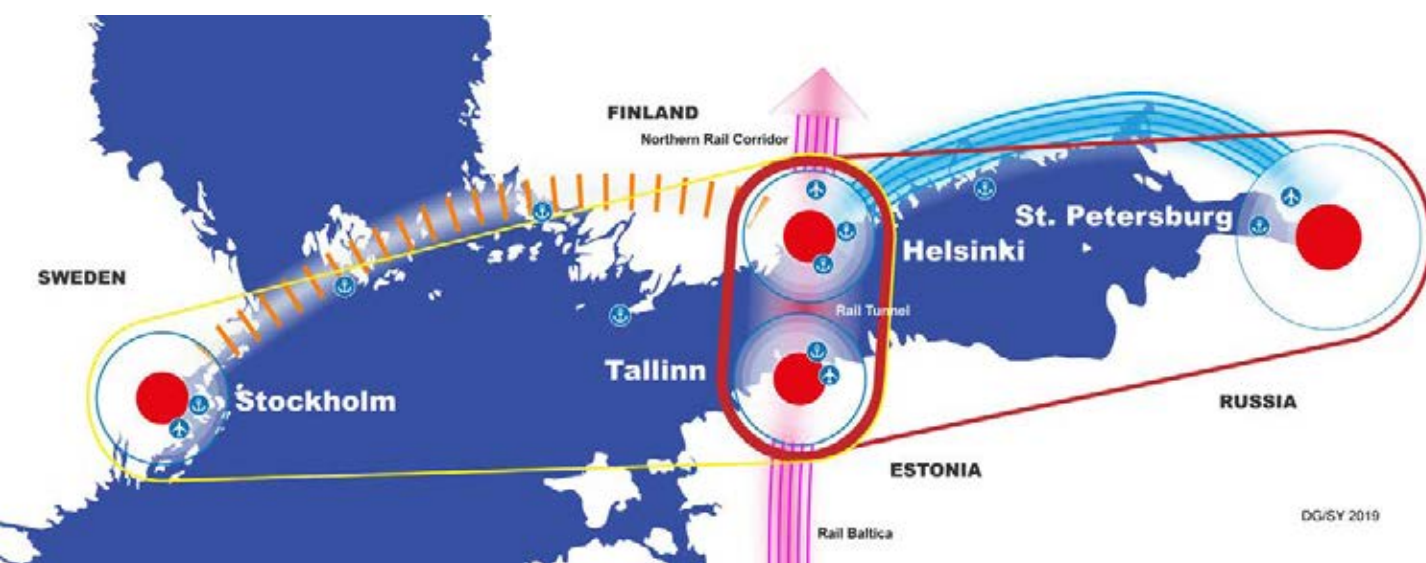
In order to provide greater economic balance spatially within the city-region the aim is for Helsinki to develop strongly towards the Gulf of Finland east-west development corridor with St. Petersburg and north-south to Tallinn. In doing so, the future metropole will be extended towards the coast along this east-west axis and a strong southern gateway to Europe by rail. Not only are these axis corridors expected to engage strong entrepreneurial business links, they will also provide an attractive global perspective and widen the market base alongside top quality logistic and rail connectivity.

In the EU Interreg project on polycentricity, the Gulf of Finland partnership brought together Helsinki, St. Petersburg and Tallinn within a unified understanding that working together at key levels of development could have major agglomeration benefits for all three cities. The Spatial Vision for the Gulf promoted a high-speed TGV train and a rail tunnel connecting Helsinki to Europe via Tallinn. The number of Russian migrants now living in Helsinki's city-region has grown significantly, as

has the number of Estonians employing their trade in Helsinki. So much so, that Helsinki and Tallinn's employment areas are merging.

St. Petersburg is Russia's window to Europe and more especially, to the Nordic-Baltic Space. New and fast connections between St. Petersburg and Helsinki will make for increased trade. The possibility of joining Helsinki to Europe through a rail tunnel to Tallinn is now under investigation in terms of financial and geo-physical assessments. The Rail Baltica link promoted by the NSB CoRe project suggests that Helsinki's investment opportunities should strengthen considerably and connect Finland strategically to growing markets.

Twin City: The twin-city scenario of regional development fits neatly into the EU's Territorial Agenda 2020 of creating a new network of polycentric city-regions such as Helsinki-Tallinn (Helsinki or Helsinki). This will improve Helsinki's opportunities to achieve for the Gulf of Finland development triangle a better balance with the EU Pentagon.



D. Baltic Space - Future Macro-Region Vision: 'the Nordic-Baltic Loop'

The Baltic Loop Macro-Region concept illustrates a spatially more integrated and accessible polycentric chain of metropolitan city-regions surrounding the Baltic Sea, binded together by the Ten-T Core Network connections.

From the Finnish point of view, the Baltic Loop emphasizes connections between the Helsinki city-region and the EU TEN-T core network corridors (CNC) and the regions around the Baltic Sea. The Baltic Loop will contribute to the EU TEN-T Transport Infrastructure Policy that connects the continent between East and West and North and South. It can do so by implementing projects to the regional and local level that will connect to the TEN-T core network corridor (CNC) of North Sea Baltic. The projects can have an impact to its catchment area and access routes in the future. The Baltic Loop will implement the TEN-T Policy from a regional development perspective.

In the Nordic-Baltic Loop, the role of urban nodes remains crucial as service points and the transnational cross border areas aim to be improved.

Transnational projects going on around the Nordic-Baltic Loop Concept:

The NSB CoRe (North Sea Baltic Connector of Regions) Interreg project aims to improve the sustainable accessibility of the Eastern Baltic Sea Region (EBSR) to freight and passenger transport. The project involves partners from Finland, Estonia, Latvia, Lithuania, Poland and Germany. The project is led by Helsinki-Uusimaa Regional Council.

In the EU Interreg project, the NSB Core activities consist of logistics, long distance commuter services, transnational community building and transport branding. The outputs will contribute to interoperability by bringing the transport operators' viewpoint and ITS solutions into logistics and passenger transport development on a transnational level. In policymaking, the project brings a transnational perspective into spatial planning in transport, as these are often carried out with little synchronization between countries.

The project produces a joint transnational vision of regional development with recommendations for policymak-

ers in passenger and freight transport. The vision connects the second level nodes and access routes to CNC and improves the position of cross border areas. The role of urban nodes remains crucial as service points between CNC and remote areas.

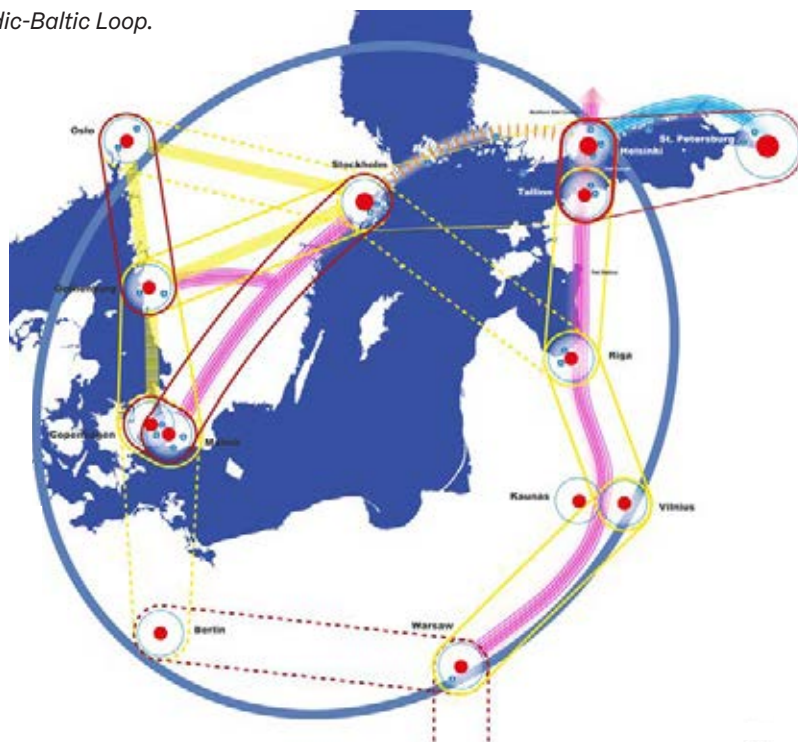
The project is part of the implementation of the NSB CNC work plan via the Corridor Forum in which Member States, infrastructure managers and regions communicate with the European Commission and European Coordinator.

The project operates as the transnational cooperation platform in spatial and transport planning and communicates the outputs of grass root level activities to policymakers on regional, national and EU levels.

In branding, the project uses the mega project of Rail Baltica as a case study. The case highlights the political decision making process of the infrastructure project and stakeholders' relations as a multilevel governance structure.

Douglas Gordon and Ilona Mansikka

Nordic-Baltic Loop.



2. Climate Change carbon-neutral City-region:

A new study on climate change from Yale university published in the Nature Scientific reports that humans are responsible for 1C global surface warming over the past 150 years. There is now 97% expert consensus on human-caused global warming (Guardian 20.11.17).

Spatial planning can help mitigate against the impact of climate change, but it will be a challenge.

Spatial planning in Helsinki has already produced a report on climate change for both the City Plan and the Regional Plan. High energy efficient family housing and for blocks of flats is on the agenda for change. New development areas, such as is pictured for Honkasua, promotes an all-wood agenda for this new wood-village in Helsinki. Honkasuo will be characterized by ecologically sustainable living solutions in wood construction. Low-energy buildings and the use of renewable energy supports the low carbon emission framework.

The use of timber construction where possible will be extended throughout the city-region. Urban infill development and regeneration programmes of the older housing areas will be upgraded as a continuous process, particularly near rail hubs.

The city-region is working with the cities of Helsinki, Espoo and Vantaa to improve the district central heating network. In Helsinki, some 94% of all homes, offices and buildings are connected to the District Central Heating network. This makes for a major saving on emissions. The contradiction at the present, however, recognizes that at least 28% of the energy created to run the district heating network relies upon coal. The aim is to close the largest coal power plant by 2024 and use alternative renewable forms of energy as a substitute.

GHG emissions by 2050 to be carbon free is a major challenge, but ener-



*Honkasuo new development area.
Urban Environment Division.*

gy systems are highly important to achieve targets by 2050. This can be done in part by using high energy efficiency in CHP as the core to nearly 100% of all building stock. Biomass, heat pumps, wind energy, solar efficiency, plus new 'internet of things' will enable machines to 'talk' to one another and influence levels of consumption of energy.

Similarly, the city-region will upgrade its waste treatment facilities with innovations to cope with the urbanization of the region. Sustainable storm water management forms a part of these innovations. Energy storage will be the norm by 2050. Changes in energy production will be essential and new energy types but also utilize existing structures to minimize carbon emissions. Creation of 'smart city' districts that links together the 'internet of things' for mobility, energy, smart homes, health and well-being and connectivity

to the public transport network forms a significant arsenal for spatial planning to impact at the city-region level.

Spatial planning can act as an 'enabler'. It can plan for new investment in transversal and radial rail corridors for a polycentric city-region. It can prioritise pedestrians and cycle paths and go towards minimising car usage in city centres. Planning can aim to create new Boulevards to replace city motorways on the outskirts of the city into the region, and it can reduce traffic emissions through boulevards and priority to pedestrians, cycling and public transport.

At the transnational level, spatial planning can assist in Transnational cooperation within the Eastern Baltic - Stockholm, Helsinki, Tallinn and St Petersburg to improve the environment and sea quality.

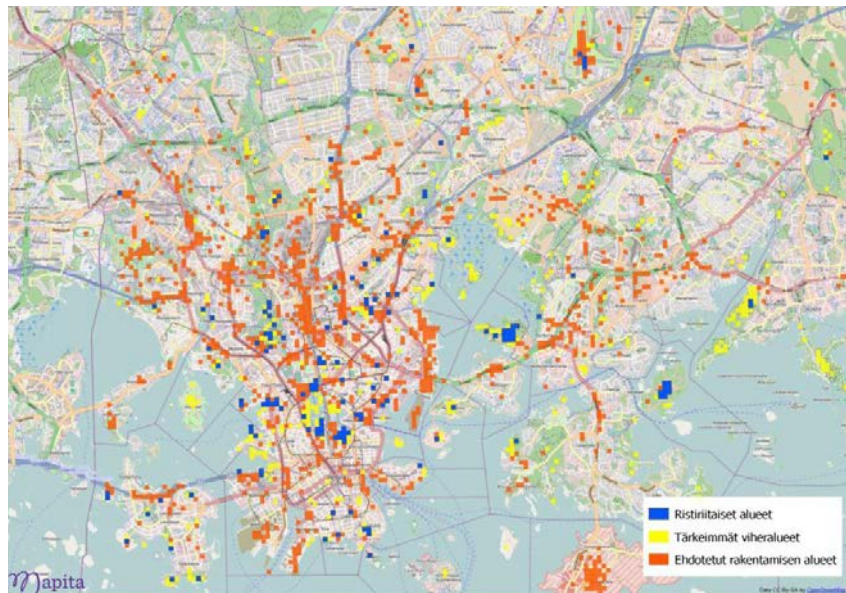
3. Public Participation

Public Participation is equally essential from the beginning to facilitate democracy & impact upon decision-making.

In meeting the challenges of the future, it is essential that an open conversation about Helsinki City-region's growth involve citizens' as well as businesses, participation in it.

It will be the case that Helsinki-Uusimaa Region, Helsinki City Environmental Services, Universities, Residents' associations and NGOs will all need to be involved in the participation process.

In recent times, the new City Plan 2050 engaged a new form of participation, by setting up a GIS digital Questionnaire on the web. The digital process allows its citizens to be interactive with its City as to what the future of the city should be. In this respect, the Helsinki City Plan created the opportunity for its residents and businesses to show (a) where people would like new developments to take place, and (b) where areas need to be protected and no new build be allowed. In total, some 33,000 hits were recorded during this process, with some 11,000 people involved. Interactive web pages promotes innovation in the democratic model of decision-making. Added to that is the availability of Social Media - Facebook, You Tube, Twitter, press releases and other Events (such as public workshops & seminars) make it easier for people to participate. There is also a City Planning Fair (Growth of Helsinki Region) annually that shows the future of the city-region and how it will be achieved. Planning will require to be more 'Social Media' savvy and embrace the digital age.



Helsinki City Plan questionnaire: New development areas and important green areas.



Image: City of Helsinki Media Bank/ Teina Rynnänen/Urban Environment Division.

4. Strengths and Weaknesses

HELSINKI & REGION: STRENGTHS AND WEAKNESSES 2050

This section evaluates the various transnational strengths and weaknesses that apply in determining what trends and information are relevant in trying to provide an understanding as to where our city-regions sit today globally, and what key factors may come into play to change the future.

The section will provide an outlook on the following topics:

- ▶ The global level places Baltic Space city-regions within the competitive hierarchy of the world economy and this will impact upon its future. In order to understand Helsinki's role within the global context, it is essential to examine its international set of strategies in relation to its neighbouring countries and capitals.
- ▶ It is also essential to look at Helsinki-Uusimaa Metropole within the EU
- ▶ Finally, to examine in more detail the strengths and weaknesses of the Helsinki city-region.

4.1 Positioning Helsinki-Uusimaa metropole in a global context

Global Helsinki-Uusimaa region

This section explains the current view of Helsinki-Uusimaa region's 'world view' and what are the aims by 2050 to improve the region's global position. Helsinki-Uusimaa consists of 26 municipalities in the wider region, whilst the Helsinki city-region (Greater Helsinki) contains 14 municipalities. The primary focus of this paper is the Helsinki-Uusimaa Regional Council's area, but also refers to the city-region and the City.

Helsinki-Uusimaa's international role sees Helsinki 'on top of the Baltic Sea Region'. There are three strategic development goals, namely, 'Platform

for intelligent growth', which is based on sustainable development and intelligent solutions. 'Easy to reach and live and work in' puts an emphasis on effortless transport, working and functioning, and an agreeable living environment. 'Clean and beautiful Helsinki-Uusimaa Region' emphasizes a sensible use of natural resources, maintenance of natural diversity, and becoming carbon neutral.

In terms of Helsinki City's international strategy, it stems from a metropolitan standpoint, whose aim is to develop as an innovation and business centre of power in the sciences, art, creativity and public services. The objective of Helsinki's international activities is a globally competitive and functional Helsinki. Achieving these objectives requires the development of the Gulf of Finland region as a "successful and well-functioning business and employment area". "Helsinki's international strategy outlines cooperation aimed at strengthening the Helsinki region as a multicultural metropolis, a Baltic Sea logistics centre, a European centre of expertise and a world-class business centre" (Helsinki International Strategy). Helsinki aims to be "the most functional city in the World".

Helsinki-Uusimaa is Finland's window to the world. The region has an overall significant role to play in implementing a global strategy and creating an international profile. Image is important. The question is what positive image does a region wish to create? For Helsinki and its region, its image is split between improving the urban identity of its city and at the same time to urbanise the region. This dual causality creates tension between competing modes for new investment in attracting people and jobs to the different parts of the region.

Professor Greg Clark's 'Future City Visions' sees Helsinki region today as being a medium sized economy that is going towards being a globalized city and region of the future. Helsinki is viewed in the top 20 of competitive cities, particularly in Life Sciences R&D, and has a world class public transport sys-

tem and infrastructure platform. The city-region is considered globally competitive (top 20 in the world) and has a mature innovation system. It is ranked first in the world for social cohesion and second for the green economy.

Helsinki-Uusimaa is acknowledged as a European knowledge hub acting as a key actor in the global economy competing for new investment (State of European Cities. EU. 2007). But at the same time Helsinki region recognises that Helsinki's image as a business location globally is poor. The number of foreign companies is low. This does not hold back the region for having a highly regarded business and connected global network. Finland has led the world, for example, in education capability (PISA-research, OECD) as well as in competitiveness (World Economic Forum).

The City and Regional Plans 2050 aim to build on such strengths and ensure Helsinki is at the forefront of change in the future.

Helsinki-Uusimaa as a 'Stop' between continents

"According to studies, networking among innovative regional economies will remain the cornerstone of competitiveness in the future. The shortest route from New York to the large centres of Asia, especially China, is through Helsinki. Helsinki's position as a gateway for air traffic between east and west is growing stronger (Huggins, World Knowledge Competitiveness Index, 2005; OECD Competitive Cities in Global Economy, 2006; Hautamäki, Innovaatioiden ekosysteemi ja Helsingin seutu, 2007).

The ESPON study (Making Europe Open and Polycentric. EU 2014) makes for gateways such as to Russia and St Petersburg to be crucial in the development of polycentric regions. These intercontinental gateways will bring a net benefit to global traffic though "reducing travel time and transport operating costs" (Espo, *ibid*). Helsinki region's role should place its international connectivity - air, rail and ship - into a future perspective.

According to the ESPON report (*ibid*) Europe is in crisis, both financially and the movement of migrants. The UK's narrow vote to leave the EU, 'Brexit', adds to the current difficulties. The world economic crisis has hit Europe particularly hard and its share of world economic value has declined in recent times, despite the EU having some 30% of World GDP (Espo, *ibid*). This has stalled the EU bid for greater integration towards improved spatial and social cohesion.

The spatial dynamics of change means that there appears to be a widening of the gap between the countries that form within the EU core and the Nordic countries, in comparison to central and Eastern Europe. The aim of creating a polycentric network of city-regions may be downgraded in favour of quick fixes of international service economies. The net result could be a widening of the disparities between regions and within regions. If this is the case, it places even greater emphasis on

the need for Helsinki and Uusimaa to outreach towards both St Petersburg/Tallinn axis as well as 'building bridges' to the west with Stockholm.

Helsinki city-region could act as a clear gateway for the EU and Stockholm to Russia. Such development could benefit both sides economically. The capital region could become a 'natural' link between east and west to enable 'convergence', both in relation to financial benefits on both sides but equally strongly, in terms of connectivity, rail mobility structures, leading to greater accessibility. Each area would retain its own profile and distinctiveness yet allow complementarity. The convergence with Tallinn is already underway in employment terms and in shipping, freight and passenger growth. St Petersburg 'opens' and 'closes', dependent upon the politics of the period, but nonetheless, the potential would appear to be highly significant, offering the possibility of tapping into Leningrad Oblast city-region and St Petersburg of nigh-on 7 million inhabitants.

From a Stockholm perspective, historic and language ties with Finland and Helsinki should enable it to exploit such ambitions by tuning into the strategic strengths of its eastern ally in order to maximize development potential; otherwise, the threat of the Öresund region from the south may leave Stockholm isolated in the very long-term. Increasing international competition makes it essential that city-regions form partnerships and strategic alliances with neighbours, based not on proximity, but those that offer greater opportunities. Critical mass is becoming an important element in order to compete internationally and for this reason, Helsinki region offers a 'natural' gateway into the growing potential with its eastern neighbours. That is why it will be important in the Nordic-Baltic Space Vision to identify the numerous potentials, cross-border dynamics and future movement of goods and people to achieve greater spatial cohesion in the expanding Baltic region.

Image: City of Helsinki Media Bank/Skyline foto.



Helsinki-Uusimaa: International Communications network

The importance of a communications network globally is vital for cities and regions in the Nordic-Baltic Space

Helsinki region's place as a global technopole now forms part of the global market and communications network. The importance of a communications network globally is vital for regions like Helsinki. The ESPON study (ibid) on the EU 2050 promotes the need for telecommunications to enhance efficiency and global connectivity. Helsinki-Uusimaa's place in global connectivity, both in maritime and intercontinental air services, offers huge potential, particularly as it has recently opened a new high-tech goods harbour in the east end of the city, some 14 kilometres to the east of the city centre in Vuosaari. This has enabled greater logistical control of cargo and places containers directly onto the rail and motorway network without having large juggernauts going through the city.

This spatial planning solution in the 1992 City Plan to deploy the harbour to the periphery opened up the city cen-

tre to attract some 50,000 new inhabitants and 30,000+ workplaces, and at the same time making the city more habitable, better value for services and spatially more sustainable with less pollution. By expanding the city-centre northwards in the City Plan 2050 and in the Regional Plan, this spatial planning solution helps facilitate Helsinki's importance to meet growing demand and the needs of the digital age. The metropole's Airport continues to grow and sufficient space to accommodate terminal expansion. The proposed Airport link-up with the Helsinki Tunnel to Europe (via Tallinn) and high-speed trains to St Petersburg and Tallinn will offer further opportunities to reinforce Helsinki's regional position in Europe as the gateway to Russia.

