

# Introduction to UNESCAP

## Time/Cost-Distance Methodology

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- ❖ The “UNESCAP Time/Cost – Distance Methodology” is the graphical representation of cost and time data associated with transport processes. The purpose of the model is to identify inefficiencies and isolate bottlenecks along a particular route by looking at the cost and time characteristics of every section along a route.
  
  - ❖ The “UNESCAP Time/Cost – Distance Methodology” enables policy makers to:
    - ❑ **compare - over a period of time - the changes of cost and/or time required for transportation on a certain route;**
    - ❑ **compare and evaluate competing modes of transport operating on the same route;**
    - ❑ **compare alternative transport routes.**

# Benefits:

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- ▶ Simple to use
- ▶ Provides a 'snap-shot' of the present situation
- ▶ Can track changes over time
- ▶ Possibility of comparing alternative routes
- ▶ Can be understood by all
- ▶ Powerful instrument for international cooperation

# Benefits:

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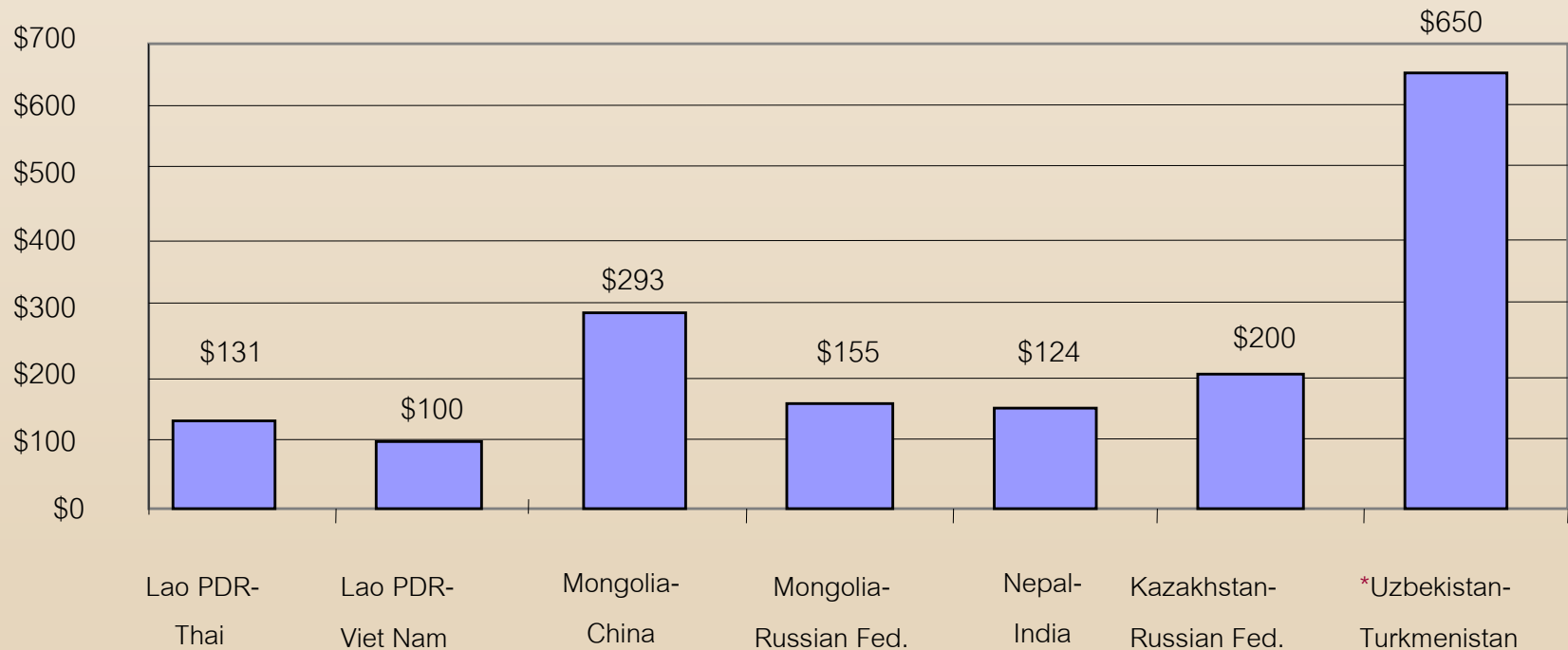
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- ❖ Can be utilised to measure and assess the performance of any transport corridor (unimodal or intermodal)
  
- ❖ Includes both transport (road, rail, inland waterway, maritime) and intermodal transfer (ports, rail-freight terminals, inland clearance depots) as cost and time components.

