



# The NordLog project Action Plan

– 5 initiatives to develop Northern Europe's logistics cluster

## Introduction

**The project “Northern Europe’s trade, logistics and transportation cluster” (NordLog) was initiated by Vækstforum Hovedstaden as a part of the development strategy for the Capital Region of Denmark. The aim has been to strengthen the logistics cluster within areas where there are competitive advantages and to ensure the regions position as a logistics hub for Northern Europe.**

The lifespan of the project has been from October 2008 to March 2010. In this period the NordLog project has served as an incubator for innovative and knowledge-based projects.

This action plan presents five initiatives which have been identified as catalysts for strengthening the logistics cluster through increased innovation, knowledge sharing and capacity building in the Capital Region.

The NordLog project has mainly addressed the opportunities and challenges for regional development within logistics by looking into the thematic areas

of infrastructure, supply chain management and logistics as well as information and communication technologies (ICT). The process has been supported by coordinators from Transportøkonomisk Forening (TØF)/Maritime Development Center of Europe (EMUC), Copenhagen Business School and Danish Technological Institute.

These coordinators have contributed with specialized knowledge and have used their networks to attract stakeholders and make the project visible. The other partners in NordLog have also supported and participated in the project. These are: AIM Denmark, Copenhagen Airports, Copenhagen Capacity, Copenhagen Malmö Port, Technical University of Denmark, Roskilde University, The Danish Transport Federation and Øresundsbrokon-sortiet. The Project has been coordinated by Øresund Logistics, a part of Øresund Science Region.

The action plan contains 5 different projects which will strengthen the Capital Region as a North

European cluster within logistics:

- » Humanitarian Logistics Innovation Platform
- » ICT for Supply Chain Management
- » Green STRING Corridor
- » Sustainable City Logistics
- » Regional capacity building through increased education within logistics

These 5 projects will heighten innovation and capacity among regional stakeholders and create strong cross science knowledge sharing networks. They will furthermore have a strong positive impact on the business life and the academic community in the Capital and Øresund Regions as the projects will attract knowledge, trade and further funding from e.g. EU.

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The NordLog project has  
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Vækstforum  
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DEN EUROPÆISKE UNION  
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## Humanitarian Logistics Innovation Platform

The capital city of Denmark is the sixth largest UN community in the world and houses offices for several UN divisions: UNOPS, UNDP, WHO, UNICEF, UNFPA and WFP. In the case of UNOPS, UNDP, UNICEF and UNFPA, their offices in Copenhagen include global centers for procurement and logistics. UNICEF alone bought for 136 million US \$ in Denmark in 2008 (UNICEF's Supply Annual Report 2008). In addition there are a large number of other major players in Copenhagen and in the Øresund Region within humanitarian, emergency and development logistics, including logistics providers and suppliers of relief goods, humanitarian organizations and universities.

The Øresund Region houses 5 science parks and 11 universities with 12.000 researchers, 165.000 students and 6.500 PhD students, and the region is the fifth-largest knowledge region in Europe measured by the number of academic publications. A Master of Disaster Management programme jointly hosted by Copenhagen University and Lund University

offers education of aid workers, emergency management and health specialists that will enable them to think together and work together with other professionals, while at the same time having an understanding of the different phases of a disaster. Furthermore, a VINN Excellence Centre is based at Lund Institute of Technology. The center, Next Generation Innovative Logistics (NGIL) provides knowledge, methods, techniques and tools for organizations and companies to increase supply chain visibility and to manage deviation in logistics systems. The competencies and the foundation for a specialized humanitarian logistics platform are present in the region. However, the full potential for collaboration and synergy between the stakeholders is not fully met.

### Network for innovation and knowledge sharing

There is a great potential for establishing a common platform for innovation and knowledge sharing between humanitarian organizations, the logistics



providers, suppliers of relief goods and the universities. The platform will create synergies and innovation within the thematic areas such as: Humanitarian logistics management, improved information sharing tools and methods, and innovative products and packaging.

A Humanitarian Logistics Innovation Platform will create synergies between organizations, industry and academia in the Capital Region. It will help to optimize the international disaster and development operations of the organizations, create a better regional foundation for the humanitarian industry, and strengthen research and education within humanitarian logistics in the Capital Region.

#### Potential partners:

UNICEF, UNOPS, UNDP, UNFPA, DanChurchAid, Danish Red Cross, Danish Refugee Council, DHL, Scan Global Logistics, Kühne+Nagel, SAAB Aerotech, suppliers of aid and relief equipment, food and medicine and packaging, Copenhagen Business School, Copenhagen University, Danish Technological Institute, Lund University, World Maritime University, The Transportation Innovation Network, The Packbridge Network and Øresund Logistics.