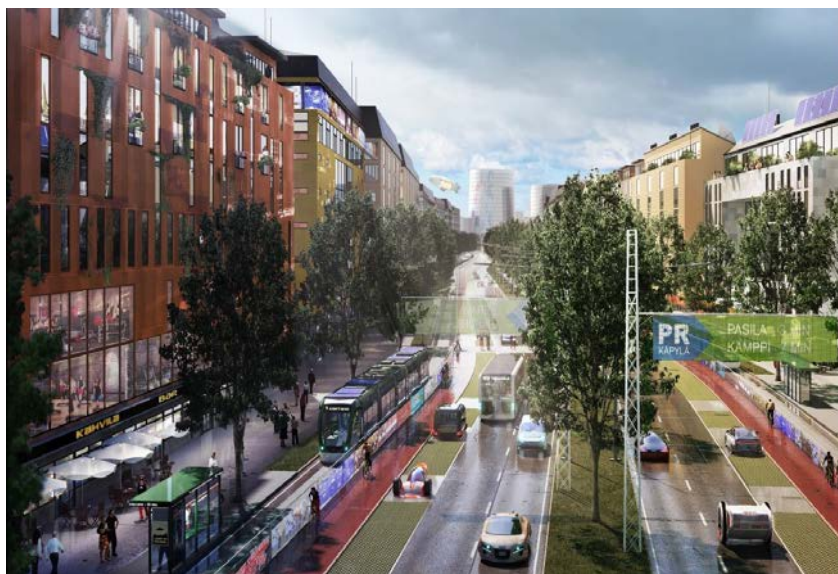
Additionally, since the early 2000's, Finland has achieved significant successes in the OECD's PISA research on education and equally in various IMD World Competitiveness indicators. Helsinki region and Finland continue to score well in league comparisons (e.g. World Economic Forum) and achieve continued global success as leaders in high-tech and R&D.

Helsinki's contribution to the country's digital integration with the use

of high-quality internet connectivity directly places it at the forefront of creativity and hub innovation using entrepreneurs and synergies between educational institutions and commerce. Although there are no, as yet, significant work clusters in the Helsinki city-region (Location Dynamics - Petit and Gordon 2015) the economy is one of the key drivers of change and the city and region are moving towards greater urbanization, which in turn aims to foster greater agglomeration benefits and lead to processes that will help create clusters in the future.

However, there are warning signals that global information on the internet, such as the vast datasets of browsing history recorded from Facebook and Google, may be an issue for concern in the future. Media sourced articles (Guardian, 7.8.2017) suggest that there is a 'global tectonic shift' in the ownership and collection of people's data and that whoever controls information in the future captures political power. This is a worrying addition to the urban landscape for it allows 'psychological insights' to target individuals and populations with 'fake' news delivered on a massive scale. It enables some firms with the hardware to 'capture' voter's information and possibly 'sway' elections. It is therefore of immense importance that cities and regions do not sign away their intellectual property (IP). Helsinki as a city and region have stated unequivocally that they will not sell their IP but keep it free for their residents.

*Image: City of Helsinki Media Bank/
3D Render/Urban Environment
Division.*



As a World Tourist Metropole

A key question surrounds how spatial planning can play an important role in tourism within the Nordic-Baltic Space? For Helsinki region, the key is placing the emphasis on greater rail mobility and accessibility to the Helsinki-Vantaa Airport, to enhance its Harbours and equally, its Central Railway station. Key regional stations need to be upgraded. By doing so, it will assist the urbanization process of the region to achieve more coherent city and re-

gional structures to manage future growth in a more holistic way. Both the new Regional Plan 2050 and the Helsinki City Plan 2050 place considerable importance to achieving spatial cohesion and a better balance within the region as a whole whilst addressing the issue of reducing disparities and maintaining progress towards a polycentric process.

For tourism, this is expressly linked to Hotel capacity. Congress facilities and connectivity (accessibility) are key issues that are dependent upon spatial planning identifying what needs to be done. The Regional Road-Map assesses the potential for tourist development throughout the region and identifies specific areas of attraction, particularly opening up accessibility to the sea and Helsinki's archipelago as well as improving 'mobility as a service' in respect of bringing information to the forefront for visitors digitally. Helsinki and regional branding form part of the importance of tourism and the need to spread it in a more spatially cohesive manner. Culture happenings, countryside, opening up nature, and the creation of a 'green network' for the region are all considered essential components for development in the future.

Helsinki region is a growing tourist and congress city and region. It attracts annually over 3 million night-stays in hotels, the majority of visitors being from leisure and travel. In this respect, it is essential for spatial planning to incorporate future hotel and congress needs into the City and Regional Plans for expansion, not only within the city centre, but also regionally linked specifically to the new rail transport hubs.

A diverse level of services, wide-ranging cultural and recreational happenings, travel services and information are important for tourists. In addition, the quality of facilities for Congresses and Conferences is increasingly essential. International levels of festivals, concerts, theatre and cuisine will attract the discerning traveller. Helsinki region meets these requirements and more, but it needs in the future to ex-

plot its natural resources such as the maritime facilities, its archipelago, its closeness to nature, if it is to compete with the more traditional tourist traps in Europe.

Cliches may be considered a tad vulgar, but for the tourist they sometimes represent precisely the experience they are seeking after, such as enjoying a Finnish sauna by the sea or lake-shores, 24 hours of sunshine during the mid-summer celebrations, or having fun on a reindeer sled during winter and meeting Santa Claus.

Helsinki region can also offer design quarters in its downtown amidst the renowned world-class design culture of the likes of Alvar Aalto furniture, Iittala and Arabia glassware, or high fashion of Marimekko.

Spatial planning plays an important role in tourism. Mobility and accessibility to City Airports, City Harbours and Central Railway stations can make or break the possibility of visiting places easily. Helsinki's Vision of the Future places the main metropolitan region Airport in its existing domain, some 16 kilometres from the heart of the city and has recently improved the rail connections with a circle link to and from downtown to the Airport in under half an hour. Future public transport connections envisage an even more direct connection via a metro tunnel to the Airport, which will also be used for the

High Speed Train to St Petersburg, bolstered by a new rail tunnel to Europe and Tallinn.

The key challenge for the tourist industry and planning is to meet the balance between new hotels and maintaining areas as residential and not simply office ghost towns or hotels and marinas. Cities and regions should be places where people can live and work in the city centre and not exclude them because of high prices. Spatial planning also needs to try to achieve a balance of all kinds of hotel and pensions, bed and breakfast places, and not cater only for expensive hotels. A balance of values will be required. A future opportunity arises out of Airbnb for temporary seasonal use, which could be spread wider to within the region, dependent upon the needs of the visitor but has to be handled sensitively in that it should not be at the expense of people in need for housing.

International Harbours - a growing success within the EU

Helsinki region has three major ports which play a major part in the metropolitan's and Finland's economies. These are Vuosaari high-tech goods harbor in Helsinki, Sköldvik near Porvoo and Hanko on the southern tip of the region. Exports from the main harbours have been increasing steadily

Vuosaari Harbour illustration.
Urban Environment Division.



over the past 7 years. The other key harbours are mainly for passenger travel and some goods traffic in the heart of the city-centre of Helsinki. The main ferries to Tallinn and Stockholm operate from the city centre, with the Western Harbour for Tallinn and the Olympic South harbour catering mainly for Stockholm.

Exports increased in 2016 by over 13%. About half of Finland's maritime exports leave from Helsinki's harbours. Raw materials normally move from other ports in Finland, but more valuable commodities tend to leave from Helsinki and are a general indication of how well Finland is doing economically. Main exports are electrical and technical goods, generators, steel, wood products, and industrial chemical outputs (HS 9.5.17).

Some 37.5 million tons of goods are imported/exported the region's harbours annually. Sköldvik is Finland's most important harbor, being part of the NESTE oil refinery and petrochemicals and accounts for nearly half of all Helsinki region's share in the market. Vuosaari has 32% and Hanko 12%.

The Helsinki ports are also Finland's most active in passenger shipping. Internationally, Helsinki has direct routes to Tallinn, Stockholm, St Petersburg and also Rostock, Germany and Gdynia in Poland. On average, there are some 8.7 million passengers to Tallinn and nearly 3 million to Stockholm annually. That is 11.6 million passengers every year, which is nearly as good as Europe's top passenger port Dover, on the south coast of England, which had 12 million passengers (HS 23.4.2017). The impact of Brexit could see Helsinki's fortunes increasing in the near future and maybe overtaking Dover's league position as number one in the EU.

Gulf of Finland development triangle

The aim is to describe the future opportunities to link up with other Nordic-Baltic Space city-regions, such as

Stockholm-Oslo-Copenhagen, Helsinki-St Petersburg-Tallinn, or Tallinn-Riga-Vilnius and Warsaw.

Helsinki-Uusimaa aims to develop strongly towards the Gulf of Finland east-west development corridor with St.Petersburg and the southern corridor to Tallinn. The future metropole will be extended towards the coast along this east-west axis and to improve connectivity and business with Tallinn.

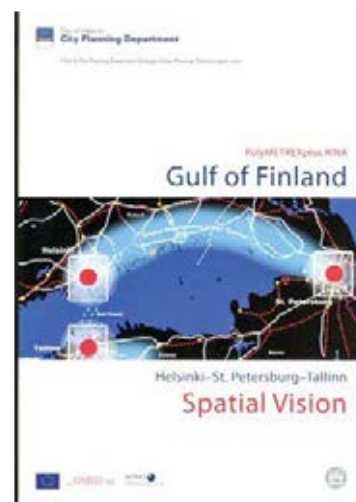
The EU Interreg project on polycentricity coordinated by the City Plan team in Helsinki, the Gulf of Finland partnership brought together Tallinn, St. Petersburg and Helsinki to create a major agglomeration between all three cities and regions.

The Spatial Vision for the Gulf promotes a high-speed TGV train along the coast of Finland to St Petersburg and a rail tunnel from Helsinki to Tallinn and Europe.

The Rail Baltica corridor creates new investment opportunities for Helsinki. This should strengthen the strategic connections to growing markets in Central Europe and beyond.

In addition to the Gulf of Finland Spatial Vision there have been several other EU Interreg projects in the past few years undertaken by the City of Helsinki and Uusimaa Region. The Rail Baltica and the HTTransPlan (Helsinki-Tallinn Transport and Planning) EU Interreg projects were continuations of the Gulf of Finland Spatial Vision and helped consolidate the initiative of a rail corridor between Helsinki and the rest of Europe. HTTransPlan enabled greater coordination between Helsinki and Tallinn on transport and spatial planning issues.

The latest project is the Interreg V NSB CoRe - North-Sea Baltic Connector of Regions initiative that aims to improve the sustainable accessibility of the Eastern Baltic Sea Region to freight and passenger transport in Europe. The Baltic Space project and NSB CoRe are considered to mutually benefit and support one another.



Stockholm - Helsinki

Stockholm today is Sweden's major economic driver and plays an ever-growing role within the Nordic-Baltic Space. The future scenario for Stockholm sees an increasing population that is attractive to companies and investors. The Capital of Sweden, however, is facing the challenges of climate impact as the region grows whilst also aiming to remain competitive and efficient. Stockholm wishes to promote diversity as a key asset, with greater accessibility through new rail infrastructural investment and going towards a polycentric regional structure. A future Stockholm will promote innovation and create the necessary framework for people to live in a safe and environmentally friendly society.

Stockholm and Helsinki's relationship is based upon historic and similar economic and social ties in that both adhere to the Nordic Welfare social system.

Recent research by the University of Helsinki and Syke (Finnish Environment Institute) indicates that the urban structure in both regions have developed in different ways. 'Growth in the Helsinki region has occurred mainly in the peri-urban areas and the car zones. In Stockholm, the growth has focused in areas near the city centre. In order to develop the Helsinki Metropolitan Area, the researchers suggest decision-making at the metropolitan level, increasing the efficiency of supplementary construction and supporting polycentricity' (SYKE. Research and Development of the Urban Form).

Stockholm has greater development within the core city whilst Helsinki has seen greater activity in the peri-urban perimeter. There are, however, similarities in that both are using the shoreline for new waterfront development of housing and workplaces. Both are also aiming for greater polycentric development. The study concludes that the Stockholm region is "closer to a functioning metropolitan administration than Helsinki region, where the common vision of the development is not

quite as clear. Stockholm has managed to channel the growth of the metropolitan area more inwards, densifying the inner parts of the region. The strengths of Stockholm also include a wide rail-based public transport system, new orbital public transport connections, excellent cycling infrastructure and successful traffic calming policies. On the other hand, Helsinki has managed to avoid some problems Stockholm has met, like the strong segregation between different housing areas" (University of Helsinki *ibid*).

Nevertheless, it is not only spatial, social and development ties that require to be analysed. In a global operating environment, it is essential for cities to be connected. The 'Nordic Triangle Axis' is a northern Baltic zone initiative stretching from Stockholm to St Petersburg. It forms part of the TEN-T Core network of corridors between the EU and Russia, forming a rail, road and maritime axis of infrastructure. This corridor is considered an essential part of the competitiveness for the cities and regions in collaborating oppor-

tunities between Stockholm and Helsinki. The EU Northern European E18 logistics corridor combines delivery and collection flows through the northern corridor to Helsinki. An upgrading of the existing Pendolino link between Helsinki and Turku is envisaged.

The American group, Hyperloop, in July 2016 made a pre-feasibility study Stockholm-Helsinki using Hyperloop One technology. This promises to link Helsinki with Stockholm in half an hour using a rail capsule bulleted through a vacuum-sealed tube travelling at speeds of up to 1.200 kilometres an hour. The estimated cost is €19 billion euros. VTT, the Finnish Technical Research Centre, is exploring the viability of such a loop. The futuristic technology could be developed using a test site in Salo, a southwestern town between Helsinki and Turku.

Some scenarios view the Hyperloop as a major opportunity to link the Nordic capitals and create a Nordic 'super-region'. The costs involved, however, will require greater critical mass.

Stockholm. Image: dg.



Twin-City Helsinki-Tallinn

Tallin is a two-hour trip from Helsinki by ferry. Since 1991, Helsinki and Tallinn have steadily increased trade activity, passenger transport and culture. Greater collaboration between these cities and regions is evolving towards integrated development. Cooperation within the ICT sector is significant, as is the immense number of people (nearly 9 million annually) using the daily ferries for leisure and work.

There are different dynamics between the economies and it is recognised that there is uneven development in terms of city and regional structures. Nevertheless, there are common features on tourism, transport connections and the labour market. Populations are increasing and many Estonians are employed regularly in the Helsinki economy, whilst Finns search for alternative opportunities in shopping, health and education (primarily at University level). There are 'asymmetric flows', workers to Helsinki, tourists to Tallinn (OECD report 2013). There are some 36,000 workers coming over from Tallinn to work in the Helsinki region. In Finland as a whole, there are estimated

to be 60,000 Estonians working in Finland. They pay their taxes to the Finnish State. For those workers, it also represents a staggering 25 million trips annually between Tallinn and Helsinki.

Joint initiatives in digital technology, public services and branding provide new opportunities in the future to collaborate.

The most recent joint initiatives were the EU funded projects, HTTransPlan and Rail Baltica Growth Corridor. Both addressed issues and strategies to improve transport and traffic infrastructures. Other initiatives focused on design, work incubators, creative IT sectors and cooperation between the various universities.

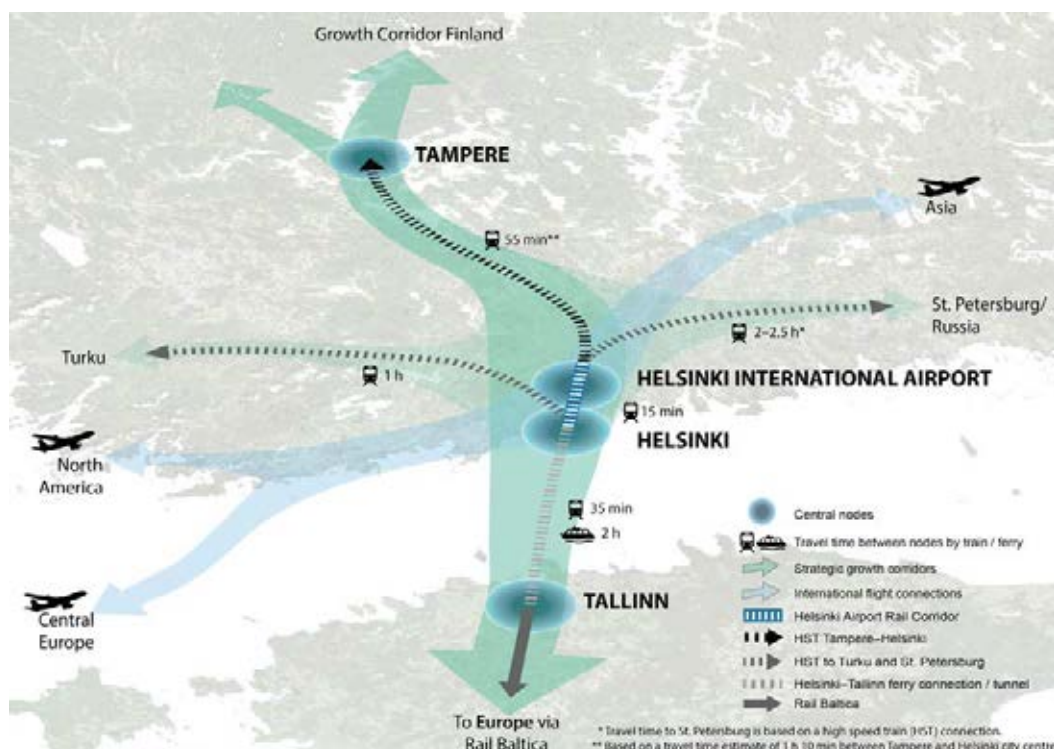
Cross border policy instruments included benchmarking, strategy and policy development, R&D support, innovation networks between the sciences, and university exchange programmes. The OECD report considered branding as an important vehicle for innovation synergies in the future as well as the development of joint public sector involvement in the form of 'joint city e-services'. Population registers,

vehicles, and other user interfaces could be jointly created. Cross-border banking was viewed as another opportunity. Overall, cooperation is viewed primarily as networking and information exchanges. This could engage the interface as evolving toward a knowledge-driven set of platforms.

Helsinki-Tallinn is moving towards a logistics hub in the wider context of the Baltic Sea Region. The twin-city development could generate a transport nexus to Northern and Central Europe as well as Russia. Helsinki has created a new high-tech goods harbor and upgraded the city centre harbours. Tallinn is currently pursuing a new vision for its harbour in stages, for 2030 and 2050.

Governance mechanisms are on the agenda. Further development into joint practices between the public authorities at city and regional level require to be explored. This needs to be aligned with collaboration in the private sector on incubators and joint programmes with universities (OECD *ibid*).

Helsinki Airport Rail Corridor. Image: Urban Environment Division/ Susa Eräranta.



4.2 Helsinki-Uusimaa Metropole within the EU

Helsinki Region's Strength as part of the EU

Helsinki region's role within the European Union in the future aims to employ the strategic policies of the Territorial Cohesion reports for increased spatial cohesion through a polycentric city-region structure.

Two different sets of visions are envisaged. The first is "looking inside" exploring the possibilities regions can develop on their own to cope with territorial challenges. This starts with the question if and how the economic base of regions can be strengthened through developing and marketing new regional products or, for instance, through a higher attractiveness for people coming from outside, as tourists or maybe even as migrants not recorded (grey migration). Another point would be to develop innovative strategies on how to adapt the infrastructure and services supply to a decreasing and ageing population, where the onus is on urban change than growth. New models of governance through regional enlargement will be required.

The second vision is "looking outside" aiming to establish stronger mutual links between densely and sparsely populated areas. These policies start from the classic approaches of better connecting regions to the larger cities and metropolitan regions, ameliorating linkages between them in transport and telecommunications networks. Nevertheless, it would also need to explore the mutual benefits that both metropolitan areas and cities on the one hand, and their respective wider hinterlands on the other, could simultaneously benefit from when developing a large-scale common strategy with specialised functions of partners and trade-offs between them.

Greater strategic cooperation between cities and their hinterland, including a greater number of inhabitants in the polycentric urban areas, makes it pos-

sible to attract or establish higher level of services.

A comprehensive urban policy is needed to counter the imbalances in the urban and regional structure and to enhance competitiveness and innovativeness that is more tailored to local and regional needs. For this, it is essential that the characteristics of urban regions are explicitly analysed and their special requirements mapped out.

Globalisation contributes to reinforce both competition among cities and cooperation. Competition between regions needs to be complemented by institutionalized cooperation, notably in the areas of knowledge and market development. Horizontal cooperation among cities and regions allows them to better identify their comparative advantages, specializations needs for goods and services, and complementarities, and thus to become stronger competitors.

New regional development strategies are needed in which the maintenance of a polycentric urban structure is elaborated as the backbone for balanced territorial development. The aim is to further the strengths and specializations of regional centres and cooperation between them to reinforce the network covering all the regions.

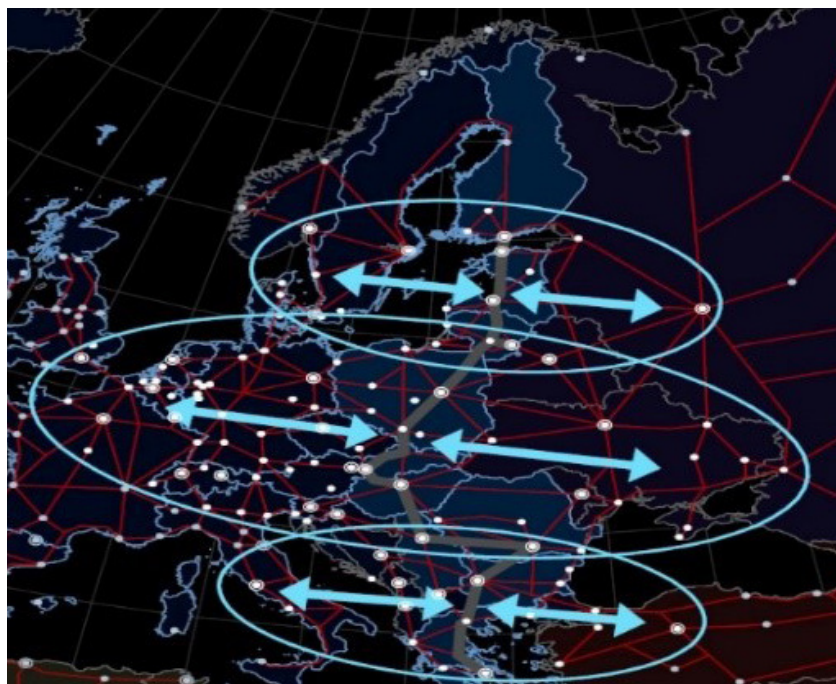
Cross-border Cooperation

For Helsinki region, a combination of the 'looking-inside' and 'looking outside' will be required. In terms of the latter, Helsinki's cross-border cooperation mostly concentrates on building a 'regional development triangle' between Tallinn and St. Petersburg. In terms of spatial and social cohesion, Helsinki-Uusimaa is probably the strongest of the three. However, it is faced with challenges such as ageing population and the need for a larger workforce. There is also a concern of "brain drain" from Helsinki metropolitan area as major companies reduce their professional workforce especially in the IT-sector, which has been Helsinki's competitive edge during the past few decades.

