

**ADB-UNESCAP Inception Workshop on  
Trade and Transport Facilitation Performance  
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**Evaluation of a Corridor Performance Using the UNESCAP  
Time/Cost-Distance Methodology**

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UNITED NATIONS  
**ESCAP**

Economic and Social Commission for Asia and the Pacific

# What is the Time/Cost – Distance Methodology?



- 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:

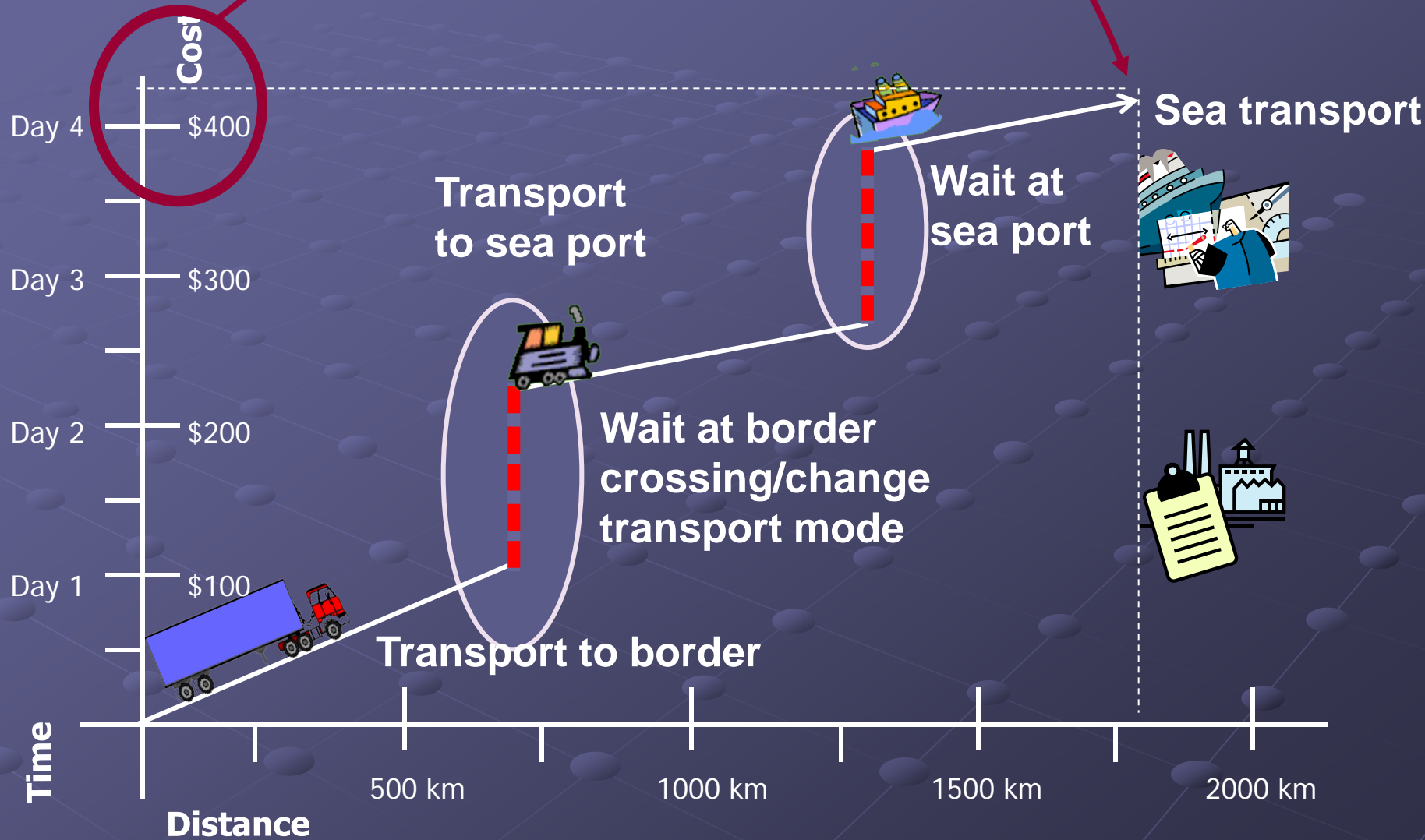
- Simple to use
- Provides a 'snap-shot' of the present situation
- Can track changes over time
- Possibility of comparing alternative routes
- Can be understood by all
- Powerful instrument for international cooperation