## ICT for Supply Chain Management

Even though high mobility is a central part of the European economic growth strategy, transport also represents 30% of the total energy consumption in the EU and transportation is the only sector where CO<sub>2</sub> emissions continue to grow steadily. There is a large potential for efficiency improvements through the use of ICT in the supply chain to increase cooperation and co-modality and to further freight consolidation and better route planning.

Firms in the supply chain are increasingly relying on cooperation and ICT networks in order to gain agility and responsiveness towards new threats and opportunities on the market. Internal resources are often combined with complementary assets from strategic partners in order to gain flexibility and thereby increase competitiveness and value creation.

Corporate networks (controlled by one company) and trading networks (electronic marketplaces managed by brokers) are relatively common, while business networks linking several companies, such

as Small and Medium sized Enterprises (SMEs) are much rarer. This means that SMEs generally have low chances of establishing successful cross-company alliances which can help them provide better, more efficient and innovative services and thereby reduce costs as well as increase value creation. This is especially a challenge since a large part of the European enterprises within freight, logistics and production are SMEs.

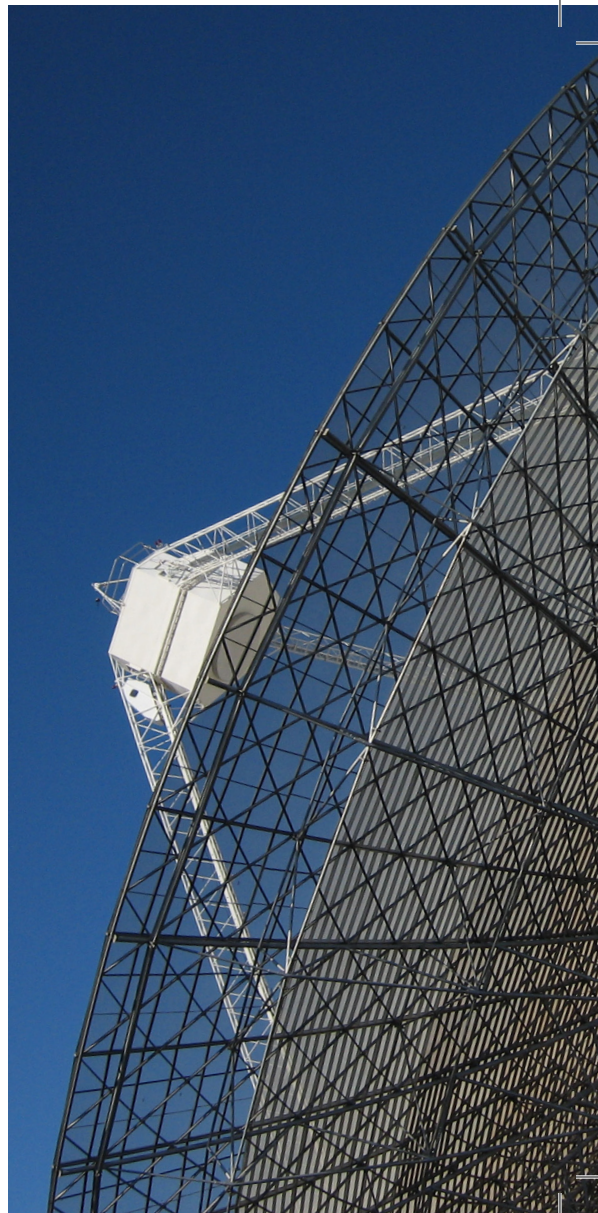
This project intends to develop methods and tools for design, development and test of cooperative ICT platforms for cooperation between companies in the supply chain, which can establish ad-hoc alliances in order to gain flexibility and increase efficiency, while reducing carbon emissions. The ICT platform will be based on open standards that allow the integration of new technologies such as sensors, and the platform will mainly focus on SMEs.

The Øresund region has the highest concentration of ICT companies in Europe and one of the purpo-

ses of this project is to create a bridge between the strong ICT cluster and the strong logistics cluster in the region. The project will connect regional stakeholder to a European consortium of experts from companies, universities and other knowledge institutions within the areas of IT, sensor logistics and sustainability and funding will be sought from EU's 7th framework program for ICT, 2011-2012, under the challenge "Low carbon multi-modal freight and logistics".

#### Potential partners:

AIM Denmark, Copenhagen Business School, Danish Technological Institute, DI (Confederation of Danish Industries), GSI Denmark, Lund University - Faculty of Engineering, Technical University of Denmark, ICT companies, logistics companies, Øresund IT, Øresund Logistics.



## Green STRING Corridor

The planned Fehmarn Belt link will greatly change the framework conditions for logistics between Scandinavia and the continent together with general trends such as CO<sub>2</sub> regulations, oil shortage, innovations within sustainable energy carriers and Intelligent Transportation Systems, as well as continuous globalization of the supply chains and consolidation of container freight at “mega hubs” such as Hamburg.