Cross-border cooperation should try to communicate jointly planned visions between the regions as was done for the Gulf of Finland Spatial Vision. In the future, resources will be required to ring-fence Stockholm into Helsinki's future vision, not simply for economic benefits, but also culturally, as the two can re-inforce each other for the need to maintain the Nordic welfare context for their regions. Tallinn and St. Petersburg cannot be viewed in a similar way as the Nordic welfare city context. The question begs to be asked, given that the Nordic model has in general terms been deemed successful, as to whether both Tallinn and St Petersburg can ignore the benefits to be accrued to synergise in the same way as their Nordic counterparts. A more neo-liberal approach in the short-term may bring so-called benefits but it is unlikely to achieve as good spatial and social cohesion in the long-term as the Nordic model over time.

Furthermore, a transnational North-South corridor (North-South Interface) study linking up Helsinki to Athens, including most of the major capitals in between, requires additional research. The original study formed three 'spheres of cooperation' and the first sphere, Helsinki-Warsaw, contributed to the Rail Baltica EU Interreg and continues with the NSB CoRe project. These 'areas of cooperation' were further supported by ESPON's similar conclusions in its Vision report 2015 (ibid).





North-South Interface levels of Cooperation. Urban Environment Division.

Core region

Looking at Helsinki from the inside, Helsinki's common goals target greater urbanization of its region, to establish improved rail public transport connectivity and hubs to support the private sector development to be located near such hubs for greater accessibility, which in turn leads to improved agglomeration benefits.

In this sense, the strategy acts as a tool for future investment. It also aims to enable greater land-value capture in the public interest. This symbiosis wishes to establish and work towards a polycentric region that can deliver improved management of the city and regional structures to ensure that there are sufficient new homes and workplaces into new areas of development or contribute to the re-generation of the older housing areas. This in turn will strengthen Helsinki region's international competitiveness, continue to promote the Nordic Welfare culture of social cohesion, maintain the green networks and maritime advantages, all set within a climate change agenda that aims to achieve a carbon

neutral region in 2035. Social cohesion and the environment go hand in hand.

Implications for Helsinki city-region at the Transnational Level: Managing Spatial Change

Helsinki region is experiencing major 'spatial change' today and for the foreseeable future. The key challenge for the EU and Helsinki is to meet regional needs within a global framework. Helsinki, partly due to land ownership and planning monopoly, can be viewed as the 'driver of change'.

The Polynet study by Sir Peter Hall (2006) defines polycentricity as functional connections across space, particularly the economy and social society. The Lisbon Agenda and Territorial Agenda taken together spell out the need to improve economic competitiveness by achieving a better economic and spatial balance within the regions. Spatial disparities may then be reduced over time through new polycentric patterns of spatial change.

European spatial planning is beginning to focus on regional identities. Dühr

et al (2010), along with Hall (2006) encourage polycentricity, as it is considered to be the central principle in the management of regional growth to target regional disparity and reduce spatial inequalities (Dühr et al. 2010. 351).

Spatial planning in Helsinki is concerned with key strategic issues for the long-term (30 years or more). To make long term strategies requires dedicated professional teams and a clear capability for informed decision making. In this respect, the EU spatial agenda will provide greater emphasis on the need to make joint decisions through strategic alliances, to work with the different cities in pooling data resources and create effective cooperation with other FUR's (Functional Urban Regions).

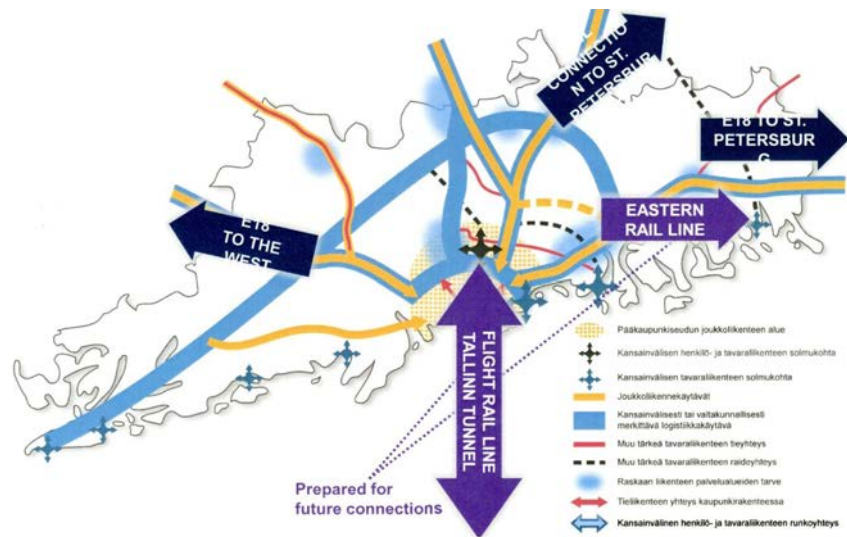
Additionally, the need to balance development over a long-term perspective will lead to a wider understanding of the region's development potential. With this in mind, Helsinki-Uusimaa is now preparing a regional plan showing the development potential and priorities until 2050.

Helsinki-Uusimaa Regional Structure Plan 2050 and its impact upon the Helsinki city-region's international perspective

The new region's structure plan vision is to maintain a healthy, well-being, Nordic welfare profile internationally and to be a dynamic and attractive region to live and work. The regional plan's purpose is to oversee that the region's objectives are upheld by each of the municipalities and ensure that their plans fit with the overall accord of the regional plan. The current plan was approved in 2006. The forthcoming new regional plan is expected to be agreed in 2019.

The new Regional Plan will promote a polycentric urban structure and move away from urban sprawl, which in turn should support greater agglomeration benefits to improve its international competitiveness.

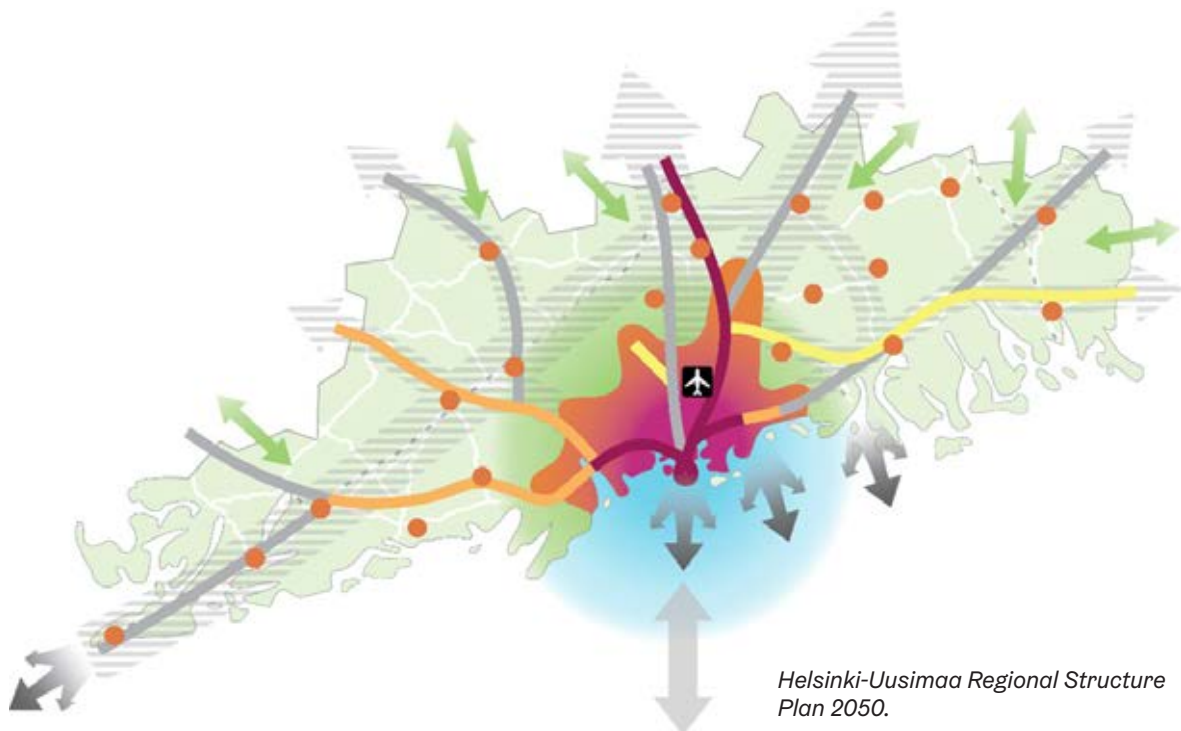
In general, the Regional Plan, which creates the legal framework for all other plans, addresses key issues on large shopping malls, new rail infrastructure and major motorways together with safeguarding the natural environment of the structural finger-plan of green and blue maritime wedges.



Southern Finland Macro-Region: Future connections for logistics, including E18 Corridor Stockholm - Helsinki - St Petersburg-Tallinn. Helsinki-Uusimaa Regional Council.

The Plan seeks to promote high quality international connectivity rail links to Tallinn and Europe through a rail tunnel and hi-speed rail to St Petersburg. To the west, importance is given to developing connections to Turku and Stockholm. Priority is also highlighted to local upgrades, including the eastern link towards Sipoo and Porvoo. These new developments are expecting to boost Helsinki's international significance whilst overseeing

an urban perspective to dominate the regional structure. The rail tunnel to Europe through Tallinn is considered of specific importance to connect with Rail Baltica and link into the centre of Europe's rail network. Not only is this expected to improve the overall competitiveness of the country's capital but to assist in Finland's and the Baltic's modernisation as well as develop the tourist industry.



Helsinki-Uusimaa Regional Structure Plan 2050.

4.3 Helsinki city-region Strengths and Weaknesses: SWOT summary

Key Strengths

Helsinki is the economic motor of Finland's development. It is the country's capital and centre for administration and culture. The city-region has a high standard of living with exceptional high-tech resources. A well-educated workforce is the reason behind an efficient business sector with top competitiveness and creativity. The knowledge economy, together with innovative industries and a strong R+D account for the high-level of jobs in the region and are well linked to the top-quality universities.

Helsinki's future is based around a growth scenario. It is expected that by 2050 Helsinki city-region will have grown to over 2,200,000 inhabitants and over a million jobs. Part of its strength as a growing metropole is the long-term strategic planning, which is primarily plan-led. This creates the necessary foundations for a strong



Helsinki-Uusimaa Regional Council.

framework to achieve a compact, urban, high-density polycentric city-region in the long term with a carbon neutral environment and an integrated public transport network.

Helsinki-Uusimaa, together with the City of Helsinki and other municipalities have created joint strategies that are based on a shared vision for the entire metropolitan area. The aim is to make the city-region a competitive centre of international repute with high levels of services and a functional ur-

ban environment. The Helsinki city-region is growing fast. Historically, the changes to the urban structures are the largest for 200 years. The emphasis is on building new development areas along the seashores. Both Vantaa and Espoo have new major growth areas in the suburbs. A significant amount of investment will be for the renovation of the older housing estates.

The Regional Plan (made by the Helsinki-Uusimaa Regional Council) is a statutory plan, providing structural

Image: City of Helsinki Media Bank/ 3D Render/Urban Environment Division.



guidance primarily on protection of environmental areas and future traffic/transport network across the region. It is a legally binding plan for all the 26 municipalities of the region.

A major part of the Regional Plan is the '4 Corridors' analysis that places the Helsinki-Uusimaa region at the heart of Southern Finland and is located in the core of all the studied development corridors. The Capital Region is the central point of the nation and an essential hub for international connections. The Capital Region provides each corridor with, among others, good international connections, professional labour force and an extensive growth platform for a versatile economic structure.

Land-use Planning in the Helsinki-Uusimaa Region Plan for housing and transport

The regional plan is legally binding. It aims to improve spatial cohesion throughout the Uusimaa region. The regional plan, however, has to take account of the wider region other than the central metropolitan core. In order to facilitate the widening polycentric network, a number of special programmes and processes have been created in order to focus primarily upon the metropolitan area rather than the entire Uusimaa region.

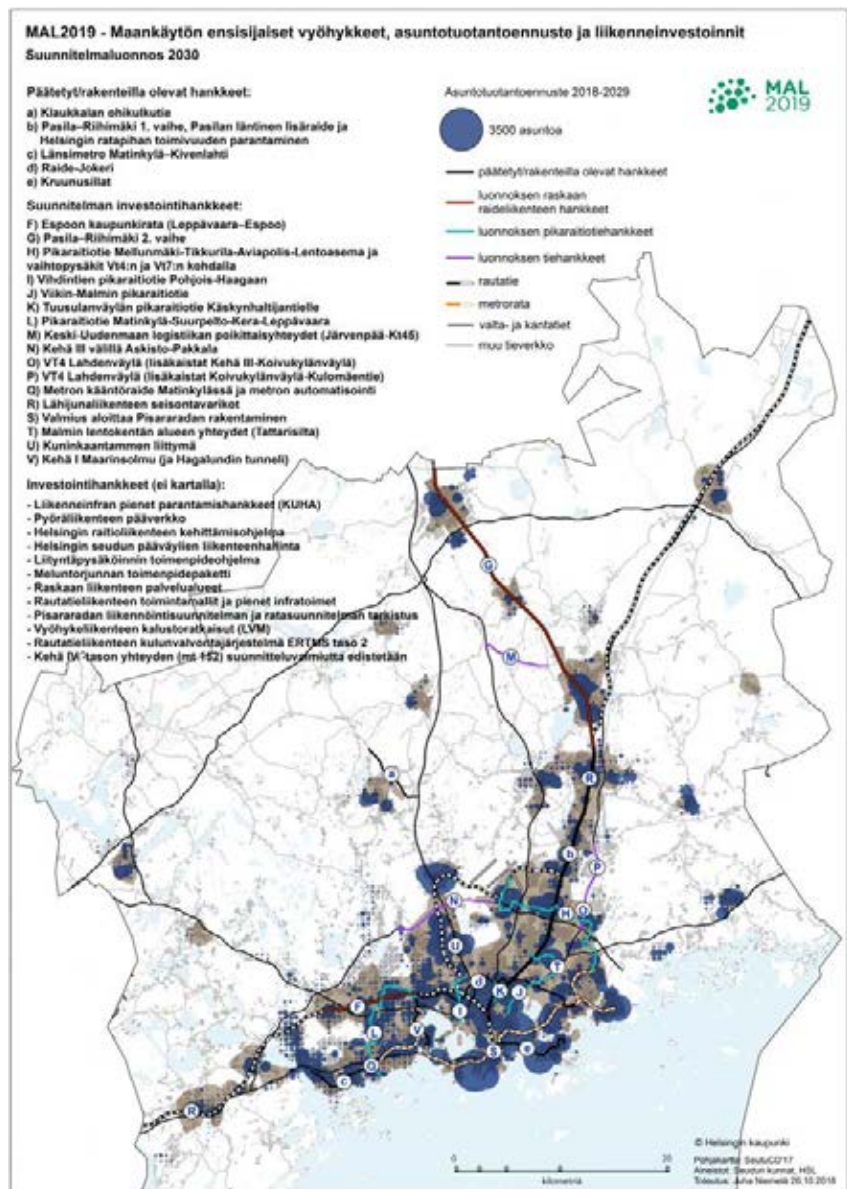
An International Competition was held in 2007/08 in respect of the 'Greater Helsinki Vision 2050', in which 14 municipalities, including the key neighbouring cities of Espoo and Vantaa, co-signed a joint agreement with the City of Helsinki to undertake the results of the Competition. This was the first time that the Capital and its surrounding region agreed to work together in making city-region planning and development into a single cause. A new Strategic Plan by the City of Helsinki was therefore undertaken in 2007/8 and adopted a regional perspective. This plan detailed the need to integrate the region into a more unified polycentric structure and to urbanise the region by creating development corridors to achieve sufficient critical mass to be able to build public rail networks, which in turn would reduce urban sprawl.

The Vision, together with the Strategic Plan, helped create the new 'MAL' initiative (land use, housing and transport) whereby all 14 municipalities that make the metropolitan area formed an alliance in 2012 to create a future vision 2050 for the growing metropole. The level of cooperation aims to integrate spatial planning, public transport and traffic into a single set of policies that tackle urban sprawl and agree priorities for expanding the rail network.

In effect, the MAL map is an agreed spatial development plan for the whole of the city-region, but not the entire region.

MAL map 2019. City of Helsinki

This vision of public rail connectivity, both radially and transversally, is now taking shape. The government announced (Helsingin Sanomat 6.4.2016) financial support to build the transversal high-speed tram network from Helsinki's Eastern Centre (Itäkeskus) to its neighbour Espoo in the west, a stretch of 25 kilometres which will allow this new development corridor to build some 2 million additional square metres of housing and offices. In doing so, the new Network City-Region in 2050 will have 7 new development corridors/boulevards and 2 long transversal, east to west, hi speed light-rail tram corridors that will eventually aid in achieving better spatial cohesion structurally across the region.



The ultimate result of all this will not only offer much-needed new homes and workplaces, it will also reduce the amount of private car traffic coming into the city centre and cross-town and in turn reduce CO2 emissions, thereby going towards meeting the goal of the 2008 Strategic Plan of a zero-carbon city-region by 2035. The State forms a major part of this initiative, providing additional funding through agreements with the Helsinki region's major cities to densify new housing developments around transport hubs.

Image: City of Helsinki Media Bank/
Hannu Bask



Finland has traditionally been at the forefront of the welfare society models and Helsinki has a strong ideal of social equality, social justice and income equality. Helsinki is a Nordic Welfare City with active social policies and extensive public services. The centrality of public landownership, long-term land use planning and a consensus in urban development policies is a major driving force of a socially balanced city structure with relatively low levels of socio-spatial segregation.

Cooperation

A further strength is the level of cooperation through the spatial management of HSY (Helsinki Region Environmental Services) and HSL (Helsinki Region Transport) with regard to waste management and the traffic planning system that includes a future regional public transport plan. HSL's digital travel card enables passengers within the city-region to change between multi-modal nodes at no extra cost. There are 4 new pay zones in 2019 and interchanging between zones obviously increases the cost of the journey. Most people tend to buy 6 month or annual cards. This demonstrates the desire for strategic intervention.

The federation of the city-region based on mutual cooperation will be the key challenge to maintain international competitiveness. Several international studies place the Helsinki city-region at the top or very near the top of cities with a highly successful urban environment. A record number of over 3 million tourists visited the capital in 2015. Particularly as Helsinki is the most northern metropolitan area in the EU and located on its very periphery there is a need for even greater levels of innovation. International work with our neighbours St. Petersburg in Russia and Tallinn across the water in Estonia offer considerable opportunities for the future to develop joint strategies within the Gulf of Finland development triangle.

Innovation in water operation at the regional level, cargo handling at the international Port of Helsinki, and growth in the energy market represent

major possibilities for the generation of new markets. Eco-efficiency is a growing prerequisite for local services to achieve. The growth in university development with the establishment of the new Aalto university promotes further educational development in a combined city-region.

Regional Innovation Strategies

As firms in related fields of business cluster together, they will have greater specialisation and division of labour, resulting in a significant increase in productivity. This is supported at the micro-level of integrating the spatial cores of the Helsinki International Airport, the key regional Harbours and the metropolitan core centre into a development triangle that aims to achieve agglomeration benefits for the public and private sectors.

Helsinki-Uusimaa Region has been implementing its smart specialisation strategy since 2015. The Region has five priorities:

Urban Cleantech: the Smart & Clean Foundation is turning the Helsinki capital region and Lahti into a world-class test platform for clean and smart solutions

Human Health Tech: connecting start-ups, corporates, public sector and universities in solving health services related challenges and promoting co-creation in self-care

Digitalising Industry: connecting technology industries and supporting them in digitalisation and Internet of Things

Welfare City: bringing together actors to solve problems of urban life and on the other hand empowering neighborhood associations

Smart citizen: finding ways to empower young, elderly and immigrants in a digital world

The helsinkismart.fi website showcases smart specialisation in the Helsinki region through examples. (www.helsinkismart.fi).

Key Weaknesses

Helsinki city-region creates the spatial conditions through a regulated planning and real estate system for the private sector to operate. Investment is directed by the Cities and municipalities. However, each city and town is competing against each other, which tends to create an imbalance in the regional structure, as each city vies to build the biggest/best shopping malls, entertainment centres and other structures. Instead of compatibility, there is intense competition for resources, people, job location and logistic centres. A further issue concerns the regional corridors of development. There are too many small municipalities all wanting to grow, but they can't grow sufficiently to support new corridors for rail transport.

The current situation enables cities and municipalities to interpret the use of spatial planning policies to suit their own or some other actor's economic needs, rather than pull together as a city-region to create a balanced economy, spatially. In practise, the cities and municipalities of the Helsinki city-region are able to use the same legislation, the same set of spatial planning norms and policies for Finland and still come up with a different planning model of their society, dependent upon their political bias. The result is two-fold. On the one hand, the Capital city is compact, dense, and its residents live in a European style of apartment blocks, based upon high quality levels of public transport and critical mass and a high-class sustainable environment. On the other hand, this is set against a region that is low in density, single family housing predominates, car-based, low levels of public transport, with high levels of urban sprawl and clusters of development that are not connected spatially. This then creates environmental and traffic/transport problems for the region as a whole.

There is as yet no consensus to develop a polycentric and spatially cohesive city-region. The City of Helsinki is at the forefront promoting/pioneering strategic development and integration

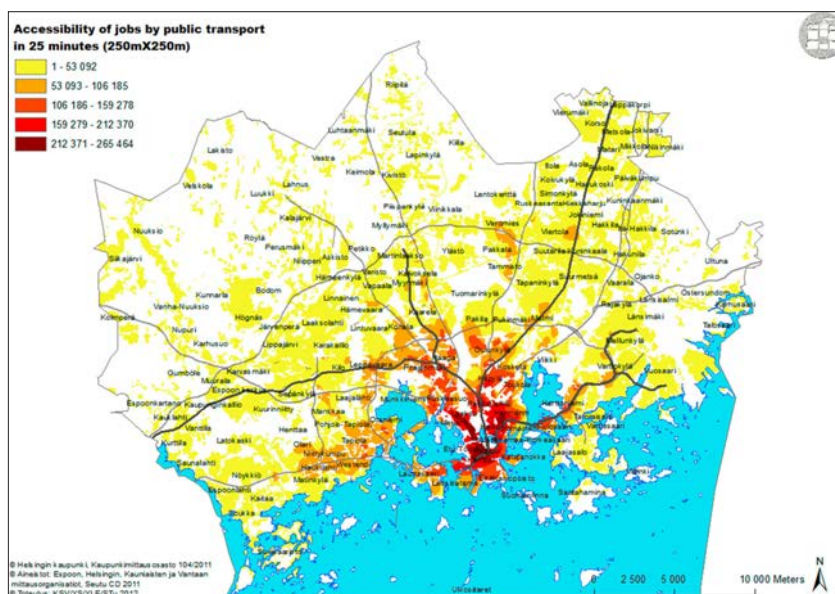


Image: Accessibility of jobs by public transport in 25 minutes/Tulikoura S. & Jäppinen S. City of Helsinki. City Plan team.

of the city and its region along with the Uusimaa Regional Council.

