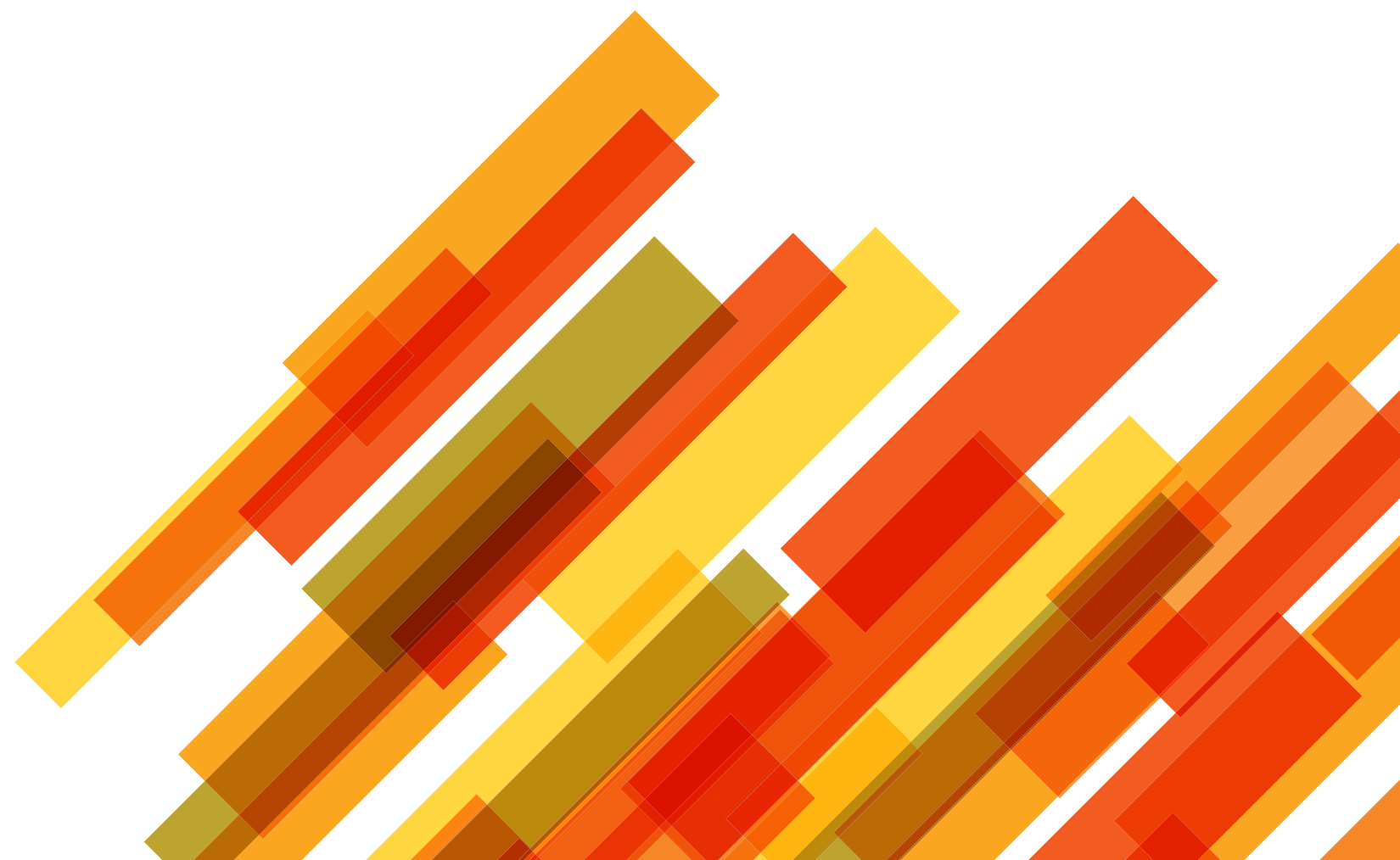


CAREC

TRANSPORT STRATEGY 2030

For Endorsement by the 18th Senior Officials' Meeting

JUNE 2019



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Abbreviations

| | | |
|-------|---|---|
| ADB | - | Asian Development Bank |
| CAREC | - | Central Asia Regional Economic Cooperation |
| CBTLF | - | Cross-border Transport & Logistics Facilitation |
| CPMM | - | Corridor Performance Measurement and Monitoring |
| DMC | - | Developing Member Country |
| PBM | - | Performance-Based Maintenance |
| PRC | - | People's Republic of China |
| PPP | - | Public-Private Partnership |
| RAMS | - | Road Asset Management System |
| SWD | - | Speed with Delay |
| SWOD | - | Speed without Delay |
| TCU | - | Transport Coordination Unit |
| TSCC | - | Transport Sector Coordinating Committee |
| TSPR | - | Transport Sector Progress Report |
| TTFS | - | Transport and Trade Facilitation Strategy |

Executive Summary

The new CAREC Transport Strategy 2030 builds on progress made and lessons learned from the CAREC Transport and Trade Facilitation Strategy 2020. Its key links to the overall CAREC 2030 program are in the areas of enhanced connectivity and sustainability. This strategy represents a simplification and refocus reflected firstly in the separation of trade facilitation from transport. The current Transport Strategy will be implemented in conjunction with the recent CAREC Integrated Trade Agenda 2030. Each is now more strongly aligned to CAREC 2030 goals. Further, this strategy shifts emphasis from construction and rehabilitation of transport corridors to sustainability and network quality. Having achieved by 2017 the 2020 goal of 7,800 km of CAREC corridor roads and 1,800 km of rail track built, going forward more emphasis will be placed on multi-modal connectivity, road asset management, road safety and performance-based maintenance. Knowledge work in these areas will be actively translated to policy and implementation changes in the CAREC countries through demand-based approaches.

Reporting through annual CAREC Transport Reports will be more disaggregated than before. Previously, the secretariat tended to report on averages, masking the tremendous variation in the region. Disaggregation and provision of specific examples will make it easier for developing member countries to analyze their own network against that of others, providing useful data to positively influence national planning, cooperation and peer to peer learning. Similarly, future knowledge work will be more flexible and demand driven. Products will be designed as practical decision support tools for CAREC DMCs.

Focus will continue on the five strategic pillars of roads and road asset management, railways, cross-border transport and logistics, road safety and aviation. The Strategy builds on the confirmed relevance of these five pillars but is open to inclusion of new strategic transport pillars in response to emerging priorities of the CAREC DMCs and development partners. Performance in cross-border transport and logistics has been identified as a particularly weak point of the program to date. The Strategy therefore commits to strengthen its focus on building trust and cooperation among the CAREC DMCs to reduce non-physical trade and logistics barriers. Particular attention and support will be given to those countries where procedural and infrastructure bottlenecks are the highest and negatively impact the overall performance of individual corridors and the entire network.

The new Strategy also builds upon its predecessor by offering CAREC as a vehicle which can help facilitate more innovative financing for increasingly large or complex projects of regional importance. This includes road and rail corridors which enhance the CAREC mission to establish a regional cooperation platform to connect people, policies and projects for shared and sustainable development. Such financing strategies will necessarily include avenues for private sector participation and will build upon initiatives such as the successful pilot initiatives to foster collaboration between private freight operators along CAREC corridors, multi-donor steering groups for regional rail corridors, and development of revenue-generation models for proposed mega projects such as the Second Salang Tunnel on Corridors 5 and 6.

The CAREC program will continue to provide a communication and coordination platform for CAREC DMCs and development partners to present and discuss new projects and transport initiatives. In this way, DMCs will align their priorities with each other and build a well-connected transport network, regulation and operational practices. The Strategy will support the CAREC sustainability agenda by addressing the strong demand to convert transport infrastructure investments into sustainable economic and social development for the region.

Introduction

1. The Central Asia Regional Economic Cooperation (CAREC) Program is a partnership of 11 developing member countries (DMC)¹ and development partners working together to promote development through cooperation, leading to accelerated economic growth and poverty reduction. It is guided by the overarching vision of “Good Neighbors, Good Partners, and Good Prospects.” The program covers several operational clusters, including Economic and Infrastructure Connectivity which covers the Transport and Energy sectors.

2. At the 16th CAREC Ministerial Conference in 2017, ministers endorsed CAREC 2030: *Connecting the Region for Shared and Sustainable Development* (CAREC 2030), the new strategic framework that will guide the Program until 2030. CAREC 2030 builds on the solid foundation of progress made under CAREC 2020, while updating its strategic directions to respond more efficiently to the region’s long-term development challenges. CAREC 2030 is inspired by a mission to create an open and inclusive regional cooperation platform that connects people, policies and projects for shared and sustainable development.

3. Following endorsement of the new CAREC 2030 framework, a new CAREC Integrated Trade Agenda 2030 was prepared and endorsed by CAREC Minsters in November 2018; and now this CAREC Transport Strategy (CTS) 2030 has been prepared. Development of separate strategic plans

for trade and transport should not be viewed as fragmentation of the trade and transport agenda, but rather a deeper response to a call for a stronger alignment of all CAREC operational clusters towards achieving CAREC 2030 goals for connecting the region for shared sustainable economic and social development.

4. In recognition of the strong linkages between transport and trade, the new CTS 2030 is fully aligned with the objectives of reducing trade barriers and costs, increasing trade connectivity and reducing trade turnover times. At the same time, it looks into more of the sustainability of transport systems. Within the scope of the CAREC TTFS 2020 consistent progress was made in setting the strategic direction for the railway sector through *Unlocking Potential of Railways: A Railway Strategy of CAREC, 2017-2030*² and road safety management through *Safely Connected: A Regional Road Safety Strategy for CAREC Countries, 2017-2030*.³ Corresponding working groups were established, capacity development seminars were held, and knowledge products were produced and disseminated in five key pillars of the CAREC Transport Sector: (i) cross-border transport and logistics; (ii) roads and road asset management; (iii) road safety management; (iv) railways; and (v) aviation. The CTS 2030 builds on the confirmed relevance of these five pillars but is open to inclusion of new strategic transport pillars in response to changing priorities of the CAREC DMCs and development partners.

¹ Afghanistan, Azerbaijan, People’s Republic of China, Georgia, Mongolia, Kazakhstan, Kyrgyz Republic, Pakistan, Tajikistan, Turkmenistan, Uzbekistan

² <https://www.adb.org/documents/railway-strategy-carec-2017-2030>

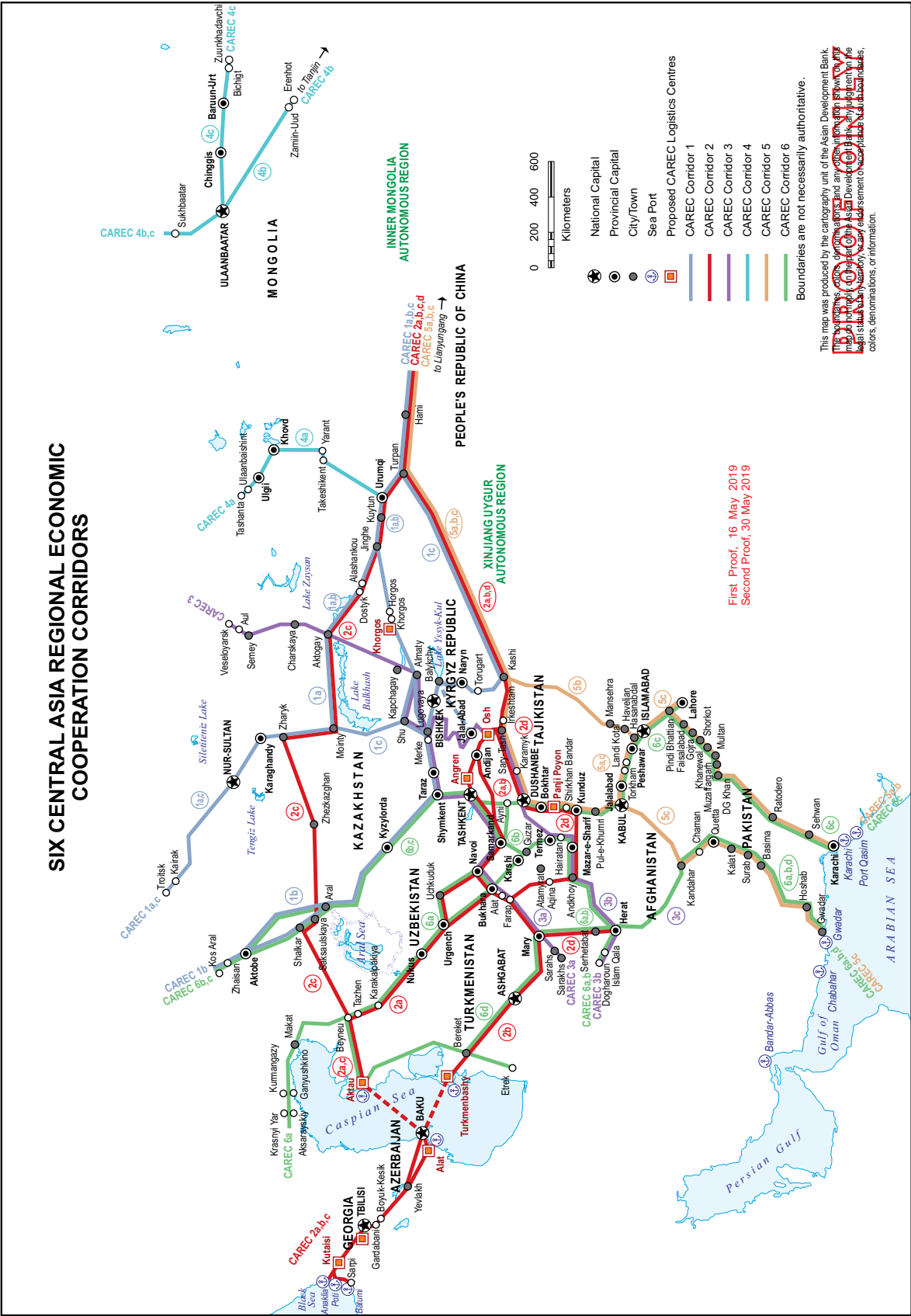
³ <https://www.adb.org/documents/road-safety-strategy-carec-2017-2030>

