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Learning Materials on

Transport Corridors

UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

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The learning materials were developed for capacity building activities to strengthen subregional connectivity in East and North-East Asia through effective economic corridor management. ESCAP East and North-East Asia Office worked with René Meeuws (Partner, STC-NESTRA Consulting) in developing the learning materials.

CONTENTS

Abbreviations

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
BCP	Border-Crossing Point/Border Control Post
CAREC	Central Asia Regional Economic Cooperation
CIM	Uniform Rules concerning the Contract of International Carriage of Goods by Rail
CLECAT	European Association for Forwarding, Transport, Logistics and Customs Services
COMCEC	Standing Committee for Economic and Commercial Cooperation of the Organization of Islamic Cooperation
CPMM	Corridor Performance Measurement and Monitoring
eCMR	Convention relative au Contrat de Transport International de Marchandises par Route (electronic)
eTIR	Transports Internationaux Routiers (electronic)
EATL	Euro-Asian Transport Linkages
ECO	Economic Cooperation Organization
ESC	European Shippers Council
ESCAP	United Nations Economic and Social Commission for Asia and Pacific
FIA	Fédération Internationale de l'Automobile
FIATA	International Federation of Freight Forwarders Associations
GPS	Global Positioning System
GTI	Greater Tumen Initiative
IMAR	Inner Mongolia Autonomous Region
ITF	International Transport Forum
IRU	International Road Transport Union
LLDC	Landlocked Developing Countries
MoU	Memorandum of Understanding
NGO	Non-Governmental Organisation
OBOR	One Belt One Road initiative
OIC	Organisation of Islamic Countries
OTIF	Intergovernmental Organisation for International Carriage by Rail
OSJD	Organization for Cooperation between Railways
PRC	People's Republic of China

SMGS	Agreement on International Goods Transport by Rail
SWD	Speed with delay
SWOD	Speed without delay
TCP	Time/Cost-Distance
TTFS	Transport and Trade Facilitation Strategy
TFI	Transport Facilitation Indicator
TIR	Transports Internationaux Routiers
TEN-T	Trans-European Transport Network
UN	United Nations
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
UNECE	United Nations Economic Commission for Europe
VAT	Value Added Tax
XUAR	Xinyiang Uygur Autonomous Region

Content and Outline

- The corridor concept; function of corridors; governance and management of corridors
- Road transport and international corridors: main challenges regarding infrastructure, border crossing posts, operational gaps, road transport permits and international technical harmonisation of road transport standards
- The importance of monitoring road transport performance and road transport costs
- Road transport and international corridors during COVID-19 pandemic
- Policies and measures to enhance international safe, secure and seamless road transport

Learning Outcomes

After completing this training module and having consulted the reference readings, you will be able to:

- understand the basic concepts and functions of corridors

- identify various models of governance and management of corridors
- understand the complexity of road transport and international corridors, including main challenges
- apply methodologies related to road transport performance
- understand the challenges for road transport and corridor operations in crisis situations such as the COVID-19 pandemic
- design and apply measures towards more safe, secure and seamless road transport

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1 Corridors: Concept, functions, management and governance

1.1 Introduction

The concept of corridors plays an important role in economic development as economies have to be supported by efficient and sustainable logistics systems. It is often used as a development concept to create fast lanes between points of origin and points of destination in different countries. It is used as a concept to facilitate trade and transport and increase connectivity.

In studies and policy documents one can find various types of corridors: development corridors; economic corridors; (multimodal) transport corridors; transit corridors; trade corridors; logistics corridors; core corridors and ancillary networks, etc. From a purely spatial perspective, corridors are links in a (transport) network and refer to a geographical connection linking two or more nodes (often economic hubs) by transport infrastructure and flows of various modes of transport. These nodes are in many cases economic centres where freight cargo is being handled, processed or stored such as cities, ports, industrial centres and freight villages. We will focus here on the concept of the multimodal transport corridor.

1.2 Multimodal transport corridors

An important element of logistics and hinterland connectivity is the link between the multimodal transport facilities (road, railways, inland waterways, maritime, air) and the location of economic zones and industrial areas.

Multimodal logistics centres and economic zones are more and more connected through multimodal transport corridors which are planned, developed and governed in multiple ways.

The multimodal transport corridors may provide simultaneous connections by various modes of transport on the same track of the corridors (road, railways, inland waterways on the continental part) or provide seamless connections in a consecutive way along the corridor. Inland ports and extended gates are important elements in this development, by functioning as facilitator for multimodal connections and as

platform for the region.

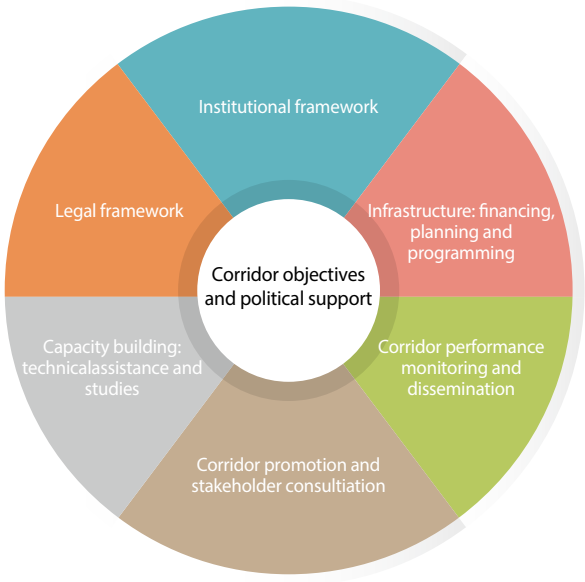
The concept of multimodal transport corridors is promoted in many countries and regions and is often an important component of national and international transport and trade facilitation agendas. Important examples in Asia are the ESCAP Eurasian Transport Corridors; the CAREC Transport Corridors; the ASEAN Master Plan on Connectivity 2025; and the Belt and Road initiative (BRI), a development strategy proposed by the Chinese Government that focuses on connectivity and cooperation between Eurasian countries and beyond.

Also, the China-Mongolia-Russia Economic Corridor forms part of such a corridor: it is part of the ESCAP Eurasian Northern Transport Corridor, but also of the CAREC Transport Corridors.

1.3 Governance and management of corridors

Corridor governance and corridor management are very complex. The combination of hard and soft measures to make the corridor fully operational in order to serve its purposes need to be governed and managed in a multi-country and multi-language setting, involving a broad range of stakeholders from both the public and the private sector. Figure 1 presents a conceptual framework for transport corridor governance and management.

Figure 1 Conceptual framework for corridor governance and corridor management



Source: COMCEC (2018)

The elements of the conceptual framework are elaborated in Annex A.

Exercises: Please make an assessment of the present state and performance of the China-Mongolia-Russia Economic Corridor based on the seven governance domains and the four levels of integration using the information of this chapter. Do not forget to read Annex A.

Note: Complete the tables below.

Assessment of the China-Mongolia-Russia Economic Corridor

Governance domains	Information exchange	Coordination	Cooperation	Integration
1. Corridor objectives and political support				
2. Legal framework				
3. Institutional framework				
4. Infrastructure: financing, planning and programming				
5. Corridor performance monitoring and dissemination				
6. Corridor promotion and stakeholder consultation				
7. Capacity building: technical assistance and studies				

Recommendations What kind of activities would you propose to improve the performance of the China – Mongolia - Russia Economic Corridor?

Governance domains	Information exchange	Coordination	Cooperation	Integration
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7. Capacity building: technical assistance and studies				

2 Road transport and international corridors

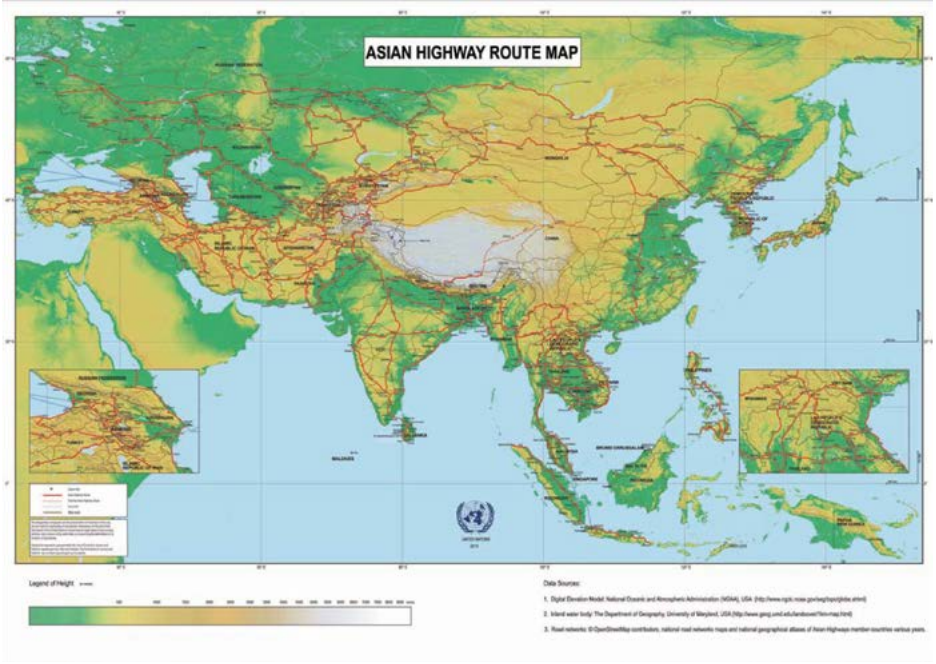
Road transport is the dominant transport mode on international corridors. For long distances over land also railway transport is often being used, but the total volume transported by railways is much less than by road. Railway transport is often used to transport bulk in large quantities, but also dedicated container trains are running on railway tracks. Railway transport in most cases also needs road transport to bring the goods to the railway station and to transport freight from the railway station to its final destination, the so-called 'first and last mile'. Road transport is much more flexible than railway transport, which has a fixed track and can only stop at railway stations.

2.1 Intergovernmental Agreement on the Asian Highway Network

The Intergovernmental Agreement on the Asian Highway Network[1] formalized regional road network, mapping out main existing and potential road transport corridors that support regional economic growth and intraregional and interregional trade. As of June 2019, the network spans more than 143,000 kilometres (Figure 2). To date, 30 ESCAP member States are Parties to the Agreement. In addition to defining the network itself, the Agreement sets out minimal technical design standards and classifications to ensure the quality of the road infrastructure along the Asian Highway routes. While initially focused primarily on the road design for accommodating increasing freight and traffic volumes, the technical standards have been expanded to other areas. The coverage of the Asian Highway network is comprehensive. It has been consolidated over the past two decades with very few missing links, if any, along the network. While the overall extension of the network tends to remain stable, its exact configuration continues to evolve, with the Parties adding new itineraries or regrouping parts of existing subregional routes as a single Asian Highway route. Overall road density assigned to be part of Asian Highway network among parties to the Agreement is estimated at approximately 0.3 kilometre per 100 square kilometres. There is, however, wide divergence among subregions.

1 *https://www.unescap.org/resources/intergovernmental-agreement-asian-highway-network*

Figure 2 Map of the Asian Highway Network



2.2 Design standards for the Asian Highway Network

One of the important elements of the governance and management of international corridors is to agree upon common standards for the road infrastructure taking into account items such as road capacity, safety and speed. ESCAP has proposed detailed design guidelines and standards for the Asian Highway Network on road infrastructure safety facilities.[2]

Table 1 shows the Asian Highway design standards of which the road section of the China-Mongolia-Russian Economic Corridor is part.

2 https://www.unescap.org/sites/default/files/Recommednded%20DESIGN%20GUIDELINES.pdf

Table 1 Asian Highway Network design standards

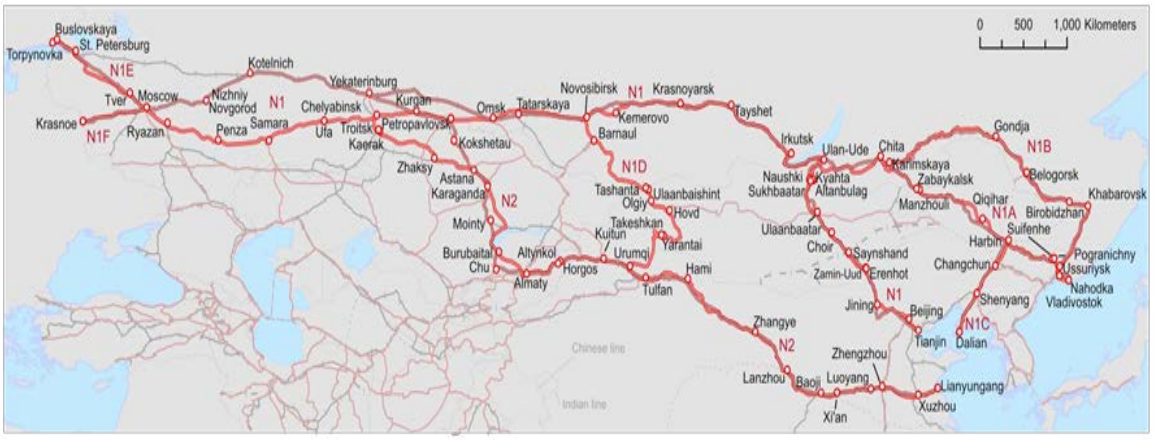
Highway classification		Primary (4 or more lanes)				Class I (4 or more lanes)				Class II (2 lanes)				Class III (2 lanes)			
Terrain classification		Level (L)	Rolling (R)	Mountainous (M)	Steep (S)	L	R	M	S	L	R	M	S	L	R	M	S
Design speed (km/h)		120	100	80	60	100	80	50		80	60	50	40	60	50	40	30
Width (m)	Right of way	(50)				(40)				(40)				(30)			
	Lane	3.50				3.50				3.50				3.00 (3.25)			
	Shoulder	3.00		2.50		3.00		2.50		2.50		2.00		1.5 (2.0)		0.75 (1.5)	
	Median strip	4.00		3.00		3.00		2.50		N/A		N/A		N/A		N/A	
Minimum radii of horizontal curve (m)		520	350	210	115	350	210	80		210	115	80	50	115	80	50	30
Pavement slope (%)		2				2				2				2 - 5			
Shoulder slope (%)		3 - 6				3 - 6				3 - 6				3 - 6			
Type of pavement		Asphalt/cement concrete				Asphalt/cement concrete				Asphalt/cement concrete				Double bituminous treatment			
Maximum superelevation (%)		10				10				10				10			
Maximum vertical grade (%)		4	5	6	7	4	5	6	7	4	5	6	7	4	5	6	7
Structure loading (minimum)		HS20-44				HS20-44				HS20-44				HS20-44			

Source: ESCAP. Strengthening the capacity of ESCAP Member States to harmonize standards on weights, dimensions and emissions of road vehicles for facilitation of transport along the Asian Highway network; Study Report 2019.