# 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.

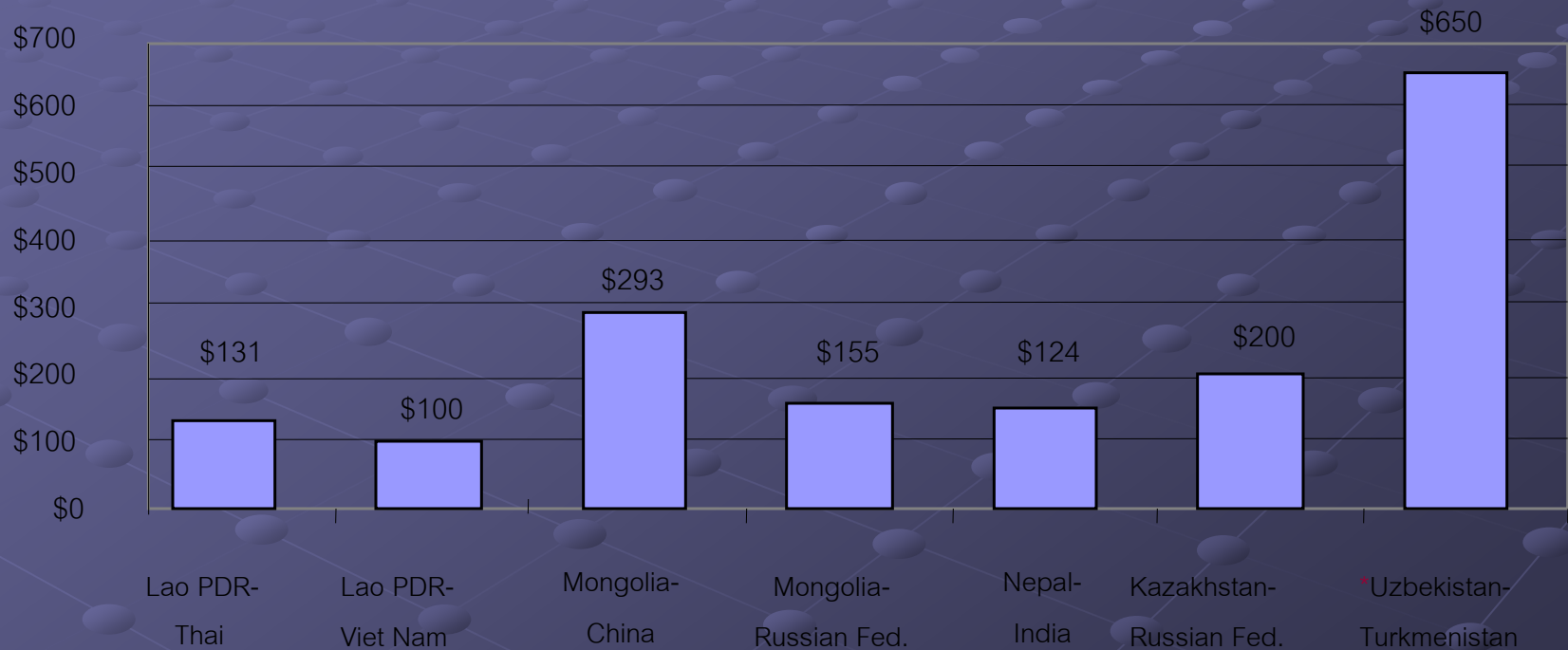


# The model



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

## Cost per TEU



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

# 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



# **Instructions on Data Collection for Route Analysis with the UNESCAP Time/Cost-Distance Methodology**

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Basic template  
and  
Detailed template



# The questionnaire – All in one MS Excel file

Microsoft Excel - EN\_0507\_TCD Template detailed v2.0.xls

File Edit View Insert Format Tools Data Window Help Adobe PDF

Type a question for help

110% Arial 10

Reply with Changes... End Review...

F11

|    | A   | B | C   | D | E | F | G  | H    | I | J | K | L | M |
|----|---|---|---|---|---|---|--|------|---|---|---|---|---|
| 1  |   |   | [Name of Project]   |   |   |   |  |      |   |   |   |   |   |
| 2  |   |   |   |   |   |   |  |      |   |   |   |   |   |
| 3  |   |   | <b>Questionnaire for Application of UNESCAP Time/Cost-Distance Model</b>            |   |   |   |  |      |   |   |   |   |   |
| 4  |   |   |   |   |   |   |  |      |   |   |   |   |   |
| 5  | a   |   | Date of questionnaire completion:   |   |   |   | (date of filling out the questionnaire)                                      |      |   |   |   |   |   |
| 6  | b   |   | Route description:  |   |   |   | (detailed route description)   |      |   |   |   |   |   |
| 7  | c   |   | Goods:  |   |   |   | (type of good(s) transported)  |      |   |   |   |   |   |
| 8  | d   |   | Quantity:   |   |   |   | (TEU)  |      |   |   |   |   |   |
| 9  | e   |   | Nationality of driver:  |   |   |   | (Only applicable when road)  |      |   |   |   |   |   |
| 10 | f   |   | Country of vehicle registration:  |   |   |   | (Only applicable when road)  |      |   |   |   |   |   |
| 11 | g   |   | Effective date of transport start:  |   |   |   | (date when transport leaves the place of departure)                          |      |   |   |   |   |   |
| 12 | h   |   | Effective delivery date of goods:   |   |   |   | (date when transport reaches the final destination)                          |      |   |   |   |   |   |
| 13 | i   |   | Was the transport performed under an international transit system (e.g. TIR, NCTS)? |   |   |   | (yes/no, please specify the type of international transit system applicable) |      |   |   |   |   |   |
| 14 | j   |   | Overall distance of route:  |   |   |   | 0  | km   |   |   |   |   |   |
| 15 | k   |   | Overall costs:  |   |   |   | 0.00   | USD  |   |   |   |   |   |
| 16 | l   |   | Overall duration:   |   |   |   | 0.00   | days |   |   |   |   |   |
| 17 |   |   |   |   |   |   |  |      |   |   |   |   |   |
| 18 | <b>The worksheets "Part A - General Questions" and "Part B - Route" require your input and information. Please fill out the highlighted cells only.</b> |   |   |   |   |   |  |      |   |   |   |   |   |
| 19 |   |   |   |   |   |   |  |      |   |   |   |   |   |
| 20 |   |   |   |   |   |   |  |      |   |   |   |   |   |
| 21 |   |   |   |   |   |   |  |      |   |   |   |   |   |
| 22 |   |   |   |   |   |   |  |      |   |   |   |   |   |
| 23 |   |   |   |   |   |   |  |      |   |   |   |   |   |
| 24 |   |   |   |   |   |   |  |      |   |   |   |   |   |
| 25 |   |   |   |   |   |   |  |      |   |   |   |   |   |
| 26 |   |   |   |   |   |   |  |      |   |   |   |   |   |
| 27 |   |   |   |   |   |   |  |      |   |   |   |   |   |

