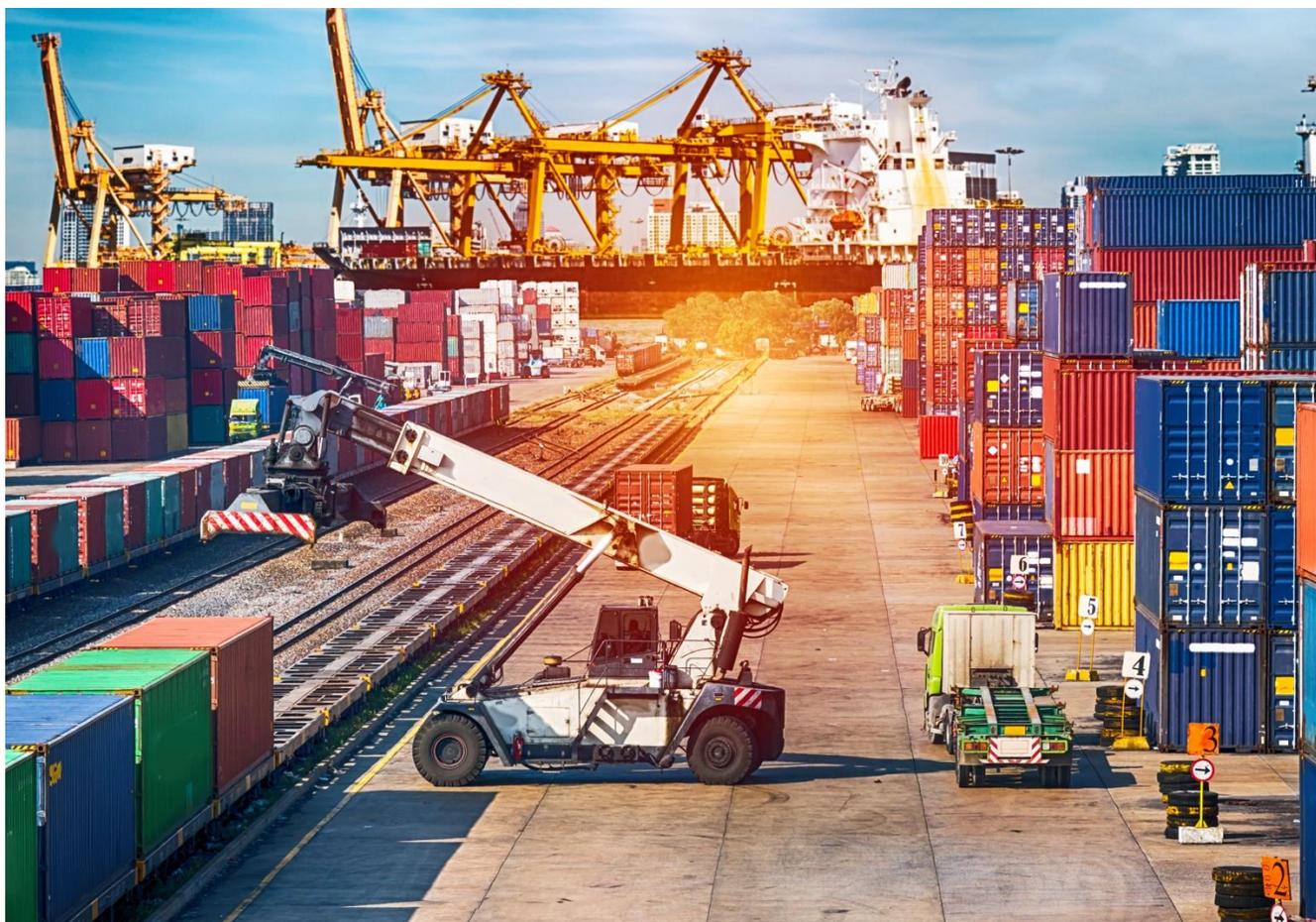


Sustainable transport connections between Europe and Central Asia

Final Report
Submitted on 16/06/2023



Prepared by:

The European Bank for Reconstruction and Development (EBRD)

Funded by:

The European Union

Contract Number: ACA/2020/414-374

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Acknowledgements

Preparation of this report was led by Idil Bilgic-Alpaslan, Senior Economist in the Policy, Strategy and Delivery (PSD) Department of the European Bank for Reconstruction and Development (EBRD), co-ordinated by Emre Can Erdogan, Principal Economist PSD, EBRD, and supported by Selin Fidan, Assistant Analyst PSD, EBRD. Many of the quantitative aspects of this report make use of CPCS Transcom Limited's Transport Global Unit. The authors are grateful to the CPCS team led by George Kaulbeck and supported by Salah Koleilat and Camille Wu, in addition to large team of transport planners, economists, modellers and research analysts.

Substantial contributions to the work and the report were made by Grigory Savva, Senior Banker Infra Eurasia; Harry Karandinos, Sustainable Transport Sector Specialist; Alexander Tatianin, Principal Banker Infra Eurasia; and Nadege Bezot Rigotard, Banker Infra Eurasia, all from the EBRD.

The study was supervised by Christoph Denk, Managing Director PSD, EBRD, with the support of Milica Delevic, Director of Competition Governance and Political Affairs, EBRD, and Thomas Chen, Advisor to the Managing Director PSD, EBRD.

The study benefited from the insights of Zsuzsanna Hargitai, Managing Director, Central Asia; Huseyin Ozhan, Director, Head of Kazakhstan; Alkis Vryenios Drakinos, Director, Head of Uzbekistan; Ayten Rustamova, Director, Regional Head of the Kyrgyz Republic, Tajikistan and Turkmenistan; Fatih Turkmenoglu, Head of Turkmenistan; Ekaterina Miroshnik, Director, Infrastructure Eurasia; and Matthew Jordan-Tank, Director, Sustainable Infrastructure Policy and Project Preparation, all from the EBRD.

At the European Commission, the authors are grateful to Maja Bakran Marcich, Acting Director General for Mobility and Transport, DG MOVE; Peteris Ustubs, Director for Middle East, Asia and the Pacific, DG INTPA; Harvey Rouse, Head of the International Relations Unit, DG MOVE; Sarah Rinaldi, Head of Unit for Middle East and Central Asia, DG INTPA; and to Annika Siirak from DG MOVE and Titien Amati from DG INTPA for their continued guidance.

The report and the project would not have been possible without the cooperation and input of representatives from numerous ministries and government agencies, as well as private-sector representatives in the five Central Asian countries. In particular, we are grateful for the assistance and interest of our counterparts in: Kazakhstan, Office of the President's Administration, Ministry of Trade and Integration, Ministry of Industry and Infrastructure Development, Customs Service of Kazakhstan, Kazakhstan Temir Zholy (KTZ), KTZ Express, KazAvtoZhol, Kedentransservice, Aktau North Port, Aktau International Sea Commercial Port, Kuryk Seaport, KazAto, KazLogistics, Eurobak, Astana International Financial Centre, Development Bank of Kazakhstan Atasu Group, Eastcomtrans LLP, TransCom Company, Apeiron International, Kazakhstan Freight Forwarding Association, Kazakhstan Atameken; the Kyrgyz Republic, Ministry of Foreign Affairs, Ministry of Transport and Communications, Ministry of Economy and Commerce, Kyrgyz Railways, Customs Services, National Investment Agency under the President of Kyrgyz Republic, Embassy of Türkiye in Bishkek, Association of Freight Forwarders of the Kyrgyz Republic, Union of International Road Operators of the Kyrgyz Republic, Chamber of Commerce and Industry, Militzer & Munch Bishkek, Translogistic and Fresco; Tajikistan, Ministry of Foreign Affairs, Ministry of Transport, Ministry of Economic Development and Trade, Customs Services, Tajik Railways, Association of International Road Transporters of Tajikistan, State Committee of Investments and State Property Administration; Turkmenistan, Ministry of Foreign Affairs, Ministry of Finance and Economy, Turkmenistan Railways Agency, Custom Services, Agency of Transport and Communications under the Cabinet of Ministers of Turkmenistan, Turkmenbashi International Seaport, Chamber of Commerce and Industry of Turkmenistan, Turkmen Logistics Association, Turkmenistan State Agency for Road Construction, Turkmenistan Central Bank, State Enterprise Turkmenawtoulaglary, TULM Logistics, Embassy of Türkiye in Ashgabat; Uzbekistan, Ministry of Investment and Foreign Trade, Ministry of Transport, Strategic Reforms Agency, State Customs Committee, Committee for Automobile Roads, Uzbekistan Railways, Association of International Road Carriers, International Freight Forwarders Association, Chamber of Commerce and Industry of Uzbekistan, AP Trans Cargo Service, Committee for Automobile Roads, TransGroup, Cotton Logistics. The study benefited significantly from the insights of the other public and private stakeholders in the Caucasus, such as the port authorities of Poti, Batumi and Baku/Alyat, Azerbaijani Railways, Azerbaijani Caspian Shipping Services, the Ministry of Transport of Azerbaijan and the Ministry of Economy and Sustainable Development of Georgia, as well as several Turkish public and private stakeholders, as part of wider discussions.

We are also grateful for comments and insights from organisations and institutions including the Permanent Representations of the European Union (EU) Member States in Brussels, diplomatic missions of the countries of Central Asia and the Caucasus in Brussels, EU Delegations and embassies of EU Member States in five Central Asian countries, the World Bank, the Asian Development Bank (ADB), the Central Asia Regional Economic Cooperation Programme (CAREC), the Asian Infrastructure Investment Bank (AIIB), the European Investment Bank (EIB), the Organisation for Economic Co-operation and Development (OECD), the OECD-International Transport Forum (ITF), the Transport Corridor Europe Caucasus Asia (TRACECA), the International Trade Centre (ITC), the International Road Transport Union (IRU), the Organization for Security and Co-operation in Europe (OSCE), the German Agency for International Cooperation (GIZ), the European Association for Forwarding, Transport, Logistics and Customs Services (CLECAT), the International Union for Road-Rail Combined Transport (UIRR), the European Sea Ports Organisation (ESPA), the European Rail Freight Association (ERFA), the International Union of Railways (UIC), European International Contractors (EIC), the European Rail Supply Industry Association (UNIFE), the Centre for European Reform (CER), the Asia-Pacific Road Safety Observatory (APRSO), the United States Agency for International Development (USAID) Trade Central Asia, Germany Trade & Invest, the International Transporters Association (INTA) of Türkiye, the Federation of European Private Port Operators (FEPORT), the European Shippers' Council (ESC), the European Sea Ports Organisation (ESPO) and the Organization for Cooperation of Railways (OSJD).

The team is also thankful to numerous global private-sector representatives for sharing their insights, including Nurminen Logistics, Rail Bridge Cargo Group, Deutsche Bahn Cargo, Deutsche Post DHL Group, DP World, Rhenus Group, VTG, APM Terminals (Port of Poti), PSA, IEC International, Gebrüder Weiss, Group Ost-West Logistik Netzwerk (OWLN), Rail Cargo Austria, CEVA Logistic, RTSB, Grampet Group and other transport industry stakeholders in the Caucasus, Europe and Türkiye.

We also thank all of the speakers at and participants in the three publicity events that were held during the implementation of the study: (1) a public stakeholders' seminar on "Sustainable Transport Connections between Europe and Central Asia" organised by the EU and the EBRD in Brussels on 30 September 2022; (2) the Transport Panel of the EU-Central Asia Connectivity Conference, held in Samarkand on 18 November 2022; and (3) the Transport Panel of the Second EU-Central Asia Economic Forum, held in Almaty on 19 May 2023.

Executive summary

The study on sustainable transport connections between Europe and Central Asia, conducted by the EBRD and led and funded by the EU, had two objectives: (1) to identify the most sustainable transport connections between the five Central Asian countries (Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan)¹ and the EU's extended Trans-European Transport Network (TEN-T), following a corridor assessment based on strict sustainability criteria, where environmental, social, economic and fiscal sustainability and political viability are taken into account; and (2) to propose key actions for the development of the identified connections in terms of both enabling environment (soft connectivity) and physical infrastructure (hard connectivity), including their prioritisation based on a coherent and sustainable transport corridor development approach.

As one of the key actions taken under the EU's Global Gateway Strategy (2021), the study also aimed to promote the EU's comprehensive, sustainable, rules-based and people-centred approach to connectivity and contribute to the implementation of the EU Strategy on Central Asia (2019). The findings contribute to the open and transparent identification of actions and the prioritisation of transport infrastructure planning and development in Central Asia. They further help to identify opportunities for stakeholders, including international financial institutions (IFIs) and the private sector, to invest in projects in the region that meet strict sustainability requirements and have been identified in close consultation with the partner countries and private-sector entities concerned.

Geographically, the study assessed existing and potential new corridors that would ensure the most sustainable transport connections between these five Central Asian republics, along with links to the TEN-T, which covers the 27 EU Member States, and its extensions to the Western Balkans, Eastern Partnership countries (including the Caucasus) and Türkiye.² This was done following the assessment of the current situation of transport networks in the region, as well as consultations with a large set of stakeholders (including not only the Central Asian countries themselves, but also EU Member States, industry, relevant United Nations (UN) bodies, IFIs, civil society organisations, the private sector and interest groups). The focus was on land transport (rail and road) and maritime connections as far as modes of transport were concerned, but interoperability with other modes of transport, legal and regulatory conditions, customs procedures, existing bilateral agreements and possible multi-modal connection points along these corridors were fully analysed as well.

Understanding and promoting the added value of regional connectivity, the study identified a regional network of connections encompassing major population and production centres and covering all five Central Asian countries, following a multi-criteria assessment (MCA) framework, which is explained in Chapter 2, *The most sustainable transport connections between Europe and Central Asia*. Based on this analysis, the Central Trans-Caspian Network (CTCN), traversing Southern Kazakhstan, was identified as the most sustainable option, allowing for further transport network and regional development by taking a two-layer catchment area approach that spanned the territory of all five Central Asian countries and covered most of the major population and production centres in the region. The identified network of connections has the potential to bring sustainable economic benefits to the entire region and offers opportunities for all five Central Asian countries to maximise their economic development by connecting better with each other and with Europe. Chapter 2 also explains how developing sustainable transport connections brings benefits to Central Asia, including stronger regional coordination, increased connectivity between regional economic centres, improved border-crossing practices, enhanced long-term planning and greater environmental benefits.

Having identified a network of the most sustainable connections between Europe and Central Asia (the CTCN), the study puts forward the priority investment needs that would help realise this network of connections, which are explained in Chapter 3, *Identification and prioritisation of key actions*. It proposes seven soft connectivity measures and 33 hard infrastructure investment needs as specific, concrete, implementable and realistic action items that could contribute to the sustainability, competitiveness and operational efficiency of the CTCN. All of these action items are

¹ The EBRD's Central Asia region includes Mongolia, which is not covered by this study.

² The EU agreed on the indicative extension of the Trans-European Transport network (TEN-T) to Türkiye in 2013, to the Western Balkans in 2016 and to the Eastern Partnership region in 2019.

divided into short-, medium- and long-term priorities in line with each country's own specific situation, needs, priorities and capacity.

Throughout the implementation period of the study and from consultations with stakeholders, it became clear that, in many cases, the key issues of transport connections in the region were not about financing or the lack (or poor state) of existing infrastructure, but of soft connectivity challenges. Therefore, the study identified country-specific and concrete soft connectivity interventions to lower transactional costs, increase operational efficiency and enhance private-sector participation to increase the efficiency of service provision. These measures related to the digitalisation of transport documents, improving interoperability, enhancing the public-private partnership (PPP) environment, trade facilitation, market liberalisation, improvements to tariff-setting mechanisms and increasing funding allocations for asset maintenance. Importantly, in many cases, the implementation of these soft measures would open up space for more private-sector activity. The cost of implementing soft connectivity measures depends on the scope and extent of each programme and can vary significantly.

The study also identified key priority infrastructure investment needs in all five Central Asian countries to significantly improve the network, for an estimated total amount of €18.5 billion. These investment needs relate to railway and road network rehabilitation and modernisation, rolling stock expansion, port capacity enhancements, improvements to border crossing points, and multimodal logistics centres and auxiliary network connections in all of the five countries involved. Under a business-as-usual scenario, transit container volume on the CTCN could increase from 18,000 20-foot equivalent units (TEUs) in 2022 to 130,000 TEUs in 2040. If investment projects and soft connectivity measures were implemented to achieve a free-flow transit time of 13 days, transit container volume could increase to 865,000 TEUs by 2040 on the CTCN. Assuming containerised trade also increased in Central Asia, in addition to the aforementioned improvements, the network could see regional container volumes of 470,000 TEUs by 2040.

Each project will still need to be carefully assessed and meet the standard requirements of any potential lending institution, including feasibility studies and more detailed integrity, technical, environmental/social and commercial/financial due diligence analyses, as appropriate.

The final chapter, *Conclusion*, provides a summary of the findings.

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Acronyms

| | |
|---------|--|
| ADB | Asian Development Bank |
| BCP | Border crossing point |
| CAREC | Central Asia Regional Economic Cooperation |
| CBTA | Cross-border transit agreement |
| CTCN | Central Trans-Caspian Network |
| EAEU | Eurasian Economic Union |
| EBRD | European Bank for Reconstruction and Development |
| ESG | Environmental, social and governance |
| EU | European Union |
| FEZ | Free Economic Zone |
| GDP | Gross domestic product |
| GHG | Greenhouse gas |
| ITF | International Transport Forum |
| KTZ | Kazakhstan Temir Zholy |
| LNG | Liquefied natural gas |
| MCA | Multi-criteria assessment |
| MOU | Memorandum of understanding |
| NDC | Nationally determined contribution |
| OECD | Organisation for Economic Co-operation and Development |
| OSBP | One stop border post |
| PPP | Public-private partnership |
| SEZ | Special Economic Zone |
| SPS | Sanitary and phytosanitary |
| TEN-T | Trans-European Transport network |
| TEU | Twenty-foot equivalent (container) |
| TFA | Trade facilitation agreement |
| TRACECA | Transport Corridor Europe Caucasus Asia |
| UN | United Nations |
| WTO | World Trade Organization |

1 Introduction

1.1 Overview of the study

The study on sustainable transport connections between Europe and Central Asia, conducted by the EBRD and led and funded by the EU, had two objectives: 1) to identify the most sustainable transport network connecting five Central Asian countries (Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan) with the EU's extended Trans-European Transport Network (TEN-T), and 2) to propose key actions for the development of the network, including soft connectivity measures and hard infrastructure investments.

The study promotes the EU's comprehensive, sustainable, rules-based and people-centred approach to connectivity and contributes to the implementation of the EU Strategy on Central Asia (2019) and the EU's Global Gateway Strategy (2021).

The findings contribute to transparent action identification and prioritisation for transport infrastructure planning and development in Central Asia, based on a set of strict sustainability criteria, including environmental, socioeconomic, political, financial and fiscal aspects. The results also help identify investment opportunities for stakeholders, including IFIs and the private sector.

Numerous stakeholders were consulted for input during the execution of the study, including government authorities (including, but not limited to, ministries for transport, economy and investment, railway and road authorities, customs agencies, and strategy and planning offices) in each Central Asian country, associations and the private sector in Central Asia, Europe, the Caucasus and Türkiye, EU Member States and EU Delegations in the region, IFIs and other relevant international organisations.

