

## AIM OF THE PRESENTATION:

# A view on infrastructure framework conditions for logistics centres in Turkey



Quotation from 'Turkey Sets National Transport Agenda', July 2011 (2023 targets for transport):

***"..make Turkey a logistical base with ports, free trade zones, logistics centres and all modes of transport. At least 16 points will be large-scale logistics centres"***

## **CONTENT OF THE PRESENTATION:**

- 1) Transport infrastructure concept and functions**
- 2) Logistics centre concept and functions**
- 3) Development trends related to regional/international logistics centre (ILCs)**
- 4) Institutional/organisational setup of ILCs**
- 5) Location requirements and options**
- 6) Phases of planning and implementation**

# 1) TRANSPORT INFRASTRUCTURE CONCEPT AND FUNCTIONS

**The aim of infrastructure is to provide the functions and services (for industrial and commercial systems), which cannot be adequately regulated and sustained by the market.**

- **The concept could include both organisational infrastructure (“orgware”), common information systems (“software”), and physical infrastructure (“hardware”)**
- **Physical infrastructure needs to be planned and coordinated**
- **Does the market present a competitive or a monopoly situation?**
- **Political, institutional and regulatory framework conditions are extremely important as well**

**Are logistics centres part of the transport infrastructure??**

**Definition of “transport infrastructure”:**

**The common physical and organisational framework conditions for individual transport activities and logistics services**

***Hypotheses:***

- ❑ ***The regional development impact of improved transport infrastructure depends on the industrial and commercial networks, and on how the regional and international trade patterns develop***
- ❑ ***Thus the extensions and improvement of transport infrastructure has to be adapted to and balanced with overall regional development strategies***

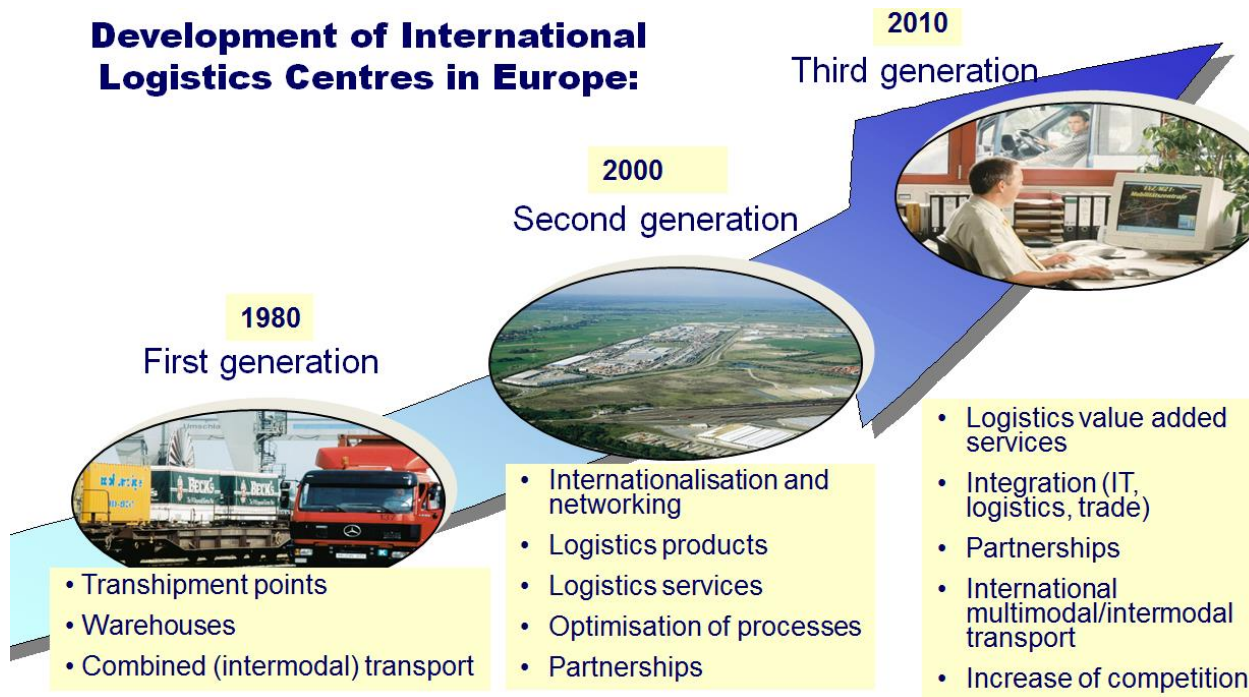
## 2) LOGISTICS CENTRE CONCEPT AND FUNCTIONS:

Definition according to the SUTRANET (Sustainable Transport Networks in the North Sea Region) project, 2007:

***“An area within which all activities relating to transport, logistics and the distribution of goods – both for national and international transit – are carried out by various operators on a commercial basis”***

### Example:

(Source: the TRACECA project: International Logistics Centres in Western NIS and the Caucasus, 2010)



## Types of logistics centres:

- **Serving city logistics (large cities)**
- **Inland location (at least: convenient access to the major road and railway networks)**
- **Location in or near a port (at least: access to road and rail transport, and to unit-load shipping (RoRo and/or LoLo))**

**Example:** (Source: TRACECA project, 2010)

**Bremen - the first logistics centre in Germany**



- **Area with efficient transport links**
- **Logistics companies**
- **Service companies/industries**
- **Efficient process of transport, freight forwarding, warehousing, logistics services**
  - value added services
- **Independent entities**
- **Intermodal links, at least two modes**
- **Independent operator**

### 3) DEVELOPMENT TRENDS RELATED TO REGIONAL/ INTERNATIONAL LOGISTICS CENTRES (ILCs):

#### Findings on development trends:

(SUTRANET 2007; TRACECA 2010; et al)

- **Distribution centres in Europe serve more than one country, so that the individual company can manage its supply chain more efficiently**
- **A rapid movement towards more frequent (and smaller) consignments of a higher value, which implies a need for consolidation/de-consolidation**
- **Increase in high-value goods (air freight potentials)**
- **Container transport reflects a dynamic growth compared to GDP growth (due to globalisation in international trade, relocation of industry to low-cost labour countries, containerisation of break-bulk and partly bulk, price-competitive shipping and handling, etc.)**
- **Deep-sea containerships are growing in size and capacity (latest up to 18.000 TEU)**



## **Findings about Turkey's transport and logistics sectors:**

**(Source: OECD Peer Review of intermodal transport in Turkey 2009; Deloitte/ISPAT report 2010)**

- **Increasing international trade**
- **A need for a balanced transport system not only dependent of road transport (road haulage is currently the major mode)**
- **All major ports are accessible by railways, but the railway network lacks sufficient capacity**
- **Suitable topography for the construction of new ports**
- **Turkey is pursuing a port privatisation process**
- **Container traffic has shown annual increases of 20%**
- **Turkish international road hauliers are expanding their intermodal fleet (one of the largest truck fleets in Europe)**
- **Considerable number of RoRo services on the Black Sea between Turkish, Ukrainian, Russian, and Georgian ports**
- **Block trains with swap-bodies operate between Turkey and Germany**
- **Presence of multinational logistics companies in Turkey enables the local players to transfer know-how**

## 4) INSTITUTIONAL/ORGANISATIONAL SETUP OF ILCs

Table 1: Basic port administration/operation modes

Type	Infrastructure	Superstructure	Port labor	Other functions
Public service port	Public	Public	Public	Majority public
Tool port	Public	Public	Private	Public/private
Landlord port	Public	Private	Private	Public/private
Private service port	Private	Private	Private	Majority public

Source: World Bank (2007)

### **Public service port:**

**The port authority owns the land, infrastructure and equipment, and performs all port related services**

### **Tool port:**

**The port authority owns the land, infrastructure and equipment, including quay cranes etc., and some cargo handling operations**

### **Landlord port:**

**The port authority owns the land and infrastructure, but infrastructure is leased to private operating companies**

### **Private service port:**

**Land, infrastructure and equipment are all owned by the private sector**

**Model for logistics centres:  
tool port or landlord port?**

## **The infrastructure role of a logistics centre:**

(Source: SUTRANET 2007)

- ❖ **in order to ensure free competition, a logistics centre must be open to allow access – on equal terms - to all companies involved**
- ❖ **thus it should be managed by a neutral legal body (e.g. in the form of a PPP) - to be separated from individual commercial companies offering transport and logistics services**
- ❖ **it must be equipped with all public facilities and services required to carry out the activities**
- ❖ **it should be served by at least two transport modes (road, rail, short-sea shipping, deep-sea shipping, aviation) to enhance intermodal solutions**

