

# Proposition Multimodal Hinterland Connections

## Summary

April, 2017



# Proposition Multimodal Hinterland logistics

## to logistics chain operators

*“ Dutch Multimodal Hinterland Logistics solutions enable your service organization to improve asset availability and reliability, and reduce operational costs through intelligent and optimized planning, direction and execution of multimodal transport flows “*

## to shippers

*“Dutch Multimodal Hinterland Logistics solutions enable your organization to improve customer satisfaction by increased reliability, and reduce operational costs through intelligent and optimized planning, direction and execution of multimodal transport flows .”*



# What is multimodal transport?

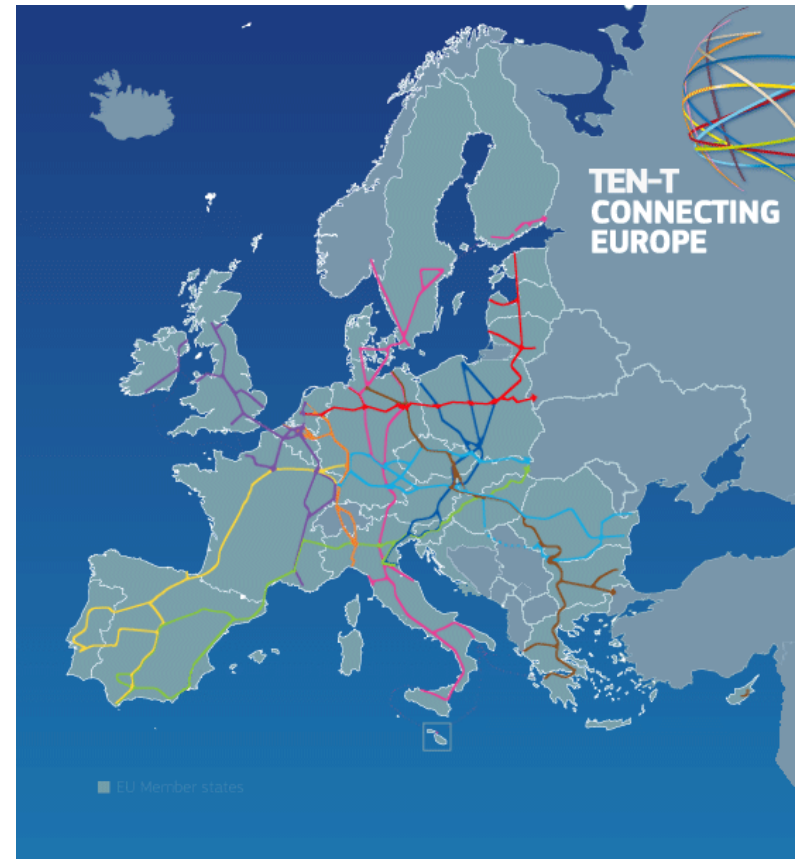


- Combination of at least two means of transport
- Integrated transport chain for bulk and container transport
- Main characteristics
  - Standardized and reusable loading units in case of intermodal container transport
  - Transshipment terminals for cargo handling between short-distance and long-distance traffic

# TEN-T Connecting Europe

## Infrastructure investments in multimodal corridors and connections

- European development of nine "Core network corridors" with public and private resources. Focus on EU support from the Connecting Europe Facility for , infrastructure investments that:
  - remove bottlenecks
  - build missing cross-border connections
  - promote modal integration and interoperability
- Three TEN-T corridors connect the Netherlands to Europe
  - North Sea-Mediterranean
  - North Sea-Baltic Corridor
  - Rhine-Alpine Corridor



