

Introduction to UNESCAP Time/Cost-Distance Methodology

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What is the 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:

- ▶ **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**

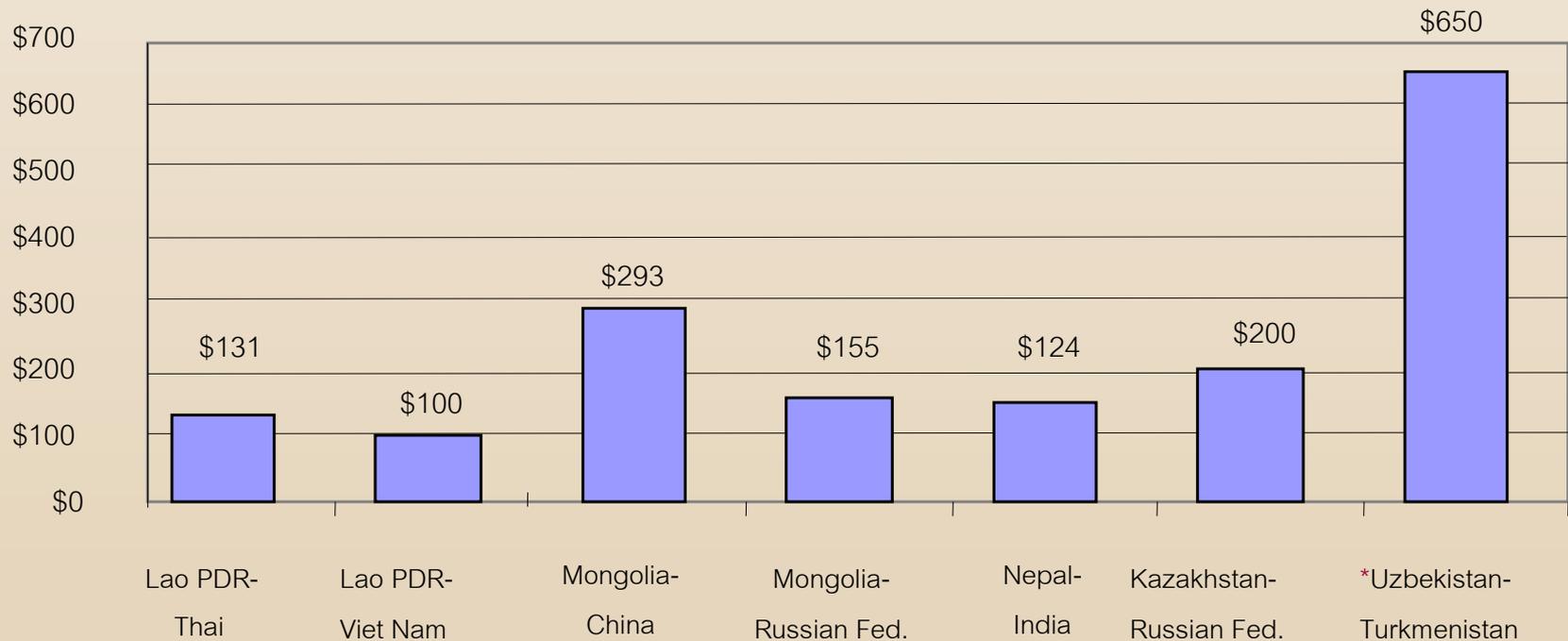
Benefits:

- ❖ 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.