Lessons Learned

5. Most of the CAREC counties are landlocked but have relatively good hinterland connectivity to their main trading partners in Europe, East Asia and Middle Asia. Within the last decade some CAREC DMCs succeeded in establishing transport land bridges between fast growing East Asia and Western Europe. The CAREC TTFS 2020 set the targets to build 7,800 km of roads and 1,800 km of rail track by 2020, both of which were exceeded by 2017. The road and rail infrastructure investments centered along the six CAREC transport corridors, and all major CAREC projects were well aligned within the CAREC geographic space.
6. Map 1 illustrates the six CAREC multimodal corridors, which continue to guide transport infrastructure development in the new transport strategy. Corridors 1, 3, 4, 5 and 6 remain as defined in the TTFS 2020 (Appendix 2). Corridor 2 was revised in 2017 after Georgia joined the CAREC program. The corridor extension to Georgia expands the CAREC multimodal network connectivity to the Black Sea ports and the land border with Turkey.
7. Going forward, CAREC member countries will continue prioritizing investment projects and transport initiatives along the CAREC corridors, with greater emphasis on multimodal connectivity, road asset management and road safety. Within the framework of the new transport strategy, the six corridors are viewed as a network of economic connectivity. Not only the main CAREC highways and railways, but also connecting and branching roads and railways, and logistics facilities are viewed as part of the CAREC Corridor network.
8. Despite good progress in achieving infrastructure development outputs, key outcomes of the TTFS 2020 such as average speed and cost of travel along the CAREC Corridors did not improve. In 2018 the average speed of travel along all six CAREC Corridors reached 21.3 km per hour, significantly fell short of the target of 30 km per hour set for 2020 and even reduced from the 2010 baseline of 23.5 km per hour. Nevertheless, the average number does not show the entire picture. The average speed performance of each of the six CAREC Corridors differs significantly, ranging for road transport from 4 km per hour in Corridor 5b to 41 km per hour in Corridor 1a.⁴
9. Taking note of the good progress with infrastructure development, which does not always translate into improvement of trade and transport related outcomes, the CAREC program will further strengthen its focus on increasing of mutual trust and cooperation among the CAREC member countries in reducing non-physical trade and logistics barriers. More knowledge dissemination activities and capacity development support will be provided to all countries which seek to improve cross-border transport and logistics. Particular attention and support will be given to those countries where procedural and infrastructure bottlenecks are the highest and negatively impact the overall performance of individual corridors and the entire network.
10. A differentiated approach to supporting individual countries and CAREC corridors requires disaggregated performance monitoring. The CAREC program will graduate from reporting the average

⁴ Asian Development Bank. CAREC Corridor Performance Measurement and Monitoring (CPMM), 2016.

Map 1: CAREC Multimodal Corridors



cars 19-1648 AV

Source: CAREC Secretariat.

performance indicators throughout the entire CAREC network and will develop a compendium of comprehensive indicators and analytical reports disaggregated by individual countries and corridors. Such performance monitoring and reporting will provide useful reference information, comparative analysis and recommendations for consideration and decision making of the relevant government authorities of the CAREC DMCs.

11. The CAREC Corridor Performance Measurement and Monitoring (CPMM), which was launched in 2010 meets these requirements and will continue serving as the primary source of information about transport operations and impediments along the CAREC corridors. Based on the data collected since launching the CAREC CPMM, further analytical reports will be prepared to support CAREC DMCs in improving the procedures and infrastructure of the CAREC corridors.

12. The CAREC Transport Sector Progress Report (TSPR) will continue providing annual

updates about progress in all key pillars of the CAREC transport sector work. The TSPR will give an opportunity to all CAREC DMCs to inform each other about progress in their priority transport investment projects and their priority investment plans and needs for the next several years. If required, TSPR will provide linked in-depth reports on particular transport sector topics of interest, such as progress towards implementation of the road safety and railway strategies, achievements in road asset management, and other transport pillars.

13. CAREC will encourage private sector participation in the funding and operation of transport assets, as a mechanism to boosting efficiency, widening the funding base, improving risk management, and encouraging institutional reforms at state-owned transport operators. The CAREC Federation of Carrier and Forwarder Associations (CFCFA) has successfully piloted collaboration initiatives between private freight operators along CAREC corridors and will expand these and other joint public-private initiatives.

CAREC Transport Sector Strategic Framework

14. The CAREC Transport Sector priorities are fully aligned with the CAREC mission to establish a *Regional Cooperation Platform to Connect People, Policies, and projects for Shared and Sustainable Development*. Key objectives of the CAREC Transport Strategy are *Connectivity and Sustainability*.

15. For improved trade and transport connectivity, CAREC DMCs and development partners will focus on prioritization and implementation of transport infrastructure development projects along the CAREC Corridors. The CAREC program will provide a communication and coordination platform for the CAREC DMCs and development partners in presenting and discussing new projects and transport initiatives. The platform will continue supporting DMCs in aligning their priorities with each other and building a well-connected transport network, regulation and operational practices. Through the CAREC program, individual DMCs will be able to consolidate support from their neighbors and raise syndicated development financing for implementation of large-scale infrastructure projects.

16. CAREC DMCs and development partners will increase attention to operational procedures and equipment harmonization to enable smooth multimodal operations along the CAREC corridors. Ports and shipping operations will be better aligned with land transport through deployment of modern Information Communications Technologies, harmonized shipping data standards, transport

documents, scheduling of operations and institutional reforms. Better alignment of cross-border transport operations will be pursued through stronger engagement of the private transport and logistics operators in diagnosing connectivity issues and setting CAREC priorities actions in cross-border multimodal transport and logistics.

17. The CAREC Program will continue promoting best quality standards in transport project design and implementation. Robust safeguards and ecological standards, high quality and sustainable design, transparent procurement and efficient project implementation practices are trademarks of the CAREC program. As much as possible, infrastructure development projects will incorporate sustainable development elements, including greener transport, which will further enhance their regional economic and social impact.

18. The *Sustainability* agenda will receive maximum attention given strong demand to convert transport infrastructure investments into sustainable economic and social development. Within the CAREC transport sector, particular attention will be given to reducing cross-border trade and logistics barriers to support the growth of free trade and economic development within the CAREC region. Sustainability of transport infrastructure investments through improved financing and management of road and railway assets will receive additional impetus through CAREC knowledge products and institutional capacity development activities. Deeper integration of contemporary road safety principles and

practices in transport infrastructure and operations will be achieved through consistent implementation of priority actions under the CAREC Road Safety Strategy 2030.

transport sector, aligned with the key CAREC objectives (Table 1). Each pillar will be expected to contribute both to increased regional connectivity and greater sustainability of the national transport system.

19. The CAREC Transport Strategy 2030 will be activated through the five key pillars of the CAREC

Table 1: CAREC Transport Strategic Framework –Two Objectives and Five Pillars

| Transport Pillar | Connectivity objective | Sustainability objective |
|--------------------------------------|---|---|
| Cross-border Transport and Logistics | <ul style="list-style-type: none"> Implementation of transport facilitation agreements and conventions and fostering regional transit transportation dialogue Improvement of border crossing facilities and procedures Development of ports and logistics centers facilities and operations to support seamless interoperability of all modes of transport | <ul style="list-style-type: none"> Reduced cost of trade, increased trade and economic growth Increased efficiency and integrity of public institutions Improved safety and security |
| Roads and Road Asset Management | <ul style="list-style-type: none"> Sufficient allocation of funds for construction, rehabilitation and maintenance of roads Strategic long-term planning for development of the regional and national transport networks to meet growing social, economic and trade connectivity needs | <ul style="list-style-type: none"> Improved economic and social conditions through better connectivity Financing allocation based on robust analytical and decision support tools, such Road Asset Management System (RAMS) Institutional and procedural reforms for improved national road asset management Increased private sector participation in road operation and maintenance |
| Road Safety | <ul style="list-style-type: none"> Improved propensity to travel due to increased safety | <ul style="list-style-type: none"> Increased road safety leading to reduces life, health and economic losses |
| Railways | <ul style="list-style-type: none"> Construction, rehabilitation, modernization and maintenance of railroads Development of stations and intermodal facilities Purchase and maintenance of rolling stock suited to emerging needs Effective commercial and efficient operational practices | <ul style="list-style-type: none"> Improving economic and social conditions through reduced service cost and improved quality of service Sustainable operational practices, inclusive financial and cost management, railways assets management and upgrade, staff qualifications Enhanced safety and security for all users, especially women Improved environmental sustainability through modal shift, energy efficiency improvements, and fuel switch |
| Aviation | <ul style="list-style-type: none"> Development of airports and public transport linkages Regional and national policies and agreements to foster open markets competition and cooperation Improved efficiency of air freight | <ul style="list-style-type: none"> Increased economic opportunities through trade, industry and tourism Increased efficiency, safety and security |

Source: CAREC Secretariat.

Strategic Pillar: Cross-border Transport and Logistics Facilitation

20. CAREC and Cross-border Transport & Logistics Facilitation (CBTLF). From its very inception, the CAREC program focused on improving cross border movement of people and cargo. CAREC program developed holistic approach towards trade and transport facilitation, which was reflected in the philosophy of the CAREC Transport and Trade Facilitation Strategy (CAREC TTFS). CAREC TTFS⁵ suggested actions on improvement of customs and other border control procedures; implementation of modern risk management principles in border control of cargo, vehicles and drivers; improvement of the border crossing infrastructure and equipment; facilitation of cross-border and transit traffic through international transport conventions and agreements and regional traffic rights agreements; support in establishing multimodal logistics centers in strategic locations along the CAREC transport corridors.

21. CAREC TTFS adopted the CAREC-corridor based approach to CBTLF through focusing priority infrastructure investments and transport facilitation actions along six CAREC Corridors. The CAREC Corridor Performance Measurement and Monitoring (CPMM) system was designed to monitor time and costs of road and rail travel across the key border crossing points of the CAREC Corridors. The

monitoring started in 2010 and was implemented by the CAREC Federation of Forwarders and Carriers Associations (CFCFA). Furthermore, for more integrated management of the CAREC corridors, the TTFS proposed establishing Corridor Management Units (CMU) for selected pilot corridors, and Designated Railway Corridors (DRC).

22. Key Issues. Despite desire to implement integrated approach to the cross-border transport and logistics, institutional coordination among national transport agencies and Border Management Agencies (customs, border security, SPS, etc.) remains weak in most of the CAREC DMCs. Even weaker is the cross-border coordination between BMAs of neighboring countries. As a result, average time and cost of clearing the border remains very high, while average speed of travel along the CAREC corridors is low (Figure 1). While the average speed of freight traffic by road and rail⁶ did not improve over the reporting period of 2010–2018, the Speed without Delays (SWOD)⁷ shown substantial improvement. The trend shows that CAREC actions to improve road and rail infrastructure contribute to increased travel speed, but those gains are lost due to the cumbersome slow border crossing and other government inspection procedures.

⁵ CAREC Transport and Trade Facilitation Strategy (2008) and CAREC TTFS 2020.

⁶ Speed with Delays (SWD) accounts all stoppages for to the government checks and queuing/waiting time.

⁷ Speed without Delays (SWOD) excludes all stoppages for the government checks and queuing, and accounts only the productive driving time.

23. CAREC CPMM demonstrated improvements of border clearance times along selected corridors and at selected border crossing points. In 2016, the best performing border crossing points achieved 0.1 hours of the total average processing times for inbound (import) and outbound (export) traffic, which is close to the best international standards. But the worst performing border crossing points delayed the outbound traffic for 60 hours and inbound for 43 hours on average. Furthermore, the average total processing time at the worst performing pair of border crossing points of the CAREC network reached staggering 103 hours of the total waiting and processing time through a connected pair of border crossing points. The border crossing delays were caused by variety of factors:

- Outdated infrastructure and equipment
- Poor traffic management during peak seasons and hours resulting in long queues
- Inefficient and duplicative customs, immigration, security, sanitary and phytosanitary control procedures
- Absence of effective traffic rights agreements, which results in transshipment of cargo or long waiting time for special traffic permits
- Absence of effective customs transit guarantee mechanisms, resulting in long waiting time for the customs escort or customs bond
- Weak risk management systems and practices
- Rent seeking by border control officials, which results in deliberate slowing down of processes for those carriers who are not prepared to pay unofficial fees.

24. The most significant obstacles to free movement of cargo and passengers not captured by CPMM are caused by absence of traffic rights agreements between selected DMCs, permanent or temporary closures of border crossing points, restrictions on specific types of traffic, bilateral legal status of some CAREC border crossing points and other restrictive practices. As a result, transit traffic often has to divert from the most direct and convenient routes along CAREC corridors or transshipment of cargo is required between transport vehicles of neighboring countries, which increases time and cost of transport and negatively impacts regional trade.