The study assessed the current situation of transport corridors in Central Asia, as well as bottlenecks and opportunities. Three existing corridors passing through Central Asian countries were assessed against each other using an objective-specific MCA framework. The most sustainable network was identified based on five sustainability components:

- 1) country assessment (economic and fiscal outlook, political viability, legal and regulatory environment)
- 2) traffic assessment (current transit trade volumes and potential, trade facilitation measures, non-tariff barriers)
- 3) infrastructure assessment (capacity of the network, infrastructure performance and efficiency, planned upgrades)
- 4) social and environmental assessment (environmental impact of route operations, commitment to sustainability goals, safety and security of route operations, social and environmental considerations)
- 5) economic integration assessment (domestic and regional connectivity enhancements).

Accordingly, the Central Trans-Caspian Network (CTCN), traversing southern Kazakhstan, was identified as the most sustainable option, allowing for a broad, inclusive transport network and regional development by taking a two-layer catchment area approach that spans the territory of all five Central Asian countries included in this study and covering most of the major population and production centres in the region. The development of the CTCN would yield significant benefits for the region, including stronger regional coordination, increased connectivity between economic centres, improved border-crossing practices, enhanced long-term planning and better environmental outcomes.

Following the identification of the most sustainable connections, an iterative process was undertaken to identify specific projects. First, a long-list of actions was shortlisted to 40 actions across all five Central Asian countries, including soft connectivity measures and infrastructure investment needs, focusing on the potential impact of projects on transactions costs, network reach, competition, and environmental and social benefits.

In the second step, an action-specific MCA framework was used for the prioritisation of shortlisted investments. The criteria for action prioritisation included six sustainability components:

- 1) financial and economic viability
- 2) ease of implementation
- 3) incremental trade benefits
- 4) alignment of projects with national and strategic donor priorities
- 5) potential geopolitical impacts
- 6) environmental and social benefits.

The study proposes seven soft connectivity measures and 33 hard infrastructure investment needs as specific, concrete, implementable and realistic action items that could contribute to the sustainability, competitiveness and operational efficiency of the CTCN. Soft connectivity measures are low-cost, high-benefit action items that could yield significant benefits to the implementing countries and the wider Central Asian region. The study identifies country-specific and concrete points of intervention to lower transaction costs, increase operational efficiency and enhance private-sector participation to increase the efficiency of service provision. Such measures relate to the digitalisation of transport documents, improving interoperability, enhancing the PPP environment, facilitating trade, liberalising markets, improving tariff-setting mechanisms and increasing the funding allocation for asset maintenance. Implementation of these measures is a precondition to enabling private-sector involvement and proceeding with hard infrastructure investments amid lower transfers from national budgets.

The total investment needed to significantly improve the CTCN is estimated at around €18.5 billion. These investment needs relate to railway and road network rehabilitation and modernisation, rolling stock expansion, port capacity enhancements, improvements to border crossing points, and multimodal logistics centres and auxiliary network connections in all the five countries. Identified investment needs take into account each Central Asian country's own needs, priorities, capacities and specific conditions.

1.2 Report overview

The report is structured as follows:

- Chapter 2 provides an overview of the transport connections between Europe and Central Asia and identifies the most sustainable connections based on an MCA framework.
- Chapter 3 provides an assessment of the identified and prioritised hard infrastructure and soft connectivity key actions to support the development of the most sustainable transport connections, based on an action-specific MCA, as well as estimated traffic flows on the most sustainable transport connections.
- Chapter 4 provides a conclusion, including the key recommendations and main takeaways of the study.

2 The most sustainable transport connections between Europe and Central Asia

2.1 Overview of the land-based transport corridors between Europe and Asia

Total trade between the EU and Central Asia has grown by 38.8 per cent in the last decade, from €34.2 billion in 2012 to €47.5 billion in 2022, with two-thirds of total trade being imports to the EU. The main products imported by the EU are mineral products, base metals and products made from them, and chemical and associated products (92 per cent of total EU exports). The EU's main exports to Central Asia are machinery and appliances, chemical or allied products, and transport equipment (70.7 per cent of total EU exports).³

Despite growing European-Central Asian trade, China is the largest driver of cargo volumes between Europe and Asia. It is also one of the EU's two largest trading partners. The majority of Europe-China trade in goods has been carried by maritime routes (estimated to be around 80-85 per cent of all EU-China trade volumes), with land-based modes carrying around 10 per cent and air transport carrying the remainder. Overland transport between Asia and Europe is conducted on three main corridors (Figure 1):⁴

- The **Northern Corridor** between Asia and Europe runs from China through Kazakhstan, Russia and Belarus before entering the EU via Poland. Trains also travel through Mongolia or directly through Russia on the Trans-Siberian railway. This route is about 10,000 kilometres (km) long and the transit time is reported to be 14 days, on average.
- The **Trans-Caspian International Transport Route (Middle Corridor)** connects Asia and Europe via Kazakhstan and the Caspian Sea. Goods enter the Caucasus through the port of Baku, Azerbaijan, and continue to Georgia, from where two alternative routes can be taken before entering the EU via Bulgaria or Romania: a land-based route via Türkiye or a maritime route via the Black Sea. While shorter than the Northern Corridor, at 7,000 km, it currently involves unpredictable timelines, which may vary from 14 days to 45 days, but can take up to 60 days depending on the circumstances.
- The **Southern Corridor** traverses the Kyrgyz Republic or Tajikistan, Uzbekistan, Turkmenistan, Iran and Türkiye before entering Europe via Bulgaria or Greece. Another potential route along the Southern Corridor crosses Afghanistan and Central Asia and onwards to the EU via the Caucasus, but this alternative has not been assessed for the purposes of this study for geopolitical reasons. The Southern Corridor is a land-based corridor and largely preferred by road carriers, as it avoids the Caspian Sea crossing and the problems associated with it, including port inefficiencies and limited and unpredictable ferry times. Transit times are reported to be around 14-20 days for non-EU destinations, but can take 60 days or more.

Despite the region's strategic location and ability to act as a land bridge between the two continents, frequent disruptions to operations, delays (mostly related to crossing the Caspian and Black Seas) and multiple international border-crossing points with unaligned transit procedures preclude container transportation and result in the transportation of mostly time-insensitive commodities on the Central Asian corridors.

³ Eurostat, European Union, Trade in goods with Central Asia 5, details_central-asia-5_en.pdf (europa.eu)

⁴ Based on recent publications by the United States Agency for International Development (USAID), the World Bank, the International Transport Forum (ITF), the Organisation for Economic Co-operation and Development (OECD) and the European Commission, among others, three competing overland transport routes have been identified.

Figure 1: Main Europe-Asia land-based corridors



Source: CPCS.

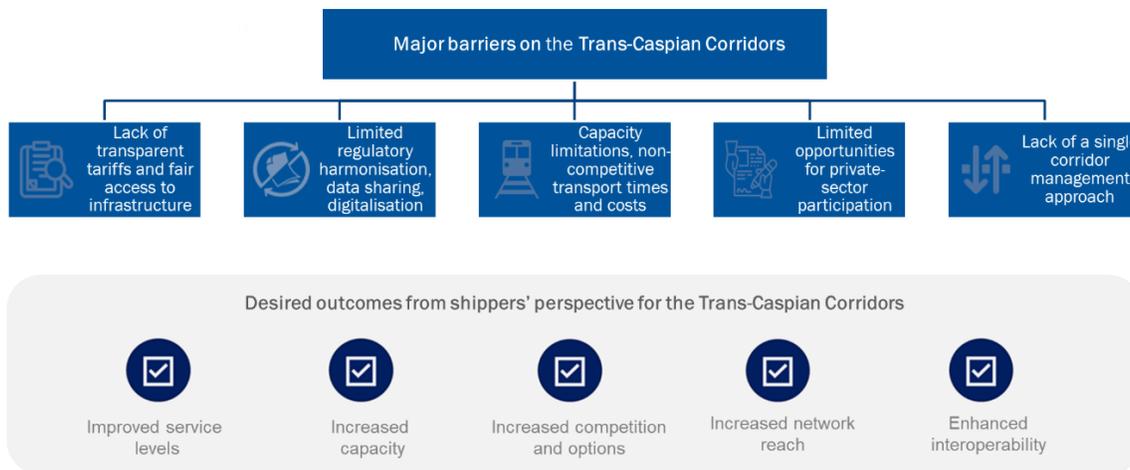
2.2 Emergence of the Trans-Caspian Corridors as a viable alternative

While traffic along the Trans-Caspian International Transport Route, also known as the Middle Corridor, has tripled since it started operating in 2017, cargo volumes are still marginal compared with the dominant Northern Corridor between Asia and Europe, which involves crossing Russia. While the diversification of trade routes was previously under way (also partly due to fluctuating ocean shipping rates during the Covid-19 pandemic in 2021 and 2022),⁵ Russia’s invasion of Ukraine sharply increased the need to identify alternative, reliable, safe and efficient trade routes between Europe and Asia.

Transit cargo is still permitted on the Russian railway network, but many operators and European companies started to cite various concerns, including insurance and ethical and moral reasons for their decision to look for alternatives and to explore the viability of the Trans-Caspian Corridors.⁶ While figures vary depending on the source, according to the Eurasian Rail Alliance Index, transported volumes between EU hubs and China via the Northern Corridor fell 31.9 per cent on the year in 2022, from 618,180 TEUs in 2021 to 386,374 TEUs in 2022.⁷

Against the backdrop of these developments, a window of opportunity has opened for the Trans-Caspian Corridors. According to Kazakh Railways, traffic along the Trans-Caspian International Transport Route increased 2.5-fold on the year last year, reaching 1.5 million tonnes. However, this massive increase in volumes also exposed significant connectivity issues, bottlenecks and capacity shortages along the route, increasing transaction costs and preventing the realisation of expected container cargo growth (Figure 2).

Figure 2: Major barriers hampering the development of the Trans-Caspian Corridors



Source: CPCS

⁵ While ocean shipping rates had indeed spiked to US\$ 14,000 in 2021, they had already come down to less than US\$ 2,000 as of December 2022, and current reports suggest it is possible to ship a container from Istanbul to Shanghai for less than US\$ 1,000 on the spot market.

⁶ See A. Tunnicliffe (2022) How sanctions are impacting Russia’s railways. *Railway Technology*, 7 September 2022. Available at: www.railway-technology.com/features/how-sanctions-are-impacting-russias-railways/.

⁷ See RailFreight.com (2023) Silk Road traffic grew in 2022: here’s how the figures developed. *RailFreight.com*, 10 January 2023. Available at: www.railfreight.com/beltandroad/2023/01/10/silk-road-traffic-grew-in-2022-heres-how-the-figures-developed/.

2.3 Identification of the most sustainable transport connections

The Trans-Caspian Corridors comprise three main transit routes (Figure 3):

- 1) **Northern Trans-Caspian Corridor:** This route goes through North Kazakhstan. Starting at the China-Kazakhstan border at Alashankou Station, the route continues to Dostyk Station in Kazakhstan before continuing to the Port of Aktau/Kuryk in the direction of Aktogai, Mointy, Zharyk, Zhezkazghan, Saksaulskaya, Shalkar and Oasis. The route then involves a maritime crossing through the Caspian Sea to the Port of Baku in Azerbaijan, land-based transport options to the Georgian ports of Poti and Batumi, and a maritime crossing through the Black Sea to ports in Bulgaria and Romania. A second option is to cross by land from the Caucasus directly into Türkiye by truck or rail using the Baku-Tbilisi-Kars railway, which is also part of the EU’s TEN-T extension. This connection is often referred to as the Middle Corridor.
- 2) **Central Trans-Caspian Corridor:** This route goes through South Kazakhstan. Starting at the China-Kazakhstan border in Khorgos, it traverses Kazakhstan, intersecting with Almaty, and onwards to Shu, Shymkent and Kyzylorda, before combining with the Northern Trans-Caspian Corridor at Saksaulskaya. This connection is also referred to as the Middle Corridor.
- 3) **Southern Trans-Caspian Corridor:** This route runs through the Kyrgyz Republic, Uzbekistan and Turkmenistan. Starting at the Torugart Pass in the Kyrgyz Republic, it continues on from Torugart-Osh by road, then to Osh, Tashkent, Samarkand, Turkmenabat. Ashgabat and Turkmenbashi by rail. It then traverses the Caspian Sea via Turkmenbashi port into the Caucasus, before crossing the Black Sea to ports in Bulgaria and Greece. A second option is to travel by land through the Caucasus and Türkiye before entering the EU. Alternatively, though in smaller volumes, cargo can enter Central Asia through the Kulma Pass in Tajikistan and connect to Uzbekistan before following the same onward route.

Figure 3: Alternative routes between Europe and Central Asia via the Caspian Sea



Source: CPCS.

These three alternatives are assessed against each other, using a corridor-specific MCA framework focusing on five aspects of sustainability (Table 1):

- traffic assessment (25 per cent)
- infrastructure assessment (25 per cent)
- social and environmental assessment (20 per cent)
- country assessment (15 per cent)
- economic integration assessment (15 per cent).

Table 1: Corridor selection MCA scoring criteria

| Criteria | Sub-criteria | Basis for sub-criteria scoring input |
|----------------------------------|---|--|
| Traffic assessment | Current transit and trade freight flows | <ul style="list-style-type: none"> • Current trade flows under existing conditions • Degree of sanction impact • Mode of freight distribution • Distance to key markets • Number of border crossings |
| | Transit trade capture potential | <ul style="list-style-type: none"> • Potential transit trade capture rate from other competing routes under a scenario that is unconstrained by capacity bottlenecks • Potential capture from general trade growth |
| | Regional trade capture potential | <ul style="list-style-type: none"> • Potential regional trade capture rate |
| | Trade facilitation measures | <ul style="list-style-type: none"> • Trade facilitation agreement (TFA) membership • Border efficiency • Single window adoption • Digitalisation advances |
| | Non-tariff measures | <ul style="list-style-type: none"> • Trade barriers • Testing, inspection, and certification in trade • International road transport cooperation |
| Infrastructure assessment | Freight rail, port and multi-modal capacity | <ul style="list-style-type: none"> • End-to-end carrying capacity by node and link • Degree/ability to absorb additional traffic relative to current capacity |
| | Infrastructure performance and efficiency | <ul style="list-style-type: none"> • Cost of shipping • Composite travel time • Travel time reliability |
| | Planned infrastructure upgrades | <ul style="list-style-type: none"> • Impact and degree of commitment to infrastructure and operational performance |
| Country assessment | Economic and financial ability to commit funding and sustain debt | <ul style="list-style-type: none"> • Trade balance • GDP • Debt-to-GDP ratio • Debt service history • Qualitative assessment of ability to service future debt • Economic complexity index gap |
| | Political viability | <ul style="list-style-type: none"> • Political stability • Institutional readiness for implementation • Potential for long-term security |
| | Favourable legal and regulatory environment | <ul style="list-style-type: none"> • Adoption of regional and international treaties/conventions • Institutional governance |

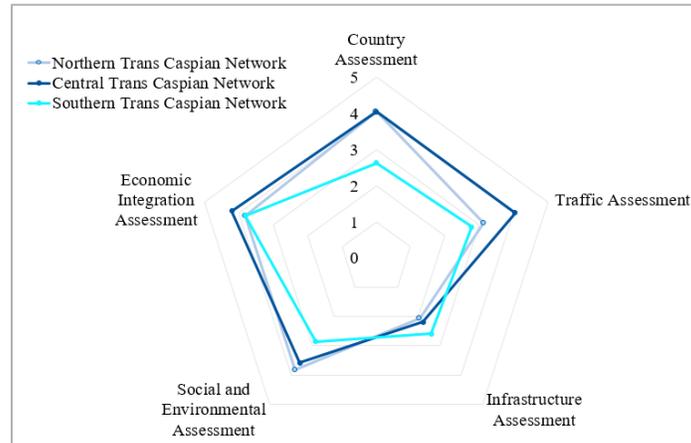
| Criteria | Sub-criteria | Basis for sub-criteria scoring input |
|--|---|--|
| | | <ul style="list-style-type: none"> • Transport regulations • Procurement environment |
| Social and environmental assessment | Environmental impact of corridor operations | <ul style="list-style-type: none"> • GHG emissions from operations |
| | Safety and security of corridor operations | <ul style="list-style-type: none"> • Safety and incident rates by modal distribution |
| | Societal, environmental assessment and digital access | <ul style="list-style-type: none"> • Population and population growth • Transport sector labour force contributions • Female labour force participation rate • GDP per capita • Degree of internet access |
| | Environmental position and commitment to sustainability goals | <ul style="list-style-type: none"> • Decarbonisation and environmental policies/laws • NDC goals • NDC goals update • Climate risk impact |
| Economic integration assessment | Domestic economic inclusion | <ul style="list-style-type: none"> • Proximity to domestic economic centres |
| | Geopolitical dynamics | <ul style="list-style-type: none"> • Geopolitical advantage of the route through regional cooperation |
| | Binational and regional trade potential | <ul style="list-style-type: none"> • Existing regional trade volumes • Potential to facilitate additional regional trade |

Source: EBRD and CPCS.

Based on this multi-criteria assessment framework, the Central Trans-Caspian Network (CTCN) is identified as the most sustainable transport connection between Europe and Central Asia (Figure 4). The results are robust to weight selection, meaning that changing the weight does not alter the results, as the CTCN serves the main economic centres across the region and supports a more regionally integrated network.⁸

⁸ Two tests were conducted to assess how the choice of weightings altered results. In the first test, the weight of the social and environmental assessment increased from 20 per cent to 60 per cent. In this case, the northern route became the preferred alternative, as it was 400 km shorter. However, from a financial assessment perspective, this was not an appropriate approach. In the second test, the weight of economic integration assessment increased, but this change in weighting did not alter the results, as the CTCN serves the main economic centres across the region and supports a more regionally integrated network.

Figure 4: Sustainability performance of the Trans-Caspian Corridor alternatives

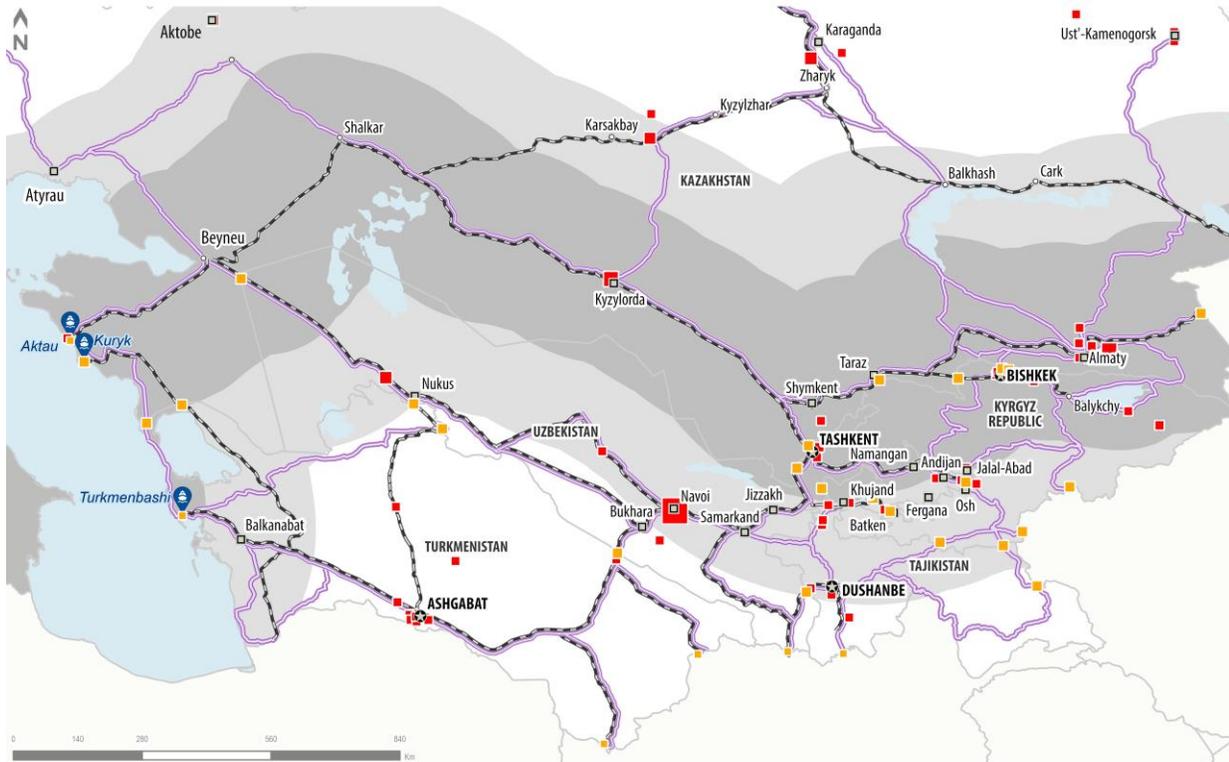


Source: EBRD and CPCS.