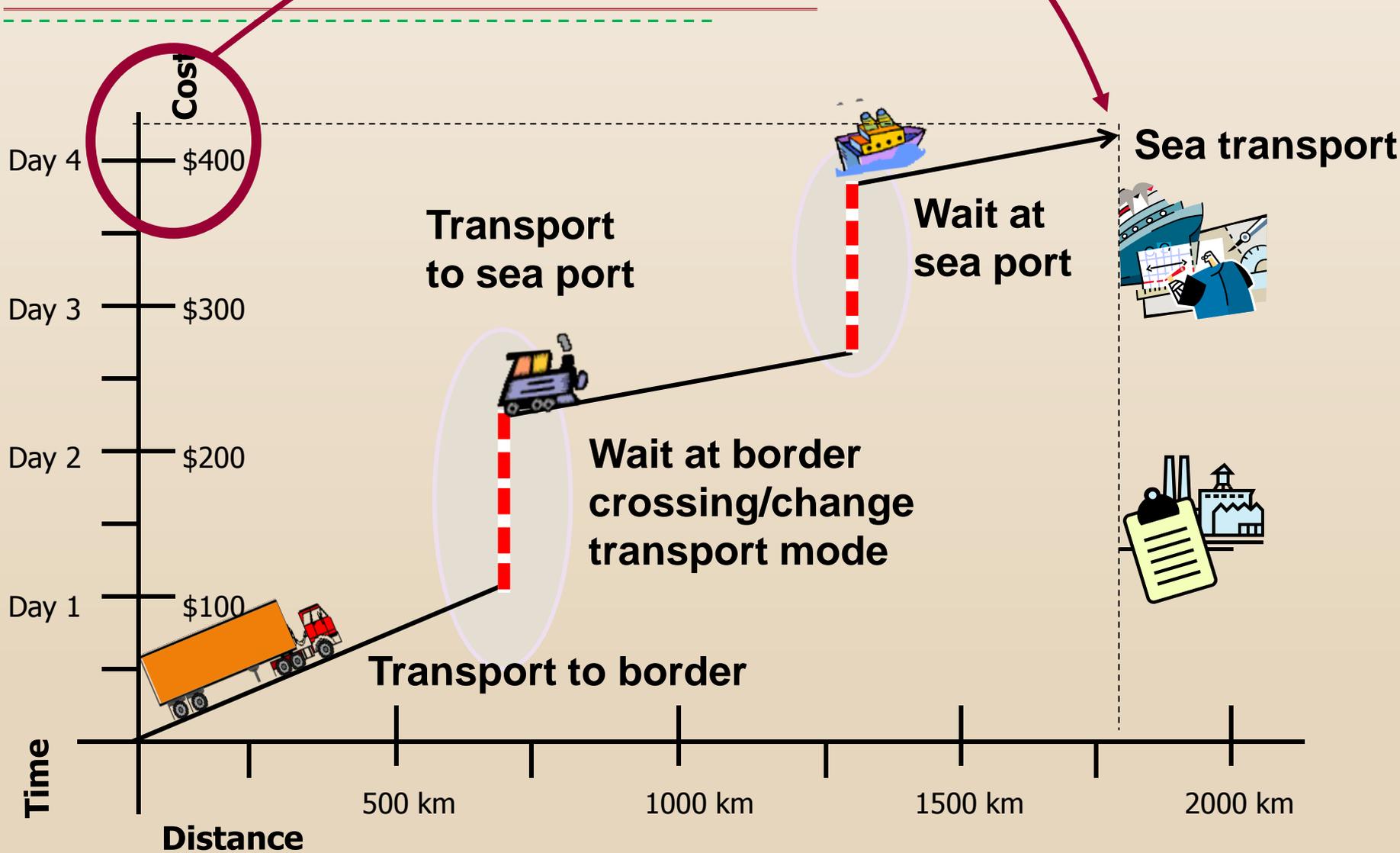
Other benefits – Comparison of Border Crossings by Cost or Time

Cost per TEU

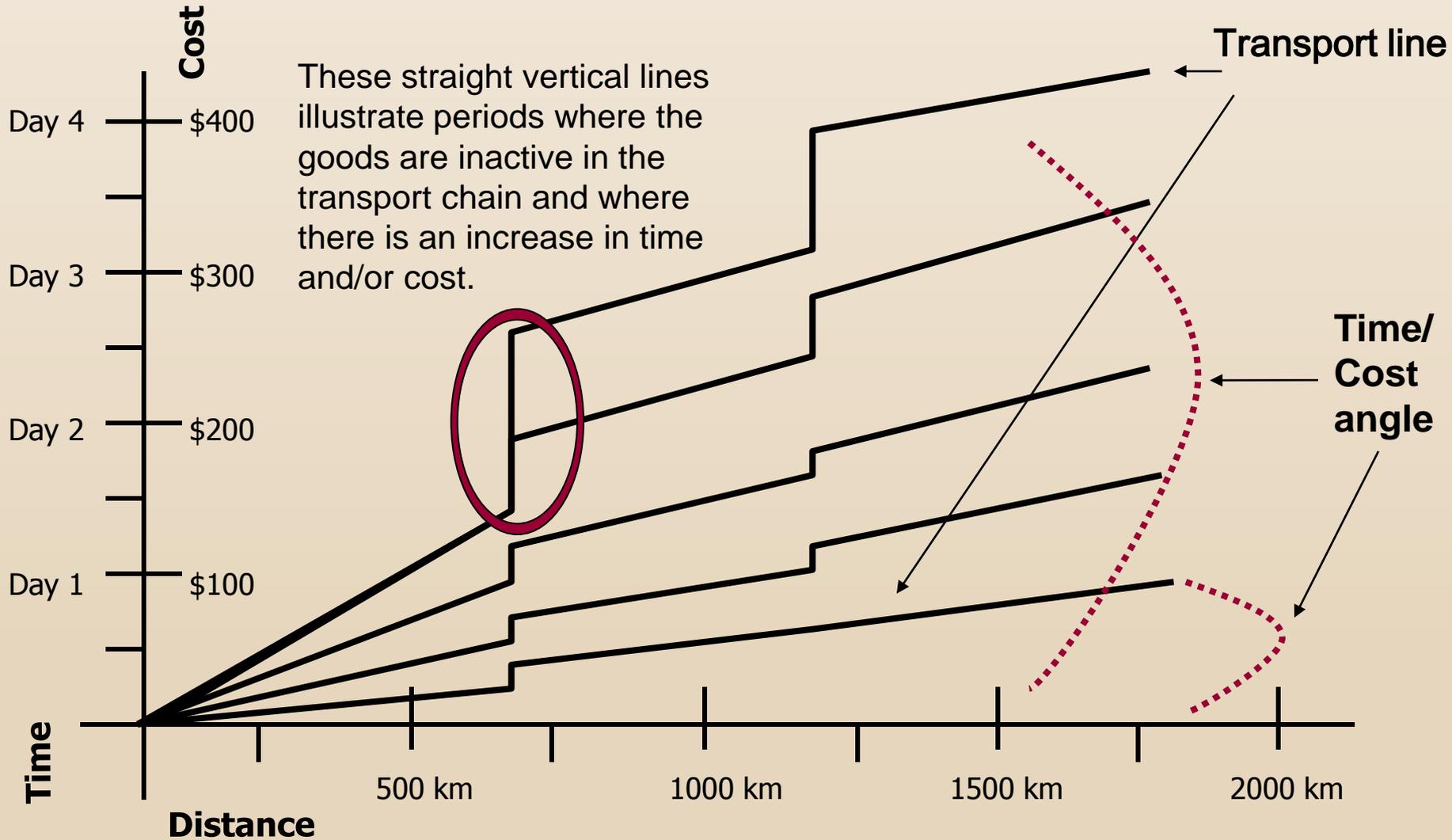


*** Estimated from cost of standard European 12 meter semi trailer.**

The model



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



Minimum Information Required:

- ▶ **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

- 1,676 mm
- 1,520 mm
- 1,435 mm
- 1,267 mm
- 1,000 mm
- 1,000/1,435 mm
- TAR LINK - PLANNED/UNDER CONSTRUCTION
- POTENTIAL TAR LINK
- BREAK-OF-GAUGE
- FERRY CROSSING

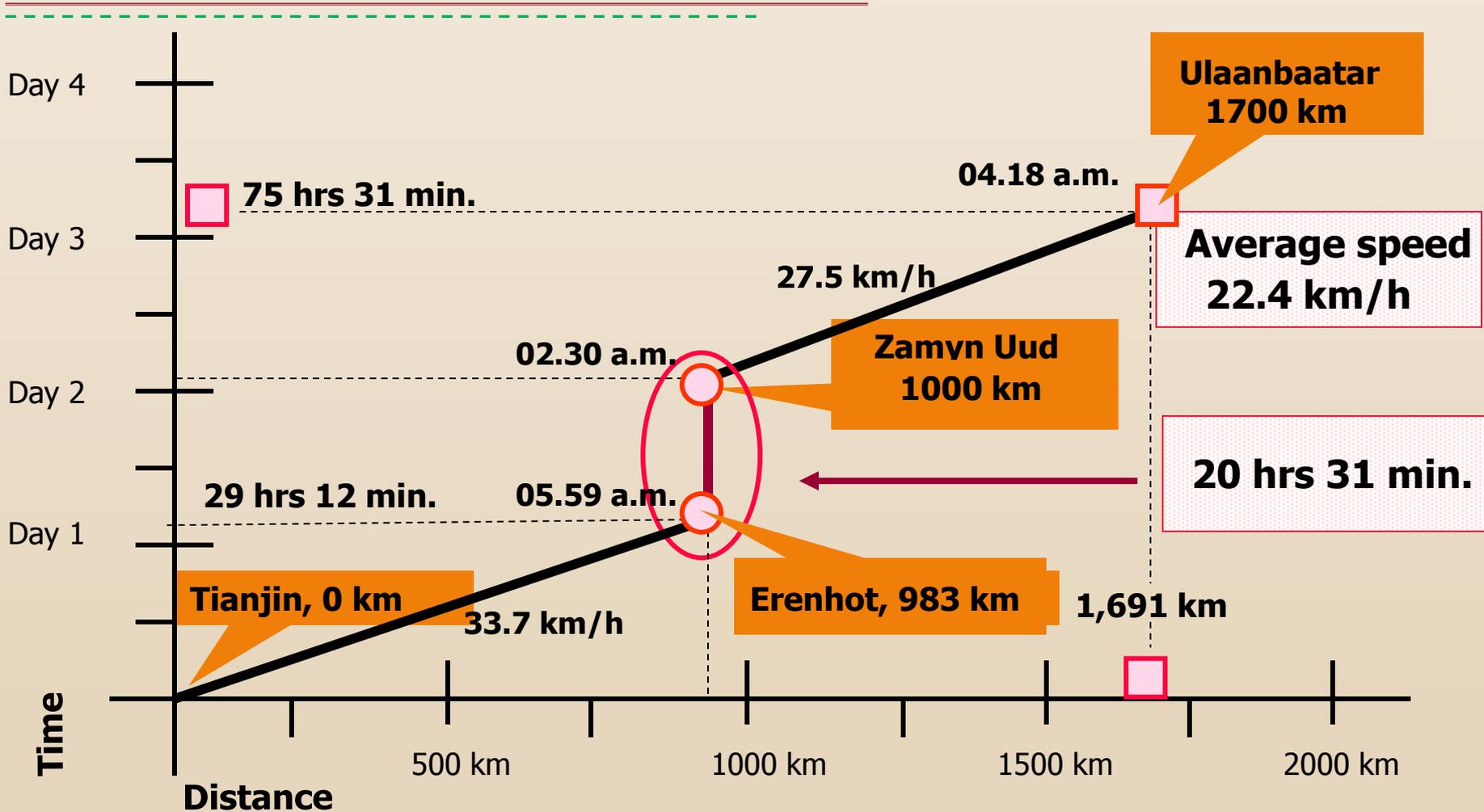


UNITED NATIONS
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The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Dotted lines represent approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not been agreed upon by the parties.

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.

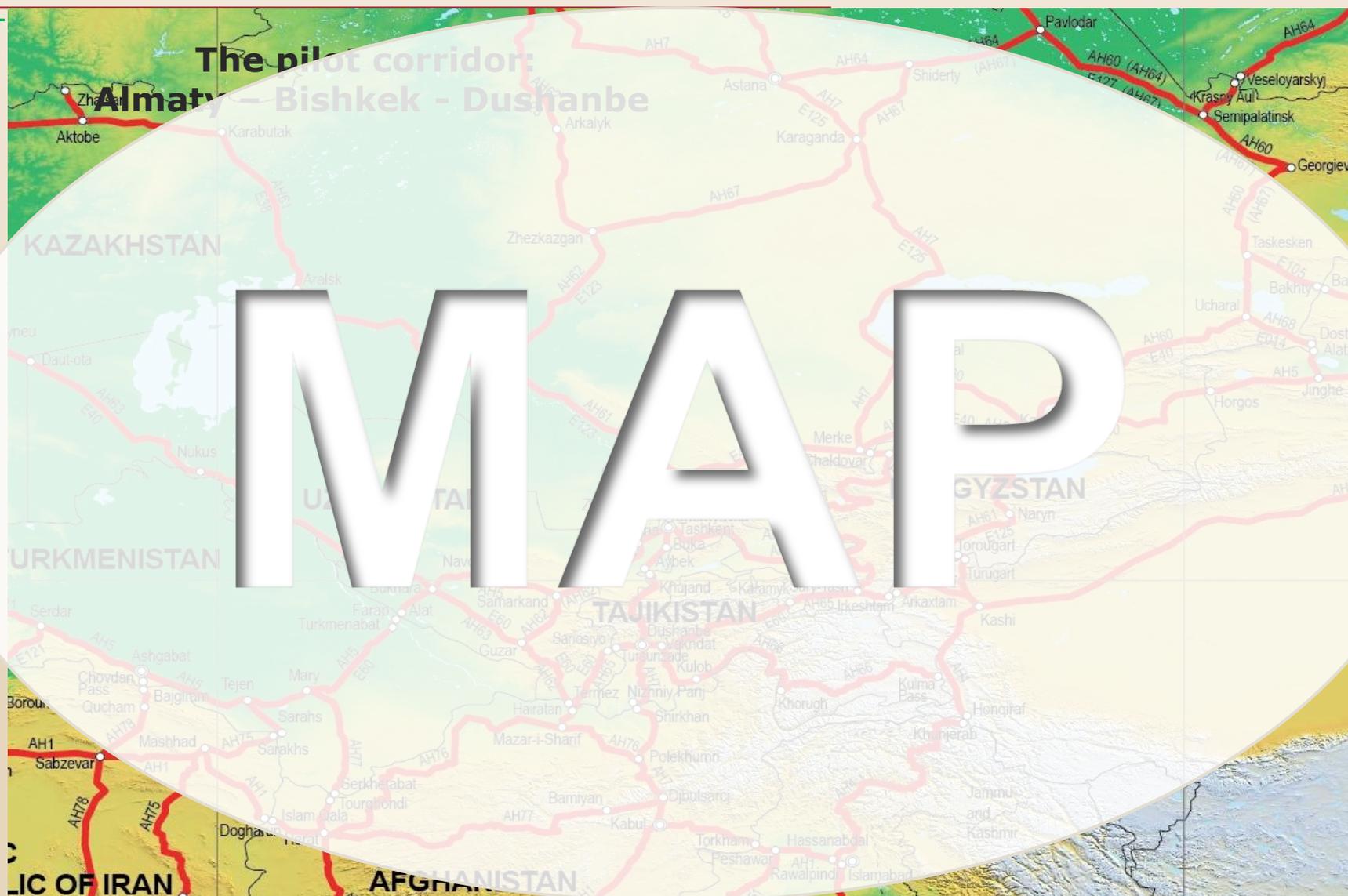
TCD pilot application by clusters

- ❖ 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



