

Enhancing regional integration of landlocked developing countries in North and Central Asia through infrastructure connectivity

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Agenda 6: Enhancing Synergy among Cross-Sectoral Infrastructure

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OUTLINE

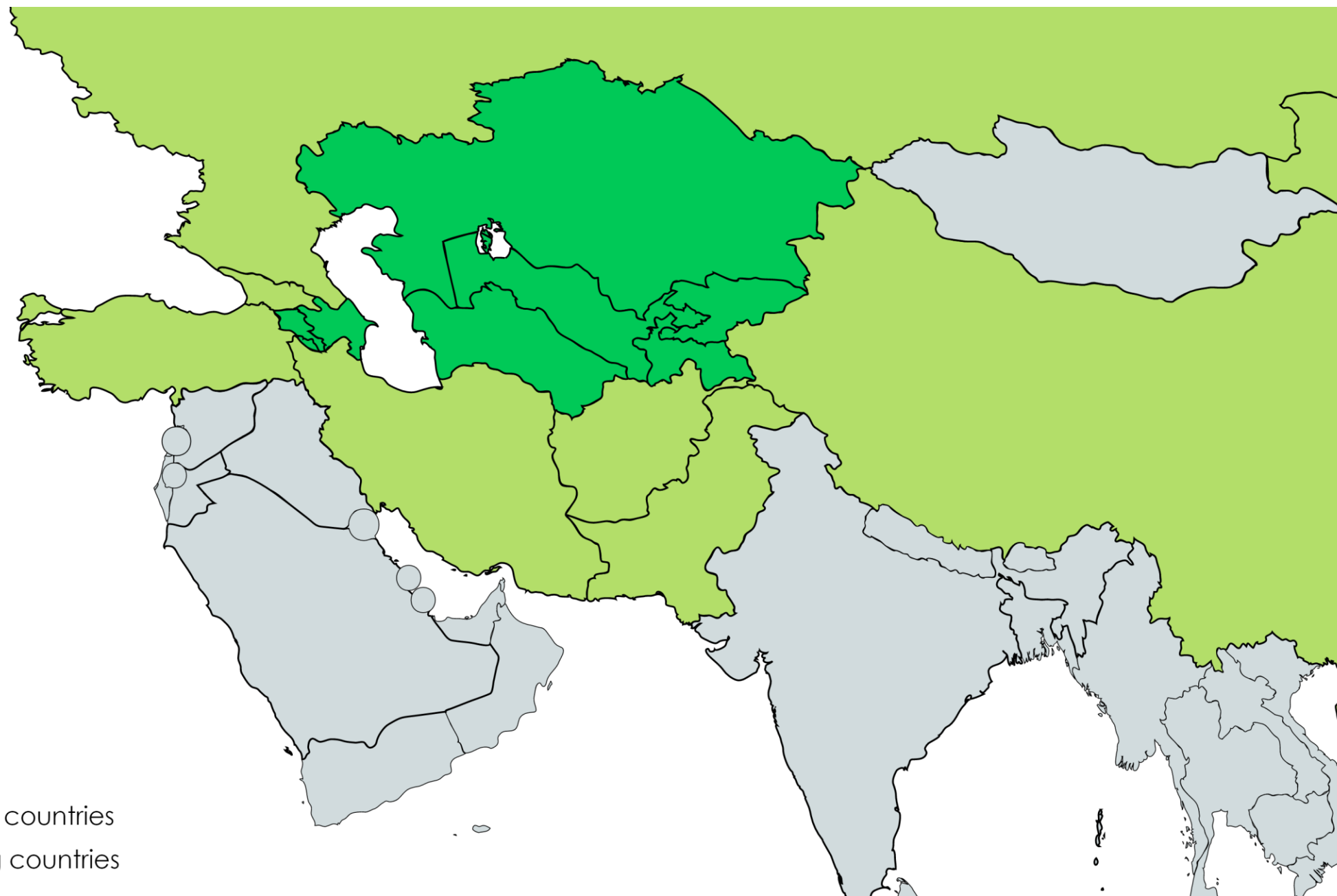


1. Introduction
2. Intergovernmental projects in infrastructure development in North and Central Asia
3. Current state of infrastructure connectivity
4. Synergy from multisectoral infrastructure development
5. ESCAP role
6. Discussion

INTRODUCTION



-  Landlocked countries
-  Neighboring countries





INTRODUCTION



- To be a centre of global economic integration
- Infrastructure connectivity
 - Missing links
 - Policy harmonization
- Intergovernmental projects
 - Belt and Road Initiative (BRI)
 - Eurasian Economic Union (EAEU)



INTRODUCTION



- Synergy from multisectoral infrastructure development
 - Economic Implication
 - Cost effectiveness in implementation
- Spillover
 - Social and Environmental
- Links to the Sustainable Development Goals