2.3 Road infrastructure

The Eurasian Northern Corridor is an operational link between Asia and Europe (Figure 3). The corridor is important for the promotion of economic activities along its routes. The corridor routes may boost economic development in areas along and adjacent to the corridor. The China-Mongolia-Russia Corridor may facilitate the diversification of the economy of Mongolia (Figures 4, 5 and 6). Therefore, this corridor is also called an 'Economic Corridor'. The private sector and governments are investing in so-called dry ports and logistics freight centres along the corridor. Some examples in Mongolia are Ulaanbaatar, Saynshand and Zamin-Uud. Mongolia is also creating special economic zones at important nodes to encourage the usage of the corridor's existing facilities and attract new investments in both transport, manufacturing and processing including Altanbulag Free trade Zone and Zamin-Uud free economic zone.

Figure 3 Eurasian Northern Corridor routes



This figure is based on the Asian Highway and Trans-Asian Railway source files as provided by ESCAP Secretariat in October 2016 and reflects the state of infrastructure as per July 2017. It serves for illustrative purposes to show in a simplified manner the corridors covered by the study and thus is not aimed at showing all existing transport nodes, border crossings, road and railway segments.

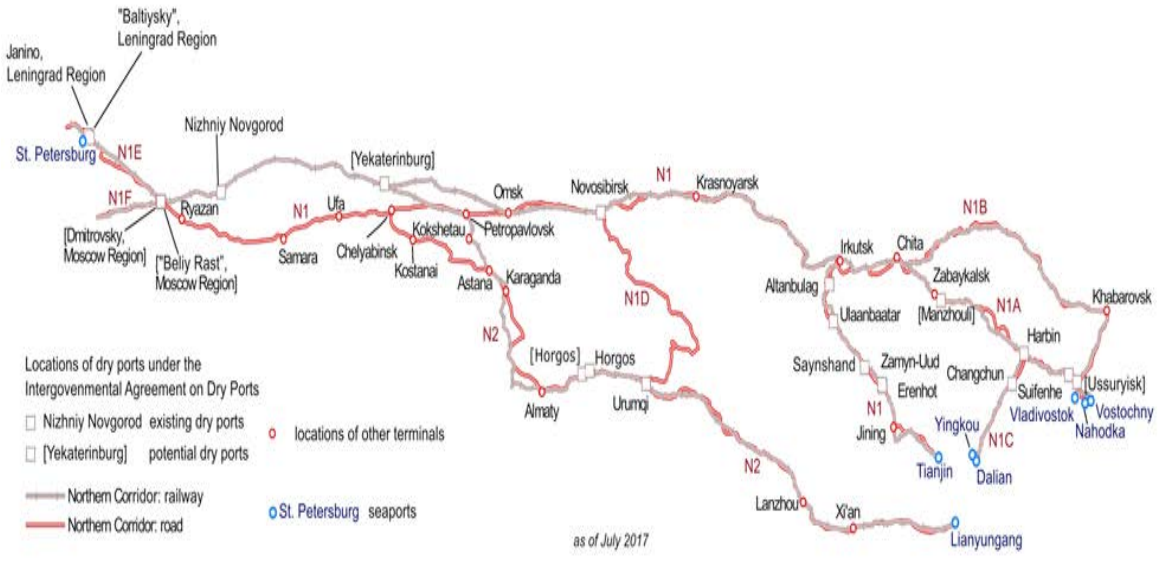
The railway section Almaty – Altynkol (Kazakhstan) – Horgos (China) is in operation but is not yet included in the TAR Agreement.

The designations employed and the presentation of material on this figure 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 line represents 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.

Figure 4 Mongolia – Road transit corridors

Figure 5 Mongolia – Rail transit corridors

Figure 6 Dry ports, terminals and seaports along the Eurasian Northern Corridor



Source: ESCAP: Comprehensive Planning of Eurasian Transport Corridors to Strengthen the Intra- and Inter-Regional Transport Connectivity; Study Report 2017.

The state of road infrastructure along the N1D route within Mongolia, where there are a mix of Class II and below Class III roads, is challenging. In the short distance before the border with China (which is upgraded to Class II), the Tsaganor to Hovd stretch contains sections of Class II and sections below Class III. The sections from Ulaanbaishint to Tsaganor and from Hovd to Bulgan Sum are entirely below Class III.[3]

With the completion in 2015 of road construction works along the road running Choir – Zamin-Uud – border with China, transit transport from the Russian Federation to the border with China on the N1 route became possible. The section from Choir to Zamin-Uud is now a two-lane asphalt-paved road, and the last 3.3 km to the border with China is a four- lane asphalt road.

2.4 Border crossing posts

Border crossing posts (BCPs) present bottlenecks for international transport though they may be well-designed. Most of these bottlenecks relate to the fact that different laws and regulations apply between countries and also inspection regimes are often different. Coordination and cooperation between the border posts of the two countries would facilitate the border crossing of persons, vehicles and cargo. Mutual recognition of each other's licenses, permits, inspection documentation would be helpful to guarantee smooth and seamless border crossing. This type of documentation refers to immigration; transport (import, export and transit freight; technical vehicle standards; driver license) and trade (trade documentation, health regulation, phyto-sanitary requirements, certificates of origin, etc.). Some countries are even building one-stop border posts and avoid duplication of procedures and inspections (the inspection by an agency at one side of the border post is recognized by the agency at the other side of the border post; in some case there is even only one agency).

In order to give an idea about operations at border crossings, some practical information on border crossings are provided below.

3 The information is from ESCAP study "Comprehensive Planning of Eurasian Transport Corridors to Strengthen the Intra- and Inter-Regional Transport Connectivity" published on December 27, 2017.

Box 1: Border crossing operations on China-Mongolia-Russia corridors (status 2016-2017)

Route N1:

- Kyahta (Russian Federation) – Altanbulag (Mongolia) road BCP

  Kyahta BCP is open 24 hours a day for cars and passengers, and 12 hours a day for trucks. The design capacity of the BCP is 1,500 passengers and 500 vehicles/day, but in 2016 the BCP operated above capacity. On peak days these numbers almost tripled. Kyahta has five transport lines and Altanbulag 11; queuing is common and, therefore, Russian Customs considers modernization in order to increase capacity. It takes about 2 hours to cross from the Mongolian side to the Russian side at Altanbulag, and this figure could increase in the coming years to around 4 hours. Altanbulag is equipped with an X-ray inspection system, while Kyahta is not. Altanbulag is also a free economic zone.

- Zamin-Uud (Mongolia) – Erenhot (China) rail and road BCP

  On November 1, 2015, Erenhot and Zamin-Uud started to exchange cargo manifests electronically, and to mutually recognize weight certificates and X-ray diagrams. A revision of the Customs Law in Mongolia improved the road transport environment; drivers have to present less papers when crossing borders. The result of these efforts is a reduction of border crossing times at the Zamin-Uud – Erenhot road BCP, from 12 hours in 2014 to 4 hours in 2015. Border crossing costs for road transport along the Sukhbaatar – Ulaanbaatar – Erenhot corridor dropped by 43 per cent, from $267 to $151.

Route N1D:

- Tashanta (Russian Federation) – Ulaanbaishint (Mongolia) road BCP

  Tashanta on the Russian side is a year-round BCP open 9 hours/day. Its design capacity (100 vehicles/day) and equipment are inadequate given the present level of traffic, and thus requires comprehensive modernization. The "Tashatinsky" logistics terminal was under construction on the Russian side. It features warehouses, including cold storage spaces and X-ray systems. The working schedule on the Ulaanbaishint BCP side ('Tsagaannuur BCP', according other sources) is not synchronized with that of the Russian side, with an overlap of 4 hours.
- Takeshkan (China) – Yarantai (Mongolia) road BCP

  The BCP is open for international traffic year-round, and it operates 9 hours/day. Yearly passenger traffic at the border crossing post is around 10,000 people.

Source: ESCAP study "Comprehensive Planning of Eurasian Transport Corridors to Strengthen the Intra- and Inter-Regional Transport Connectivity" published on December 27, 2017

In 2017 there was inadequate capacity for the actual traffic at the road border posts on the Russian sides at Kyahta (Russian Federation) – Altanbulag (Mongolia); Tashanta (Russian Federation) – Ulaanbaishint (Mongolia). Working hours between the border countries at Tashanta (Russian Federation) – Ulaanbaishint (Mongolia) were also not synchronized.

Table 2 shows the costs of investments in priority road infrastructure and dry ports for Mongolia along the Eurasian Northern Transport Corridor as estimated by ESCAP in 2017.

Table 2 Estimated cost of investments in priority transport infrastructure for Mongolia along the Eurasian Northern Transport Corridor

Infrastructure	Route	Length (km)	Cost (USD million)
Road	Altanbulag-Choir	527.6	820
	Hovd-Bulgan	360	1,400
	Ulaanbaishint-Hovd	260	1,300
Dry Ports	Ulaanbaatar and Zamin-Uud		200
Total			3,720

Source: Compiled based on ESCAP: Comprehensive Planning of Eurasian Transport Corridors to Strengthen the Intra- and Inter-Regional Transport Connectivity; Study Report 2017.

Read ESCAP is continuing to support its member States in identifying and addressing the operational challenges along the Asian Highway network

The *Handbook on Cross-Border Transport along the Asian Highway Network* can be used as a "one-stop" source of practical information and a tool for policymakers, transport operators, logistics service providers and other stakeholders in relation to border-crossing processes and formalities.

The handbook is available online at:
https://www.unescap.org/resources/handbook-cross-border-transport-along-asian-highway-network

2.5 Bilateral and Multilateral Road Transport Agreements

In the road transport sector, bilateral and multilateral road transport agreements are quite common to regulate international road transport. Figure 7 shows that Mongolia still has not adhered to various sub-

regional agreements. There is a variety of issues that can be covered by such agreements: access to the market; cabotage regimes; transit regulations; technical standards on weight, dimension and emissions for the vehicle; recognition of driving licenses of international truck and bus drivers; road tax; etc. Access to the market can be granted, for instance, by issuing road permits for individual trips, certain vehicles and/or for certain time periods. The bilateral road permit system along the Eurasian Northern Corridor is presented in Figure 8.

- **Mongolia – China**

The border crossings of Takeshkan (China) – Yarantai (Mongolia) and Erenhot (China) – Zamin-Uud (Mongolia) on the N1 route of the Eurasian Northern Corridor are covered by the **China – Mongolia Agreement on International Road Transport** from 2011. The ESCAP survey on international road transport practices between the countries showed that the two countries use a permit system, whereby China issues a single round-trip permit subject to an annual quota, while Mongolia issues both single round-trip and multiple round-trip permits. There are no designated routes for Chinese trucks in Mongolia, while China allows Mongolian trucks to use the Takeshkan – Qinghe route at the first Border Crossing Post and to travel up to Erenhot at the second BCP. Both sides require third-party insurance, a national driving license translated into the national language of the other country, and for transport operators to be registered at the respective national authorities. There are differences in the weight and dimensions standards of China and Mongolia. The transport authorities of the two countries require a similar list of documents for entering vehicles. The customs requirements of the two countries for the temporary importation of vehicles and cargoes do not match (the rules in China are stricter than the Mongolian ones).