With its two-layer catchment area – 300 km and 600 km to the north and south of the Central Trans-Caspian Corridor (shaded in grey in Figure 5) – the CTCN spans all major economic and population centres in Central Asia and ensures connectivity within the region and with Europe through key transport network links. The CTCN has the greatest potential for further development, as it allows not only for transport network development, but can also support regional development in Central Asia. This region has an extensive transport network, which can serve as the basis for further regional cooperation and coordinated project implementation.

The CTCN is a system of infrastructure assets that can bring significant benefits to domestic, regional and intercontinental users. With its cross-country linkages through border crossing points (BCPs) and network connections, it facilitates direct access to major population centres across Central Asia, including four of the most populous five cities in the region (Almaty, Bishkek, Shymkent and Tashkent). There are several BCPs within the identified catchment area that can support the development of seamless interregional and regional transportation and trade operations through targeted improvements. The catchment area hosts many key production centres that are conducive to a further boost in regional trade by integrating regional value chains with each other, as well as with Europe.

Figure 5: The most sustainable transport connections between Europe and Central Asia



Source: EBRD and CPCS.

2.4 Expected benefits

As seen in the successful example of connecting the 27 EU Member States with the development of the TEN-T, a regional plan to implement and develop a Central Asia-wide transport network could close the gaps in infrastructure and soft connectivity, remove bottlenecks and technical barriers, and strengthen social, economic and territorial cohesion in the region. Such an approach has multiple benefits (Figure 6). Focusing on the rehabilitation of existing assets with a regional perspective is more conducive to economic development, given the fiscal limits of the Central Asian countries, their relatively limited economic activity and their geography.

Two conditions are required for wider regional development benefits to materialise:

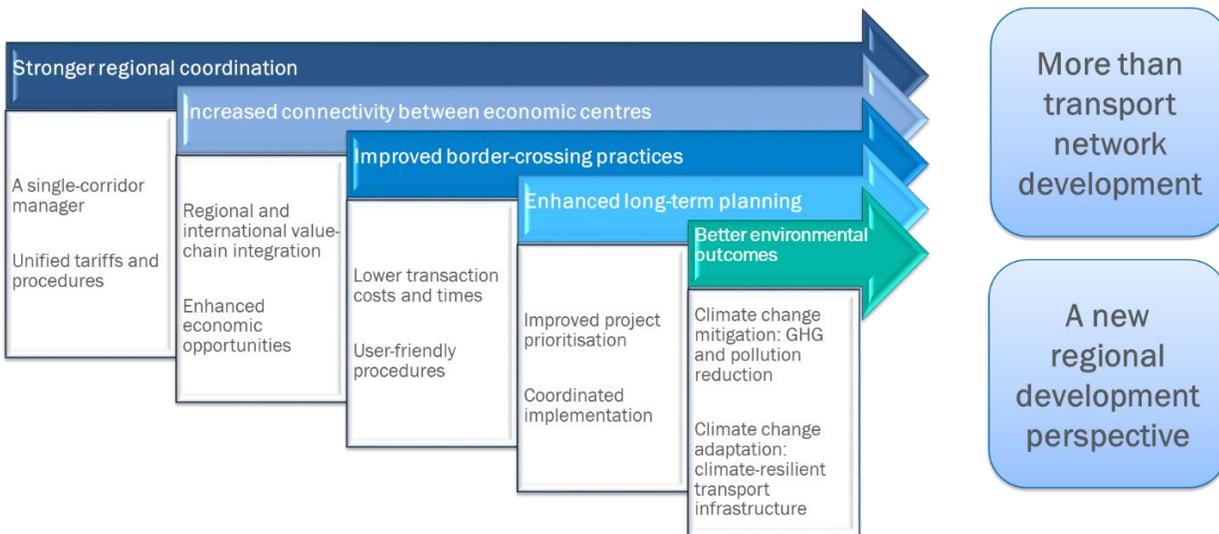
- all countries provide equal and fair access to all regional peers and players to their network
- countries invest in enhancing their domestic network, aligned with international corridors, and cross-border connections in a coordinated manner.

2.4.1 Stronger regional coordination

To increase the efficiency of the transport sector and reap the benefits of international and regional trade, Central Asian countries need to improve their transport infrastructure, logistical capabilities and human capital, remove non-tariff barriers, and introduce coordinated policies and strategies. Endorsement of a plan to develop the CTCN by the Central Asian countries would enhance regional coordination, which could improve connectivity, lower transaction costs, enhance the safety, reliability and security of transportation, and improve environmental outcomes.

A well-established coordination and cooperation mechanism requires the coordination of interfaces between national and international transport systems, as well as the integration of different modes of transport, such as rail, road and maritime. The range of operational approaches to establishing a regional coordination mechanism can start with less formal structures (namely, ad hoc arrangements based on short-term issues) and move on to more formal ones (that is, a regional legal entity with dedicated resources, authorities and representation of members). The more formalised the coordination mechanism, the more enforcement capacity it can have.

Figure 6: Expected benefits of developing the CTCN



Source: EBRD.

Currently, a lack of harmonised practices increases transaction costs significantly for regional and international operators. Asset owners and operators in the region could develop a seamless transportation system through a well-developed collaboration and cooperation mechanism. This would support the introduction of single and unified tariffs, as well as a single payment platform along the corridor. It could also facilitate the provision of regional traffic information and smooth border-crossing procedures.

2.4.2 Increased connectivity between regional economic centres

A well-developed transport network is conducive to moving goods and people quickly and efficiently and can support economic development. Currently, high logistics costs due to time delays and uncertainty are among the key reasons for the lack of regional integration. Inadequate soft and hard infrastructure components, and limited trade liberalisation, as well as inefficiencies at BCPs, dim the prospects for the development of regional value chains. If the CTCN is developed from a regional perspective, focusing on targeted measures to improve hard and soft connectivity components, it could support the development of regional value chains that are also better linked with Europe and better integrated into global supply-chain logistics.

In **Kazakhstan**, two sectors with the highest proportion of non-domestic and non-regional value added in gross exports are wood and paper and petroleum and chemical products (30 per cent and 25 per cent, respectively).⁹ The Taraz Special Economic Zone (SEZ), located within the catchment area of the CTCN, is focused on the production of new chemicals, a promising area for the country's integration into global value chains. Aktau Sea Port, one of the two Kazakh exit points on the Caspian Sea, and the associated SEZ are important for overall exports, as well as for the export of petroleum products. The development of the CTCN could play a significant role in economic development, as seven of the country's 13 SEZs are within the primary catchment area of the CTCN, including the SEZs focused on textile processing and petro-chemistry (Ontustik), tourism and mixed production (Turkistan), and information technology development (Park of Innovative Technologies, Almaty).

The **Kyrgyz Republic** has the greatest degree of integration into regional and global value chains, despite its small economy. This is mainly down to the country's relatively more liberal trade regime. The share of external value added in total exports is as high as 55 per cent for wholesale trade, indicating significant integration into value chains. Also, export services, such as construction, finance and hospitality, make up 20-30 per cent of external value, providing some bright spots for further integration.¹⁰ The top three regions by industrial production in the Kyrgyz Republic are Chui, Issyk-Kul and Jalal-Abad, all within the catchment area of the CTCN. In this respect, developing the CTCN creates an opportunity for the country to facilitate economic diversification and development, should railway connectivity with the Kazakh and Uzbek networks be improved through the modernisation of the Lugavoya-Almaty and Osh-Andijan connections. In addition, the development of a multi-modal approach would facilitate efficient storage, sorting and distribution activities in major production centres.

In **Tajikistan**, integration into global and regional value chains is very limited, accounting for around 5 per cent of the best-performing sectors.¹¹ This is also a reflection of the country's relatively low industrial production, with the main industries being aluminium processing and chemical production. In addition to heavy industry, agriculture is important for the economy. Tajikistan's top manufacturing companies are generally located in the western part of the country, with the largest companies in the capital, Dushanbe, within the catchment area of the CTCN. The city is connected by east-west road and rail infrastructure towards Uzbekistan and into the rest of the country. Improving rail connectivity with Uzbekistan, investments to increase speeds on the railway network and enhancing customs services would lower transaction costs and facilitate integration into cross-border production chains.

In **Turkmenistan**, non-gas and non-oil exports constitute a very small portion of the overall trade structure. However, despite their small volumes, transport equipment, electrical and machinery goods, and agriculture are key sectors that could offer opportunities for further integration into global and regional value chains, as somewhat higher non-domestic value added can be observed in exports of these products. The main manufacturing industries include cotton processing, chemicals and construction, including cement factories located in the regions of Balkan, Lebap and Ashgabat. While these regions are outside the direct catchment area of the CTCN, ensuring smooth connections to the country's Central Asian neighbours by improving key transport links would facilitate the main economic producers' integration into regional value chains.

Uzbekistan has been the least integrated Central Asian country in terms of global value chains.¹² However, this is expected to change in the light of recent liberalisation efforts. The top industrial producers are located in the Tashkent (including Tashkent City), Andijan and Navoi regions, all within the CTCN catchment area. The Tashkent region's top industries include agriculture, energy production, mining, metallurgy, fertilisers, chemicals, electronics, textiles, cotton processing, food processing and footwear. The region and the capital are well connected by both rail and road infrastructure. The Navoi region is a mining area with significant activity in natural gas, petroleum, metals, construction materials and gold. The Andijan region, located in the easternmost portion of the country, bordering the Kyrgyz Republic, is Uzbekistan's third top producing region, with petroleum, natural gas, metals processing, chemicals, light

⁹ A. Sharafeyeva (2022) How much do Central Asian countries participate in regional value chains?, *Australian and New Zealand Journal of European Studies*, 14: 62-80. www.researchgate.net/publication/363627532_How_much_do_Central_Asian_countries_participate_in_Regional_Value_Chains

¹⁰ Ibid.

¹¹ Ibid.

¹² Ibid.

industry, food processing and agriculture. Because of its varying production patterns, as well as domestic and international connections, further improvements to assets and network rehabilitation, in tandem with a structured multi-modal and inter-modal approach, would facilitate the country's integration into regional and global value chains.

2.4.3 Improved border-crossing practices

BCPs are a country's key entry and exit nodes, where the authorities assess compliance with national legislation, including on safety and security, commercial policy, customs procedures, quarantine measures and migration policy. The growth of cross-border trade challenge the implementation of conventional border control mechanisms and necessitate the adoption of a risk-management approach, concentrating on high-risk goods, in coordination with trade partners.

Development of the CTCN, including improvements to border-crossing practices, would add to the viability of the network for moving cargo between Europe and Asia. However, benefits can only materialise if Central Asian countries coordinate closely with each other to alleviate inefficiencies with respect to border-crossing practices. This would result in fewer disruptions at borders, lowering transportation costs and waiting times at BCPs. A coordinated border management system, supported by national border control agencies, could bring many advantages, including the efficient delivery of services, as well as better harmonisation of practices and policies by different agencies. Wider sharing of data and information would allow for the introduction of better risk assessment and management practices, enabling efficient delivery of facilitation and intervention programmes.

2.4.4 Enhanced long-term planning

While any large-scale project in the Central Asian region would benefit from political willingness and alignment, a simultaneous focus on and coordination with the improvement in domestic transport networks, green economy transition, skills and capacity development, and enhanced use of data and technology would facilitate project planning and implementation. A regionally agreed transport development plan, endorsed by the five Central Asian governments, would support long-term planning through agreements on project prioritisation and coordination and contribute to regional sustainability and stability.

A long-term perspective enables planning to promote the efficient use of network capacity and capabilities. It provides flexibility to develop potential interventions as part of high-level strategies. Such long-term planning allows for interactive and continuous coordination and cooperation between project owners and funders, informed decisions and the identification of priorities for funding mechanisms.

2.4.5 Improved environmental benefits

The transport sector is a significant contributor to global CO₂ emissions, accounting for 23 per cent of CO₂ emissions in 2022.¹³ In Kazakhstan, the Kyrgyz Republic and Uzbekistan, emissions are somewhat lower than the global average, around 11 per cent, 17 per cent and 15 per cent, respectively. The transport sector's contribution to total CO₂ emissions remains high in Tajikistan and Turkmenistan, at 23 per cent and 22 per cent, respectively.¹⁴ Either way, to achieve positive environmental outcomes, transport sector emissions need to decrease significantly, driven by targeted measures including, at least, a modal shift to less carbon-intensive travel alternatives, a scaling up of low-carbon fuels and energy-efficiency measures. With the European Green Deal, the EU has set an ambitious target to reduce transport-related greenhouse gas (GHG) emissions by 90 per cent by 2050, and is also promoting sustainable connectivity globally (including in Central Asia) through its Global Gateway Strategy.

¹³ See IEA (2023) *CO₂ Emissions in 2022*, Paris. Available at: www.iea.org/reports/co2-emissions-in-2022.

¹⁴ See IEA (2021) *Greenhouse Gas Emissions from Energy Data Explorer*, Paris. Available at: www.iea.org/data-and-statistics/data-tools/greenhouse-gas-emissions-from-energy-data-explorer.

Given the landlocked nature and geographic features of Central Asia, most cargo is moved by land and has historically been concentrated on road transport. However, considering the vast distances that need to be crossed and the fact that rail is considered the most sustainable mode of transport, railway operations offer a cheaper, safer and faster alternative for long-haul cargo. Clearing large volumes of cargo at BCPs on trains is also more efficient than clearing the same amount of cargo on multiple trucks. Nevertheless, given the limited domestic railway connectivity of Central Asian countries, a multi-modal approach could be a starting point for pursuing climate change mitigation and adaptation policies. This would allow the utilisation of railways for long-distance transport operations and the combination of railway transportation with multi-modality for distribution in urban areas and around production facilities, still allowing for a significant reduction in emissions from transport operations. However, investments require regional coordination and cooperation, not only to improve the network, but also to introduce harmonised soft connectivity measures to make railways the preferred mode of transport.

3 Identification and prioritisation of key actions

3.1 Methods for selecting and prioritising key actions

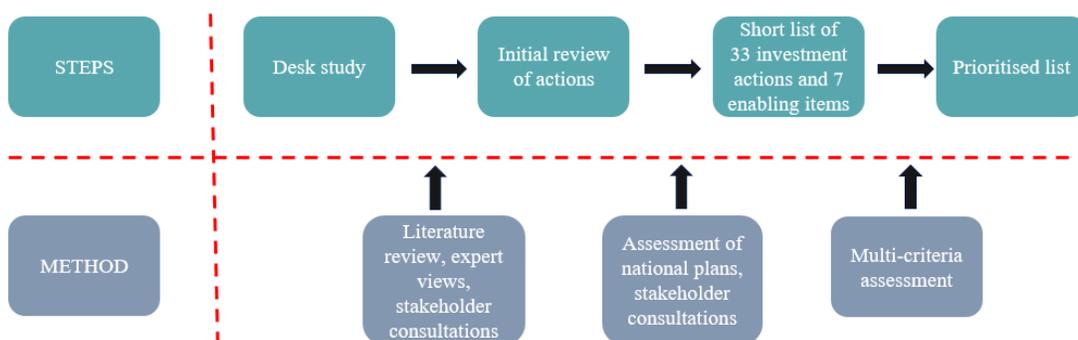
Building on the needs and gaps identified during the selection of the most sustainable transport connection between Europe and Central Asia, first, a long-list of key interventions was identified. These interventions aim to address physical or non-physical barriers and gaps pertaining to different transport modes, infrastructure assets, facilities, operations and regulations associated with the CTCN.

Generally, the investments, projects and measures identified across the study's focal countries would fall into one of the following categories, though this is not an exhaustive list:

- actions to enhance infrastructure and rolling stock condition and performance
- actions to enhance operational and economic connectivity, benefiting the route's competitiveness
- actions to enhance regulatory and legal harmonisation across borders and along the route itself
- actions to enhance transparency and cross-border operations
- actions to enhance data, information systems and digitalisation.

The process involved multiple rounds of stakeholder consultation with the national authorities in the five Central Asian countries, including, but not limited to, ministries in charge of transport planning, ministries of economy and finance, railway and road authorities, and customs and border agencies. In addition, consultations were held with public and private stakeholders in Europe and Central Asia, regional and international users of the network and relevant European and international associations. The actions are potentially being introduced for the first time through this study or have been carried forward from recommendations presented in other studies or plans. All actions defined herein are intended to be specific, concrete, implementable and realistic.

Figure 7: Key action selection and Prioritization approach



Source: EBRD and CPCS

To refine the long list initially, a high-level four-point scoring approach was used to filter for actions that were technically sound and perceived to support key performance outcomes for the CTCN. The criteria included:

- improved transit time and/or reliability on the route
- increased route capacity
- increased route competition and/or more options for shippers
- greater network reach (including increased interconnectivity to other modes) within one country
- greater network reach (including increased interconnectivity to other modes) within multiple countries
- enhanced interoperability/operating efficiency between Central Asian countries
- potential for GHG reduction impact.

Following stakeholder consultation, the priority action list was refined to better reflect country priorities, and the top seven soft connectivity actions and 33 infrastructure investment needs were identified as key priorities. Shortlisted investment actions were scored and ranked using a project-specific MCA framework. The list of scoring criteria, associated sub-criteria and basis for each sub-criterion's MCA assessment are presented in Table 2. Each sub-criterion is scored on a qualitative five-point scoring scale and ranked for further investigation.

Table 2: Action item MCA scoring criteria

| Criteria | Sub-criteria | Basis for qualitative long-list screening assessment |
|---|---|--|
| Alignment with policies and strategic visions | Alignment with national policies and priorities | <ul style="list-style-type: none"> • Degree of alignment with national strategies and directions |
| | Alignment with strategic donor priorities | <ul style="list-style-type: none"> • Degree of alignment with donor priorities and strategic objectives (based on donor engagement feedback) |
| Incremental trade benefit | Incremental trade benefit | <ul style="list-style-type: none"> • Incremental trade benefit for transit and regional traffic (measured in volume) |
| | Incremental freight capacity | <ul style="list-style-type: none"> • Incremental end-to-end capacity improvement benefit |
| Financial and economic viability of projects | Value for money | <ul style="list-style-type: none"> • Relative degree of upfront capital costs and operating expenditure relative to potential for incremental revenue generation |
| | User benefits | <ul style="list-style-type: none"> • Improved transit time and/or reliability on the corridor • Increased corridor capacity • Increased corridor competition/more options for shippers |
| | Economic development/regional integration | <ul style="list-style-type: none"> • Enhanced interoperability/operating efficiency between Central Asian countries • Greater network reach including by way of increased interconnectivity to other modes and existing/planned infrastructure |
| | Impact on GDP | <ul style="list-style-type: none"> • Potential influence on national GDP as a result of implementation |
| Environmental and social impacts | Impact on employment | <ul style="list-style-type: none"> • Potential influence on additional employment/job creation as a result of implementation (direct and indirect) |
| | Environmental impacts | <ul style="list-style-type: none"> • Assessment of environmental impact of investment (for example, GHG emissions, other relevant air pollutants, impacts on natural resources and landscape) |
| | Social impacts | <ul style="list-style-type: none"> • Expected community health and safety impacts and potential impacts on communities |

| Criteria | Sub-criteria | Basis for qualitative long-list screening assessment |
|--|---|--|
| Implementation ease/difficulty | Overall ease/difficulty of implementing the action item | <ul style="list-style-type: none"> Factor of country risk, private-sector participation risk and project implementation complexity |
| Alignment with regional connectivity potential | Mutual benefits for Central Asian countries Alignment with existing international and regional agreements and treaties | <ul style="list-style-type: none"> Number of countries expected to participate in project implementation Degree to which the action item is implementable relative to existing agreements and treaties |

Source: EBRD and CPCS

3.2 Overview of key actions

Key actions are broken down into two major groups for prioritisation: soft measures and physical infrastructure actions. Each group is further divided into several subgroups, focusing on key aspects of soft infrastructure development, the individual mode of transport utilised within the CTCN or additional connecting infrastructure elements within the CTCN.

Table 3: Breakdown of soft connectivity and hard infrastructure measures

| Group 1: Soft measures | Group 2: Hard infrastructure measures |
|-----------------------------------|---------------------------------------|
| Legal/regulatory | Rail |
| Policy | Road |
| Institutional | Ports and maritime transport |
| Bilateral/multilateral agreements | Logistics and intermodal |
| Digitisation | Border crossings |

Source: EBRD

Soft connectivity key actions are defined as actions that support further freight movement and capacity development throughout the CTCN catchment area. These key actions focus on services required to maintain the network's economic integration and sustainability. The services covered pertain to particular transport modes, such as railway investment programmes or risk management programmes introduced at BCPs. The services also pertain to overall transport sector institutions, regulations and national policies. The soft measures are vetted by Central Asian ministries of transport and other organisations and are chosen based on their potential to facilitate greater connectivity between Europe and Central Asia along the CTCN, while also fostering regional integration on ancillary corridors in Central Asia.

Hard infrastructure investment needs are defined as actions that outline the construction, modernisation, rehabilitation or acquisition of physical assets used for the transport of cargo across the CTCN and associated transport links.

3.3 Priority soft connectivity key actions

To enhance international institutional governance of the CTCN, the study identifies **overarching regional soft connectivity actions**:

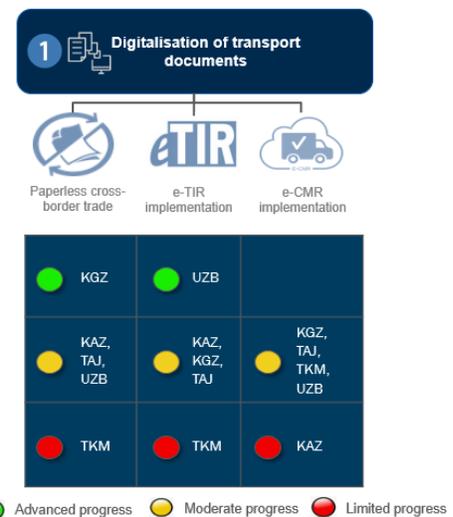
- A **formal network management institution** should be developed, with a decision-making body to ensure regulatory harmonisation and operational facilitation in the five Central Asian countries. A joint operating committee could facilitate communication and ensure coordination in planning, prioritisation and implementation.
- In each country, **policymaking, control and licensing, and operations should be separated** to enhance private-sector participation, improve efficiency and transparency, support regulatory adherence and increase competitiveness.
- The **unbundling of different lines of businesses** for state-owned enterprises and the effective performance management of the remaining state-owned enterprises would help improve operational performance.
- **Better coordination between key transport infrastructure projects and the main economic sectors** is needed to support regional development, integration and connectivity. By doing so, the region can better transform transport, logistics or trade corridors into economic corridors to spur economic development.
- Countries' **transport decarbonisation policies, with targeted goals for GHG emissions reductions**, should be at the core of planning and implementation. All countries should continue to implement their nationally determined contributions (NDCs) and allocate adequate funding to the implementation of projects with high environmental, social and governance (ESG) considerations.

3.3.1 Digitalisation of transport documents

There are several opportunities for increasing the digitalisation of transport documents and enhancing paperless cross-border trade, including the implementation of e-TIR and e-CMR systems.

E-TIR: The Transports Internationaux Routiers (TIR) Convention, first established in 1959, is administered by the United Nations (UN) Economic Commission for Europe and facilitates cross-border trade using a standard, internationally recognised customs document and transit guarantee called a TIR carnet.¹⁵ E-TIR integrates the digitised TIR into transport/trade procedures and enables customs-customs information exchange. By using the existing information technology (IT) tools of the International Road Union (IRU), the TIR electronic pre-declaration (TIR-EPD) platform, Kazakhstan, Uzbekistan, Tajikistan and the Kyrgyz Republic have advanced TIR digitalisation. Turkmenistan has also started to use TIR-EPD to digitalise processes related to international transit and enhance the security of transit through risk management.

E-CMR: The rules for transporting goods internationally are covered by the UN Convention on the Contract for the International Carriage of Goods by Road (CMR).¹⁶ The CMR consignment



¹⁵ The first TIR Convention was replaced by the current Customs Convention on the International Transport of Goods Under Cover of TIR Carnets in 1975. It is the international customs transit system used by 77 contracting parties. A condition of the TIR procedure is that the movement of the goods must include transport by road. Trucks operating under a TIR carnet use one single international guarantee, including for intermodal transport.

¹⁶ CMR is an international consignment note, used by drivers, operators and forwarders, and is specified under the UN Convention for the Contract of the International Carriage of Goods by Road 1956 (the CMR Convention). It governs the responsibilities and liabilities of the parties to a contract for international road transportation of goods.

note is used to document information about the shipped goods, as well as the transporting and receiving parties. In 2011, the e-CMR protocol entered into force and, in January 2017, it was launched officially. All Central Asian countries have started work on accession to the e-CMR, but it has not been implemented in any of the countries to date. All countries need to conduct a legal assessment prior to e-CMR implementation to assess their readiness to implement the software solution.

Generally, the digitalisation of transport documents leads to a reduction in errors, increased transparency and reduced corruption, hence reduced administration time and thereby cost to trade. Furthermore, digitalisation has positive environmental impacts due to the reduced use of paper, as well as the transport of paper documents.

E-CMR can reduce the number of non-conformities, allow signature tracking, provide real-time document access, enhance document exchange security, increase administrative efficiency (with the potential to achieve 45-55 per cent operating cost savings)¹⁷ and reduce processing time (and thereby handling costs have the potential to become 3-4 times less expensive).¹⁸

TIR has been shown to cut transport times by up to 80 per cent and costs by up to 38 per cent.¹⁹ It is more secure and creates additional risk-management opportunities for customs agencies, reducing fraud risk. E-TIR further reduces administrative time for all stakeholders involved (shippers, transporters and governments), speeds up processing at borders due to the provision of advance cargo information and the real-time exchange of information, provides shippers with more accurate goods delivery times, gives transporters 24/7 access and eliminates trips to obtain guarantees, reducing administrative time and cost, carbon emissions and the amount of paper required for physical TIR carnets.

- **Kazakhstan:** The country would benefit from efforts to: introduce paperless trade, including the development of an electronic exchange of sanitary and phytosanitary (SPS) certificates and certificates of origin; starting to implement the planned electronic exchange of customs declarations; and fully implement laws/regulations for electronic transactions. Kazakhstan piloted e-TIR implementation, but should move from the pilot stage to full e-TIR adoption. Kazakhstan has not ratified the e-CMR protocol as yet, so needs to take immediate action with a view to ratification, followed by amendments in order to implement it.
- **Kyrgyz Republic:** The country would benefit from the implementation of two specific measures on laws and regulations for electronic transactions and recognised certification authority to further its efforts on paperless trade. The country has advanced TIR digitalisation, but still needs to connect its domestic system with the international e-TIR system. The country has acceded to e-CMR, but needs to take steps towards implementation.
- **Tajikistan:** The country has partially developed laws and regulations on electronic transactions, but has not implemented any of the relevant measures for paperless trade. The country has advanced TIR digitalisation, but still needs to connect its domestic system to the international e-TIR system. The country has acceded to e-CMR, but needs to take steps on implementation.
- **Turkmenistan:** The country has not made any efforts on paperless trade as yet. Turkmenistan has started to use TIR-EPD in order to digitalise the process for international transit and enhance the security of transit through risk management. The country has acceded to e-CMR, but needs to take steps towards implementation.
- **Uzbekistan:** The country has developed laws and regulations on electronic transactions and implemented an electronic customs declaration exchange, but has yet to put in place other measures to implement paperless trade practices. Uzbekistan has completed the integration process between its customs system and the international e-

¹⁷ See J.M. Ponzoa Casado, A. Gomez and J. García (2021) Digital Transformation: Advantages and opportunities of E-CMR in international cargo logistics. *ESIC Digital Economy and Innovation Journal*, 1: 84-102. Available at: www.researchgate.net/publication/358984919_Digital_Transformation_Advantages_and_opportunities_of_E-CMR_in_international_cargo_logistics.

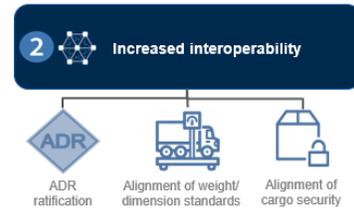
¹⁸ See IRU (n.d.) Making freight truly paperless: e-CMR, Geneva, Switzerland. Available at: www.iru.org/what-we-do/facilitating-trade-and-transit/e-cmr.

¹⁹ See IRU (n.d.) TIR, Geneva, Switzerland. Available at: www.iru.org/what-we-do/facilitating-trade-and-transit/tir.

TIR system, but has to move from pilot to full adoption of the system. The country acceded to e-CMR, but needs to take steps towards implementation.

3.3.2 Increased interoperability

Within Central Asia, standards should be harmonised to allow for efficient cross-border movement. In addition, standards need to be better enforced. Without proper legislation, incentives and enforcement, transporters and shippers have an incentive to overload their trucks. Laws need to provide for sufficiently high fines to act as a deterrent. Enforcement agencies are in need of proper staffing levels and equipment to detect and enforce the rules in full. The benefits of increasing interoperability include increased harmonisation for greater competition in the road sector, increased enforcement for lower damage to assets and improved enforcement for better road safety.



| | | |
|-------------------------------|------------------------------------|------------------------------------|
| <p>KAZ, TAJ, UZB</p> <p>●</p> | <p>UZB</p> <p>●</p> | |
| | <p>KAZ, KGZ, TAJ, TKM</p> <p>●</p> | <p>TAJ</p> <p>●</p> |
| <p>KGZ, TKM</p> <p>●</p> | | <p>KAZ, KGZ, TKM, UZB</p> <p>●</p> |

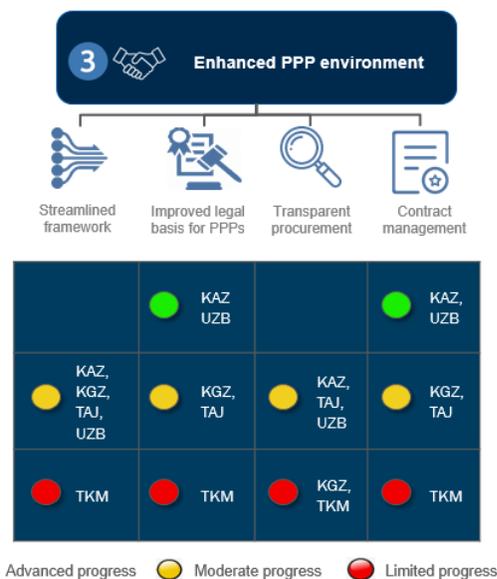
● Advanced progress ● Moderate progress ● Limited progress

- Kazakhstan:** The country acceded to the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) in 2001. Truck weights and dimensions are harmonised with other Central Asian countries (except for Uzbekistan), but differ slightly from EU standards. Further enforcement is needed to ensure standards are applied, however. Requirements for cargo insurance or cargo storage safety should be introduced.
- Kyrgyz Republic:** The country should ratify the ADR agreement. Truck weights and dimensions are harmonised with other Central Asian countries (except for Uzbekistan), but differ slightly from EU standards. Further enforcement is needed to ensure standards are applied, however. Requirements for cargo insurance or cargo storage safety should be introduced.
- Tajikistan:** The country has ratified the ADR agreement. Truck weights and dimensions are harmonised with other Central Asian countries (except for Uzbekistan), but differ slightly from EU standards. However, further enforcement is needed to ensure standards are applied. The Ministry of Transport has highlighted the establishment and enforcement of norms and technical requirements for cargo safety and consumer protection as a key mandate. However, requirements for cargo insurance and storage safety have not been introduced as yet.
- Turkmenistan:** The country should ratify the ADR agreement. Truck weights and dimensions are harmonised with other Central Asian countries (except for Uzbekistan), but differ slightly from EU standards. Further enforcement is needed to ensure standards are applied, however. Requirements for cargo insurance or cargo storage safety should be introduced.
- Uzbekistan:** The country has ratified the ADR agreement. In terms of weight and dimension standards alignment, the country permits slightly smaller vehicles than the other Central Asian countries and these standards are more closely aligned with EU standards. All other standards are harmonised with those of Central Asian countries. However, better enforcement is needed to ensure standards are applied. Requirements for cargo insurance or cargo storage safety should be introduced.

3.3.3 Enhanced PPP environment

Four out of the five countries in Central Asia (except Turkmenistan) covered by this study have developed a PPP framework, but these could be strengthened. A first step could be to streamline the framework that applies to those public contracts: most countries regulate PPPs under different frameworks depending on the type of remuneration (PPP or concession) or the activity undertaken. This may be perceived as legal uncertainty by potential private operators and creates complexity in understanding the applicable legal frameworks. Next, procurement processes could be made more transparent. The benefits of enhancing the PPP environment include increased predictability for the private sector, lower government expenditures, risk sharing, increased innovation and greater competition.

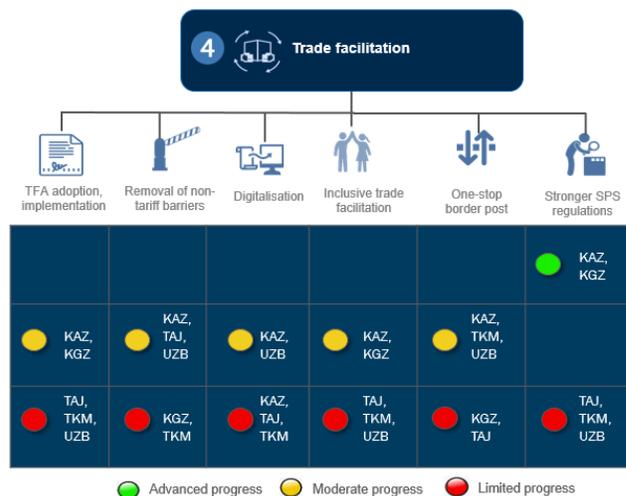
- Kazakhstan:** The overall PPP framework could be strengthened. Applicable PPP frameworks must be streamlined based on the type of contract used. The legal basis for PPPs has been developed and tested in the infrastructure sector. Some attention has been paid to transparency and competition in procurement contracts, but the dominance of public institutions means limited market entry opportunities for competitors through PPP. Following amendments to the PPP law in January 2023, the unsolicited proposal procedure is in line with international standards. The capacity for contract management exists to some extent, but further efforts on implementation and monitoring would strengthen the PPP environment.
- Kyrgyz Republic:** The overall PPP framework could be strengthened. Applicable PPP frameworks must be streamlined based on the type of contract used. The legal basis for PPPs has been developed, but has not been tested in the infrastructure sector. Given the lack of large-scale PPPs in the country, there is heavy reliance on the state budget for infrastructure financing. Transparency and competition in procurement need to be improved further to international standards. There is limited capacity for external contract management and improvements remain slow.
- Tajikistan:** The overall PPP framework could be strengthened. Applicable PPP frameworks must be streamlined based on the type of contract used. The legal basis for PPPs has been developed, but has not been tested in the infrastructure sector. Given the lack of large-scale PPPs in the country, there is heavy reliance on the state budget for infrastructure financing. Transparency and competition in procurement contracts could be improved further to enhance entry opportunities for competitors through PPP. There is limited capacity for external contract management, and the country could develop its internal contract management capacity by cooperating with international donors.
- Turkmenistan:** The country does not permit PPPs, however, the introduction of a PPP framework could support private-sector participation in economic development, putting less pressure on fiscal balances.
- Uzbekistan:** The overall PPP framework could be strengthened. Applicable PPP frameworks must be streamlined based on the type of contract used. The legal basis for PPPs has been developed and has already been tested in the infrastructure sector. Improvements to transparency and competition in procurement contracts would enhance entry opportunities for the private sector through PPP. Unsolicited proposal procedures are in place, and contract management procedures have been developed lately. Their proper implementation would result in improved PPP outcomes.



3.3.4 Trade facilitation

In line with Article 8 of the World Trade Organization (WTO) Trade Facilitation Agreement (TFA),²⁰ the establishment of one-stop border posts (OSBPs) and joint controls are key aspects of improving cross-border cooperation and trade facilitation. At an OSBP, exit and entry formalities are undertaken in one place. The four pillars of OSBPs include:²¹

- **Legal and institutional framework:**
 - a. *Institutional:* Integrated border management allowing intra-agency, inter-agency and international cooperation
 - b. *Legal/regulatory:* Extraterritorial application of laws, bilateral or regional agreements harmonising customs control protocols, working hours and data exchange
- **Streamlined procedures:** Procedures must be harmonised, simplified and coordinated to be as efficient as possible following TFA principles
- **ICT and data exchange:** Full digitisation and implementation of single windows and the interconnection of inter-agency and international systems
- **Hard infrastructure:** New or modified border facility for use by both countries, with proper lanes and equipment, offices and parking spaces.



The implementation of trade facilitation measures, integrated border management and digitalisation are key precursors to the development of functioning OSBPs. Once measures are undertaken to ensure that best practices are applied within each individual country’s border posts, the next step is to develop the legal and institutional framework that allows the agencies to coordinate and delegate procedures between the two countries, so that each process is only undertaken once. This requires connected IT systems and electronic data exchange, which requires full digitalisation.

- **Kazakhstan:** The country is a member of the TFA and has made substantial progress since 2015. Immediate measures to support full TFA implementation and remove non-tariff barriers relate to lowering average release times and expedited shipments. The country would also benefit from improvements to publication standards, information availability through the internet, enquiry points and notification, advance rulings, authorised operators, use of international standards, single window and transit procedures. The country lags in terms of establishing and publishing average release times and would benefit from facilitation measures for authorised operators to reach European standards.²² To further its efforts on digitalisation, the country needs to implement electronic applications for customs refunds and the submission of air cargo manifests and fully implement its electronic single window system. The country has fully implemented measures to enhance women’s membership of the national trade facilitation committee and similar bodies for inclusive trade facilitation, but needs to develop a trade

²⁰ The TFA entered into force on 22 February 2017 and contains provisions for expediting the movement, release and clearance of goods, including in transit.

²¹ See AUDA-NEPAD and JICA (2022) *One-Stop Border Post Sourcebook*. Midrand, South Africa. Available at: [https://nepad.org/sites/default/files/resourcefiles/English Version of OSBP Sourcebook %28Final Version 3rd edition%29.pdf](https://nepad.org/sites/default/files/resourcefiles/English%20Version%20of%20OSBP%20Sourcebook%20Final%20Version%203rd%20edition%29.pdf).

²² See WTO (n.d.) Trade Facilitation Agreement Database: Kazakhstan, Washington, DC. Available at: <https://tfadatabase.org/en/members/kazakhstan>.

facilitation policy to increase women's participation in trade and introduce measures to benefit women involved in trade.²³ To increase border agency cooperation and support the development of OSBPs, the national institutional and legislative framework should be improved further. SPS regulations are up to date, but the country would benefit from enforced implementation.

- **Kyrgyz Republic:** The country is a member of the TFA, but had several outstanding actions due for implementation in 2022 and 2023. Immediate improvement needs relate to the availability of online information for trade operations, enquiry points, advance rulings, test procedures, general discipline on fees and charges, pre-arrival processing, risk management, post-clearance audit, average release times, authorised operators, expedited shipments, border agency cooperation, alignment of formalities and procedures with neighbouring countries at BCPs, use of international standards, single window, temporary admission of goods, and inward and outward processing.²⁴ While internet connection is provided for customs and other officials to support digitalisation, the country needs to fully implement measures on automated customs systems, the electronic submission of customs declarations, the electronic application and issuance of preferential certificates of origin, and the e-payment of customs duties and fees. To enhance inclusive trade facilitation, the country should adopt measures to benefit women involved in trade.²⁵ The country has not fully delegated border controls to customs authorities and there is a lack of border agency cooperation, hampering the development of OSBPs. SPS regulations are up to date, but the country would benefit from enforced implementation to ensure standards are applied properly.
- **Tajikistan:** The country is a member of the TFA, it had (has) several actions outstanding for implementation in 2022 and 2023. Immediate improvement needs relate to enquiry points, advance rulings, notifications for enhanced controls, electronic payment, authorised operators and single window. Tajikistan lags when it comes to the implementation of risk management and has not implemented pre-arrival processing.²⁶ In terms of digitalisation, the country needs to implement measures on the e-payment of customs duties and fees, the electronic submission of air cargo manifests, electronic applications for customs refunds, the electronic submission of customs declarations and the introduction of an automated customs system. To further enhance inclusive trade facilitation, the country should develop strategies to enable women's participation in the national trade facilitation committee or similar bodies and to introduce benefits for women involved in trade.²⁷ The country has not fully delegated border controls to its customs authorities and there is a lack of border agency cooperation. SPS regulations should be strengthened to comply with international best practices.
- **Turkmenistan:** The country is not a member of the TFA, but is preparing to enter the agreement, obtaining acceding country status in 2022. Visa requirements for drivers remain a significant barrier to trade, as do additional requirements for specific imports. The relaxation of such measures would lower transaction costs for users of the network and help the country's network become part of regional trade corridors. To increase border agency cooperation and support the development of OSBPs, the national institutional and legislative framework should be improved. SPS regulations should be strengthened to comply with international best practices.
- **Uzbekistan:** The country is not a member of the TFA, but has been preparing to enter the agreement for a few years and has already implemented certain reforms and practices that align with TFA principles. In Uzbekistan, procedures for export and import operations clearance were simplified in 2018 and 2019 and many previously

²³ See United Nations (2021) *UN Global Survey on Digital and Sustainable Trade Facilitation: Kazakhstan*, New York. Available at: www.untfsurvey.org/economy?id=KAZ.

²⁴ See WTO (n.d.) Trade Facilitation Agreement Database: Kyrgyzstan, Washington, DC. Available at: <https://tfadatabase.org/en/members/kyrgyz-republic>.

²⁵ See United Nations (2021) *UN Global Survey on Digital and Sustainable Trade Facilitation: Kyrgyzstan*, New York. Available at: www.untfsurvey.org/economy?id=KGZ.

²⁶ See WTO (n.d.) Trade Facilitation Agreement Database: Tajikistan, Washington, DC. Available at: <https://tfadatabase.org/en/members/tajikistan>.

²⁷ See United Nations (2021) *UN Global Survey on Digital and Sustainable Trade Facilitation: Tajikistan*, New York. Available at: www.untfsurvey.org/economy?id=TJK.

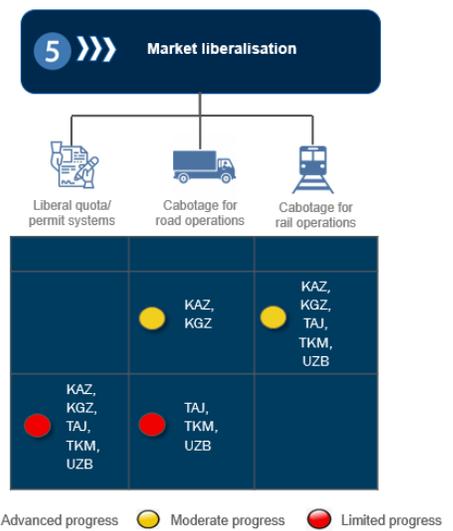
required contracts were annulled. The country scores poorly when it comes to trade facilitation measures for authorised operators and post-clearance audits and has not implemented measures for expedited shipments. There are options in place to make customs payments through electronic systems, and the real-time monitoring of customs clearance flows has now been enabled. To further improve digital practices, Uzbekistan needs to strengthen its electronic single window system, create an electronic application process, digitalise the issuance of preferential certificates of origin and introduce an electronic application for customs refunds.²⁸ To increase border agency cooperation and support the development of OSBPs, the national institutional and legislative framework should be improved. SPS regulations should be strengthened to comply with international best practices.

3.3.5 Market liberalisation

Liberalising the transport sector promotes greater free market competition and increases market capacity. Increased competition leads to increased quality of services and can bring about reductions in cost. Removing cabotage restrictions increases the percentage of trips with backhaul, positively impacting asset utilisation and thereby reducing transport prices and carbon emissions.

Liberalisation can bring significant benefits to the sector. Removing trucking permits and quotas allows properly licensed foreign operators to use national corridors without obtaining permits with no added value that promote illicit behaviour or fees that increase transport costs. Allowing foreign crews eliminates the need for changes during cross-border operations, which impacts efficiency, time and cost.

All Central Asian countries have problems in common when it comes to market liberalisation and these require a coordinated and regional solution to fuel wider benefits. Changes on cabotage rules require political will, regional negotiations for harmonisation among peers and regulatory changes, including addressing the transition at local level. All Central Asian countries still use **trucking permits** in limited numbers and **quota systems**. While **road cabotage** is restricted in all Central Asian countries, Kazakhstan and the Kyrgyz Republic are planning to allow cabotage shipments within Eurasian Economic Union (EAEU) members under the framework of implementing a mutual EAEU transport market by 2025. This would support market liberalisation to a certain extent and could establish the basis for additional measures. **Rail cabotage** is permitted and regulated by international treaties in all Central Asian countries, but not by national law, and foreign crews and locomotives are not permitted.

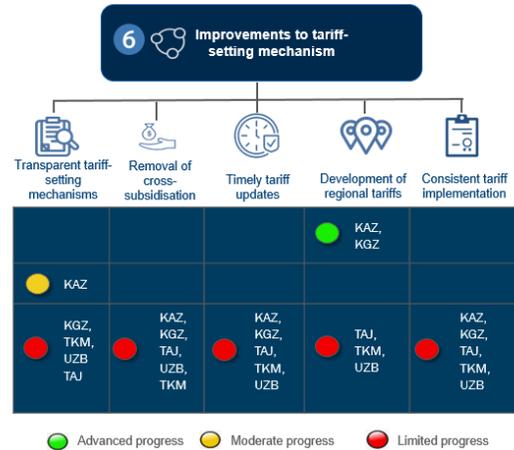


3.3.6 Improvements to tariff-setting mechanisms

Transparent tariff-setting mechanisms and consistent implementation require tariff setting based on best practices, using either marginal cost pricing or price discrimination, but avoiding collusive or monopolistic pricing. While Kazakhstan, the Kyrgyz Republic, Tajikistan and Uzbekistan are parties to the Organisation for Co-Operation of Railways (OSJD) Agreement on Uniform Transit Tariffs, parties can still provide benefits and discounts for transportation on their

²⁸ United Nations (2021) UN Global Survey on Digital and Sustainable Trade Facilitation: Trade Facilitation and Paperless Trade in Uzbekistan, New York. Available at: www.untsurvey.org/economy?id=UZB.

railways and grant privileges or discounts to transport operations. The formulas used to set the tariffs should be published to allow operators and users to understand how tariffs are structured. Tariffs should also be published on a platform, so that they are easily accessible to operators and users. Tariffs should be updated appropriately to account for sector developments and changes in market conditions, without creating confusion. The cross-subsidisation of passenger rail by freight rail should be removed, a regional tariff should be considered, as should a unified tariff across the corridor, which would require the harmonisation of tariff-setting mechanisms. Some of the benefits of improving the tariff-setting mechanism would include greater tariff transparency, more flexibility in tariff setting, the abolition of cross-subsidisation, the introduction of a unified tariff and an increase in the use of railways as a preferred transport mode.



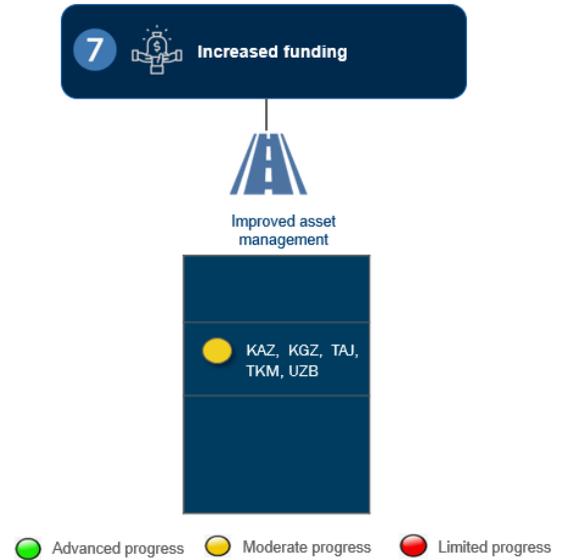
- Kazakhstan:** Tariff components are public. However, tariff setting is still based on old principles and is inflexible. There is a high level of cross-subsidisation between passenger and freight operations, diesel and electric traction, and high-value and low-value commodities. Tariffs for infrastructure are updated every five years, while tariffs for traction and commercial freight services are updated every year. Consequently, access charges are inflexible and do not reflect current market conditions. Yet, the country has the lowest regional tariffs in the region. The country would benefit from the introduction of more flexible, market-reflective tariffs, greater tariff transparency and regular updates of tariff levels, as well as consistent implementation.
- Kyrgyz Republic:** The majority of the national railway company's tariffs are set by foreign network owners, allowing for cross-border rail trips. There is a high level of cross-subsidisation between passenger and freight operations and high-value and low-value commodities. Tariffs are not updated frequently, so do not use market-based rates. The country is a member of the EAEU and is subject to lower tariffs, but tariffs are not implemented consistently. Accordingly, the country needs to overhaul its tariff structure for greater transparency and flexibility, especially considering planned large-scale railway investments to support international connectivity.
- Tajikistan:** Railway tariffs are regulated and there is a high level of cross-subsidisation between passenger and freight operations and high-value and low-value commodities. Tariffs are set by the national railway company and updated once a year, so are not flexible enough to reflect changing market conditions. The country is not a member of the EAEU and is not subject to lower regional tariffs. The country would benefit from consistent implementation of tariffs, despite the inflexibility involved, while structural changes to the tariff-setting mechanism would reflect market conditions more accurately.
- Turkmenistan:** The government has full control over the setting of railway tariffs and there is a high degree of cross-subsidisation. Tariffs are set on a fixed schedule and subject to Cabinet of Ministers' approval, so are inflexible. The country is not a member of the EAEU and is not subject to lower regional tariffs. It would benefit from the introduction of market-reflective tariffs and the frequent reassessment of tariff levels, as well as the consistent implementation of tariffs.
- Uzbekistan:** The national railway company has limited control over total prices for cross-border transport, as its tariff covers just a portion of the network. Therefore, its pricing is influenced by the tariffs of other railway companies. There is a high degree of cross-subsidisation between different market segments and operations. Railway tariffs are inflexible and, as such, cannot be changed based on market conditions. The country is not a member of the EAEU and is not subject to lower regional tariffs. Existing tariffs are not implemented consistently. To support the country's plans to become a major player in international transport, tariff levels should be reassessed frequently in line with changing market conditions, amid greater transparency and consistency.

3.3.7 Increased funding

Asset management can minimise maintenance costs for infrastructure assets, as well as user costs, by determining optimal funding levels and how best to allocate funds to specific network sections. The region is making moderate progress in this area thanks to a regional programme run by international organisations.

In addition to implementing asset management systems, Central Asian countries should consider developing dedicated maintenance funding sources. This will help reduce current maintenance and rehabilitation funding gaps. Typically, this is done by earmarking and ring-fencing dedicated funds from user charges, general government budgets or development partners.

All Central Asian countries implement some measures to improve asset management practices. However, all would benefit from the introduction of structured approaches to asset management, increasing available funding and improving multi-annual planning programmes. However, predictable funding allocation remains an issue. In **Kazakhstan**, dedicated funding sources for maintenance have not been developed or defined. In the **Kyrgyz Republic**, only 50-55 per cent of road-sector needs have received funding since 2005. This raises concerns over road safety, as the country has some of the highest road accident and death rates globally. In **Tajikistan**, the Transport Sector Development Programme provides a basis for improving the country’s transport sector, setting out a list of investments for the short, medium and long term. However, dedicated funding sources for road maintenance have not been fully developed. In **Turkmenistan**, dedicated funding sources for road maintenance have not been developed or defined. In **Uzbekistan**, a new Republican Road Fund was developed in 2019, which no longer earmarks road user charges. The fund now depends on budget allocations.



3.4 Priority hard infrastructure key actions²⁹

To develop the CTCN, the study identified 33 priority hard infrastructure investments needs in the five Central Asian countries. These are in addition to those for the frequent maintenance and rehabilitation of existing assets to ensure networks are kept in good condition.

3.4.1 Kazakhstan

Kazakhstan has invested heavily in restoring and developing its transport infrastructure, linking almost all available routes and making the country's international transport corridors more attractive than those of its regional peers. In addition, with the rapid economic development of China, eastern Europe and southeast Asia, transit traffic through Kazakhstan is projected to increase significantly over the coming decades. Eighty-five per cent of transit containers along the three Eurasian transport corridors pass through Kazakhstan.³⁰

The development of the country's transport and logistics complex remains a crucial transport issue, as regional competition for transit routes has emerged from the Kyrgyz Republic and Uzbekistan. Kazakhstan's integration into Eurasian transport corridors continues to grow, with the development of a nationwide infrastructure framework and the successful implementation of the first stage of the Nuryly Zhol State Infrastructure Development Programme. Through the Nuryly Zhol programme, Kazakhstan has developed an optimal logistics chain from the east coast of China to Khorgos multimodal dry port and beyond, through a system of railways and highways, into Türkiye and Europe. Through this programme, Kazakhstan has invested in a new Caspian logistics hub to ensure the development of the Port of Aktau, along with a new multimodal ferry complex. The Kazakh government plans to develop an International Centre for Trade and Economic Cooperation, which will act as an industrial, trade and logistics hub for the implementation of joint investment projects in Kazakhstan and Uzbekistan.³¹

Further development of Kazakhstan's international transport infrastructure is planned, with the enhancement of information and communications technology (ICT) infrastructure and automated freight management systems incorporated as transport policy goals. The government also plans to introduce automated control systems and to invest in transport automation for remote mechanics, intelligent monitoring systems for rolling stock and fail-safes for the management of passenger and freight flows.³² Plans are in place for the introduction of intelligent transport systems in the road sector and the development of a nationwide transport masterplan to increase the efficiency of infrastructure development by 2025.

As Kazakhstan is a member of the EAEU, along with Russia, Belarus, the Kyrgyz Republic and Armenia, routes through Kazakhstan and Russia have certain competitive advantages. First, cargo flows across the Kazakh/Russian border are free of customs formalities and this route is often favoured for cargo from China/Kazakhstan to Europe, both by rail and road. Also, freight tariffs are lower on this corridor.

Kazakhstan was the first Central Asian country to conclude an Enhanced Partnership and Cooperation Agreement with the EU, its largest trading partner. The agreement was signed in 2015, was provisionally applied from 1 May 2016 and entered into force on 1 March 2020. It creates a better regulatory environment in areas such as trade in services, the

²⁹ The study relied on the cost estimates of state authorities whenever these are publicly available. In other cases, unit costs for similar projects were used to estimate the total project costs.

³⁰ Ibid.

³¹ See W.A. Sánchez and K. Auyezova (2022). The trans-Caspian corridor: Kazakhstan's Silk Road? *The Diplomat*, 12 May 2022. Available at: <https://thediplomat.com/2022/05/the-trans-caspian-corridor-kazakhstan-silk-road/>.

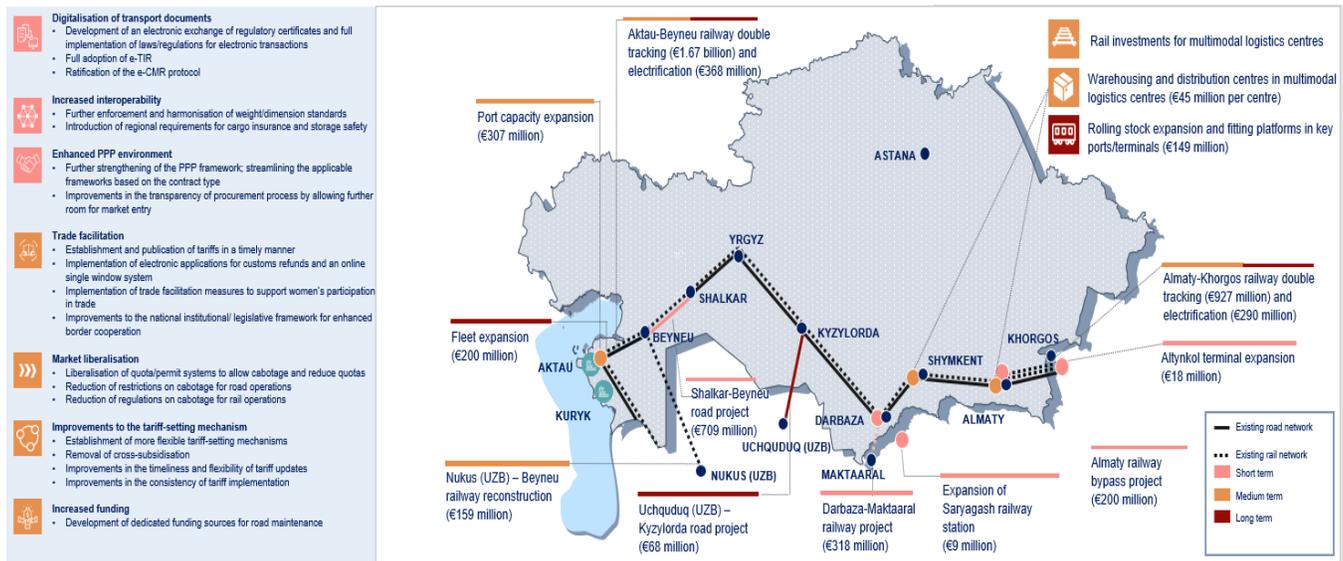
³² See TRACECA ORG. (n.d.) Transport and logistics sector of the Republic of Kazakhstan. Available at: www.traceca.org/en/countries/kazakhstan/the-transport-logistics-sector-of-the-republic-of-kazakhstan/.

establishment and operation of companies, capital movements, raw materials and energy, government procurement and intellectual property rights.³³

In an effort to maintain strong relations with European and Asian partners, the government of Kazakhstan has ratified the WTO TFA, the General Agreement on Tariffs and Trade, the Kyoto World Customs Organization Convention, the Convention on Road Traffic and the Convention on Road Signs and Signals, among many other international transport and logistics agreements. Kazakhstan has also taken steps to implement bilateral and multilateral cooperation initiatives with neighbouring Central Asian countries. For instance, it is in favour of harmonising national road transport standards with those of Uzbekistan and Tajikistan to promote increased transportation efficiency and to reduce corruption.³⁴

To emphasise its commitment to low-carbon growth and improve innovation and competitiveness in climate change adaptation, Kazakhstan has adopted a Concept on Transition to a Green Economy, adopted on 30 May 2013.³⁵ With this concept, the government is committed to developing sustainable and green transport and modernising key transport infrastructure technologies by way of improved energy efficiency.³⁶

Figure 8: Priority soft connectivity measures and infrastructure investment needs in Kazakhstan



Source: CPCS.

³³ See. European Commission (n.d.) Kazakhstan: EU trade relations with Kazakhstan – facts, figures and latest developments, Brussels. Available at: https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/kazakhstan_en.

³⁴ See A. Satubaldina (2022) Kazakhstan hopes to expand network of international road corridors to maintain transit potential. *Astana Times*, 5 April 2022. Available at: <https://astanatimes.com/2022/04/kazakhstan-to-expand-network-of-international-road-corridors-to-boost-transit-potential/>.

³⁵ See UNDP (2021) Green economy – paradigm of innovative and sustainable development of Kazakhstan, New York. Available at: www.undp.org/kazakhstan/news/green-economy-%E2%80%93-paradigm-innovative-and-sustainable-development-kazakhstan.

³⁶ Ibid.

Recommendations (Figure 8)

Five priority infrastructure investment needs have been identified in the **short term**:

- 1) Shalkar-Beyneu road project: There is currently no road directly connecting Kyzylorda with Aktau. The current detour increases transit time by five days, on average. The Shalkar-Beyneu road will complete this missing link.
- 2) Almaty railway station bypass project: The project will reduce travel time for shipments, relieve Almaty station of cargo traffic by 40 per cent and provide job opportunities for around 2,000 people.
- 3) Darbaza-Maktaaral railway project: No rail link currently exists between Darbaza and Maktaaral. This new railway line will decrease transit times for regional trade, partially relieve the pressure at Saryagash railway crossing with Uzbekistan, and increase corridor capacity 2.5-fold.
- 4) Saryagash railway station expansion project: Currently, there are eight lanes serving trains. Four new lanes of approximately 1,500 meters in length will mirror the expected expansion on the Uzbek side, bringing greater efficiency to transport operations between Kazakhstan and Uzbekistan and reduce congestion at the BCP.
- 5) Altynkol terminal expansion project: Altynkol Rail Station, located 9 km west of the Khorgos Gateway, acts as a train marshalling yard for Khorgos Gateway. In line with recent capacity increases at Khorgos Gateway, capacity at Altynkol needs to increase for additional operational efficiency and a reduction in waiting times.

Six priority infrastructure investment needs have been identified in the **medium term**:

- 1) Aktau-Beyneu railway double tracking and electrification project: Closer to Aktau, the terrain ranges from hilly to mountainous, so the speed on this railway section is low. Double tracking this section will enable more trains to operate and increase capacity. As a follow-up project, electrification of the rail line between Aktau and Beyneu will reduce carbon emissions and energy costs associated with railway operations, in addition to increasing daily train capacity and speeds.
- 2) Aktau and Kuryk port capacity expansion projects: The expansion projects include the acquisition of modern cranes and handling equipment, improving berths and developing dedicated container ports in Aktau and Kuryk to accommodate the expected growth in traffic. While the development of container hubs will enable an increase in container traffic, more powerful and larger cranes and handling equipment will allow non-vessel operations to be performed at ports during inclement weather, reducing idle time.
- 3) Beyneu (Kazakhstan)-Nukus (Uzbekistan) railway reconstruction project: This project aims to rehabilitate the rail line from Beyneu to the Kazakhstan-Uzbekistan border (approximately 75 km) in order to improve transit times, reliability and passenger comfort. The implementation of the project will improve trade and regional connectivity between Uzbekistan and Kazakhstan, and link the Aktau /Mangystau region in Kazakhstan with the Karakalpakstan region of Uzbekistan.
- 4) Almaty-Khorgos railway double tracking and electrification project: The rail line between Almaty and Khorgos, approximately 290 km in length, is currently not electrified. The realization of the project will increase the capacity of this heavily used section, reduce carbon emissions and the energy costs associated with railway operations, and contribute to higher economic activity in south-eastern Kazakhstan.
- 5) Rail investments for multimodal logistics centres: The construction and reconstruction of rail networks in and between key trade and logistics hubs will support economic development and contribute to the development of multimodal logistics in the country. Such investments in key economic centres will support more efficient first- and last-mile operations.
- 6) Warehousing and distribution centres in multimodal logistics centres: The construction of these centres will increase the efficiency of goods distribution, processing and storage, both for transit and regional trade.

Three priority infrastructure investment needs have been identified in the **long term**:

- 1) Expansion of the sea fleet: Kazakhstan's current sea fleet, deployed on the Caspian Sea, will not be adequate to handle projected increases in cargo traffic. Expanding the fleet size will increase shipping capacity and reduce waiting times at ports.
- 2) Rolling stock expansion and the installation of fitting platforms in key ports and terminals: To handle the expected growth in cargo traffic, it is important to supply locomotives, passenger cars and wagons to replenish the rolling stock. The expansion of the rolling stock will increase rail capacity and reduce waiting times.
- 3) Kyzylorda (Kazakhstan)-Uchquduq (Uzbekistan) road project, Kazakh section: There is currently no direct route between these cities and the travel time is over 16 hours by road. The distance between Kyzylorda and the border is around 140 km as the crow flies, but the current indirect route is approximately 1,200 km. The construction of the road should be complemented with the construction of a BCP to support economic and trade activity between Kazakhstan and Uzbekistan, reduce travel times between the two countries and lower congestion at existing BCPs.

3.4.2 Kyrgyz Republic

The Kyrgyz Republic, thanks to its geographical location between China and Kazakhstan, has the potential to become an economic bridge offering opportunities to diversify connections through increased investment in transit infrastructure. The Kyrgyz Republic's mountainous landscape significantly increases the costs of infrastructure construction, particularly for the construction of railways. The government has expressed interest in increasing cooperation with Kazakhstan on transit corridor development, to learn from Kazakhstan's extensive experience in the sector. The Kyrgyz Republic and Kazakhstan are both members of the EAEU, and the Kyrgyz Republic has made noteworthy efforts to accede to international conventions and agreements with a view to developing its transport and logistics industry and integrating further into international supply chains.³⁷

The country's overarching development plan is the National Development Strategy 2018-40.³⁸ Under the plan, transport infrastructure development is a priority, with the vision of the Kyrgyz Republic being a transit country by 2040. Improving both road and rail connectivity with China, Kazakhstan and Uzbekistan are priorities.³⁹ The country's main policy in relation to the road sector is its road sector development strategy for 2016-25.⁴⁰ The document highlights that financing is the main issue the country is facing in its endeavours to improve road infrastructure and road maintenance. It underscores that the road sector is essential, accounting for 98 per cent of passenger and 96 per cent of freight traffic. The main priorities of the 2016-25 strategy are: 1) the phased reform of the road industry management system; 2) the restoration and proper maintenance of transport corridors and priority roads of state and local importance; and 3) the development of public-private partnerships. In addition to funding issues, the 2016-25 strategy notes that road safety is a major issue and that the country has some of the highest road accident and road death rates in the world.

³⁷ See UN ESCAP (2022) *Kazakhstan, and Kyrgyzstan: Transport Connectivity, Impact of the Covid-19 Pandemic, and Euro-Asian Linkages*. Bangkok, Economic and Social Commission for Asia and the Pacific. Available at: <https://repository.unescap.org/bitstream/handle/20.500.12870/4199/ESCAP-2022-WP-Kazakhstan-Kyrgyzstan-Transport-Connectivity-Impact-Covid-19-Pandemic-Euro-Asian-Linkage.pdf?sequence=4>.

³⁸ See Kyrgyz Republic (2018) *National Development Strategy of the Kyrgyz Republic for 2018-2040*, Bishkek. Available at: [https://policy.thinkbluedata.com/sites/default/files/National%20Development%20Strategy%20of%20the%20Kyrgyz%20Republic%20for%202018-2040%20\(EN\).pdf](https://policy.thinkbluedata.com/sites/default/files/National%20Development%20Strategy%20of%20the%20Kyrgyz%20Republic%20for%202018-2040%20(EN).pdf).

³⁹ See UN ESCAP (n.d.) *Study report on resilience of road and rail infrastructure in Kyrgyzstan*. Bangkok. Available at: <https://unesap.org/sites/default/d8files/event-documents/KYR-UNDA-RECI-final.pdf>.

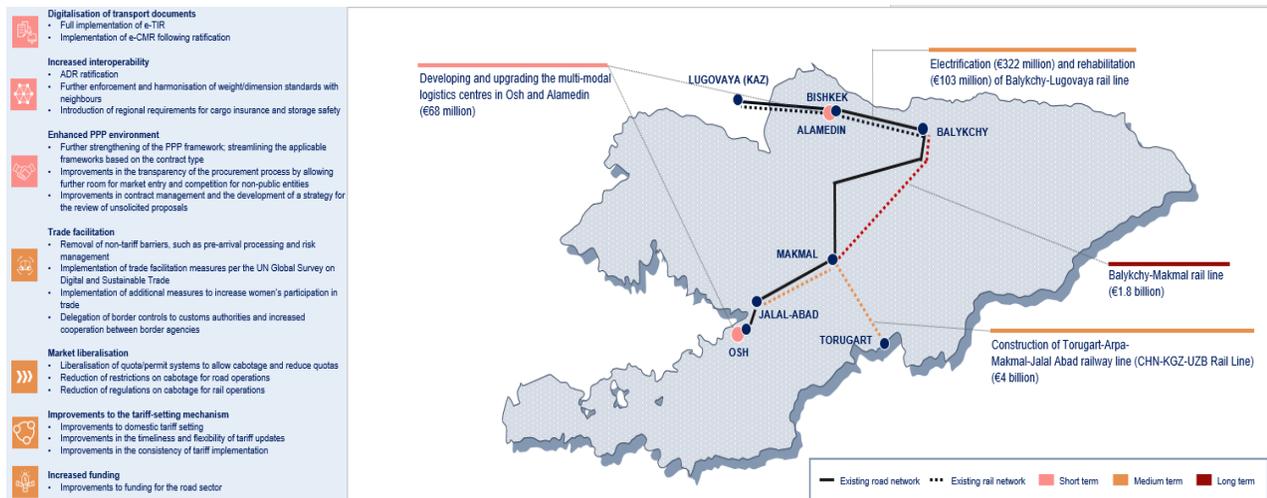
⁴⁰ See Ministry of Justice of the Kyrgyz Republic (2016) *Decree of the Government of the Kyrgyz Republic dated July 1, 2016 No. 372 "On approval of the Main directions for the development of the road industry for 2016-25*. Available at: <http://cbd.minjust.gov.kg/act/view/ru-ru/98583?ci=ru-ru#unknown>.

In the rail sector, the most recent policy is the railway development strategy for 2014-20.⁴¹ The development priorities of the policy were to create an internal rail transport network, develop transit potential, modernise infrastructure and strengthen the railway's staffing personnel.

The Kyrgyz Republic is a beneficiary of a special incentive arrangement for sustainable development and good governance (GSP+) under the unilateral Generalised Scheme of Preferences (GSP) of the EU since 2016, and benefits from the removal of tariffs on 66 per cent of products exported to the EU. This is an important step towards increasing its trade with the bloc. While only about 5 per cent of overall EU imports from the country make use of the trade preferences granted under the GSP+, this is due to the small fraction (only 7 per cent) of all EU imports being eligible for GSP preferences.⁴²

Transport decarbonisation policies in the Kyrgyz Republic are limited, but the government has identified the promotion of ecological transport and the increased use of sustainable fuels as key measures for reducing emissions. The energy sector contributes more than 60 per cent of the country's current GHG emissions, and most of the government's climate change policy revolves around renewable energy use. Under its energy goals, the Kyrgyz Republic is committed to replacing light internal combustion vehicles with electric vehicles, improving infrastructure development for cycling and sustainable urban transport, and replacing diesel buses with gas-powered engines in major cities. However, a lack of financing increases the risk to achieving these ambitious plans.

Figure 9: Priority soft connectivity measures and infrastructure investment needs in the Kyrgyz Republic



Source: CPCS.

Recommendations (Figure 9)

In the **short term**, the development and upgrade of the multi-modal logistics centres in Osh and Alamedin is identified as a priority infrastructure investment need. Further development of the Alamedin station in Bishkek and the development of a new facility at Osh will allow more frequent operations and increase throughput capacity for container

⁴¹ See Government of the Kyrgyz Republic (2014) *Decree of the Government of the Kyrgyz Republic, Bishkek, dated September 30, 2014, No. 558, on the approval of the main directions of development of railway transport of the Kyrgyz Republic for 2014-2020*. Bishkek. Available at: <http://kjd.kg/ru/about/strategiya-razvitiya-zeleznih-dorog/>

⁴² See EU GSP Hub (n.d.) Kyrgyzstan, Brussels. Available at: <https://gsphub.eu/country-info/Kyrgyzstan>.

operations. These investments will also enable more efficient multi-modal operations and encourage greater containerisation in transport operations.

In the **medium term**, two priority infrastructure investment needs have been identified:

- 1) Electrification and rehabilitation of the Balykchy-Lugovaya rail line project: The project will increase train speeds on the sections in question. The country has significant hydroelectric power capacity. Given the government's commitment to providing power to the line and low electricity tariffs, electrification will reduce operating costs and emissions from train operations.
- 2) Construction of the Torugart-Arpa-Makmal-Jalal-Abad railway line project: The new line will support the country's transition to becoming a transit country, potentially increasing the national railway company revenue from transit operations. It will reduce the time and cost associated with travelling between China and south-eastern Europe. Once completed, the new link could shorten the freight transport route between China and Europe by 900 km. This corridor would provide additional capacity for intercontinental transport operations and increase competition for rail transport along all corridors in the region. However, without additional fiscal space the project could widen the fiscal deficit and weaken debt sustainability.⁴³

In the **long term**, construction of the Balykchy-Makmal rail line has been identified as the priority infrastructure investment need. This project would connect the country's two existing lines. The expansion of the network would increase economic opportunities in hinterland regions and support further development of multimodality in the country.

3.4.3 Tajikistan

The government is focused on supporting domestic and foreign trade while enhancing international economic relations and transit. Since 2010, the government has focused on overcoming communication deadlocks both within the country's transport sector and with neighbouring countries. Notably, this includes the rehabilitation and construction of road networks at its borders with the Kyrgyz Republic and Uzbekistan. Consequently, the development of an integrated transport network and its connection to international trade corridors is central to Tajikistan's transport policy.

The Transport Sector Development Programme for the rehabilitation and reconstruction of Tajikistan's transit network to 2025 provides the basis for improvements in the country's transport sector, sets out a list of investments for the short, medium and long term, and outlines steps towards the automation of communication within the sector.⁴⁴

CAREC Corridor 5 is currently the largest transport corridor passing through Tajikistan, and trade facilitation on this corridor is handled through the Cross Border Transport Agreement (CBTA) under the CAREC initiative. In March 2011, the parliament of Tajikistan ratified the CBTA to encourage a greater flow of goods, services and passengers between Tajikistan and the Kyrgyz Republic.⁴⁵ However, actual implementation remains limited due to the political environment, limited human capital and equipment inefficiencies.

In an effort to boost trade with the EU, Tajikistan and the EU signed a non-preferential Partnership and Cooperation Agreement (PCA), which has been in effect since 2010. The country is also a beneficiary of the GSP, under which the EU provides preferential access to Tajikistan by way of reduced tariffs on its exports to the EU. The country has recently become committed to joining the GSP+, which could serve as a positive signal to the international community that the

⁴³ See IMF (2023) *Kyrgyz Republic: 2022 Article IV Consultation-Press Release; and Staff Report*, Washington, DC. Available at: www.imf.org/en/Publications/CR/Issues/2023/02/15/Kyrgyz-Republic-2022-Article-IV-Consultation-Press-Release-and-Staff-Report-529832.

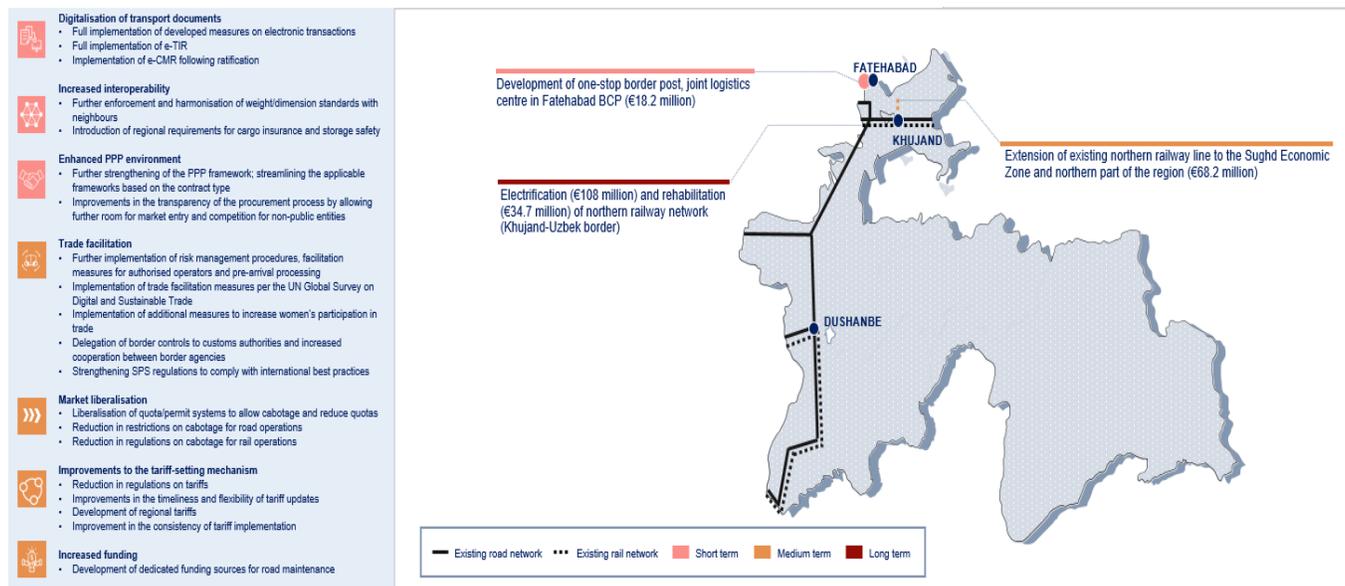
⁴⁴ See S. Asadov (2012) *Tajikistan's Transit Corridors and their Potential for Developing Regional Trade*, Working paper no. 6, Bishkek, University of Central Asia, Institute of Public Policy and Administration. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2943859.