# Other benefits – Comparison of Border Crossings by Cost or Time

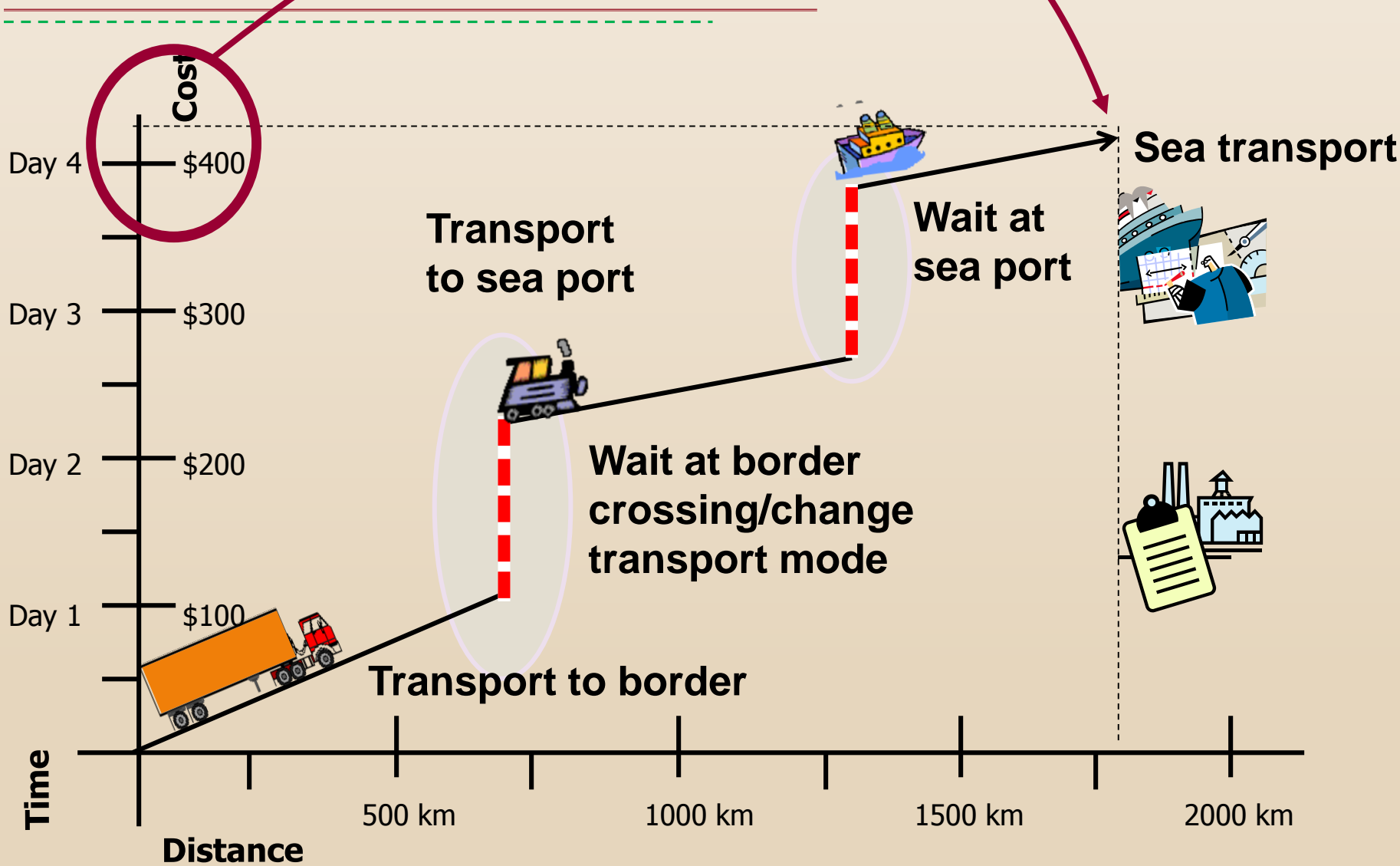
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## Cost per TEU