The National Government (Ministry of Finance) in its 2012 report recommended for the Helsinki cities and surrounding municipalities to amalgamate into a single authority for a more effective city-region competitively and spatially. Sadly, this did not achieve implementation as there was a change of government in April 2015 that proclaimed itself to not be 'urban-friendly'.

Hence, Governance consists of informal alliances; there is no single statutory authority with full powers in the metropolitan city-region. Economic competition between the city-region's municipalities leads to urban sprawl, as uncontrolled expansion takes place to capture investment. The relationship between spatial planning and real estate development is much weaker in the municipalities outside the City of Helsinki, thereby subjecting these municipalities to market forces that are not easily regulated. This in turn means that city-regional governance is fragmented and that there are too many decision-making bodies.

The past few years have seen a return to growth of around 2-3% for the economy after the world recession of 2008. However, operating expenses for the cities in the metropolitan area continue to grow as does the tax revenues, so it is important for finances to remain on a sustainable basis. This presents a challenge to maintain the high standard of living whilst continuing to implement new investment in the metro, and tram public transport and build new housing developments whilst maintaining social cohesion. The lack of critical mass outside the key urban areas is a major worry.

Helsinki continually falls short in the number of major world companies it is able to attract to its region. The lack of international headquarters reflects the northern location of Finland's capital and its lack of overall critical mass today outside the key urban areas. Equally, it can be argued that Helsinki's geographical isolation, being the furthest northern territory in the EU, further highlights that it is not connected with mainland Europe. This represents a major issue for the future development of a growing metropole.

Housing production, by European standards set against the mature urban cores of the 'European Pentagon' is relatively dynamic. The City of Helsinki is experiencing levels greater than 5,000 units a year, whilst in the 14 municipalities annual housing is around 11,000 units per annum. Both of these statistics compare very favourably with what is happening in Central Europe. Even so, despite the high levels of housing production right across the board of the greater capital region, it is still insufficient to keep up with demand, such is the increase of population. This results in rising house prices and rents and makes it difficult for first time buyers to afford buying a property. If this issue is not addressed, this could lead to future spatial segregation and undermine the existing social cohesion.

Key Threats

Climate change poses immense challenges at the local and global levels. Spatial planning needs to be aware of the impact of climate change spatially and such challenges integrated into the planning process in order to affect all new developments in the future. The City and Regional Plans must act as engines to determine positive changes in the management of the city-region



EU report: EC Energy Roadmap 2050

structure in a carbon neutral manner. The need to maintain and improve the metropolitan environment is one of the paramount principles upon which Helsinki looks to the future.

Globalisation is both a threat and an opportunity. It refers to the process of corporate expansion that knows no borders. Economic linkages impact upon countries through financial mobility that aims to drive productivity through lower costs. However, such processes appear to increase income inequality, job insecurity, and the gap between rich and poorer countries appears to be increasing (GPF). The continual shift of capital promotes significant changes in countries like Finland, with many aspect of industry shifting to places like China and Indonesia. Finland, and the Helsinki metropolitan region continually reacts to such measures by shifting the industrial economy to a service economy. Only by improving educational standards and placing stress on innovation enables Helsinki to remain near the top of the economic league tables worldwide.

Finland's changing demography is in stark contrast to Helsinki. The share today of +65 year olds in Finland is 19.4%, with this figure expected to rise to 26.9% by 2050 (Demos. 2015). In Helsinki's case ageing is not as rapid as Finland. It is anticipated that some 20% of Helsinki's population will be +65 in 2050. Rapid growth over the foreseeable 30 years may indeed see a reduction on this figure, as the biggest group in Helsinki today has an average age of 27. Nonetheless, the impact on the economy is likely to be significant.

The continued fragmentation of city-regional governance remains one of the key threats. Competition for jobs and people continues to widen urban/suburban sprawl. This impacts upon the economy and is energy inefficient. It is unlikely that the Greater Helsinki 14 municipalities will agree joint governing without a mandate from Parliament. Entwined with the issue of urban sprawl is the number of families having to move out to the fringes of the metropolitan area searching for lower hous-

ing costs. This accounts for longer-distance traveling from home to work. This adds to the cost of living and fails to address the issues of carbon emissions and pollution, as more than likely people are dependent upon the car the further they are located from the centre.

In the digital age, the use of cyber terrorism is a growing phenomenon. There was a major attack on the US internet in October 2016 for several hours, targeted at DNS provider, impacted upon Twitter, Netflix, Spotify etc. Various outages were noted by major corporations. Finland is a highly digitalised society, more so in the metropolitan region. The more machines can 'talk' to one another, the greater the risk for a cyberattack. Helsinki needs to create a digital network that aims to minimise such threats. Ownership of information is equally a possible threat in the future and how internet data is manipulated may threaten the role of democracy.

Key Opportunities

Cooperation and Regional land-use planning

An agreement of cooperation, signed by all the four key neighbouring cities of Helsinki, Espoo, Vantaa and Kauniainen, together with another 10 municipalities in the city-region, enabled these 14 municipalities to undertake the making of a joint-development spatial plan for the Helsinki city-region (MAL), which was completed in 2015. Such regional cooperation will help sustain and improve public transport, the environmental services and the information networks. A new MAL Plan is now being prepared and will be ready in 2019.

The Plan-led regional strategies will be strengthened in the new Regional Plan 2050. The aim will be to improve the long term change to the city and regional structures enable resource planning to create a new investment programme for rail infrastructure. In turn, the future transport corridors can provide the opportunity to locate more and more development around major rail transport interchanges and achieve better levels of critical mass to support such investments. In addition, this will contribute to curbing urban sprawl. The rail investment will open up significant development opportunities for many decades to come.

Improving International Connections

One such opportunity is the Metropole's Airport, which for Helsinki is physically located in neighbouring Vantaa, thereby requiring spatial planning cooperation. The future 'metro' or rail connection from Helsinki city centre to the Airport will provide a direct link that will more than half the current 27 minutes via the Circle-line. This tunnel will also act as the platform for the new high-speed TGV-style rail axis to St Petersburg and will be the connection directly to the Helsinki rail tunnel to Tallinn and Europe's TenT-network.

Local Traffic - Network City

The City of Helsinki aims to strengthen its city centre whilst decentralising specific functions to the city-region.

A new western metro line, jointly promoted by the Cities of Espoo and Helsinki, is now complete and opened in 2017.

A 'circle' line to the Metropole's Airport now connects the city centre with the Airport and runs every 10 minutes in either direction, making for a highly efficient way to get around the city-region.

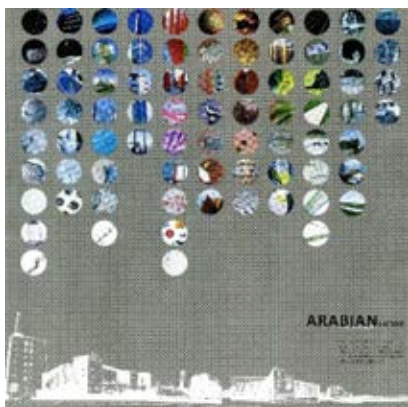
Limiting Urban Sprawl

The majority of new development areas are brownfield and represent sustainable alternative to urban sprawl on the periphery. By concentrating new land-uses with the development corridors and brownfield sites, this will reduce the loss of green spaces. Opportunities also exist to open up the maritime shoreline for recreation and living and integrate the networks.

Managing growth in the city-region could be improved to be more environmentally sustainable at the present time, particularly when the world is still experiencing one of the worst recessions at the global and European levels.

Image: Crosstown Rail 'Jokeri' / City of Helsinki Media Bank





Arabia Waterfront brochure. City of Helsinki

Governance - more effective Regional Integration

Helsinki region at the governance level could be improved through rational inclusion into a single authority. The current government are aiming to reform regional governance in 2019. There are too many layers of governance and none has the ultimate power over the future development of the city-region into a cohesive whole.

Jobs are the foundation for the region to succeed in a highly competitive European market. Helsinki-Uusimaa area will aim to benefit from the high-end IT skills and workplaces that are at the cutting edge and space for expanding economic sectors. The lack of foreign competition, whilst seen as a weakness, offers an alternative flip of the coin in enabling domestic companies to grow and expand.

Land Ownership

In general, markets are the main determining factor in building cities. However, in terms of a new city-region the City of Helsinki leads the way by acting as the 'driver of change'. It is capable of doing this because a considerable part of land is in public ownership. This is a good example of a spatial planning tool that other municipalities in the region could learn a great deal. The region would therefore be able to act as a 'driver of change' to create the necessary conditions for spatial planning to oversee and guide new development.

Image: City of Helsinki Media Bank / Susanna Karhapää



This in turn creates positive conditions for the private sector to flourish by promoting stability through regulatory change. It would also enable those cities and towns with land in public ownership to achieve 'land-value capture' and contribute towards paying for new rail investment by using added-value for its citizens generally.

Carbon neutral region 2050

Helsinki-Uusimaa region's climate change RoadMap aims to be carbon neutral by 2050 and the City by 2035. This includes reducing pollution, increasing energy efficiency, improving rail public transport within the region, thereby reducing the dependency upon the car, and use resources sustainably. This provides increased opportunities for the public and private sectors to engage in the developing energy and high-tech disciplines and to lead the way in regional innovation.

Social Integration

The region needs in the future a growing workforce. There is clear evidence that an ageing population will impact adversely upon the economy. Finland and the Helsinki region require new workers. The primary aim will be to achieve sufficient numbers through immigration. Immigration in recent times throughout the entire EU has become a political liability, yet the opportunities exist to harness the energy of a new workforce and achieve greater economic stability in the long run.

The challenge is to enable immigrants the opportunity to integrate into Finnish society whilst bringing new ideas and culture from other countries. The Nordic welfare cultural must ensure spatially cohesive neighbourhoods and a workforce integrated within the regional network. Education and a socially protective network geared to assimilation will contribute positively to a stronger Helsinki metropolitan region.

Douglas Gordon with comments from Ilona Mansikka and Iiro Grönberg

SWOT summary by DG/IM/IG

SWOT

SPATIAL	
<p>Strengths</p> <ul style="list-style-type: none"> ■ Compact, high-density connected inner cities with high quality environment ■ Plan-led regional structure, long term strategic planning and integrated public rail transport network ■ Public ownership of land in major cities ■ Close cooperation with Tallinn, St Petersburg and Stockholm ■ Regional Plan is legally binding 	<p>Weaknesses</p> <ul style="list-style-type: none"> ■ sprawling region ■ no effective integrated governance ■ possible progression of spatial socio-economic segregation
<p>Opportunities</p> <ul style="list-style-type: none"> ■ Regional development uses brownfield sites and reduces loss of green space ■ Maritime waterfronts and green/blue integrated networks ■ Improving International Rail Connections ■ moving towards a polycentric region ■ Future Spatial Visions aim to pull the region together ■ Helsinki region acts as the 'spur' for Southern Finland 4corridors 	<p>Threats</p> <ul style="list-style-type: none"> ■ spatial segregation ■ municipalities compete for new investment, jobs and people leading to unplanned interventions
DEMOGRAPHICAL	
<p>Strengths</p> <ul style="list-style-type: none"> ■ Sustainably growing population future scenario ■ Education levels are one of the highest in the World (PISA) ■ Balanced population growth based on stability 	<p>Weaknesses</p> <ul style="list-style-type: none"> ■ lack of critical mass outside of main cities ■ possibly growth may be too rapid, can't cope
<p>Opportunities</p> <ul style="list-style-type: none"> ■ Migration brings new skills and metropolitan dimension to city and regional living 	<p>Threats</p> <ul style="list-style-type: none"> ■ possibility of immigrants not integrating ■ ageing population ■ people moving from small towns to big cities, de-population of region into major centres ■ Capital region too dominant for Finland as a whole
ECONOMIC	
<p>Strengths</p> <ul style="list-style-type: none"> ■ Growing metropolitan region and economy, plus desire for strategic integration ■ Knowledge economy, innovative industries, strong R+D, & high levels of education ■ International Airport and World-wide connections ■ High-tech Goods harbours and Passenger Ports 	<p>Weaknesses</p> <ul style="list-style-type: none"> ■ Unconnected with mainland Europe; on periphery of EU ■ high level of house production unable to keep up with demand makes for rising house prices and rents ■ lack of international headquarters

Opportunities	Threats
<ul style="list-style-type: none"> ■ Helsinki region's role in a global world ■ Development Land significant for many years to come ■ IT remains at the cutting edge and space for expanding sectors exists ■ Lack of foreign competition domestically (few World-leading companies) ■ Tallinn-St Petersburg joint development axis with Helsinki region ■ Regional innovation in cleantech and digital companies ■ Region accelerates innovation ■ Region can become 'driver of change' ■ Promote Universities with 'Anchor' institutions ■ Govt's regional re-organisation (2019) may help solve fragmented governance 	<ul style="list-style-type: none"> ■ Climate change, globalization, rising terrorism ■ Possible that fragmentation of regional governance persists ■ Increasingly longer-distances home to work ■ digital terrorism ■ rising house prices excludes future generations
SOCIAL	
Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Nordic Welfare well-being, safe region, social cohesion, no slums ■ high-quality Universities and IT skill levels ■ policies aimed at minimizing disparities within region ■ Long term strategic prognosis linked to investment for people 	<ul style="list-style-type: none"> ■ too many decision-bodies ■ weak employment opportunities for immigrants compared to locals
Opportunities	Threats
<ul style="list-style-type: none"> ■ Maintain diversity and minimize class segregation through education ■ Better use of public space through metropolitan mixed land-uses ■ Increasing Urbanisation ■ Healthy region through decreasing energy and carbon emissions 	<ul style="list-style-type: none"> ■ climate change ■ families moving out to the fringes seeking cheaper housing ■ social-economic segregation of classes, areas and regions ■ not succeeding in integrating migrants to work and housing markets ■ cyber terrorism ■ changing values and preferences
MOBILITY	
Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Regional public transport integrated network ■ Using digital and IT know-how in improving mobility as a service 	<ul style="list-style-type: none"> ■ still too much dependency upon car in region
Opportunities	Threats
<ul style="list-style-type: none"> ■ Cooperation in public transport, the environment and Information networks ■ High-Speed Train to St Petersburg in 1 hour ■ Rail Tunnel connecting Helsinki with Europe ■ Future regional development mainly around major rail infrastructure interchanges ■ New investment in public rail transport throughout the region increases diversity and balanced structure ■ Urbanisation of Region ■ better integration of Southern Finland development triangle by fast train connections 	<ul style="list-style-type: none"> ■ Internet of Things not being protected in communications threatens stability ■ poor accessibility to outer fringes reduces economic potential ■ possible reduced levels of finance to support infrastructure investment

5. Scenarios & Vision

HELSINKI & UUSIMAA REGION: SCENARIOS 2050

Introduction on what the scenarios method is based upon:

- ▶ The key driving forces, 'drivers of change', are summarized as a collection of criteria or variables as to how to assess the future. The drivers are grouped into five coloured clusters. From this is derived the framework. Three scenarios are then produced set against the drivers. The three scenarios are: (i) a fast growth World Metropole, (ii) a medium growth analysis 'Network Region', and (iii) a slow-growth ECO alternative.

Scenario Outline –

- ▶ The key question for the Helsinki Scenarios is what should be Helsinki's long-term strategy to meet future challenges in the economy, in social cohesion, the city-regional public transport infrastructure, climate change and the overall balance of development within the region and between the city and its region.
- ▶ The timeframe is 2050. Since it is impossible to predict what will actually happen, the aim is to gain a better understanding of what kind of city and region is desirable. The three alternative scenarios by themselves do not represent the 'best' choice. Instead, the process is to gauge what may happen in each different scenario set against the five pillars of criteria. The process then centres upon selecting the most appropriate ideas from each scenario to create a single, joint scenario.
- ▶ This then formulates into a long term Vision for the future of the city-region. This is done by interpreting the joint agreed scenario into a set of key objectives.
- ▶ In practice, the key objectives, being linked into the management of the city-regional structure, will adapt to changing circumstances, such as during growth periods the aims will be achieved quicker, whilst during downturns, it will take longer to implement the goals. However, the relationship between the overall objec-

tives and the city-regional structure remain the same irrespective of the economic climate.

Three Scenarios –

- ▶ A 'World Metropole' proposes that the city-region accelerates at a fast rate and finds difficulty in keeping up with the changes taking place. Agglomeration benefits accrue much faster but possibly at the expense of a reduction in social cohesion and rapid rising house prices/rents. The paradox is that the city-region may develop into a centralized polycentric structure, but those towns on the periphery could decline as a result. Regional centres closest to the metropolitan structure are the likely winners, and furthest apart, the losers.
- ▶ 'Network Metropole' is a mixture of medium growth but less critical mass. There is likely to be greater spatial balance within the region, but a polycentric structure is likely to evolve more slowly.
- ▶ A 'Slow or modest growth' enables greater control over future development as the pace is at a more 'natural' level. Social and spatial cohesion improves but at the expense of slower development along the key regional centres and less finances to pay for rail expansion into the region or to Europe.

In conclusion, the economy is the main driving force in the way the regional and city structures advance and how much funding is available for expanding the rail infrastructure within the region and to Europe. It is essential therefore, to have a clear Vision for not only Helsinki, but equally for the Nordic-Baltic Space generally, in order that the implementation of the drivers accommodate the swinging changes within the economy without losing sight of the overall way forward.

The Helsinki city-region scenarios are outlined below, firstly, grouped together for easier comparison, and secondly, each scenario is listed separately. These scenarios then form the Helsinki Vision 2050.

Scenarios by Douglas Gordon, Ilona Mansikka and Iiro Grönberg

**Scenario 1:
World Metropole**

**Scenario 2:
Network City-Region**

**Scenario 3:
Slow-growth City-Region**

Economy

- managing growth
- innovation
- agglomeration benefits
- Nordic Welfare Society
- Globalisation
- transport network/hubs
- international rail corridors
- development opportunities
- ageing population
- digitalisation of services and production
- strong Nordic-Baltic axis

- strong growth +GDP
- significant innovation through jobs and productivity
- increased jobs & productivity through agglomeration but struggling to maintain pro-active impact on job location
- transport hubs densify job clusters
- economic well-being growth grows quickly but struggling to cope with keeping Nordic Welfare Society as inequality may rise
- technological development prerequisite for fast growth
- coping with globalisation impact & staying the course
- digitalisation of services & easy-share rapid development
- Strengthens image of City world-wide and Nordic city-regions
- logistics widens throughout region to keep pace with legal directives

- moderate growth
- some degree of innovation
- less intense agglomeration leads to slower increase in jobs and productivity but improved pro-active on job location
- steadier level of transport hubs but reduced job numbers
- economic well-being moderate growth
- technological development reduced in line with moderate growth
- tolerable response to impact of globalisation
- digitalization slower but Open Data achieved and still free of charge
- improved image across Europe and Nordic city-regions but World-wide acknowledgement of Network City & Spatially cohesive region
- logistics change slower impact in region and costs increase over legal directives

- slow and modulated growth
- innovation less intense
- agglomeration benefits mainly to Regional centres but unlikely to contain sprawl expansion
- transport hubs concentrated to regional rail network in metropolitan area
- economic well-being slower growth (less cake to go around)
- technological development quite slow
- globalisation may overtake and threaten weaker city-regions
- digitalization costs grow threatening need to share or sell data to private companies
- image restricted to 'those in the know'
- increased costs of directives threaten loss of firms who move out to periphery to save costs, increasing sprawl; logistics of food production slow to take-off compared to EU

Social Cohesion

- housing + population growth
- immigration driver of population increase
- balance new development / regeneration of older areas
- dense urban structures
- culture and life values improve
- social/spatial segregation threat
- accessibility of services to improve
- but ageing population places strain on services

- huge increases in population, relatively
- two-thirds of population growth due to immigration
- baby-boom brings ageing population into better balance
- considerable new housing development intermixed with jobs
- diverse population structure & density
- significant growth in new development areas
- lot of work on maintaining safe neighbourhoods
- international culture permeates metropolises
- threat of spatial and social segregation grows
- service accessibility improves through network transport
- improved services and value for money through increased critical mass brings greater accessibility to services

- population growth moderate
- immigration half from Finland and half due to immigration
- worry over steady impact of ageing population increases
- new housing developments to regional centres and less inter-modal living, leading to more sprawl
- population structure at medium density
- better & controlled balance of new areas & regeneration of older areas
- less pressure on change leads to safer neighbourhoods
- international culture reduced within metropolis
- spatial and social segregation contained
- accessibility improvements dented due to less critical mass and reduced investment
- pressures reduced but critical mass not sufficient to lower costs of services, leading to increased taxation

- population growth minimal
- immigration slows significantly
- ageing population increases pressure on pensions and taxation
- housing development concentrated outside main centres - greater sprawl threat
- population structure less diverse
- significant growth in regeneration of older areas; less new development areas
- safe & secure neighbourhoods maintained
- international culture remains elusive to the metropolis
- spatial and social segregation reduced to a minimum
- accessibility improvements slow to periphery
- more relaxed but overall costs increase

Connectivity

- Network City-region (mobility radial/transversal/accessibility)
- Orbital investment speeds up polycentricity
- public transport improves urban densities
- Multi-modal transport alternatives (integrated tickets/boulevardisation)
- Sustainable modes (pedestrians, cycling, public transportation)
- ship tourism continues to rise
- travel costs increase
- International connection (Airports, harbours etc)

- Rail network expands rapidly into metropole
- high quality public transport investment leads to greater variety of multi-mode travel
- pedestrianisation/cycling widens in city centre and district centres
- increased critical mass through density = more services
- travel costs reduced due to increased compactness of structure
- opening of Great Northern Tunnel to EU & HST to St Petersburg direct link to International Airport; harbours continue to develop at fast pace leading to improved nodes
- widens northwards with extension of city centre into integrated metropolitan areas

- Rail network prioritised to metropolitan centres
- high quality public transport investment reduced leads to reduction in multi-mode transport options and slow extension of boulevards beyond city centre
- pedestrianisation of city centre and cycle paths at moderate pace
- critical mass slow to take off to deliver higher density & equivalent level of services
- costs slightly reduced due to partial improvement to structure but still some sprawl in periphery
- threatens delay of rail tunnel and Rail Baltica
- inter-regional connection expansion delayed to South of Finland only