## **General recommendations:**

**(SUTRANET, 2007; TRACECA 2010; OECD Peer Review 2009)**

- **Intermodal transport solutions are seen as essential for logistics centres with a regional/international function**
- **The logistics centres could enhance and promote a shift from road transport to intermodal solutions involving rail- and/or sea transport**
- **This implies a focus on goods organised in standardised unit-loads, i.e. containers, semi-trailers and swap-bodies**
- **Location should be in a major international transport corridor, where there is access to different modes of transport (at least road and rail), and preferably access to a major sea port**
- **For locations in or near a sea port, congestions in the port and on the hinterland connections have to be avoided, because they will have a negative impact on costs and reliability**
- **Offers concentration of a range of logistics services in one place, including customs clearance**
- **Information flows about the supply chains is important**

## 5) LOCATION REQUIREMENTS AND OPTIONS:

### Physical infrastructure requirements to logistics centres near/in ports:

- ❑ **Road and rail access**
- ❑ **Deep-sea port access**

### Inland logistics centres:

- ❑ **Cross-point for major road and rail networks**
- ❑ **Proximity to large urban/commercial/industrial areas**
- ❑ **Cross-border location an additional asset**

### In addition:

**Airport access near major cities (air freight offering potentials for ILCs in Istanbul, Ankara and Izmir)**

## Major transport corridors and routes through Turkey:

- TRACECA ('Transport Corridor Europe-Caucasus-Asia')
- Pan-European corridors, e.g. TEM ('Trans-European Motorways') and TER ('Trans-European Railways') networks
- MoS ('Motorways of the Sea')
- BSEC ('Black Sea Economic Cooperation') Black Sea Ring Highway

### ILC locations related to TRACECA routes:

(Source: TRACECA project, 2010)

Network of Western TRACECA ILCs



## Transnational transport priority axes:

(Source: Extension of the major Trans-European transport axes to the neighbouring countries, EU 2007)



# Transport infrastructure networks in Turkey:

## Road network:

### Autobahnen der Türkei



TEM:



# Railway network (2008):



Figure 7 - Marmaray and Kars-Tbilisi-Baku Projects



Source: UTIKAD



Source: UTIKAD

## **Railway issues:**

- **Kars – Georgia - Azerbaijan (Kars-Akhalkalaki-Tbilisi-Baku) railway line completed in 2012**
- **Bosporus railway tunnel under construction**
- **Rail link to Armenia closed since 1993**
- **Turkey's rail network has a standard gauge (1,435 mm; like most European countries)**
- **Georgia, Armenia, and Azerbaijan have a former Soviet Union gauge (1,520 mm); i.e. break-of-gauge facilities required**
- **Iran and Syria: most lines have standard gauges (1,435 mm)**
- **Extension of electrification?**
- **A need for a more adequate set of rules and regulations for the railway sector**

## **Expectations for the near future:**

- **Continued efforts to integrate Turkey's transport network with the European transport networks (TEN-T)**
- **Excess demand for customs clearance, container transport, and bonded warehouse services**
- **Ports will become logistics centres that facilitate combined/intermodal transport**

## **Extract of Vision for Turkey 2023: (Source: Deloitte/ISPAT report, 2010)**

- **16 new large-scale logistics centres**
- **Railway projects to connect Turkey with the Caucasus, the Middle East, and North Africa**
- **Transfer ports in Aegean/Mediterranean, Marmara, Black Sea**
- **At least one of Turkish ports among the top ten ports in the World by 2019**
- **32 million TEU handling capacity for container transport (Hamburg Port 2011: 9 million TEU; Rotterdam Port 2012: 12 million TEU)**

**All ports:**



## **Types of ports serving intermodal transport:**

**RoRo services**

**LoLo (container) services**

- **Feeder port**
- **Deep sea (hub) port (including hinterland connection)**
- **Trans-shipment port (not serving the hinterland)**

**Requirements to deep-sea container ports:**

- **16-18 metre draught**
- **LoLo ship sizes up to 18,000 TEU (or more?)**

## Potential ports and inland locations of relevance to intermodal transport:



## **Ports serving RoRo shipping (short-sea routes and MoS):**

**Haydarpasa, Ambarli, Derince (Istanbul/Marmara region), Izmir, Mersin, Iskenderun, Zonguldak, Samsun, Trabzon, (Rize)**

## **Ports serving container (LoLo) ships:**

### **- feeder ports:**

**Izmit? Iskenderun?**

### **- deep-sea ports including trans-shipment ports:**

- Haydarpasa, Ambarli, Bandirma (Marmara region)**
- Izmir**
- Mersin**
- New locations, e.g. Filyos Port project at the Black Sea**