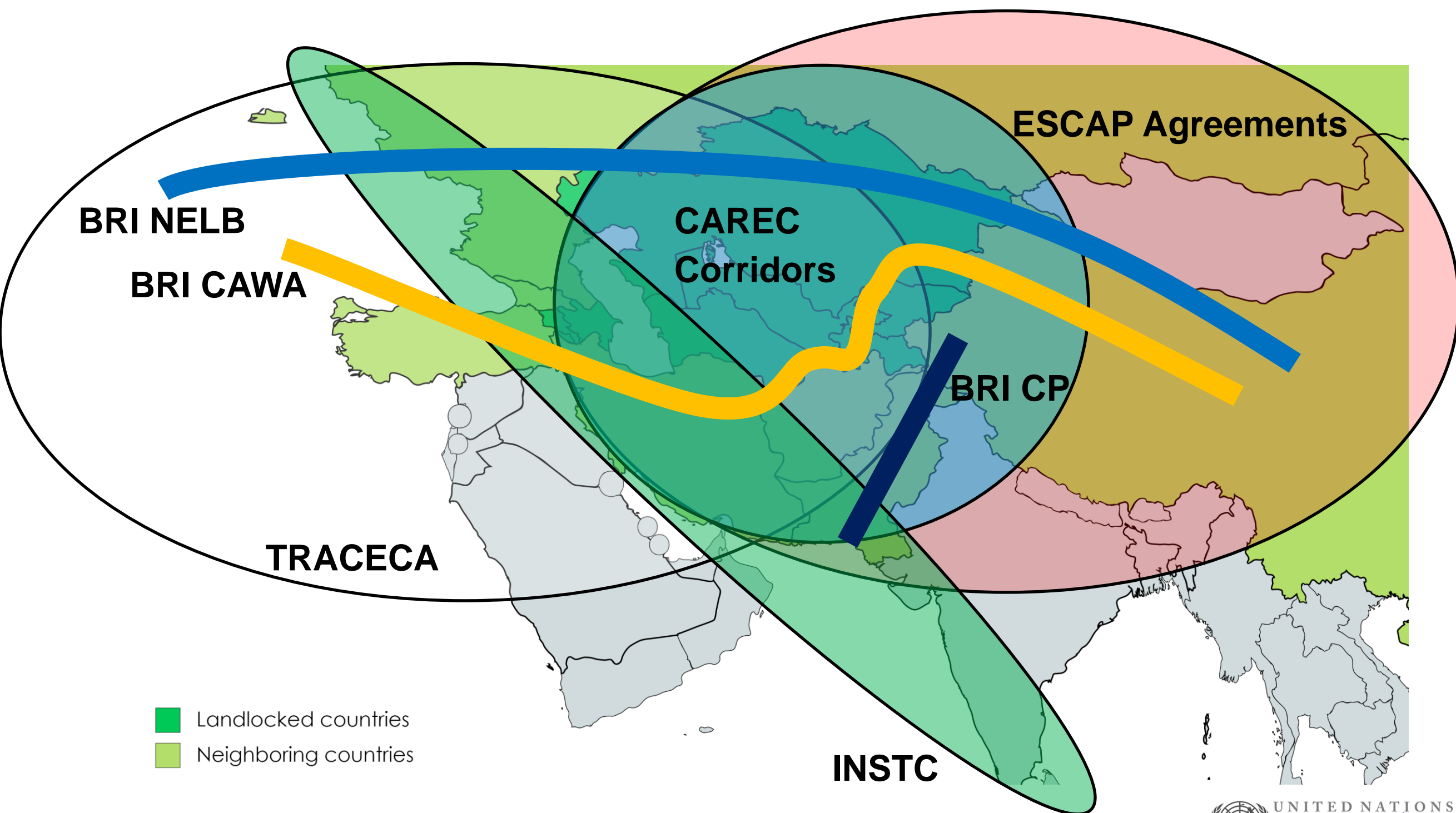
INTERGOVERNMENTAL PROJECTS

International projects (transport and intermodal)

- ESCAP intergovernmental agreements on transport
- ADB Central Asia Regional Economic Cooperation Program (CAREC)
- BRI
 - China-Central-West Asia Corridor (CAWA)
 - New Eurasian Land Bridge (NELB)
 - China-Pakistan Economic Corridor (CP)
- TRECECA
- International North-South Transport Corridor (INSTC)



INTERGOVERNMENTAL PROJECTS (TRANSPORT)





INTERGOVERNMENTAL PROJECTS

ESCAP Intergovernmental Agreements

- **Asian Highway Network (2005)**
 - 7th Working Group meeting in Incheon, Republic of Korea, on 12-13 December 2017
- **Trans-Asian Railway Network (2009)**
 - 5th Working Group meeting in Busan, Republic of Korea, on 13-14 June 2017
- **Dry Port (2016)**
 - 2nd Working Group meeting in Bangkok, Thailand on 22-23 November 2017

Source: United Nations Treaty Collection



INTERGOVERNMENTAL PROJECTS

Status of North and Central Asian countries and their transit countries in ESCAP Intergovernmental Transport Agreements
(as of 20 August 2017)

| | Intergovernmental Agreement on | | |
|--------------------------------------|--------------------------------|-----------------------------|-----------|
| | Asian Highway Network | Trans-Asian Railway Network | Dry Ports |
| <u>North and Central Asia</u> | | | |
| Armenia | Ratified | Signed | Signed |
| Azerbaijan | Ratified with declaration | Signed with declaration | - |
| Georgia | Approved | Approved | - |
| Kazakhstan | Approved | Signed | Acceded |
| Kyrgyzstan | Ratified | - | - |
| Russian Federation | Definitively Signed | Accepted | Approved |
| Tajikistan | Ratified | Approved | Approved |
| Turkmenistan | Acceded | Acceded | Acceded |
| Uzbekistan | Definitively Signed | Ratified | - |
| <u>Transit Countries</u> | | | |
| Afghanistan | Ratified | - | Acceded |
| China | Definitively Signed | Approved | Approved |
| India | Ratified | Ratified | Acceded |
| Iran (Islamic Republic of) | Ratified | Ratified | Ratified |
| Pakistan | Ratified | Ratified | - |
| Turkey | Ratified | Signed | Signed |

Source: United Nations Treaty Collection



INTERGOVERNMENTAL PROJECTS

ADB CAREC (2001)

| CAREC Corridors | Countries | | | | | | | | | Road (km) | Railway (km) | Logistics Centre | Proposed Logistics Centre |
|--------------------|-----------|----|----|----|----|----|----|----|----|--------------|-----------------|---------------------|--|
| | AZ | CN | KZ | KG | TJ | TM | UZ | AF | RU | | | | |
| Corridor 1 | | | | | | | | | | 13,600 | 12,000 | 1 | Khorgos |
| Corridor 2 | | | | | | | | | | 9,900 | 9,700 | 6 | Aktau, Alyat, Angren, Osh, Panji Poyon, Turkmenbashi |
| Corridor 3 | | | | | | | | | | 6,900 | 4,800 | 1 | Osh |
| Corridor 5 | | | | | | | | | | 3,700 | 2,000 | 1 | Panji Poyon |
| Corridor 6 | | | | | | | | | | 10,600 | 7,200 | 5 | Aktau, Alyat, Angren, Panji Poyon, Turkmenbashi |

Source: <http://www.carecprogram.org/index.php?page=carec-corridors>

Note: The names of countries are abbreviated according to ISO 3166-1 (two digits).

- As of 2016, 176 projects and \$29.4 billion
- Transport and energy connectivity
- Dry ports (logistics centres): Khorgos, Osh, Alyat