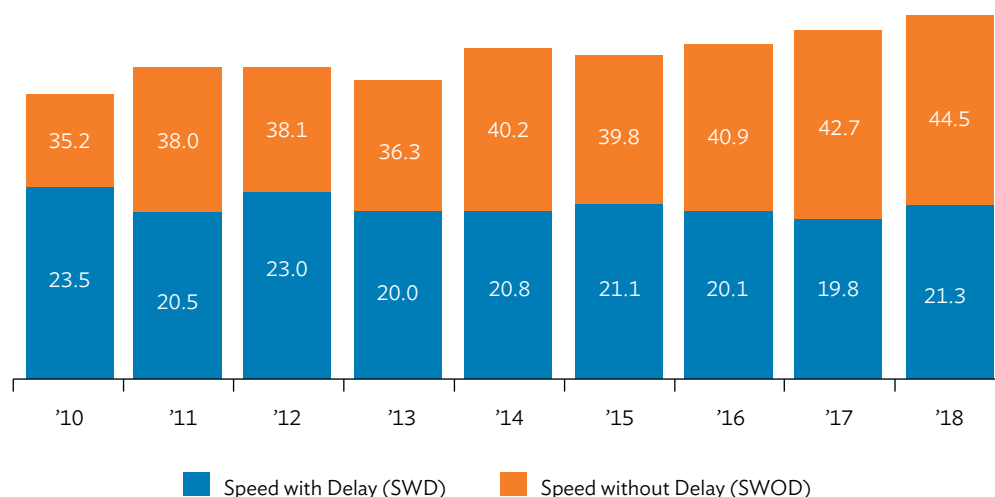
25. CAREC transport corridors connect landlocked countries to overseas trading partners through deep sea ports of the Arabian Sea and Black Sea. Furthermore, improved connectivity can be achieved through the multimodal corridor via the Caspian Sea. Despite significant investments in sea ports and shipping operations, the regional multimodal logistics and transport operations remain slow and costly. Significant delays and additional costs are caused by limited interoperability between water transport and land transport operations, by slow border crossing procedures and insufficient logistics facilities and technologies.

26. **Actions.** In 2015,⁸ CAREC DMCs agreed to adopted principles of freedom of transit within the CAREC geographical area, by concluding and fully implementing bilateral and regional cross-border transport agreements (Figure 2); and joining key UN Cross-Border Transport Facilitation Agreements and Conventions, especially TIR Convention (1975), Convention on Harmonization of Frontier Control of Goods (1982) and CMR Agreement (1956).⁹

⁸ 14th CAREC TSCC. Summary of Proceedings. <http://test0301en.carecprogram.org/uploads/2015-TSCC-Summary-Proceedings-14th-CAREC-TSCC2.pdf>

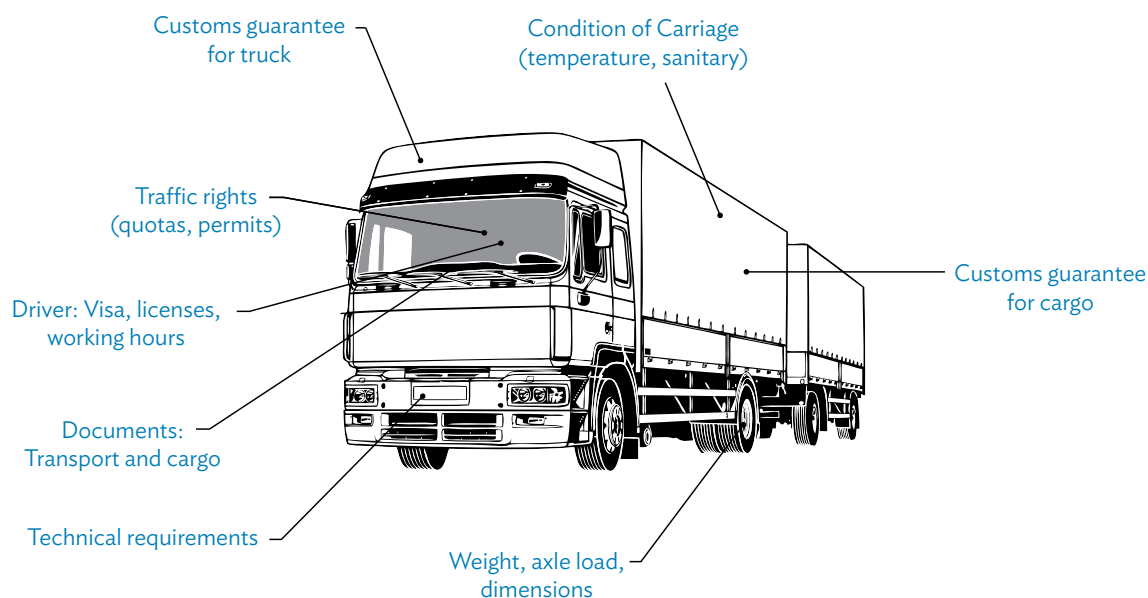
⁹ International UNECE agreements and conventions: <https://www.unece.org/trans/conventn/legalinst.html>

Figure 1: Average speed with Delay and Without Delay Across Borders along the CAREC Corridors, 2010–2018 (kilometers per hour)



Source: CAREC Secretariat. The CPMM methodology and data are further explained in CAREC CPMM Annual Report 2016. <https://www.carecprogram.org/?publication=carec-corridor-performance-measurement-and-monitoring-annual-report-2016>

Figure 2: Components of Bilateral and Regional Cross-Border Transport Agreements



Source: CAREC Secretariat.

By 2017, after accession of Pakistan and PRC, all CAREC member countries are now fully covered by TIR, with national road transport associations and local chambers of commerce acting as guaranteeing organizations. In parallel with implementation of TIR customs guarantee mechanism, selected CAREC member countries agreed to the pilot implementation of CAREC Advanced Transit System (CATS), which in the long run can become an alternative CAREC-wide customs transit guarantee mechanism.

27. Several Regional Improvement of Border Services (RIBS) projects were implemented in CAREC member countries and adopted holistic approach to improvement of border crossing points, institutions and procedures. One of substantial components of RIBS approach was establishment of integrated management structures for development, maintenance and coordinated operations of the border crossing points. New CAREC projects, which will follow this approach will include some of these elements:

- (a) Establishment of integrated management structures, such as Land Port Authorities;
- (b) Construction of border crossing point facilities and installation of control equipment;
- (c) Deployment of efficient ICT solutions to enable integrated data flow and management;
- (d) Training and Capacity development for the border management agencies;
- (e) Supporting implementation of best practices and legal instruments, such as Revised Kyoto Convention, WCO Safe Framework, TIR Convention, Harmonization Convention (1982), etc.
- (f) Supporting implementation of TIR parks and electronic queuing systems to reduce congestions at the border crossing points, reduce unproductive waiting time and exhausts from the queuing vehicles.

28. Similar integrated approach will be pursued with development of sea port operations. In April

2019, CAREC Transport Sector Coordination Committee called for increased attention to multimodal operations through the regional sea ports and endorsed preparation of the scoping study to examine key issues and priority actions in developing seamless multimodal transport and logistics through the CAREC seaports. Key priorities for developing multimodal logistics and sea port operations within CAREC can be:

- (a) Development of knowledge products on ports and shipping, logistics operations and logistics centers will be prepared for specific countries to provide support in the national policy decision making;
- (b) Standardization of equipment, operational standards and schedules to reduce interoperability time and cost. Particular attention will be given to increased containerization of freight traffic along the CAREC corridors;
- (c) Usage of standardized FIATA freight forwarding documents will be further supported and training and capacity development activities will be implemented in partnership with International Federation of Freight Forwarding Associations (FIATA) and CAREC Federation of Carrier and Forwarders Association (CFCFA);
- (d) Implementation of advance shipping notification paired with robust risk management systems to enable expedited clearance of cargo in sea ports and dry ports;
- (e) Deployment of common data interchange standards and advanced information systems to enable smooth electronic data interchange between shippers and carriers and border management authorities of CAREC member countries
- (f) Support implementation of relevant international transport conventions and regional transport agreements to enable freedom of transit within CAREC internal waterways.

29. Modern Information Communication Technologies (ICT) shall support seamless transport operations along the CAREC transport corridors. Relevant ICT components will be integrated in the CAREC transport projects to enhance cross border transport time and cost. The most relevant ICT related project components will be:

- (a) ICT and security equipment and business process streamlining at land border crossing points and sea ports;
- (b) Intelligent Transport Systems to enable efficient management of traffic in congested areas near the sea ports, at the border crossing points, in urban areas, severe whether impacted areas such as mountain regions;
- (c) CAREC DMC and development partners will look for opportunities to combine transport infrastructure development with construction of international high performance communication lines;
- (d) In addition to transport related information technologies and systems, additional positive impact on international trade cost and time can be achieved through implementation of other trade and general governance information systems, such as National Single Windows for Trade.

30. Private sector will be engaged in developing smooth cross-border transport operations. With support of the CAREC Federation of Carrier and Forwarders Associations (CFCFA), CAREC program will continue monitoring speed and costs of travel along CAREC transport corridors, by rail and road. Deeper engagement of the CFCFA associations will help provide the in-depth analysis of transport and logistics issues along the CAREC corridors, will contribute to recommendations on reducing time and cost of cross-border transport and will support implementation of priority actions.

31. CAREC program will prioritize the holistic improvement of business logistics environment to enable seamless end-to-end trade and transport within the CAREC region and beyond. Attention will be given to all pillars of logistics and supply chain management. CAREC program will strive to improve logistics performance of all DMCs along all pillars monitored by the Logistics Performance Index.¹⁰ Training and capacity development in Logistics and Supply Chain Management in the CAREC DMCs will be priorities as an important prerequisite for the long-term planning and improvement of the regional logistics performance.

¹⁰ World Bank. 2018. Logistics Performance Index. Available at: <https://lpi.worldbank.org/international/global>

Strategic Pillar: Roads and Road Asset Management

32. CAREC and Roads and Road Asset Management (RAM). Throughout the last decade, investments in the road sector have focused on the upgrading and rehabilitation of priority road networks in CAREC countries, bringing up the standard of these roads to address current and future transport needs. This has had a significant impact on the overall condition and standard of these roads. To ensure the sustainability of these road improvements, the TTFS 2020 envisaged the development of Road Asset Management Systems (RAMS) and the implementation of Performance-Based Maintenance (PBM) contracts in several CAREC DMCs. Implementation of Performance-Based Maintenance (PBM) contracts in several CAREC DMCs was envisaged in the TTFS 2020. To support this objective a regional Road Asset Management Workshop was held in April 2015, followed by the preparation and dissemination of three road asset management publications. CAREC self-assessment tools were designed and used by DMCs to assess their status and capacity to implement robust Road Asset Management Systems (RAMS). Throughout the TTFS 2020 implementation period, CAREC DMCs and development partners continued working on the modality of PBM contracts and arrangements for development financing of the PBM related projects.

33. Key Issues. Despite improvements of CAREC road network infrastructure and road maintenance practices, with budgets prioritizing

construction and rehabilitation, existing levels of maintenance funding cover only a fraction of estimated needs. The limited maintenance funding furthermore tends to be targeted at older roads in poor condition, with allocation of funds not necessarily needs- and demand-driven. As a result, proper maintenance of the recently completed road networks has been lacking, leading to the accelerated deterioration of these roads and resulting in only limited reductions to travel times.¹¹ By failing to maintain these assets, however, countries have been unconsciously imposing higher future expenditures and road user costs as road conditions continue to deteriorate. At a certain moment these roads will no longer be maintainable, requiring costly rehabilitation or reconstruction.

34. Actions. The objective of this strategic pillar of the CAREC program is therefore to strengthen road asset management in the CAREC countries. Road asset management is a strategic approach that seeks the optimal allocation of resources for the management, operation, preservation and enhancement of road infrastructure to meet the needs of current and future road users. Road asset management looks at the optimization of available funding levels and especially the optimal allocation of this funding to different roads and different investment types, with the aim of maximizing the benefits over time in terms of improved road conditions and reduced road user costs. By collecting and analyzing data regarding the road network and

¹¹ Although road deterioration negatively impacts travel times, an even more significant cause of delays is related to border crossings.

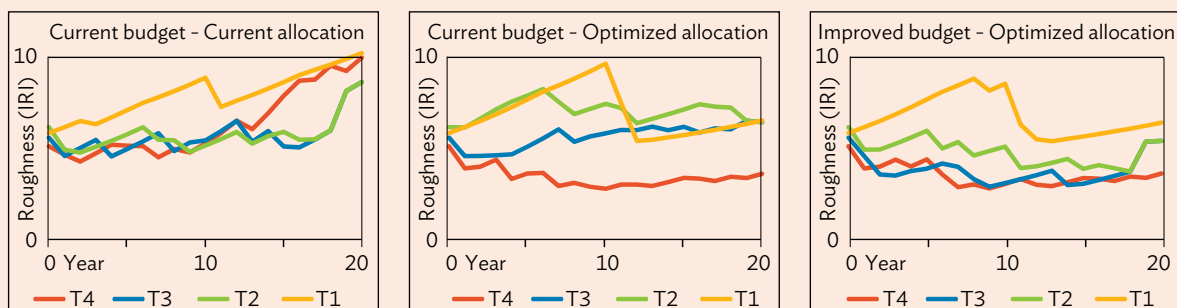
its users, governments can make better informed choices regarding the allocation of funding to either develop, rehabilitate, or maintain an ever-expanding network of roads. This may also take into account any expected climate change impacts. This introduces a shift in focus from short-term targets regarding the upgrading of road standards, towards the long-term benefits of road maintenance on asset sustainability and future road sector funding requirements.

35. Although CAREC supports the ongoing general development of the six CAREC road corridors, the emphasis of future investment and technical assistance will increasingly prioritize routine and periodic maintenance¹² of completed roads through 2030. This will be combined with the introduction and further development of road asset management systems (RAMS) that optimize and categorize the allocation of maintenance funding in relation to long-term road conditions and costs.

36. The RAMS approach focuses on optimizing the efficiency and effectiveness of funding allocations in the road sector. The RAMS allows governments to predict future conditions of the road network and to determine the impact of different funding levels and funding allocations on the road network in the long term. This optimization of the funding levels and allocations generally results in a shift in focus towards the preservation of roads in good or fair condition, giving priority to roads with higher traffic volumes. Pakistan is currently the only CAREC country that has a fully mainstreamed and integrated RAMS for its national highway network, although several other member countries have progressed in this direction. In Pakistan, this has resulted in a shift in funding allocations towards periodic maintenance, and a significant reduction in the average roughness of its highway network.