# Multimodal hinterland connections

connecting the Netherlands with European consumer markets

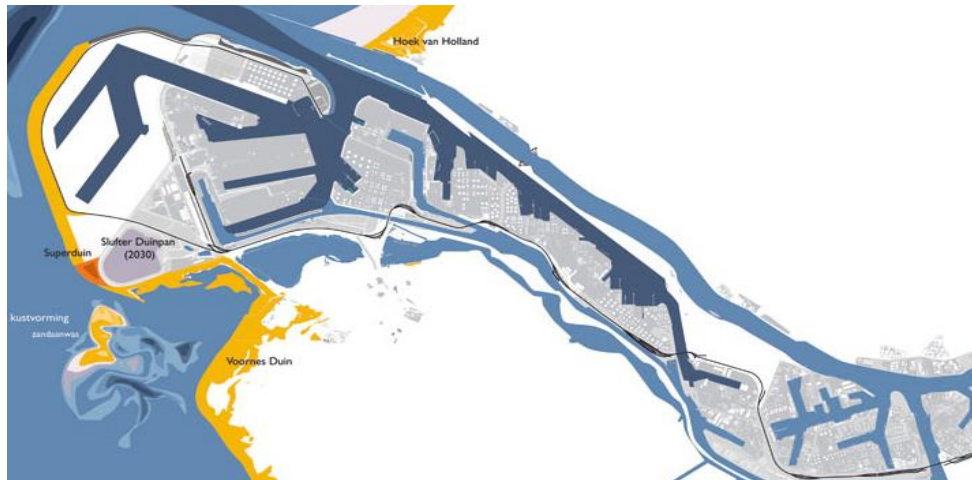
- Multimodal transport: different modalities
- Intermodal transport: using standard loading units, e.g. containers
- Multimodal hinterland connections:
  - Maritime/Shortsea
  - Inland waterway/barge
  - Rail
  - Road
  - Also air and pipeline
- Dutch ports: sea connections to ports at edge of logistics regions
- Multi/intermodal planning services



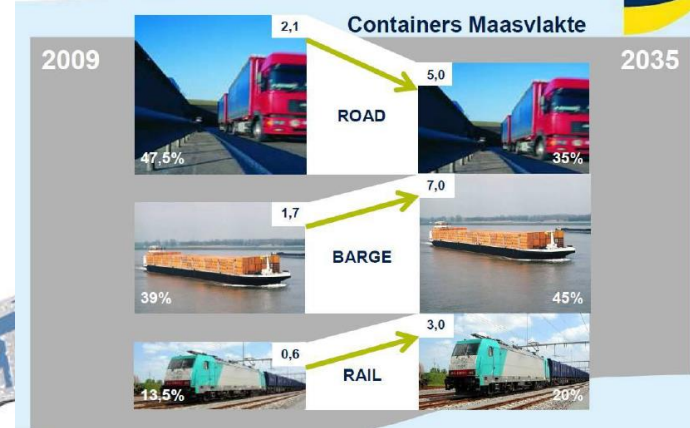
# Challenges

## in multimodal and intermodal hinterland connections

- Port of Rotterdam: nr. 1 in Europe → Increased cargo flows calls for optimized multi/intermodal solutions.
- 2015: Maasvlakte II, adding 600 ha containers transshipment facilities



