Intermodal Logistics Centres and Freight Corridors – Concepts and Trends

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Contents

1. Logistics Centers and Freight Villages

2. Freight Corridors as a Global Trend

3. Challenges and Concepts for Freight Villages

4. Future Trends and Outlook
1. Logistics Centers and Freight Villages

Definitions

Freight Village

- Large industrial estate where logistics companies settle → spatial concentration of logistics
- In vicinity to urban agglomerations, motorway and rail network
- Intermodal terminal → integration of transport modes, access to freight corridors
- Service facilities → synergy effects → value adding neighbourhood
- Usually developed and financed through PPP → win-win-situation

Logistics Centers Hierarchy

Standardized Logistics Centre Hierarchy
Source: (Higgins, et al., 2012, p. 14)
1. Logistics Centers and Freight Villages

Benefits of Freight Villages

FV are a success story in Europe because of benefits for

Private Sector

- Land available, ready for construction
- Intermodal interface between long distance transport and short distance transport → short reaction and delivery times; intermodal access
- Round the clock operation without disturbing neighbors
- Synergies and cost savings through co-operation
- Wide service spectrum (truck service, customs clearance, etc.)

Public Sector

- Creation of jobs
- Taxes for municipality
- Congestion in city is reduced
- Reduction of emissions
- Concentration of infrastructure investments, spatial planning
- Economic growth and competitiveness of the region

Ranking of Freight Villages in Europe 2015
Source: http://www.gvz-org.de/index.php?id=190
2. Freight Corridors As A Global Trend

North Sea Baltic Corridor / Rail Baltica

North Sea Baltic TEN-T Corridor

- 5,931 km
- 8 countries

Rail Baltica Project will create a new economic corridor

- 870 km, 5 countries
- Warsaw, Vilnius, Kaunas, Panevežys, Riga, Pärnu, Tallin, Helsinki
- 1435 mm gauge, 740 m train length (on parts within 1520 mm gauge)
- Intermodal terminals in Kaunas (LT), Salaspils (LV), Muuga (EE)
- 5.8 bn €, to be completed in 2025

Lithuanian Government initiated the development of Freight Villages

in Vilnius (Vaidotai), Kaunas, Siaulai and Klaipeda
2. Freight Corridors As A Global Trend

India Jal Marg Vikas Project, National Waterway No. 1
Eastern Dedicated Freight Corridor (Rail)

Ganga river will become the first modern inland navigation fairway in India
- 1,360 km-stretch of the Ganga river between Varanasi and the seaport of Haldia
- 6 multimodal terminals planned
- costs $ 800 mio, $ 375 mio $ from World Bank

Dedicated Eastern Freight Corridor (Rail)
- 1,856 km electrified rail freight track
- 1676 mm Indian wide gauge
- between Dankuni (West Bengal) and Ludhiana (Punjab)
- costs $ 4.44 bn $ 2.725 bn $ from World Bank

In Varanasi a Freight Village with a multimodal terminal can serve as transshipment node and cargo generator


Varanasi - construction of the jetty
Photo Wagener
The development of a FV is a complex task and needs co-operation of all parties involved, co-ordination and planning from the very beginning.

1. **Active role of the State**
   - High investments into infrastructure (roads, rails, energy, water, ...)
   - Non-profit orientation of land development results in attractive land prices and stability
   - Long lasting and far reaching impacts on regional and urban development

2. **Master Planning is needed**
   - Spatial planning determines designated areas for logistics
   - Feasibility study for the FV proves viability
   - Cooperation of different stakeholders is needed (municipality, district, road administration, railway, ...)

![Map of Westhafen and Königs Wusterhausen](Source for Map: Senate of Berlin)
The key success factor for a Freight Village is the right location.

3. Selecting the right location

- An unbiased Multi-Criteria Analysis helps to assess different options and to identify the right location
- Interdisciplinary groups of experts
- Less influence of interest groups

4. Land availability

- Availability of large areas of >100 ha is a bottleneck often
- Different ownerships and different interest
- Land development for FV is in public interest
- Do legal provisions for public land developments exist? (e.g. special title in German construction law)

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1. Existing territory
   - Available state land area
   - Private land, which should be taken for society purposes
   - Is there a possibility to develop terminal without appropriation of the land for public needs?
   - Land prices
   - Is territory planning needed?
   - Land purpose
   - Needed works
   - Other elements

2. Infrastructure
   - Distance to railway station
   - Water, electricity, sewerage
   - Alternative access road density and quality
   - Existing railway traffic management infrastructure
   - Existing cargo handling equipment
   - Existing buildings / warehouses, which can be used

3. Distances to roads and operators
   - Distance to Transport Corridor
   - Distance to highway A1
   - Distance to airport
   - Distance to the existing container terminal
   - Distance to existing custom warehouse
   - Distance to public transportation
   - Number of logistics companies 7km radius

4. Environmental Impact
   - Is it needed environmental impact assessment?
   - What is the need for further land/soil analysis?

Multi-Criteria Analysis
Source: Wagener
The development of a Freight Village needs a “driver” and involvement of stakeholders. In Europe FV’s are developed often in a PPP.

5. Business and Financing Model

- **State (Municipal or Port Administration):** investments into infrastructure, land development
- **Private sector:** purchase of land plots, investments into supra-structure.
- **Revolving financing scheme in phases:** invest and sale of land plots
- **Active management of land plots to ensure “synergetic neighbourhood”**

Source: developed on the basis of E&Y and W&H
The concentration of logistics companies in logistics centers promote innovation and collaboration.

- Innovative handling technologies for non cranable trailers
- Emission free city logistics and electro mobility
- Freight Exchange platforms
- Security solutions
- Telematics solutions
- Digitalization of supply chains and information platforms
- Collaboration of Freight Villages
- New train concepts (mixed trains, more public trains, fresh food corridors, ...)

Source: LNBB
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