- **Mongolia – Russian Federation**

Mongolia and the Russian Federation have two border crossings along the Eurasian Northern Corridor route N1: Tashanta (Russian Federation) – Ulaanbaishint (Mongolia), and Kyahta (Russian Federation) – Altanbulag (Mongolia). They are regulated by the **Mongolia – Russian Federation agreement on international road transport** from 1996. The two countries reported during the ESCAP survey that they are using a permit system, both issuing single round-trip permits subject to quota (8,000 in case of the Russian Federation). There are no designated routes. The countries have similar weight and dimensions standards, both require third-party insurance and the transport operator should be registered with the relevant authority of its home country. The Russian Federation requests the purchase of insurance at the border or accepts a green card. Both countries accept national or international driving licenses, but the Russian Federation

requests the translation of the Mongolian driving license into Russian. Customs requirements for the temporary importation of vehicles and cargoes are the same. The requirements of their transport authorities for bringing in vehicles are similar, except that Mongolia requires the submission of a transport operator registration certificate.

In addition to above, the agreement prohibits cabotage, allows transport from/to the territory of the other country to/from the territory of a third country subject to separate permission, and it envisages the possibility of special procedures for border regions. The agreement states that cargo transport should be carried out under a national consignment note in an internationally accepted format.

- **China – Mongolia – Russian Federation**

The Governments of China, Mongolia and the Russian Federation signed the Intergovernmental Agreement on International Road Transport along the Asian Highway network in Moscow on 8 December 2016. In doing so, each country agreed to grant the other two countries traffic rights for international road transport on the sections of AH3 and AH4 that connect their respective territories.

Through the Agreement, the three ESCAP member States have operationalized the following Asian Highway routes: AH3 from Ulan-Ude in the Russian Federation to Tianjin port in China, through Ulaanbaatar and Beijing, providing access to the sea for landlocked Mongolia; and AH4 from Novosibirsk in the Russian Federation to Honqiraf at the Chinese border with Pakistan, through Urumqi and Kashi in China. This constitutes the first intergovernmental agreement concluded within the framework of the China-Mongolia-Russian Federation economic corridor.

At the first meeting of the Joint Committee under the agreement in 2019 it was agreed that each country will issue 200 permits. This exchange of permits under the Agreement is set to ease international road transport on these segments.

Read Know more about the Intergovernmental Agreement on International Road Transport along the Asian Highway network:

https://www.unescap.org/sites/default/files/Intergovernmental-Agreement-on-Internation-al-Road-Transport-along-the-Asian-Highway-Network-English-language.pdf

Note — Jot down some basic facts about the Agreement:

- What are the included routes and state border crossings?
- What information are contained in the permits for international road transport?
- What are the responsibilities and functions of the Joint Committee?

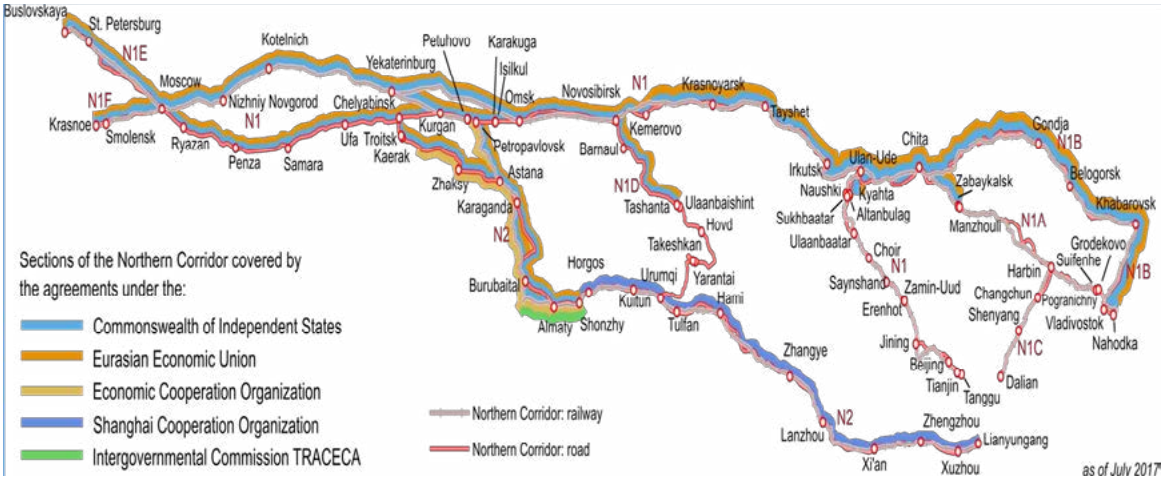
Learn more — The Handbook on Cross-border Transport and Ancillary Facilities along the Asian Highway Network Routes 3 and 4 takes stock of the current cross-border infrastructure and formalities as well as ancillary facilities along AH3 and AH4.

https://www.unescap.org/sites/default/files/Handbook-AH3-AH4-final.pdf

Annex B presents additional information international harmonization of technical standards for weight, dimensions and emissions of heavy-duty and commercial vehicles. Road transport transit and the TIR Convention are also given mention.

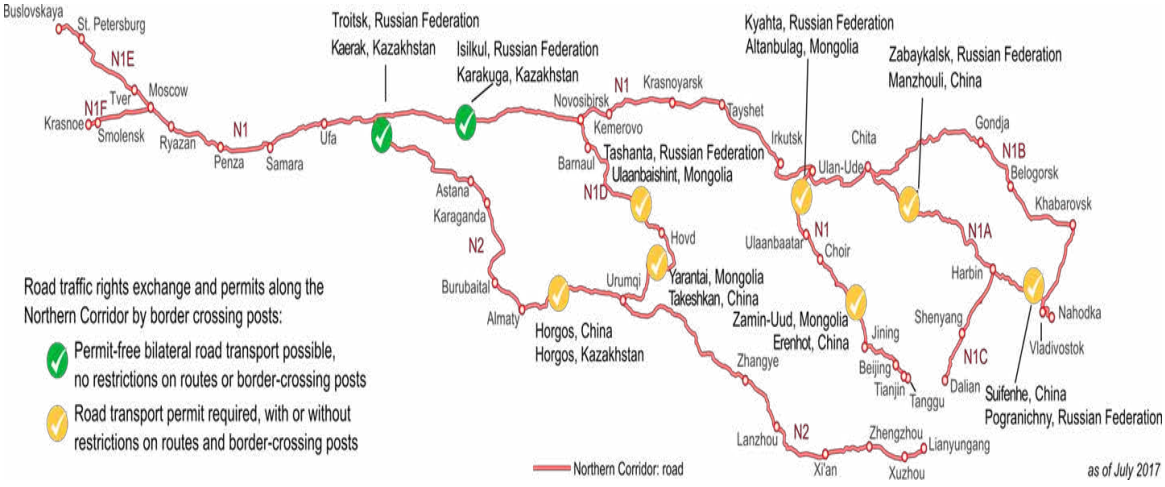
Read: Do not forget to read Annex B.

Figure 7 Eurasian Northern Corridor – Coverage by subregional agreements



Source: ESCAP. Comprehensive Planning of Eurasian Transport Corridors to Strengthen the Intra- and Inter-Regional Transport Connectivity; Study Report 2017.

Figure 8 Road permits for bilateral transport along the Eurasian Northern Corridor



Source: ESCAP. Comprehensive Planning of Eurasian Transport Corridors to Strengthen the Intra- and Inter-Regional Transport Connectivity; Study Report 2017.

2.6 Some of the main non-infrastructure road transport and customs impediments along the Eurasian Northern Corridor

Roads

- Regulatory mismatches occur at the borders of countries along the Corridor during international road transport operations. Differences in weight standards, and requirements for the translation of national driving licenses for international transport to occur can lead to decreased efficiency, and an increase in the number of documents needed for international transport along with respective costs.
- There are geographical restrictions on entry to partner countries in some country pairings along the Corridor: Mongolian trucks can enter China only up to certain points.
- Cabotage is forbidden in all countries.

Customs

- Customs requirements between China, Mongolia and the Russian Federation differ, complicating the environment for transit. The three countries' authorities are taking steps towards improving the situation through the holding of trilateral meetings. Most of the issues raised by freight forwarders concern borders with China, rather than the Russian Federation – Mongolia border.
- The treatment of Mongolia-bound cargoes at Tianjin port is known to induce delays, since a large amount of cargoes are subject to detailed physical inspection regardless of the advance electronic submission of documentation prior to a vessel's arrival.
- Chinese requirements for the temporary importation of vehicles and cargoes are stricter than those in bordering countries.

2.7 Monitoring road transport performance and road transport costs

- **Establishing an observatory to monitor road transport performance and related road transport and logistics costs**

It is good international practice to set-up an observatory along the main transport and trade corridors to monitor road transport performance and related transportation and logistics costs.

There are worldwide many good practices of establishing such observatories. Some of these observatories sometimes monitor driving and waiting times in real time using chip technology and present the real-time data on a website. A good example of such an observatory is the CAREC Corridor Performance Measurement and Monitoring (CPMM) system of Central Asia Regional Economic Cooperation (CAREC) in Asia.

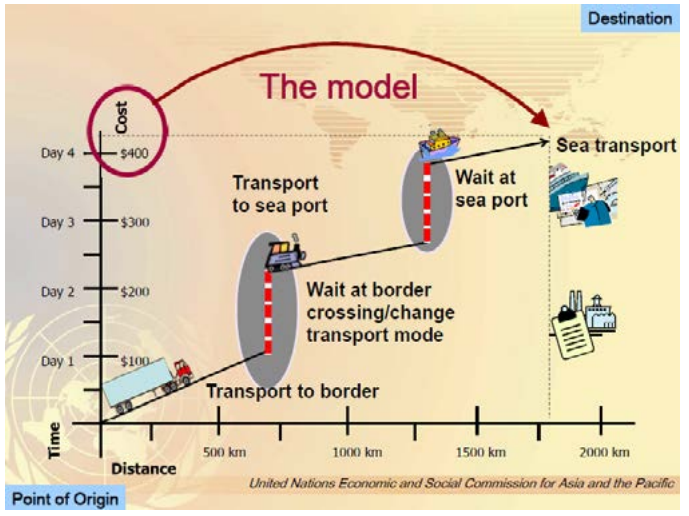
- **The ESCAP Time/Cost-Distance Methodology**

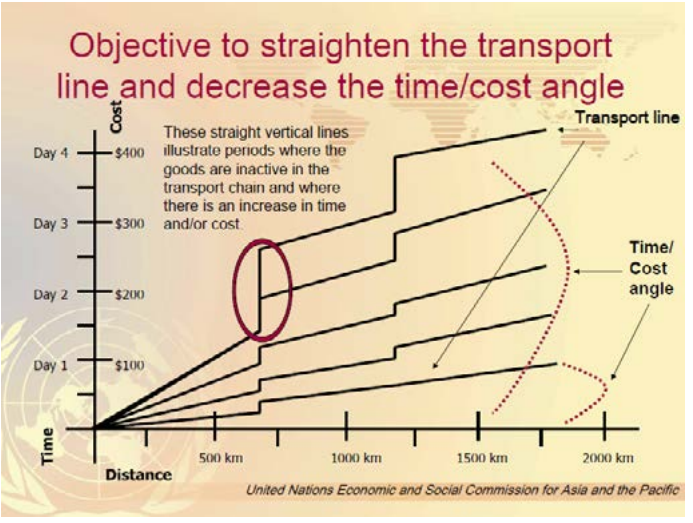
Figure 9 shows graphically the ESCAP Time/Cost-Distance Methodology. The model is the graphical representation of cost and time data associated with transit transport processes. The purpose of the methodology is to identify inefficiencies and isolate bottlenecks along a particular transit route by looking at the cost and time characteristics of every section along a transit route.

The methodology requires a minimum amount of information: the route from origin to destination, including stops and border crossings, the mode of transport of each leg of the trip, the distance travelled, and the travel time, and the cost of each leg and node by mode of transport.

The 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; and compare alternative transit routes.

Figure 9 Time/Cost-Distance methodology (ESCAP)





Source: http://www.unescap.org/sites/default/files/Time_cost_methodology%20Model.pdf

Read: Further information on the methodology, including user guides and templates are available at:

https://www.unescap.org/resources/timecost-distance-methodology

Read: Case Study

This would be a good time to read through the CPMM system for the CAREC corridors in Central Asia. (Refer to Case Studies section at end of the module)

3 Road transport and international corridors during COVID-19 pandemic

The road transport sector plays a very important role in times of crisis such as the COVID-19 pandemic. It is crucial that supply chains are maintained, in particular for essential commodities such as food, medical supplies and petrol. Road transport, however, could theoretically also be a vector for the national and international spreading of the disease if no precaution measures are undertaken.

Below are case studies on policy measures implemented by countries in response to the COVID-19 outbreak, including regulating border-crossings and road transport.

3.1 Transport connectivity in Asia and Pacific: Policy responses to COVID-19 pandemic[4]

ESCAP's Policy Brief on policy responses to COVID-19 highlights that one of the first lessons of the COVID-19 pandemic is the importance of maintaining transport connectivity and the cross-border movement of essential goods. This is very challenging to implement as it has gone against the global trend of lockdown responses resulting in the closing of borders and a severe reduction in mobility. Recent practices in the countries in Asia-Pacific have revealed fragmented policy responses following the COVID-19 outbreak, which would suggest that there may not be sufficient cooperation mechanisms in place to ensure that cross-border trade and transport take place as smoothly as possible in times of pandemic or other similar cross-border emergencies.