### Modal split target



The Netherlands

Rotterdam  
port area

Europe

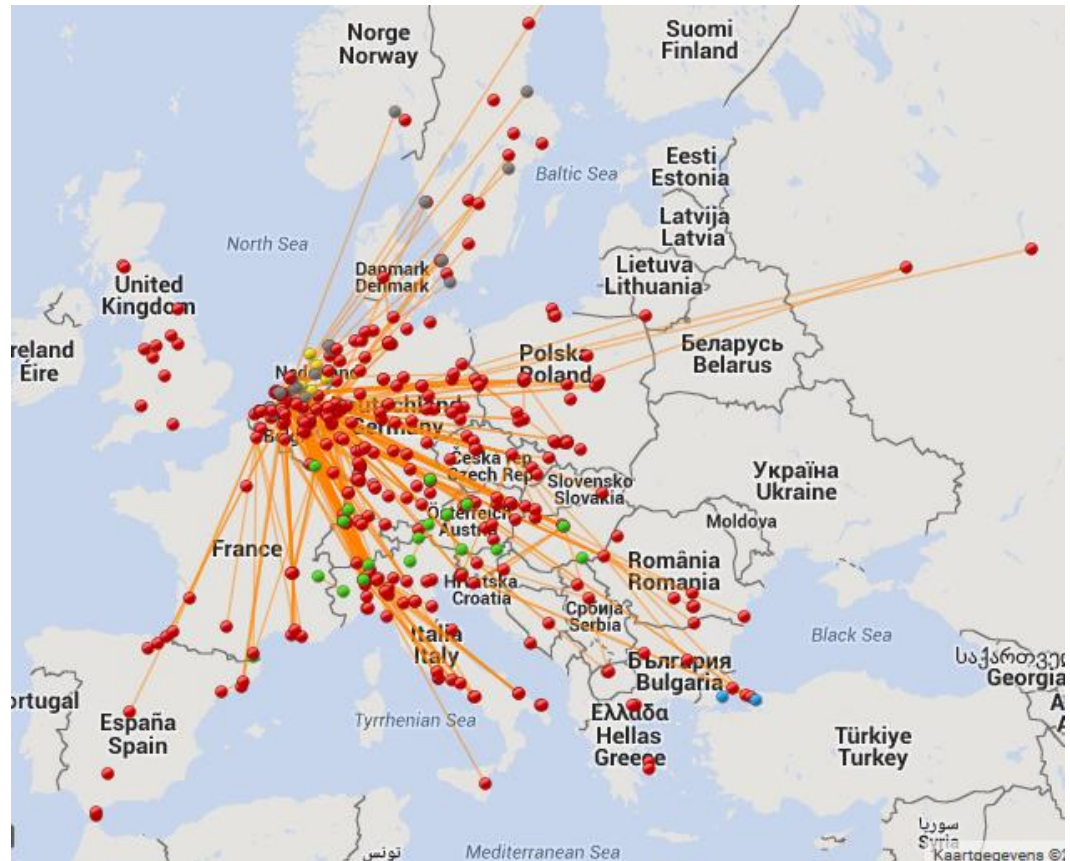
The Netherlands



# Multimodal rail cargo network

## Intermodal rail hinterland connections

- The Netherlands: more than 300 rail cargo services to other EU destinations
- The Netherlands rail cargo sector is liberalized : more than 20 rail transport operators make rail cargo transport competitive.
- Dedicated Betuwe railway line from Rotterdam to Germany



# Multimodal inland barge network

## Inland waterway hinterland connections

- The Netherlands: largest inland waterway barge fleet in Europa
- The Rhine is main international waterway, but whole of Netherlands is crisscrossed by rivers and canals.
- More than 100 million tons annually crossing the Dutch-German border by inland waterway



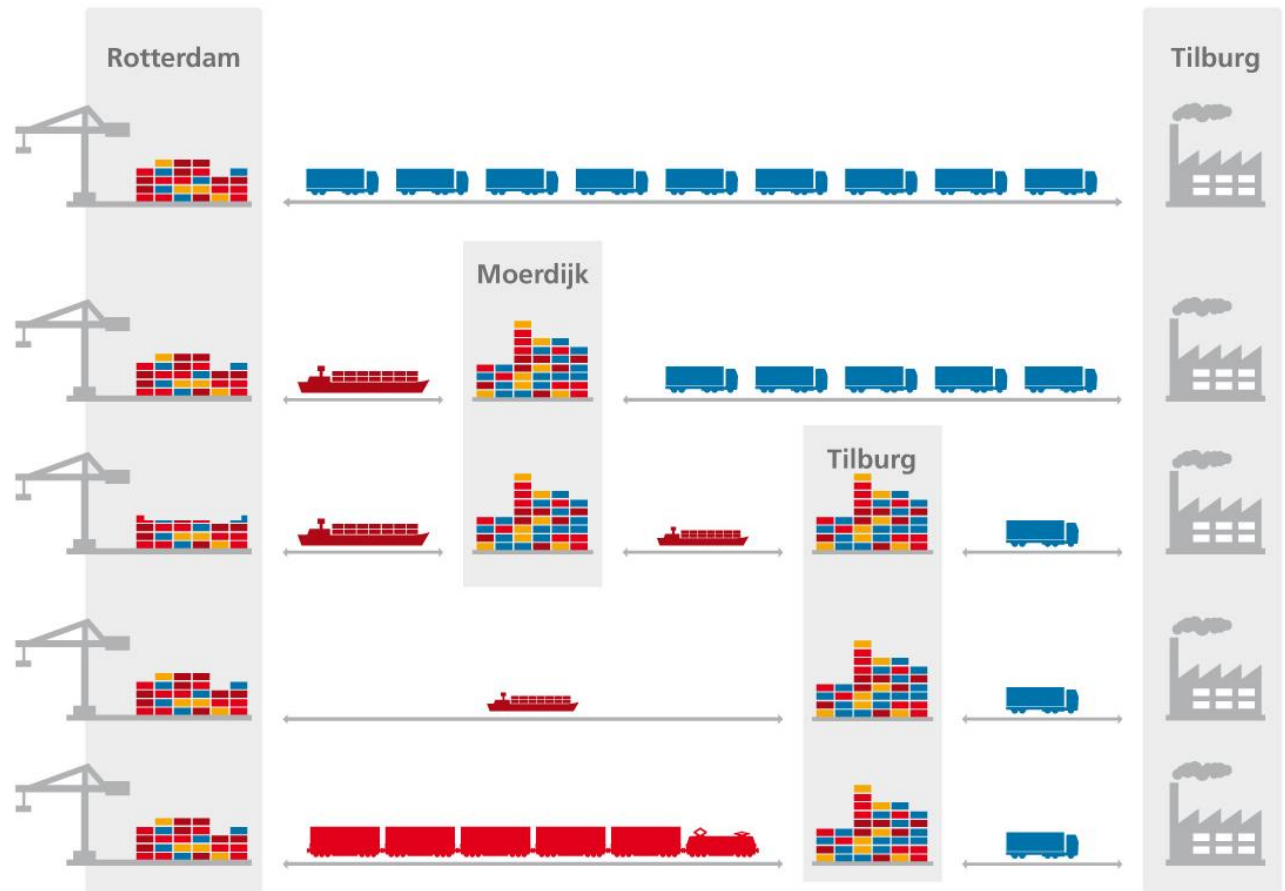


# Multimodal hinterland connections

Intermodal corridors; an example from Rotterdam to the hinterland

Choices for transport from port of Rotterdam to end customer:

- Using road, rail or inland waterway transport
- Using port of Moerdijk as transshipment hub
- Intermodal solutions



# Multimodal hinterland connections

Innovation: synchromodal transport solutions

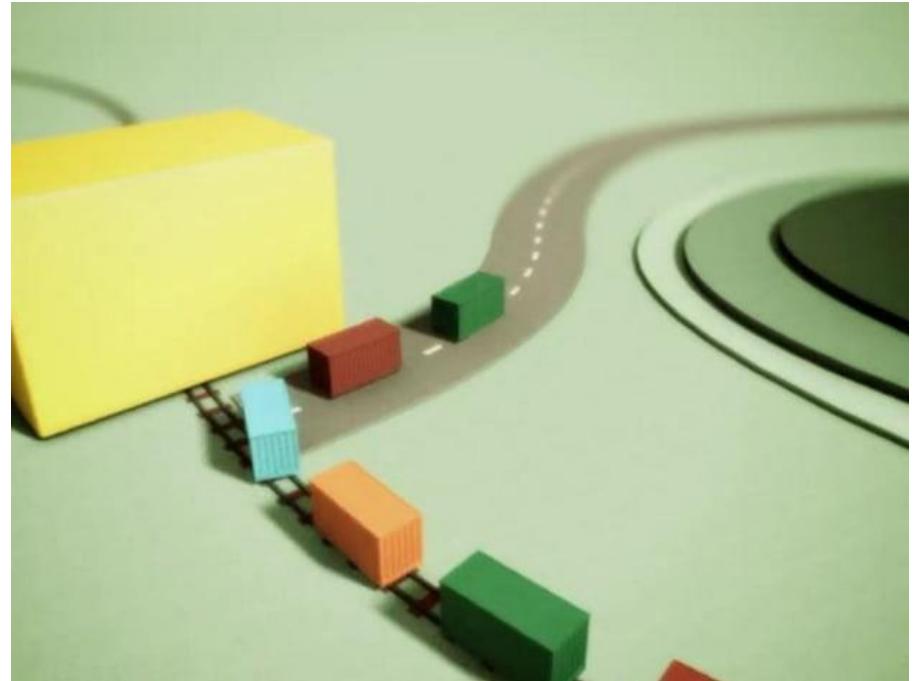
**How to improve use of intermodal transport, and increase customer service?**  
**The answer is in Innovation: Synchromodal transport. Logistics service provider has ability to switch without effort between different modalities = optimal, effective and sustainable utilization**

Innovation in:

- Bundling
- Decision horizon
- Flexibility
- System approach

Objective: Improved transport system:

- Increased reliability
- Increased predictability
- Cost efficiency
- Quality
- Sustainability
- Speed



# Multimodal network collaboration

Essential: sharing transport information in network from ports to operators to hinterland hubs



# Intermodal innovations and solutions

Synchromodal transport: intermodal transport in an optimal way



Shippers: A-modal bookings!

- Lower Price
- Fixed Time of delivery
- Higher Quality (safety, sustainability)



Logistic service provider:

- Optimization of assets
- Increased frequency of services
- Flexibility between modalities



Synchromodal innovation:

- a-modal booking for shippers
- Capability of IT systems
- Intermodal Infrastructure
- Contracts flexible
- Network business models
- Trust: mental shift required



# Benefits

## of using multimodal hinterland solutions



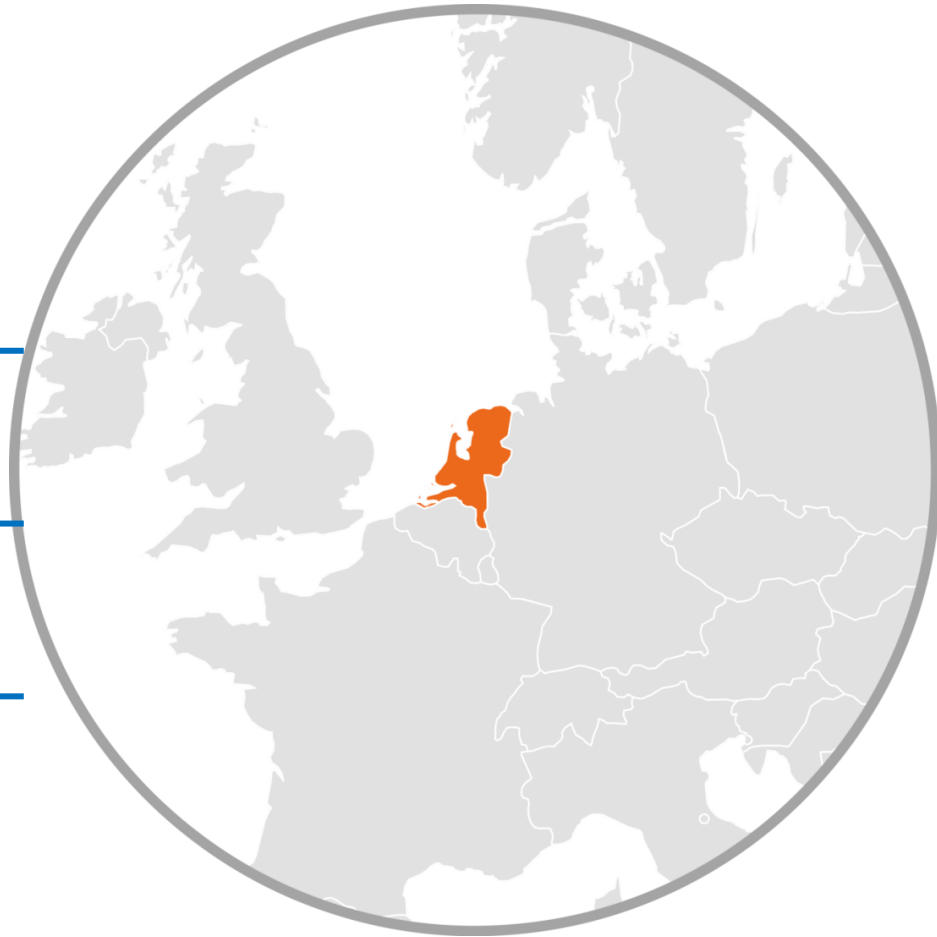
Optimal use of transport  
modality networks in Europe



Savings in costs and decreased  
pressure on the environment by  
combining different modalities



New logistics knowledge and  
new profitable business activities  
(incl. new jobs);



# The Netherlands = Logistics



Geographical position as gateway to Europe



Excellent Mainports (Rotterdam, Schiphol/Amsterdam)



Excellent hinterland connections (road, rail, barge, shortsea)