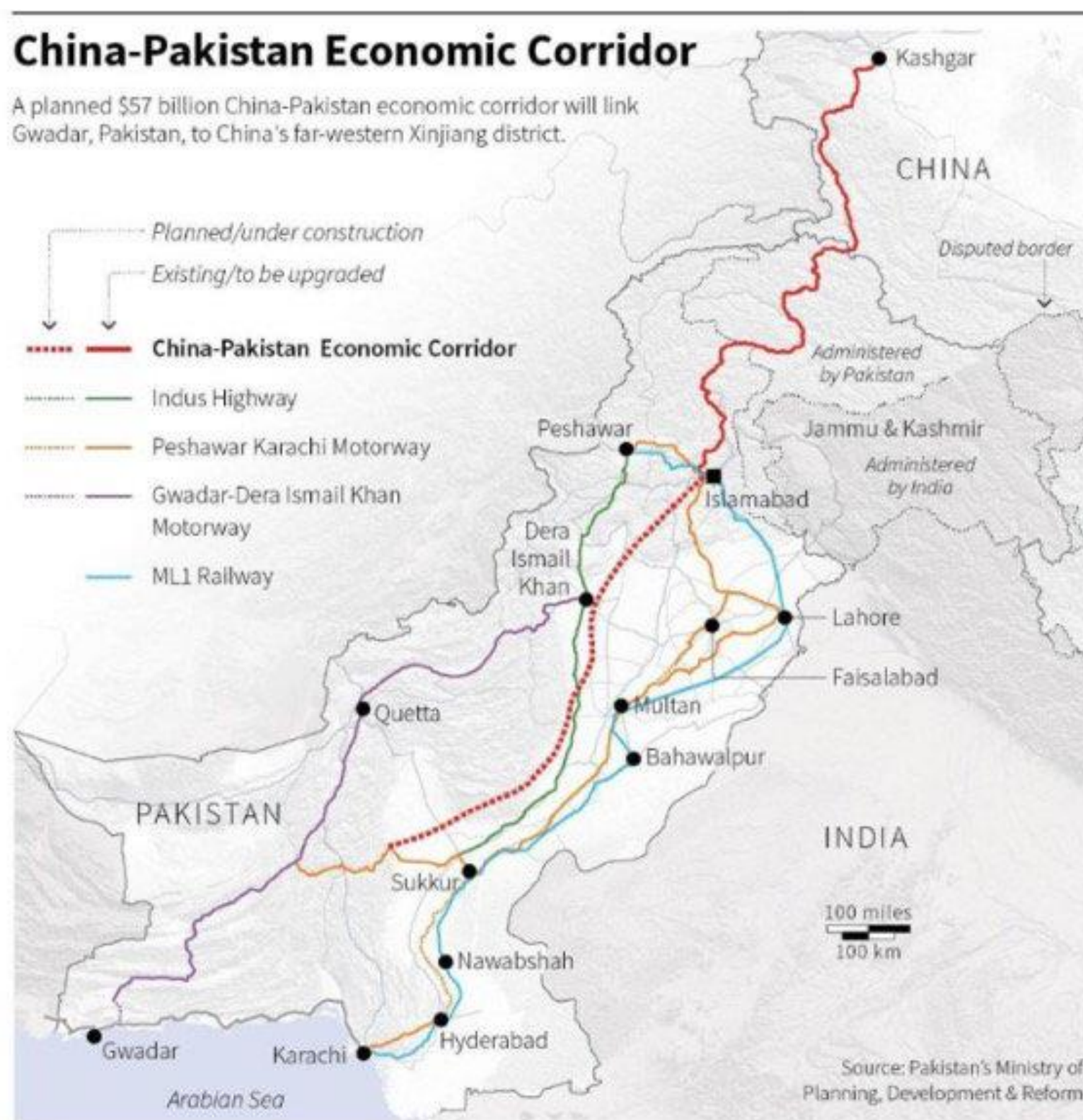
INTERGOVERNMENTAL PROJECTS

BRI Economic Corridors

- **China Central West Asia Corridor (CAWA)**
 - China – Central Asia – West Asia – Europe
 - Rehabilitation and Modernization
- **New Eurasian Land Bridge (NELB)**
 - China – Kazakhstan – Russia – Europe
 - In operation
- **China-Pakistan Economic Corridor (CP)**
 - Kashgar/Kashi (China) – Gwadar (Pakistan)



INTERGOVERNMENTAL PROJECTS





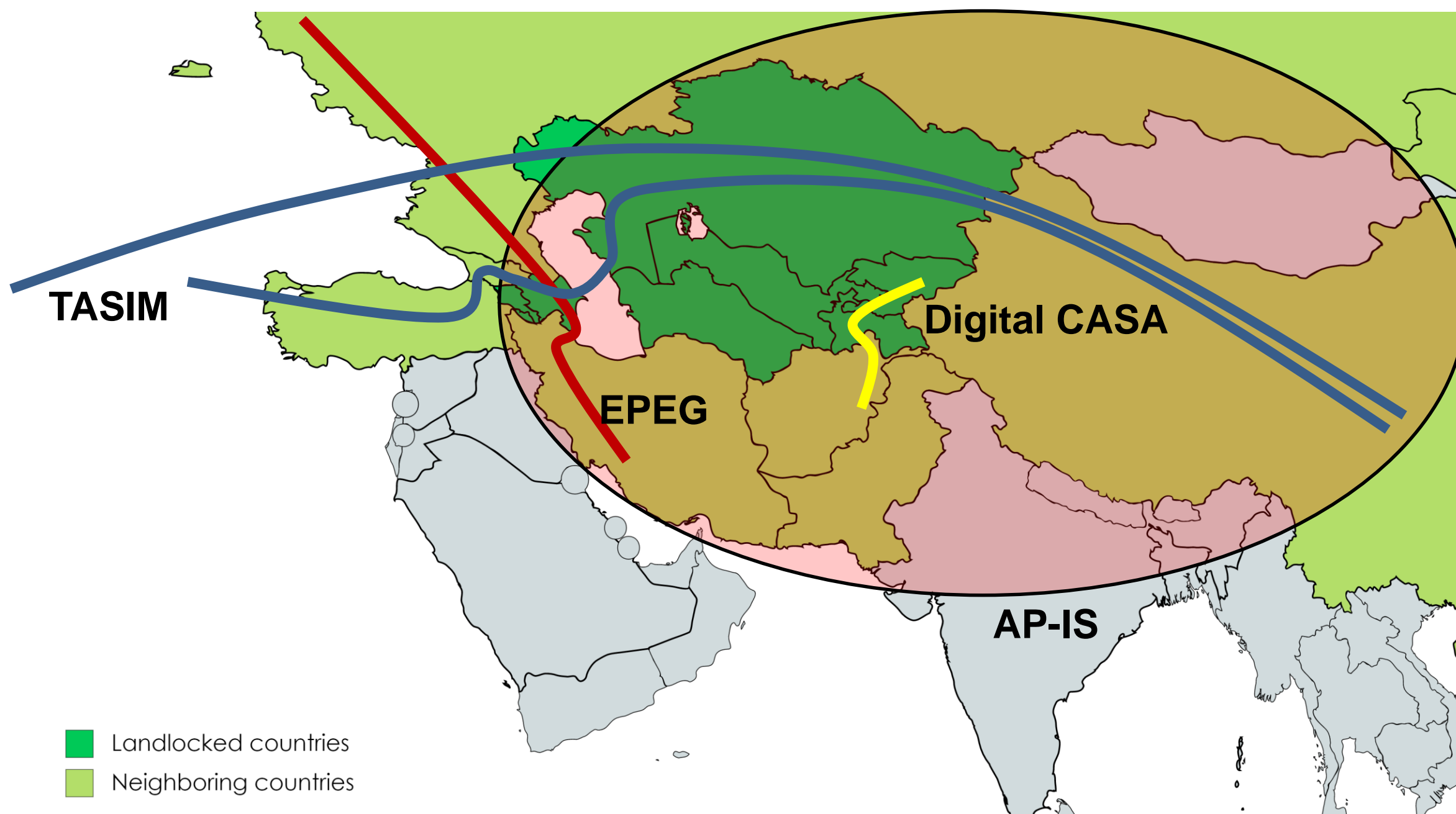
INTERGOVERNMENTAL PROJECTS

International projects (ICT)

- Trans-Eurasian Information Super Highway (TASIM)
- ESCAP Asia-Pacific Information Superhighway (AP-IS)
- Europe-Persia Express Gateway (EPEG)
- Digital CASA



INTERGOVERNMENTAL PROJECTS (ICT)





INTERGOVERNMENTAL PROJECTS

Trans-Eurasian Information Super Highway (2009)