## 6) PHASES OF PLANNING AND IMPLEMENTATION

**Policy and strategy formulations at a national level (involving all relevant stakeholders)**



**Overall surveys**



**Formulation of a national logistics master plan adapted to the National Transport Master Plan**



**Overall time schedule for implementation**



**Overall investment plans (public and private sector investors)**



**Specific surveys for individual ILCs (involving local stakeholders; including environmental impact assessments)**



**Planning and design, and a business plan, for the individual ILC**



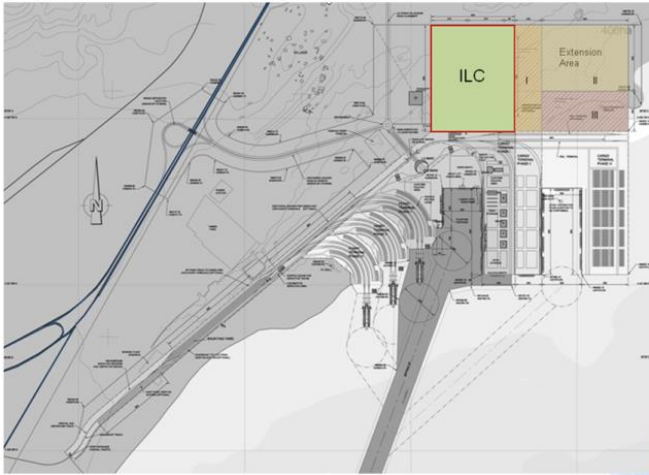
**Detailed design of layout and facilities**



**Budgeting, tendering and implementation (in stages)**

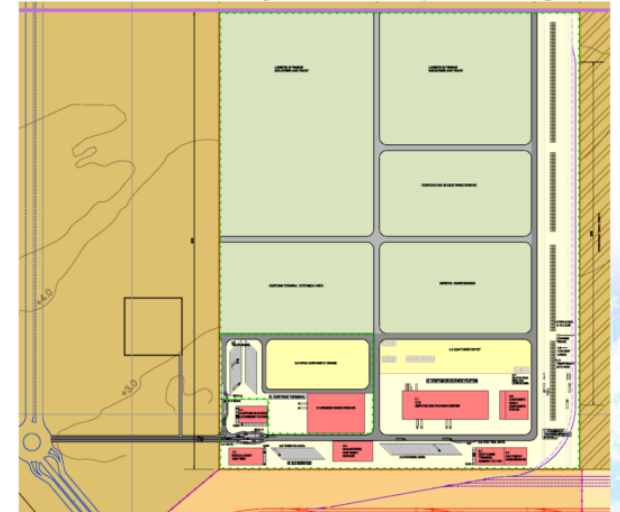
## Example: Alyat as international logistics centre (ILC):

(Source: TRACECA project, 2010)



- Establishment of the ILC **within the port territory**
- The available **area 50 ha for the phase 1**
- Expansion possibilities of about 50 ha.
- **Integration of the ILC** into the port infrastructure is essential
- Infrastructure development should be financed under **port development package**

Draft Master Plan Layout – Development Stage I



### Establishment of the ILC **within the port territory**

- Phase 1: New development of infrastructure

**Public:**

**step 1:** preparation of the plot, utilities, communication, integration into the transport network, internal road and railway network, container terminal

**step 2:** further development of infrastructure

- Phase 2: Attraction of the logistics business to the new facility

**Private:**

investment in warehouses, logistics facilities, supporting services, establishment of the value added services in the logistics centre.