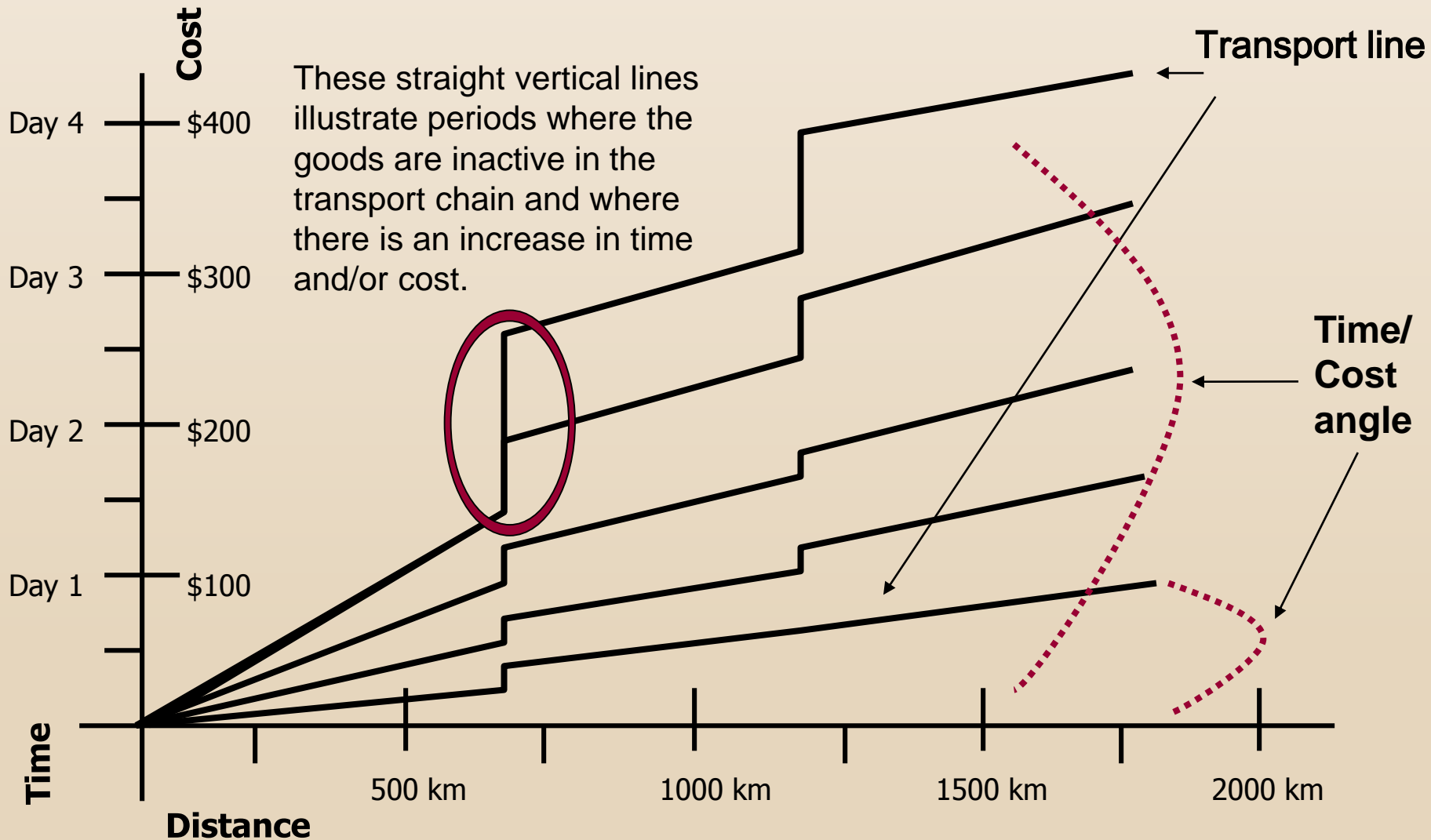


**\* Estimated from cost of standard European 12 meter semi trailer.**

# The model



# Objective to straighten the transport line and decrease the time/cost angle



# Minimum Information Required:

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- ▶ **Route** from origin to destination, including border crossings
- ▶ **Mode** of transport for each leg  
(e.g. Road/Rail/Sea/Air)
- ▶ **Distance** for each leg/mode
- ▶ **Time** for each leg/mode
- ▶ **Cost** for each leg/mode