- 2 General Assembly resolutions
- 2 proposed fibre-optic backbone networks
 - **China-Kazakhstan-Russia-Europe**
 - **China-Kazakhstan-Azerbaijan-Georgia-Europe**
 - Submarine cable under the Caspian Sea



INTERGOVERNMENTAL PROJECTS

Asia-Pacific Information Superhighway

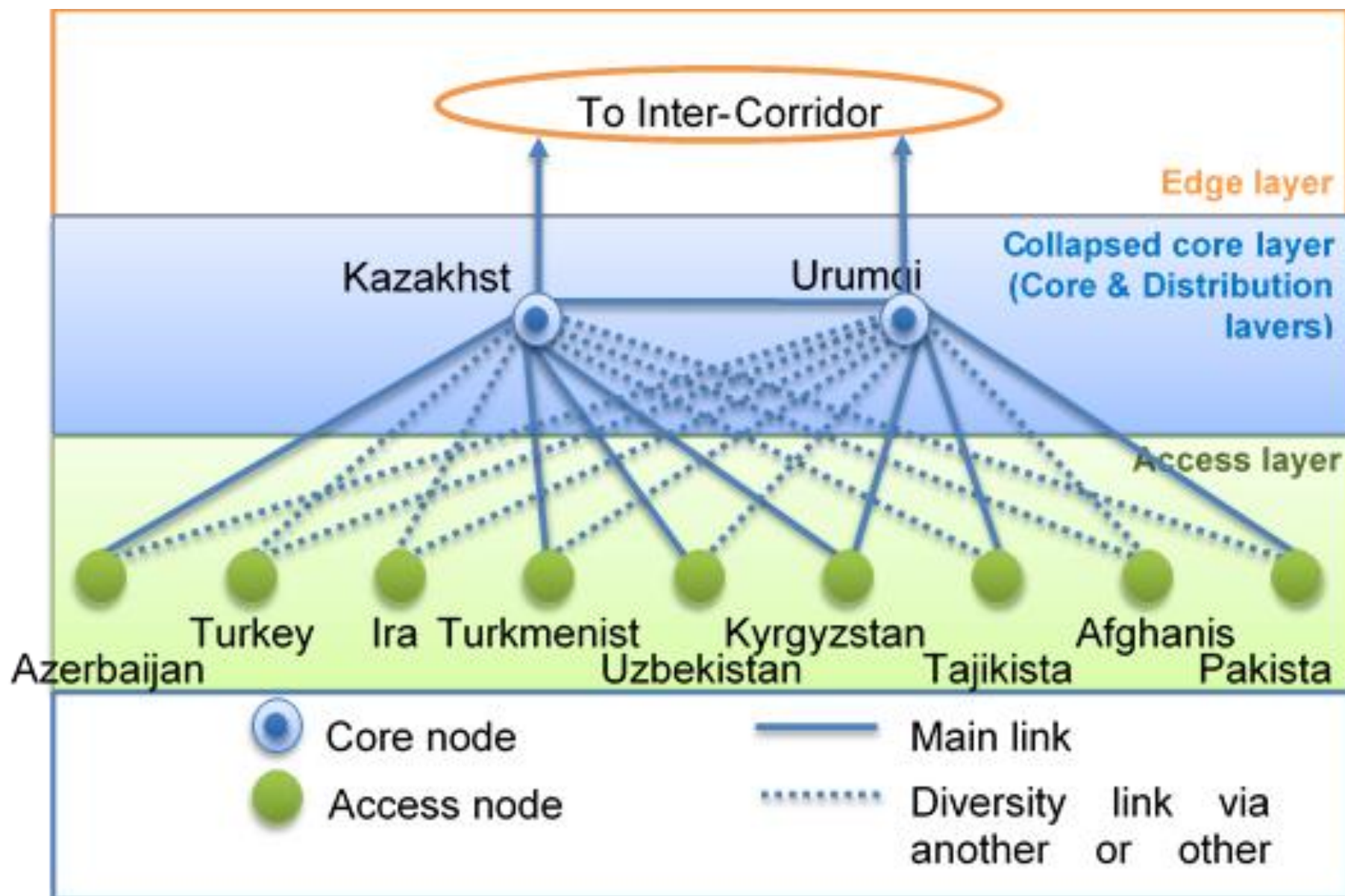
Master Plan and Regional Cooperation Framework Document (2017)

- 73rd session of Commission adopted a resolution to support implementation to support these initiatives.
- 1st session of the Steering Committee on AP-IS in Dhaka, Bangladesh, on 1-2 November 2017.



INTERGOVERNMENTAL PROJECTS

A network of core nodes in North and Central Asia



Source: ESCAP, forthcoming, the Belt and Road Initiative and the Role of ESCAP



INTERGOVERNMENTAL PROJECTS

International projects (oil and gas)

Eastward oil and gas connectivity

- Kazakhstan-China oil pipeline
- Central Asia-China natural gas pipeline

Westward oil and gas connectivity

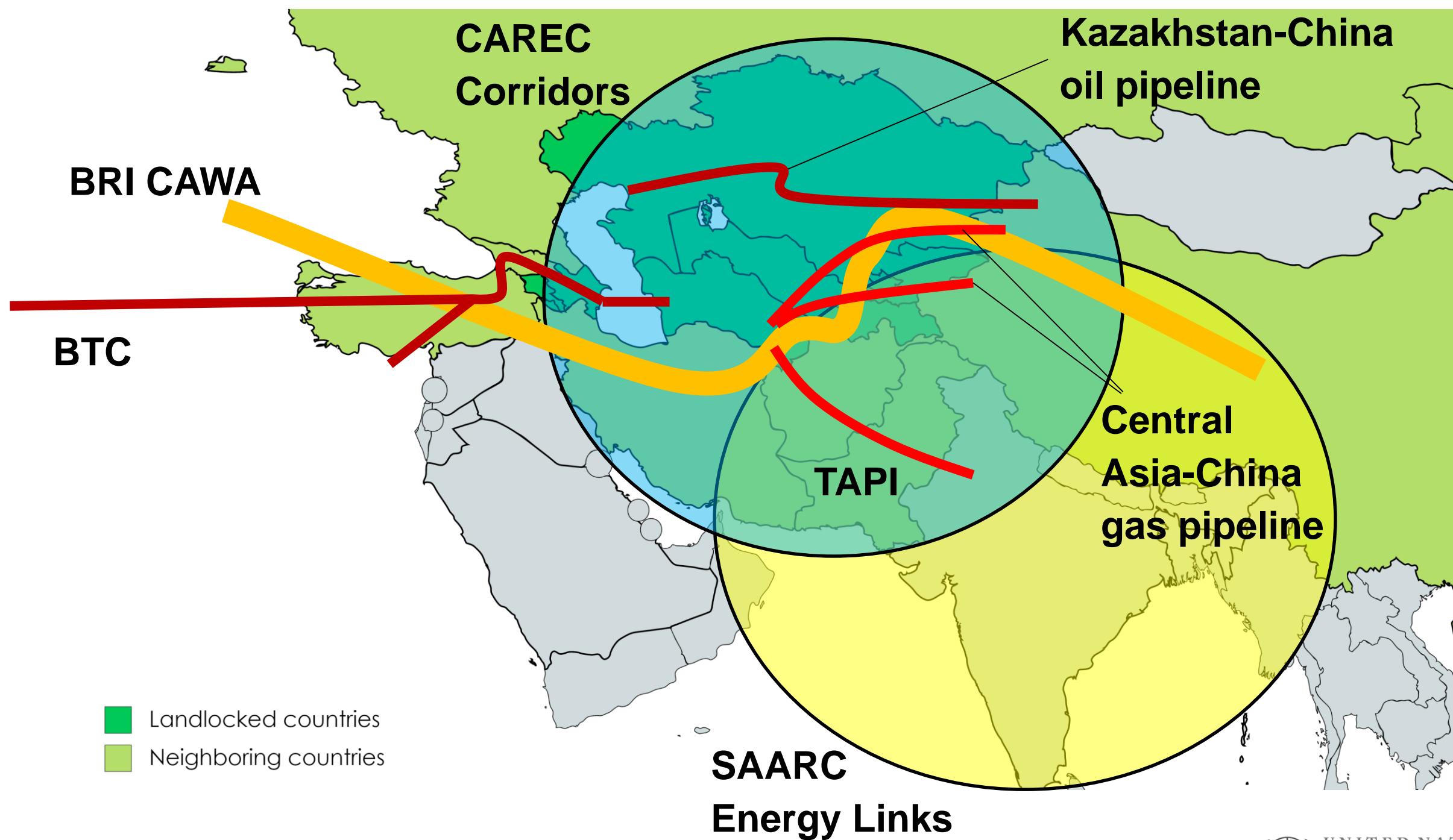
- Baku-Tbilisi-Ceyhan (BTC) oil pipeline
- Baku-Tbilisi-Erzurum gas pipeline
- Trans-Caspian gas pipeline

