Introduction to UNESCAP
Time/Cost-Distance Methodology

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UNITED NATIONS
ESCAP
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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

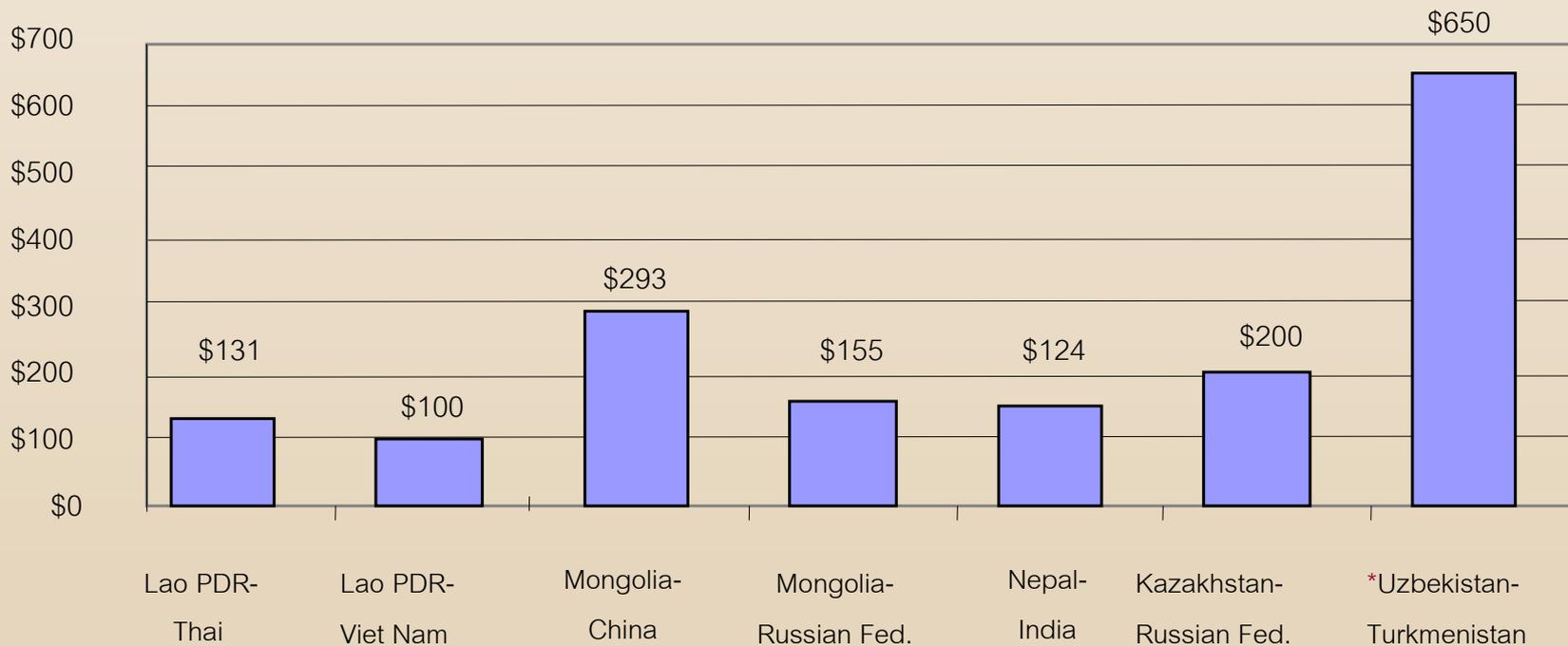- ▶ Powerful instrument for international cooperation

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.

Other benefits –
Comparison of Border Crossings
by Cost or Time

Cost per TEU

	Lao PDR- Thai	Lao PDR- Viet Nam	Mongolia- China	Mongolia- Russian Fed.	Nepal- India	Kazakhstan- Russian Fed.	*Uzbekistan- Turkmenistan
Cost per TEU	$131	$100	$293	$155	$124	$200	$650