# Example of TCD application: Tianjin-Ulaanbaatar Railway link

TRANS-ASIAN RAILWAY NETWORK

DRAFT

Ulaanbaatar

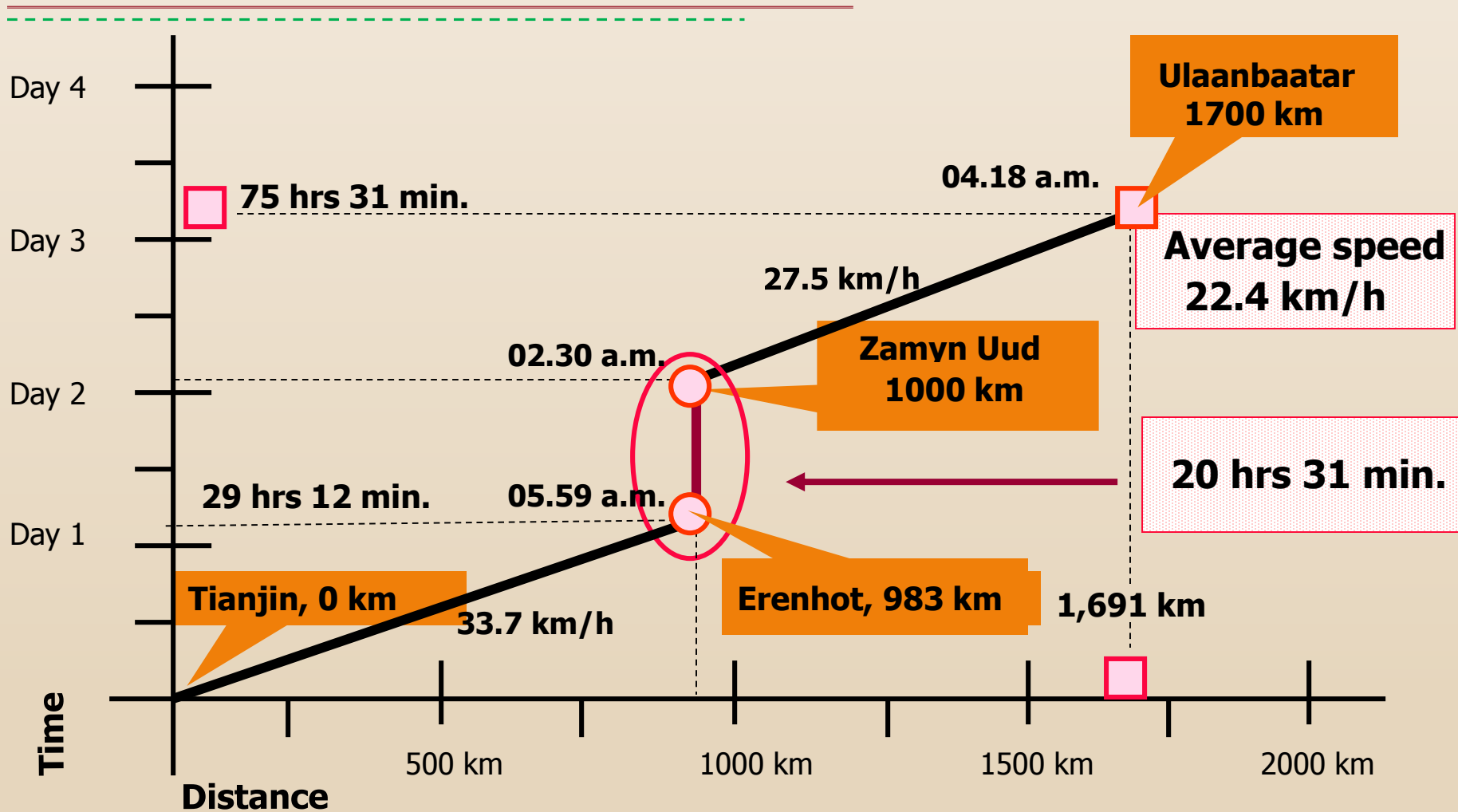
MAP

Tianjin Port

### Track Gauges

- 1,520 mm
- 1,435 mm
- 1,067 mm
- 1,000 mm
- 1,000/1,435 mm
- TAR LINK - PLANNED/UNDER CONSTRUCTION
- POTENTIAL TAR LINK
- BREAK-OF-GAUGE
- FERRY CROSSING

# Example of TCD application: Tianjin-Ulaanbaatar Railway link



- Transshipment: 3 hrs. 20 min.  
(3.5 min. per box)

Shunting + train formation: 3 hrs. 35 min.

- Customs: China, 3 hrs. 00 min.  
Mongolia, 4 hrs. 50 min.