⁴⁵ See Ministry of Foreign Affairs of the Republic of Tajikistan (n.d.) *Transportation sector of the Republic of Tajikistan*. Dushanbe. Available at: <https://mfa.tj/en/main/tajikistan/transport>.

government is committed to international law and continuous, transparent monitoring.⁴⁶ The country has one of the highest preference utilisation rates of all standard GSP beneficiary countries, at 97.6 per cent, and it uses trade preferences granted under the GSP for about 30 per cent of its exports to the EU.⁴⁷

The National Strategy for Adaptation to Climate Change of the Republic of Tajikistan for the period up to 2030 considers transport an essential sector for emissions reduction and a sector at high risk of degradation through climate change.⁴⁸ The strategy has identified the following key strategies for greening the sector: increasing public urban transportation and promoting cycling, developing multimodal urban transport infrastructure, encouraging increased railway transportation, building facilities for the recycling of old vehicles and switching to sustainable modes of transport, such as liquefied natural gas, hybrid and fully electric passenger vehicles. According to the State Target Programme for the Development of the Transport Complex of the Republic of Tajikistan until 2025, the government has also made it a priority to bring transport infrastructure in line with international environmental standards.⁴⁹ Yet, ESG considerations remain limited for nationally funded projects.

Figure 10: Priority soft connectivity measures and infrastructure investment needs in Tajikistan



Source: CPCS.

Recommendations (Figure 10)

In the **short term**, the priority infrastructure investment need relates to the development of an OSBP and a joint logistics centre in Fatehabad. In addition to physical infrastructure development, the project would include the implementation of an integrated border management system and the harmonisation of digital systems. Equipment upgrades needs relate to the installation of X-ray devices and other smart inspection hardware to utilise more lanes and expedite

⁴⁶ See Delegation of the European Union to Tajikistan (2021) *The European Union and Tajikistan*, Dushanbe. Available at: https://www.eeas.europa.eu/tajikistan/european-union-and-tajikistan_en?s=228.

⁴⁷ See EU GSP Hub (n.d.) *Tajikistan*. Available at: <https://gsphub.eu/country-info/Tajikistan>.

⁴⁸ See UNEP (2019) *National Strategy for Adaptation to Climate Change of the Republic of Tajikistan for the period up to 2030*. Dushanbe. Available at: <https://leap.unep.org/countries/tj/national-legislation/national-strategy-adaptation-climate-change-republic-tajikistan>.

⁴⁹ See Government of the Republic of Tajikistan (2011) *The state target development program of transport complex of the Republic of Tajikistan till 2025*, Dushanbe. Available at: <https://cis-legislation.com/document.fwx?rgn=81534>.

service provision. The implementation of the project will reduce border-crossing delays and facilitate trade between Tajikistan and Uzbekistan, as well as transit trade.

In the **medium term**, the priority infrastructure investment need relates to the expansion of the existing northern railway line to the Sughd Economic Zone and northern parts of the region. The region hosts 64 per cent of total exports in Tajikistan and the Sughd Economic Zone is one of the most active FEZs in Tajikistan. Expansion of the existing network towards the region will open up opportunities for producers in the region and increase agribusiness and other exports from the Sughd FEZ.

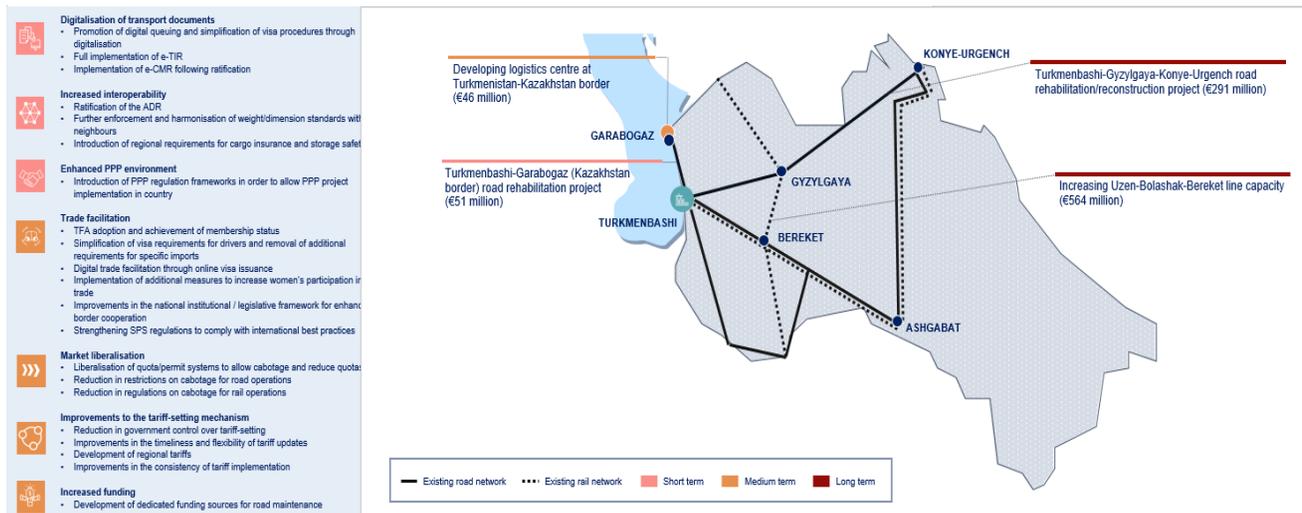
In the **long term**, the priority infrastructure investment need relates to the electrification of the northern railway section. Thanks to the country’s low electricity prices and electricity generation surplus, electrification could lower operational costs and carbon emissions.

3.4.4 Turkmenistan

Turkmenistan has acceded to the International Convention on the Harmonisation of Frontier Control of Goods, the Intergovernmental Agreement on the Asian Highway Network, the Intergovernmental Agreement on the Trans-Asian Railway Network and the Intergovernmental Agreement on Dry Ports.⁵⁰ These conventions and agreements are intended to facilitate transport, and the government has actively increased its international presence in the sustainable transport sector.

Turkmenistan is playing a key role in developing the second crossing between Central Asia and the Caucasus through the Caspian Sea, hosting the recently modernised port of Turkmenbashi. Consequently, the government is heavily focused on investing in new, large-scale infrastructure projects, including the expansion of the transit potential of its railway network. Also, through the country’s Rail Transport Development Programme, several railway bridges and railway routes have been developed.

Figure 11: Priority soft connectivity measures and infrastructure investment needs in Turkmenistan



Source: CPCS.

⁵⁰ See News Central Asia (2022) Ashgabat conference on international transport and transit corridors highlighted the role of Turkmenistan in the Eurasian connectivity. News Central Asia, 19 July 2022. Available at: <http://www.newscentralasia.net/2022/07/19/ashgabat-conference-on-international-transport-and-transit-corridors-highlighted-the-role-of-turkmenistan-in-the-eurasian-connectivity/>.

Recommendations (Figure 11)

In the **short term**, the priority infrastructure investment need relates to the rehabilitation of the Turkmenbashi-Garabogaz road. This is a significant transit cargo route following the Caspian Sea basin. The project will facilitate connectivity between the ports of Turkmenistan and Kazakhstan and increase trade flows between the two countries. It will also contribute to increased passenger and cargo transportation and improve the quality of logistics operations.

In the **medium term**, the priority infrastructure investment need relates to the development of a logistics centre at the Turkmenistan-Kazakhstan border. Cargo movements on the border and connecting roads have increased, mainly driven by trade in construction materials, iron and grain. Development of the first logistics centre at the Turkmenistan-Kazakhstan border would support more efficient operations at the border, reduce congestion, and lower transaction costs of the operators and service users.

For the **long term**, two priority infrastructure investment needs have been identified.

- 1) Turkmenbashi-Gyzylgaya-Konye-Urgench road rehabilitation/reconstruction project: This project represents a missing link that could save time and cost for carriers travelling to Nukus in Uzbekistan. Reconstruction and rehabilitation of this road will establish more direct links between Turkmenbashi port and Uzbekistan, particularly Nukus, which is closer than the Farap-Alat border, and enable connectivity to the proposed Nukus-Beyneu line.
- 2) Expansion of the Uzen-Bolashak-Bereket line project: This project would increase the capacity of the railway line between Bereket in Turkmenistan and Serkhetyaka in Kazakhstan. Capacity increases are expected thanks to a combination of additional or longer passing sidings, improvements to the signalling control system and faster train speeds.

3.4.5 Uzbekistan

Over the past four years, the Uzbek government has been carrying out systematic reforms aimed at liberalising and modernising the national economy and increasing its integration into global markets. One aspect of the expansion of Uzbekistan's presence on the international markets is the need to create favourable conditions for the diversification of foreign trade routes and the formation of alternative and efficient transport corridors.⁵¹ As part of its Comprehensive Program for Improving Transport Infrastructure and Diversifying Foreign Trade Routes for the Transportation of Goods 2018-22, Uzbekistan has actively developed a network of logistics centres, expanded its fleet of transport vehicles and aircraft, and created conditions for the efficient transportation and handling of goods in country and with neighbouring trade partners.⁵²

At the time of writing, the Ministry of Transport was developing a Strategy for the Development of the Transport System for the Republic of Uzbekistan to 2035. It highlights the Trans-Caspian Corridor as a key priority and notes competing needs for both cooperation and competition with Kazakhstan.⁵³ The strategy's objectives include the creation of conditions for growth in the volume and quality of passenger/freight traffic, improvements to the transport-sector management system and improvements in training and capacity building for individuals employed in the transport sector.⁵⁴ In an effort to increase foreign direct investment, Uzbekistan has been added to the EU's Generalised System

⁵¹ F. Juraev (n.d.) Transport corridors central Asia: Brussels-Uzbekistan. Brussels-Uzbekistan Friendship Group. Available at: www.brussels-uzbekistan.org/transport-corridors-central-asia.

⁵² B. Rakhimberdievich (2013) *Transport Corridors of Uzbekistan and Prospect of Its Development*. Tashkent, Tashkent State University for Economics. Available at: www.platinumessays.com/essays/Transport-Corridors-of-Uzbekistan-and-Prospect-of-Its/8726.html.

⁵³ Eurasian Research Institute (n.d.) Transport Strategy of Uzbekistan: Current Developments, Almaty. Available at: www.eurasian-research.org/publication/transport-strategy-of-uzbekistan-current-developments/

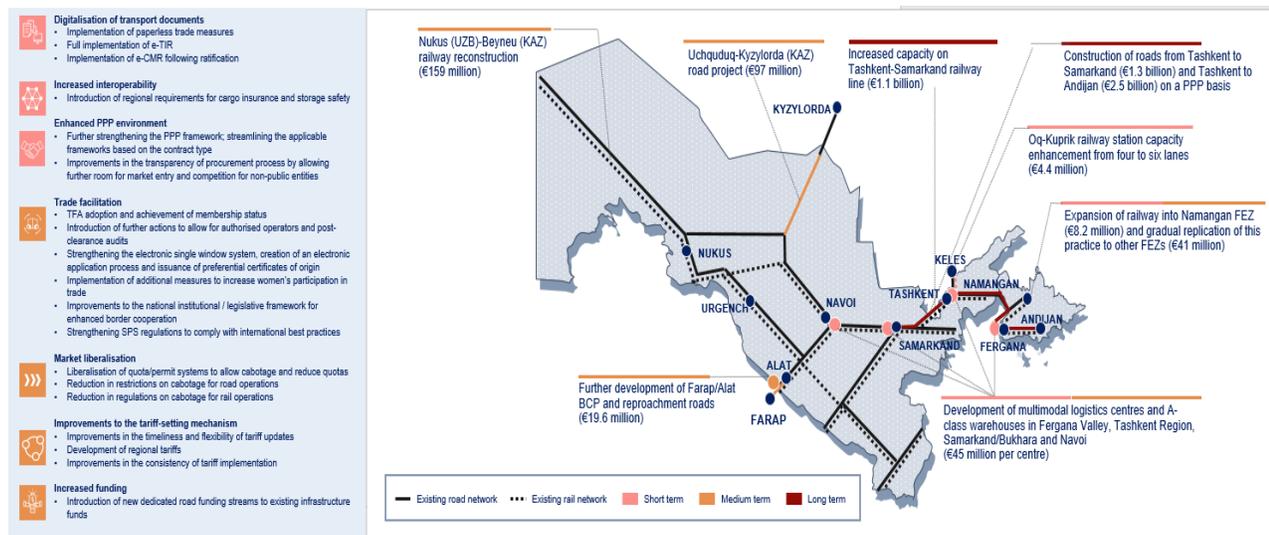
⁵⁴ F. Juraev (2021) Key priorities of Uzbekistan for the comprehensive development of Transport Corridors in Central Asia. Institute for Strategic and Regional Studies under the president of the Republic of Uzbekistan, Tashkent. Available at: <https://isrs.uz/en/maqolalar/klucevye-prioritye-uzbekistana-po-vsestoronnemu-razvitiu-transportnyh-koridorov-v-centralnoj-azii>.

of Advanced Preferences for sustainable development and good governance.⁵⁵ Through this system, tariffs on a number of crucial export goods, such as textiles, clothing and plastic products, have been removed, accelerating the development of trade relations between Uzbekistan and the bloc.⁵⁶

Uzbekistan and Turkmenistan have built the Turkmenabad-Farab railway and road bridges as part of international transport and transit routes.⁵⁷ Uzbekistan currently considers cooperation with the Caspian states a priority direction of its foreign policy and transport strategy. Using the transit potential of the CTCN will allow Uzbekistan and southern Central Asian countries to diversify their transport routes, as it provides an alternative to the southern land-based route going through Iran. This will consequently play a key role in establishing the regular transportation of goods from Türkiye and Europe to the countries of Central Asia and Asia.⁵⁸

Uzbekistan's Ministry of Transport is committed to expanding the production of vehicles with greater energy efficiency and alternative fuel use and to developing urban electric transport. It is particularly committed to ensuring the transition of 80 per cent (nearly 6,500 units) of public transport to gas fuel and electric traction.

Figure 12: Priority soft connectivity measures and infrastructure investment needs in Uzbekistan



Source: CPCS.

⁵⁵ See European Commission (2021) Uzbekistan joins EU's GSP+ arrangement, Brussels. Available at: https://policy.trade.ec.europa.eu/news/uzbekistan-joins-eus-gsp-arrangement-2021-04-09_en.

⁵⁶ F. Juraev (n.d.) Transport corridors central Asia: Brussels-Uzbekistan. Brussels-Uzbekistan Friendship Group. Available at: www.brussels-uzbekistan.org/transport-corridors-central-asia.

⁵⁷ Ibid.

⁵⁸ W. Shepard (2019) Non-stop from Baku to Europe - a new silk road corridor emerges. *Forbes*, November 14. Available at: www.forbes.com/sites/wadeshepard/2019/11/14/non-stop-from-baku-to-europea-new-silk-road-corridor-emerges/?sh=20c356ca5b8f.

Recommendations (Figure 12)

In the **short term**, three priority infrastructure investment needs have been identified.

- 1) Oq-Kuprik railway station capacity enhancement project: There are currently four lanes in the station. In the short term, adding two more lanes of approximately 1,500 meters in length would reduce border congestion, increase capacity by more than 30 per cent and enhance the efficiency of cross-border operations between Uzbekistan and Kazakhstan.
- 2) Expansion of the railway line into Namangan FEZ: As the distance between the railway line and the Namangan FEZ area is very short (approximately 1 km), the new rail connection through the urbanised area would provide direct access to FEZ for shippers and would avoid urban congestion. Gradually replicating this practice in other key FEZs would alleviate congestion and pollution problems and would give producers and exporters direct access to the railways.
- 3) Development of multimodal logistics centres and A-class warehouses in Fergana Valley, Tashkent Region, Samarkand/Bukhara and Navoi: These trade centres and logistic hubs have adequate road and rail connectivity, but lack the logistics facilities required for multimodal transport operations. The development of multimodal logistic centres will reduce the logistics costs for shippers and contribute to the overall efficiency of railways.

In the **medium term**, three priority infrastructure investment needs have been identified.

- 1) Uchquduq (Uzbekistan)-Kyzylorda (Kazakhstan) road project – Uzbekistan section: There is currently no direct route between these cities and the travel time is more than 16 hours by road (approximately 1,200 km), even though the distance between Uchquduq and the border is only around 200 km as the crow flies. The construction of the road should be complemented by the construction of a BCP to support economic and trade activity between Uzbekistan and Kazakhstan, reduce travel time between the two countries and lower congestion at existing BCPs.
- 2) Nukus (Uzbekistan)-Beyneu (Kazakhstan) railway reconstruction project: This project is to rehabilitate the rail line from Nukus to the Uzbekistan-Kazakhstan border (approximately 400 km) in order to improve transit times, reliability and passenger comfort. The implementation of the project will improve trade and regional connectivity between Uzbekistan and Kazakhstan and link the Karakapalstan region in Uzbekistan with the Aktau/Mangystau region in Kazakhstan.
- 3) Further development of the Farap/Alat BCP and reconstruction of BCP approach roads: Farap/Alat is the main BCP between Uzbekistan and Turkmenistan. The roads and railway link through this BCP connect to Turkmenbashi port via Ashgabat. This project includes an upgrade of approximately 23 km of road and an upgrade of the existing BCP. The implementation of the project will reduce congestion and processing times at the border, as well as improve driving conditions.

In the **long term**, two priority infrastructure investment needs have been identified.

- 1) Capacity enhancement project on the Tashkent-Samarkand railway line: The construction of the Tashkent-Samarkand high-speed and electrified freight railway line will increase speeds by 30 per cent, enhance the capacity for goods movement and provide environmental benefits. Given the expected cargo volumes on the line, the project could be conducted on a PPP basis, subject to further detailed assessment.
- 2) Construction of new roads from Tashkent to Samarkand and Tashkent to Andijan on a PPP basis: Given the current and expected traffic flows along the two road sections, it would be possible to undertake the construction of the new roads on a PPP basis to allow global investors to bid for tenders. These investments are expected to result in travel-time savings and improved service quality, mainly driven by private-sector participation.

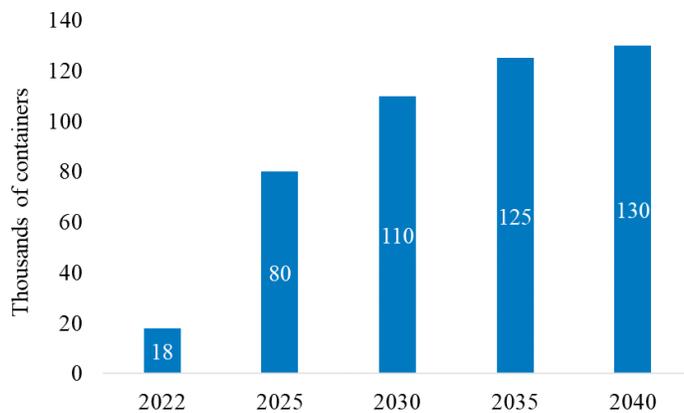
3.5 Expected freight transit flows on the CTCN

For the private sector, the choice of corridor for any shipment is primarily driven by three factors: travel time, predictability and cost from the origin to the destination. These are the key aspects that influence the decision of companies seeking to operate on a given route. To estimate container volumes on the CTCN, demand and transport

models were developed, taking into account the real delivery times and costs for each route, as well as origins, destinations, modes and corridors. A choice model was then developed for the alternative options, with variables including transit time and transit time reliability, cost per TEU, distance to Europe origin/destination and number of border crossings.

In 2022, around 33,000 containers were carried between Aktau and Baku ports. Based on stakeholder consultations, 18,000 TEUs of these volumes were assumed to have been carried along the CTCN. Using project-specific models, it is estimated that container traffic on the CTCN will grow from 18,000 TEUs in 2022 to 130,000 TEUs by 2040 (Figure 13).