Box: RAMS Analysis at Different Budget Levels

The example below shows a RAMS analysis depicting the expected highway conditions over time for Yunnan Province in the People's Republic of China based on different budget levels and allocation strategies. The first graph is based on current budget levels whereby allocations focus on the rehabilitation of a limited number of roads in poor condition, leading to the gradual deterioration of the rest of the road network which does not receive funding. In the second graph the allocation is optimized for the same budget, focusing on roads with high traffic volumes and prioritizing preventive maintenance of roads in good or fair condition. This allows a greater portion of the network to be maintained and results in overall better road conditions, especially for high volume roads (T4). The third graph shows how an increase in the budget allows a greater portion of the road network to be rehabilitated and maintained, with further improvement of the road conditions over time (again focusing on roads with higher traffic volumes).



T1≤1000ADT, 1000ADT<T2≤2000ADT, 2000ADT<T3≤4000ADT, T4>4000ADT, ADT = average daily traffic, IRI = International Roughness Index.

Source: ADB. TA 7962, Yunnan Sustainable Road Maintenance Project.

¹² Routine maintenance refers to activities carried out on a regular basis to ensure the proper functioning of road elements (e.g. clearing drains) and to carry out small repairs (e.g. patching potholes). Periodic maintenance refers to activities that are carried out every few years in a significant portion of the road to rejuvenate the pavement and other road elements.

Table 2: Components of Road Asset Management

| Institutional Framework | | Planning |
|-------------------------|----------------------|----------|
| Financing | RAMS data collection | |
| | RAMS data management | |
| | RAMS data analysis | |
| Implementation | | |

Source: CAREC Secretariat.

37. The RAMS is only a tool, however, and to function properly it needs to be integrated into the wider context of road asset management, including financing mechanisms, planning procedures, implementation modalities and institutional framework (Table 2). This integration tends to be the main challenge faced by countries in achieving the benefits of a RAMS, and CAREC will therefore pay significant attention to working with member countries to ensure that their road asset management systems link up properly with existing road management procedures, assisting in the adjustment of these procedures where this is considered necessary and desirable.

38. This will look at possible financing mechanisms and different funding levels for road maintenance, developing strategies to ensure adequate funding for maintenance operations and predicting the impact on future road conditions and road user costs. Special attention will be given to the introduction and development of road user charges as a source of maintenance funding. The CAREC program will furthermore determine how the RAMS may support existing planning procedures in CAREC countries, strengthening decision making based on objective data analysis. The need for institutional

reforms will be assessed, ensuring that the required institutional capacities exist to run the RAMS and to implement the resulting plans. Alternative implementation modalities will be reviewed to identify options that provide suitable incentives for the timely execution of road maintenance in line with plans.

Different financing mechanisms are used in the CAREC member countries. For road network development, general budget allocations and donor funding are commonly used. Although general budget allocations are also common for financing road maintenance, there is a growing tendency to introduce earmarked road user charges. Common road user charges include fuel taxes, vehicle registration fees, heavy vehicle surcharges, and tolls.

39. In support of road asset management, the CAREC Program will also assist the further introduction of performance-based maintenance contracts (PBM).¹³ The PBMs facilitate the management of road maintenance and improve the predictability of resulting road conditions, while also increasing the interest from contractors and providing incentives to invest in maintenance equipment and carry out repairs in a timely manner. As such, they complement the RAMS very well. Mature experiences with PBMs have resulted in cost savings of 15%-30% when compared to traditional approaches (Table 3). The 14th TSCC Meeting in April 2015 confirmed region-wide interest in implementing PBMs, and several countries have successfully piloted PBM maintenance programs, with plans for further expansion. The CAREC Program will continue to support member countries in addressing the challenges faced in PBMs regarding the use of suitable performance indicators and incentive structures, the lack of experience of the local contracting industry, and the effects of overloading on road conditions.

¹³ PBMs involve multiannual road maintenance contracts that require contractors to ensure that road conditions comply with predefined minimum performance standards at all times.

Table 3: Cost Savings of Performance-based Contracts

| Country | Reported Savings |
|-----------------|------------------|
| Australia | 10%–40% |
| Brazil | 15%–35% |
| Canada | 20% |
| Estonia | 20%–40% |
| Finland | 18% |
| The Netherlands | 30%–40% |
| New Zealand | 15%–38% |
| United States | 10%–15% |

Source: International Overview of Innovative Contracting Practices for Roads, 2007

40. CAREC will work with member countries to structure and implement RAMS systems and PBMs that encourage appropriate road maintenance strategies, in accordance with the conditions and characteristics of each member country. Effective implementation will require significant funding commitments from the public and private sectors, and the political will of transport and government agencies to undertake institutional and regulatory reforms. It will also require the active participation of the private sector in both works implementation as well as management support.

41. CAREC will serve as a leading platform for knowledge dissemination and regional workshops promoting the application of RAMS and PBC. In 2018, the CAREC Secretariat produced a compendium identifying 11 best practices crucial to the successful introduction and integration of RAMS.¹⁴ In the same year, a guide on performance-based road maintenance contracts was also prepared, identifying best practices and lessons learned from various countries.¹⁵ These two documents will form the basis for the further introduction and development of RAMS and PBMs in the CAREC member countries. The CAREC program will also provide wider support to the improvement of road asset management in the member countries, ensuring the financing mechanisms, planning procedures, institutional frameworks and implementation modalities allow the RAMS and PBMs to be used to their full potential.

42. CAREC will provide a platform to help facilitate dialogue between different government agencies, and between different countries, particularly given the need for collaboration across multiple agencies to implement road maintenance. Due to the huge regional variance in approaches to road maintenance, member countries will benefit from the knowledge sharing of best practice that CAREC provides.

¹⁴ <https://www.adb.org/publications/compendium-best-practices-road-asset-management>

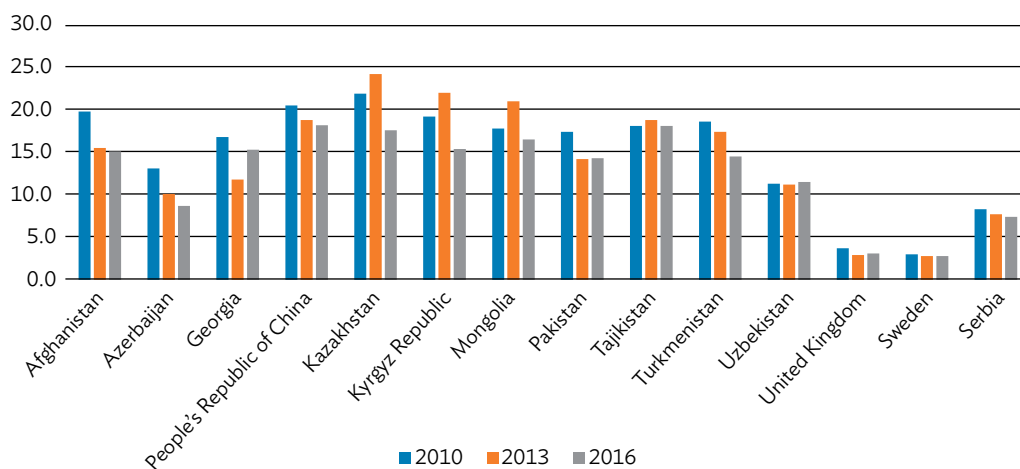
¹⁵ <https://www.adb.org/documents/guide-performance-based-road-maintenance-contracts>

Strategic Pillar: Road Safety

43. CAREC and Road Safety. Road crashes are the eighth most important cause of death globally and the sixth in Central Asia as of 2014. Improvements in road safety can dramatically reduce deaths and injuries while delivering significant social and economic benefits. For example, in Western Europe, where serious efforts have improved road safety, road crashes are the 24th most important cause of death.¹⁶ Thus, road crashes are preventable through adoption of internationally accepted road safety practices based on sound research.

44. Key issues. While road traffic deaths rates have decreased by about 15% on average since 2010 across all CAREC countries, the number of annual road traffic fatalities (60,000) and injuries (600,000) remain high in the CAREC region (Figure 3).¹⁷ As of 2018, the road traffic death rates range from 8.7 to 18.1 per 100,000 population across CAREC countries as compared to 2.8 in Sweden and 3.1 in the United Kingdom.¹⁸ Road traffic fatalities are the tip of the iceberg. For every reported death, a number of people are injured with drastic consequence for the individuals involved and their families such as permanent disabilities.

Figure 3: Estimates Road Traffic Deaths Rates in CAREC Countries, Serbia, Sweden, and the United Kingdom, 2010, 2013 and 2016
(per 100,000 population)



Source: World Health Organization (WHO).

¹⁶ Global Road Safety Facility, The World Bank; Institute for Health Metrics and Evaluation. 2014. *Transport for Health: The Global Burden of Disease from Motorized Road Transport*. Seattle (IHME) and Washington (World Bank).

¹⁷ A road traffic fatality is defined as a death occurring within 30 days of a road traffic crash.

¹⁸ World Health Organization. 2018. *Global Status Report on Road Safety*. Geneva.

45. Road safety legislation, design standards, and practices in many countries do not reflect international good practice. Collection, reporting, and sharing of data on road crashes and casualties is limited in many member countries, thereby restricting the ability to formulate informed road safety action plans. Further, both requisite skills and knowledge of good practice relating to road safety are limited throughout the region. This includes critical areas such as performing road safety audits, black-spot investigations, effective road policing, road safety education and awareness campaigns, and first aid services provided by first responders. Long term commitment from the CAREC member countries is essential for safer roads. It is also essential to upgrade national road safety regulation, to be constantly aligned with international good practices.

46. **Actions.** Following the 14th CAREC Ministerial Conference in September 2015, the CAREC Road Safety Working Group was first established, which subsequently led to the preparation of the CAREC Road Safety Strategy 2017-2030 that was approved in 2016.¹⁹ The CAREC Road Safety Strategy endorsed a reference framework to guide and implement all future road safety-related activities, which is directly aligned with the United Nations' Decade of Action for Road Safety 2011-2020 and Sustainable Development Goals (SDGs).²⁰

47. The CAREC Road Safety Strategy's vision statement is to "make CAREC international road corridors safe, efficient, and attractive for all road users". The CAREC Road Safety Strategy aims to reduce the number of global deaths and injuries from road crashes by 50% by 2030, relative to 2010 levels. In the CAREC context, this would

amount to at least 23,000 lives saved and 250,000 injuries avoided each year. The CAREC Road Safety Strategy includes a number of specific output indicators and targets.

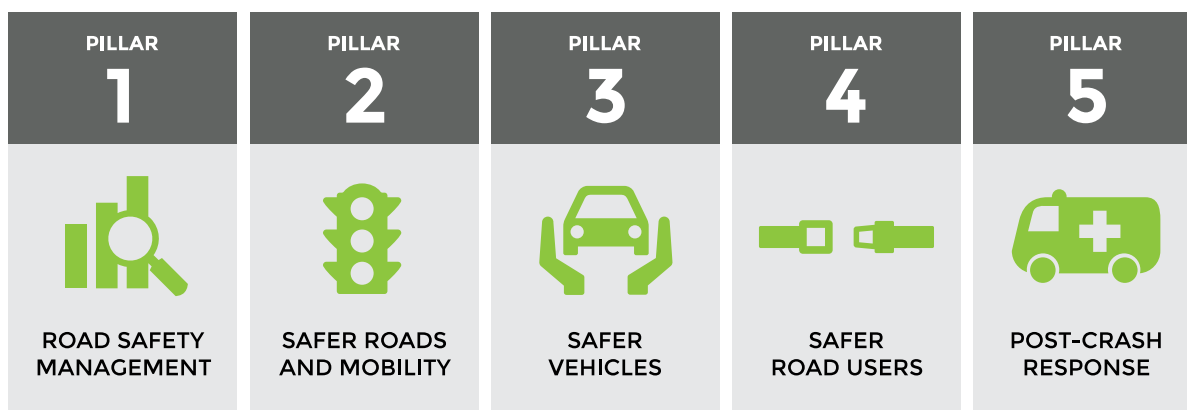
48. Following the approval of the CAREC Road Safety Strategy, promising progress has been made in mainstreaming and integrating road safety engineering in design and implementation of CAREC road projects. The vast majority of CAREC road projects are subject to road safety audits before and during construction. A series of three road safety manuals (road safety audit, safer road works, and roadside hazard management) were developed and disseminated through national training workshops to support and guide DMCs' efforts.

49. CAREC countries will continue implementing the CAREC Road Safety Strategy in the period up to 2030. Implementation efforts will focus to a greater extent on road safety management (pillar 1) and safer road infrastructure (pillar 2), which involve direct collaboration with Transport Ministries in member countries. Safer road vehicles (pillar 3), safer roads users (pillar 4), and emergency post-crash care (pillar 5) will also receive due attention in line with each country's needs and priorities (Figure 4).

50. Priority actions under pillars 1 and 2 may include (i) developing national road safety strategies and action plans, (ii) improving collection and monitoring of crash data, (iii) upgrading road design standards, (iv) institutionalizing road safety audits processes, (v) eliminating hazardous locations on existing road networks, (vi) developing road safety engineering capacities, and (vii) improving safety at road work sites.

¹⁹ ADB. 2016. *Safely Connected: A Regional Road Safety Strategy for CAREC Countries (2017-2030)*. Manila.

²⁰ Two of the SDGs targets are specifically related to road safety: target 3.6 aims to halve the number of global deaths and injuries from road traffic accidents by 2020 and target 11.2 seeks to provide access to sustainable and safe transport systems.

Figure 4: Five Pillars of the United Nations Decade of Action for Road Safety

Source: Together for Safer Roads (2015).

51. Overall, the CAREC Program will help catalyze priority road safety actions through (i) project preparation, (ii) peer learning, (iii) knowledge sharing, (iv) capacity development, (v) policy dialogue, and (vi) technical assistance and investment financing. Use of high-level technologies and preparation and implementation of fully-fledged road safety programs through alternative financing modalities (e.g.: results-based or policy-based lending) will be given special attention.