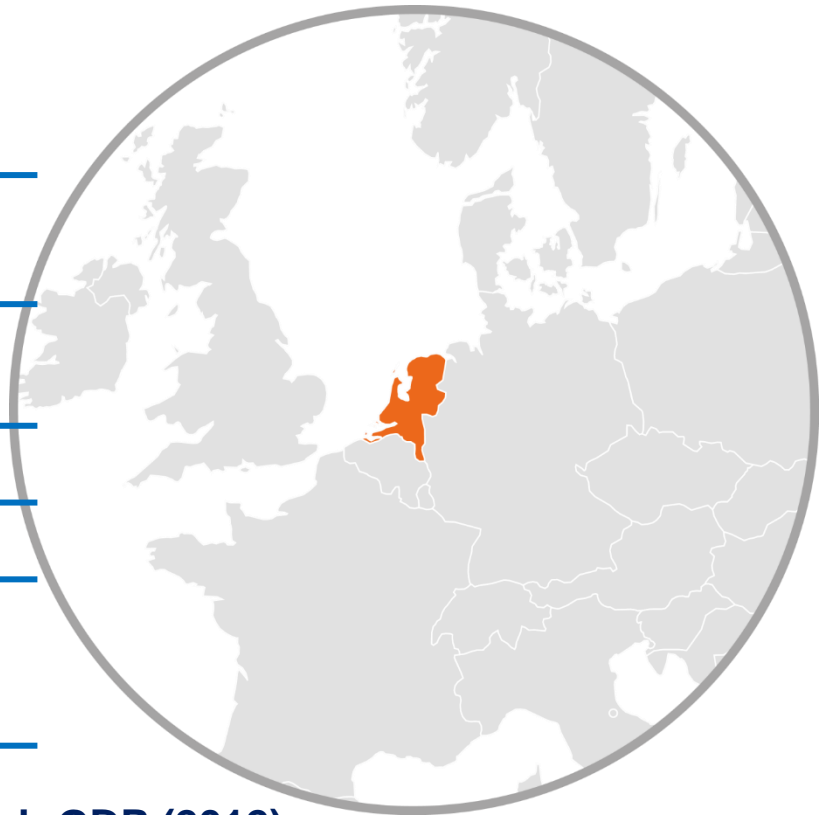


Logistics Service Providers (1PL-4PL)

Legislative framework & customs



High level of knowledge:  
8 research universities and 11 Universities  
of Applied Sciences specialized in logistics,



**Logistics/transport sector essential for Dutch GDP (2012):  
65 billion euros (10% of GDP); 813,000 jobs (12% of Dutch workforce)**



# Extensive expertise in hinterland logistics

## The Netherlands



LSPs and deep sea terminals offering optimized intermodal and synchronomodal solutions.



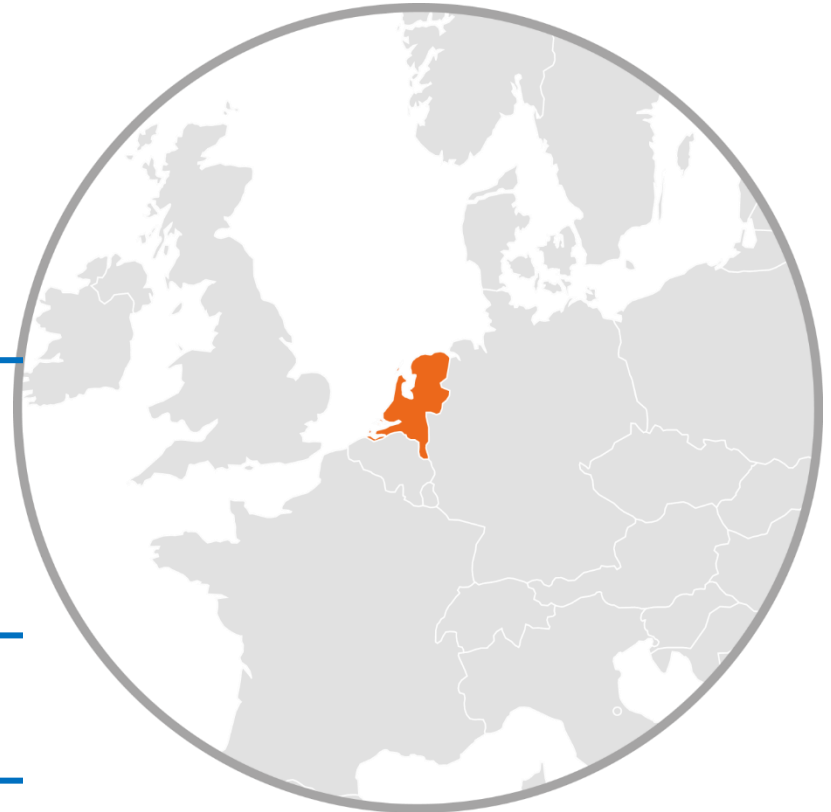
IT Companies, including global players, offer a broad range of IT solutions to manage hinterland supply chains.