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

The model

Destination

Cost

Day 4 — $400

Day 3 — $300

Day 2 — $200

Day 1 — $100

Transport to sea port

Wait at sea port

Sea transport

Wait at border crossing/change transport mode

Transport to border

Time

Distance

500 km   1000 km   1500 km   2000 km

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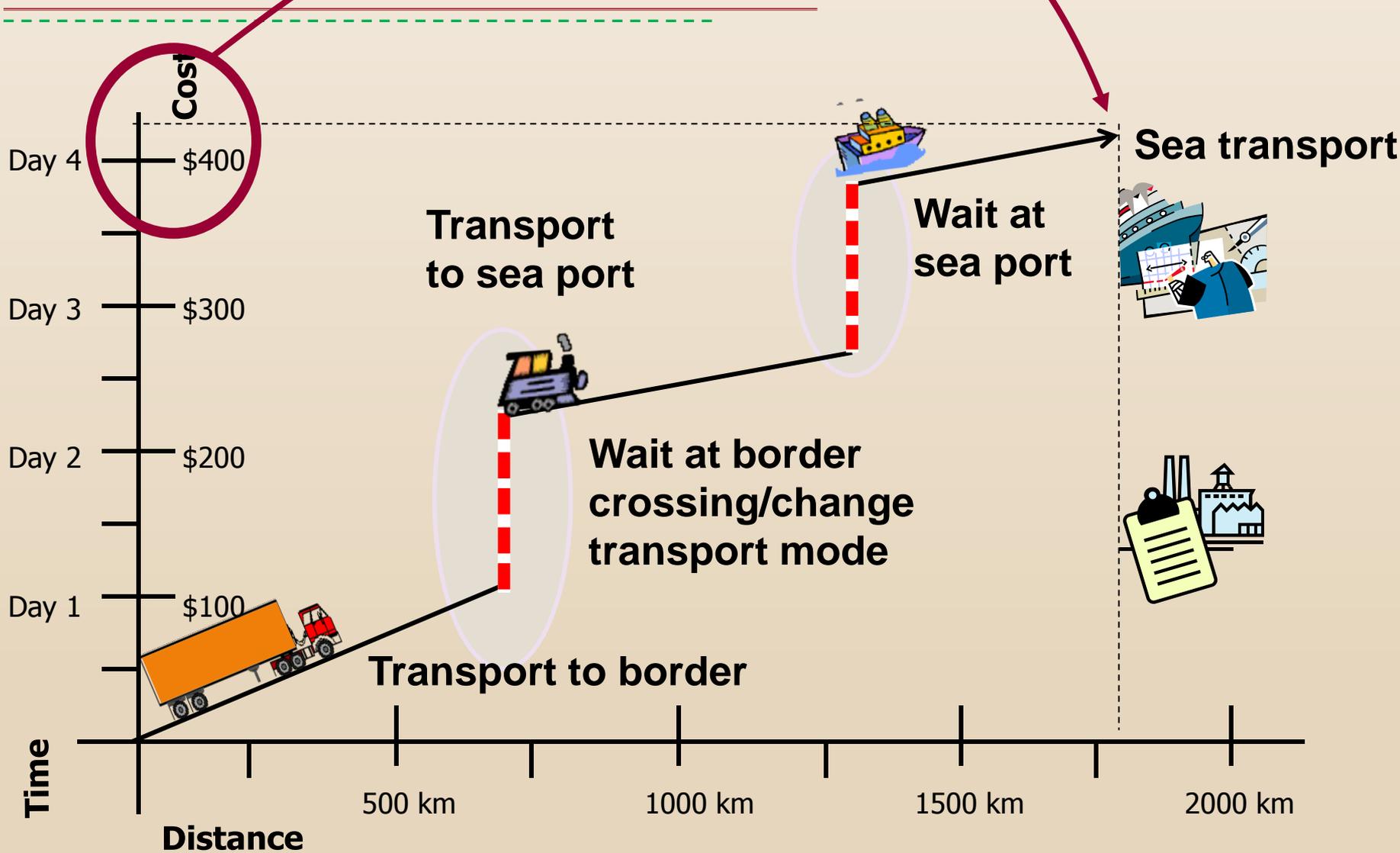
Objective to straighten the transport line and decrease the time/cost angle

Cost

Day 4 — $400

Day 3 — $300

Day 2 — $200

Day 1 — $100

These straight vertical lines illustrate periods where the goods are inactive in the transport chain and where there is an increase in time and/or cost.