Countries also may seize upon the lessons learned during the pandemic for a decisive shift towards innovation and digitizing the processes involved in exchange of information to complete operational and regulatory transport, trade, import, export and transit controls. Several countries introduced priority lanes (sometimes called 'green lanes') and accelerated customs procedures for essential goods, accepted electronic documents, piloted new automated and digital technologies, promoting contactless processing and delivery and other measures. Box 2 presents examples of facilitation measures.

4 *https://www.unescap.org/resources/policy-reponses-covid-19-transport-connectivity-asia-and-pacific*

Box 2: Examples of facilitation measures introduced to fight the COVID-19 outbreak

Georgia

Within the frames of the measures to prevent the spread of COVID-19, movement of the freight vehicles through the customs checkpoint on Georgian-Azerbaijani border (including transit and rail freight traffic) is ensured according to the specially developed protocol in 24-hour regime.

China

Transport facilitation measures taken include removing all road tolls (including for bridge and tunnels) across the country for all vehicles, until the pandemic ends; putting in place a no-stop, no-check, toll free policy for vehicles transporting emergency supplies and essential personnel and cutting operational costs of international air cargo, including exemptions from the civil aviation development funds as well as reduction of airport charges and air traffic control. Passenger airlines are also encouraged to turn passenger planes into all-cargo freighters for carrying out freight transportation to make up for the shortage of air freight capacity amid the escalating pandemic.

India

Special facilitation measures at main ports. To ensure smooth flow of supply chain of essential items during national lockdown to fight COVID-19, clarifications were provided to ensure that stakeholders in logistics and warehousing receive necessary assistance to continue their operations.

Republic of Korea

To address delays at airports and seaports, allowing cargo to be transported directly to manufacturing plants without entry into the terminal after arrival in order to solve the problems of delayed unloading and shortage of storage space at airports and seaports driven by the concentration of imports.

Russian Federation

A headquarters has been set up at Russian Railways to provide operational support to shippers and ensure coordination of all links in the transport chains in the context of preventing and eliminating the spread of new coronavirus infection. Temporary exemption from weight control of vehicles carrying essential goods and temporary cancellation restrictions on the movement of such vehicles and their loading and unloading within the city limits.

Singapore

The Singapore-Malaysia Special Working Committee has agreed that the transport of all types of goods between Malaysia and Singapore will be facilitated during the duration of Malaysia's Movement Control Order. As such, those conveying essential services, or supplies (e.g. lorry drivers, vegetable supply truckers, frozen supply truckers) via land and sea crossings will be exempted from the Ministry of Manpower's (MOM) entry approval and quarantine ("Stay Home Notice" (SHN)) requirements.

Source: ESCAP, 2020. Policy Reponses to Covid-19: Transport Connectivity in Asia and the Pacific.

However, the outbreak of the pandemic also made clear that in reality the many regional trade, transport or transit cooperation mechanisms, which in practice should be regulating and facilitating cross-border trade and transport, offered insufficient guidance to handle a crisis like the one caused by COVID-19. Regional cooperation can alleviate the cross-border transport complications arising from the COVID-19 response and this regional cooperation should be further developed, strengthened in implemented in the post-COVID era.

3.2 Case Study on Road Transport and Operations on International Corridors in the EU under COVID-19

The European Commission of the European Union issued on 16 March 2020 guidelines for border management measures to protect health and ensure the availability of goods and essential services at the same time. These guidelines stipulate that individual EU Member States should not undertake measures that jeopardise the integrity of the Single Market for goods, particularly of supply chains, or engage in any unfair practices. The guidelines address five topics:

1. Transport of goods and services

As transport and mobility are essential to ensure economic continuity, control measures should not undermine this continuity of economic activity and preserve the operation of the supply chains. EU Member States may impose restrictions to the transport of goods and passengers on grounds of public health, but only if these restrictions are transparent, duly motivated, proportionate, relevant and mode-specific, and non-discriminatory.

2. Supply of goods

Member States should preserve the free circulation of all goods and guarantee the supply chain of essential products such as medicines, medical equipment, essential and perishable food products and livestock. Member States should also designate priority lanes for freight transport, e.g. via so-called green lanes and consider waiving existing weekend bans. Transport workers should be enabled to circulate across borders.

3. Health-related measures

It is recommended to put in place primary[5] and secondary[6] entry and exit screening measures and provide information in various forms. Suspected case should be isolated and actual cases transferred to a health care facility. Protective equipment for healthcare and non-health care workers should be provided.

4. External borders

All persons, EU and non-EU nationals, who cross the external borders to enter the Schengen area[7] will be subject to systematic checks at border crossing points and Member States are allowed to refuse entry to non-resident third country nationals where they present relevant symptoms or have been particularly exposed to risk of infection and are considered to be a threat to public health.

5. Internal borders

EU Member States are allowed to reintroduce temporary border controls at internal borders if justified for reasons of public policy or internal security. Member States can also require persons entering their territory to undergo self-isolation or similar measures upon return from an area affected by COVID-19 if they impose the same requirements on their own nationals. Member States should also coordinate to carry out health screening on one side of the border to avoid overlaps and waiting times.

The complete set of guidelines is presented in Annex C.

Exercise and Discussions

- Which measures taken by countries would be useful for the China-Mongolia-Russia Economic Corridor?
- Which measures could realistically be implemented on the China-Mongolia-Russia Economic Corridor?
- Which measures would only be useful in times of pandemic?
- Which measures would apply also in times without pandemics?
- Are there any other measures that you would propose?

Note

Do not forget to write down your answers.

5 Primary screening includes an initial assessment by personnel, who may not necessarily have medical training. Activities include visual observation of travellers for signs of the infectious disease, measurement of travellers' body temperature, and completion of a questionnaire by travellers asking for presence of symptoms and/or exposure to the infectious agent.

6 Secondary screening should be carried out by personnel with medical training. It includes an in-depth interview, a focused medical and laboratory examination and second temperature measurement.

7 The Schengen Area is an area comprising 26 European states that have officially abolished all passport and all other types of border control at their mutual borders. The area mostly functions as a single jurisdiction for international travel purposes, with a common visa policy. The area is named after the 1985 Schengen Agreement signed in Schengen, Luxembourg.

3.3 Health related measures under COVID-19 proposed by the industry: associations of road transport operators, freight forwarders, providers of logistics services and shippers

The transport industry also proposed measures to protect the safety of their drivers and workers minimizing the chances for transmission of COVID-19 during operations.

Boxes 3 and 4 show recommendations from the International Road Transport Union (IRU)[8] to governments and companies and guidelines for truck drivers during COVID-19. Box 5 shows recommendations for consignors, consignees, drivers and road transport operators in the wake of COVID-19 by the European Shippers Council (ESC) and the European Freight Forwarders Association CLECAT at loading and unloading sites.

Box 3: IRU: Short term actions to keep road networks safe and open

Safety

- Operating companies should implement higher driver health and safety standards for loading and unloading goods (particularly in quarantine areas) and concerning the carriage of documents to demonstrate compliance with health rules.
- Operating companies must ensure traceability in recording and maintaining driver and worker movements.
- Governments and authorities should clearly communicate enforcement procedures for vehicles, drivers and cargo or passengers, especially for quarantine areas.
- Governments and authorities should closely coordinate and publish measures to mitigate the impact of the restrictions they adopt on supply chains and related movements of goods and people.

Economic

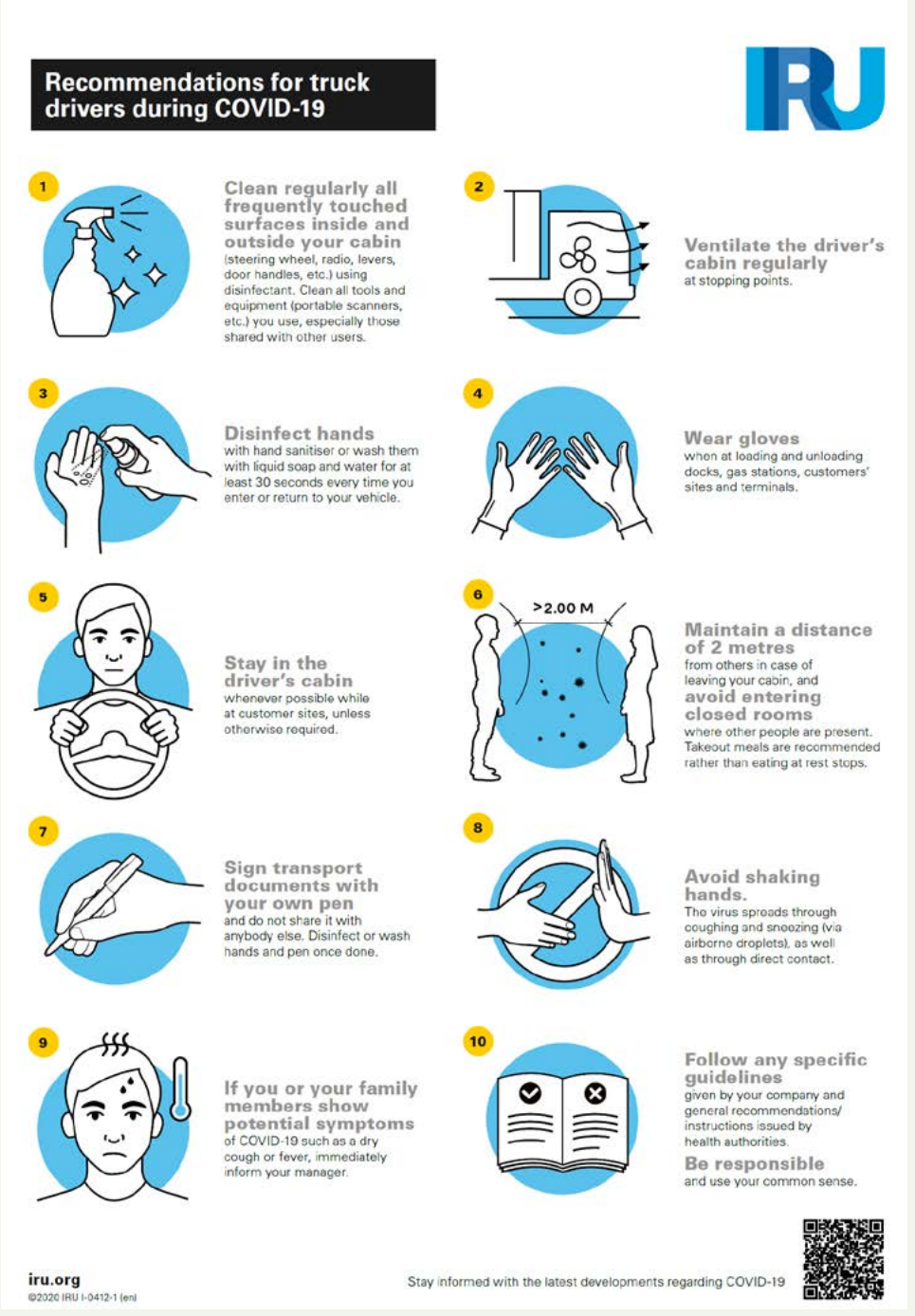
- Ease driving and resting time rules to ensure efficient logistics for critical goods (food and medical supplies) and enable drivers to leave affected regions or quarantine zones as quickly as possible to return home.
- Lift delivery restrictions to ensure delivery can take place at safer times, in the night for example.
- Ease loan and mortgage repayment terms from financial institutions, especially for large vehicle loans, and VAT and tax payment deadlines.
- Remove or reduce tolls and road user charges for trucks and coaches.
- Set up support programmes for temporarily unemployed road transport workers.
- Avoid unilateral measures by the relevant authorities so that cross-border transport of goods is facilitated (especially essential items such as food and medical supplies).
- Provide emergency financial aid programmes for impacted businesses to prevent bankruptcies.

Source: *https://www.iru.org/resources/newsroom/coronavirus-covid-19-iru-calls-governments-help-keep-road-transport-supply-chains-and-mobili-*

8 The road transport industry is organized worldwide through the International Road Transport Union (IRU). The IRU defends the interest of the road transport sector and is the voice of 3.5 million road transport companies in more than 100 countries. Many national road transport associations are member of the IRU.

ty-networks-moving

Box 4: Recommendations for truck drivers during COVID-19



Box 5: Recommendations for (un) loading ESC/CLECAT under COVID-19

RECOMMENDATIONS

to Support Health and Safety in Road Freight Transport in the Wake of COVID-19

AT LOADING AND UNLOADING SITES

CONSIGNOR / CONSIGNEE

- Be respectful in your communication towards the driver.
- Create standardised procedures for loading and unloading trucks. Inform your logistics partners and own staff accordingly.
- Prepare instructions for the arriving drivers and make sure that there is personnel to receive them.
- Prepare barriers indicating the boundary line between internal and external persons.
- Make sure there is enough hand disinfection at exits and entrances for internal and external persons.
- Clean loading equipment regularly. Ramp personnel should wear protective equipment (masks and gloves), if available.
- Designate a place for handling documents. When using electronic tools, the receiver should wear gloves and/or use his/her own tool for receipt. Seek alternatives which would not involve any human contact, if possible.
- Open up or put up temporary sanitary/washing facilities for the drivers of your logistics partner.
- Define clear rules on access to your premises and on keeping appropriate minimum distance, according to national rules. Indicate these visibly.
- Instruct drivers waiting for goods to stay in their vehicles.
- If there are many loading ramps, ensure sufficient space between the vehicles.
- Observe the health and safety regulations of the national and local governments for infection protection.

DRIVER / ROAD HAULIER

- Be respectful in your communication towards the consignor / consignee.
- Clean the driver's cabin frequently.
- Disinfect hands or wash them with soap when entering and leaving the driver's cabin.
- Keep appropriate minimum distance, according to national rules, and avoid contact with other persons when possible.
- If available, use personal protective gear, such as gloves and a face mask, while outside the driver's cabin. Read carefully the manual of the protective gear for proper use.
- Keep yourself informed on the customer's instructions before entering their premises.
- Stay in the driver's cabin whenever possible while at the customer's premises.
- Hand over freight documents at the place designated by the consigner / consignee. When using electronic tools, the receiver should wear gloves and/or use his/her own tool for receipt.
- Observe the health and safety regulations of the national and local governments for infection protection.

ESC CLECAT

Exercise and Discussions

After considering the guidelines above:

- Which recommendations would be useful for the China–Mongolia–Russia Economic Corridor?
- Which measures could realistically be implemented on the China–Mongolia–Russia Economic Corridor?
- Which measures would only be useful in times of pandemics?
- Which measures would also apply in times without pandemics?
- Are there any other measures that you would propose?

Note

Do not forget to write down your answers.

4 Design and apply measures towards more safe, secure and seamless road transport

4.1 On exchange of information

Exchange of information is crucial and is the first towards integrating the various information systems. It is the first step towards safe and seamless digital trade and transport corridors.

Relevant information regarding transport and trade regulations should become more transparent and should be made available in various languages in the public domain.

4.2 On coordination, cooperation and integration

The main lesson to be drawn from the COVID-19 pandemic is that despite the growing trend of globalisation of the social and economic system, there is still lack of coordination, cooperation an integration of information systems at all levels. The crisis, however, has also brought governmental institutions and the business sector all over the world to work closer together in combatting a common enemy: COVID-19.

It is important that this experience of working together between the public and private sector at national level, and between countries at international level will result in a further development of this cooperation.

An important cornerstone for the post-pandemic socio-economic recovery is investing in digital infrastructure, which will facilitate more coordination, cooperation and integration of information systems.

4.3 On observatories to monitor corridor performance

The Observatory on Border Crossings[9] was launched in March 2020 in response to an increasing number of countries around the world that were closing their borders and imposing travel restrictions during COVID-19 pandemic. The patchwork of uncoordinated actions taken by governments were causing delays at border crossings in many countries making it difficult to keep transport supply chains open. The observatory provides available information on the border crossing limitations worldwide and the continuously changing rules and regimes affecting border crossings.

It is recommended to continue with this observatory after the end of the COVID-19 pandemic and widen the scope of monitoring. Important information for the observatory includes:

- changing national laws, decrees and regulations affecting international incoming and outgoing transport
- border procedures and requirements for drivers, vehicles/trains and cargo; inspection regimes at border crossings
- estimated waiting time at border crossings

Additionally, a permanent observatory could also coordinate the monitoring of performance of transport along the corridors and at border crossings by organizing regular surveys measuring time, cost and reliability of cargo of individual trips.

4.4 On border crossings along the corridors

At the border crossings along the corridors, Customs and other inspection agencies should coordinate and cooperate much better amongst themselves at each side of the border, but also coordinate and cooperate with Customs and the other inspection agencies at the other side of the border.

Opportunities should be identified towards establishing one-stop-border posts.

International harmonization and simplification of border procedures are needed as well.

9 *https://wiki.unece.org/display/CTRBSBC/Observatory+on+Border+Crossings+Status+due+to+COVID-19+Home*

There is an urgent need for global harmonization and simplification of documents required for trade, transport, sanitary and phyto-sanitary inspection, etc.

Progress should be made in the mutual recognition of licenses, certificates and other transport and trade-related documents.

It is important to accelerate the introduction and acceptance of electronic submission of national and international documents for trade and transport taking into account standards as elaborated by UN/CEFACT; this also includes the global acceptance of e-signatures. Examples are the legal acceptance of eCMR (road transport document), eTIR (road transport document for international container transport), FIATA Bill of Lading, CIM/SMGS (railway document), etc.

4.5 On safe and secure parking places along corridors

Along the national and international Eurasian transport corridors, a system should be developed to set-up safe and secure parking places for trucks and buses with a minimum level of facilities and services to be defined by the Member States of ESCAP.

4.6 On sanitary conditions

COVID-19 has shown that good sanitary conditions, availability and use of personal protection equipment in specific cases and personal safety deserve particular attention at the work spot, at home and in social interaction, also in normal times.

International associations with member companies and institutes operating in the field of transport, warehousing, cargo handling, freight forwarding, logistics, trade, customs, health and phyto-sanitary inspections have proposed a wide range of measures to improve the sanitary conditions of its operations and to provide protection against infection by COVID-19. Some of these measures will be valid after the end of the pandemic as well.

4.7 On gender

Women are worldwide dramatically underrepresented in the transport work force. According to information from the International Transport Forum only 22% of transport employees in the European Union are female; in de Asian-Pacific region 20%; and in the United States 14%[10]. However, women are particularly rare in senior positions in the transport, logistics and infrastructure sectors. The result is that gender specific perspectives in the elaboration of all kind of measures addressing the transport sector, and in particular the road transport sector, are less likely to be considered. More special gender-specific attention is thus needed.

Watch: Reference Videos – Working conditions for ttruck drivers; a serious concern for everyone!

- Exploitation across Europe in road transport supply chain automotive industry (14 m. 50 s.)
  https://www.youtube.com/watch?v=Z4LOLVdf4dY
- The Pandemic in Road Transport (14 m. 26 s.)
  https://www.youtube.com/watch?v=apP1CDlGpd0
- Truck driving in Mongolia: Ulaanbaatar to Mumbai – Mongolia's rough roads (3 m. 24 s.)
  https://www.youtube.com/watch?v=21oN267DjCU
- About a Chinese truck driver: Shanghai to Ulaanbaatar: The road is open (3 m. 30 s.)
  https://www.youtube.com/watch?v=ofKgnH6wrjo

Discussions What are your thoughts on:

- measures towards more safe, secure and seamless road transport?
- improving working conditions for international truck drivers?

10 *https://www.itf-oecd.org/gender-transport*

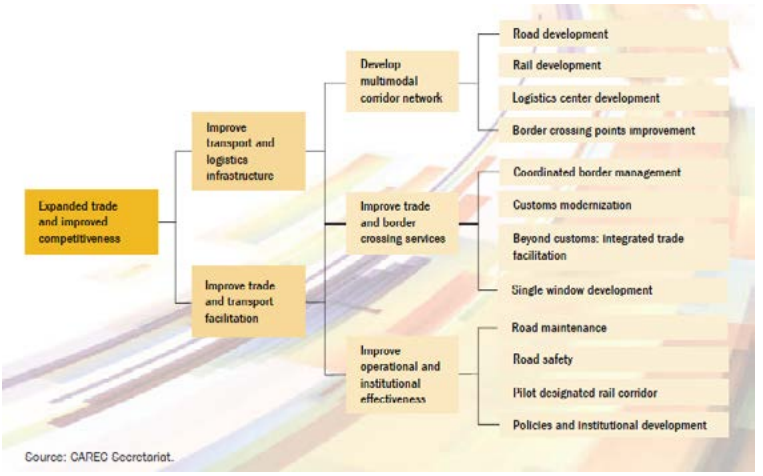
Case Study CPMM system for the CAREC corridors in Central Asia

ADB started the Central Asia Regional Economic Cooperation (CAREC) Program in 1997 to foster economic cooperation and integration in Central Asia. Presently, CAREC consists of 10 member states: Afghanistan, Azerbaijan, the People's Republic of China (PRC), specifically the Inner Mongolia Autonomous Region (IMAR) and the Xinjiang Uygur Autonomous Region (XUAR), Kazakhstan, the Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan. The backbone of the Central Asia Regional Economic Cooperation (CAREC) Program is transport and trade facilitation. At the 12th Ministerial Conference on Central Asia Regional Economic Cooperation held 23-24 October 2013 in Astana, Kazakhstan, the refined CAREC Transport and Trade Facilitation Strategy (TTFS) 2020 was endorsed.[11]

The broader vision of CAREC is to promote and facilitate regional cooperation among member states to improve access to markets within the region and beyond, thereby leading to accelerated economic growth and shared prosperity – Good Partners, Good Neighbours, and Good Prospects. The goals of the CAREC TTFS 2020 are (i) establish competitive corridors across the CAREC region; (ii) facilitate the efficient movement of goods and people through the CAREC corridors and across borders; and (iii) develop sustainable, safe, user-friendly transport and trade networks. These goals are consistent with the broader CAREC vision. The focus of the TTFS 2020 is on improving the region's competitiveness and expand trade among CAREC economies and with the rest of the world.

11 In January 2020, the Central Asia Regional Economic Cooperation (CAREC) Transport Strategy 2030 was published. It builds on progress made and lessons learned from the CAREC Transport and Trade Facilitation Strategy 2020. It separates trade facilitation from transport and links to the overall CAREC 2030 program in the areas of enhanced connectivity and sustainability. This strategy underscores increasing sustainability and network quality alongside continued construction and rehabilitation of transport corridors, and places more emphasis on multimodal connectivity, road asset management, road safety, and performance-based maintenance goals. The CAREC Transport Strategy 2030 will be implemented in conjunction with the CAREC Integrated Trade Agenda 2030.

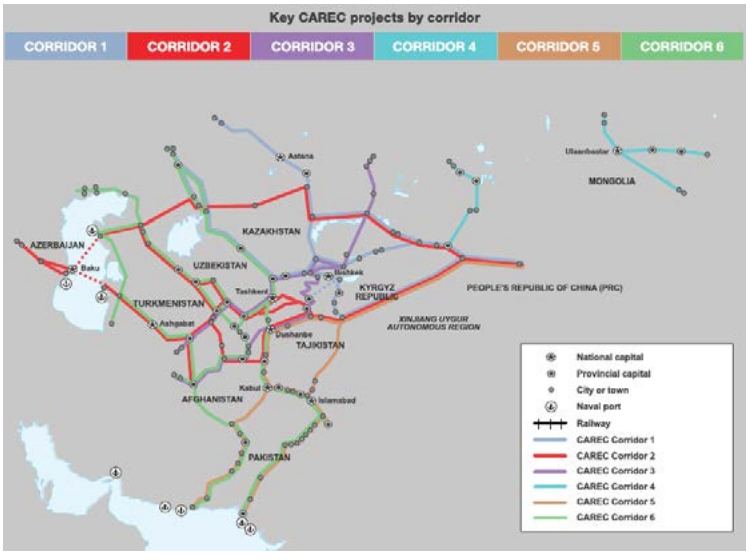
Figure 10 CAREC TTFS 2020 – Impact, approaches, and priorities



Source: CAREC, ADB. CAREC Transport and Trade Facilitation Strategy 2020.

The CAREC TTFS 2020 has an integrated approach that centred on the development of six priority CAREC corridors through transport infrastructure investments and trade facilitation initiatives. It stipulates three operational priorities: 1) Develop Multimodal Corridor Network; 2) Improve Trade and Border-Crossing Services; 3) Improve Operational and Institutional Effectiveness.

Figure 11 The six CAREC corridors



The CAREC TTFS 2020 introduced some extensions of the original six corridors, mainly to develop connectivity with seaports within and outside the CAREC region; introduce alternative routes to shorten travel time along existing corridors; develop missing links to increase geographical coverage and interconnectivity between corridors; and develop designated rail corridors to realize the comparative advantage of rail transport for long-distance and bulk transport.

The CPMM Methodology

- **Developing a CAREC CPMM methodology**

The first CAREC Transport and Trade Facilitation Strategy 2008-2017, which was adopted in 2007, mandated the monitoring and periodic measurement of the performance of the six priority transport corridors:

- identify the causes of delays and unnecessary costs along the links and nodes of each CAREC corridor, including Border Crossing Points (BCPs) and intermediate stops;
- help authorities determine how to address the identified bottlenecks; and
- assess the impact of regional cooperation initiatives.

Therefore, a methodology had to be developed to measure and monitor performance of the six priority transport corridors. The process for developing this methodology started in 2008 and the first version of the CAREC Corridor Performance Measurement and Monitoring (CPMM) methodology was launched in 2009. The methodology was strongly based on the Time/Cost-Distance (TCD) approach, developed by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).

The CPMM methodology is continuously evolving and continues to change and adapt on the basis of feedback of CPMM partners and various stakeholders. It also attempts to address new demands and new needs for information of the performance of the corridors.

Trade Facilitation Indicators to measure and monitor corridor performance

The TCD methodology of ESCAP focuses on the time and cost dimensions of transport and trade facilitation, with special attention to border crossings and other impediments along a transport corridor, which can be related to distance. Combining these factors, indicators can be developed to measure performance of road and rail infrastructure, as well as of border crossing and Customs and other inspection services

efficiency. By monitoring corridors in such a way, policy makers can identify areas that need improvement: road infrastructure, rail infrastructure, other infrastructure facilities, Customs efficiency, inspection services, integration of information systems amongst agencies, etc.