- slow expansion of rail network into metropole
- multi-modal investment low; concentration of resources on maintaining existing network
- slower development & limited extension of boulevards; pedestrianisation of city centre struggles to achieve wide acceptance by businesses; cycling growth continues
- critical mass insufficient to increase density levels to required level for more services
- travel costs increase as a result of sprawling city-region structure
- Regional & Transnational rail development delayed until 2100
- inter-regional connections modified to maintain basic inter-city services

Climate Change & Environment

- carbon-neutral by 2035-2050
- environmental risks & impact grows
- 'green' economy produces faster solutions
- to Climate Change
- development threatens green & blue networks +ecology
- green belts slow pace of urban sprawl
- sea rises force minimum of 7 metre walls for development
- Bio diversity evermore important
- Energy revolution required

- carbon neutral city and region achieved by 2035
- risks in balance due to innovation, but pollution probably increases with density
- green networks under threat from development; likewise brownfield development may be used up quickly leading to pressure on green space
- innovation leads to reduction in energy usage
- environmental threats grow but emissions balanced
- biodiversity under threat from development expansion

- carbon neutral city and region achieved by 2070
- risks more moderate, but less investment to counter impact though pollution and emissions under control
- green networks still under threat from development but much less so; likewise brownfield development not used up so quick leading to less pressure on green space, so brownfield development and green space in balance
- energy usage struggling to accommodate demand
- environmental threats grow but emissions balanced
- biodiversity more in balance

- carbon neutral city and region achieved by 2100
- environmental risks softened and are stabilised
- Regional green belt maintains greater sustainability but cannot stop urban sprawl beyond its borders
- energy usage continues to outgrow demand
- environmental threats reduced and emissions balanced
- biodiversity enhanced

Spatial Cohesion

- polycentric city-regions
- centralisation - urbanisation
- development of network regional centres
- new Nordic city-region governance
- distribution of regional development impact
- strategic plans (pro-active/reactive)
- rail corridors promote greater development
- Nordic-Baltic transnational role in Europe

- dense, polycentric metropolis framework develops quickly but greater uneven development in the periphery
- densification of city-region through development corridors
- regional centres expand rapidly to cope with new development and change
- improves city-regional balance by directing investment to city centre and regional centres
- Metropolitan Plan has difficulty keeping-up with rapid change
- European role strengthened through Rail Baltica, Great Tunnel & HST to St Petersburg

- polycentric structure evolves slowly
- urbanization of development corridors limited to north and west corridors; densification of suburbs and region limited to key outlying centres
- compact city but city-regional centres progression moderate
- city-regional imbalance westwards
- Metropolitan Plan controls change more sustainably
- European role maintained by linking up to Rail Baltica but Rail Tunnel delayed

- existing regional centres upgraded and maintained
- densification of city-region minimal, leading to wider urban sprawl; suburbs reluctant to embrace intensification
- compact city achieves improved spatial cohesion but region catching up slowly
- improves city-regional balance by directing investment
- Regional Plan places priority on each city/town upgrading independently
- European role undermined by lack of investment in Rail Tunnel and HST

Scenario 1: World Metropole

Economy

- managing growth
- innovation
- agglomeration benefits
- Nordic Welfare Society
- Globalisation
- transport network/hubs
- international rail corridors development opportunities
- ageing population
- digitalisation of services and production
- strong Nordic-Baltic axis

- strong growth +GDP
- significant innovation through jobs and productivity
- increased jobs & productivity through agglomeration but struggling to maintain pro-active impact on job location
- transport hubs densify job clusters
- economic well-being growth grows quickly but struggling to cope with keeping Nordic Welfare Society as inequality may rise
- technological development prerequisite for fast growth
- coping with globalisation impact & staying the course
- digitalisation of services & easy-share rapid development
- Strengthens image of City world-wide and Nordic city-regions
- logistics widens throughout region to keep pace with legal directives

Social Cohesion

- housing + population growth
- immigration driver of population increase
- balance new development / regeneration of older areas
- dense urban structures
- culture and life values improve
- social/spatial segregation threat
- accessibility of services to improve
- but ageing population places strain on services

- huge increases in population, relatively
- two-thirds of population growth due to immigration
- baby-boom brings ageing population into better balance
- considerable new housing development intermixed with jobs
- diverse population structure & density
- significant growth in new development areas
- lot of work on maintaining safe neighbourhoods
- international culture permeates metropolis
- threat of spatial and social segregation grows
- service accessibility improves through network transport
- improved services and value for money through increased critical mass brings greater accessibility to services

Connectivity

- Network: City-region (mobility radial/transversal/accessibility)
- Orbital investment speeds up polycentricity
- public transport improves urban densities
- Multi-modal transport alternatives (integrated ticket/boulevardisation)
- Sustainable modes (pedestrians, cycling, public transportation)
- ship tourism continues to rise
- travel costs increase
- International connection (Airports, harbours etc)

- Rail network expands rapidly into metropole
- high quality public transport investment leads to greater variety of multi-mode travel
- pedestrianisation/cycling widens in city centre and district centres
- increased critical mass through density = more services
- travel costs reduced due to increased compactness of structure
- opening of Great Northern Tunnel to EU & HST to St Petersburg direct link to International Airport; harbours continue to develop at fast pace leading to improved nodes
- widens northwards with extension of city centre into integrated metropolitan areas

Climate Change & Environment

- carbon-neutral by 2035-2050
- environmental risks & impact grows
- 'green' economy produces faster solutions
- to Climate Change
- development threatens green & blue networks +ecology
- green belts slow pace of urban sprawl
- sea rises force minimum of 7 metre walls for development
- Bio diversity evermore important
- Energy revolution required

- carbon neutral city and region achieved by 2035
- risks in balance due to innovation, but pollution probably increases with density
- green networks under threat from development; likewise brownfield development may be used up quickly leading to pressure on green space
- innovation leads to reduction in energy usage
- environmental threats grow but emissions balanced
- biodiversity under threat from development expansion

Spatial Cohesion

- polycentric city-regions
- centralisation - urbanisation
- development of network regional centres
- new Nordic city-region governance
- distribution of regional development impact
- strategic plans (pro-active/reactive)
- rail corridors promote greater development
- Nordic-Baltic transnational role in Europe

- dense, polycentric metropolis framework develops quickly but greater uneven development in the periphery
- densification of city-region through development corridors
- regional centres expand rapidly to cope with new development and change
- improves city-regional balance by directing investment to city centre and regional centres
- Metropolitan Plan has difficulty keeping-up with rapid change
- European role strengthened through Rail Baltica, Great Tunnel & HST to St Petersburg

Scenario 2: Network City-Region

Economy

- managing growth
- innovation
- agglomeration benefits
- Nordic Welfare Society
- Globalisation
- transport network/hubs
- international rail corridors development opportunities
- ageing population
- digitalisation of services and production
- strong Nordic-Baltic axis

- moderate growth
- some degree of innovation
- less intense agglomeration leads to slower increase in jobs and productivity but improved pro-active on job location
- steadier level of transport hubs but reduced job numbers
- economic well-being moderate growth
- technological development reduced in line with moderate growth
- tolerable response to impact of globalisation
- digitalization slower but Open Data achieved and still free of charge
- improved image across Europe and Nordic city-regions but World-wide acknowledgement of Network City & Spatially cohesive region
- logistics change slower impact in region and costs increase over legal directives

Social Cohesion

- housing + population growth
- emigration driver of population increase
- balance new development / regeneration of older areas
- dense urban structures
- culture and life values improve
- social/spatial segregation threat
- accessibility of services to improve
- but ageing population places strain on services

- population growth moderate
- immigration half from Finland and half due to immigration
- worry over steady impact of ageing population increases
- new housing developments to regional centres and less inter-modal living, leading to more sprawl
- population structure at medium density
- better & controlled balance of new areas & regeneration of older areas
- less pressure on change leads to safer neighbourhoods
- international culture reduced within metropolis
- spatial and social segregation contained
- accessibility improvements dented due to less critical mass and reduced investment
- pressures reduced but critical mass not sufficient to lower costs of services, leading to increased taxation

Connectivity

- Network City-region (mobility radial/transversal/accessibility)
- Orbital investment speeds up polycentricity
- public transport improves urban densities
- Multi-modal transport alternatives (integrated tickets/boulevardisation)
- Sustainable modes (pedestrians, cycling, public transportation)
- ship tourism continues to rise
- travel costs increase
- international connection (Airports, harbours etc)

- Rail network prioritised to metropolitan centres
- high quality public transport investment reduced leads to reduction in multi-mode transport options and slow extension of boulevards beyond city centre
- pedestrianisation of city centre and cycle paths at moderate pace
- critical mass slow to take off to deliver higher density & equivalent level of services
- costs slightly reduced due to partial improvement to structure but still some sprawl in periphery
- threatens delay of rail tunnel and Rail Baltica
- inter-regional connection expansion delayed to South of Finland only

Climate Change & Environment

- carbon-neutral by 2035-2050
- environmental risks & impact grows
- 'green' economy produces faster solutions to Climate Change
- development threatens green & blue networks +ecology
- green belts slow pace of urban sprawl
- sea rises force minimum of 7 metre walls for development
- Bio diversity evermore important
- Energy revolution required

- carbon neutral city and region achieved by 2070
- risks more moderate, but less investment to counter impact though pollution and emissions under control
- green networks still under threat from development but much less so; likewise brownfield development not used up so quick leading to less pressure on green space, so brownfield development and green space in balance
- energy usage struggling to accommodate demand
- environmental threats grow but emissions balanced
- biodiversity more in balance

Spatial Cohesion

- polycentric city-regions
- centralisation - urbanisation
- development of network regional centres
- new Nordic city-region governance
- distribution of regional development impact
- Strategic plans (pro-active/reactive)
- rail corridors promote greater development
- Nordic-Baltic transnational role in Europe

- polycentric structure evolves slowly
- urbanization of development corridors limited to north and west corridors; densification of suburbs and region limited to key outlying centres
- compact city but city-regional centres progression moderate
- city-regional imbalance westwards
- Metropolitan Plan controls change more sustainably
- European role maintained by linking up to Rail Baltica but Rail Tunnel delayed

Scenario 3: Slow-growth City-Region

Economy

- managing growth
- innovation
- agglomeration benefits
- Nordic Welfare Society
- Globalisation
- transport network/hubs
- international rail corridors development opportunities
- ageing population
- digitalisation of services and production
- strong Nordic-Baltic axis

- slow and modulated growth
- innovation less intense
- agglomeration benefits mainly to Regional centres but unlikely to contain sprawl expansion
- transport hubs concentrated to regional rail network in metropolitan area
- economic well-being slower growth (less cake to go around)
- technological development quite slow
- globalisation may overtake and threaten weaker city-regions
- digitalization costs grow threatening need to share or sell data to private companies
- image restricted to 'those in the know'
- increased costs of directives threaten loss of firms who move out to periphery to save costs, increasing sprawl; logistics of food production slow to take-off compared to EU

Social Cohesion

- housing + population growth
- immigration driver of population increase
- balance new development / regeneration of older areas
- dense urban structures
- culture and life values improve
- social/spatial segregation threat
- accessibility of services to improve
- but ageing population places strain on services

- population growth minimal
- immigration slows significantly
- ageing population increases pressure on pensions and taxation
- housing development concentrated outside main centres - greater sprawl threat
- population structure less diverse
- significant growth in regeneration of older areas; less new development areas
- safe & secure neighbourhoods maintained
- international culture remains elusive to the metropolis
- spatial and social segregation reduced to a minimum
- accessibility improvements slow to periphery
- more relaxed but overall costs increase

Connectivity

- Network City-region (mobility radial/transversal/accessibility)
- Capital investment speeds up polycentricity
- public transport improves urban densities
- Multi-modal transport alternatives (integrated tickets/boulevardisation)
- Sustainable modes (pedestrians, cycling, public transportation)
- ship tourism continues to rise
- travel costs increase
- international connection (Airports, harbours etc)

- slow expansion of rail network into metropole
- multi-modal investment low; concentration of resources on maintaining existing network
- slower development & limited extension of boulevards, pedestrianisation of city centre struggles to achieve wide acceptance by businesses; cycling growth continues
- critical mass insufficient to increase density levels to required level for more services
- travel costs increase as a result of sprawling city-region structure
- Regional & Transnational rail development delayed until 2100
- inter-regional connections modified to maintain basic inter-city services

Climate Change & Environment

- carbon-neutral by 2035-2050
- environmental risks & impact grows
- 'green' economy produces faster solutions to Climate Change
- development threatens green & blue networks + ecology
- green belts slow pace of urban sprawl
- sea rises force minimum of 7 metre walls for development
- Bio diversity evermore important
- Energy revolution required

- carbon neutral city and region achieved by 2100
- environmental risks softened and are stabilised
- Regional green belt maintains greater sustainability but cannot stop urban sprawl beyond its borders
- energy usage continues to outgrow demand
- environmental threats reduced and emissions balanced
- biodiversity enhanced

Spatial Cohesion

- polycentric city-regions
- centralisation - urbanisation
- development of network regional centres
- new Nordic city-region governance
- distribution of regional development impact
- strategic plans (pro-active/reactive)
- rail corridors promote greater development
- Nordic-Baltic transnational role in Europe

- existing regional centres upgraded and maintained
- densification of city-region minimal, leading to wider urban sprawl; suburbs reluctant to embrace intensification
- compact city achieves improved spatial cohesion but region catching up slowly
- improves city-regional balance by directing investment
- Regional Plan places priority on each city/town upgrading independently
- European role undermined by lack of investment in Rail Tunnel and HST



References

- Demos Helsinki. 2015. Terveys 2050. TEKES.
- Duhr, Colomb and Nadin. European Spatial Planning and Territorial Cooperation. Routledge. 2010
- ESPON. Territorial Impacts of EU Economic Policies and Location of Economic Activities, Final Report, Vol 1, Executive summary, Luxembourg. 2006c.
- ET2050 – Territorial Scenarios and Visions for Europe. Final Report. EU. 2015.
- European Commission. 2005. Trans-European Transport Network - TEN-T priority axes and projects.
- Guardian. 7.5.2017. The Great British Brexit robbery: how our democracy was hijacked. Carole Cadwalladr.
- Guardian. 31.10.2017. UN warns of 'unacceptable' greenhouse gas emissions gap.
- Guardian. 20.11.2017. Battered by extreme weather. Dana Nuccitelli.
- Global Policy Forum. 2017. Internet pages on 'The threat of Globalisation. <https://www.globalpolicy.org/global-taxes/47948-the-threat-of-globalization.html>
- Greg Clark. Future Helsinki Region 2030 (PPT Helsinki 1/2017)
- Gordon, Douglas. Gulf of Finland Spatial Vision. 2007. Helsinki City Planning department.
- Gordon, Douglas. North-South Interface. 2007. Helsinki City Planning department
- Hall, Peter. The Polycentric Metropolis. 2006
- Helsingin Sanomat newspaper, 23.04.2017. Interview with Helsinki's harbour director.
- Helsingin Sanomat newspaper, 9.05.2017. Hurjat vientiluvut yllättivät. Massive increase in export growth.
- Helsinki-Uusimaa harbours. http://www.uudenmaanliitto.fi/files/19943/Etela-Suomen_liikennekaytavien_logistiikkaselvitys.pdf // http://www.uudenmaanliitto.fi/files/15162/Logistiikan_kehityskuva._4._vm-k._E_136_-_2014.pdf
- Helsinki-Uusimaa. Hillineutrali Uusimaa 2050 Tiekartta. 2015.
- Helsinki-Uusimaa estimates on Estonian workforce in Finland. <http://finestlink.niili.net/wp-content/uploads/2015/12/pre-feasibility-study.pdf>
- Northern Growth Zone. Turku. 2017. <https://www.turku.fi/en/northern-growth-zone-creates-success>
- OECD Regional Development Working Paper 2013/19. Nauwelaers, C et al. Case of Helsinki-Tallinn.
- Petit and Gordon (ed) Location dynamics of cluster formation and public sector response - can planning influence the process? Metrex. 2015. City of Helsinki Planning Department.
- SYKE. Research and Development [http://www.syke.fi/en-US/Research_Development/Sustainability_of_land_use_and_the_built_environment/Stockholm_beats_the_Helsinki_region_in_i\(30031\).](http://www.syke.fi/en-US/Research_Development/Sustainability_of_land_use_and_the_built_environment/Stockholm_beats_the_Helsinki_region_in_i(30031).)
- Söderström, Panu et al. Urban form in the Helsinki and Stockholm city regions – Development of pedestrian, public transport and car zones (report in English). 2015.
- Uudenmaan Liitto. 2017. Matkailun Aluerakenne Uudellamaalla 2050
- YLE News. 12.11.2016. http://yle.fi/uutiset/osasto/news/finland_negotiating_high-speed_hyperloop_connection_between_helsinki_and_stockholm/9289255

OUTCOMES

Nordic-Baltic Space OUTCOMES

CONCLUSIONS TO THE TRANSNATIONAL NORDIC-BALTIC SPACE DEVELOPMENT PERSPECTIVE

The Nordic-Baltic Space project, set up under the auspices of METREX and led by Helsinki and Stockholm as lead partners, was a macro-region analysis that created a 'transnational perspective' for the Nordic-Baltic Space to make a joint 'framework for action' as a set of intentions to implement over a long-term timescale. 'Working together' was the key philosophy behind the project's ideals. The aim is to implement the findings of this report and to maintain close cooperation in the future.

As a 'Transnational Development Perspective', the Nordic-Baltic Space aims to guide the future development changes across the Nordic-Baltic city-regions through better cooperation with respect to initiatives on climate change and energy, on the economy, social and spatial cohesion, connectivity and the environment.

In doing so, this macro-regional report supports the EU's territorial cohesion policy for the Baltic Sea Region and provides a framework for joint action between its cities and regions. Action primarily focuses on spatial policies and programmes at the city and regional levels in respect of managing change set within a polycentric structure. Furthermore, the initiative analysed the results of ESPON's ET 2050 'Making Europe Open and Polycentric' Vision for Europe. This was used as a basis to translate the ESPON findings into practice through polycentric clusters and corridors in relation to the Nordic-Baltic Space.

The project's methodology and framework consisted of meetings taking place at Metrex Conferences twice a year, with follow-up discussions throughout the intervening periods. Thematic discussions with a spatial planning approach followed a common way forward using a step-by-step work plan and included a framework that addressed 'Drivers of Change' at the macro level followed by examining 'Key Challenges' and 'Strengths and Weaknesses' SWOT analysis. By doing so, the drivers, challenges and SWOT enabled a better understanding of the Space's key issues and problems to be addressed at that level, which led in turn to formulating a joint scenario and joint vision for the future. The joint vision created a framework to implement a 'set of agreed intentions' as to what needs to be done over the long-term period up to 2050 for the Nordic and Baltic city-regions to cooperate together to achieve its aims and implement the policies set down in the intentions.

The set of intentions was then interpreted into a strategic set of maps for the Nordic-Baltic Space.

The Nordic-Baltic macro-region was divided into 'mini' macro zones showing the city-regions closest allies in spatial terms that manage change. For this purpose, three 'mini-zones' were formulated – Stockholm-Helsinki-St.Petersburg-Tallinn, another zone stretching from Helsinki 'North to South' through the Baltic capitals to Warsaw, then connecting to the Pentagon in Berlin. The third zone consisted of Oslo-Gothenburg-Copenhagen/Malmö-Stockholm.

A 'blue loop' symbolically tied them together within a framework of spatial cooperation.

Conclusion on a macro-regional analysis of the Nordic-Baltic Space: competition or complementarity?

Duhr et al (ibid) adopt the view that 'regional competitiveness' policy in the EU is normally associated with the internal growth potential and deployment of its 'territorial capital', meaning, assets of a region in terms of economic, cultural, social and environmental factors that contribute to the differentiation in regional growth. Each region has its own productiveness, fiscal attributes, wage cost issues, and potential to increase the value of capital assets.

ESPON (2006c:31), on the other hand, refers to 3 key drivers of regional competitiveness, namely, traditional factors of economic diversity, connectivity, human capital, or specialisations, but includes a second driver, of modern factors such as synergy, quality of life, creativity and innovation, to be added to a third driver stated as governance factors, including strategy, vision, and implementation capability.

Hence, EU policy has for the past two decades concentrated on innovation through networks and clusters (Petit and Gordon, editors, Location dynamics of cluster formation) that share information and look at joint solutions to problems.

Analysing the different relationships that exist between the Nordic and Baltic city-regions it would appear that the key role of competitiveness contributes primarily to the strengthening of a region through its own internal dynamics. Complementarity requires strong governance with the intention of coordinating between other city-regions

with a specific aim of working together over key issues such as infrastructure, movement of human resources, commercial partnerships and exchange of knowledge and information.

The European Commission defines complementarity as ‘the optimal division of labour between different stakeholders in order to make the best possible use of the human and economic resources’ (European Commission 2007, p5). This requires each city-region to concentrate on local activities where there is comparative advantage. Complementarity is seen mainly to act at the international level (EC *ibid*).

In the Nordic-Baltic Space, it can be seen that cooperation and complementarity will take place at the institutional level between cities, city-regions and State authorities. Thus, city-regions whilst being competitive with one another at the economic level, can specifically build cooperation networks that target transport infrastructural improvements to improve connectivity and the effectiveness of local and regional policies and instruments, particularly in achieving low carbon economies. The Nordic-Baltic Space through its policies and joint set of intentions aims to address these key aspects.

Conclusion on ‘drivers of change’

As part of the Nordic-Baltic Space evaluation techniques, it was decided to use an approach which adopted the key ‘drivers of change’ to analyse what is happening across the Space with respect to key issues of climate change and energy, social relations, the economy, connectivity and spatial structure and environment.

The key drivers sought to provide how change comes about and how it impacts spatially within our city-regions. By analysing these central questions surrounding spatial planning, it was possible to determine what needs to be done. Increases in population and enterprises in the Nordic area may be taking place at a time when some of the

Baltic cities and regions are experiencing major changes to their economies, which has created spatial problems in the regions.

It is anticipated that over the next 30 years, the Nordic-Baltic city-regions aim to mitigate against climate change and go towards a low-carbon resource-efficient economy and spatial structure. Social cohesion may grow in significance through increased migration and population size, which in turn will contribute to urbanising the city-regions and make the areas more dense as integrated polycentric structures improve over time.

Development growth will probably be uneven across the Space, but over a long-term perspective, the aim will be to reducing regional disparities between regions and within each city-region. One of the essential drivers that may contribute to reducing disparities may be through improved connectivity by building new, upgraded rail lines that will provide greater contact between the regions and help build corridors of development. This should speed up agglomeration benefits and help move towards polycentric city-regional structures across the Space.

Conclusion on ‘key challenges’

Key challenges addressed how the Nordic-Baltic Space can manage change and be more integrated in working out solutions to the problems. Learning from one another and sharing work experiences, spatial tools and policies will go a long way to contribute to an integrated Space.