Transport line

Time/ Cost angle

Time

Distance

500 km   1000 km   1500 km   2000 km
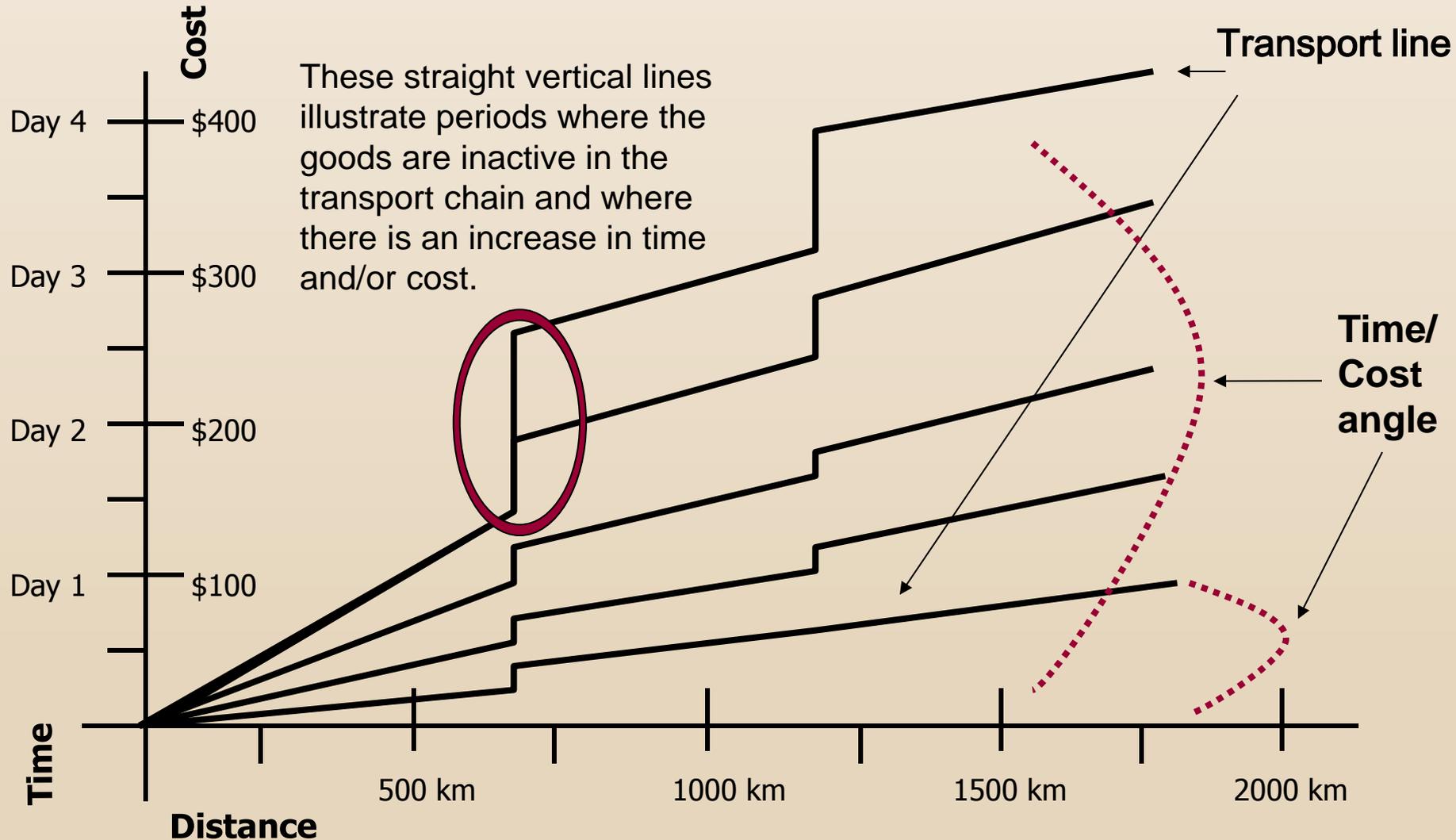
Minimum Information Required:

- ▸   **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

Updates on Time/Cost-Distance Methodology

❑ **Guide on preparation for application**
- o Consensus building
- o Survey method and data sources
- o Institution selection
- o Commodities selection (top 5)
- o Seasonality factor
- o Routes and means of transport

❑ **Guide on data collection**
- o Trip diaries
- o Independent survey
- o Interviews
- o Demonstration runs
- o Database
- o Satellite positioning record
- o Data validity

❑ **Data processing**
- o Graph development and templates
- o Detailed composition of bottlenecks

Thank you!