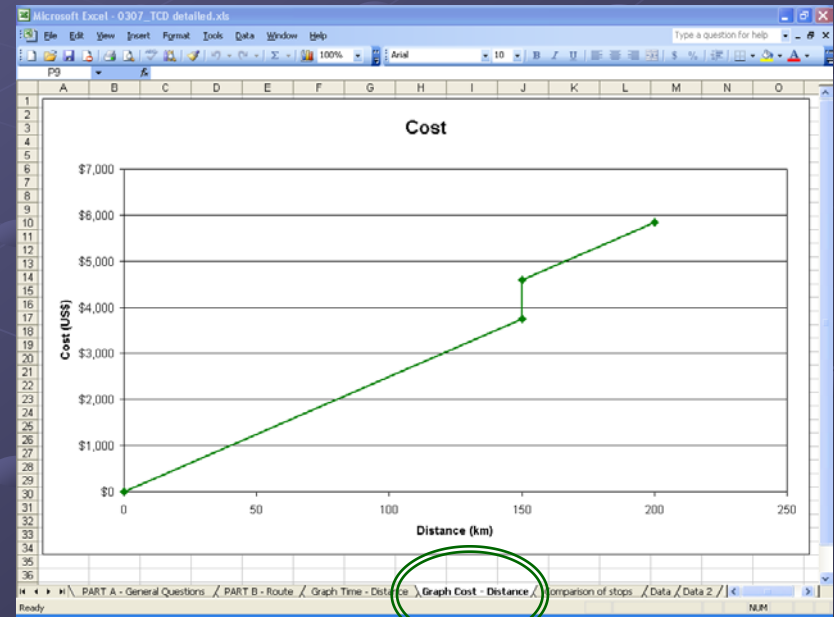
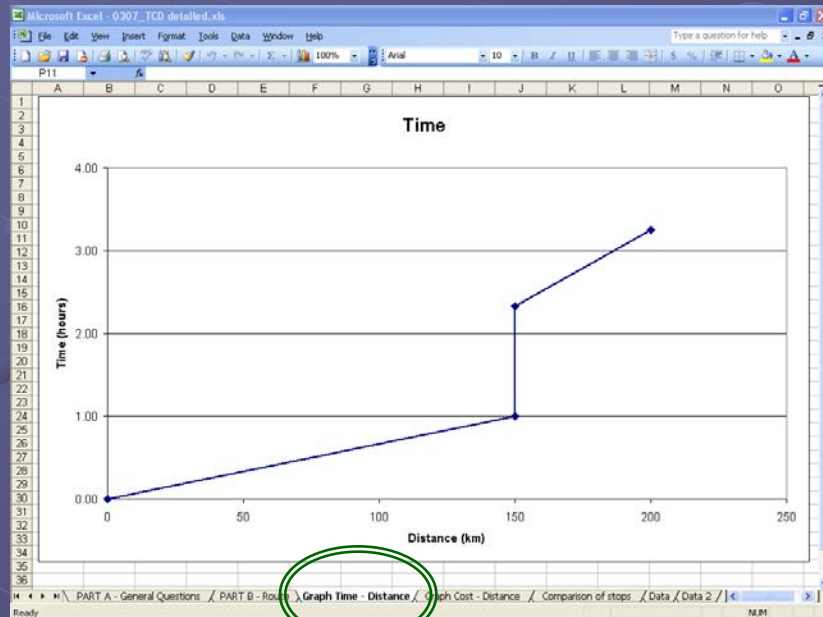
Ready

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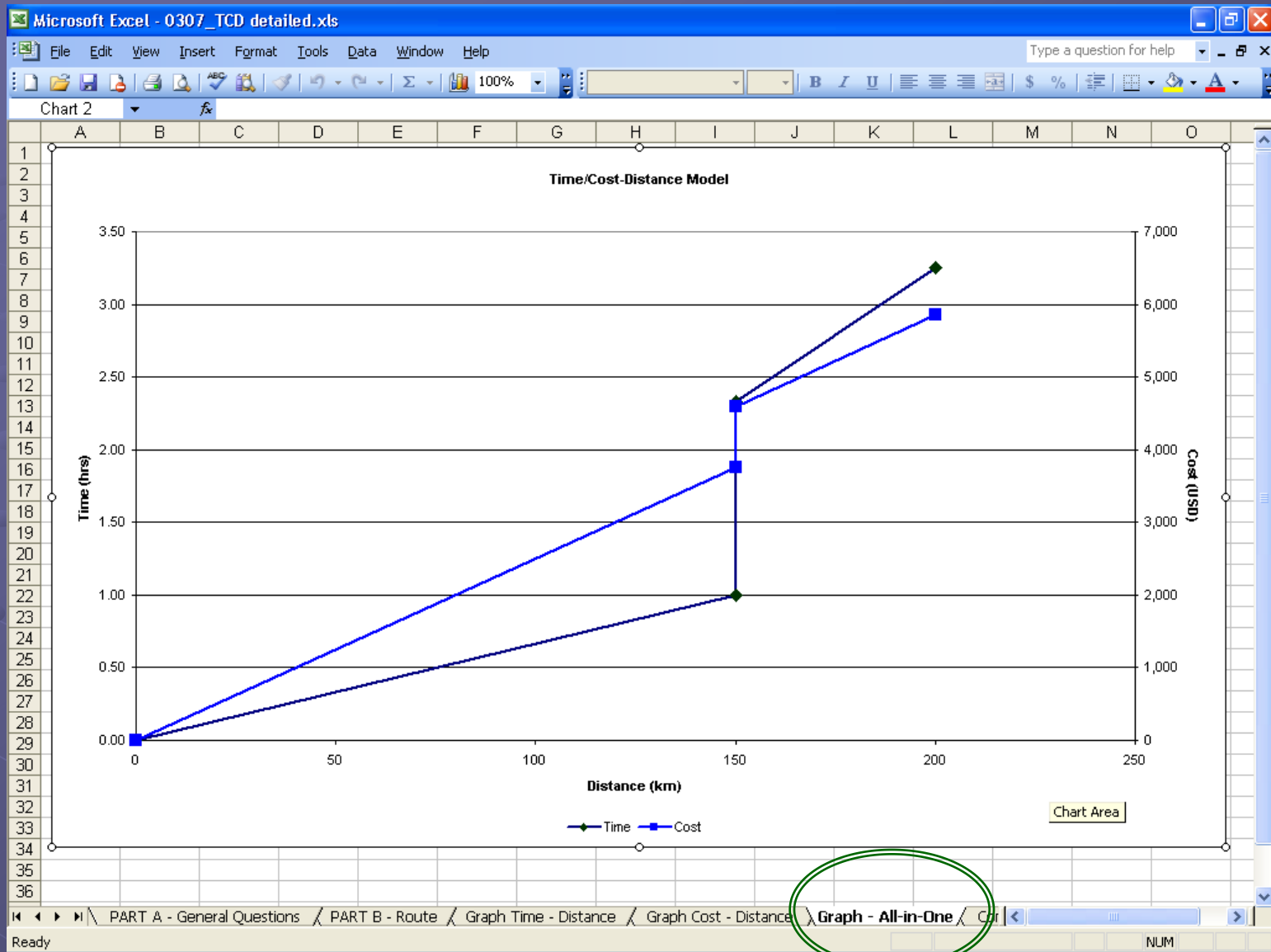
PART A - General Questions / PART B - Route / Graph Time-Distance / Graph Cost - Distance / Graph All-in-One / Graph Average Speed / Data A1