Spatial cohesion aims to make our cities and regions more balanced by promoting new housing and workplace development evenly across the spatial structure. Our Nordic and Baltic city-regions require being more dynamic and pro-active in meeting the economic challenges of moving towards a greener economy. These challenges will not be easy to overcome as many municipalities within a city-region are competing for new residents

and to attract jobs to their area.

Critical mass will be an essential element for city-regions to adapt in a changing world and cities in particular require urbanising and extending their inner cores out to the suburbs. In doing so, it will help to combat urban sprawl in the outer regions. New development could be placed inside new rail, metro or tram public transport corridors.

Spatial planning can help place future development into the required areas. Spatial planning can also lead in meeting the biggest challenge of climate change and use of energy resources. Wind and solar power, renewables and a move towards a carbon-free path will be essential throughout the entire Space.

Needs will require to be prioritized to take account of the use of resources and clearer criteria and priorities adopted to integrate the spatial, economic, social and environmental processes in a collective way to enable the challenges to be met and minimised.

Conclusion on Strengths and Weaknesses (SWOT)

Evaluating the various transnational strengths and weaknesses across the Space allowed the city-regions to understand better the trends and information relevant today to make changes for the future.

SWOT was used as a strategic technique in spatial planning to determine the key factors in play in seeking out future objectives for the Nordic-Baltic Space. The SWOT analysis adopted the key drivers as the basis for examining the different categories within SWOT. The drivers also helped create an integrated picture for the Space’s global perspective.

There were notable differences between the Nordic and Baltic areas, such as demographic changes, how dynamic the economies were likely to be in the future, or financial opportunities to contribute much needed transport infrastructure across the Space.

Joint SWOT Analysis for the Nordic-Baltic Space

This is a SWOT analysis from a macro-regional perspective:

SPATIAL	
Strengths	Weaknesses
<ul style="list-style-type: none"> collective Nordic identity, but less so for the Baltic city-regions compact, high-density connected inner cities with high quality environments Plan-led regional structures, long term strategic planning and integrated public rail transport network stable conditions – a lot of green space and maritime settings strong Regional Plans tend to be legally binding – ensures good and adaptable planning laws 	<ul style="list-style-type: none"> Nordic-Baltic Space seen as peripheral in European and global context Spatially isolated metropolises with long distances between them hinders (within the Baltic Space) to other big cities in the BSR sprawling regions no effective integrated regional governance in several city-regions within the Space/ reorganization climate change
Opportunities	Threats
<ul style="list-style-type: none"> Strong polycentric integration of cities and regions and consensus over climate change Regional development uses brownfield sites and reduces loss of green space Maritime waterfronts and green/blue integrated networks in all Nordic-Baltic Space city-regions Improving International Rail Connection, especially within the Space Future Spatial Visions aim to connect city-regions to work together and participate in EU metropolitan networks Nordic-Baltic city-regions can act as the ‘spur’ for new rail corridors linking them together 	<ul style="list-style-type: none"> Lack of EU cooperation could isolate Nordic-Baltic Space city-regions spatial segregation, especially in cities municipalities compete for new investment, jobs and people leading to unplanned interventions urbanised metropolitan areas growing at the expense of rural communities less regard for uncertainties within planning process
SOCIAL	
Strengths	Weaknesses
<ul style="list-style-type: none"> sustainable but strong growth of population Nordic Welfare well-being, safe region, social cohesion, no slums, low corruption high-quality Universities and IT skill levels education levels are one of the highest in the World & free policies aimed at minimizing disparities within region Long term strategic prognosis linked to investment for people across the Nordic-Baltic Space equal opportunities – greater gender equality good work-life-balance (work-family reconciliation policies) for both men & women due to good public child and elderly care immigration of educated labour force brings tax advantages 	<ul style="list-style-type: none"> ageing population growing levels of immigration place pressure on health care & welfare weak employment opportunities for immigrants compared to locals, which may lead to segregation lack of critical mass outside of main cities in regions possibly growth may be too rapid, can’t cope high level of house production unable to keep up with demand makes for rising house prices and rents lack of equality and uneven social infrastructure between districts throughout city-regions
Opportunities	Threats
<ul style="list-style-type: none"> migration brings new skills and metropolitan dimension to city and regional living good balance of youth and families in city-regions growing share of healthy elderly who can engage themselves and require also new services Maintain diversity and minimize class segregation through education Better use of public space through metropolitan mixed land-uses Increasing urbanisation Healthy region through decreasing energy and carbon emissions 	<ul style="list-style-type: none"> possibility of immigrants not integrating/ or low-skilled people moving from small towns to big cities, de-population of region into major urban centres Baltic city-regions losing population to rest of EU for better salaries fast-growth risk of low-quality developments families moving out to the fringes seeking cheaper housing social-economic segregation of classes, areas and regions not succeeding in integrating migrants to work and housing markets cyber terrorism changing values and preferences increasing social tensions from migration

ECONOMIC	
Strengths	Weaknesses
<ul style="list-style-type: none"> ■ city-regions are driving force for strong growth and decoupling of energy use ■ city-regions are economic hubs of knowledge and innovative industries, strong R+D, & high levels of education and skilled workforce ■ International Airports and World-wide connections ■ High-tech goods harbours, passenger ports and City Airports ■ free education 	<ul style="list-style-type: none"> ■ unconnected with mainland Europe; on periphery of EU ■ lack of international headquarters, generally, with Stockholm and Oslo the exceptions ■ high rate of investment in real estate creates imbalance ■ some city-regions lack national priority in infrastructure ■ insufficient labour force in many branches of IT
Opportunities	Threats
<ul style="list-style-type: none"> ■ Nordic and Baltic region's role in a global world ■ development land significant for many years to come ■ IT remains at the cutting edge and space for expanding sectors exists ■ Stockholm-Copenhagen axis to the EU strong ■ Tallinn-St Petersburg joint development axis with Helsinki and Riga regions with Rail Baltica corridor ■ major tourist and business companies ■ green growth - regional innovation in cleantech and digital companies ■ city-Regions accelerate innovation ■ city-Regions can become 'driver of change' ■ promote Universities as 'Anchor' institutions ■ cruise-ship destinations 	<ul style="list-style-type: none"> ■ climate change, globalization, rising terrorism ■ EU and Russian relationships require improvement to open up markets ■ increasingly longer-distances home to work ■ digital terrorism ■ ageing population in relation to working population ■ rising house prices excludes future generations ■ Nordic-Baltic Space not part of EU Pentagon ■ populism across the EU
MOBILITY	
Strengths	Weaknesses
<ul style="list-style-type: none"> ■ Regional public transport integrated networks ■ Using virtual mobility, digital and IT know-how in improving mobility and developing services further ■ International, National and Metropolitan transport hubs in good shape ■ increasing cycling and walking ■ toll system in Oslo and Stockholm brings greater financial and regulation rewards 	<ul style="list-style-type: none"> ■ still too much dependency upon car in region ■ air travel dependency ■ low spatial accessibility in a European context ■ TEN-T networks are not fully developed ■ missing high speed railway connections between city-regions within the Space
Opportunities	Threats
<ul style="list-style-type: none"> ■ High-Speed Trains development will improve connectivity along corridors and axes of city-regions to Europe and Russia ■ new investment and greater cooperation in public transport, the environment and Information networks will provide better balance structurally ■ future regional development mainly around major rail infrastructure interchanges ■ urbanisation of city-regions will be strengthened through greater international connectivity such as Rail Baltica ■ freight harbours integrated part of TEN-T ■ network, but needs to be further developed ■ car-sharing, electric bikes, digital self-drive cars 	<ul style="list-style-type: none"> ■ continued dependency on flight connections impacts negatively on climate change ■ Internet of Things not being protected in communications threatens stability ■ poor accessibility to outer fringes reduces economic potential ■ possible reduced levels of finance to support infrastructure investment

Joint Scenario for the Nordic-Baltic Space

The joint outcome on SWOT reflected the city-regions outlook for the Space's future and laid down the foundations for building the joint scenario and vision.

The Nordic-Baltic Space scenario is a result of an integrated process, which analysed the collective views of the participating city-regions into a joint summary of a single scenario that represents the dynamics and potential of the future Space.

The key driving forces within the scenarios, 'drivers of change', are a collection of criteria or variables as to how to assess the future in managing city-region structures in a sustainable way. The key drivers influence the scenarios by analysing significant changes that may take place. The key drivers are formulated around climate change and energy, the economy, social cohesion, connectivity and spatial criteria.

A number of alternative scenarios were discussed in relation to the drivers. The key question for the joint scenario was what key issues can adequately describe the long-term strategy to meet future challenges in the economy, in social cohesion, the city-regional transport infrastructure, climate change and the overall balance of development between the cities and their regions. The process centred upon selecting the most appropriate ideas from various scenarios presented to create a single, joint scenario and by a course of elimination, a number of key points were commonly agreed.

The timeframe is 2050.

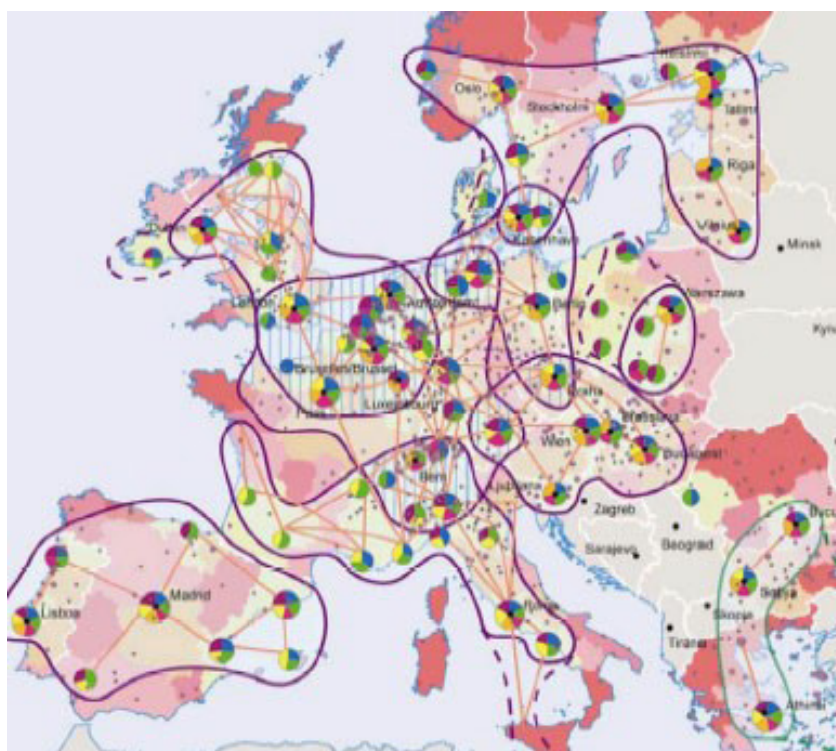
The joint Nordic-Baltic Space Scenario is outlined below:

The joint Vision for the whole of the Nordic-Baltic Space is displayed thereafter as a key outcome to demonstrate the fluidity of the process that the Metrex project employed during the course of the Scenario-Vision context.

Economy - macro

- Moderate to strong growth, at uneven intervals and unevenly spread within the macro-region
- Innovation in key sectors of the 'green' economy, energy and technological digital development as a pre-requisite for growth
- Moderate agglomeration benefits together with productivity increases, lead to moderate growth in jobs in the city-regions. This can be offset by improved pro-active city-regional coordination, improving job location in regional centres (e.g. close to the city centres)
- Improving living standards, but city-regions struggle to keep Nordic Welfare Society principles intact, while inequality and spatial segregation may increase
- Globalization threatens the stability of peripheries whilst helping regional cores closest to central city, leading to further increased polarisation
- The geo-political situation will change in time and this may have an impact both economically and socially
- Increased development of public transport infrastructure, such as rail, tram and metro transport hubs will lead to densification and concentration of jobs
- Logistics become more centralised, due to internet retailing and location near the largest markets
- Digitalisation of services enables 'Open Data' to be achieved free of charge, prompting the Nordic-Baltic Space sphere of influence to act as an alternative global model, also strengthening cohesion in city-regions
- Strong Nordic-Baltic axis improves image across Europe and Worldwide with acknowledgement of Network City & Spatially Cohesive city-regions
- Innovative local food production tethered to digital distribution achieves global support
- Longer growing season and reduced heating and general costs associated with long winters, due to climate change

ESPON GIZ potential. ET2050 – Territorial Scenarios and Visions for Europe. Final Report. Making Europe Open and Polycentric. EU. 2015.



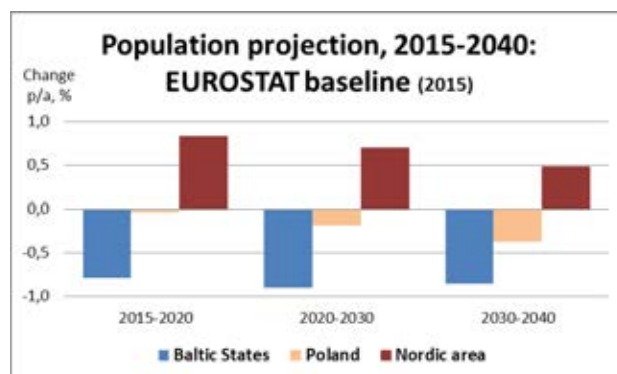
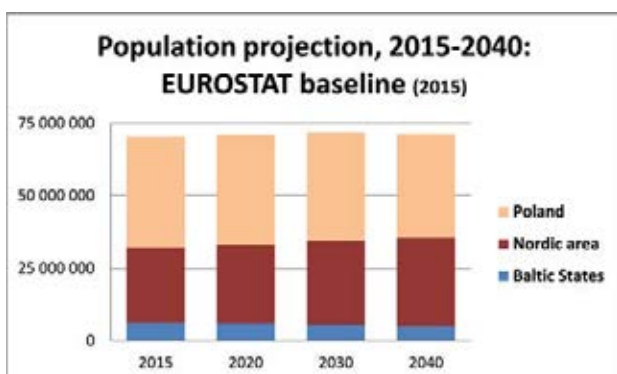
Social

- Demographic changes are anticipated over the long term (see EUROSTAT projections below)
- Population growth across the macro-region as a whole will be fast to moderate as it undulates between now and 2050
 - population decline is likely to continue across the Baltic states, whereas the Nordic countries will experience long-term population growth
 - immigration will prevent long-term decline in the total population of the macro-region as a whole, at the same time that net emigration will continue in the Baltic states.
 - growing areas will experience development pressures, whilst peripheral regions are likely to experience decline
 - ageing population will push up the pressure and costs of public services, leading to increased taxation pressures
 - Spatially compact growth and continued migration will have social impacts
 - International culture improves within each city-region
 - Political solutions will be found to address the challenge of spatial and social segregation in some urban locations, due to rising wealth within city cores
 - Urban growth is supported by improved transport, providing critical mass in some areas, while services may continue to be inadequate in the periphery.



Oslo Opera House. Image: dg

- Travel costs increase as a result of increased investment in city-region network structure and new international lines of connectivity
- Housing
 - Intensity of rising house prices in cities likely, as city-regions plan to mitigate urban sprawl, leading to even more concentration of homes within the central core.
 - To counteract the challenges of high centralization, at the same time combatting urban sprawl and promoting more spatially cohesive/ balanced city-regions, growth in new regional centres is prioritized, supported by polycentric rail networks
 - Flats are likely to become smaller in order to reduce energy costs and achieve zero carbon emissions
 - Demographic changes lead to rings of high density in city centres and regional centres, falling rapidly towards the periphery
 - Immigration improves the demographic balance as they represent younger groups, but the ageing population trend will still continue, thereby increasing pressure on taxation and pensions
 - international culture improves within each city-region

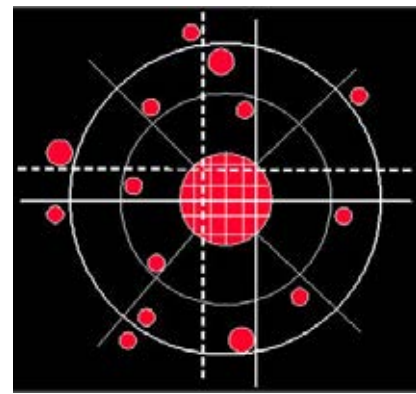


Connectivity

- Strategic goals and measures will have an impact on connectivity:
 - Sustainable and green transport: both economic and environmental imperatives call for alternative solutions to road transport
 - Climate targets become sufficiently strong to improve sustainable mobility
 - Taxation of air traffic could strengthen the demand for HST networks
 - Mutual learning for low-emission transport technologies and automated driving give results across the macro-region
 - increase in walking and cycling within city-regions and reduction in car usage
- Strong priority for rail transport for future connectivity
 - Rail networks are prioritised to metropolitan centres, including integrated city and regional tickets to enable multi-modal travel
 - High quality public transport investments lead to higher densities in city and spreads out to the city-regional structure over time
 - Expanding rail networks help urbanise the city-region and begin to limit sprawl but at too modest a pace, so need to promote more investment in public rail transport
 - Basic inter-regional connections maintain inter-city services to other parts of countries
 - Critical mass insufficient to increase density levels to required level for more transport services, except in regional development corridors and sub-cores
 - Orbital rail and metro investments important for city-region development
- Intra-urban transport improvements and expansions are prioritised, especially the Stockholm-Metro and Oslo-Metro networks, due to surge in population
- Harbours continue to develop at city and regional levels leading to improved nodes with separation of goods and passengers into separate terminals, while cruise-based tourism continues to rise

Connectivity corridors

- Baltic States relative competitiveness changes and no longer has an economic advantage due to South East Asian economies rise in importance
- Increased linkages between the neighbouring metropolitan areas in Western Scandinavia, and a potential to develop into a competitive and attractive macro-region, with cross-border economic linkages and integration of labor markets.
- Rail Baltica and Helsinki-Tallinn tunnel provide extra growth on a north-south axis to connect city-regions and stimulate polycentric structures. This in turn strengthens ties to the St Petersburg axis along a west-east corridor



Polycentric structure. City of Helsinki.

Ten-T corridors. EU report.

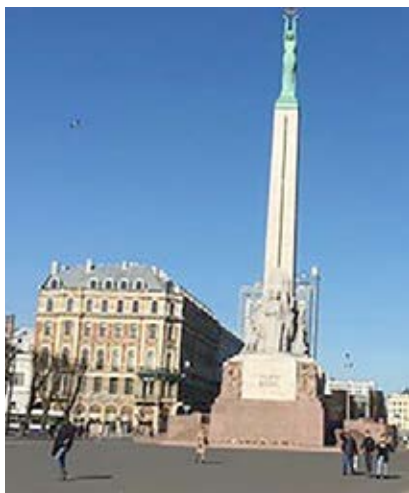


- Stockholm – Malmö - Copenhagen corridor intensifies links to the EU’s ‘Pentagon Core’ GIZ (global integration zone) faster than anticipated
- Oslo – Gothenburg – Malmö - Copenhagen slower to develop transnational agglomeration benefits as HST rail development anticipated late in the period - a full cost-benefit analysis is recommended.
- Stockholm – Malmö – Copenhagen develops as a strong axis, providing extra agglomeration benefits
- Oslo – Stockholm slower to develop transnational agglomeration benefits as HST rail development anticipated late in the period
- Tallinn-Riga-Kaunas/Vilnius-Warsaw TEN-T corridor contributes significantly towards polycentric city-region development in Baltic area of the Space
- opening of Helsinki-Tallinn Tunnel to Europe implements TEN-T policy and together with the new HST link to St Petersburg spurs economic growth along the Rail Baltic corridor to Warsaw as well as extending the Baltic corridor to the North

Climate Change & Environment

- Measures to further mitigate climate gas emissions continue to take priority
 - Carbon neutral city-regions are achieved by 2050, some earlier
 - City-regions are willing to make structural changes, in an effort to reduce carbon emissions but pace of technological development may be insufficient
- Social and economic impacts of environmental policy become more apparent
 - fast growth in economies may create additional risks, e.g. pollution & emission increases; on the other hand, if economies improve, the possibility to promote new green technology faster also grows
 - social unrest and food shortages in key areas across the globe may place considerable pressure on the Nordic and Baltic city-regions to help alleviate the world crisis, but probably after 2050; i.e. Baltic viewed as ‘overflow centre’ for EU. ‘Climate change immigrants’ place considerable pressure on resources and city-regions must learn to accommodate and integrate such pressures
- Nordic Welfare ensures fairer distribution of food supplies and places greater priority for local supplies to reduce energy consumption
 - green economy produces faster solutions to climate change to help balance growth; as a result, overall reduction in energy usage
 - food supplies come under threat from climate change and world demand for produce leading to price spikes of key commodities
- City regions will take key measures to adapt to climate change
 - Sea rise barriers erected where possible, to reduce potential risk from increasing storms and sea-level rises, e.g. at Öresund to control sea flows into Baltic
 - Cities and regions adapt strategies to become more resilient faster than expected;
 - Intensification of households ‘growing their own’ in and around city perimeters, giving impetus to local produce
 - new measures in the Baltic force maritime cities to build minimum 7 metres above sea level for all new development
- Eastern Baltic Sea Region quality of sea water continues to improve as well as coastline conservation
- City-regions must aim to produce emission free modes of energy, such as wind turbines and solar energy, to combat climate change

Riga City. Image: DG



Spatial Cohesion

- Goals for compact, high quality urban development, combine with climate change, leading to an improvement in city-regional balance by directing investment to city centre and regional centres, but there are signs of widening disparities within cities
- Compact urban growth:
 - Urban core densifies through inner-city expansion into city suburbs
 - Regeneration of the urban core employs new planning tools to combat the challenge of climate change
 - Controlled balance of new redevelopment areas & regeneration of older areas as development space alternatives in cities is reduced
 - New development close to the regional centres intermixed with jobs and directly connected to rail hubs
 - Increase in pedestrianisation/cycling widens in city centres and to regional centres
 - Increasing house prices and rents force suburban areas to densify quicker, making city-regions more pro-active in land policies to achieve greater balance
- Strategically important green infrastructure sets limits to urban growth
- Regional green belts maintain greater sustainability and aim to slow pace of urban sprawl yet still allows planned recreational cores to be used within the belts. These measures aim to address:
 - Green networks which are under threat from development, especially in densifying urban areas; likewise brownfield development may be used up quickly leading to pressure on green space and older neighbourhoods may be subject of comprehensive redevelopment
 - Bio diversity and carbon sinks as well as recreation areas which are under threat from development expansion and densification of cities and regions
- Polycentricity is a key to limiting growth pressure in the urban core, as well as including other centres within the urban region
 - Orbital rail and metro investments speed up polycentric structure
 - Dense, polycentric metropolis framework develops slowly, but greater uneven development in the periphery
 - Densification of compact city but city-region spatial cohesion catches up slowly
 - Metropolitan city-region Plans 2050 across the Space have difficulty in achieving acceptance as municipalities further away from centre lose out; but Plans improve overall balance by directing investment into key areas close to cities
 - Existing regional centres upgraded and developed
 - Some new regional centres created to cope with development change and reduce energy consumption close to cities
- New governance structures seek to involve wider communities within and beyond the core city
 - Nordic capitals force new city-regional governance for cities and their surrounding areas to merge into a single authority to combat climate change and energy crisis
 - Public participation essential to be part of the decision-making process in the future
- The importance of macro-structures to link city-regions is emphasised, which will underpin the efforts for sustainable city-regional strategies with compact urban growth and polycentricity.
 - Development rail corridors in general will enable more critical mass in the region. The investments costs are high, but the long-term benefits in terms of sustainable growth should outweigh these costs.
 - European role strengthened through Rail Baltica, Helsinki-Tallinn Tunnel & HST to St Petersburg in the east and Stockholm-Copenhagen-Hamburg axis to west
 - The geographical proximity between the large metropolitan areas across Western Scandinavia, together with the combination of historical ties and low language barriers, has offered a natural ground for joint development.

In conclusion, the economy is considered the main driving force in the way the regional and city structures advance and how much EU and national funding is available for expanding the rail infrastructure within the region and to Europe. This is tempered by the need for the Nordic-Baltic Space to adapt and mitigate against climate change. It is essential therefore, to have a clear Vision for the Nordic-Baltic Space generally, in order that the implementation of the drivers accommodate the swinging changes within the economy without losing sight of the overall way forward.

This joint scenario then formulates into a long term Vision for the future Nordic-Baltic city-regions. This is done by interpreting the joint agreed scenario into a set of key objectives. These in turn form the joint Vision for the whole of the Nordic-Baltic Space, which are now set out in the next section.

Joint Scenario created by the Nordic-Baltic Space Expert Group.

ESPON EU VISION – Baltic macro-region. ET2050 – Territorial Scenarios and Visions for Europe. Final Report. Making Europe Open and Polycentric. EU. 2015.



Joint Vision 2050

The Nordic-Baltic Space joint Vision is a strategic anchor for what these city-regions aspire to be in the future.

The aim of the Vision is to show the future-state the Nordic-Baltic Space wishes to go towards within the competitive space of Europe and globally. The future is uncertain. However, by establishing clear goals and ways of achieving the vision, allied to long-term strategic spatial planning, it will be pos-

sible to select a clearer path based on the choices set out in the joint scenario. The Vision represents how different actions affect outcomes in a more informed spatial environment and is the result of how the city-regions interpreted the scenario results.

The Vision statement is necessarily short and to the point so it is easy to understand. The Vision creates a clear set of values for the Nordic-Baltic city-regions. It is based upon Nordic welfare values. It can be seen that

the Vision is not made in isolation. The Vision is a result of a long-term spatial analysis built around the key drivers, which themselves set the framework for the SWOT outcomes. This was then used to prepare a set of alternative scenarios from which a Joint Scenario was selected. The Vision, therefore, focuses on the outcomes of making our city-regions to be better places to live and work set within a high quality environment.

Joint Vision created by the Nordic-Baltic Space Expert Group.



Joint Set of Intentions

Policies for the forming of polycentric city-regions in order to achieve spatial cohesion in the Nordic-Baltic Space

The Nordic-Baltic Space city-regions agree the following policy-options as a means of achieving its Vision 2050:

- to implement the Nordic-Baltic Space Vision and Framework 2050 to promote spatial and social cohesion and better connectivity between its city-regions
- to create polycentric city-regions that are compact, dense in structure, strong centres and based upon high-quality public rail transport networks
- aim to achieve economically vital, urban in character, dynamic and innovative city-regions working in unison
- to manage growth sustainably and aim to be carbon neutral by 2050 or earlier, and mitigate against CO2 emissions and other pollutants
- to promote transnational inter-connecting rail infrastructure to ensure easier accessibility to get around the Nordic-Baltic Space, and in particular, high-speed dedicated train networks
- to restrict urban sprawl in the city-regions by means primarily of placing development within new rail corridors and making new urban environments carbon-neutral
- for the EU's TEN-T to prioritise Rail Baltica from Helsinki to Warsaw and Berlin via the Baltic States; a rail tunnel between Helsinki and Tallinn to connect with mainland Europe; a HST between Stockholm-Copenhagen with the intention of linking Gothenburg to this corridor; improvements to the Oslo-Gothenburg-Copenhagen corridor, and Oslo-Stockholm; and that each of these connectivity upgrades act as an alternative to short flights in general in order to reduce CO2 emissions
- to develop city-regions around key transnational interchanges of public rail transport and to develop local metro and tram networks into the city-regions
- that transnational connectivity as a facilitator can be a means to build within existing city-regions by developing city structures inwards and to place emphasis on renewal of existing structures within a polycentric network of city-regions
- coordinating public transport investment with spatial planning to ensure that they are integrated together in making priorities for investment and to evaluate where best new rail infrastructure can support existing and new development proposals
- ensuring that there is international cooperation between cities and regions to promote greater 'cross-border' coordination of rail infrastructure and to agree a set of priorities between cities, regions and countries so that cross border transport links achieve the greatest benefits.
- to create synergies of employment clusters within the city centres and in appropriate key locations within city-regions around key interchanges in order to create better urban balance with the periphery; to support innovatory cluster development through the re-organisation of space within city-regions, and in particular, locating near new synergies such as City Airports, rail-hubs, and port harbours;
- for the Nordic-Baltic Space city-regions to work together in developing investment in alternative sources of energy, such as wind turbines and solar energy, in order to reduce carbon emissions
- to support the diversity of nature by recognizing the most valuable areas and protecting them, by adding integrity of green connections and ensuring enough green areas for recreation near the inhabitants
- to reduce CO2 emissions by supporting alternative renewable energy production, by creating eco efficient urban structures to save energy and by saving the biomass of forests and swamps to preserve the valuable carbon sinks

Spatial planning instruments to use to achieve better cohesion throughout the Nordic-Baltic Space

- to examine new forms of city-region governance applicable throughout the Nordic-Baltic Space. A collective institutional framework for each metropolis will help create joint initiatives across a city-region both spatially and economically, especially if municipalities have an agreed set of strategies to achieve their objectives and work together
- to explore the possible of city-region Governance options that best fit the means to achieve polycentric city-regions
- to use spatial planning as the main instrument in the future for city-regions to be developed in a polycentric structure
- each city-region to develop long-term strategic plans to take account of the overall objectives and policies for the Nordic-Baltic Space
- to continue to develop inclusive strategic maps that aim to synchronise the Nordic-Baltic Space Vision.
- for each city-region plan to adopt the key aims and strategies of the Nordic-Baltic Space Vision in order that the various plans can complement each other as a means to achieve greater cohesion
- to consider securitisation as a means to pool assets in the form of securities backed by cash-flows from assets to fund new investment in rail infrastructure and alternative energy sources
- to improve coordination between various transport modes within cities and regions and set-up formal agreements internationally, for example, to enable passengers from Tallinn or Helsinki, or Oslo, Gothenburg and Stockholm, to have dual accessibility to use tickets in each city and to be able to inter-change between modes with the same ticket.

Nordic-Baltic Space Expert Group



ESPON: integrated urban areas. ESPON GIZ potential. ET2050 – Territorial Scenarios and Visions for Europe. Final Report. Making Europe Open and Polycentric. EU. 2015.

Key Symbols:

Cities and Regions

Helsinki represents both the city and the city-region, being a description of Helsinki-Uusimaa Regional Council region and the City of Helsinki.

Stockholm refers to the Stockholm region.

Riga and Tallinn are primarily the main city areas and surrounding city-region municipalities.

Gothenburg refers to the Region.

Oslo represents both the City of Oslo and Akershus County.

City-region symbols

*White circle with blue border and red centre – symbolic marking for each city-region and does not show the true extent of city and regional borders



Belts

*Red belt connecting city-regions – strong pull on economic and spatial integration



*Yellow belt connecting city-regions – medium to weaker pull on economy and spatial impact



Coloured Rail Lines

*blue neon line – ultra hi-speed rail line



*magenta line – medium to high-speed rail line



*yellow line – upgrading from standard rail line in the long-term



*orange 'bridge' – E18 symbolic economic and logistic connection between Stockholm and Helsinki



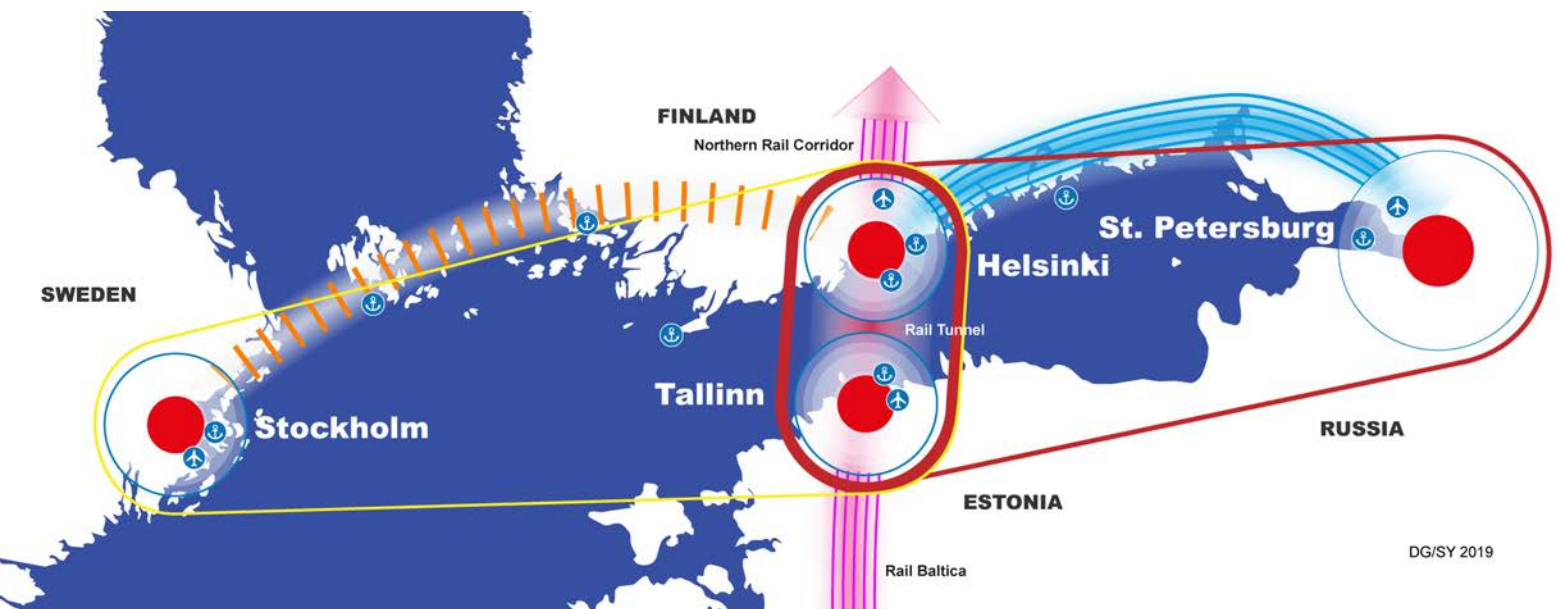
*Blue 'Loop' Circle within Zonal Frames – the 'Blue Loop' represents the symbolic integration of the Nordic-Baltic Space macro-region. The Loop is then sub-divided into spatial 'mini' macro-region zones that show the areas of closer cooperation



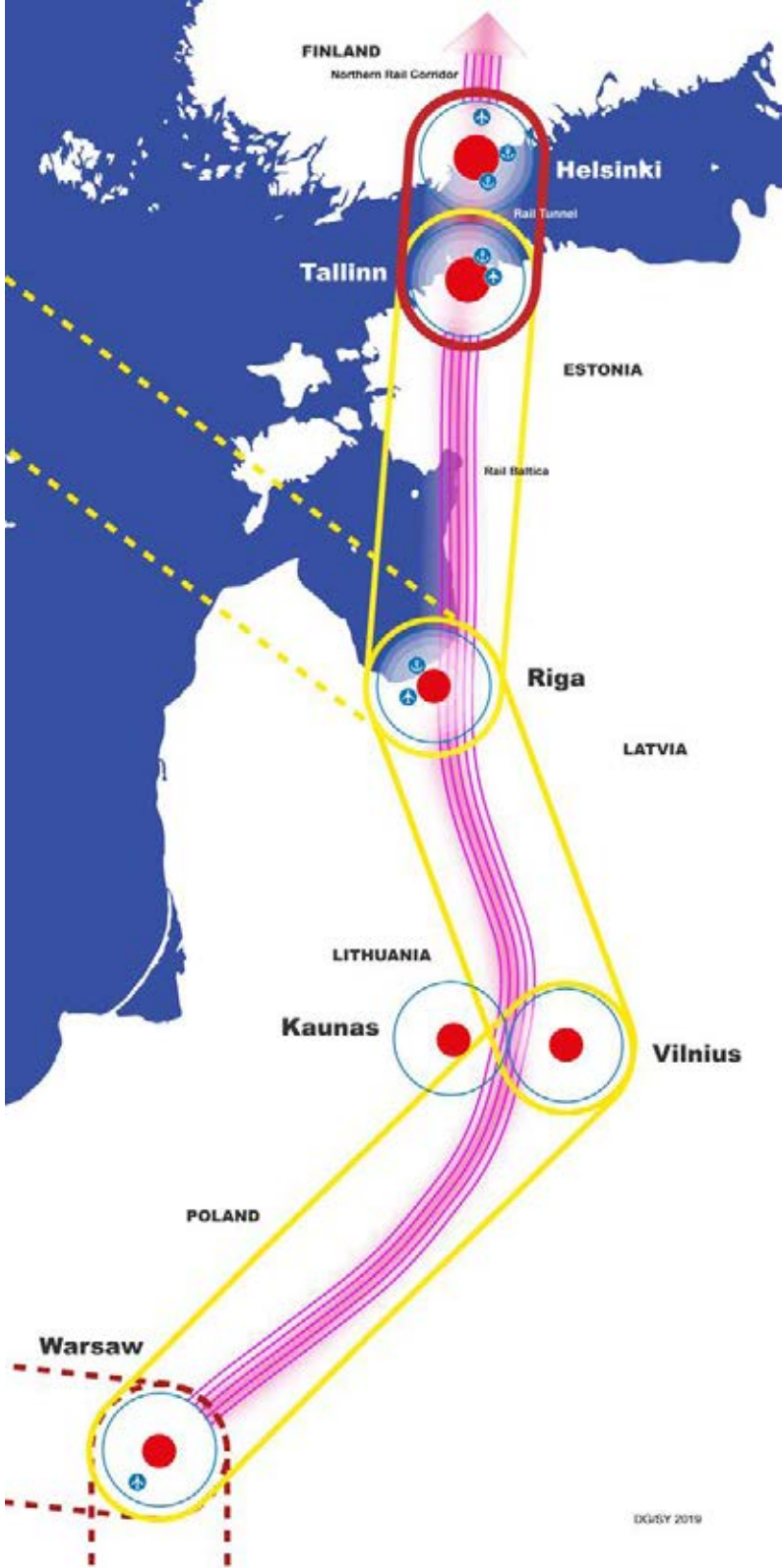
Nordic-Baltic Space Zonal-frames

Zone 1	Stockholm-Helsinki-St.Petersburg-Tallinn
Zone 2	Helsinki-Tallinn-Riga-Kaunas/Vilnius-Warsaw (Berlin)
Zone 3	Stockholm-Copenhagen-Gothenburg-Oslo
Loop	Integrated Nordic-Baltic Loop