Southward gas connectivity

- SAARC Energy Link (natural gas)
- Turkmenistan-Afghanistan-Pakistan-India (TAPI)



INTERGOVERNMENTAL PROJECTS (OIL/GAS)





INTERGOVERNMENTAL PROJECTS

International projects (Power Grid)

Southward energy connectivity

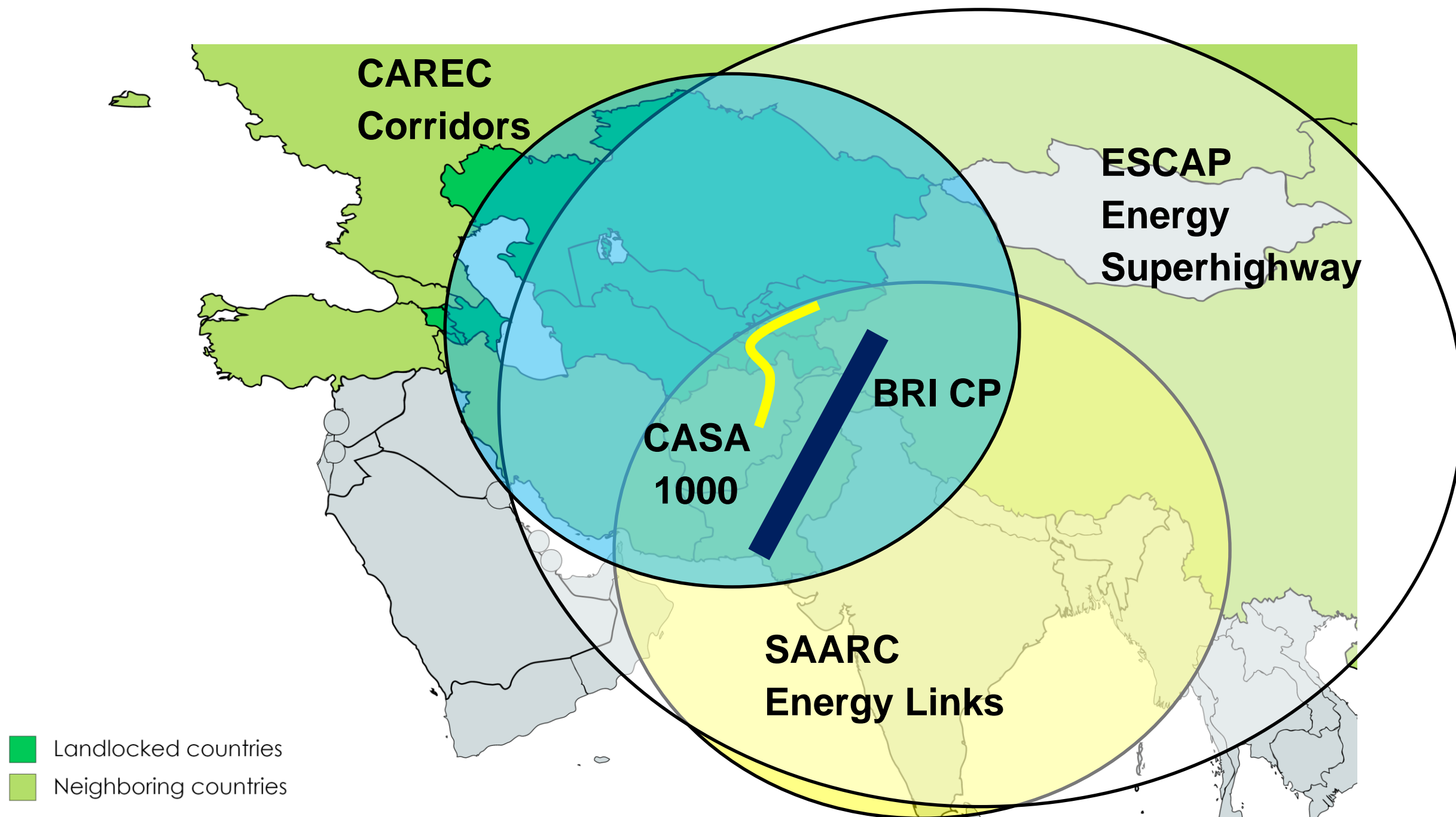
- South Asian Association for Regional Cooperation (SAARC) Energy Link
- CASA1000
- BRI China-Pakistan

Energy connectivity in Asia

- Asia-Pacific Energy Superhighway



INTERGOVERNMENTAL PROJECTS (POWER GRID)