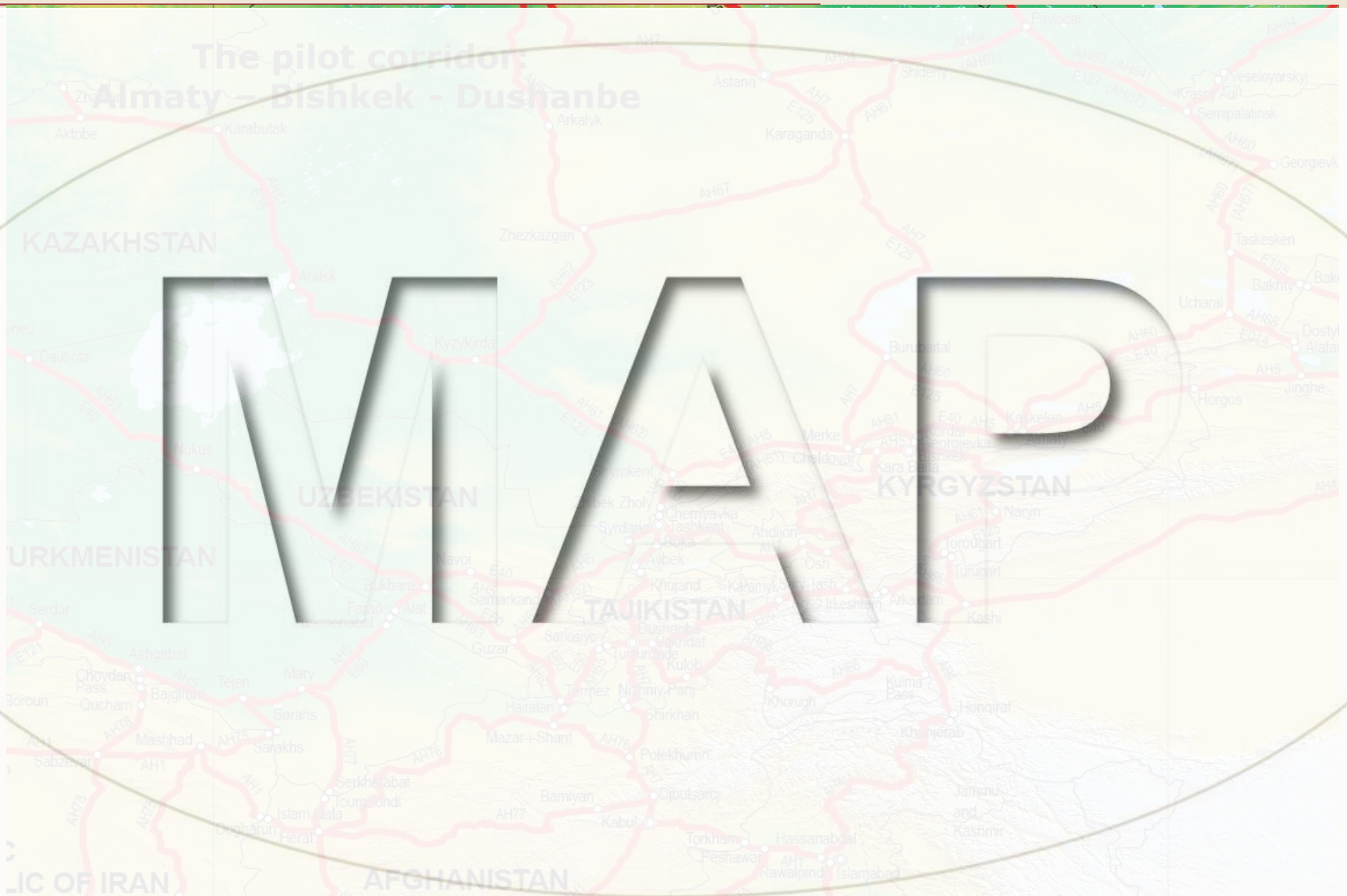
# TCD pilot application by clusters

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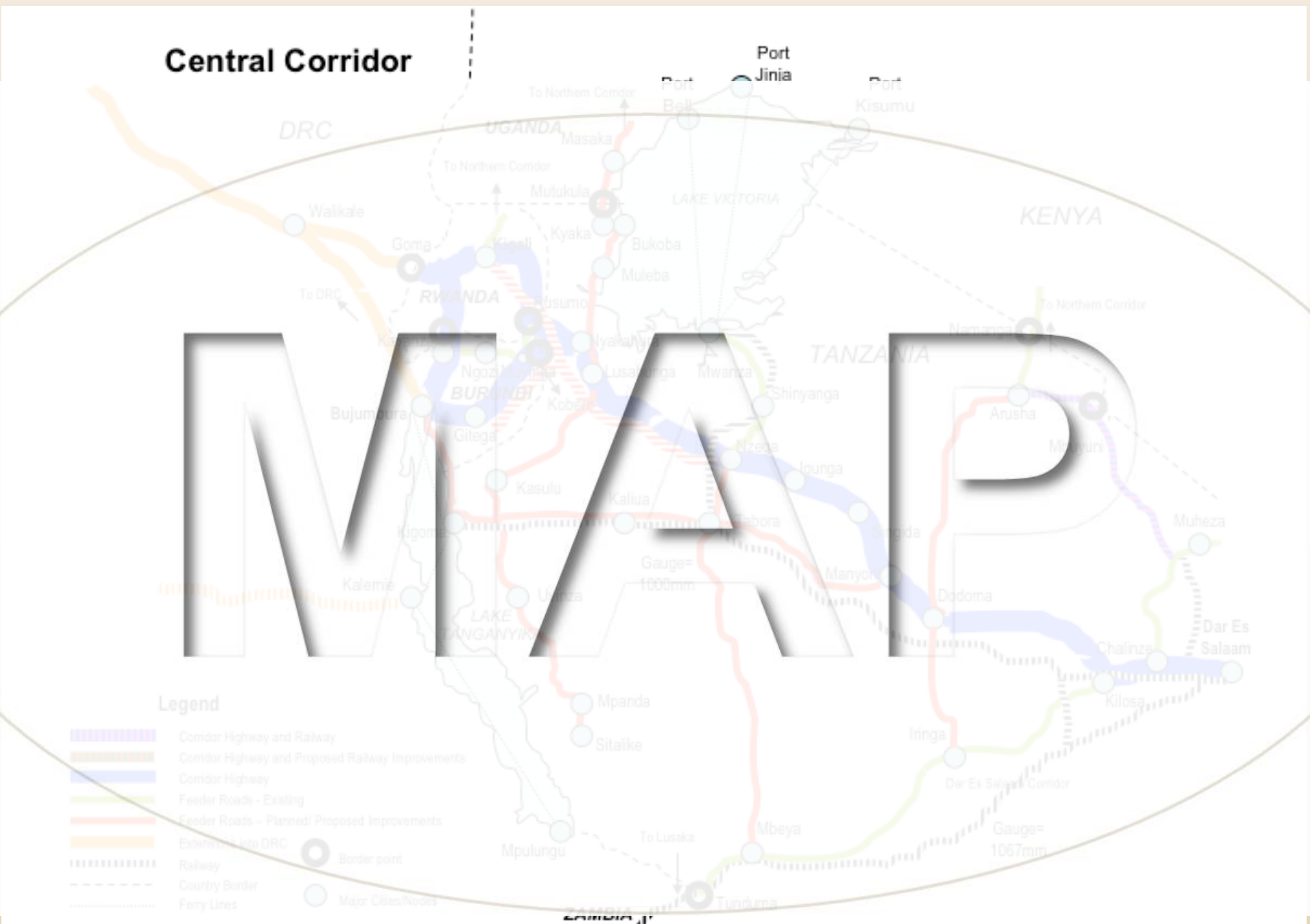
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- ❖ UNCTAD has developed a cluster methodology to use a collaborative structure called cluster to bring stakeholders involved in cross-border and transit transport in landlocked and transit developing countries together to discuss the issues of transit transport and coordinate their facilitation measures
- ❖ UNESCAP has developed the Time /Cost- Distance methodology to find time and costs spent for each segment of transport process, through which to help identify, quantify and isolate bottlenecks to be addressed in transport process
- ❖ The two methodologies have been integrated into a single transport facilitation toolkit
- ❖ Two pilot project sites in East Africa and Central Asia.
- ❖ Participating countries in Asia:
  - ▶ Kazakhstan, Kyrgyzstan and Tajikistan
- ❖ Participating countries in Africa:
  - ▶ Burundi, Rwanda and Tanzania

# Kazakhstan, Kyrgyzstan and Tajikistan



# Central Corridor





# Examples of TCD application: ADB CAREC CPMM

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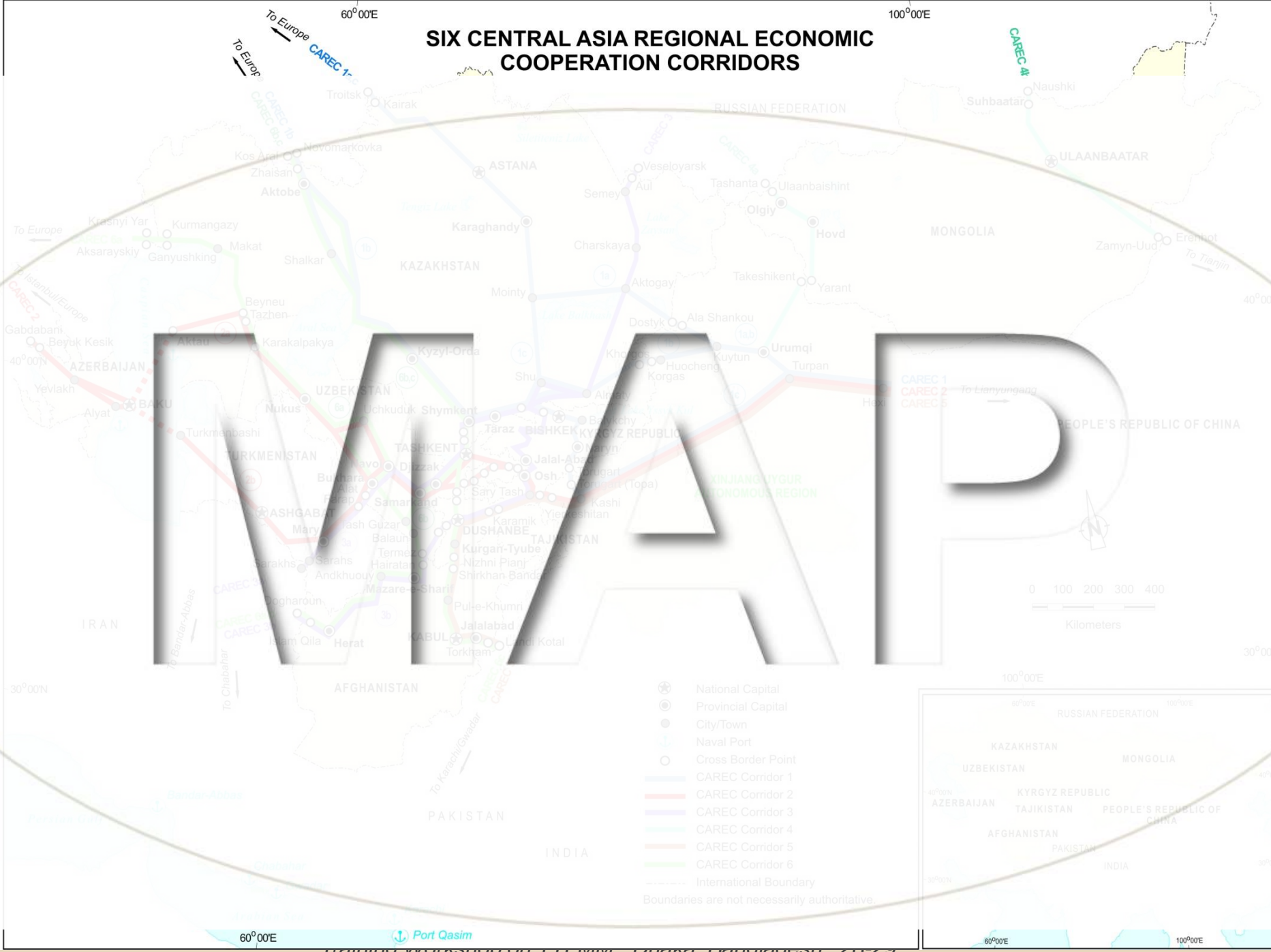
## **CAREC Corridor Performance Measurement and Monitoring**

- Efficient corridors to reduce time and cost
- Detailed measurement and monitoring
- Identify bottlenecks
- Develop response

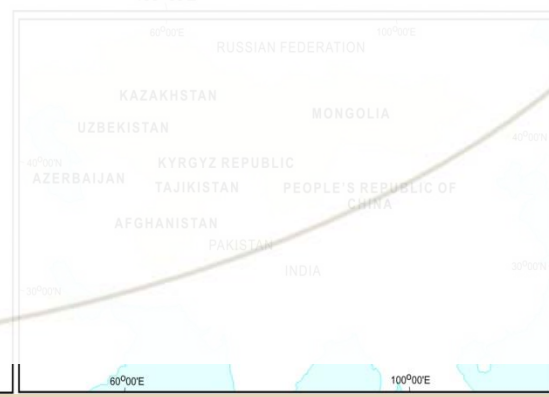


ADB

# SIX CENTRAL ASIA REGIONAL ECONOMIC COOPERATION CORRIDORS



- ⊛ National Capital
  - Provincial Capital
  - City/Town
  - ⚓ Naval Port
  - Cross Border Point
  - CAREC Corridor 1
  - CAREC Corridor 2
  - CAREC Corridor 3
  - CAREC Corridor 4
  - CAREC Corridor 5
  - CAREC Corridor 6
  - International Boundary
- Boundaries are not necessarily authoritative.