# Time-distance and cost-distance graphs

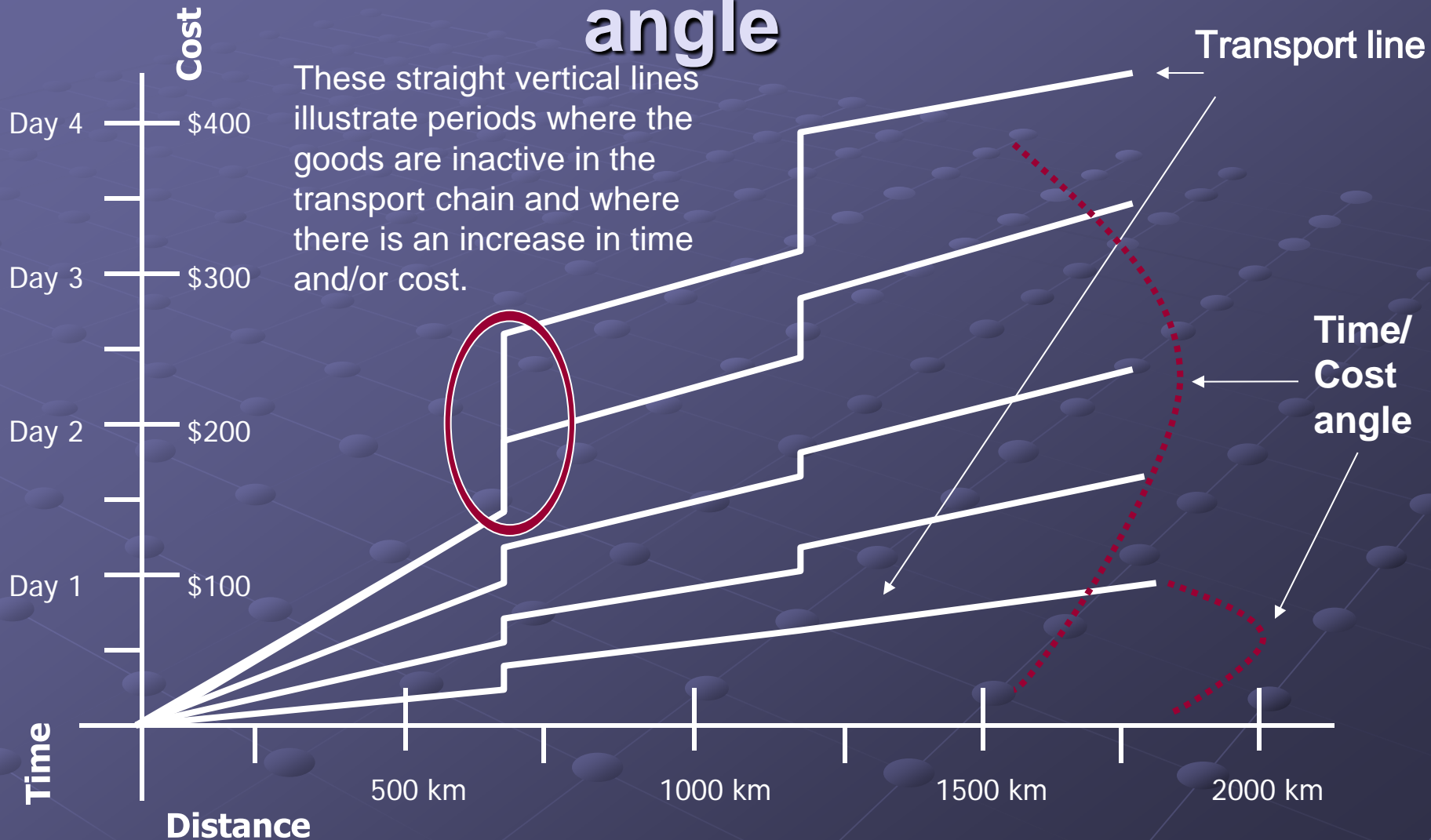
- The individual charts “Time over Distance” and “Cost over Distance” are plotted automatically as a function of the information you entered into the highlighted cells on worksheets “Part A – General Questions” and “Part B – Route”.