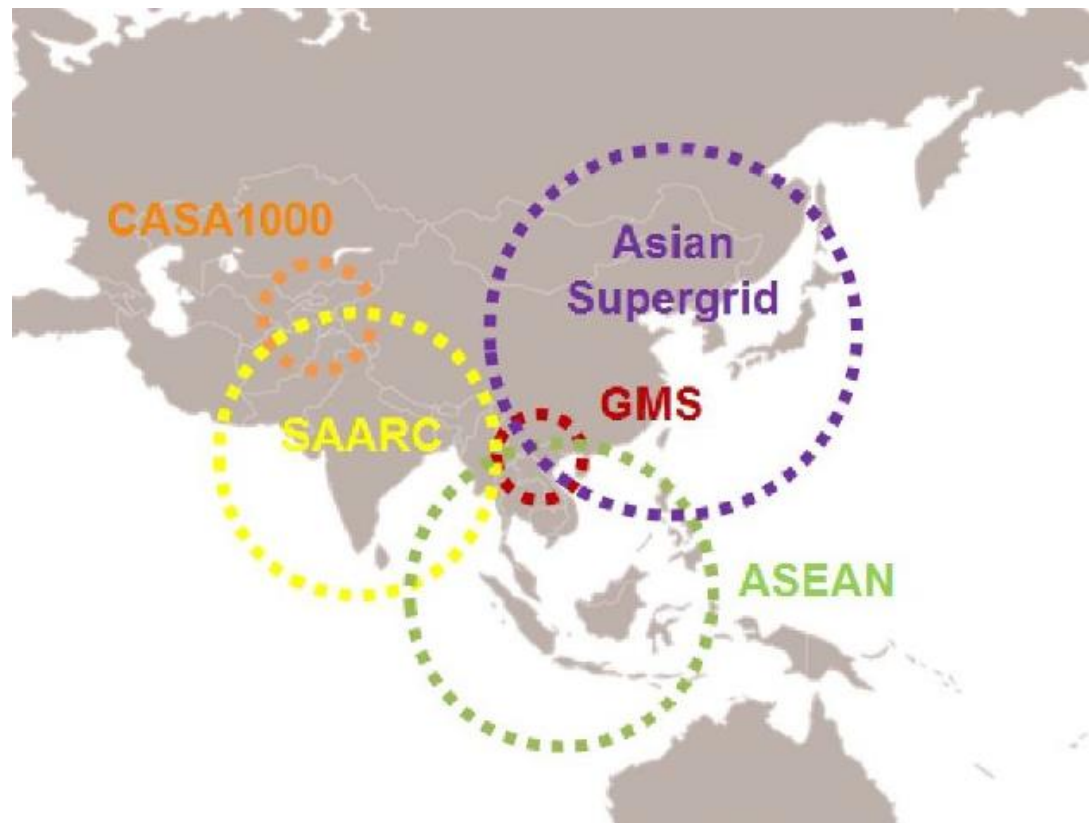




INTERGOVERNMENTAL PROJECTS

Asia-Pacific Energy Superhighway

- A concept of Integrated power grid in Asia
- ESCAP resolution 68/11
- SAARC Energy Link, Asian Super Grid, ASEAN Power Grid, Greater Mekong Subregion



- 2nd Asian and Pacific Energy Forum (APEF2) in 2018



CONNECTIVITY STATUS

Railway Transport

- Railway freight has grown by 13.6 per cent between 2010 and 2014, which is at a higher pace than the averages of ESCAP member States (4.3 per cent) and World (4.3 per cent).
- The railway network connects major cities in North and Central Asia with the Russian Federation and China.
- Southward railway link is limited.
 - Kazakhstan-Turkmenistan-Iran railway



CONNECTIVITY STATUS



Railway Transport

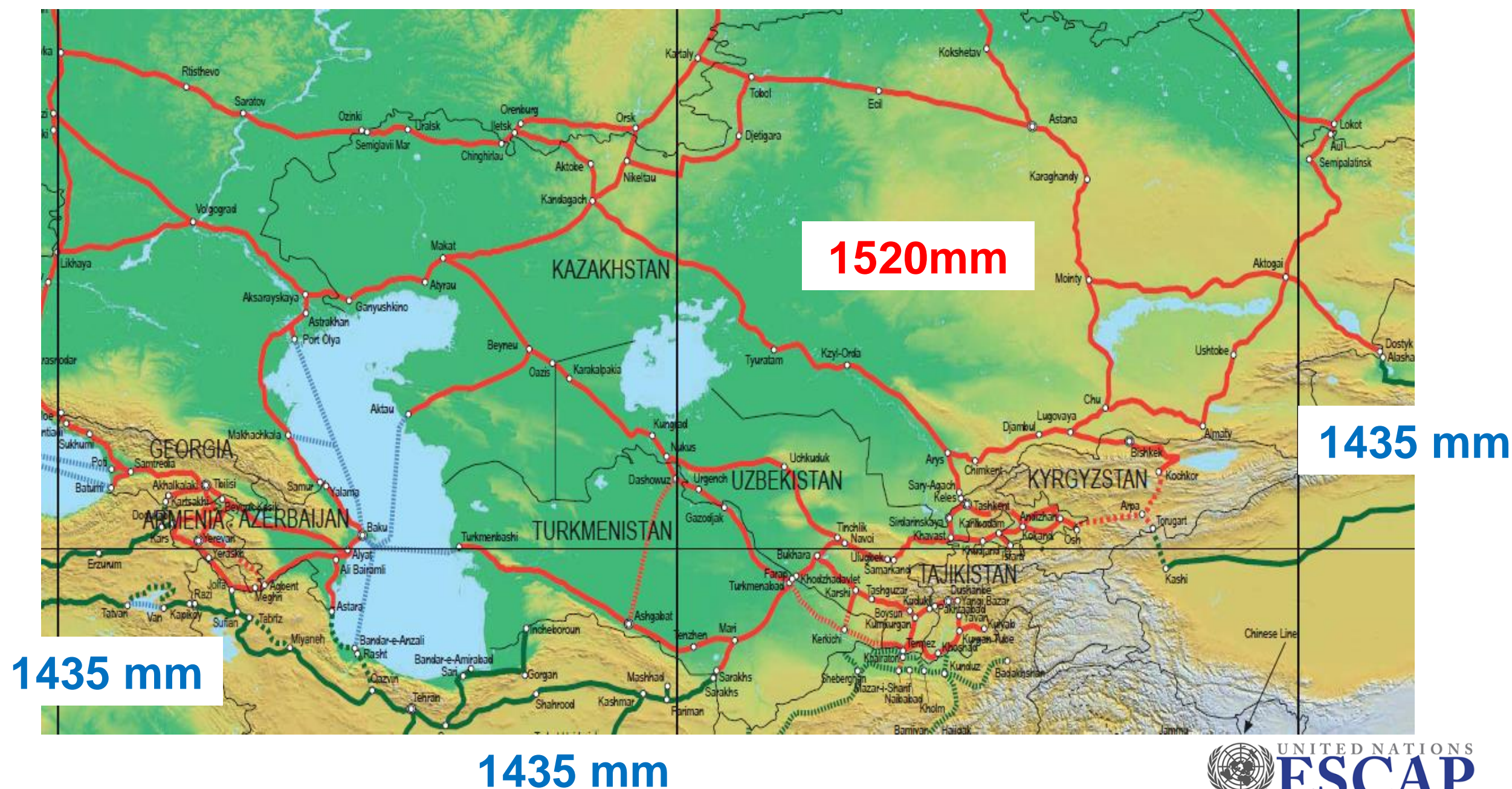
| Countries | Missing links | Distance (km) | Estimated Cost (million USD) |
|----------------------------|--------------------------------|------------------|------------------------------------|
| China | Kashi to Torugart (Kyrgyzstan) | 165 | |
| Kyrgyzstan | Kochkor to Arpa | 357 | 2,100 |
| Kyrgyzstan | Karasu to Torugart | 274 | 2,000 |
| Armenia | Martuni to Meghri | 316 | 3,200 |
| Iran (Islamic Republic of) | Rasht to Astara (Azerbaijan) | 170 | 600 |
| Georgia | Akhalkalaki to Kartsakhi | 30 | |
| Turkey | Kars to Kartsakhi (Georgia) | 68 | |
| Total | | 1380 | |