Since freight transport is the backbone of our economy, it is essential to understand the future chal-

lenges for the sector and to identify possibilities to promote efficient and sustainable logistics, as well as to develop a consistent policy towards promoting a Green Corridor in the STRING geography in order to facilitate future economic growth in the region.

The Fehmarn Belt link will create a new region with core competencies within logistics, information technology as well as energy systems, which can lead to the development of a world class cluster for innovation within intelligent and sustainable logistics.



The Green Corridor STRING project will facilitate the establishment of a green freight corridor between Northern Germany and Scandinavia through a fixed Fehmarn Belt link, both by promoting efficient road transportation, modal shifts as well as innovative concepts such as sustainable energy carriers and Intelligent Transportation Systems (ITS).

#### The specific goals are:

- » Create a network with an increasing amount of experts, which supports knowledge sharing and consensus building among the main stakeholders, including companies, authorities and researchers.
- » Analyzing the expected capacity needs in the STRING corridor after the Fehmarn Belt link has been built on short and long terms.
- » Identifying possibilities and barriers for establishing an efficient and sustainable freight corridor in the STRING axis which matches the expected capacity needs and builds on new

infrastructure initiatives, new logistics concepts, and innovative solutions such as sustainable energy carriers and ITS.

- » Elaborate policy recommendations in order to integrate the transport system in the STRING region and promote the creation of a Green Corridor.
- » Establish the corridor as an official DG TREN “Green Corridor” and “Core network” in order to attract increasing EU funding to infrastructure.

#### Partners:

The STRING regions: Capital Region of Denmark, Free and Hanseatic City of Hamburg, Land Schleswig-Holstein, Region Zealand and Region Skåne.

## Sustainable city logistics

Logistics in cities are connected with many challenges, both environmental such as high emissions of CO<sub>2</sub>, noise, particles, NO<sub>x</sub>, SO<sub>x</sub>, and increased risk for accidents, as well as economical challenges, such as higher costs, lower productivity and reliability. A city logistics project will be initiated that gathers the knowledge and expertise in the field of sustainable and efficient city logistics and energy efficient transportation technologies.

The project will include a number of innovative demonstration projects with the purpose of reducing emissions from the transportation sector, especially in the cities. Benefits will be achieved by organizing the logistics system in new ways, implementing new technologies and energy carriers, as well as increasing efficiency in the supply chain.

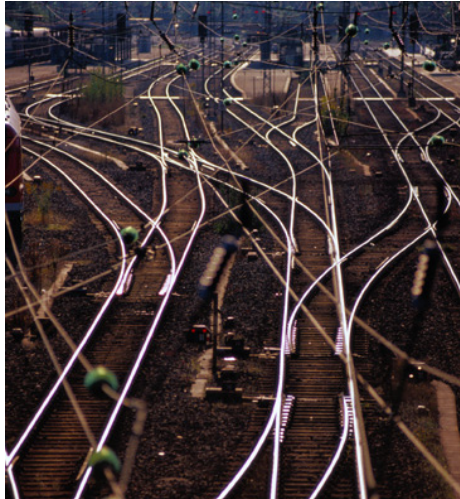
### Demonstration of city logistics solutions

In this project an urban consolidation center that focuses on the customers will be established in

the City of Copenhagen. The focus will be on the services and the benefits that a consolidation center can deliver to the stores in the city e.g. bundling deliveries from multiple suppliers and delivering the goods at a convenient time for the store owner, making storage space available at the consolidation center, and offering value-added logistics such as taking care of the return logistics for the store. A consolidation center situated close to the city border will make it possible to consolidate the goods flow from outside the city and bundle the transports into the city. This increases filling rates and makes it possible to use smaller vehicles in the cities, which furthermore can be powered by batteries, while keeping the long haul heavy goods vehicles outside the cities.

The project will also work with the development of new technologies and intelligent transport systems for improving the possibilities for controlling the transports of goods in the cities by e.g. using in-vehicle computers with satellite position-

ning, which are connected to a common server. Data from the server can be used by shippers, carrier companies, customers, authorities and other relevant stakeholders to get information about the vehicles position, velocity, route, arrival time and cargo type, which can be used for dynamic route planning and traffic control. In this way city logistics can be deployed safer and faster and with less energy use.



### Potential partners:

City of Copenhagen, Copenhagen Business School, Danish Technological Institute, Lund Technical University, Malmö University, Technical University of Denmark, Transportens Innovationsnetværk, ITD, DI Transport and Øresund Logistics.