The CPMM methodology identifies four Transport Facilitation Indicators (TFIs):

- *Trade Facilitation Indicator 1 (TFI1): Time taken to clear a Border Crossing Point (BCP)*

  TFI1 refers to the time it takes to cross a border in hours. This time is composed of two components: 1) the time it takes to exit a country and 2) the time it takes to entry a country. It includes controls related with Customs, visa/immigration, health/quarantine, phytosanitary, veterinary, traffic inspection, police checkpoint, weight/standards, vehicle registration, emergency repair, escort/convoy, loading-unloading, road toll, waiting/queue, etc. The objective of using this indicator is to find out and visualize the inefficiencies in the border crossing process and to understand the complexity of the multiple processes.

- *Trade Facilitation Indicator 2 (TFI2): Costs incurred at a Border Crossing Point (BCP)*

  TFI2 presents the costs incurred at border-crossing clearance in US dollars ($). The total costs are composed of two components: 1) the total costs related with exiting a country and 2) the total costs related with entering a country. Both official and unofficial payments are included. For the sake of comparison across various samples, this indicator assumes 20 tons of cargo.

- *Trade Facilitation Indicator 3 (TFI3): Costs incurred while traveling along a corridor section*

  TFI3 presents the costs incurred to travel a corridor section measured in US$ per 500 km per 20-ton of cargo. For this indicator the concept of vehicle operating costs is being applied for road transport. For rail transport the railway fees are being used, which may, however, not reflect the railway operating cost in economic terms.

- *Trade Facilitation Indicator 4 (TFI4): Speed of travel along a corridor section*

  TFI4 is the speed to travel along CAREC corridors in kilometres per hour (kph). The speed is calculated by dividing the total distance travelled by the duration of travel. CPMM uses two measures of speed: a) speed with delay (SWD), which is the ratio of distance travelled to the total time spent on the journey, and is composed of the time the vehicle was in motion and the time it was stationary b) speed without delay (SWOD), which is the ratio of the distance travelled to the time spent by a vehicle in motion between origin and destination (real traveling time). SWD is a composed indicator of both quality and condition of the physical infrastructure as well as the

efficiency of Border Crossing Points along the corridors. SWOD can be considered as an indicator for the quality and condition of the physical infrastructure. The difference between SWD and SWOD may be considered as an indicator of the efficiency of the Border Crossing Points.

The following tables present trade facilitation indicators for Mongolia and border-crossing performance in Mongolia. These indicators are averages from surveys along the corridors and at the border-crossings.

Table 3 Trade facilitation indicators for Mongolia (2017-2019)

		Road Transport				Rail Transport			
		2017	2018	2019		2017	2018	2019	
TFI1	Time taken to clear a border-crossing point (hour)	**3.2**	**3.5**	**3.7**	●	**13.3**	**18.1**	**19.0**	●
	Outbound	2.9	2.9	2.9		7.6	11.7	8.7	
	Inbound	3.2	3.5	3.7		16.6	20.4	21.4	
TFI2	Cost incurred at border-crossing clearance ($)	**93**	**93**	**97**	●	**48**	**49**	**52**	●
	Outbound	12	13	12		-	27	11	
	Inbound	104	104	109		48	49	54	
TFI3	Cost incurred to travel a corridor section ($, per 500 km, per 20-ton cargo)	**1,034**	**1,512**	**1,373**	●	**827**	**1,030**	**720**	●
TFI4	Speed to travel on CAREC corridors (km/h)	**28.5**	**33.5**	**26.2**	●	**13.6**	**14.1**	**19.1**	●
SWOD	Speed without delay (km/h)	**46.5**	**50.2**	**40.8**	●	**22.7**	**20.9**	**24.1**	●

Legend: ● Improved by at least 3% ● Deteriorated by at least 3%

– = no data, CAREC = Central Asia Regional Economic Cooperation, km = kilometer, km/h = kilometer per hour, SWOD = speed without delay, TFI = trade facilitation indicator.
Source: Asian Development Bank.

Source: CAREC Corridor Performance Measurement and Monitoring Annual Report 2019.
https://www.adb.org/publications/carec-cpmm-annual-report-2019

Table 4 Border-crossing performance in Mongolia (2017-2019)

BCP	Corridor	Direction of Trade	Duration (hours)			Cost ($)		
			2017	2018	2019	2017	2018	2019
Road Transport								
Yarant	4	*Outbound*	3.0	3.1	2.9	57	55	55
		Inbound	3.4	3.9	3.3	201	201	198
Zamiin-Uud	4	*Outbound*	–	–	–	–	–	–
		Inbound	3.5	4.0	4.5	123	121	133
Altanbulag	4	*Outbound*	–	–	–	–	–	–
		Inbound	2.5	2.2	1.9	5	10	12
Bichigt	4	*Outbound*	–	–	–	–	–	–
		Inbound	1.7	1.4	1.4	11	6	7
Rail Transport								
Sukhbaatar	4	*Outbound*	–	–	–	–	–	–
		Inbound	11.1	7.4	6.2	11	8	5
Zamiin-Uud	4	*Outbound*	7.6	11.8	8.7	–	27	4
		Inbound	18.9	22.9	24.2	63	34	36

– = no data, BCP = border-crossing point.
Source: Asian Development Bank.

Source: CAREC Corridor Performance Measurement and Monitoring Annual Report 2019.
https://www.adb.org/publications/carec-cpmm-annual-report-2019

Box 6 presents key findings based on the measurement and monitoring of the performance of the corridors in Mongolia.

Box 6: Key findings on the performance of the corridors in Mongolia

(i) In 2019, both road and rail transport reported mixed performance for Mongolia, displaying an increase in border-crossing time and cost compared to 2018, while total cost declined. Road transport suffered from lower speeds in 2019, while rail transport benefited from higher speeds.

(ii) For road transport in 2019, border-crossing time increased slightly from 3.5 hours to 3.7 hours year-on-year, due to border crossing at Zamiin-Uud for inbound cargoes, which experienced an increase from 4.0 hours to 4.5 hours during 2018–2019. Border security (1.2 hours) and customs controls (1.8 hours) were the main culprits of delay.

(iii) Average border-crossing costs crept up from $93 to $97 during 2018–2019 and were likewise due to the Zamiin-Uud BCP, where fees per truck averaged $133, up from $121 in 2018—payments to border control and customs controls were key factors. However, total average cost decreased from $1,512 to $1,373 during 2018–2019.

(iv) Speeds dropped in 2019, falling from 50.2 km/h in 2018 to 40.8 km/h for SWOD, and from 33.5 km/h in 2018 to 26.2 km/h for SWD.

(v) In 2019, rail transport saw a slight increase in average border-crossing time from 18.1 hours in 2018 to 19.0 hours, affected by changes at Zamiin-Uud BCP. While outbound cargo time was shorter, the average time to handle inbound cargoes grew from 22.9 hours in 2018 to 24.2 hours in 2019, largely due to the shortage of wagons, marshaling, and the time required to load goods.

(vi) Average border-crossing cost rose from $49 to $52 in 2019. Commercial inspection and the change in gauge operation at Zamiin-Uud were the key cost drivers.

(vii) Total transport cost lowered from $1,030 to $720, showing that rail freight tariffs have reduced in 2019.

(viii) Both speeds reported higher levels in 2019 compared with 2018 data. SWOD increased from 14.1 km/h to 19.1 km/h and SWD increased from 20.9 km/h to 24.1 km/h. This was achieved despite the longer average border-crossing time.

Source: CAREC Corridor Performance Measurement and Monitoring Annual Report 2019. p. 48

Annex A Multimodal transport corridors – Further elaboration

The concept of multimodal corridors is relatively new, but in more and more countries, the authorities see the concept as a possibility to achieve improvements in the logistics and transport between the seaports and the hinterland, but also for international and national land transport guided by these corridors.

The multimodal corridor concept looks at transportation from an integrated transport perspective: what are the overall transport requirements on a corridor that can be met by a combination of transport modes in an efficient and seamless way.

A corridor in this case is a connection between the hinterland and the port outlet, from a trade and logistics point of view, or between inland national or international nodes.

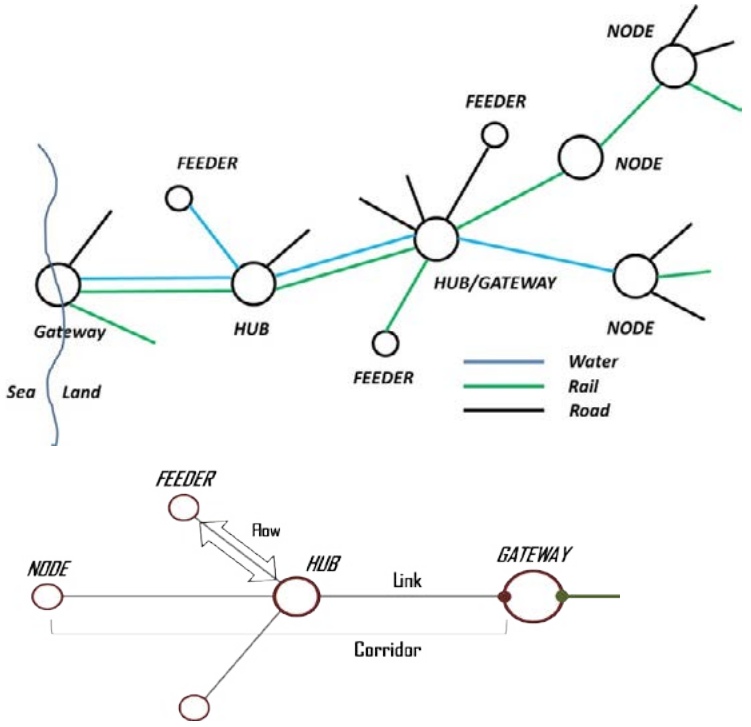
In most countries and regions, the multimodal transport network is (still) a patchwork of single modal networks of roads, railways, waterways, airports and seaports. These modal networks might be of high quality and well developed, however, it this does not automatically guarantee smooth and seamless connections and logistics operations. Realizing efficient supply chains in practice is hampered especially by:

- cross border or cross region infrastructures
- cross border or cross region operations
- different cross border regulatory and legal regimes
- technical interoperability
- integration of different transport modes

Efficient multimodal transport systems, which require high volumes of cargo and close coordination and facilitation, will normally develop faster in parts of these networks that connect high volume generating areas, with destination areas, or international nodes such as seaports.

A multimodal transport network or corridor consists of various components, described from the perspective of freight transportation, (Figure 12) which make cargo transport along a transport axis possible.

Figure 12 Transport networks (with nodes and links)



Nodes are locations along the multimodal transport network, which provide access to the transport network through available transhipment facilities and transport services (e.g. at inland ports, distribution centres, logistics zones, etc.). Connections between several nodes along a corridor are enabled through (transport) links, mostly physical infrastructure like highways, railway tracks and waterways. Although the link itself lacks infrastructure, connections between airports are also nominated as links in this matter.

A transport hub is a location or node which typically handles large volumes of cargo and/or where cargo is consolidated into larger transport flows and/or where cargo flows are exchanged between modes. Typically, feeder locations (or feeder ports) are nodes where regional flows are consolidated and integrated in the multimodal corridor by means of a direct link to and from the transport hub.

The multimodal corridor networks typically link gateways (e.g. seaports) to the hinterland. It differs from hubs in such a way that hubs mostly consolidate cargo from various links of the same mode deeper in the network and gateways typically involve also a change of transport mode, such from maritime connections to road, rail or inland waterways. Therefore gateways connect multiple multimodal transport networks on a global scale and enable the import and export of cargo worldwide.

Initiatives on multilmodal transport corridors acknowledge the fact that transport and trade facilitation and corridor development need to be a combination of infrastructure investment and a wide variety of softer measures and activities. This combination of hard and soft measures related with the development of transport corridors may take into account the following considerations (COMCEC 2018):

- It is important to provide countries, particularly landlocked countries, with basic access to maritime ports for their overseas trade.
- Transport corridors provide a visible and direct opportunity to bring about regional integration. Regional integration improves the growth prospects of middle- and low-income countries, especially landlocked countries.
- Legal, regulatory and other constraints to facilitate international trade and transport become visible and transparent at corridor level, giving the opportunity to take appropriate measures to solve them.
- Corridors provide a spatial framework for organising cooperation and collaboration between countries and public and private sector agencies involved in providing trade and transport infrastructure and services.

The governance and management of corridors are critical success factors. The concepts of corridor governance and corridor management are related with each other (COMCEC 2018):

- Corridor governance: Governance deals with doing the right things and concentrates on high-level decision-making process, primarily setting strategic directions.
- Corridor management: Management concentrates on doing things right and concentrates on day-to-day administration and implementing the systems of governance.

- **Conceptual framework for corridor governance and corridor management: Domains**

As a summary, the seven transport corridor governance domains and its main components are presented in Table 5.

Table 5 Seven transport corridor domains and its main components

Governance domains	Components
1. Corridor objectives and political support	• Objectives of transport corridors: primary and secondary. The defined corridor objectives strongly affect the other six governance domains. • Transport corridors are included in national strategies and plans, as an indication of political support.
2. Legal framework	• The legal basis of the corridor (MoU, treaty) and the extent to which the agreement is binding. • Harmonisation of (legal) systems and procedures. • Mutual recognition of systems and procedures.
3. Institutional framework	• Organisation and characteristics, including presence of a corridor secretariat. • Involvement of stakeholders, including private sector and local government.
4. Infrastructure: financing, planning and programming	• Sources of finance available to effectively ensure governance of transport corridors. • Planning and programming of infrastructure (corridor vs national level).
5. Corridor performance: monitoring and dissemination	• Measuring corridor performance, clear KPIs (Key Performance Indicators) defined. • Monitoring system to measure corridor performance. • Dissemination and making data and statistics publicly available.
6. Corridor promotion and stakeholder consultation	• Promoting the corridor, by providing publications and organising events. • Consultation of stakeholders on a regular basis.
7. Capacity building: technical assistance and studies	• Build capacity by providing technical assistance and implement studies.

Source: COMCEC (2018)

Levels of transport corridor governance

The COMCEC study (2018) defines four levels of transport corridor governance:

- Information exchange: exchange of information to facilitate corridor performance.
- Coordination: increased level of coordination.
- Cooperation: a coordinated approach, working close together, joint systems.
- Integration: integration of systems and working arrangements.

In Table 6, these four levels of transport corridor governance are applied to the seven governance domains, providing a useful tool to assess a transport corridor.

Table 6 Levels of transport corridor governance

Governance domains	Information exchange	Coordination	Cooperation	Integration
1. Corridor objectives and political support	Identifying common objectives among participants	Broadly defined objectives and laid down in non-legally binding fashion	Objectives defined in more detail and concrete plans for corridor management	Defining broad range of specific objectives and management principles
2. Legal framework	Weak and developing in terms of bilateral and sub-regional agreements	Maturing, with focus on harmonization of regulations and standards	Further developed, with mutual recognition (inspections, certificates, etc)	A common and integrated legal basis
3. Institutional framework	Developing, for example, joint working groups, regional workshops	Developing, more formal structures, for example observatories	Further developed, for example corridor coordination committees	Integrated, for example corridor authorities with responsibility for the full corridor
4. Infrastructure: financing, planning and programming	Informing, no dedicated funds available	Increased coordination, joint projects	More cooperation and increased corridor perspective, emerging of joint earmarked funds	Integrated planning and prioritization, dedicated funds available
5. Corridor performance monitoring and dissemination	Selected data is exchanged, no standards or formats	More coordinated effort in exchanging data, with more harmonized standards	Further integration, for example in joint publications.	Integrated systems for data collection and management and publication
6. Corridor promotion and stakeholder consultation	Little promotion, mainly to identify key stakeholders to set up corridor governance model	Joint promoting and attracting more stakeholder support for corridor development	Establishing institution for promotion and stakeholders approach	Advanced institutions for promotion and making sure stakeholders meet regularly
7. Capacity building: technical assistance and studies	Studies to establish corridor objective	Coordinating studies, but mostly national	Cooperative studies and establishing institution for technical assistance	Studies published regularly and dedicated institution for technical assistance

Source: COMCEC (2018)

1. Corridor objectives, political support

The first and most important domain is defining a clear central objective for the development of the corridor. This main objective can be split-up in various sub-objectives. What do stakeholders want to achieve with the development of the transport corridor? The other six domains are geared to reaching this central objective.

A legal framework is set up to make juridical enforcement possible of the measures to be taken; an institutional framework is built to have an organisation in place involving the main stakeholders in the decision-making process and in the operation of the corridor; infrastructure planning and financing are embedded in national plans and budgets; performance is monitored and analysed to learn from the reality in practice on how the corridors operates and to adjust measures as well as to take additional measures if needed.

A corridor does not only relate with transport. Corridor objectives can also have social, political, environmental and economic dimensions. A corridor may facilitate access to social services such as health care and increase the mobility of people; contribute to food security; enhance social cohesion by integrating remote areas; boost economic development in the areas along the corridor. Governments may also want to achieve political goals such as regional development and job creation and stimulate political dialogue with neighbouring countries.

2. Legal framework

A legal framework forms the foundation for the development and operation of a transport corridor, an economic corridor or a trade corridor. The creation of such a legal basis starts when the different stakeholders reaching consensus on the objectives and management of the corridor. A legal basis is important as legal instruments may be binding in various degrees and commit countries to carry out agreed actions for its development and operation. The legal framework is in most cases an agreement between the various parties normally. If an international corridor is at stake, national governments should guarantee that within the country all relevant governmental institutions at national, regional and local level, and also the private sector are well aligned to the concept of the corridor. Agreements normally cover the overall strategic perspective and objectives of the corridor as well as institutional arrangements and working principles and, last but not least, its financing.

There are two main types of legal agreements used in corridors:

- Memorandum of Understanding (MoU): an MoU expresses a willingness and intention to cooperate, but is not binding; there are no consequences for non-compliance, unless otherwise stated in the MoU.
- Treaty: the content of a treaty is legally binding and in most cases Governments/Ministries of Finance commit themselves to the financing of the development and operation of the corridor.

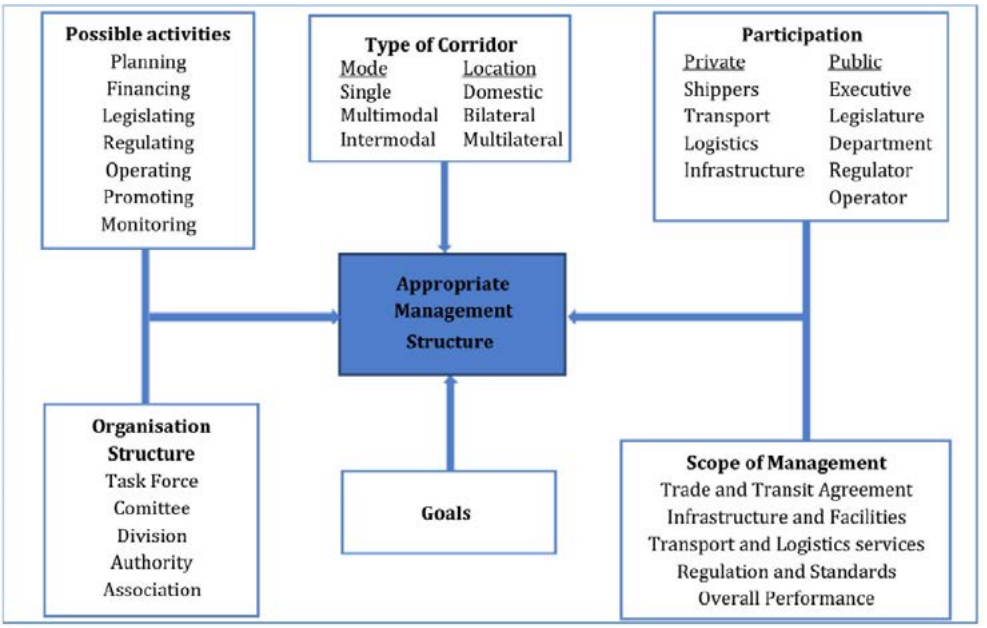
One of the major challenges that a seamless operation of an international corridor is facing is the fact that countries apply different legal and regulatory regimes.

Legal harmonization is very important to simplify trade and transport processes and increase the efficiency of the logistics system. There are many non-tariff barriers to trade putting obstacles for smooth and seamless international transport such as different and non-compatible systems of licenses, certificates, quotas, procedures, inspections and different technical standards. Harmonization of legislation between the members of an agreement is, therefore, an important component of a MoU. Harmonization of technical standards and mutual recognition of each other's certificates, licenses and inspections is a prerequisite for a smooth functioning of the corridor. To facilitate this process of legal harmonization various UN organisations such as UNECE, ESCAP and UNCTAD have elaborated international standards for trade and transport and launched international conventions to which member states can adhere and transpose the contents of these conventions into national legislation.

3. Institutional framework

A dedicated corridor management body is crucial for the effective development and operation of a corridor. There are many ways for how such a management structure can be constituted. It depends on the objectives of establishment of the corridor and the commitment of its stakeholders.

Figure 13 Components for designing a proper management structure for corridors



Source: COMCEC (2018), based on Arnold (2006)

It is common practice that in the governance of corridors the following institutional structures are involved:

- Ministerial meetings to define the policies and set out the broad courses of action.
- Steering committee meeting on regular basis and responsible for the monitoring and planning of the activities.
- (Technical) Secretariat to provide technical support to the steering committee and the Ministerial meetings.
- National coordinators or focal points that coordinate between the stakeholders and the secretariat.
- Working groups or expert groups involving stakeholders to elaborate on specific subjects and items.

The main activities of corridor management bodies are:

- Planning and prioritizing corridor improvements
- Seeking/guaranteeing financing for investments in infrastructure and operations
- Advocating for legal and regulatory reforms and harmonization of standards

- Monitoring corridor performance
- Promoting the use of the corridor
- Proposing and guiding reforms in trade and transport facilitation and logistics
- Supporting project implementation

It is important to involve not only national representatives from the public sector, but also local and regional authorities and the business sector. The local and regional authorities have an important role in the land-use planning of the areas alongside and adjacent to the corridor and host socio-economic activities which may relate with and take benefit of the existence of the corridor. Also, the business sector is important as they also may contribute to and benefit from the existence of the corridor. The business sector may also become a partner in co-financing in transport and logistics infrastructure in so-called Public-Private Partnerships.

4. Infrastructure: planning and financing

For international transport corridors to become efficient, safe, secure and reliable, it is important to agree upon common standards for its design, construction and maintenance. It is important that the planning and financing of this infrastructure is embedded in national transport infrastructure plans. If more countries are involved in a corridor, countries should agree to inform neighbouring countries about their transport infrastructure plans, not only for the core network along the transport corridors, but also for the development of the ancillary network.

Countries may also explore opportunities to cooperate in looking for financing options to plan and implement transport infrastructure projects together.

It is advisable to define common minimum standards for the transport infrastructure as well as the financing principles in the MoU, agreement or Treaty. Also, the sign and signaling systems along the corridors should be harmonized.

Agreements about uniform or common border post infrastructure could also be part of an MoU as well as the design, planning and financing of a system of safe and secure parking places which could offer a minimum of mutually agreed services along the corridor.

5. Corridor performance monitoring and dissemination

It is crucial to establish systems for monitoring corridor performance and evaluating corridor management performance. Monitoring and evaluation show the impact of the measures and actions and indicate whether the expected results have been achieved. The outcome of monitoring and evaluation will also provide guidance for taking additional measures to realize the objectives and improve the performance.

There are many ways of monitoring corridor performance: traffic studies; surveys amongst shippers, freight forwarders and transporters about corridor performance; time release studies at customs and other inspection agencies at border crossings; average speed of vehicles or trains without delay; average speed of vehicles or trains with delays (stops); truck driver surveys registering time and costs along the route; GPS based monitoring of trucks and trains; etc. The data obtained from this type of studies give often a good indication of the main bottlenecks along the corridor and useful directions for the right course of action to improve the corridor performance.

It is important to disseminate the results of this type of monitoring to the public via dedicated websites.

6. Corridor promotion and stakeholder consultation

Many corridors are promoting themselves as safe, secure and seamless transport corridors. They have dedicated websites where one can find all kind of useful information about the existing infrastructure, the legal and regulatory regimes along the corridors and at the border post procedures that apply for vehicles, trains, drivers, cargo, passengers, etc. Sometimes they provide data and statistics about performance and additional services that the corridor offers. Some corridors provide even real-time information about waiting times at borders or estimated driving times on certain tracks making use of GPS systems. There are also corridors, which provide hot line communication systems for drivers who face difficulties on route.

This type of systems also do contribute to the promotion of the corridor. Many corridors publish on regular basis reports on the performance of the corridors providing traffic and transport statistics and corridor performance data.

Stakeholder consultation is used to improve the performance of the corridor. It is recommended to involve stakeholders in the operation of the corridor in a more structural way including them in organisation structures such as working groups for the governance and management of the corridor.

7. Capacity building: technical assistance and studies

Capacity building should be an ongoing activity in the governance and management of corridors. All stakeholders should be involved in capacity development: public sector (in the field of transport, infrastructure, finance, customs, trade, agriculture, health, industry, etc.) at various governmental levels (national, regional, local); shippers associations; freight forwarders; transport operators; logistics service providers; knowledge institutes.

Technical assistance can often be provided by international organisations to provide studies, deliver training and organize seminars and workshops.

Annex B Overview – Road infrastructure, border crossing operations, and road transport agreements

International harmonization of technical standards for weight, dimensions and emissions of heavy-duty and commercial vehicles

Freight road vehicles represent the main source of wear of the road surface and of threat to tunnels, bridges and other road structures due to their size and weight. Heavy and large road transport vehicles put also an extra risk for road safety when involved in traffic accidents due to their heavy weight and the corresponding impact in a collision. Therefore, national governments set limits on road transport vehicles taking also into account the state of road infrastructure and their capacity to maintain it. It is understandable that national differences in the technical standards on weight, dimensions and emissions of pollutants may constitute a significant barrier to international transport and trade. Therefore, countries along international corridors tend to harmonize this type of technical vehicle standards and align to guarantee a minimum standard of road infrastructure, including tunnels and bridges.

Table 7 China, Mongolia and Russia signed, as said before, in 2016 the Agreement on International Road Transport along the Asian Highway Network. As for the dimensions and weight standards it refers to the respective national regulations, which are presented in Table 8.