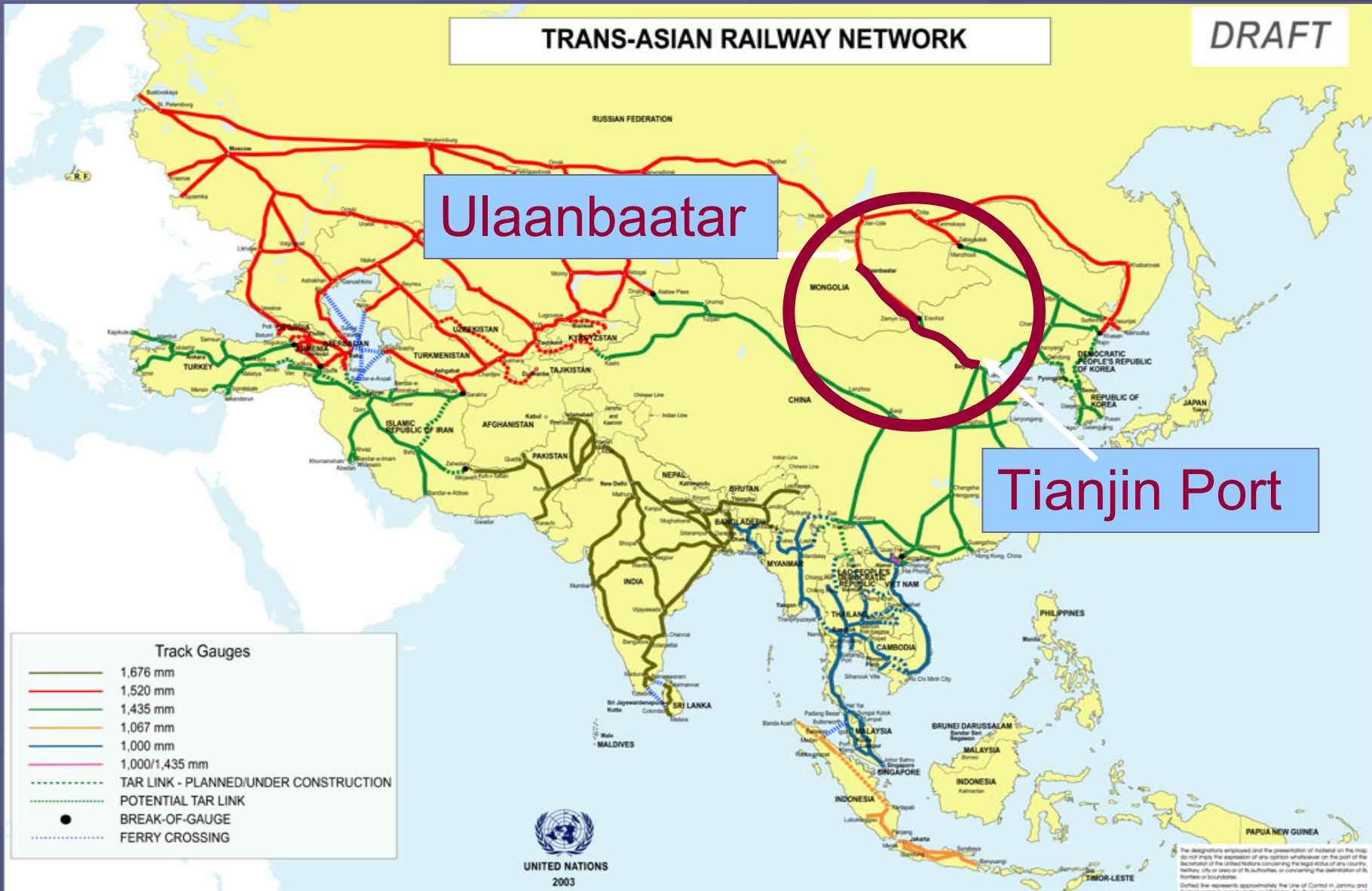
# Back-Up: All the information in one graph