Figure 13: Container traffic estimates on the CTCN (2022-40, business-as-usual scenario)



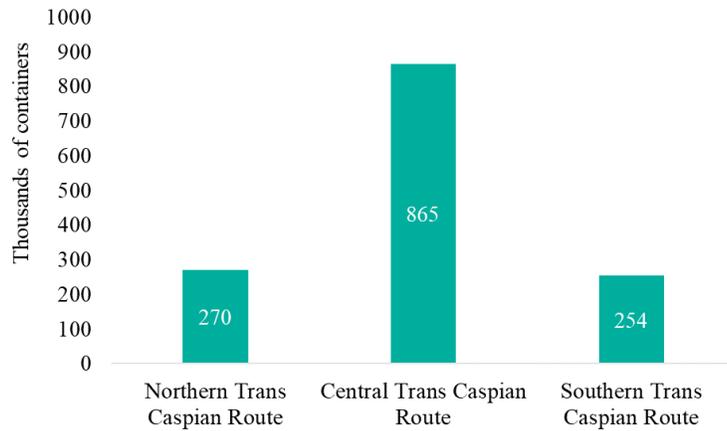
Source: CPCS.

Note: Total container traffic through the Middle Corridor through Kazakhstan in 2022 was about 33,000 TEUs. Eighteen thousand TEUs were through southern Kazakhstan (via the CTCN), while 15,000 TEUs were through northern Kazakhstan.

If all of the action items and projects proposed in this study are implemented, the CTCN has the potential to reach a free-flowing transit time of 13 days between the EU and Asian hubs. In this case, the maximum container volumes on the CTCN could reach to 865,000 TEUs (

Figure 14). In addition, higher volumes on the Northern and Southern Trans-Caspian Corridors would be observed, of 270,000 TEUs and 254,000 TEUs, respectively, as a result of spill-over effects. This amounts to a total of 1.4 million containers transiting through Central Asia and connecting to Europe by 2040, should all the improvements put forward in this study be made to enhance the operational efficiency of this route.

Figure 14: Container traffic estimates on Trans-Caspian routes (2040, unconstrained scenario)



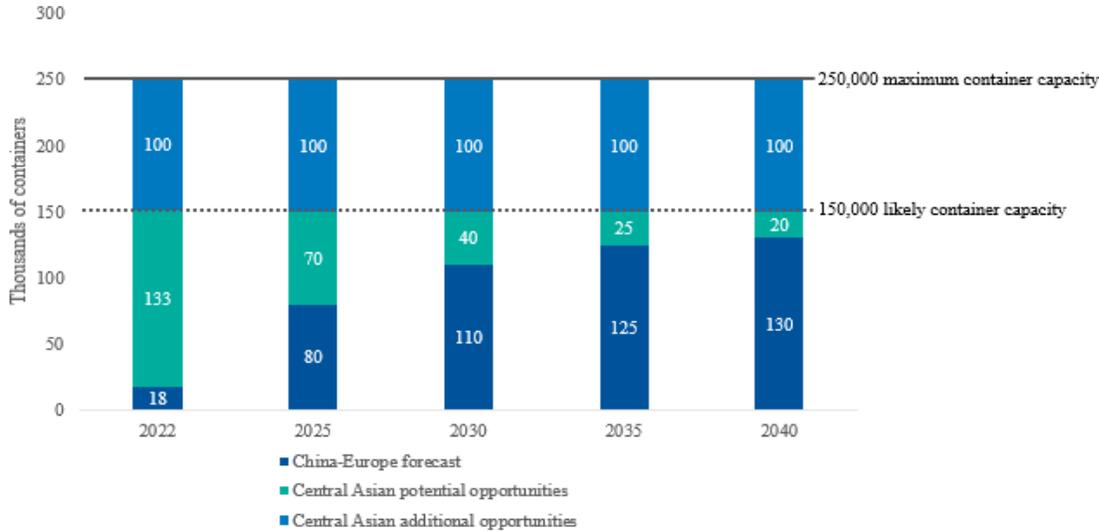
Source: CPCS.

3.6 Intra-regional trade in Central Asia

As part of traffic estimations, intraregional trade potential was assessed to estimate the maximum potential of regional container traffic. Given its higher revenue potential, it was assumed that transit traffic would take preference over regional trade on the CTCN, in line with current practices. Trade estimates between the Central Asian countries were used to estimate intraregional traffic. Containerisation rates were assumed based on current trade structure and the potential shift to containerisation in suitable sectors.

In the constrained model, where capacity is constrained, regional container traffic can occupy the gap between the transit traffic allocated to a route and the maximum route capacity. Hence, an upper bound for maximum hypothetical container volume potential originating from the Central Asia region is estimated under ideal conditions. As the maximum transit container volume on the CTCN by 2040 is estimated to be 130,000 TEUs, the potential for containerised regional cargo transportation gradually declines (Figure 15).

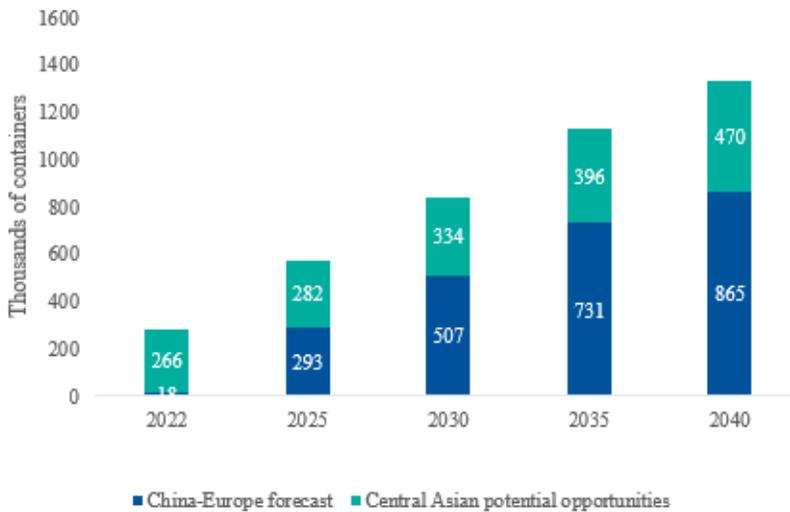
Figure 15: Regional traffic estimates on the CTCN (constrained scenario)



Source: CPCS.

Where capacity is unconstrained and improvements are made to enhance the competitiveness of the CTCN, the regional container traffic range by route is added to the transit traffic. In the baseline scenario, potential loaded containers used for Central Asian regional trade could reach 470,000 TEUs by 2040 (Figure 16). This would put significant pressure on the infrastructure, amid 865,000 TEUs of expected transit traffic on the CTCN and the expected growth in non-containerised trade. Hence, large-scale capacity and operational improvements are needed to accommodate expected traffic growth.

Figure 16: Regional traffic estimates on the CTCN (unconstrained scenario)



Source: CPCS.

4 Conclusion

Based on the MCA assessment and stakeholder consultations, the CTCN, with its two-layered catchment area spanning the territories of five Central Asian countries, has been identified as providing the most sustainable transport connections between Europe and Central Asia. The development of the CTCN would yield many benefits for the region, including the stronger regional coordination of unified tariffs and network management, enhanced connectivity between the economic centres of Central Asia to support regional and global value-chain integration, more efficient border-crossing practices to lower transaction costs and to provide more user-friendly services, the provision of long-term planning perspectives for project preparation, prioritisation and implementation, and better environmental outcomes.

The study proposes seven soft connectivity measures and 33 hard infrastructure investment needs as specific, concrete, implementable and realistic action items to support the development of the CTCN. Soft connectivity measures are low-cost, high-benefit action items that can yield significant benefits to the implementing countries and the wider Central Asian region. Such actions can lower transaction costs, increase operational efficiency and enhance private-sector participation to increase the efficiency of service provision (Table 4). Implementation of these measures is a prerequisite to enabling private-sector involvement and proceeding with hard infrastructure investments.

Table 4: Prioritised soft connectivity measures in Central Asia

| | Short term | Medium term |
|-------------------|---|---|
| Kazakhstan | <p>Digitalisation of transport documents</p> <ul style="list-style-type: none"> Development of an electronic exchange of regulatory certificates and full implementation of laws/regulations for electronic transactions Full adoption of e-TIR Ratification of the e-CMR protocol <p>Increased interoperability</p> <ul style="list-style-type: none"> Further enforcement and harmonisation of weight/dimension standards Introduction of regional requirements for cargo insurance and storage safety <p>Enhanced PPP environment</p> <ul style="list-style-type: none"> Further strengthening of the PPP framework; streamlining the applicable frameworks based on the contract type Improvements in the transparency of procurement process by allowing further room for market entry | <p>Trade facilitation</p> <ul style="list-style-type: none"> Establishment and publication of tariffs in a timely manner Implementation of electronic applications for customs refunds and an online single window system Implementation of trade facilitation measures to support women's participation in trade Improvements to the national institutional/legislative framework for enhanced border cooperation <p>Market liberalisation</p> <ul style="list-style-type: none"> Liberalisation of quota/permit systems to allow cabotage and reduce quotas Reduction of restrictions on cabotage for road operations Reduction of regulations on cabotage for rail operations <p>Improvements to the tariff-setting mechanism</p> <ul style="list-style-type: none"> Establishment of more flexible tariff-setting mechanisms Removal of cross-subsidisation Improvements in the timeliness and flexibility of tariff updates |

| | Short term | Medium term |
|------------------------|--|---|
| | | <ul style="list-style-type: none"> Improvements in the consistency of tariff implementation <p>Increased funding</p> <ul style="list-style-type: none"> Development of dedicated funding sources for road maintenance |
| Kyrgyz Republic | <p>Digitalisation of transport documents</p> <ul style="list-style-type: none"> Full implementation of e-TIR Implementation of e-CMR following ratification <p>Increased interoperability</p> <ul style="list-style-type: none"> ADR ratification Further enforcement and harmonisation of weight/dimension standards with neighbours Introduction of regional requirements for cargo insurance and storage safety <p>Enhanced PPP environment</p> <ul style="list-style-type: none"> Further strengthening of the PPP framework; streamlining the applicable frameworks based on the contract type Improvements in the transparency of the procurement process by allowing further room for market entry and competition for non-public entities Improvements in contract management and the development of a strategy for the review of unsolicited proposals | <p>Trade facilitation</p> <ul style="list-style-type: none"> Removal of non-tariff barriers, such as pre-arrival processing and risk management Implementation of trade facilitation measures per the UN Global Survey on Digital and Sustainable Trade Implementation of additional measures to increase women's participation in trade Delegation of border controls to customs authorities and increased cooperation between border agencies <p>Market liberalisation</p> <ul style="list-style-type: none"> Liberalisation of quota/permit systems to allow cabotage and reduce quotas Reduction of restrictions on cabotage for road operations Reduction of regulations on cabotage for rail operations <p>Improvements to the tariff-setting mechanism</p> <ul style="list-style-type: none"> Improvements to domestic tariff setting Improvements in the timeliness and flexibility of tariff updates Improvements in the consistency of tariff implementation <p>Increased funding</p> <ul style="list-style-type: none"> Improvements to funding for the road sector |
| Tajikistan | <p>Digitalisation of transport documents</p> <ul style="list-style-type: none"> Full implementation of developed measures on electronic transactions Full implementation of e-TIR Implementation of e-CMR following ratification <p>Increased interoperability</p> | <p>Trade facilitation</p> <ul style="list-style-type: none"> Further implementation of risk management procedures, facilitation measures for authorised operators and pre-arrival processing Implementation of trade facilitation measures per the UN Global Survey on Digital and Sustainable Trade Implementation of additional measures to increase women's participation in trade |

| | Short term | Medium term |
|---------------------|--|--|
| | <ul style="list-style-type: none"> Further enforcement and harmonisation of weight/dimension standards with neighbours Introduction of regional requirements for cargo insurance and storage safety <p>Enhanced PPP environment</p> <ul style="list-style-type: none"> Further strengthening of the PPP framework; streamlining the applicable frameworks based on the contract type Improvements in the transparency of the procurement process by allowing further room for market entry and competition for non-public entities | <ul style="list-style-type: none"> Delegation of border controls to customs authorities and increased cooperation between border agencies Strengthening SPS regulations to comply with international best practices <p>Market liberalisation</p> <ul style="list-style-type: none"> Liberalisation of quota/permit systems to allow cabotage and reduce quotas Reduction in restrictions on cabotage for road operations Reduction in regulations on cabotage for rail operations <p>Improvements to the tariff-setting mechanism</p> <ul style="list-style-type: none"> Reduction in regulations on tariffs Improvements in the timeliness and flexibility of tariff updates Development of regional tariffs Improvement in the consistency of tariff implementation <p>Increased funding</p> <ul style="list-style-type: none"> Development of dedicated funding sources for road maintenance |
| Turkmenistan | <p>Digitalisation of transport documents</p> <ul style="list-style-type: none"> Promotion of digital queuing and simplification of visa procedures through digitalisation Full implementation of e-TIR Implementation of e-CMR following ratification <p>Increased interoperability</p> <ul style="list-style-type: none"> Ratification of the ADR Further enforcement and harmonisation of weight/dimension standards with neighbours Introduction of regional requirements for cargo insurance and storage safety <p>Enhanced PPP environment</p> <ul style="list-style-type: none"> Introduction of PPP regulation frameworks in order to allow PPP project implementation in country | <p>Trade facilitation</p> <ul style="list-style-type: none"> TFA adoption and achievement of membership status Simplification of visa requirements for drivers and removal of additional requirements for specific imports Digital trade facilitation through online visa issuance Implementation of additional measures to increase women's participation in trade Improvements in the national institutional / legislative framework for enhanced border cooperation Strengthening SPS regulations to comply with international best practices <p>Market liberalisation</p> <ul style="list-style-type: none"> Liberalisation of quota/permit systems to allow cabotage and reduce quotas |

| | Short term | Medium term |
|------------|---|---|
| | | <ul style="list-style-type: none"> • Reduction in restrictions on cabotage for road operations • Reduction in regulations on cabotage for rail operations <p>Improvements to the tariff-setting mechanism</p> <ul style="list-style-type: none"> • Reduction in government control over tariff-setting • Improvements in the timeliness and flexibility of tariff updates • Development of regional tariffs • Improvements in the consistency of tariff implementation <p>Increased funding</p> <ul style="list-style-type: none"> • Development of dedicated funding sources for road maintenance |
| Uzbekistan | <p>Digitalisation of transport documents</p> <ul style="list-style-type: none"> • Implementation of paperless trade measures • Full implementation of e-TIR • Implementation of e-CMR following ratification <p>Increased interoperability</p> <ul style="list-style-type: none"> • Introduction of regional requirements for cargo insurance and storage safety <p>Enhanced PPP environment</p> <ul style="list-style-type: none"> • Further strengthening the PPP framework; streamlining the applicable frameworks based on the contract type • Improvements in the transparency of procurement process by allowing further room for market entry and competition for non-public entities | <p>Trade facilitation</p> <ul style="list-style-type: none"> • TFA adoption and achievement of membership status • Introduction of further actions to allow for authorised operators and post-clearance audits • Strengthening the electronic single window system, creation of an electronic application process and issuance of preferential certificates of origin • Implementation of additional measures to increase women’s participation in trade • Improvements to the national institutional / legislative framework for enhanced border cooperation • Strengthening SPS regulations to comply with international best practices <p>Market liberalisation</p> <ul style="list-style-type: none"> • Liberalisation of quota/permit systems to allow cabotage and reduce quotas • Reduction in restrictions on cabotage for road operations • Reduction in regulations on cabotage for rail operations <p>Improvements to the tariff-setting mechanism</p> |

| Short term | Medium term |
|------------|---|
| | <ul style="list-style-type: none"> Improvements in the timeliness and flexibility of tariff updates Development of regional tariffs Improvements in the consistency of tariff implementation <p>Increased funding</p> <ul style="list-style-type: none"> Introduction of new dedicated road funding streams to existing infrastructure funds |

The total investment needed to significantly improve the CTCN are estimated at around €18.5 billion, related to railway and road network rehabilitation and modernisation, rolling stock expansion, port capacity enhancements, improvements to BCPs, and multimodal logistics centres and auxiliary network connections (Table 5: Prioritised hard infrastructure investment projects in Central Asia).

Table 5: Prioritised hard infrastructure investment projects in Central Asia

| | Short term | Medium term | Long term |
|-------------------|--|--|--|
| Kazakhstan | <ul style="list-style-type: none"> Shalkar-Beyneu road Darbaza-Maktaaral railway Expansion of Saryagash railway station Almaty Railway bypass Altynkol terminal expansion | <ul style="list-style-type: none"> Aktau-Beyneu railway double tracking and electrification Port capacity expansion Beyneu-Nukus railway reconstruction (Kazakhstan section) Almaty-Khorgos railway double tracking and electrification Rail investments for multimodal logistics centres Warehousing and distribution centres in multimodal logistics centres | <ul style="list-style-type: none"> Kyzylorda- Uchquduq road (Kazakhstan section) Rolling stock expansion and fitting platforms in key ports/terminals Fleet expansion |
| Kyrgyzstan | <ul style="list-style-type: none"> Development and upgrade of the multi-modal logistics centres in Osh and Alamedin | <ul style="list-style-type: none"> Electrification and rehabilitation of Balykchy-Lugovaya rail line Construction of Torugart Makmal-Jalal Abad railway line | <ul style="list-style-type: none"> Construction of Balykchy-Makmal railway line |
| Tajikistan | <ul style="list-style-type: none"> Development of a one-stop border post, joint logistics centre in Fatehabad BCP | <ul style="list-style-type: none"> Extension of existing northern railway line to the | <ul style="list-style-type: none"> Electrification and rehabilitation of the |

| | Short term | Medium term | Long term |
|---------------------|--|--|--|
| | | Sughd Economic Zone and northern part of the region | northern railway network (Khujand-Uzbek border) |
| Turkmenistan | <ul style="list-style-type: none"> Turkmenbashi-Garabogaz (Kazakhstan border) road rehabilitation | <ul style="list-style-type: none"> Developing a logistics centre at the Turkmenistan-Kazakhstan border | <ul style="list-style-type: none"> Turkmenbashi-Gyzylgaya-Konye-Urgench road rehabilitation/reconstruction Increasing Uzen-Bolashak-Bereket line capacity |
| Uzbekistan | <ul style="list-style-type: none"> Oq-Kuprik railway station capacity enhancement Expansion of railway into Namangan FEZ Development of multimodal logistics centres and A-class warehouses in Fergana Valley, Tashkent Region, Samarkand/Bukhara and Navoi | <ul style="list-style-type: none"> Nukus – Beyneu railway reconstruction (Uzbekistan section) Further development of Farap/Alat BCP and BCP approach roads Uchquduq-Kyzylorda Road (Uzbekistan section) | <ul style="list-style-type: none"> Enhanced capacity on Tashkent-Samarkand railway line Construction of roads from Tashkent to Samarkand and Tashkent to Andijan |

Transit container volume on the CTCN is expected to increase from an estimated 18,000 TEUs in 2022 to 130,000 TEUs by 2040 under a business-as-usual scenario. However, if investment projects and soft connectivity measures are implemented to achieve a free-flowing transit time of 13 days between the EU and Asian hubs, transit container volumes could increase to 865,000 TEUs on the CTCN by 2040. If containerisation increases in Central Asia, additional 470,000 TEUs of regional container volume could be observed by 2040. Thus, implementation of the identified and prioritised key actions would not only support Europe-Asia transportation, but also contribute to economic growth and the transformation in Central Asia.