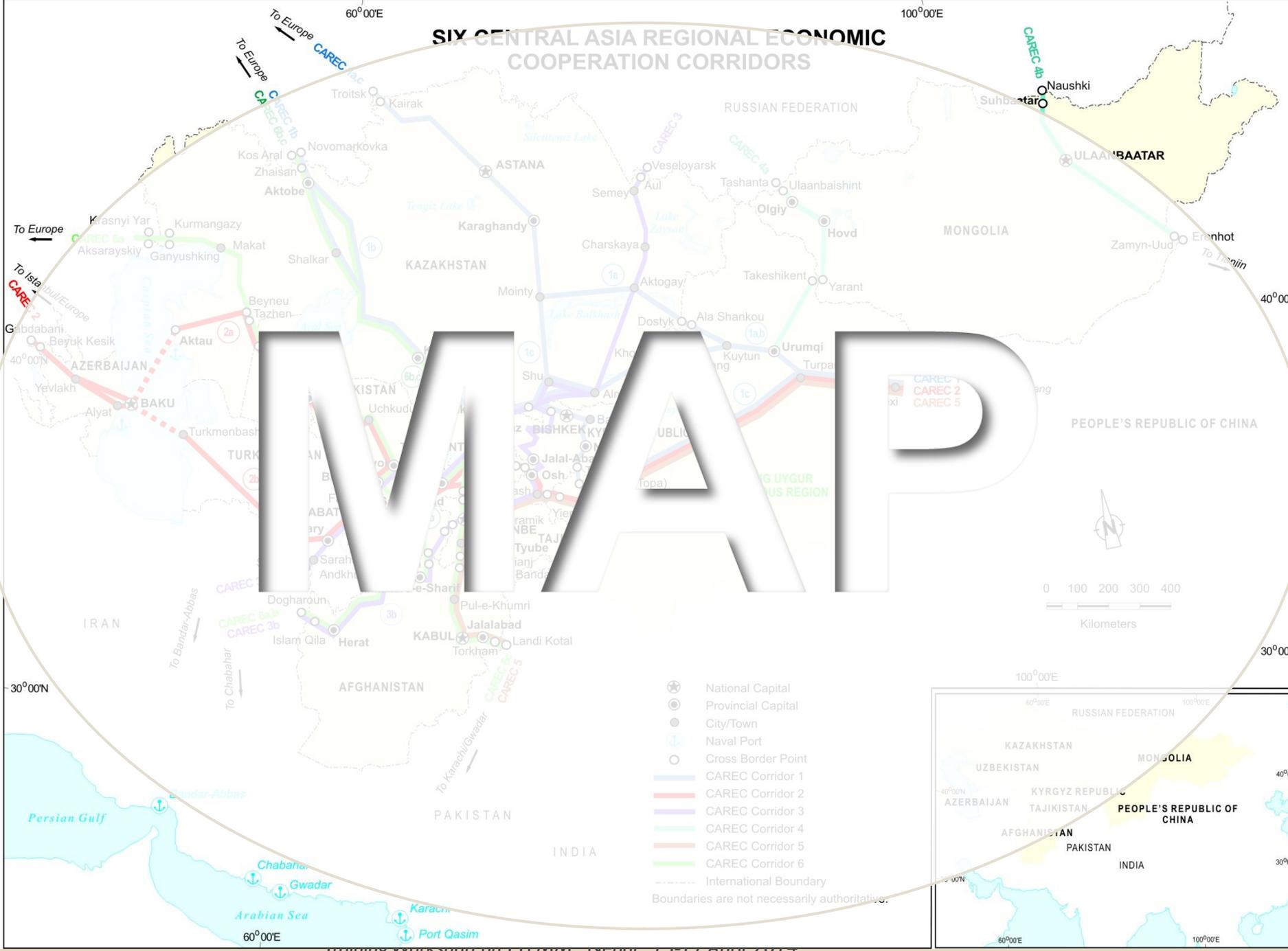
Examples of TCD application: ADB CAREC CPMM

CAREC Corridor Performance Measurement and Monitoring

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



SIX CENTRAL ASIA REGIONAL ECONOMIC COOPERATION CORRIDORS



MAP

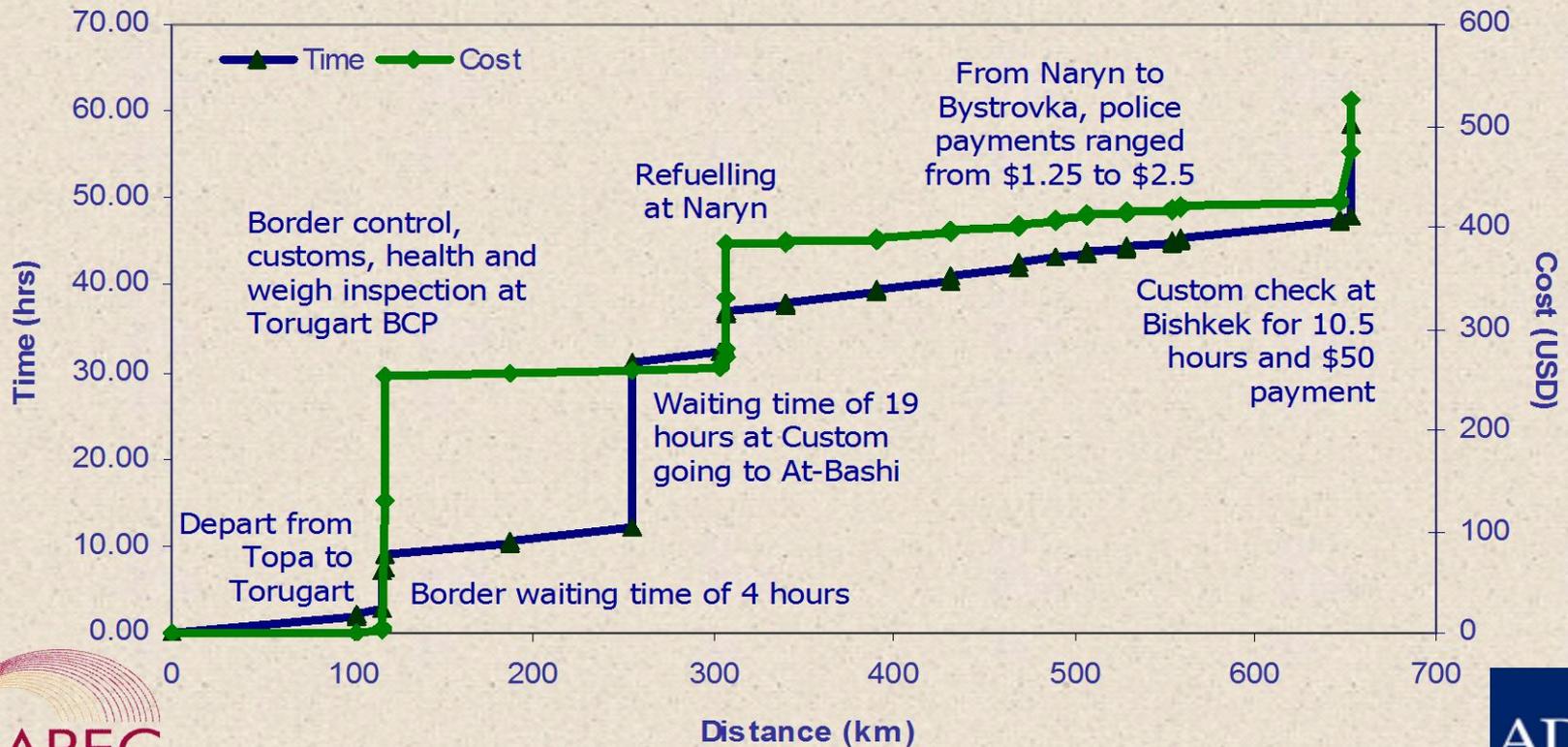
- ★ National Capital
 - Provincial Capital
 - City/Town
 - ⚓ Naval Port
 - Cross Border Point
 - CAREC Corridor 1
 - CAREC Corridor 2
 - CAREC Corridor 3
 - CAREC Corridor 4
 - CAREC Corridor 5
 - CAREC Corridor 6
 - International Boundary
- Boundaries are not necessarily authoritative.



Example of TCD application: ADB CAREC CPMM

Time-Cost Distance Method

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



Good practices and lessons learnt:

- ▶ 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)

- ▶ **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**

Thank you!