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

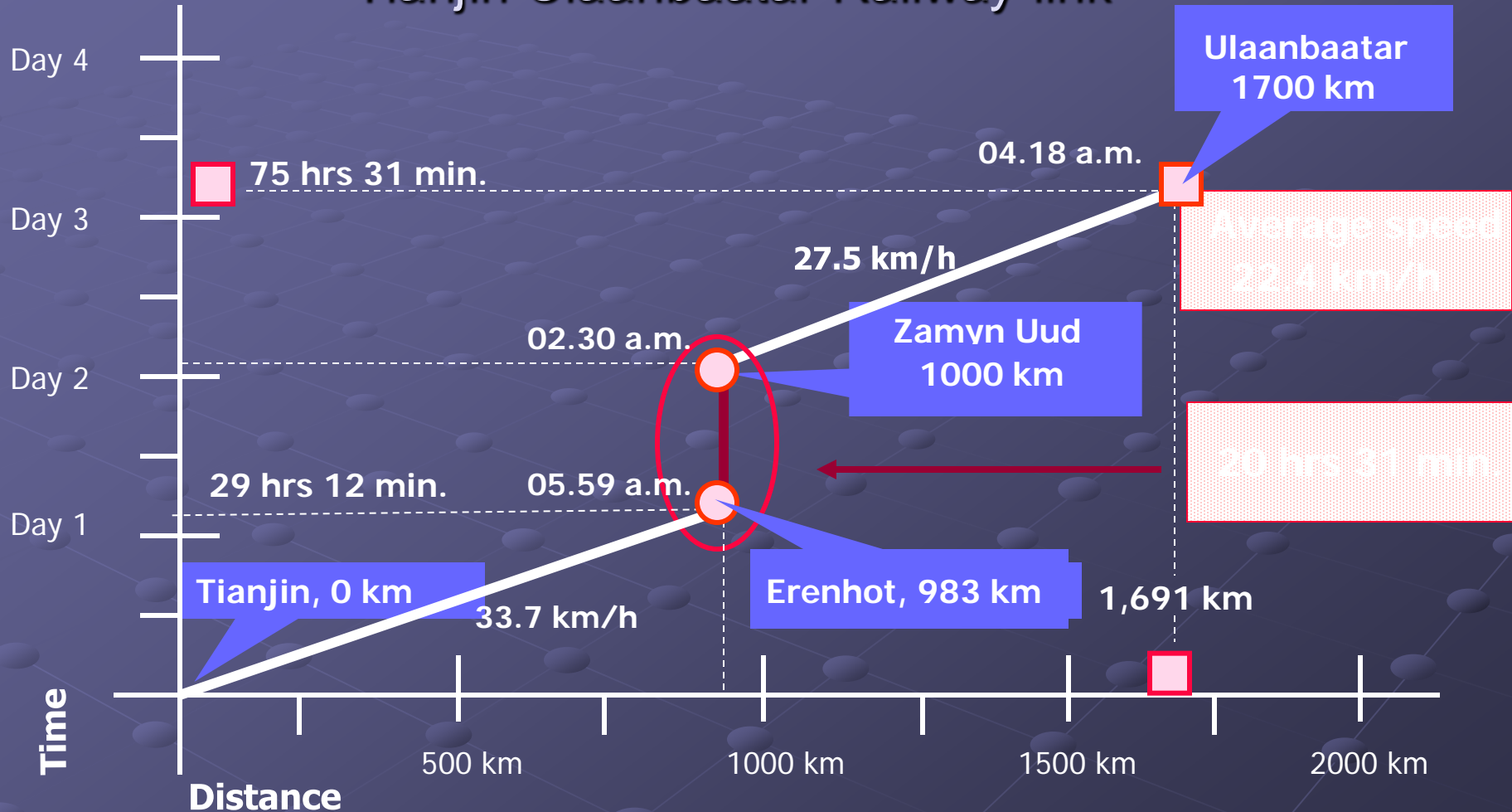


# Example of TCD application: Tianjin-Ulaanbaatar Railway link





# 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.

# Examples of TCD application: ADB CAREC CPMM

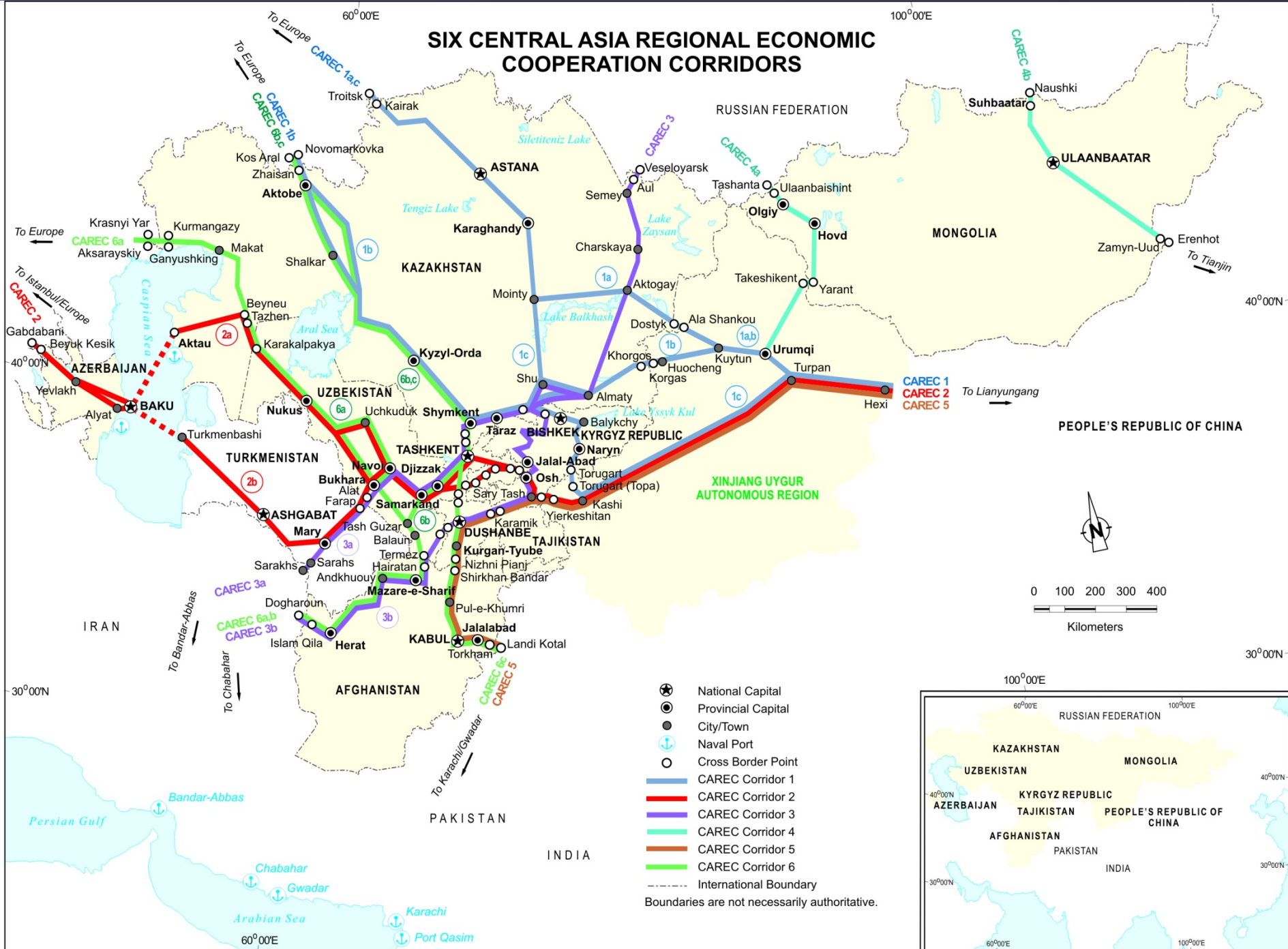
## **CAREC Corridor Performance Measurement and Monitoring**