Stockholm - Helsinki - St Petersburg - Tallinn

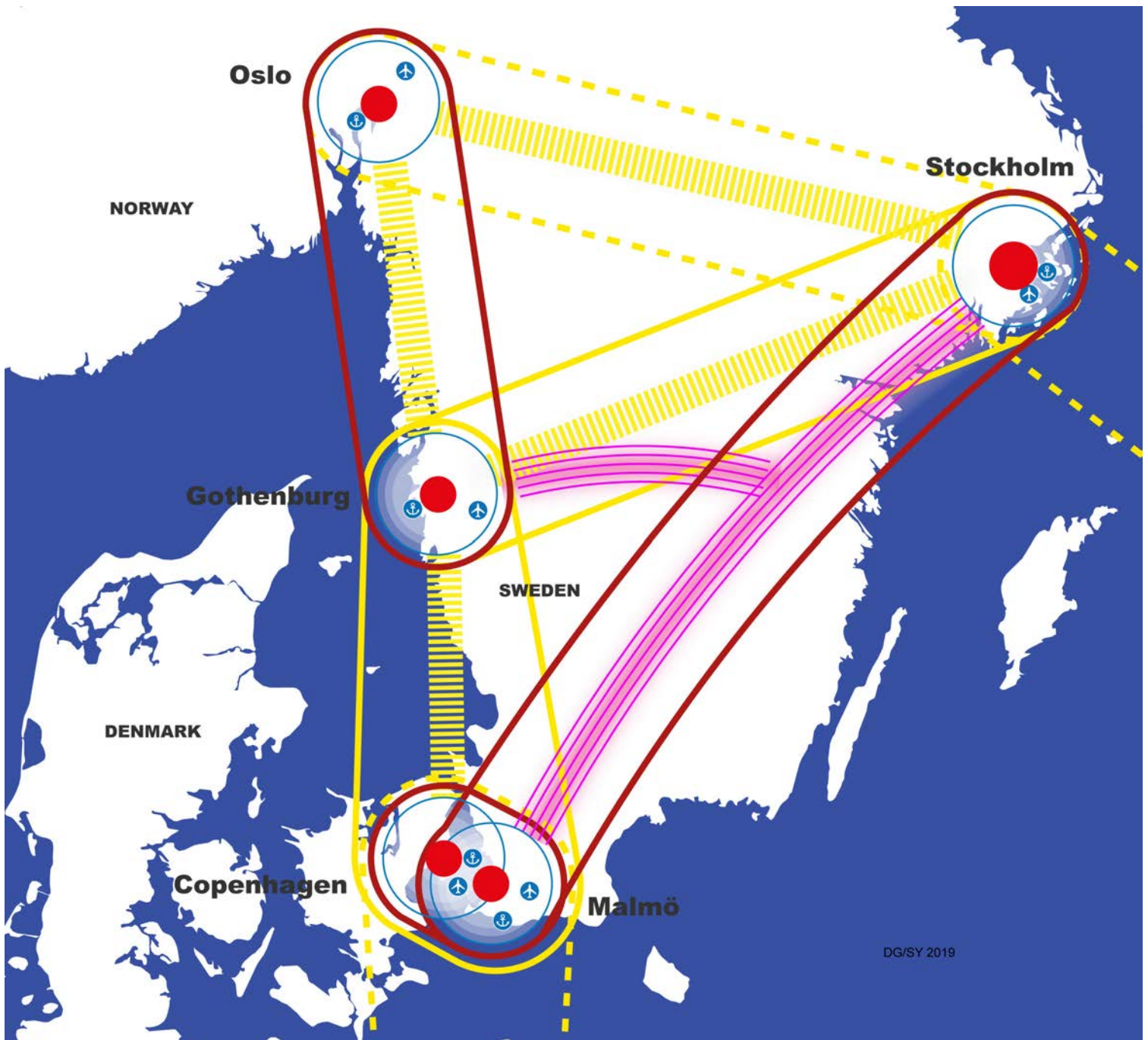


Helsinki - Tallinn - Riga - Kaunas/Vilnius - Warsaw

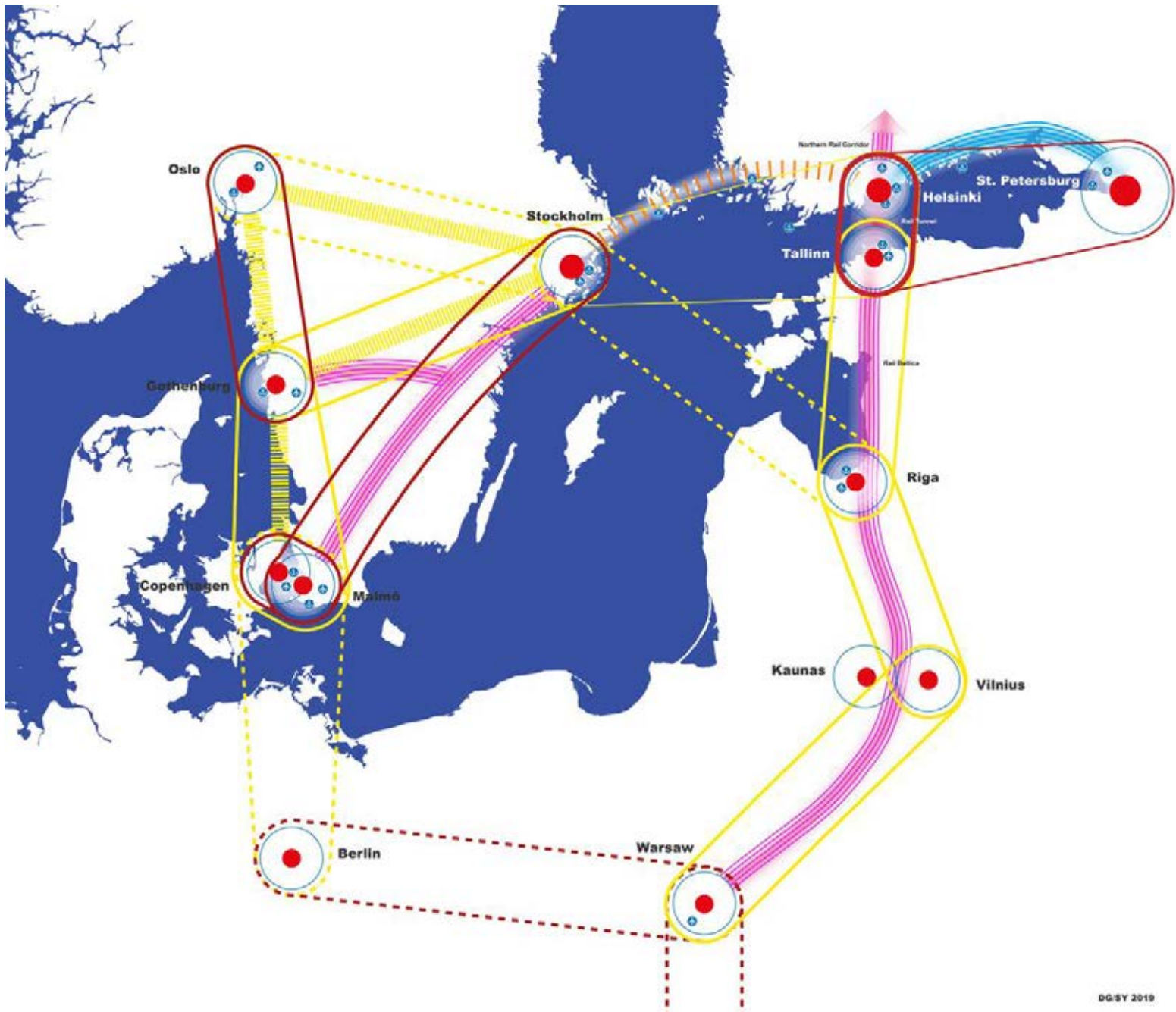


DG/ISY 2019

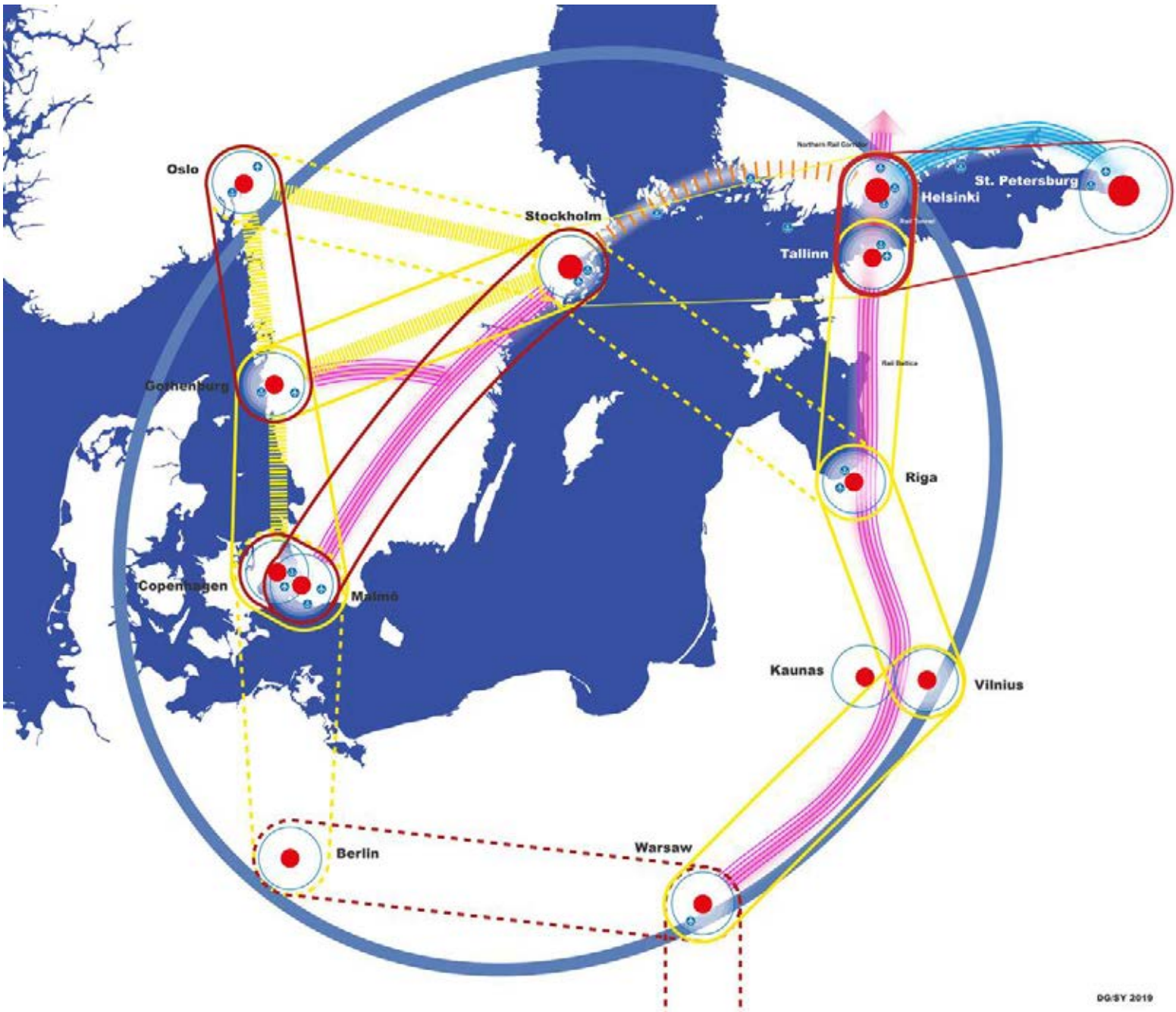
Stockholm - Copenhagen/Malmö - Gothenburg - Oslo



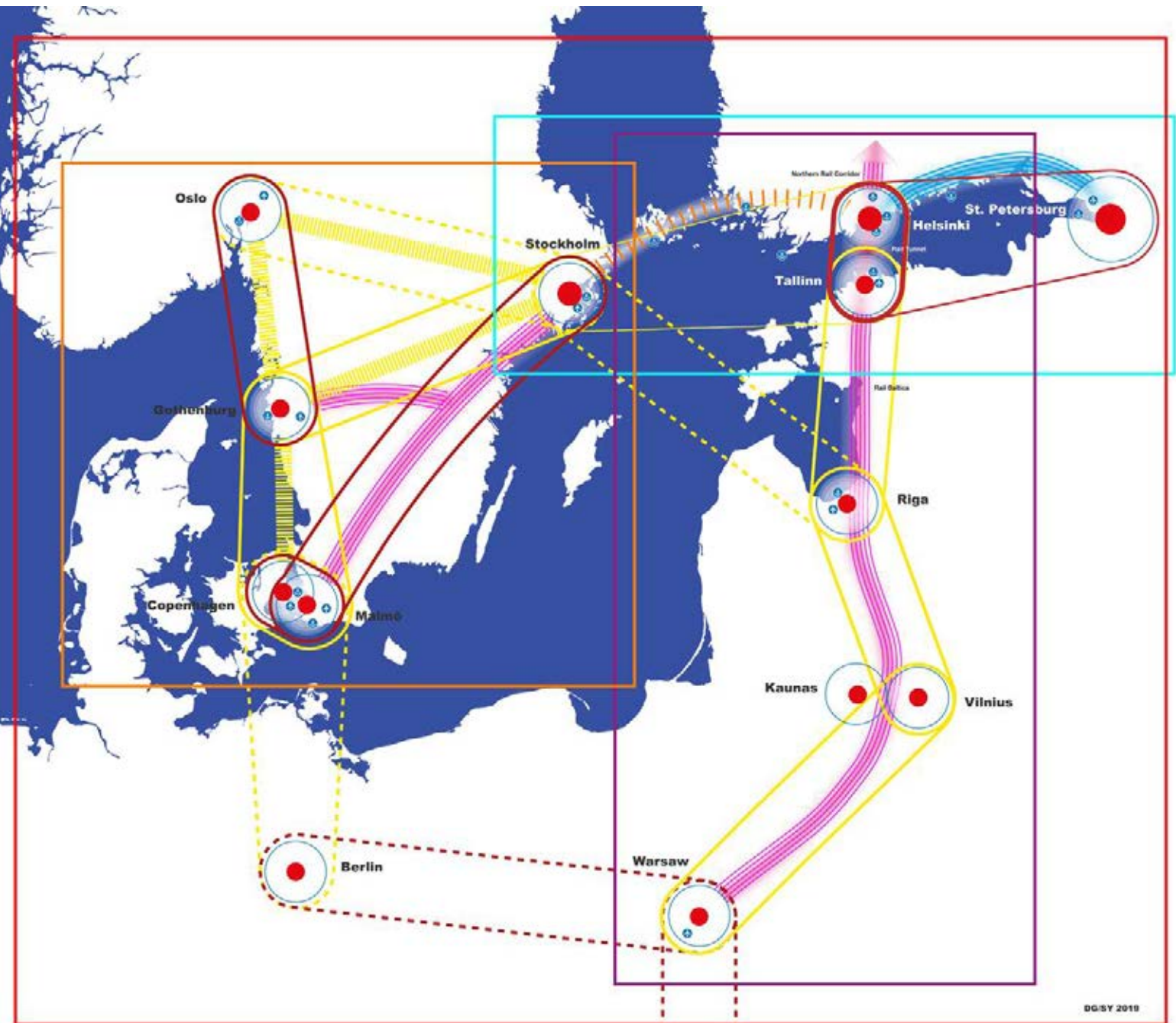
Integrated Nordic-Baltic Space



Nordic-Baltic 'Loop'



Nordic-Baltic Space Integrated Spatial Zones



Comparison

Comparative Assessment of key spatial issues across the Nordic-Baltic Space

The comparison offers a spatial focus of analysis across a range of spatial planning issues that are representative of what is happening across the Nordic-Baltic Space today.

In doing so, it presents a synopsis of a snapshot in time showing where there is broad agreement by each of the cities and regions in addressing key issues such as mitigation against climate change, support for public rail transport initiatives, or promoting cycling. Conversely, the comparison shows unevenness in a city or region's approach to issues such as road congestion pricing, or land agreements with the State, or spatial segregation.

Metropolitan challenges can be seen as being substantial. The way city-regions meet those challenges varies to some degree, but overall, the comparison tends to suggest that there is greater cohesion across the Space in how to solve challenges efficiently.

By working together through networking on spatial planning policies and programmes across the Nordic-Baltic Space, in time, the aim will be to achieve greater unity to strengthen the functions of our cities and regions through increased cooperation.

The one essential complexity refers to metropolitan governance. Cooperation between the key cities and their surrounding municipalities differs across the Space. Examples of strong coordination exists, but they tend to be on an informal, voluntary level rather than statutory. To manage city-regions more efficiently in the future may require strengthening of cooperation and stronger governance structures. There is no one single model yet that can be promoted as a favoured solution. Coordination of development of our city-regions through spatial planning can provide strong control of functions and decision-making towards achieving polycentric structures. Spatial planning can provide the framework. Working together can coordinate the implementation of the Nordic-Baltic Space joint vision and set of intentions to evolve in a more balanced way in the future.

Comparison table made by Juha Niemelä. City of Helsinki. Urban Environment Division.

	Helsinki	Stockholm	Gothenburg	Riga	Oslo	Tallinn
Scale of city-region km ²	(1) Helsinki-Uusimaa region: • 9097 km ² • 26 municipalities • 1.7 million inhabitants (2) Helsinki city-region: • 3,843 km ² • 14 municipalities • 1.457 million inhabitants	Stockholm County • 6519 km ² • 26 municipalities • 2.3 million inhabitants	Gothenburg region • 3694 km ² • 13 municipalities • 1.028 million inhabitants	Riga metropolitan region • 7596.6 km ² • 30 municipalities • 1.070 million inhabitants	Greater Oslo region • 8894 km ² • 46 municipalities • 1.547 million inhabitants	Harju County • 4333 km ² • 16 municipalities • 610 000 inhabitants
Regional plan	• New Structure Plan 2019	RUFS 2050	Plan for Västra Götalandsregionen	Riga Region Sustainable Development Strategy 2030	Regional plans for Oslo/Akershus region	County Spatial Plan
Public transport	• Common pricing ticket system in city-region • 73 % use public transport, walk or cycle in Helsinki	• Common pricing ticket system in the county • 74% use public transport, walk or cycle in Stockholm (57% in the region)	• Cooperation in public transport in the region • 54% use public transport, walk or cycle in Gothenburg city (2015)	• Partial cooperation in public transport in region between Riga Traffic and regional municipalities • 55% use public transport, walk or cycle	• Public transport authority Ruter (Oslo/Akershus) • 64% use public transport, walk or cycle	• Some regional public transport cooperation in Harju county • 73 % use public transport, walk or cycle in Tallinn (2015)
Pedestrianisation / Cycle ways	City centre part-pedestrianised	City centre part-pedestrianised	City centre part-pedestrianised	City centre part-pedestrianised	City centre part-pedestrianised	City centre part-pedestrianised
CO2 Emissions goals	Carbon neutral by 2035	Fossil fuel free by 2040	Advanced carbon reduction program (Green bonds)	decrease 40% by 2030 compared to 1990	Carbon neutral by 2030	-40% by 2030 as compared to 2007 level
Road Pricing / Congestion charge	• Neither the City or the region operates a congestion charge. • The City is currently debating whether it introduce a congestion charge in the future. Congestion charge at Ports introduced in 2019	Yes - city centre congestion charge	Yes - city centre congestion charge	Neither City or the Region operates a congestions charge. City debating whether to introduce in future with new Mobility Plan	Yes - toll ring	Only for heavy vehicles
Land Agreements with the State	City-region cities have land-agreements on new rail infrastructure support if cities build higher densities around rail/metro stations	Region Stockholm have land agreements with the State on new rail infrastructure based on building higher densities around rail/metro stations		Not systematic cooperation; only for special projects, e.g. new campus development in city centre for University of Latvia		None
Social Cohesion	Spatial segregation not yet a major challenge, but may increase in future due to increase in population and immigration	Major spatial segregation challenges	Major spatial segregation challenges	Spatial and socio-economic segregation levels low but are increasing	Increasing segregation levels	Still low segregation levels, but increasing
Governance now/2050	Reasonable possibility for a Helsinki metropole of 14 municipalities	Region is elected body for healthcare, culture, public transport and regional planning and growth development. Region can levy taxes.		There is a debate about a new territorial administrative reform that could also redefine Riga administrative orders and strengthen Riga metropolitan area development.		

Next Steps

Next Steps

- The Nordic-Baltic Space project and METREX will disseminate the findings of the Final Report on a broad front at relevant conferences and events, both in Europe and further afield where appropriate. A joint presentation on the Outcomes will be given high priority at the Metrex Birmingham Conference and the Oslo Urban Future global Conference in summer 2019
- Smaller groups of city-regions within the network should make active use of the report, to inform and inspire ongoing work in developing stronger links between cities and regions along the main corridors. (e.g. Via Baltica, and STRING).
- Partners in The Nordic-Baltic Space project will continue to meet within Metrex and work together in order to exchange experience and to improve and, where possible, synchronise their local policies and strategies
- Each city-region should disseminate the outcomes of the Nordic-Baltic Space Final Report and other stakeholders and at a targeted seminar or through existing networks of municipalities. Circulation and discussion of the report should aim to strengthen local commitment
- METREX will inform VASAB of the Final Report and initiate a dialogue with VASAB on the future of the Baltic Sea Region with respect to the future of integrating spatial planning programmes and policies across the Nordic-Baltic Space
- The results and commitment of the Nordic-Baltic Space should inspire METREX to promote macro-regional approaches across other macro-regions in Europe
- EU –representatives from the Nordic-Baltic city-regions should ask their city/region-representatives in Brussels to host a joint half-day conference with the Commission, ESPON and invited MEPs, on the Final Report and Outcomes. This conference should discuss suggestions for following up the Outcomes under the TEN-T investment programme and other relevant European policies and funding mechanisms
- Project partners and participants in the Nordic-Baltic Space should plan for monitoring and revision / revitalising of the project and its outcomes within the next four years in order to achieve closer working cooperation

References

- Champion, A.G. Changing Demographic Regime and Evolving Polycentric Urban Regions. 2001.
- Duhr, Colomb and Nadin. European Spatial Planning and Territorial Cooperation. Routledge. 2010
- ESPON. Making Europe Open and Polycentric (2015)
- ESPON. Territorial Impacts of EU Economic Policies and Location of Economic Activities, Final Report, Vol 1, Executive summary, Luxembourg. 2006c.
- ESPON DeTeC. 2014.
- ET2050 – Territorial Scenarios and Visions for Europe. Final Report. Making Europe Open and Polycentric. EU. 2015.
- EU ESDP – European Spatial Development Perspective. 1999.
- EU Baltic Sea Region Strategy. 2009.
- EU Fifth Cohesion Report. 2010.
- EU Interreg projects (i) Rail Baltica Growth Corridor & (ii) HTTransPlan - Helsinki-Tallinn Transport and Planning.
- EU Lisbon Agenda 2000 and EU Gothenburg Agenda on Sustainability. 2001.
- EU State and Perspectives 2011
- EU Territorial Agenda. 2007
- EU Territorial State and Perspectives. 2011
- EU Territorial Agenda 2020.
- EU Third Cohesion Report. 2004
- EU Urban Agenda. 2016
- European Commission. 2005. Trans-European Transport Network - TEN-T priority axes and projects.
- From City to City-Region http://www.hel2.fi /ksv/julkaisut/ julk_2009-8.pdf. City of Helsinki.
- Guardian. 7.5.2017. The Great British Brexit robbery: how our democracy was hijacked. Carole Cadwalladr.
- Guardian. 31.10.2017. UN warns of 'unacceptable' greenhouse gas emissions gap.
- Guardian. 20.11.2017. Battered by extreme weather. Dana Nuccitelli.
- Global Policy Forum. 2017. Internet pages on 'The threat of Globalisation. <https://www.globalpolicy.org/global-taxes/47948-the-threat-of-globalization.html>
- Greg Clark. Future Helsinki Region 2030 (PPT Helsinki 1/2017)
- Gordon, Douglas (ed). Gulf of Finland Spatial Vision. 2007. Helsinki City Planning department.
- Gordon, Douglas (ed). North-South Interface. 2007. Helsinki City Planning department
- Hall, Peter. The Polycentric Metropolis. 2006
- Helsinki Strategic Plan. From City to City-region. City of Helsinki. 2008.
- Intra-metropolitan polycentricity in practice – Metrex Expert Group (Stockholm 2010)
- Metrex Framework. 2007.
- PolyMetrexplus. Metrex 2007.
- Northern Growth Zone. Turku. 2017. <https://www.turku.fi/en/northern-growth-zone-creates-success>
- OECD Regional Development Working Paper 2013/19. Nauwelaers, C et al. Case of Helsinki-Tallinn.
- Petit and Gordon (ed) Location dynamics of cluster formation and public sector response - can planning influence the process? Metrex. 2015. City of Helsinki Planning Department.
- UN Report on Climate Change. 10/2017.

Appendix:

Methodology

The working method was based around Expert group meetings at Metrex conferences twice a year, usually 3-4 hour seminars. Thematic discussions with a spatial planning approach followed a common way forward using the step-by-step work plan and followed up with a continuous layer of discussions throughout the year.

Drivers of Change & the Macro-regional level: The first meeting, held in Den Hague (2016) examined the key principles of the project and aimed to describe the macro-regional level. The key regional drivers were discussed in detail in relation to the ESPON ET2050 final report. Each city-region prepared an input and Nordregio made a study for Stockholm together with a framework analysis.

All meetings required an 'input'. Both Stockholm and Helsinki provided the 'output', offering a summary of views and issues discussed to take forward to the next meeting.

Key Challenges: Held in Sofia (2016), the second meeting centred upon the problems of rapid growth, urbanisation and urban sprawl, together with climate change.

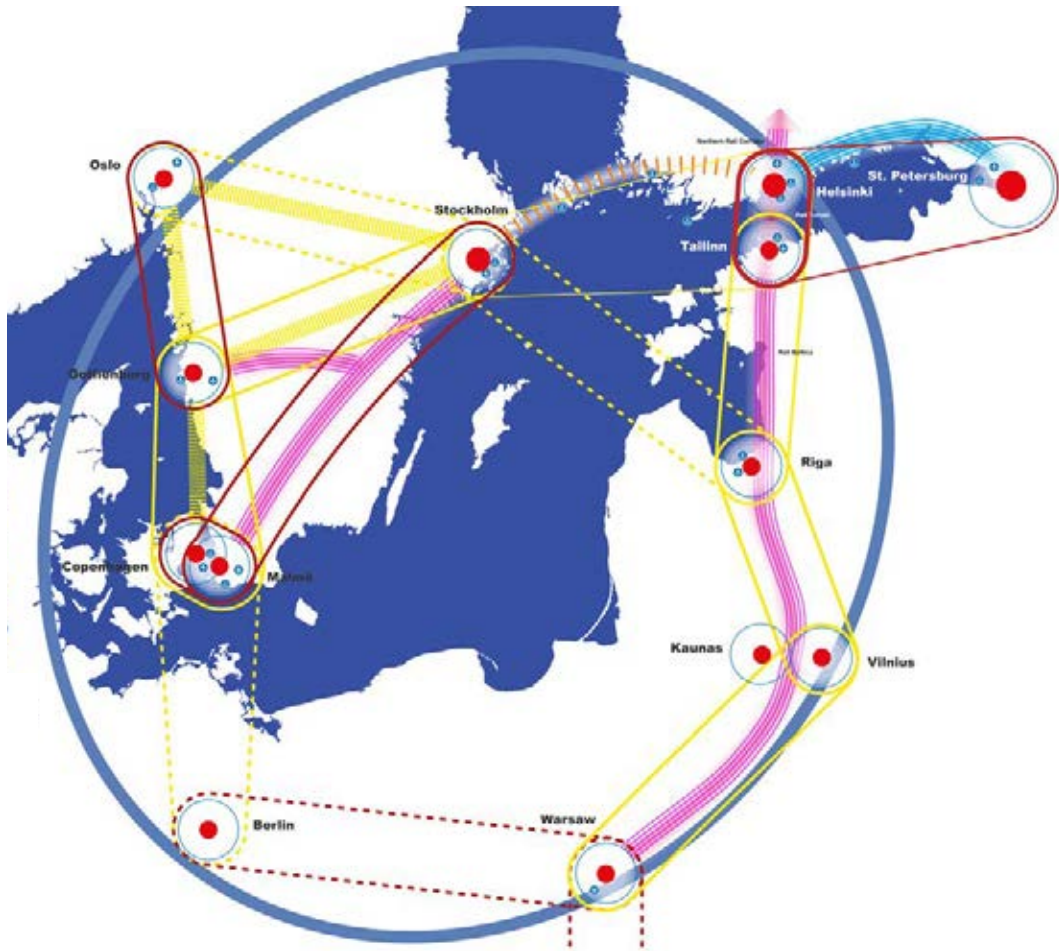
Strengths and Weaknesses: A SWOT analysis dominated the meeting in Stockholm (2017) on the strengths and weaknesses in the long term to 2050.

Future Scenarios: The Helsinki meeting (2017) produced a synthesis of a single scenario and a long-term vision for the Nordic-Baltic Space as a whole. The key was whether the Nordic and Baltic city-regions had a similar or divergent point of view towards a long-term vision. Discussion concluded with the need to continue this important element of the joint report to San Sebastian 2018.

Strategic Maps: The San Sebastian meeting (2018) examined primarily the strategic maps for the Nordic-Baltic Space.

Joint Set of Intentions and Conclusions were held in Brussels 2018.

The Final Report was put together during the Winter/Spring of 2019 and will present its Outcomes to the Metrex Conference in Birmingham 2019.



Helsinki



The Urban Environment Division is responsible for planning, construction and maintenance, building supervision and environmental services in the Helsinki city environment.

www.hel.fi/kaupunkiymparisto/en