52. To better facilitate coordination of each country's road safety initiatives, which typically involve several stakeholders, the CAREC Transport Sector Coordination Committee will provide a platform to monitor progress and facilitate experience sharing across member countries. Ad-hoc regional and national meetings will be regularly held to advance the road safety agenda and help reinforce a collective approach to achieving targets of the CAREC Road Safety Strategy.

Strategic Pillar: Railways

53. CAREC and Railways. Cognizant of the centrality of railway transport for enhancing multimodal connectivity, TTFS 2020 introduced the designated rail corridors (DRCs) concept, to create conditions for seamless, uninterrupted train services across borders (Map 2). Railways are crucial to promoting economic diversification through the development of logistics and manufacturing supply chains. The efficient use of railways can also help countries to meet sustainable development goals on climate change, since they are generally a carbon-efficient mode of transport on a ton-km or passenger-km basis.²¹ Railways are also characterized by their long economic life: movement of certain goods by rail – especially bulky and heavy goods – are cost effective on routes which have been in existence for a long period of time, and where capital expenditures have been amortized.

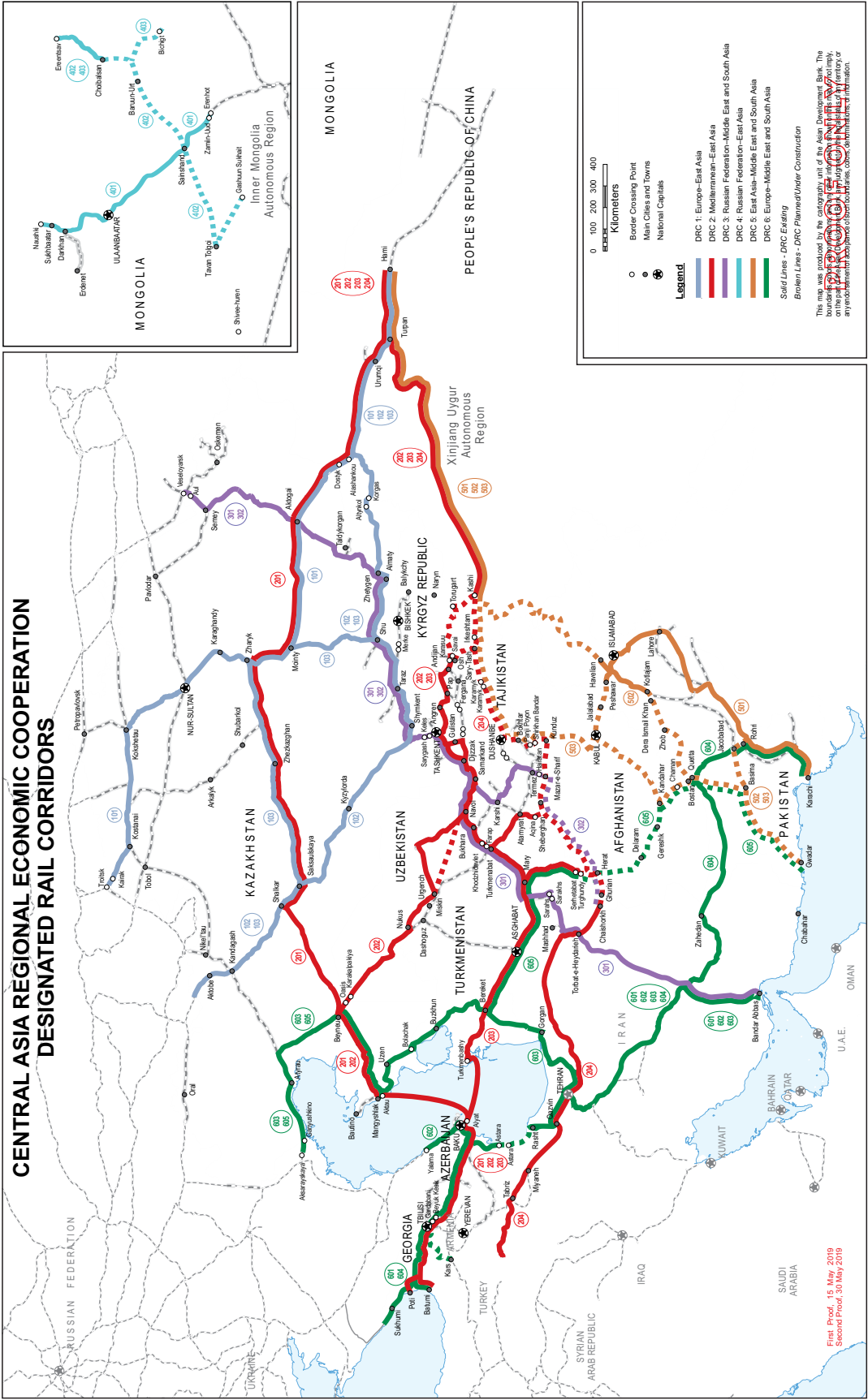
54. Key Issues. Despite being geographically well-positioned to capture growing demand for trans-continental rail cargo traffic, the railway sector's share of CAREC regional cargo trade has stagnated in favor of road transport. Underlying this trend is the fact that market requirements are rapidly changing in favor of faster, cheaper and user-friendly transport services. Railways need to improve the overall level of service to their clients and support the door-to-door movement of goods in tandem with other modes of transport, in order to meet such new requirements.

55. Actions. The CAREC Railway Working Group was established in April 2015 to offer a mechanism for CAREC countries to enhance regional cooperation in railways. The working group was tasked with formulating a strategy for rail to become a “transport mode of choice” by 2030. The strategy was completed in October 2016, and its framework is replicated in Figure 5. The strategy highlights a comprehensive set of actions to be undertaken under a two-pronged approach to enhance the sector's performance – through improvements of physical infrastructure, as well as in policies related to sector reform and commercialization. In support of these two approaches, the strategy sets out priorities in the areas of (i) development of effective rail infrastructure, (ii) development of robust commercial capabilities, and (iii) improvement of legal and regulatory frameworks. Targets are set for new railway construction and electrification, accompanied by measures to improve cost efficiency of rail freight.

56. In the period up to 2030, CAREC countries will work to implement the CAREC Railway Strategy. CAREC countries will use the Railway Working Group and its meetings to (i) deepen subsector assessments, (ii) develop and upkeep a regional traffic model to support evidence-based planning of investments, (iii) conduct project preparation (screening, pre-feasibility), (iv) develop/diffuse knowledge, and (v) build up the capacity of railway institutions.

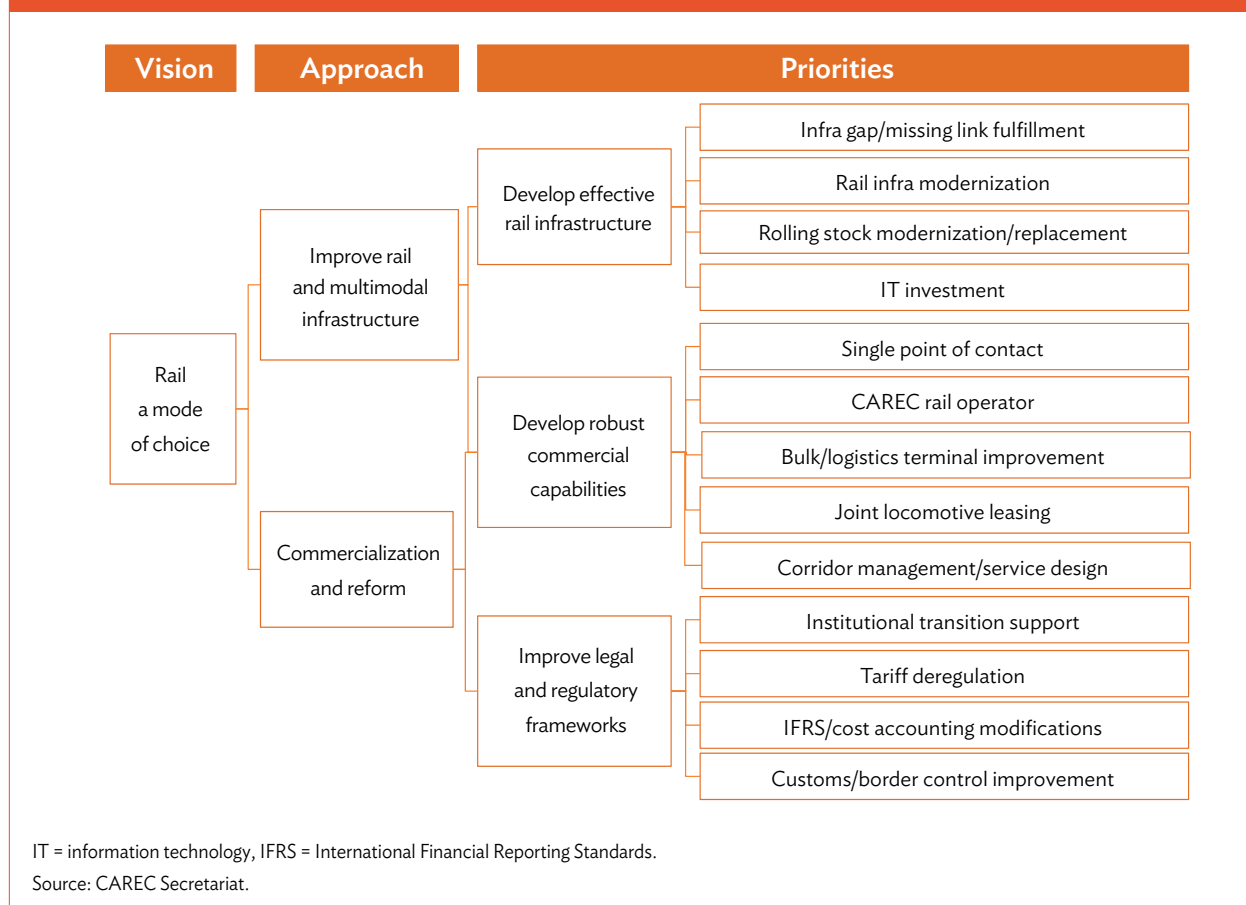
²¹ Intergovernmental Panel on Climate Change. 2018. Fifth Assessment Report. https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter8.pdf

Map 2: CAREC Designated Rail Corridors



Source: CAREC Secretariat.

Figure 5: Framework of CAREC Railway Strategy



57. The Railway Working Group will undertake or update subsector assessments in each CAREC member country, to enhance the understanding among policy makers on the constraints facing each railway and solutions to overcome them.

58. The Railway Working Group will develop and maintain an empirical model which can be used by CAREC member countries to forecast traffic, identify bottlenecks to further growth in traffic, and specify projects which can help to relieve such bottlenecks. Specific emphasis will be placed on border crossing points, to determine the cause of delays at such locations and to identify requisite solutions.

59. The Railway Working Group will aim to formulate bankable investment projects and

mobilize large requisite resources, by screening project options, performing pre-feasibility studies or validating existing pre-feasibility studies. CAREC countries will work to prioritize railway projects that are economically and financially viable, significantly facilitate cross-border freight, encourage private sector participation, or dovetail with wider institutional and regulatory reforms in individual countries. Important considerations will also be given to improve environmental sustainability of railways, through modal shift, enhanced energy efficiency and fuel switch (e.g. from diesel to electricity). Safety and security of railways will be pursued, for rail service users (including specific solutions for women where applicable), railway workers, as well as for the general public on matters relating to e.g. crashes at level crossings.

60. To support the policy aspects of railway sector actions and outputs, the Railway Working Group will develop knowledge products and conduct events on topics prioritized by CAREC countries, such as state-owned enterprise reform, financial restructuring, asset management, tariff policies and regulation, border-crossing policies, interoperability and environmental protection. The Railway Working Group will serve as a platform for providing training, capacity development, and introducing international best practice in these key areas. There will be a heavy emphasis on regional knowledge sharing of such best practices. The platform will also help facilitate better coordination between different agencies responsible for railways in each individual country.

61. The Railway Working Group will serve as a coordination mechanism among development partners to align their support to CAREC member countries. A dedicated technical assistance project has been prepared by ADB in response to countries' requests made in 2018 to support the initial implementation of the CAREC Railway Strategy in the aforementioned areas.²² This will be combined and coordinated with other important initiatives of various CAREC development partners.

²² ADB. 2018. Railway Sector Development in Central Asia Regional Economic Cooperation Countries. Manila. Available at: <https://www.adb.org/projects/52137-001/main>

Strategic Pillar: Aviation

62. CAREC and Aviation. With much of the CAREC region being land-locked and facing physically-restrictive geographies, air connectivity represents a vital transport option. Air connectivity is particularly key to moving perishable and high-value goods as well as being a preferred option for time-constrained business travel and tourism. The strategic location of CAREC countries also implies the region holds the potential to be an aviation hub between Asia and Europe.

63. Despite this significant potential, air connectivity between CAREC countries is quite sparse by international standards (Table 4). Of the

55 country pairs within CAREC, only 26 are linked. CAREC countries are generally better linked to markets outside CAREC. There are approximately 73,000 weekly seats between CAREC countries, including approximately 42,000 weekly seats between the PRC and other CAREC countries. Total weekly international capacity among the ten CAREC countries, excluding the PRC, is approximately one million seats. The PRC alone has more than 3.4 million international weekly seats.

64. Lack of competition and market access are the key factors inhibiting the sector's growth. The current scope of bilateral or multilateral air service

Table 4: Weekly Scheduled Services between CAREC Member Countries
(as of September 2017)

| From To | Afghanistan | Azerbaijan | Georgia | Kazakhstan | Kyrgyz Republic | Mongolia | Pakistan | PRC | Tajikistan | Turkmenistan | Uzbekistan | CAREC Total |
|----------------------|-------------|------------|---------|------------|-----------------|----------|----------|-----|------------|--------------|------------|-------------|
| Afghanistan | | | | 1 | | | 8 | 1 | | | | |
| Azerbaijan | | | 21 | 23 | | | | 5 | | 6 | 2 | |
| Georgia | | 21 | | 21 | | | | 3 | | | | |
| Kazakhstan | 1 | 23 | 21 | | 13 | | | 41 | 8 | 2 | 18 | |
| Kyrgyz Republic | | | | 13 | | 3 | | 10 | 2 | | 2 | |
| Mongolia | | | | | 3 | | | 53 | | | | |
| Pakistan | 8 | | | | | | | 12 | | | 2 | |
| PRC | 1 | 5 | 3 | 41 | 10 | 53 | 12 | | 7 | 4 | 8 | |
| Tajikistan | | | | 8 | 2 | | | 7 | | | 1 | |
| Turkmenistan | | 6 | | 2 | | | | 4 | | | | |
| Uzbekistan | | 2 | | 18 | 2 | | 2 | 8 | 1 | | | |
| Total | 10 | 57 | 45 | 127 | 30 | 56 | 22 | 144 | 18 | 12 | 33 | 554 |
| % of Total | 2% | 10% | 8% | 23% | 5% | 10% | 4% | 26% | 3% | 2% | 6% | 100% |
| Total w/o PRC | 9 | 52 | 42 | 86 | 20 | 3 | 10 | | 11 | 8 | 25 | 266 |

CAREC = Central Asia Regional Economic Cooperation, PRC = People's Republic of China.

Source: Official Airline Guide (OAG) database. <https://www.oag.com/analytics/schedules-analyser> (accessed in September 2017).

agreements between countries remains extremely limited. Many CAREC airports also charge landing fees, fuel prices, and taxes higher than the global average, while the regulatory environment in some countries encourages monopolistic practices by airlines.

65. Key Issues. CAREC initiated collaboration on the aviation sector with a study visit and training workshop in Singapore during the April 2017 TSCC. During this event, a consensus began to take shape in which regional aviation connectivity was recognized as a core area for CAREC support. This finding was confirmed during the 2017 CAREC Senior Officials Meeting in which it was decided to undertake a CAREC Scoping Study on Aviation. At this time, aviation was also formally recognized as the fifth pillar of the CAREC program (in addition to Railways, Road Safety, Transport and Logistics Facilitation, and Road Asset Management). In September 2018, the CAREC Aviation Scoping Study was published and disseminated to member countries.

66. Given the relative unrealized potential of aviation for CAREC countries, addressing the following key issues would be pivotal in catalyzing greater regional air connectivity:

- Phased approach to opening of air markets, including the initial permitting of “third” and “fourth” freedom rights for non-domestic airlines to serve intra-regional routes²³
- Creation of an enabling environment for the introduction of low-cost carriers into the CAREC aviation market, particularly for underserved areas
- Strategic investment in aviation infrastructure, including airport upgrades

and development in secondary cities with much tourism potential

- Upgrading of navigation and air safety equipment
- Augmenting of fleets with new or leased aircraft, especially smaller aircraft for regional connectivity
- Provision of quality public transport / mass transport systems between cities centers and airports
- Strategic adoption of public-private partnership (PPP) models, when appropriate, to improve efficiencies of airport management, including catering services, retailing, parking, and duty-free concessions
- Policy and project commitment to the adoption of paperless e-cargo systems that allows the seamless movement of air cargo across the CAREC region
- Evaluation of visa policies and aviation fee structures in order to better permit the free flow of passengers and freight through the region as well as the encouragement of a joint tourism strategy.

67. Actions. CAREC partners are well-placed to facilitate a move towards a more open and effective aviation market across the region. The CAREC Program provides a platform to promote bilateral and multilateral air service agreements, along with other forms of regional modernization of the aviation sector. CAREC could play a role with technical assistance to promote regulatory convergence and regional harmonization of common standards between member countries in areas including airspace management, transit agreements, navigation systems, and visa policies. This technical assistance could also be applied through consulting and knowledge services on

²³ ADB. 2018. Aviation and the Role of CAREC: Scoping Study. Available at: <https://www.adb.org/publications/aviation-role-carec-study>

critical industry issues such as pre-feasibility and feasibility studies, gap analyses, regulatory reforms, managing infrastructure monopolies, and creating a supporting environment for PPPs.

68. CAREC is likewise well-placed to provide capacity development and training support to member countries on aviation best practices. The initial CAREC aviation workshop was well-received, and from survey work under the CAREC Aviation Scoping Study, member countries particularly expressed interest in further capacity development activities on regulations and policies (including open sky agreements) and airport management practices. The participation to date in CAREC capacity development by key international aviation organizations, including the International Civil

Aviation Organization (ICAO) and the International Air Transport Association (IATA), should be encouraged to continue.

69. CAREC partners are poised to offer finance and grant support to member countries for aviation initiatives, particularly efforts that can overcome obstacles to aviation's role in economic development. Private investment through PPP structures are viable in air transport, especially where there is sufficient passenger or cargo demand. In other instances, conditions may require partial or full public investment, especially in the case of secondary cities or isolated portions of a country, where air transport investment can be key to local economic development.

Implementation Arrangements and Action Plan

70. The CAREC program is the joint cooperation platform of 11 developing member countries (DMCs) and international and bilateral development partners, with shared responsibility for choosing directions and priority actions. In 2000 ADB established the CAREC Secretariat to support primary CAREC activities. The core team of the CAREC secretariat is based in Manila, with additional consultants based in CAREC countries. Every CAREC member country nominates CAREC National Focal Points, who are usually senior government officials of ministries of economy or finance and sectoral focal points, who represent relevant ministries or agencies such as transport, energy, customs and trade. Every year CAREC program holds several high-level regional events, such as the CAREC Ministerial Conference, Senior Officials Meeting (SOM), Sector Coordination Committees and topical workshops and forums on Transport, Energy, Customs and Trade.

71. The CAREC Transport Sector Coordination Committee (TSCC) will continue to be held annually, normally in the first half of a year or as agreed by CAREC countries, preceding the mid-year CAREC SOM. The CAREC TSCC serves as a communication and coordination platform where DMCs and development partners have an opportunity to discuss key trends and priorities in the global regional transport, share their experiences, present new projects and initiatives, and discuss action plans for the short-term and mid-term horizon. Although most of the projects

presented and discussed in the CAREC TSCC are centered around six CAREC Transport Corridors, they remain highly relevant to the entire CAREC network and transportation systems of the CAREC neighborhood countries.

72. Regional Working Groups on railways, cross-border transport, road safety, road asset management and other priority topics will be held annually, preferably back to back with the CAREC TSCC. To improve capacity development and implementation of priority transport actions in individual countries, national training and capacity development workshops will be held. DMCs will be invited to express their interest in such national events based on their interests and specific needs. In design and implementation of the national workshops, key attention will be given to cross-country learning.

73. One of the key success factors for the CAREC program is its strong focus on development and financing of transport infrastructure. The program will continue further development of the CAREC transport infrastructure through identification and prioritization of projects which meet the objectives of regional connectivity, and economic, social and ecological sustainability. Communications and pre-feasibility assessment support will be provided especially to those projects which involve two or more countries and where coordination among CAREC DMCs and development partners is required. Through the CAREC platform, co-financing opportunities

including private sector financing and PPP opportunities will be identified.

74. In addition to establishing the platform for coordination and communication among CAREC DMCs and development partners (DPs), the CAREC program will continue prioritizing preparation and dissemination of knowledge products in relevant subsectors of transport. More attention will be given to the knowledge products to support decision making process of DMCs on specific transport related policy reforms. Knowledge products will be mostly directed towards the government policy decision makers rather than to the technical transport experts.

75. The CAREC Transport sector work will be led by the National Transport Sector Focal (NTSF) officials, appointed by all DMCs. Through their appointed NTSF, DMCs will contribute to prioritization of actions under the CAREC Transport agenda. All decisions under the CAREC transport agenda are made on a consensus basis by the CAREC DMCs. CAREC transport development partners will appoint their own focal points to represent their respective organizations.

76. The CAREC Transport Secretariat (CAREC Secretariat) is established in ADB and included ADB transport specialists, coordinators and consultants. The CAREC Secretariat coordinators and consultants are financed through TAs, which in the past have been supported by ADB and other funding resources. Staff of other development partners, including but not limited to World Bank (WB), European Bank for Reconstruction and Development (EBRD), Islamic Development Bank (IDB), International Road Transport Union (IRU), United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), United Nations Economic Commission for Europe (UNECE) and the Transport Corridor Europe-Caucasus-Asia (TRACECA) will continue providing technical, financial and organizational support to the program.

77. The CAREC Institute (CI) will upscale and align its transport-related knowledge generation, knowledge services and knowledge management activities with this strategy. CI will continue providing strategic support by designing and delivering road safety and road asset management workshops in the CAREC countries as well as further developing analytical and knowledge dissemination activities in the CAREC region's transport sector.

78. The CAREC Transport Sector will increase engagement with private sector organizations of the DMCs, mostly transport and freight forwarding associations. The private sector organizations will provide independent monitoring data, consulting and knowledge dissemination support. Knowledge products will be prepared to support development of the private sector in the CAREC region.

79. The CAREC program will support improving connectivity between CAREC DMCs and with the rest of the world and the sustainability of CAREC transport systems and networks. Key outcomes will be measured through travel time and cost of travel along CAREC transport corridors. Various outputs of the CAREC program will be measured to provide reference information for DMC and DP decision makers. The CAREC secretariat will compile and report required information and in cases when information is not readily available, will conduct dedicated studies and analysis.

80. The CAREC Transport Strategy 2030 will be monitored via annual CAREC Transport Sector Progress Report and Rolling Action Plan and, outline content of which is shown in Table 5. Full use will be made of CPMM and other indicators, with information updated and provided by individual countries, and consolidated into annual progress reports. Reviews of the CAREC Transport Strategy 2030 progress towards the high-level outcomes will take place annually during the meetings of sector professionals. Progress is unlikely to be uniform across all CAREC countries, and there should be

Table 5: CAREC Transport Sector Progress Report and Rolling Action Plan (TPR-RAP)

| Section | Key content | Data sources |
|--|---|---|
| Report on CAREC Transport work plan implementation | <ul style="list-style-type: none"> • Stock-take of activities completed by CAREC Transport Sector and lessons learned • Coordination Committees, Working Groups, training activities • Knowledge products completed, reports, publications | CAREC Secretariat |
| Transport projects update | <ul style="list-style-type: none"> • List of priority CAREC Projects by country and corridor with latest updates | DMCs |
| Project achievements | <ul style="list-style-type: none"> • Summary of projects and initiatives, which successfully integrated key topics of the Strategy | CAREC Secretariat, DMCs, DPs |
| Outcome level achievements | <ul style="list-style-type: none"> • Outcome indicators by pillar • Analytical reports, interpretation of data, lessons learned • Additional reports can be prepared as attachments to the Transport Sector Progress Report and Rolling Action Plan or stand-alone documents | All relevant per Appendix 1 |
| Action plan for the next year | <ul style="list-style-type: none"> • Detailed action plan with specific activities listed – working groups, knowledge products, capacity development activities, etc • Will be approved by annual CAREC TSCC | CAREC Secretariat in consultation with DMCs and DPs |
| Indicative plan for the next 3 years | <ul style="list-style-type: none"> • Indicative priority activities for the next 3 years • Decisions on CAREC Transport Sector technical assistance resource requirements • Will be approved by annual CAREC TSCC | CAREC Secretariat in consultation with DMCs and DPs |

Source: CAREC Secretariat.

adequate flexibility to accommodate potential future adjustments to objectives, and the evolution of regional or individual country circumstances. As such, where possible the indicators for the CAREC Transport Strategy 2030 High Level Outcomes are expressed as movements on a spectrum; or refer to the existing CAREC corridor performance and monitoring indicators (CPMM). High level indicators are drawn, where possible, from the associated sub-sector strategies (Appendix 1).

81. The CAREC Transport Strategy 2030 will be implemented in a phased approach through 2030, in line with the overarching CAREC Strategy 2030 and the associated Rolling Strategic Action Plan (RSAP) as a guiding framework. Implementation will also be synchronized to the greatest extent possible with the national development plans of member countries, as well as other CAREC-led regional initiatives such as the CAREC Integrated Trade Agenda (CITA) 2030 which has stipulated objectives to increase regional trade and investment flows within CAREC by 2030.

82. The CAREC Transport sector will follow the principle “Think Regionally – Act Locally”. The CAREC DMCs will be supported in cascading CAREC Transport Strategy 2030 priorities down into their own national transport sector strategies and action plans. The strategic alignment of the national transport strategies and action plans with the regional priorities of the CAREC Transport Strategy will help CAREC DMCs achieve stronger coordination in transport among each other. The national transport strategies and plans will contain country-specific result monitoring frameworks, performance targets, implementation arrangements and accountability mechanisms, which each CAREC DMC will set based on the national priorities and circumstances. The CAREC Secretariat will collect and summarize key priorities, performance targets and achieved outputs by individual country and will help CAREC DMCs share their plans and achievements with each other through the annual TPR-RAP. CAREC Secretariat and development partners will provide technical support to those DMCs which need assistance in developing their national transport strategies or action plans.

Table A1: Outcome Level Indicators for CAREC Transport Sector

| Pillar | Title | Outcomes | Indicators (sources/reports) |
|--------|---|---|---|
| 1 | Transport and Logistics Facilitation | Efficiency improvements in border crossing points (BCPs), customs clearance, immigration procedures and cross-border logistics. | <ul style="list-style-type: none"> Average speed by corridors (SWD) Time and cost to clear a border crossing point, by corridor, country and BCP Logistics Perception Index (LPI) |
| 2 | Roads and Road Asset Management | Improvement on the CAREC Road Asset Management maturity model* | <ul style="list-style-type: none"> 2019 (provisional): All countries at level 1 except Pakistan at level 3, for National Highway network (CAREC TSPR) Average speed of traffic without delays (SWOD), by corridors (CAREC CPMM) Perception of highway quality improved (Global Competitiveness Index (GCI) of World Economic Forum) – for selected countries |
| 3 | Road Safety | Reduction in the number of road crash fatalities on CAREC international road corridors | <ul style="list-style-type: none"> By 2030: 50% reduction from 2010 figure (82,000 fatalities). |
| 4 | Railways | Improved service level and operation efficiency of railways | <ul style="list-style-type: none"> CPMM average commercial speed, by CAREC corridor (SWD) and speed without delays (SWOD) Perception of railway quality improved (WEF GCI for railways) – for selected countries |
| 5 | Aviation | Creation of a more open aviation market that catalyzes enhanced exchange and trade outcomes | <ul style="list-style-type: none"> Number of CAREC country pairs achieving unrestricted third- and fourth-freedom rights Number of CAREC countries adopting paperless e-freight systems for aviation Number of countries with e-visa systems. |

* RAMS maturity model (Phase 1 – RAMS at construction; Phase 2 – RAMS provides full inventory assessment, albeit it can be at the fixed time, not regularly updated, not used in full for decision making and financial planning; Phase 3 – continuous (periodic) monitoring of the road asset inventory, good cost models, cost/management accounting and planning, decisions and financial planning based on all well-known factors and clear performance targets).

CAREC Corridor Alignments

Table A2.1 CAREC Corridor 1: Europe–East Asia

| CAREC 1a | | CAREC 1b | | CAREC 1c | |
|---------------|----------------------------------|---------------|-------------------------------|---------------|-------------------------------|
| Country/Route | | Country/Route | | Country/Route | |
| PRC | Hami | PRC | Hami | PRC | Hami |
| | Turpan | | Turpan | | Turpan |
| | Urumqi | | Urumqi | | Kashi |
| | Kuytun | | Kuytun | | Torugart/Topa (road) - BCP |
| | Jinghe | | Jinghe | KGZ | Torugart - BCP |
| | Alashankou (rail and road) - BCP | | Khorgos (road) - BCP | | Naryn |
| KAZ | Dostyk (rail and road) - BCP | KAZ | Korgas (road) - BCP/LC | | Balykchy |
| | Aktogay | | Almaty | | Kochkor |
| | Mointy | | Merke - BCP (rail) | | Jalal-Abad |
| | Karaganda | | Taraz | | Bishkek |
| | Nur-Sultan | | Shymkent | | Chaldovar - BCP (road/rail) |
| | Kostanai | | Kyzylorda | KAZ | Merke - BCP (rail) |
| RUS | Kairak (rail and road) - BCP | RUS | Aktobe | | Sypatai Batyr (road) |
| | Troitsk (rail and road) - BCP | | Zhaisan (rail and road) - BCP | | Shu |
| | | RUS | Kos Aral (rail) | | Mointy |
| | | | (Sagarchi) (road) - BCP | | Zharyk |
| | | | Novomarkovka | | Karaganda |
| | | | | | Nur-Sultan |
| | | | | | Kostanai |
| | | | | | Kairak (rail and road) - BCP |
| | | | | RUS | Troitsk (rail and road) - BCP |

BCP= border crossing point, CAREC = Central Asia Regional Economic Cooperation, KAZ = Kazakhstan, KGZ = Kyrgyz Republic, PRC = People's Republic of China, RUS = Russian Federation.

Source: CAREC Secretariat.

Table A2.2: CAREC Corridor 2: Europe–Mediterranean–East Asia

| CAREC 2a | | CAREC 2b | | CAREC 2c | | CAREC 2d | |
|--|--|--|--|----------------|--|---------------------------|-------|
| Country/Route | | Country/Route | | Country/Route | | Country/Route | |
| PRC | Hami | PRC | Hami | PRC | Hami | Hami | |
| | Turpan | | Turpan | | PRC | Turpan | |
| | Kashi | | Kashi | | | Kashi | |
| Yierkeshitan (road) - BCP | | Yierkeshitan (road) - BCP | | Kuytun | | Yierkeshitan (road) - BCP | |
| KGZ | Irkeshtam (road) - BCP | KGZ | Irkeshtam (road) - BCP | | Jinghe | Irkeshtam (road) - BCP | |
| | Sary-Tash | | Sary-Tash | | KGZ | Sary-Tash | |
| | Osh - LC | | Osh - LC | | | Karamyk - BCP | |
| Kara-Suu (rail/road) | | Kara-Suu (rail/road) | | | Dostyk (rail and road) - BCP | | |
| Kara-Suu/Savay (rail/road) | | Kara-Suu/Savay (rail/road) | | | TAJ | Dushanbe | |
| | | | | | | Bokhtar | |
| UZB | Andijan (split) | UZB | Andijan (split) | KAZ | Zharyk | Panji Poyon - LC/BCP | |
| | Kokland - BCP | | Kokland - BCP | | Zhezkazghan | Shirkhan Bandar - BCP | |
| Kanibadam (rail) - BCP | | Kanibadam (rail) - BCP | | | Saksaulskaya | Kunduz | AFG |
| TAJ | Nau (rail) - BCP | TAJ | Nau (rail) - BCP | Shalkar | Andkhoy | | |
| | Bekabad (rail) - BCP | | Beyneu (rail) Tazhen (road) - BCP | Aqina | | | |
| UZB | Djizzak (converge) | UZB | Djizzak (converge) | AZE | Aktau - LC | Farap (rail/road) - BCP | |
| | Andijan (split) | | Andijan (split) | | Baku (port) - LC | TKM | Mary |
| | Angren - LC | | Angren - LC | | Yevlakh | AFG | Herat |
| Tashkent | Tashkent | Agstafa | | | | | |
| Djizzak (converge) | Djizzak (converge) | Beyuk Kesik (rail) and Red Bridge (road) - BCP | | | | | |
| Samarkand | Samarkand | | Samarkand | GEO | Gabdabani (rail) and Red Bridge (road) - BCP | | |
| | Navoi (split) | | Navoi (split) | | Tbilisi | | |
| | Bukhara | | Bukhara | | Kutaisi | | |
| Urgench (coverge) | Alat - BCP | | | Senaki (split) | | | |
| Nukus | Farap - BCP | TKM | Farap - BCP | Anaklia | | | |
| Karakalpakstan (rail/road) | Mary | | Mary | Poti | | | |
| Beyneu (rail)/Tazhen (road) - BCP | Ashgabat | | Ashgabat | Batumi | | | |
| Aktau - LC | Turkmenbashi - LC | | | | Sarpi (road) - BCP | | |
| AZE | Baku (port) - LC | AZE | Baku (port) - LC | TUR | Sarp (road) - BCP | | |
| | Yevlakh | | Alyat - LC | | | | |
| | Agstafa | | Yevlakh | | | | |
| Beyuk Kesik (rail) and Red Bridge (road) - BCP | Agstafa | | | | | | |
| Gardabani (rail) and Red Bridge (road) -BCP | Beyuk Kesik (rail) and Red Bridge (road) - BCP | GEO | Gardabani (rail) and Red Bridge (road) - BCP | | | | |
| | Tbilisi | | Tbilisi | | | | |
| | Kutaisi | | Kutaisi | | | | |
| Senaki (split) | Senaki (split) | | Anaklia | | | | |
| Anaklia | Anaklia | | Poti | | | | |
| Poti | Poti | | Batumi | | | | |
| Batumi | Batumi | | | | | | |
| Sarpi (road) - BCP | Sarpi (road) - BCP | | | | | | |
| TUR | Sarp (road) - BCP | | | | | | |
| | | TUR | Sarp (road) - BCP | | | | |

AFG = Afghanistan, AZE = Azerbaijan, BCP = border crossing point, CAREC = Central Asia Regional Economic Cooperation, GEO = Georgia, KAZ = Kazakhstan, KGZ = Kyrgyz Republic, LC = Logistics Center, PRC = People's Republic of China, TAJ = Tajikistan, TKM = Turkmenistan, TUR = Turkey, UZB = Uzbekistan.

Source: CAREC Secretariat.

Table A2.3: CAREC Corridor 3: Russian Federation–Middle East and South Asia

| CAREC 3a | | CAREC 3b | |
|---------------|--|---------------|--------------------------------------|
| Country/Route | | Country/Route | |
| | Rubtsovsk | | Rubtsovsk |
| RUS | Veseloyarsk (rail and road) - BCP | RUS | Veseloyarsk (rail and road) - BCP |
| | Aul (rail and road) - BCP | | Aul (rail and road) - BCP |
| | Semey | | Semey |
| | Charskaya | | Charskaya |
| | Aktogay | | Aktogay |
| | Taldykorgan | | Taldykorgan |
| KAZ | Kapchagay | KAZ | Kapchagay |
| | Almaty | | Almaty |
| | Merke - BCP | | Merke - BCP |
| | Taraz | | Chaldovar (rail) - BCP |
| | Shymkent | | Kara-Balta |
| | Saryagash/Yallama (rail) and Zhibek Zholy (road) - BCP | | Bishkek |
| | Keles (rail) and Gisht Kyprik (road) - BCP | KGZ | Kordai |
| | Tashkent | | Osh - LC |
| | Syrdaryinskaya | | Sary-Tash |
| UZB | Djissak | | Karamyk (road) - BCP |
| | Samarkand | | Karamyk (road) - BCP |
| | Navoi | TAJ | Dushanbe |
| | Bukhara | | Tursunzade |
| | Alat (rail and road) - BCP | | Pakhtaabad (rail and road) - BCP |
| | Farap (rail and road) - BCP | | Saryasia (rail and road) - BCP |
| TKM | Mary | UZB | Termez/Airatom (rail and road) - BCP |
| | Saraks | | Hairatan (rail and road) - BCP |
| IRN | Sarakhs | | Mazar-e-Sharif |
| | | AFG | Andkhoy |
| | | | Herat |
| | | | Islam Qala (road) - BCP |
| | | IRN | Dogharoun (road) - BCP |

AFG = Afghanistan, BCP = border crossing point, CAREC = Central Asia Regional Economic Cooperation, GEO = Georgia, IRN = Iran, KAZ = Kazakhstan, KGZ = Kyrgyz Republic, LC = Logistics Center, PRC = People's Republic of China, RUS = Russian Federation, TAJ = Tajikistan, TKM = Turkmenistan, UZB = Uzbekistan.

Source: CAREC Secretariat.

Table A2.4: CAREC Corridor 4: Russian Federation–East Asia

| CAREC 4a | | CAREC 4b | | CAREC 4c | |
|---------------|--------------------------------------|---------------|------------------------------|---------------|------------------|
| Country/Route | | Country/Route | | Country/Route | |
| RUS | Tashanta (road) - BCP | RUS | Naushki - BCP | RUS | Naushki - BCP |
| | Ulaanbaishint/Tsagaanur (road) - BCP | | Sukhbaatar - BCP | | Sukhbaatar - BCP |
| MON | Olgii | MON | Ulaanbaatar | | Ulaanbaatar |
| | Khovd | | Zamiin-Uud (rail/road) - BCP | MON | Chinggis |
| | Yarant (road) - BCP | PRC | Erenhot (rail/road) - BCP | | Baruun-Urt |
| | Takeshikent (road) - BCP | | | | Bichigt - BCP |
| PRC | Urumqi | | | | |

BCP = border crossing point, CAREC = Central Asia Regional Economic Cooperation, MON = Mongolia, PRC = People's Republic of China, RUS = Russian Federation.

Source: CAREC Secretariat.

Table A2.5: CAREC Corridor 5: East Asia–Middle East and South Asia

| CAREC 5a | | CAREC 5b | | CAREC 5c | |
|---------------|------------------------------|---------------|---------------|---------------|------------------------------|
| Country/Route | | Country/Route | | Country/Route | |
| | Hami | | Hami | | Hami |
| PRC | Turpan | PRC | Turpan | PRC | Turpan |
| | Kashi | | Kashi | | Kashi |
| | Yierkeshitan (road) - BCP | | Mansehra | | Yierkeshitan (road) - BCP |
| | Irkeshtam (road) - BCP | | Havelian | | Irkeshtam (road) - BCP |
| KGZ | Sary-Tash | | Hasanabdal | KGZ | Sary-Tash |
| | Karamyk (road) - BCP | | Islamabad | | Karamyk (road) - BCP |
| | Karamyk (road) - BCP | | Lahore | | Karamyk (road) - BCP |
| TAJ | Dushanbe | | Pindi Bathian | TAJ | Dushanbe |
| | Bokhtar | | Faisalabad | | Bokhtar |
| | Panji Poyon - LC/BCP | PAK | Gojra | | Panji Poyon - LC/BCP |
| | Shirkhan Bandar (road) - BCP | | Shorkot | | Shirkhan Bandar (road) - BCP |
| | Kunduz | | Khanewal | | Kunduz |
| AFG | Kabul | | Multan | AFG | Kabul |
| | Jalalabad | | Muzaffargarh | | Ghazni |
| | Tokham (road) - BCP | | DG Khan | | Qalat |
| | Landi Kotal (road) - BCP | | Ratodero | | Kandahar |
| | Peshawar | | Sehwan | | Chaman |
| | Islamabad | | Karachi | | Quetta |
| | Lahore | | | | Kalat |
| | Pindi Bathian | | | PAK | Surab |
| | Faisalabad | | | | Basima |
| PAK | Gojra | | | | Hoshab |
| | Shorkot | | | | Gwadar |
| | Khanewal | | | | |
| | Multan | | | | |
| | Muzaffargarh | | | | |
| | DG Khan | | | | |
| | Ratodero | | | | |
| | Sehwan | | | | |
| | Karachi | | | | |

AFG = Afghanistan, BCP = border crossing point, CAREC = Central Asia Regional Economic Cooperation, KGZ = Kyrgyz Republic, LC = Logistics Center, PAK = Pakistan, PRC = People's Republic of China, TAJ = Tajikistan.