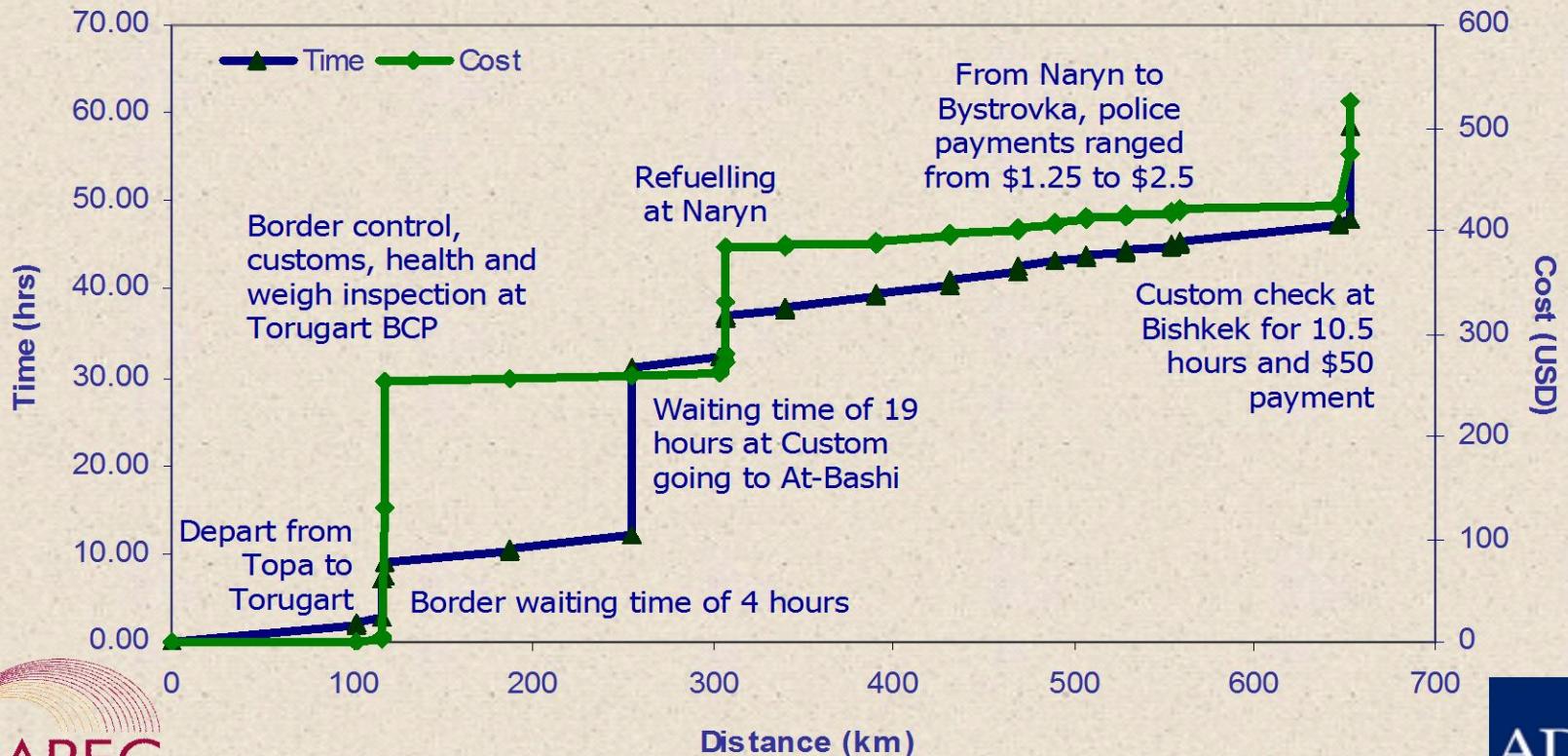




# Example of TCD application: ADB CAREC CPMM

## Time-Cost Distance Method

### Topa (PRC) - Bishkek (Kyrgyz Rep) - Corridor 1c





# Good practices and lessons learnt:

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- ▶ TCD is a versatile tool and its application can be custom-tailored to the needs of a particular country or transport corridor
- ▶ TCD can be applied for different purposes
- ▶ TCD can be applied for measurement of transport corridor performance under various integrated projects
- ▶ The most resource-consuming aspect of TCD's practical application is the collection of data
- ▶ Scope of application of TCD may largely vary subject to availability of data and capacity for its regular collection

## Proposed TCD application for selected SASEC transport corridor(s)

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- ▶ Use of TCD to measure the performance of SASEC transport corridors as the part of BPA+, as part of the establishment of TTFMM
- ▶ TCD can also be applied to compare the efficiency of road and rail corridors or routes

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Thank you!