**Thank you for the attention**

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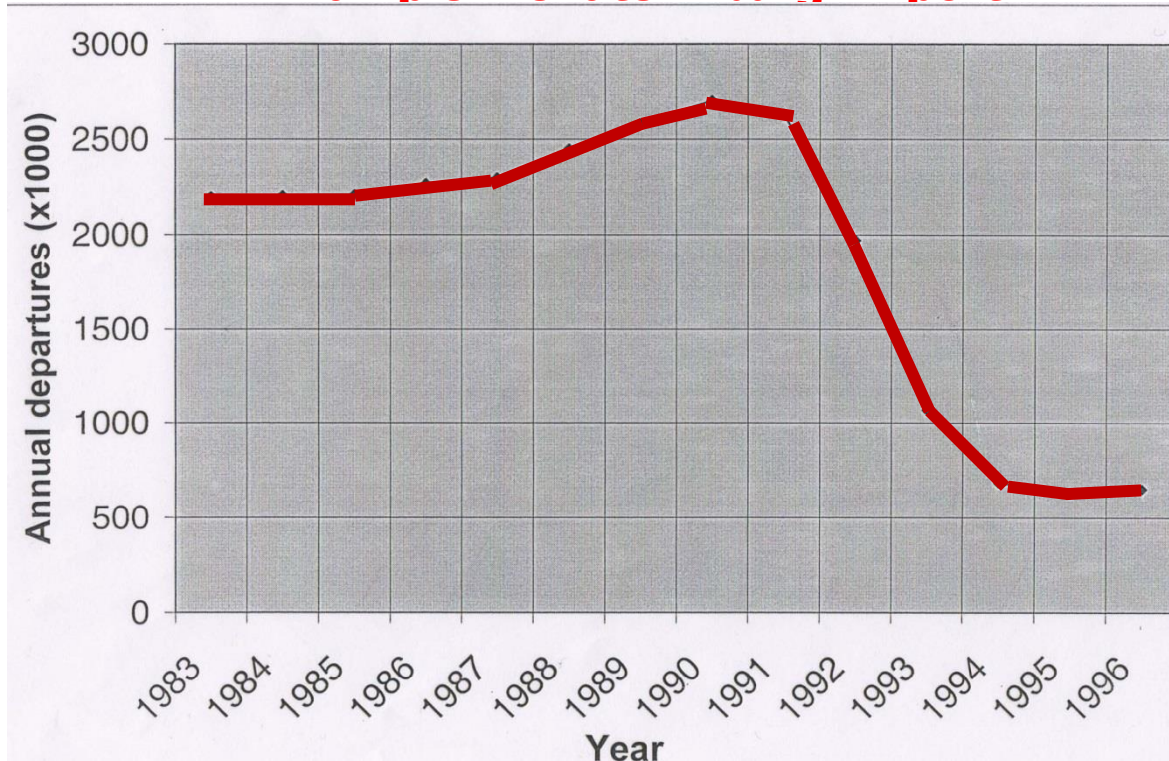
**Websites:**

**SUTRANET:** [sutranet.plan.aau.dk](http://sutranet.plan.aau.dk)

**TRACECA:** [www.traceca-org.org/en/home/](http://www.traceca-org.org/en/home/)  
[ec.europa.eu/transport/themes/international/regional\\_cooperation/](http://ec.europa.eu/transport/themes/international/regional_cooperation/)

**Political, institutional and regulatory framework conditions are extremely important as well**

**Example: Yekaterinburg Airport:**



**Motorways of the Sea (MoS) concept:**  
***“Without the deck of a ship there is no ‘seaway’ infrastructure”***

**(Source: SUTRANET, 2007)**



## **Institutional and organisational issues in Turkey:**

(source: TRACECA project, 2010)

### **“Weaknesses”:**

- **Institutional/organisational restructuring in the rail sector, including TCDD to concentrate on core businesses**
- **Infrastructural and organisational deficiencies in the port sector**
- **A lack of consistency in logistics centre development initiatives**  
(presently there is no national strategy, adequate legal framework, and regulatory and financial incentives to enhance intermodal transport)

### **“Opportunities”:**

- **Turkish transport and logistics companies are gradually changing to a more customer minded approach based on value-added services**
- **Turkey has the largest truck fleet in the region, with links to RoRo shipping, and is partly realising the MoS concept**

**Recommendations (extract from a list of 17 recommendations) about Turkey's transport and logistics sectors:**

(Source: OECD Peer Review of intermodal transport in Turkey, 2009)

- **A clear policy and legal framework should be elaborated in order to ensure a level playing field for the private sector**
- **Turkey should elaborate a comprehensive intermodal strategy in the form of a national intermodal/logistics master plan, which should define a network of intermodal corridors, nodes, and gateways**
- **Regulatory and financial incentives to be implemented in order to attract private capital for the development of intermodal transport services**
- **Infrastructure capacity for the major ports to be increased, including hinterland connections to be improved**
- **Turkish transport authorities to encourage the extension of RoRo shipping in relation to the EU initiative: 'Motorways of the Sea' (MoS)**
- **The railway network to be upgraded to allow for competitive and reliable goods transport services**
- **Transit trade through Turkey could be further used as an instrument for additional economic growth**