Source: CAREC Secretariat.

Table A2.6: CAREC Corridor 6: Europe Middle East and South Asia

| CAREC 6a | | CAREC 6b | | CAREC 6c | | CAREC 6d | |
|---------------|--|---------------|--|---------------|---|---------------|---|
| Country/Route | | Country/Route | | Country/Route | | Country/Route | |
| RUS | Krasnyi Yar (road)/ Aksaraskaya (rail) - BCP | RUS | Orenburg | RUS | Orenburg | RUS | Krasnyi Yar (road)/ Aksaraskaya (rail) - BCP |
| | Kurmangazy (road)/ Ganyushkino(rail) - BCP | | Novomarkovka (road)/ Kos Aral (rail) - BCP | | Novomarkovka (road)/ Kos Aral (rail) - BCP | | Kurmangazy (road)/ Ganyushking (rail) - BCP |
| KAZ | Makat Beyneu (rail)/ Tazhen (road) - BCP | | Zhaisan (road/rail) - BCP Aktobe | | Zhaisan (road/rail) - BCP Aktobe | KAZ | Makat Beyneu |
| | Karapalkastan (road/rail) - BCP | | Shalkar | | Shalkar | | Aktau |
| | Nukus Urgench (split) Turtkul Gazli | KAZ | Aral Kyzyl - Orda Shymkent Saryagash/Yallama (rail) and Zhibek Zholy (road) - BCP | KAZ | Aral Kyzyl - Orda Shymkent Saryagash/Yallama (rail) and Zhibek Zholy (road) - BCP | | Bereket |
| | | | | | | TKM | Ashgabat Mary |
| | | | | | | AFG | Herat |
| UZB | Bukhara (coverge) | | Keles (rail) and Gisht Kuprik (road) - BCP | | Keles (rail) and Gisht Kuprik (road) - BCP | | Islam Qala - BCP |
| | Uchkuduk Navoi Bukhara (coverge) Karshi Boysun Termez/Airatom (rail/ road) - BCP | UZB | Tashkent (split) Djizzak Ayni Samarkand (converge) Karshi Boysun | UZB | Tashkent (split) Khavast - BCP | IRN | Dogharoun - BCP |
| | Hairatan | | Termez/Airatom (rail/ road) - BCP | TAJ | Istaravshan - BCP Ayni Dushanbe Bokhtar | AFG | Kandahar |
| | Mazar-e-Sharif | | Hairatan (rail/road) - BCP | | Panji Poyon (road) - LC/ BCP | | Chaman - BCP |
| AFG | Andkhoy Herat Kandahar | AFG | Mazar-e-Sharif Andkhoy Herat Islam Qala - BCP | AFG | Shirkan Bandar - BCP Kunduz Pul-e-Khumri Salang Kabul Jalalabad Torkham (road) - BCP | | Quetta Kalat Surab |
| | Chaman - BCP | IRN | Dogharoun - BCP | | | PAK | Basima |
| | Quetta | AFG | Kandahar | | | | Hoshab Gwadar |
| | Kalat | | Chaman - BCP | | | | |
| PAK | Surab Basima Hoshab Gwadar | PAK | Quetta Kalat Surab Basima Hoshab Gwadar | PAK | Landi Kotal (road) - BCP Peshawar Islamabad Pindi Bhattian Lahore Faisalabad Gojra Shorkot Khanewal Multan Muzaffargarh DG Khan Ratodero Sehwan Karachi | | |

AFG = Afghanistan, BCP = border crossing point, CAREC = Central Asia Regional Economic Cooperation, IRN = Iran, KAZ = Kazakhstan, LC = Logistics Center, PAK = Pakistan, PRC = People's Republic of China, RUS = Russian Federation, TAJ = Tajikistan, TKM = Turkmenistan, UZB = Uzbekistan.

Source: CAREC Secretariat.

Table A3: CAREC Priority Investment Projects by Country

| No. | Country | Subsector | Project Title | Indicative Cost (\$ million) | Indicative Implementation Period |
|-----|---------|-----------|---|------------------------------|--|
| 1 | AZE | Maritime | Enhancing Maritime Safety in the Territorial Waters of the Republic of Azerbaijan | 0.6 | 2020-2021 |
| 2 | AZE | Ports | Construction of Grain Terminal in Baku Port | 22.5 | 2019-2020 |
| 3 | AZE | Ports | Construction of TIR Parking Area at Baku Port | 9.0 | 2020 |
| 4 | AZE | Railways | Reconstruction of Bilajari-Yalama Railway Line | 438.0 | 2018-2022 |
| 5 | AZE | Railways | Reconstruction of the Power Supply System of the Alat-Astara Railway Line | 1,567.0 | 2018-2024 |
| 6 | GEO | Maritime | Construction of Anaklia Deep Sea Port (Phase 1) | 586.0 | 2017-2020 |
| 7 | GEO | Logistics | Development of Tbilisi Logistics Center | 95.4 | 2020-2025 (Stage 1) 2026-2031 (Stage 2) |
| 8 | GEO | Logistics | Development of Kutaisi Logistics Center | 72.5 | 2021-2026 (Stage 1) 2027-2032 (Stage 2) |
| 9 | GEO | Road | Construction of Rustavi-Red Bridge Highway | 170 | 2020-2022 |
| 10 | GEO | Road | Construction of Tbilisi Bypass Section | 300 | 2023-2025 |
| 11 | GEO | Road | Construction of Shorapani-Argveta Section | 315 | 2020-2022 |
| 12 | GEO | Road | Construction of Batumi-Sarpi Section | 130 | 2020-2023 |
| 13 | GEO | Road | Construction of Bridge over River Rioni in Poti | 21 | 2020-2022 |
| 14 | GEO | Road | Construction of Samtredi-Zugdidi Bypass Road | 250 | 2025-2029 |
| 15 | GEO | Road | Construction of Access Road to Anaklia Deep Sea Port | 45 | 2019-2020 |
| 16 | KAZ | Road | Reconstruction of Atyrau-Astrakhan Road | 373 | 2017-2021 |
| 17 | KAZ | Road | Reconstruction of Balkhash-Burylbaital Road | 557 | 2017-2021 |
| 18 | KAZ | Road | Reconstruction of Taldykorgan-Kalbatau Road | 690 | 2017-2021 |
| 19 | MON | Railway | Freight Wagon Manufacturing Facility in Sainshand, Dorno Gobi Province | 61 | 2020- |
| 20 | MON | Railway | New Railway Line in Southern Mongolia | 5,000 | 2020- |
| 21 | MON | Road | Regional Road Development and Maintenance Project Phase I and II (Reconstruction of Altanbulag-Ulaanbaatar-Zamyn Uud Road CAREC 4b) | 120 | 2018-2021 |
| 22 | MON | Road | Regional Road Development and Maintenance Project Phase III (Reconstruction of Altanbulag-Ulaanbaatar-Zamyn Uud Road CAREC 4b) | 120 | 2021-2024 |
| 23 | MON | Road | Western Regional Road Corridor Investment Program, Tranche 2 (Khovd-Ulgii-Ulaanbaishint Road CAREC 4a) | 58 | 2015-2020 |
| 24 | MON | Road | Construction of work 272 km paved road Baruun-Urt-Bichigt (IP 101); Part of Corridor 4c (Ulaanbaatar-Urdurkhaan-Baruun-Urt-Bichigt-Huladao/Chifeng-Jinzhou) | 120 | 2019-2022 |
| 25 | MON | Road | Advanced and smart technologies (control on vehicle movement, weight, dimension, emission, traffic intensity, and emergency mobile network) to be installed on 997 km of Zamiin-Uud-Ulaanbaatar-Altanbulag Road | 4.5 | 2020 |
| 26 | MON | Logistics | LCs in the provinces of Bayan-Ulgii, Khovd, Darkhan-Uul | 150 | 2020-2026 |
| 27 | MON | Aviation | Upgrade Khovd airport in Khovd Province to serve as alternate airport in the western region | 150 | 2019-2022 |

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Table A3: continued

| No. | Country | Subsector | Project Title | Indicative Cost (\$ million) | Indicative Implementation Period |
|-----|---------|-----------|---|------------------------------|----------------------------------|
| 28 | MON | Aviation | Upgrade Tsagaandeglii Airport in Uvs Province to serve as an alternate airport in the western region | 20 | 2020-2025 |
| 29 | PAK | Road | Construction of 4-Lane Highway Rajanpur- D G Khan | 300 | 2028-2031 |
| 30 | PAK | Road | Construction of Additional Tunnel at Kohat | 80 | 2021-2024 |
| 31 | PAK | Road | Rehabilitation of Missing Section of D I Khan - Yarak, N-55 | 20 | 2022-2023 |
| 32 | TAJ | Road | Construction of Vakhdat-Rasht-Lakhsh-Kyrgyz Border, Km 72-158 | 350 | 2019-2023 |
| 33 | TAJ | Road | Rehabilitation of Guliston-Farkhar-Pyandj-Dusti Road | 39.8 | TBD |
| 34 | TAJ | Road | Rehabilitation of Dushanbe-Rudaki-Yavan-A. Jomi-Sarband Road | 50.4 | TBD |
| 35 | TAJ | Road | Rehabilitation of Kurbonshakhid-Temurmalik road | 24.0 | TBD |
| 36 | TAJ | Road | Rehabilitation of Kyzlkala-Kabadiyan-Shakhrituz-Aivadj road | 51.7 | TBD |
| 37 | TAJ | Road | Construction of a bridge across the Kafernigan river at km 9.8 of Dushanbe-Rudaki road | 4.3 | TBD |
| 38 | TAJ | Road | Construction of a bridge across the Elok river at km 11 of Dushanbe-Rudaki road | 1.1 | TBD |
| 39 | TAJ | Logistics | Development of transport industry and logistics services in the Republic of Tajikistan | 1.1 | TBD |
| 40 | TAJ | Road | Construction of bridges in Rasht region to replace those destructed by the natural disaster in 2015 | 2.8 | TBD |
| 41 | TAJ | Road | Construction of Labi Djar-Kalaikhumb road | 335.0 | TBD |
| 42 | TAJ | Railway | Construction of Tajikistan-Afghanistan-Turkmenistan railway | 237.8 | TBD |
| 43 | TAJ | Road | Rehabilitation of Kangurt-Temurmalik road | 16.0 | TBD |
| 44 | TAJ | Railway | Construction of new Vakhdat-Karamyk railway (Kyrgyzstan's border) | 3,200.0 | TBD |
| 45 | TAJ | Road | Construction of anti-avalanche galleries along Dushanbe-Chanak road | 51.5 | TBD |
| 46 | TAJ | Road | Construction of anti-avalanche galleries along Dushanbe-Chanak road | 4.2 | TBD |
| 47 | KGZ | Aviation | Expanding Air Traffic Control Capacity Project for KGZ | 46.0 | 2019-2023 |
| 48 | KGZ | Aviation | Single navigation field of the Fergana Valley (installation of VOR / DME equipment at Batken airport) | 1.0 | 2019-2023 |
| 49 | KGZ | Aviation | Construction of a new ATC tower at the Osh airport | 3.0 | 2019-2023 |
| 50 | KGZ | Road | Alternative North-South Road, 99 km long, Aral-Kazarman section (km 195 - 291) and construction of 2 elevated bridges | 298.7 | 2015-2021 |
| 51 | KGZ | Road | Construction of the Alternative North-South Road, phase 3, Project Connecting Routes between CAREC 1 and CAREC 3 Transport Corridors (km 89-159, Epkin-Bashkuugandy). | 114.4 | 2018-2021 |

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Table A3: continued

| No. | Country | Subsector | Project Title | Indicative Cost (\$ million) | Indicative Implementation Period |
|-----|---------|-----------|--|---------------------------------|-------------------------------------|
| 52 | KGZ | Road | Section Balykchy town - km 0-43; Kochkor village - Epkin village (km 62.4 - km 89.5), "Connecting Routes between CAREC 1 and 3 66Transport Corridors, with a Length of 70.1 km". | 90.75 | 2019-2023 |
| 53 | KGZ | Road | Rehabilitation of Bishkek-Osh road sections from km 9 to km 61 (Bishkek-Kara-Balta section) | 100.0 | 2018-2020 |
| 54 | KGZ | Road | Rehabilitation of Bishkek-Osh road sections from km 498 to km 571 (Jalal-Abad-Madaniyat section) | 60 | 2016-2020 |
| 55 | UZB | Road | Rehabilitation of 77-km road Karshi-Shakhrisabz-Kitab | 198 | 2016-2021 |
| 56 | UZB | Road | Rehabilitation of the 87-km A-380 highway "Guzar-Bukhara-Nukus-Beyneu", km 228-315 section | 150 | 2016-2020 |
| 57 | UZB | Road | Development of regional roads of local importance | 200 | 2016-2021 |
| 58 | UZB | Road | Rehabilitation of 35-km road "Guzar-Chim-Kukdala", km 38-73 section | 50 | 2011-2019 |
| 59 | UZB | Railway | Electrification of Pap - Namangan - Andijan railway section | 80 | 2017-2021 |
| 60 | UZB | Railway | Construction of electrified Angren-Pap railway line, with electrification of Pap-Kokand-Andijan section | 545.0 | 2013-2021 |
| 61 | UZB | Aviation | Acquisition of four new Boeing 787-8 aircraft | 317.5 | 2016-2020 |

About the Central Asia Regional Economic Cooperation Program

The Central Asia Regional Economic Cooperation (CAREC) Program is a partnership of 11 member countries and development partners working together to promote development through cooperation, leading to accelerated economic growth and poverty reduction. It is guided by the overarching vision of “Good Neighbors, Good Partners, and Good Prospects.” CAREC countries include: Afghanistan, Azerbaijan, the People’s Republic of China, Georgia, Kazakhstan, the Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan, and Uzbekistan. ADB serves as the CAREC Secretariat.