## Regional capacity building through increased education within logistics

The logistics sector is crucial to the economy, both through the sector's own activities, but especially as a framework condition for other companies. The sector is, however, changing and logistics activities are globalized while the service level increases. This development creates new opportunities for value adding activities but it also brings challenges e.g. in the form of increased competition from low-income countries and a generally low level of knowledge and innovation in the logistics sector. Access to skilled labor will be a crucial factor for the competitiveness of Danish enterprises in the future.

The NordLog project wants to strengthen the framework conditions for producers and shippers in the region among other things by ensuring access to state-of-the-art educations and skilled labor to manage the logistic needs. The capital region has – also because of its position in the Øresund region – the potential to become a hub for knowledge and competencies within areas such as medico and food

logistics (including cold chains), innovative track-and-trace technologies in high-value supply chains and humanitarian logistics.

One of the ways to achieve a competency lift and to secure access to skilled labor for the companies and logistics suppliers is to ensure that the proper education and training is available and marketed to potential students. The NordLog project in cooperation with the Transport Innovation Network (TINV) will facilitate a discussion between the education institutions and the business world whether the available educations are sufficient and what the need for training and education will be in the future to be able to compete in a globalized world. There are plans for a communication or marketing campaign to spread the knowledge of logistics educations to potential students and to place the Capital Region on the map as an international hub for education and knowledge within particular sectors.

In the future TINV will keep an overview of educations within logistics and transport updated and make it available online on [www.tinv.dk](http://www.tinv.dk). Øresund Logistics will make an overview of logistics educations within the Øresund region available at [www.orelog.org](http://www.orelog.org).

#### Potential partners:

The Transportation Innovation Network (TINV), Transportøkonomisk Forening (TØF), Maritime Development Center of Europe (MDCE), Øresund University, educational institutions, industry associations, enterprises and the project Jobs and competencies in the Øresund region.



## Conclusion

Implementing the NordLog action plan will strengthen the Capital Region as a North European logistics cluster by increasing the competitive advantages within areas such as innovation, regional knowledge and capacity levels as well as help attracting increasing amounts of funding to the region. The next step for the 5 initiatives is to consolidate the project consortium for each initiative and to initiate a project application process in order to attract funding which can transform the ideas into successful projects. These open consortiums will be able to respond quickly on calls e.g. from EU and will ensure a more systematic and extensive participation in EU research and innovation programs. The aim for the 5 initiatives and the consortiums behind is to function as catalysts for attracting new projects and generating new initiatives in the Capital Region in the coming years in order to further develop the logistics cluster.

Through a wide composition of partners in the consortiums behind the 5 initiatives it will be possible to draw on networks that extend from the Capital Region out to the rest of Europe. The STRING regions have already begun strengthening the coo-

peration between Sweden, Denmark and Germany. In unison with Øresund Logistic and the Femern Bælt Logistics Platform there is a strong foundation for a consortium to ensure efficient and sustainable transportation through the STRING corridor.

The fact that Copenhagen is the sixth largest UN community in the world and Europe's fifth-largest knowledge region is a strong and unique foundation to build a humanitarian logistics platform on. The Capital Region has potential to position itself as an excellence center for knowledge and innovation within this area. The region could become specialized within research and education in areas such as Supply Chain Management for disaster relief and development aid, ICT systems and technologies for humanitarian logistics, as well as innovative products and packaging for humanitarian operations. Both organizations, academia and business life in the region will benefit from the establishment of such a knowledge sharing and innovation platform.

An initiative towards raising the region's capacity level within the transport and logistics sector will be implemented through a coordination of the industry's

need for qualified and skilled labor with the diversity of educations and training offered at the education institutions. The aim is to disseminate the knowledge about the education programs and courses and thus attract students to the logistics and transportation educations and ensure that the workforce in the logistic sector has the right competencies in the future.

The Capital Region has a number of strong sectors including the ICT sector. By uniting core competencies and experts from the logistics and the ICT sectors in a common project, new solutions and systems will be generated to increase intelligent supply chains via the use of innovative ICT technologies, which can increase efficiency and contribute to the decarbonisation of the transport sector.

Negative environmental impacts from freight activities in cities around the world have for many years been the center of intensive debate and conflicts, which has even increased in recent years as global warming has entered the agenda. However, new efficient solutions which function in real life are still to be tested. The city logistics initiative will demonstrate a number of innovative solutions

to improve the transportation of goods in and around Copenhagen and reduce the emission of CO<sub>2</sub> and other pollutants.

By identifying these 5 initiatives and establishing strong consortiums to carry them out, the NordLog project will strengthen the logistics cluster in Capital Region of Denmark on multiple levels. The NordLog project has played its role as incubator for the initiatives and it is time for the consortiums to take over the process. The closing of NordLog means the starting up of 5 new projects to develop the Capital Region's trade, transport and logistics.

### For further information about the 5 initiatives please contact:

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## Partners in the NordLog project:



## The NordLog project has been funded by:

