HIGH-LEVEL MEETING ON DEEPENING DIGITALIZATION OF INTERNATIONAL RAIL TRANSPORT IN ASIA-PACIFIC

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STATE OF RAILWAY CONNECTIVITY BETWEEN SEA AND NCA

Ekaterina KOZYREVA
President, IEC International (InfraEconomy Group) – ESCAP resource person
e.kozyreva@infraeconomy.group

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MACROECONOMIC CONTEXT FOR COOPERATION AND CONNECTIVITY PROFILES

1. TRADE BACKGROUND

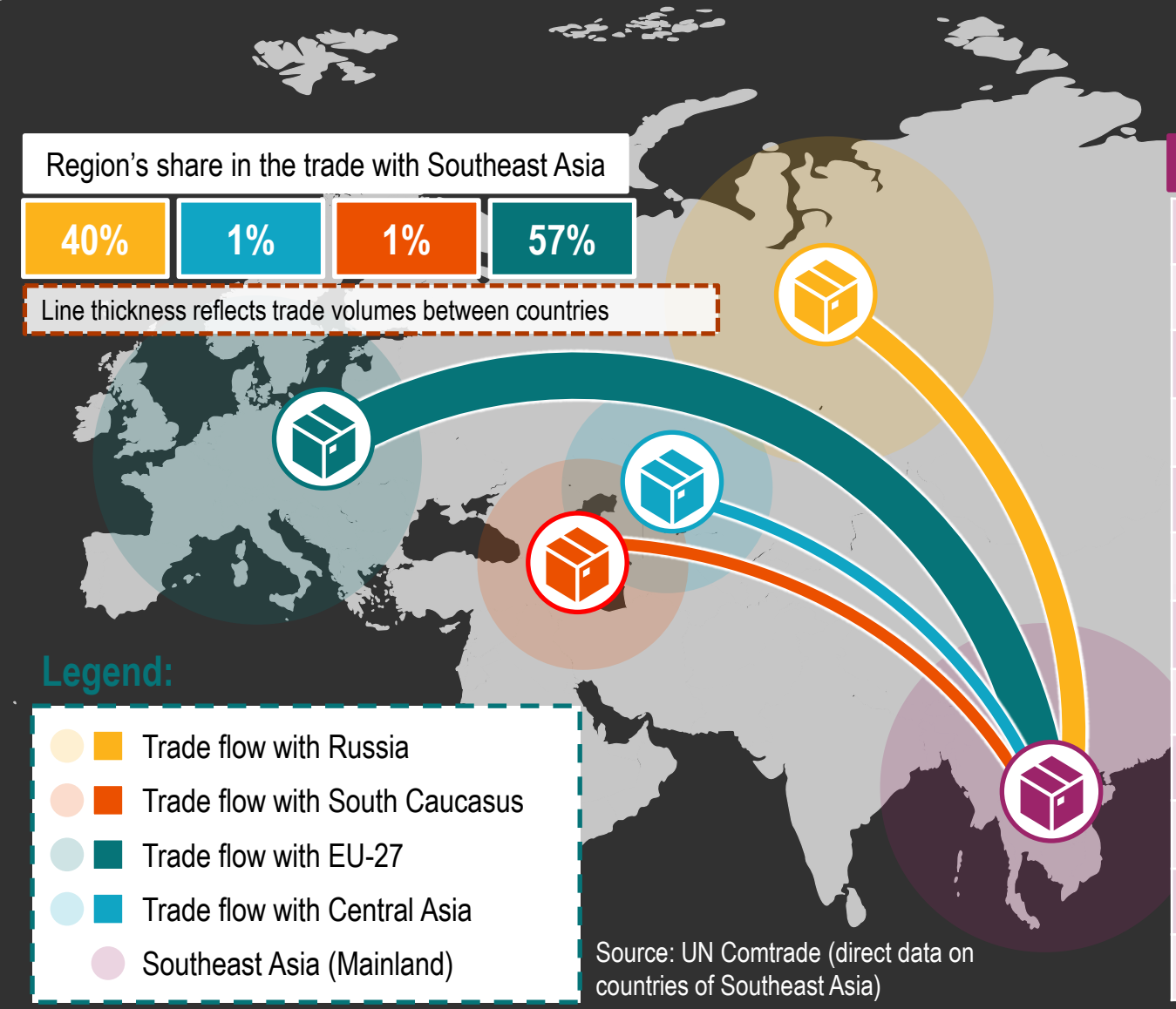
Physical exports structure

Agricultural products (excl. Grains)	35%
Chemical products, plastics, rubber	24%
Ferrous and non-ferrous metals and articles thereof	8%
Grains	7%
Machinery, equipment and transport	6%
Ores, stones, earths, etc.	6%
Textile, leather, etc.	5%
Oil and oil products	5%
Other	2%
Wood, pulp and paperboard	1%
Fertilizers	<1%
Coal and coke	<1%

Region's share in the trade with Southeast Asia

40%	1%	1%	57%

Line thickness reflects trade volumes between countries

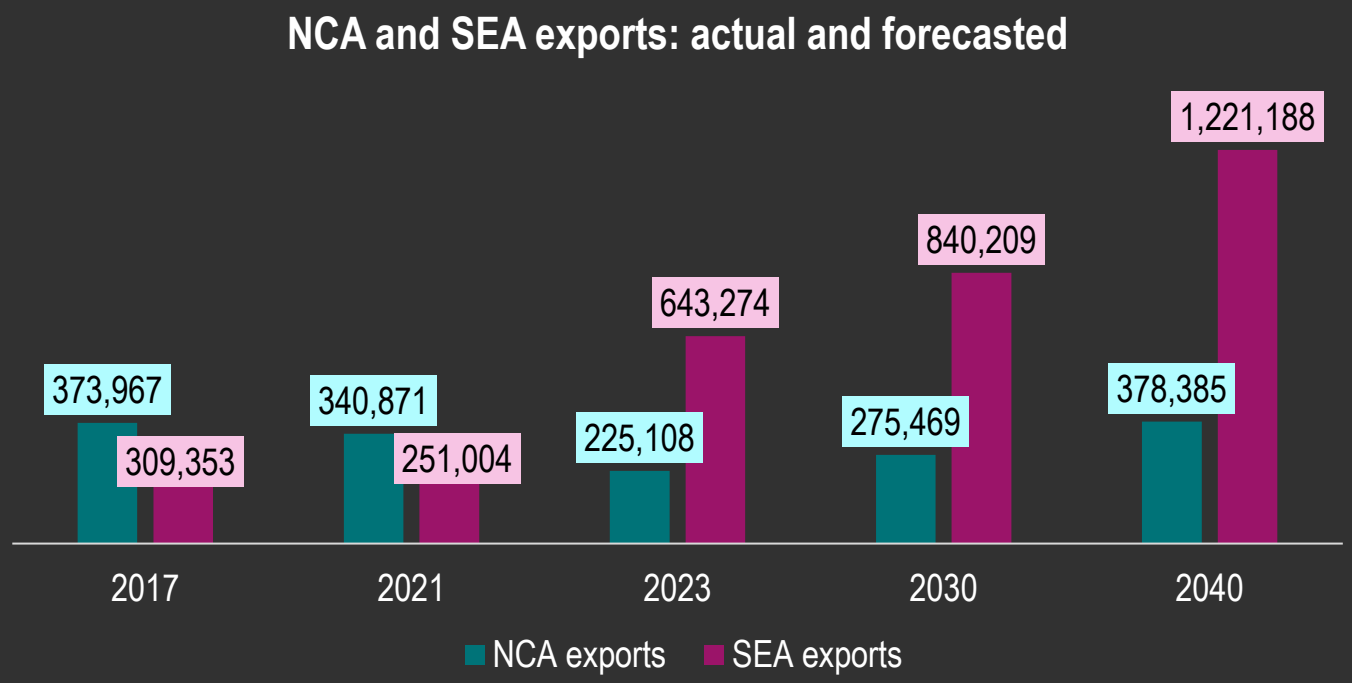


Source: UN Comtrade (direct data on countries of Southeast Asia)

Physical imports structure

Coal and coke	36%
Oil and oil products	16%
Agricultural products (excl. Grains)	9%
Wood, pulp and paperboard	8%
Fertilizers	7%
Chemical products, plastics, rubber	7%
Ferrous and non-ferrous metals and articles thereof	6%
Grains	5%
Ores, stones, earths, etc.	4%
Machinery, equipment and transport	2%
Textile, leather, etc.	1%
Other	<1%

2. Mainlaind trade

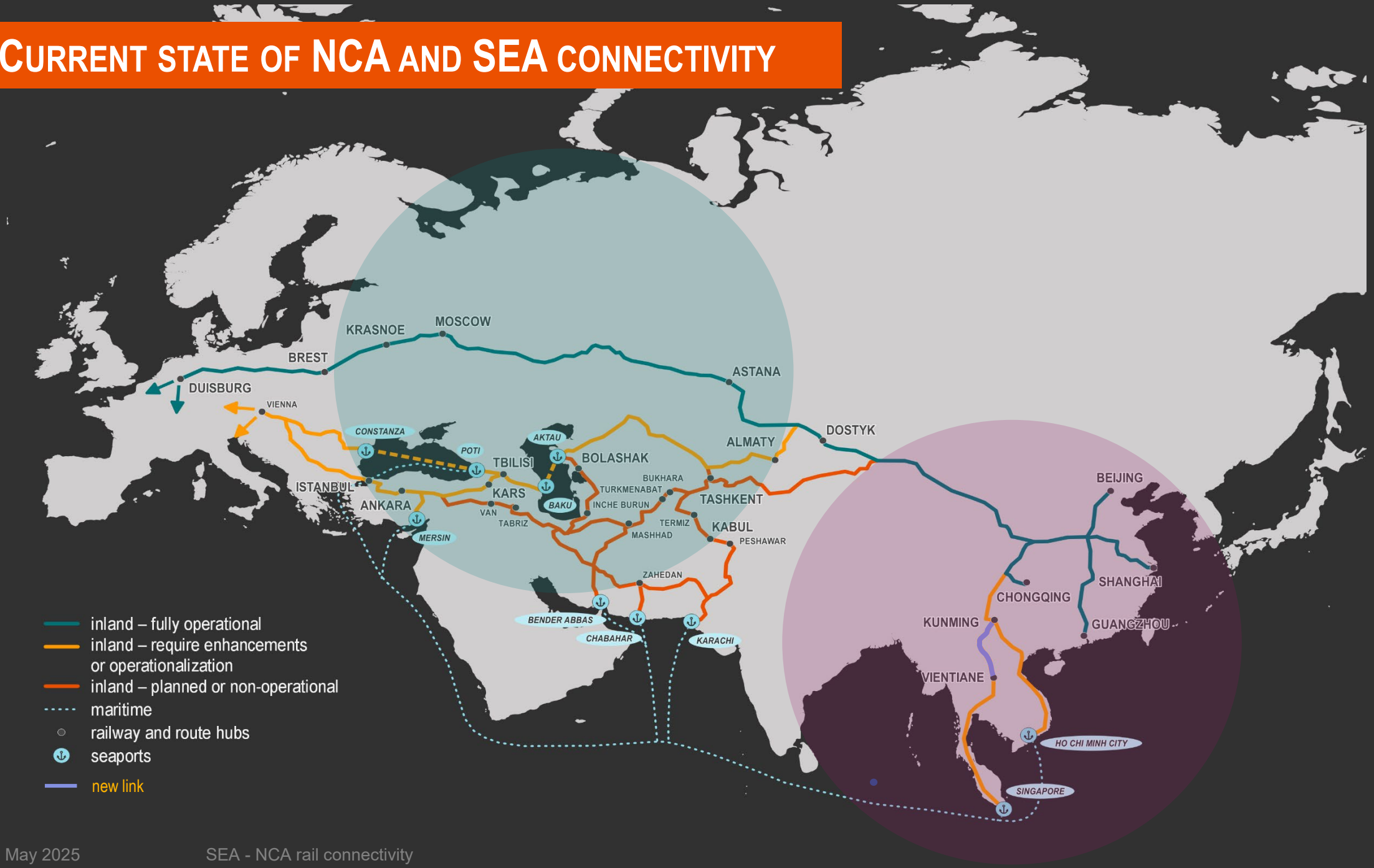


Forecast of InfraEconomy Group for the World Bank (within Middle Trade and Transport Corridor project), baseline scenario

1. Without consideration of oil and exports to island states, Russia and Singapore (reflected in customs statistics, but not referring to real volumes), NCA and SEA exports tending to be transported by rail are moderate.
2. Key exported products refer to fertilizers going eastwards, machinery, vehicles, palm oil going westwards. These products are time senstitive.
3. A two-times growth is projected for the SEA exports.
4. A World Bank study of the Middle Corridor shows, that a 10% decrease in total transportation costs can boost additional exports, mainly grains from Kazakhstan to SEA.

KEY NCA – SEA CORRIDORS

3. CURRENT STATE OF NCA AND SEA CONNECTIVITY



4. Existing and planned inland routes

Corridor		Description and opportunities for specific commodities	Current status	Challenges	Links with Asian subregions
1. China – Kazakhstan – Russian Federation – Belarus - EU		Key route for EU – China links	**Fully operational**, one-window facility (more than 80 per cent of China – EU rail transit in 2021)	Geopolitical trade restrictions and sanctions	Southeast Asia 
2. Trans-Caspian route (TITR, Middle Corridor, TMTM)	 	**Second best option to deliver Chinese goods and Kazakhstan's exports to the EU**	**Fully operational, but requires capacity expansions (less than 5 per cent of China – EU rail transit in 2021)**	**Multimodality (ferry), 4 countries of transit**	**Southeast Asia** 
3. China – Kazakhstan – Uzbekistan – I.R.Iran – Türkiye – EU (Southern corridor)		Linking the EU and China through countries with the largest populations, including I.R.Iran and Türkiye	**Limited operations**	Numerous bottlenecks along the entire route, 5 countries of transit	Southeast Asia 
4. China – Kyrgyzstan – Uzbekistan		Linking the EU and China NCA	**Under construction**	Numerous border crossings, mountaineous terrains (extra traction)	Southeast Asia 

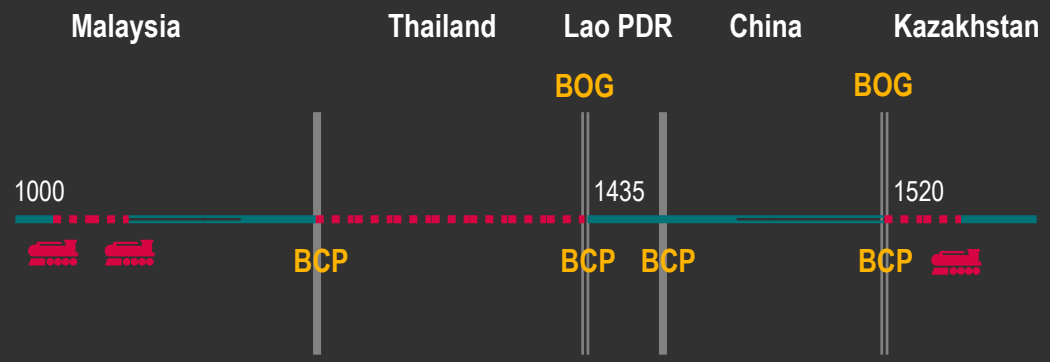
PHYSICAL AND NON-PHYSICAL BARRIERS: CASE OF MALAYSIA – THAILAND – LAO PDR – CHINA – KAZAKHSTAN ROUTE

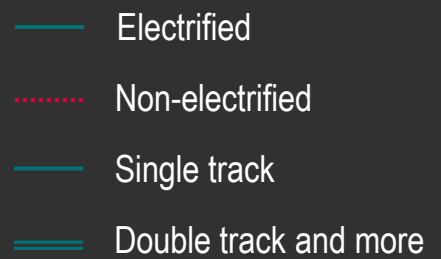
5. Malaysia – Thailand – Lao PDR – China – Kazakhstan case



6. Malaysia – Thailand – Lao PDR – China – Kazakhstan case

Physical barriers





1. Different gauges and numerous border crossings are obvious physical barriers.
2. In addition to the border crossing, there are additional barriers referring to (1) traction change, (2) changes in number of tracks, (3) one-track sections with limited capacities.
3. At least 3 additional locomotive changes are necessary out of border crossings.
4. Most of the route is single track.

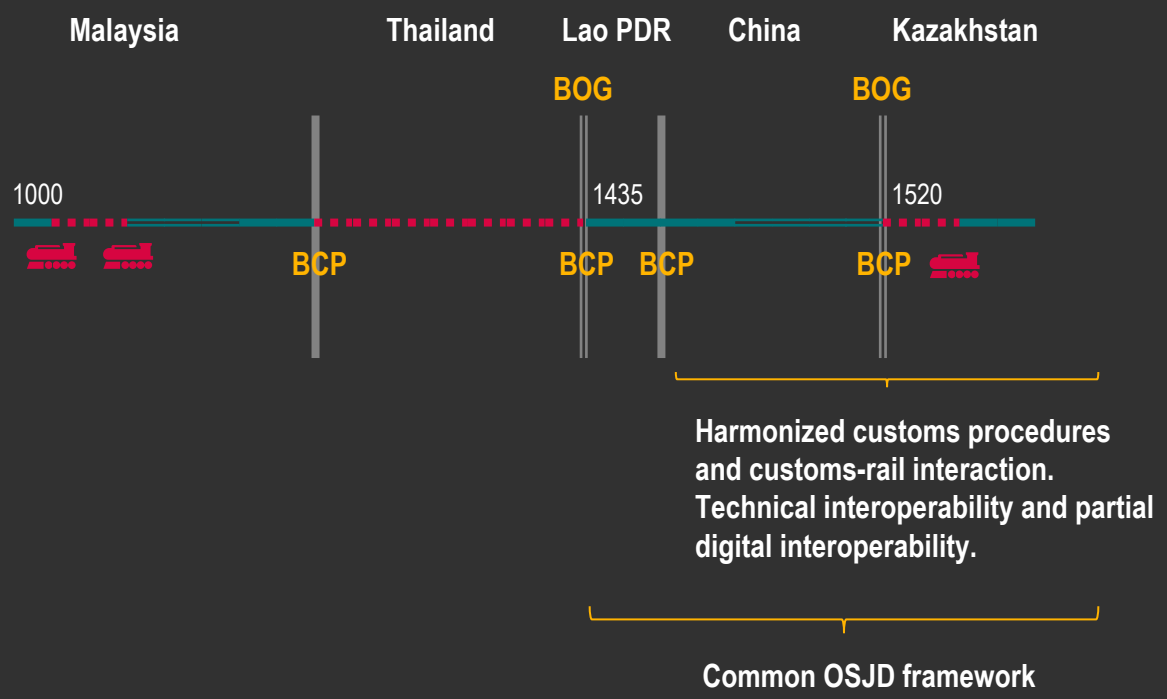
BCP Border-crossing point

BOG Break of gage

Locomotive change out of BCP

7. Malaysia – Thailand – Lao PDR – China – Kazakhstan case

Non-Physical barriers



The most part of the route is not harmonized in terms of regulation and procedures.

Key barriers:

1. Lack of technical interoperability and digital interoperability.
2. Lack of customs to customs and rail to customs harmonized and digitized interaction.
3. Excessive customs and border crossing controls (at each side of the border crossings and not simultaneously.
4. Lack of seamless rolling stock access along the route.

8. Malaysia – Thailand – Lao PDR – China – Kazakhstan case

How to assess the impact of the barriers and prioritize actions

Example of the analysis by elements of the route



It may be recommended to use an element-based approach.

Each element of an international route is checked against optimal (a) time parameters, (b) total transportation costs parameters*.

Each solution is to be checked against its effects on (a) and (b), the best ones are to be prioritized (**first of all those, that allow decrease of costs / time at several elements at once**).

For these issues joint working groups among railways and authorities (customs, control, etc.) are recommended.

* market price of transportation and costs of frozen assets specific for each commodity

JOINT ROADMAP TO ENHANCING CONNECTIVITY BETWEEN THE TWO SUBREGIONS

9. CHALLENGES FOR SEA – NCA TRANSPORT LINKS

1. NCA – SEA connections are currently not considered within dedicated comprehensive program resulting in development of **economic cooperation corridor(s)**.

2. Inland transport enhancements are **not targeted at decreasing trade costs for specific commodities**.

3. There is **no long-term economic and transport project planning and prioritizing system** for the corridors.

4. For each existing route and corridors under construction there is **a set of physical and non-physical barriers requiring international solutions**.



10. Corridor management mechanisms

No	Mechanism	Description and use-cases	Advantages	Disadvantages
Soft management mechanisms				
1.	**Memoranda of understanding followed by permanent working groups**	Kazakhstan – Turkmenistan – I.R.Iran railway corridor	• Fast in implementation	• No firm commitments • No uniform regulation (incl. tariffs)
2.	**Associations or coordinating councils of intergovernmental or inter-agency level**	RailNetEurope* Gulf Cooperation Council Rail Authority	• Uniform prioritizing for investment projects • Link between trade and transport developments	• Need to be backed up by uniform regulations (e.g. EU, EAEU, etc.)
3.	**Associations or coordinating councils of sectoral (business) level**	Coordinating Council on Trans-Eurasian Transportation (CCTT), International Rail Transport Committee (CIT)	• Focus on market necessities and solutions to put together different regulations	• Cannot substitute necessary regulations, targeted at business needs • No uniform regulation (incl. tariffs)
Hard management mechanisms				
4.	**Organizations of intergovernmental or inter-agency level aimed at creation of a uniform transport law and regulations**	OSJD, OTIF	• Link between trade and transport developments	• Often not considering business needs as strongly focused on regulation
5.	**Intergovernmental management / control bodies**	European Railway Agency (ERA)	• Uniform prioritizing system for decision-making	• Often not considering business needs as strongly focused on regulation • Need to be backed up by uniform regulations (e.g. EU, EAEU, etc.)
6.	**Commercial entity**	UTLC ERA	• One-window services, including government relations	• Cannot substitute necessary regulations

11. Roadmap for inter-regional connectivity

Actions recommended upon establishment of the corridor management mechanism

1 Establishment of current and future economic and transport profiles of subregion-to-subregion connectivity

- In-depth analysis, forecast and modelling of trade flows.
- Analysis of optimal transportation parameters **for each traded commodity** to understand optimal transport profiles for each route.
- Modelling of sufficiency of existing plans, top and bottom requirements.
- Agreement on the future backbone connectivity links.

2 Establishment of prioritizing system

- Development Trans-Asian connectivity projects prioritizing methodology based on (a) national, (b) subregional and (c) Asian wider economic effects from connectivity projects – in partnership with international development institutions.
- Agreement on the certification of projects and relevant certification centers - in partnership with international development institutions.

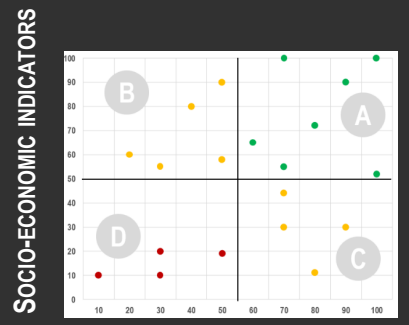
3 Corridor-based harmonization

- Elaboration of multilateral agreements on the functioning of the system of commodity flows and infrastructure projects to ensure subregion-to-subregion connectivity.
- Continuation of improvements of border crossing procedures – also based on recommendations on previous ESCAP studies, including enhancement of seamless data interchange and electronic interoperability.

12. SUGGESTION ON PROJECTS PRIORITIZING SYSTEM

01

NATIONAL PRIORITIES – STAGE 1



A. Projects with the **highest priority**, as they are **effective from both socio-economic and financial points of view** (the project is effective for both the state and the population, as well as for business).

B. Projects that are **more effective from a socio-economic point of view for the state and the population**, e.g. improve the connectivity of the countries of the regions and/or comply with the ESG agenda. However, such projects **may require additional budget support**, as indirect effects may prevail over direct effects.

C. Projects that are **more financially efficient, e.g. have a quick return on investment, are highly profitable and do not require significant government support**. Such projects may have a smaller radius of impact on the economy and population, but have larger direct effects.

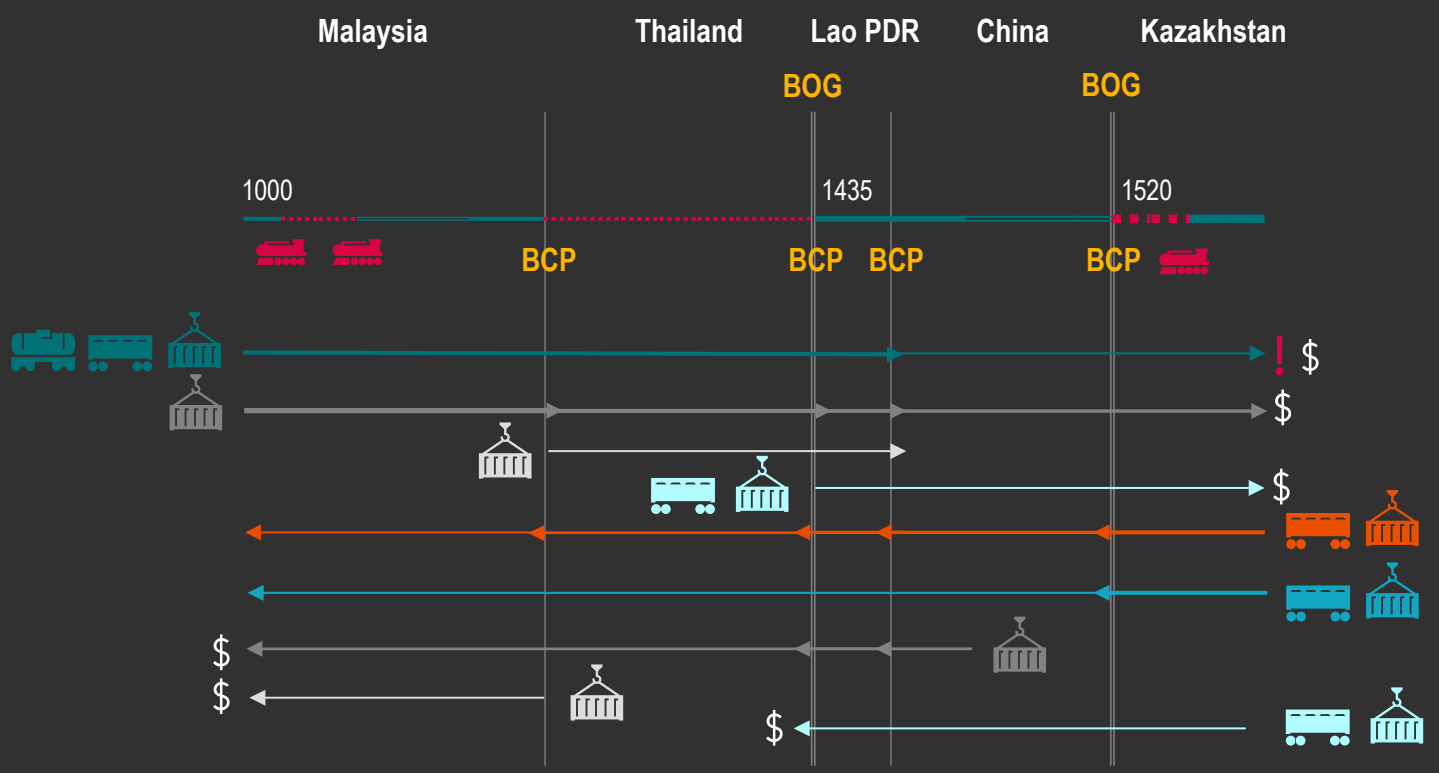
D. Projects that require **additional research at this stage of appraisal and prioritization to refine the parameters** and possible effects ***OR requalification at stage 2***, as they may have a high regional importance.

02

SUBREGIONAL PRIORITIES – STAGE 2

No	Criteria	Options	Attributed value
1.	**Does this project contribute to the achievement of the UN SDGs, higher environmental and social sustainability?**	1) projects classified A and B at Stage 1 2) projects not classified A and B, but having a specifically high importance (confirmed in national strategic or other documents) 3) other options	1) 1 2) 0.5 3) 0
2.	**Is this project a part of the subregional backbone rail transport network?**	1) yes, a missing link 2) yes, upgrade/ enhancement of existing infrastructure 3) no	1) 1 2) 0.5 3) 0
3.	**Is this project a part of the subregion's international rail corridors?**	1) yes, it ensures direct connections between capitals or economic centres/ development of hubs in the capitals or centres 2) yes, this is a border crossing infrastructure 3) yes, but it does not ensure direct connections between capitals or economic centres development of hubs in the capitals or centres, neither is it a border crossing infrastructure 4) no	1) 1 2) 0.5 3) 0.3 4) 0
4.	**Is this project a part of a larger economic/ social project?**	1) yes, it comes together with the development of special economic zones, areas, public spaces or cities, production areas 2) this is a part of a multimodal transport project/ border crossing enhancement project 3) no, it is a standalone transport project	1) 1 2) 0.5 3) 0
5.	**Is the project financially efficient?**	1) projects classified A and C at Stage 1 2) projects with guaranteed funding 3) other options	1) 1 2) 0.5 3) 0

13. CONNECTIVITY PROFILES



- Electrified
- Non-electrified
- Single track
- Double track and more
- **Agricultural goods, incl oils**
- **Machinery and electronics**
- **Plastics and rubbers**
- **Vehicles**
- **Ferrous metals**
- **Non-ferrous metals**

! Special conditions

$ High value-added (time sensitive)

BCP Border-crossing point

BOG Break of gage

Locomotive change out of BCP

Connectivity profile is an easy in use approach to corridor planning and management applicable at early stage to understand the key constraints and to define and prioritize development actions.

It puts together transport profile of the corridor with key existing characteristics and limitations and trade profile along the route.

THANK YOU FOR ATTENTION!

CONTACTS

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