Source: E/ESCAP/TARN/WG(5)/4



CONNECTIVITY STATUS

Railway Transport: Break of gauge



CONNECTIVITY STATUS

Road Transport

Asian Highway Network

- AH 5: China-Central Asia-South Caucasus-Turkey
- AH 7: Russia-Central Asia-South Asia
- AH 8: Russia-Azerbaijan-Turkey



CONNECTIVITY STATUS



Road Transport

Asian Highway Network (Quality)

| Country | Asian Highway | | | | | | |
|------------------------|---------------|----------------|----------------|-----------|------------|------------------|---------------|
| | Total (km) | Primary (%) | Class I (%) | II (%) | III (%) | Below III (%) | Others (%) |
| ESCAP Aggregates | 129910 | 12% | 22% | 37% | 21% | 8% | 1% |
| North and Central Asia | 42515 | 0% | 11% | 53% | 29% | 6% | 1% |
| Armenia | 966 | 0% | 15% | 75% | 6% | 4% | 0% |
| Azerbaijan | 1465 | 0% | 20% | 80% | 0% | 0% | 0% |
| Georgia | 1101 | 0% | 6% | 80% | 15% | 0% | 0% |
| Kazakhstan | 12828 | 0% | 4% | 42% | 50% | 4% | 0% |
| Kyrgyzstan | 1763 | 0% | 0% | 17% | 75% | 8% | 0% |
| Russian Federation | 17311 | 0% | 14% | 70% | 9% | 5% | 3% |
| Tajikistan | 1912 | 0% | 1% | 51% | 0% | 48% | 0% |
| Turkmenistan | 2204 | 0% | 3% | 0% | 96% | 1% | 0% |
| Uzbekistan | 2966 | 0% | 40% | 37% | 23% | 0% | 0% |

Source: ESCAP statistical database (accessed on 23 August 2017)



CONNECTIVITY STATUS

Dry Port

- Intermodal transport (Ashgabat Agreement)
- Dry ports (logistics centres): Khorgos, Osh, Alyat
- Several AH intersections
 - Kara Balta (Kyrgyzstan) and Merke (Kazakhstan)
 - Tashkent and Srydaria (Uzbekistan)
 - Baku and Alat/Alyat (Azerbaijan)



CONNECTIVITY STATUS

ICT

- Growing demand and insufficient supply and quality

| | Internet users | | Mobile cellular subscriptions | | Fixed Internet broadband (per 100 people) | | | | | |
|--------------------|-------------------|------|-------------------------------|--------|--|------|--------------|------|-----------|------|
| | (% of population) | | (per 100 people) | | High-speed | | Middle-speed | | Low-speed | |
| | 2000 | 2015 | 2000 | 2015 | 2011 | 2015 | 2011 | 2015 | 2011 | 2015 |
| Armenia | 1.3 | 58.2 | 0.57 | 115.15 | 0 | 3.1 | 1.1 | 6.1 | 4.1 | 0.1 |
| Azerbaijan | 0.1 | 77 | 5.18 | 111.28 | 0.3 | 1.5 | 1 | 7.4 | 9.4 | 10.4 |
| Georgia | 0.4 | 47.5 | 4.11 | 128.95 | 0 | 7.4 | 1.3 | 7.8 | 4.2 | 0.5 |
| Kazakhstan | 0.6 | 70.8 | 1.35 | 187.17 | 1.8 | 5.7 | 4.2 | 4.3 | 2.7 | 1.5 |
| Kyrgyzstan | 1 | 30.2 | 0.18 | 132.80 | 0.3 | 1.7 | 0.1 | 0.9 | 0.3 | 0.7 |
| Russian Federation | 1.9 | 70 | 2.22 | 159.95 | 2.6 | 12 | 5.8 | 4.7 | 3.6 | 1.9 |
| Tajikistan | 0 | 18.9 | 0.02 | 98.59 | - | - | - | - | - | - |
| Turkmenistan | 0.1 | 14.9 | 0.17 | 145.94 | - | - | - | - | - | - |
| Uzbekistan | 0.4 | 42.8 | 0.21 | 73.32 | - | - | 0 | 0.5 | 0.6 | 5.4 |

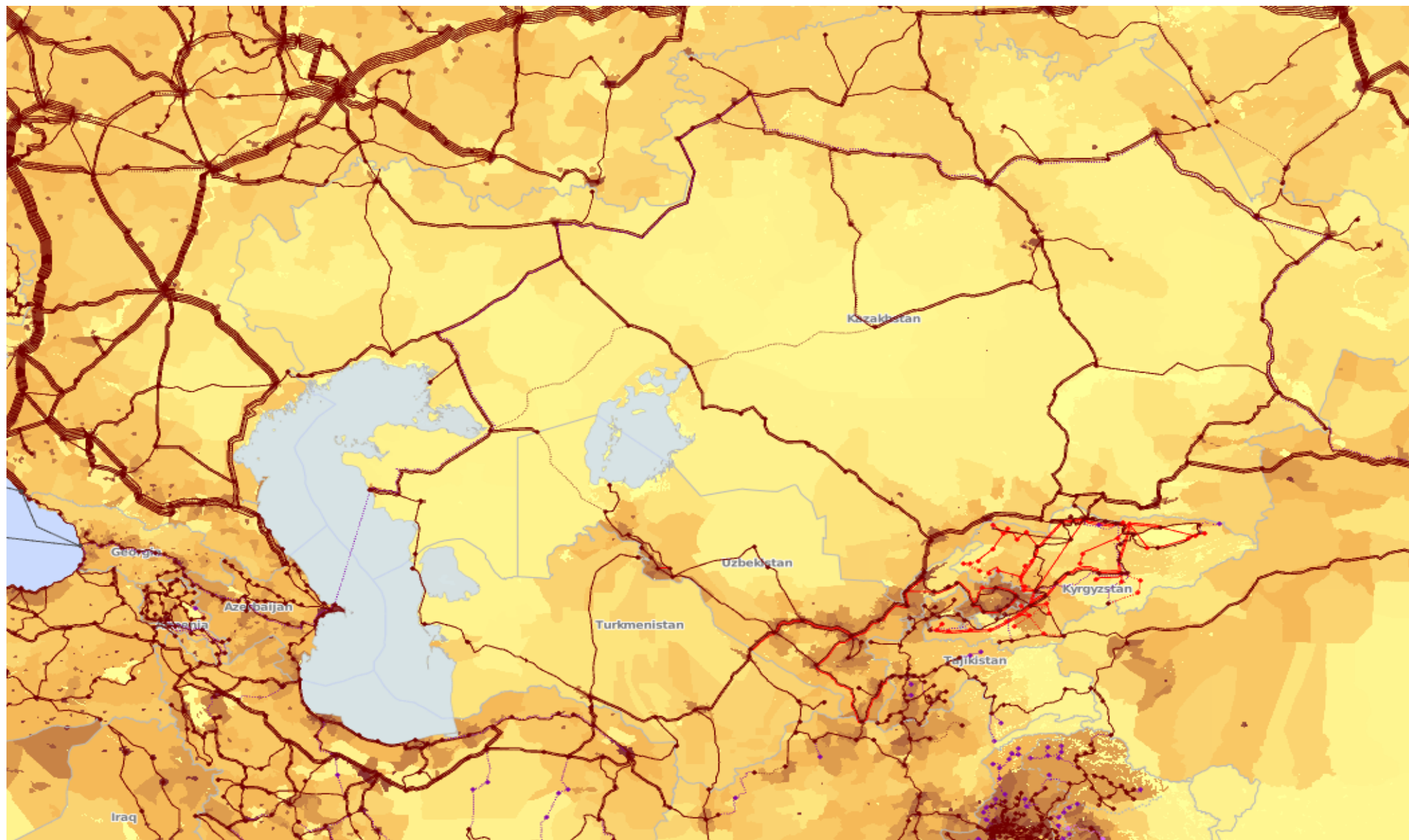
Source: ESCAP Statistical Online Database (accessed on 2 March 2017)