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



ADB

## SIX CENTRAL ASIA REGIONAL ECONOMIC COOPERATION CORRIDORS

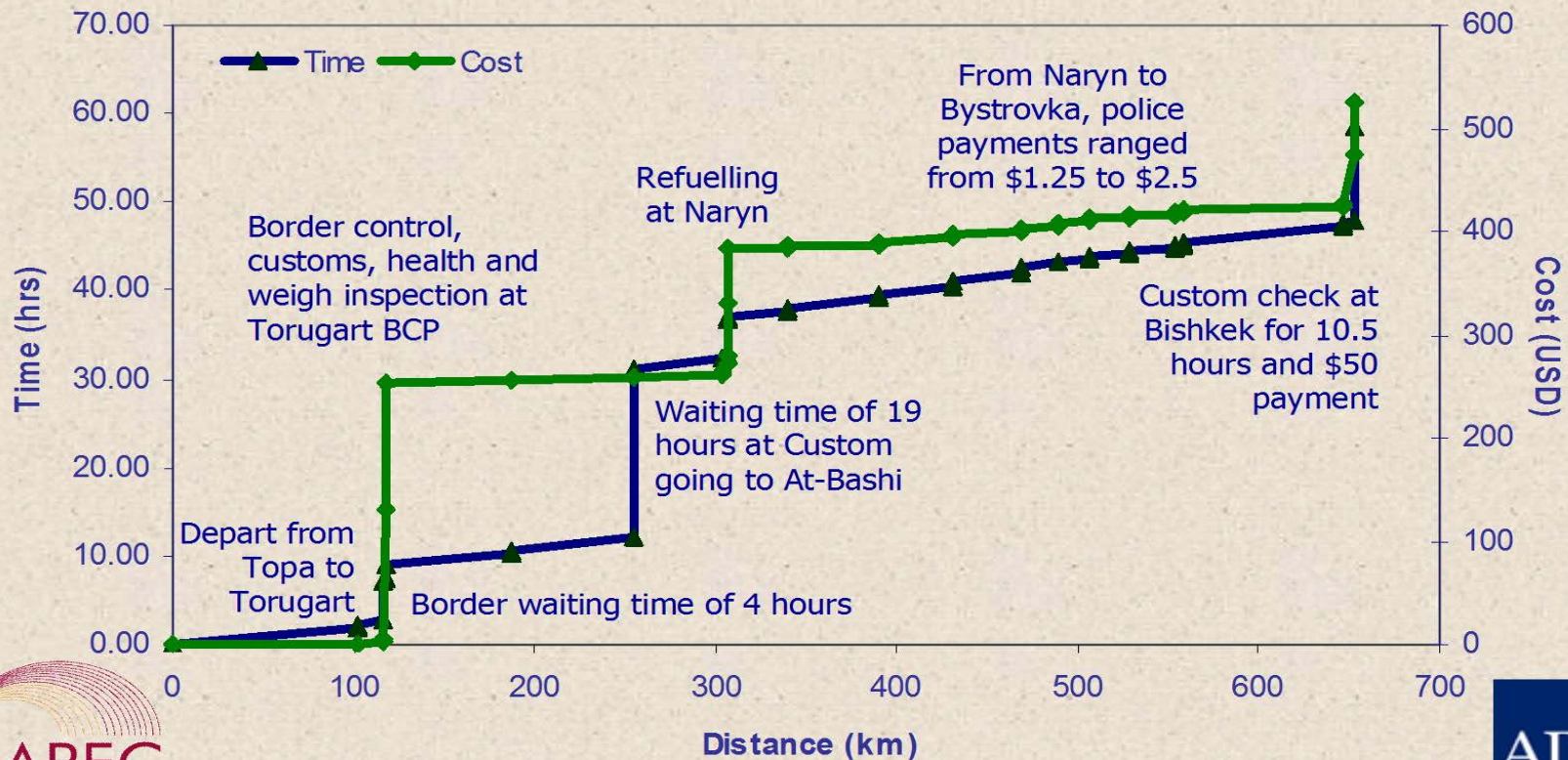




# Example of TCD application: ADB CAREC CPMM

## Time-Cost Distance Method

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

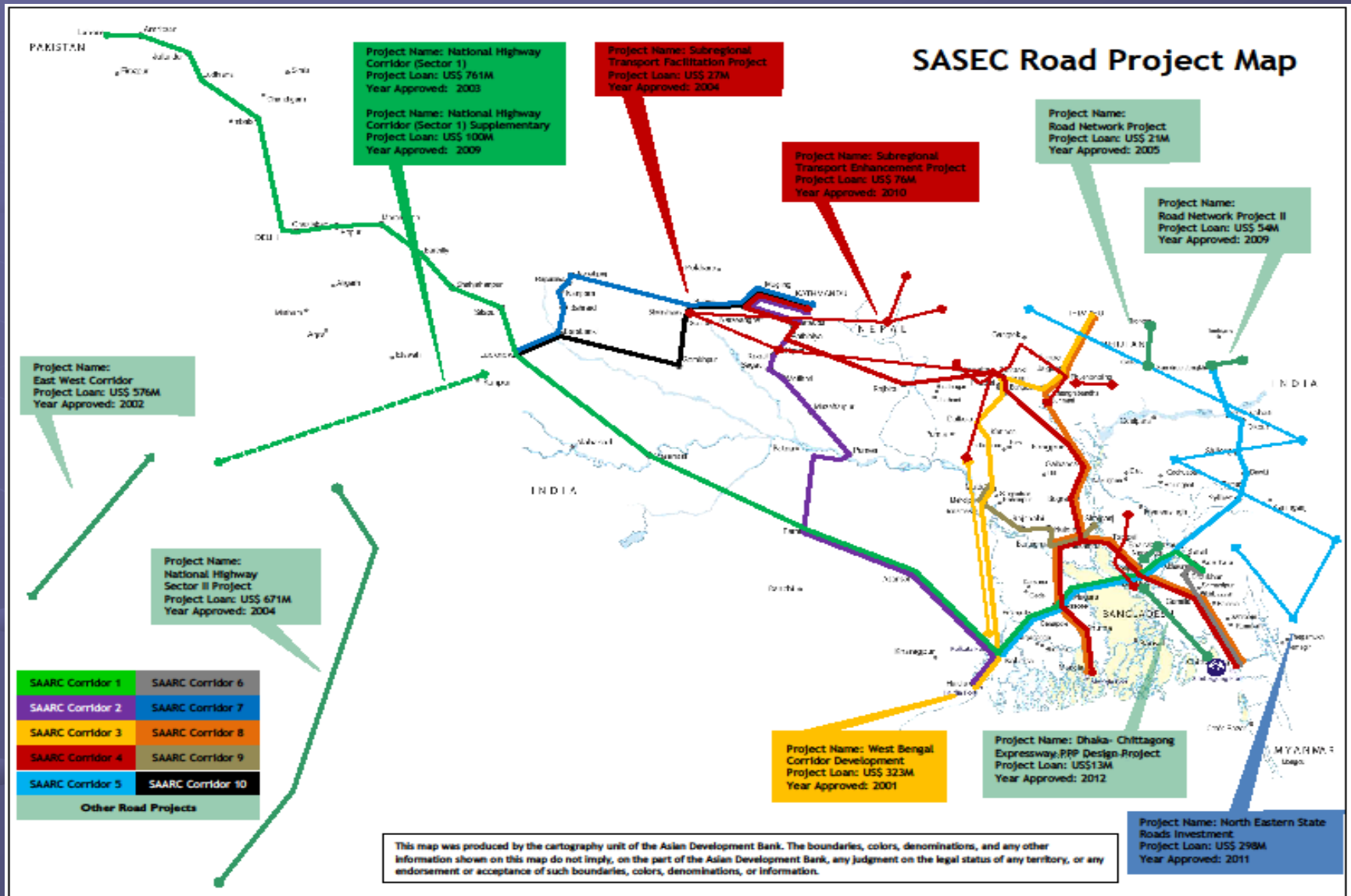


# Proposed TCD application for selected SASEC transport corridor(s)

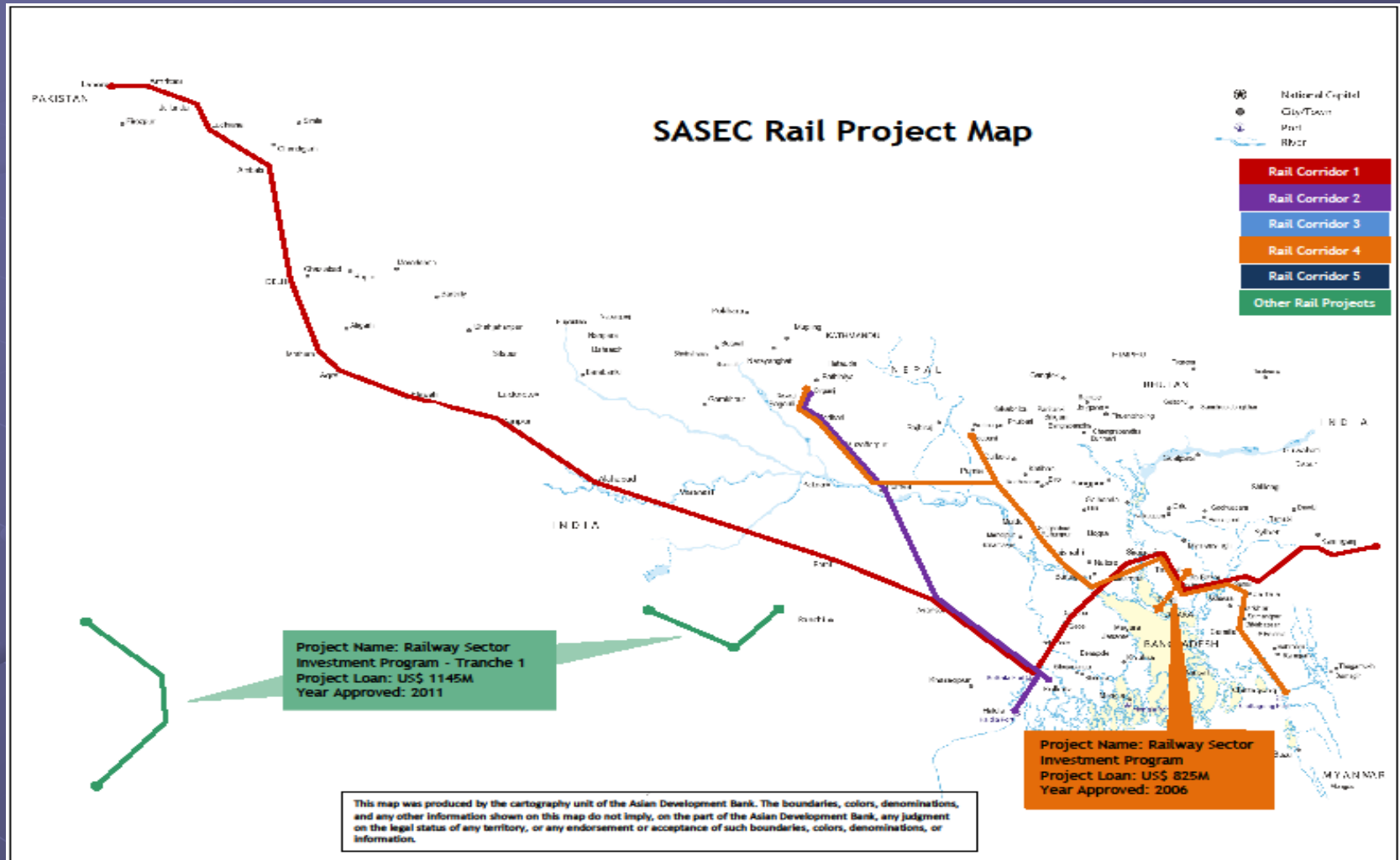
- Use of TCD to measure the performance of SASEC transport corridors as the part of BPA+
- Consider the establishment of the system of regular monitoring of transport corridor performance based on the available experience
- TCD can also be applied to compare the efficiency of road and rail corridors



# SASEC Road Corridors



# SASEC Rail Corridors





Thank you!