Table 7 Limits on dimensions and weight of the freight road vehicle in the countries along the Eurasian Northern Corridor (route N1)

	Maximum Width, mm	Maximum Height, mm	Maximum Length, mm		Maximum Gross Weight, tonnes		Maximum Axle Load, tonnes	
			Rigid truck	Articulated Vehicle/Road Train	Rigid Truck	Articulated Vehicle/Road Train	Group Axles	Single Axle
China	2,550	4,000	12,000	20,000	31.00	49.00	24.00[i]	11.5[iii]
Mongolia	2,500	4,000	12,000	18,750	-	44.00	N.A.	11.5
Russian Federation	2,550[ii]	4,000	12,000	20,000	35.00	44.00	26.00[i]	11.5
EU	2,550[ii]	4,000	12,000	18,750	32.00	44.00	24.00[i]	11.5

Source: National standards as indicated in the footnotes to the Annex I.

i-for tridem axle

II-2,600mm for truck with isothermal or refrigerator body

iii-for powered axle

N.A. - date are not available.

- the limit is not set by the standard.

The three countries along the N1 route of the Eurasian Northern Corridor have identical limits on vehicle's widths, height, length of rigid truck and load per single axle. Obstacles arise if an articulated vehicle is to be used: while China and the Russian Federation allow road trains of 20.0 m, Mongolia (and also the European Union) limit their length in 18.75 m. Thus, vehicle chosen to go via Mongolia or to enter EU would be smaller than one that can operate in China or the Russian Federation.

The three countries and the EU have different limits on the gross weight of a rigid truck and while the highest national permissible value is 35 tonnes (Russian Federation), hypothetical haulage from China to EU by this route would be limited to 31 tonnes/truck which is the lowest limit along the way (China). China allows for the heaviest articulated vehicles among the four regulatory environments along the route, 49 tonnes, meaning that China freight forwarders and shipping companies would either underload trucks or keep smaller vehicles to send them along this route. Attention would be also paid to the axle load as China's 24 tonnes limit per tridem axle is lower than 26 tonnes allowed in the Russian Federation.

International harmonization of standards for emissions is still not regulated in many countries. As a practical solution, an expert group of ESCAP has recommended to require that the heavy-duty vehicle would have at least a Euro IV engine on the Asian Highways. Table 9 shows the EU emission standards for heavy-duty vehicles.

Table 8 EU Emission Standards for Heavy-Duty Diesel Engines

Stage	Date	Test	CO	HC	NOx	PM	PN	Smoke
			g/kWh				*1/kWh*	*1/m*
Euro I	1992, ≤ 85 kW	ECE R-49	4.5	1.1	8.0	0.612		
	1992, > 85 kW		4.5	1.1	8.0	0.36		
Euro II	1996.10		4.0	1.1	7.0	0.25		
	1998.10		4.0	1.1	7.0	0.15		
Euro III	*1999.10 EEV only*	ESC & ELR	*1.5*	*0.25*	*2.0*	*0.02*		*0.15*
	2000.10		2.1	0.66	5.0	0.10[a]		0.8
Euro IV	2005.10		1.5	0.46	3.5	0.02		0.5
Euro V	2008.10		1.5	0.46	2.0	0.02		0.5
Euro VI	2013.01	WHSC	1.5	0.13	0.40	0.01	8.0×10^{11}	

a - PM = 0.13 g/kWh for engines < 0.75 dm^3 swept volume per cylinder and a rated power speed > 3000 min^{-1}

Source: DieselNet: Emission Standards; EU: Heavy-Duty Truck and Bus Engines (http://www.dieselnet.com/standards/eu/hd.php)

Read: ESCAP proposed recommended harmonized standards for dimensions and weights of road freight vehicles taking into consideration various technical criteria, including the AH road design standard.

Further details are available at:
https://www.unescap.org/resources/strengthening-capacity-escap-member-states-harmonize-standards-weights-dimensions-and

Road transport transit and the TIR Convention

The TIR Convention dates from 1975 and came into force in 1978. The TIR Convention facilitates the international carriage of goods from one or more customs offices of departure to one or more customs offices of destination (up to a total of four customs offices departure and destination) and through as many countries as necessary. As a rule, the vehicle remains sealed throughout the TIR transport and, thus, goods are generally not inspected at border crossings. However, customs authorities remain entitled to perform inspections whenever they suspect irregularities, applying an internal risk management system.

The Convention applies to transports with road vehicles, combinations of vehicles as well as containers and allows for the use of the TIR Carnet for all modes of transport, provided that some portion of the journey is made by road.

Watch: Reference Videos – To get a better understanding of the operation of TIR

- Movie about the TIR system (4 m. 42 s.)
  https://www.youtube.com/watch?v=dWD2JLqG81o
- Movie how TIR works (3 m. 43 s.)
  https://www.youtube.com/watch?v=Xl0X0InXDG0
- Movie on TIR launch in China (2 m. 22 s.)
  https://www.youtube.com/watch?v=wMqu6xBs7nw
- Movie on first TIR transport from Europe to China (0 m. 46 s.)
  https://www.youtube.com/watch?v=uVF19tl4by8

Further information on TIR is available at:
https://www.unece.org/tir/welcome.html

Annex C Health-related guidelines

COVID-19

Guidelines for border management measures to protect health and ensure the availability of goods and essential services

The coronavirus crisis has highlighted the challenge of protecting the health of the population whilst avoiding disruptions to the free movement of persons, and the delivery of goods and essential services across Europe. The implementation of the Union's policies on checks of persons and goods should be governed by the principle of solidarity between the Member States.

In order to avoid shortages and avoid that the social and economic difficulties that all European countries are already experiencing worsen, maintaining the functioning of the Single Market is key. Member States should therefore not undertake measures that jeopardise the integrity of the Single Market for goods, in particular of supply chains, or engage in any unfair practices.

Member States must always admit their own citizens and residents, and facilitate transit of other EU citizens and residents that are returning home.

As regards measures linked to border management, coordination at EU level is key.

Therefore, these guidelines set out principles for an integrated approach to an effective border management to protect health while preserving the integrity of the Single Market.

I. Transport of goods and services

1. The **transport and mobility sector is essential to ensure economic continuity**. Collective and coordinated action is indispensable. **Emergency transport** services should have **priority** within the transport system (e.g. via 'green lanes').

2. **Control measures should not undermine the continuity of economic activity and should preserve the operation of supply chains.** Unobstructed transport of goods is crucial to maintain availability of goods, in particular of essential goods such as food supplies including livestock, vital medical and protective equipment and supplies. More generally, such measures should not cause serious disruption of supply chains, essential services of general interest and of national economies and the EU economy as a whole.

3. **Professional travel to ensure transport of goods and services should be enabled**. In that context, the **facilitation of safe movement** for transport workers, including truck and train drivers, pilots and aircrew, across internal and external borders, is a key factor to ensure adequate movement of goods and essential staff.

4. Where Member States impose restrictions to the transport of goods and passengers on grounds of public health, it should be done only if those restrictions are:

1

a. Transparent, i.e. enshrined in public statements/documents;

b. Duly motivated, i.e. they need to spell out the reasons and the link to Covid-19. Justifications must be science-based and supported by World Health Organization (WHO) and European Centre for Disease Prevention (ECDC) recommendations;

c. Proportionate, i.e. not going beyond what is strictly necessary;

d. Relevant and mode-specific, i.e. restrictions on any of the different transport modes must be adapted to that mode; and

e. Non-discriminatory.

5. Any **planned transport-related restrictions should be notified** to the Commission and to all other Member States in a timely manner and, in any event, before they are implemented, without prejudice to the specific rules that apply to emergency measures in the aviation sector.

II. Supply of goods

6. Member States should **preserve the free circulation of all goods**. In particular, they should guarantee the **supply chain of essential products** such as medicines, medical equipment, essential and perishable food products and livestock. No restriction should be imposed on the circulation of goods in the Single Market, especially (but not limited to) essential, health-related and perishable goods, notably foodstuffs, unless duly justified. Member States should designate priority lanes for freight transport (e.g. via 'green lanes') and consider waiving existing weekend bans.

7. No additional certifications should be imposed on goods legally circulating within the EU single market. It should be noted that, according to the European Food Safety Authority, there is no evidence that food is a source or a transmission source of Covid-19[1].

8. Transport workers, especially but not only those delivering essential goods, should be able to circulate across borders as needed and their safety should in no way be compromised.

9. Member States should ensure constant provisioning to meet social needs, to avoid panic buying and the risk of dangerous overcrowding of shops, which will require proactive commitment from the entire supply chain.

[1] https://efsa.europa.eu/en/news/coronavirus-no-evidence-food-source-or-transmission-route

10. Specific transport nodes (e.g. ports, airports, logistics hubs) should be reinforced as needed.

III. Health-related measures

11. Appropriate measures need to be taken for people who are identified as posing a risk to public health from Covid-19. They should have **access to appropriate health care**, having regard to the prioritisation of different case profiles in national healthcare systems.

12. Based on best practices by health authorities in Member States, the following steps are recommended at **external borders**, as appropriate:

    a. **Put in place entry screening measures** (primary[2] and secondary[3]) which aim at assessing the presence of symptoms and/or the exposure to Covid-19 of travellers arriving from affected areas or countries; completion of a Public Health Passenger Locator Form on board an aircraft, a ferry, a train or a bus arriving on a direct or indirect connection from an affected areas or countries; completion of Maritime Declaration of Health for all arriving ships, indicating all ports visited;

    b. **Provide information materials** (leaflets, banners, posters, electronic slides, etc.) for distribution to travellers arriving from or departing to affected areas;

    c. **Put in place exit screening measures,** which aim at assessing the presence of symptoms and/or the exposure to Covid-19 of travellers departing from affected countries. Travellers identified as exposed to, or infected with Covid-19 should not be allowed to travel;

    d. **Isolation of suspected cases and transfer actual cases to a health care facility**. The authorities on both sides of the border should agree on the appropriate handling of cases of people considered as posing a public health risk such as further tests, isolation or quarantine and health care – either in the country of arrival or by agreement in the country of departure.

13. For these checks to be effective, the following constitute good practices:

    a. Establish standard operating procedures and ensure sufficient numbers of staff trained accordingly;

    b. Provide protective equipment for healthcare workers and non-health care workers; and

[2] Primary screening includes an initial assessment by personnel, who may not necessarily have medical training. Activities include visual observation of travellers for signs of the infectious disease, measurement of travellers' body temperature, and completion of a questionnaire by travellers asking for presence of symptoms and/or exposure to the infectious agent

[3] Secondary screening should be carried out by personnel with medical training. It includes an in depth interview, a focused medical and laboratory examination and second temperature measurement

c. Provide up-to-date information for health staff and other relevant staff at points of entry such as security, police, customs, port state control, harbour pilots and cleaning services.

Most of these measures are to be taken by or under the control of health authorities. Border authorities play an essential supportive role including by providing information to passengers and by referring cases of concern immediately to the relevant health services.

IV. External borders

14. **All persons, EU and non-EU nationals, who cross the external borders to enter the Schengen area are subject to systematic checks at border crossing points.** Border checks may include health checks as set out in Section III.

15. **Member States have the possibility to refuse entry** to non-resident third country nationals where they present relevant symptoms or have been particularly exposed to risk of infection and are considered to be a threat to public health.

16. Alternative measures to a refusal of entry such as isolation or quarantine may be applied where they are considered to be more effective.

17. **Any decision on refusal of entry needs to be proportionate and non-discriminatory**. A measure is considered proportionate on condition that it has been taken following consultation of the health authorities and that it has been considered by them as suitable and necessary to attain the public health objective.

V. Internal borders

18. Member States may **reintroduce temporary border controls at internal borders if justified for reasons of public policy or internal security**. In an extremely critical situation, a Member State can identify a need to reintroduce border controls as a reaction to the risk posed by a contagious disease. Member States must notify the reintroduction of border controls in accordance with the Schengen Borders Code.

19. Such controls should be applied in a proportionate manner and with due regard to the **health of the individuals** concerned. Persons who are clearly sick should not be refused entry but appropriate measures should be taken as indicated in point 11.

20. The conduct of health checks of all persons entering the territory of Member States does not require the formal introduction of internal border controls.

21. For EU citizens, the safeguards laid down in the Free Movement Directive must be guaranteed. In particular, **non-discrimination** between Member States' own nationals and resident EU-citizens must be ensured. A Member State must not deny entry to EU

citizens or third-country nationals residing on its territory and must facilitate transit of other EU citizens and residents that are returning home. Member States can, however, take appropriate measures such as requiring persons entering their territory to undergo self-isolation or similar measures upon return from an area affected by Covid-19 provided they impose the same requirements on their own nationals.

22. Border controls, if introduced at internal borders, should be organised in a way that prevents the emergence of large gatherings (e.g. queues), which risk increasing the spread of the virus.

23. Member States should permit and facilitate the crossing of frontier workers, in particular but not only those working in the health care and food sector, and other essential services (e.g. child care, elderly care, critical staff for utilities) to ensure continued professional activity.

24. Member States should coordinate to carry out health screening on one side of the border only to avoid overlaps and waiting times.

25. Member States, and in particular neighbouring Member States, should closely cooperate and coordinate at EU level to ensure effectiveness and proportionality of the measures taken.

Learning Materials on Transport Corridors

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