Dutch universities, together with industry parties, have carried out world-class research into Hinterland Logistics solutions leading to knowledge-intensive innovations

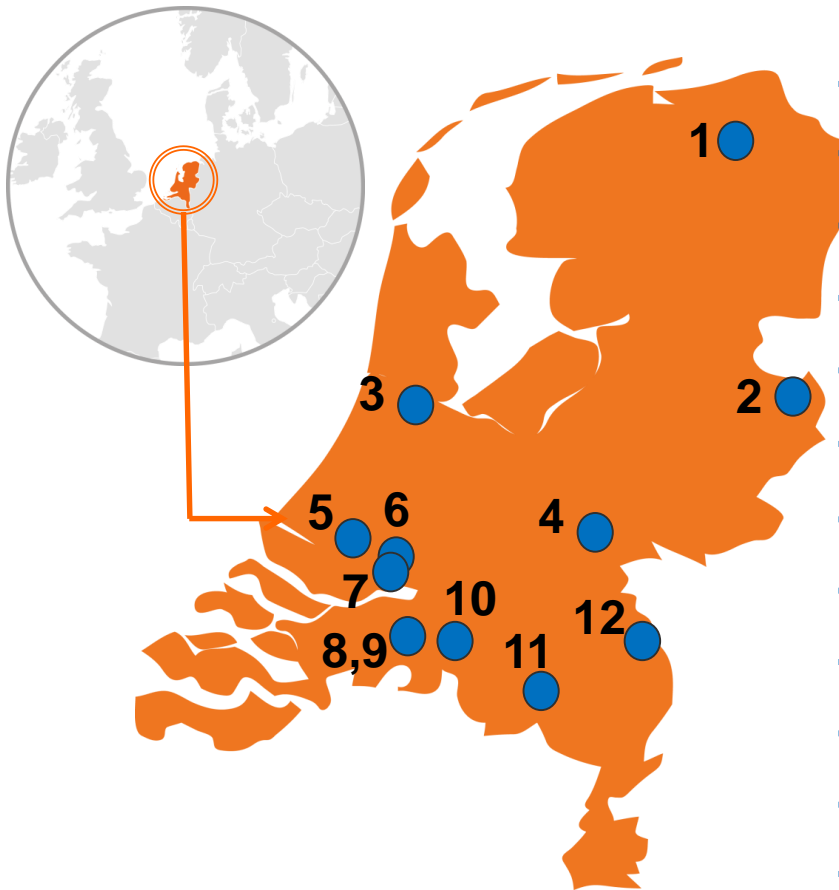


Dutch education institutes offer highly skilled graduates.



# Main Logistics courses at Universities

developing knowledge for multimodal hinterland connections



1. University of Groningen

2. University of Twente

3. University of Applied Sciences Amsterdam

4. University of Applied Sciences Arnhem Nijmegen

5. Delft University of Technology

6. Rotterdam University of Applied Sciences

7. Erasmus University Rotterdam

8. University of Applied Sciences Breda (NHTV)

9. Dutch Institute for Advanced Logistics (Dinalog)

10. Tilburg University

11. Eindhoven University of Technology

12. University of Applied Sciences Venlo (Fontys)

# Innovation roadmap for Synchromodality

## collaborative research and development

- The Netherlands has set up a specific innovation program for synchromodal transport, driven by the Dutch Institute for Advanced Logistics TKI DINALOG.



### Set up and Implementation

- Innovation of synchromodal concepts
- Shippers and logistics service providers



### Improving IT tools

- Set up of control towers
- Advanced planning tools
- Automated synchromodal booking platforms

### Orgware

- Mental shift at companies
- Distributed business community system
- National collaboration networks
- Regional synchromodal hotspots

# Setting up hinterland IT platforms

Dutch solutions for optimal multimodal networks



## Modalities



- Market place for rail cargo transport in Europe



- Market place for inland waterway cargo transport in Europe

## Ports



Port Community System (PCS), the digital connection to smart Dutch ports.

## Airports



Front runner in information services for the air cargo industry

## Sector co-operation



- Platform offering connections between all logistic partners in floriculture sector

# Intermodal and synchromodal logistics services

Dutch solutions: Providing a-modal logistics services



EUROPEAN  
GATEWAY  
SERVICES

Straight into Europe



# Multimodal planning IT solutions

Dutch solutions: control towers for efficient synchronomodal networks