Note: High-speed (more than 10 Mbits/s), Middle-speed (2 - 10 Mbit/s), Low-speed (256 Kbit/s - 2 Mbit/s)



CONNECTIVITY STATUS

ICT Topology is required.



Source: ITU Interactive Transmission Map <http://www.itu.int/itu-d/tnd-map-public/>
Note: Dark red are operational fibre-optic lines while red lines are operational microwave lines.
Note: As regions are darker red, their population density is higher.



CONNECTIVITY STATUS

Number of cross-border fibre-optic connections

| | AZ | GE | KZ | KG | RU | TJ | TM | UZ | AF | CH | IR |
|----|----|----|----|----|----|----|----|----|----|----|----|
| AM | 0 | 1 | | | | | | | | | 1 |
| AZ | | 1 | 0 | | 1 | | 0 | | | | 1 |
| GE | | | | | 2 | | | | | | |
| KZ | | | | 3 | 4 | | 1 | 2 | | 2 | |
| KG | | | | | | 1 | | 1 | | 1 | |
| RU | | | | | | | | | | 4 | |
| TJ | | | | | | | | 1 | 1 | 1 | |
| TM | | | | | | | | 1 | 2 | | 2 |
| UZ | | | | | | | | | 1 | | |
| AF | | | | | | | | | | | 1 |
| CH | | | | | | | | | | | |

Source: ESCAP based on ITU Interactive Transmission Map

<http://www.itu.int/itu-d/tnd-map-public/>



CONNECTIVITY STATUS



Investment priorities for redundancy in ICT network

| Cross-border connection | Distance (km) | Priority | Existing network |
|--------------------------|---------------|----------|---|
| Kazakhstan/Kyrgyzstan | 1224 | Medium | |
| Kakazahstan/Turkmenistan | 379 | High | One fibre link of STM-64 at 10 Gbps using SDH network technology between Beyneu and Nukus |
| Kazakhstan/Uzbekistan | 2203 | Medium | One fibre connection between Symkent and Tashkent in Uzbekistan |
| Kyrgyzstan/Tajikistan | 870 | Medium | One fibre connection between Osh and Andijan using SDH network technology |
| Kyrgyzstan/Uzbekistan | 1099 | High | One fibre connection between Osh and Khudzhand |
| Tajikistan/Uzbekistan | 1161 | High | One link with capacity STM-1 at 156 Mbps between Dushanbe and Denau |
| Turkmenistan/Uzbekistan | 1621 | High | Only and old connection between Turkmenabat and Bukhara under the Trans-Asia Europe Line |

Source: ESCAP, 2014, Bridging transport, ICT and energy infrastructure gaps for seamless regional connectivity



CONNECTIVITY STATUS

Energy

Southward connectivity in energy is mutually beneficial but currently limited.

Energy-surplus Central Asia → Energy-deficit South Asia

- For example, Total Primary Energy Supply (TPES) per capita in South and South-West Asia is 709.3 kg of oil equivalent, which is much lower than 3914.7 kg in Central Asia.
- CASA1000 and TAPI are promising.

Source: ESCAP, 2014, Bridging transport, ICT and energy infrastructure gaps for seamless regional connectivity



SYNERGY FROM INFRASTRUCTURE DEVELOPMENT

Co-deployment of multiple infrastructures

- Reduce investment and maintenance costs

Examples

- Baku-Tbilisi-Ceyhan (BTC) pipelines project
- CASA-1000 and Digital CASA

Opportunities

- Caspian pipeline and fibre-optic development
- Dry port development and ICT node deployment



SYNERGY FROM INFRASTRUCTURE DEVELOPMENT

Co-deployment of ICT infrastructure

- Reducing cost of information
- Closing the digital divide
- Trade and transport facilitation “Paperless trade”
- e-governance



SYNERGY FROM INFRASTRUCTURE DEVELOPMENT

Beyond connectivity

With diversification of economy

- Love of variety
- High-value exportable - agricultural processing

With renewable energy development

- Electronic cars and digitalization of economy
- Increase in demand for clean energy
- Energy trade and energy security



Mandates and Normative Work

2030 Agenda

- Asia Pacific Forum for Sustainable Development
- High-Level Political Forum

Vienna Programme for Landlocked Developing Countries

- In 2019, midterm review

Regional Economic Cooperation and Integration (RECI) Agenda

- RECI Ministerial Meeting in November 2017



ESCAP ROLE



Norm-setting opportunities (2017)

| Date | Meeting | Place |
|----------------|--|----------------------|
| 1-2 November | 1 st meeting of the Steering Committee on the Asia-Pacific Information Superhighway | Dhaka, Bangladesh |
| 21-24 November | Regional Economic Cooperation and Integration (RECI) Ministerial and Preparatory Meetings | Bangkok, Thailand |
| 22-23 November | 2 nd meeting of the Working Group on Dry Port | Bangkok, Thailand |
| 7-8 December | United Nations Special Programme for North and Central Asia (SPECA) Economic Forum | Dushanbe, Tajikistan |
| 12-13 December | 7 th meeting of the Working Group on the Asian Highway Network | Incheon, Korea |



ESCAP ROLE



Norm-setting opportunities (2018, tentative schedule)

| Date | Meeting |
|----------|---|
| March | Asia Pacific Forum for Sustainable Development |
| May | 74 th session of the Commission |
| October | 2 nd meeting of Committee on ICT, Science, Technology and Innovation |
| November | 2 nd Asian and Pacific Energy Forum |
| November | 5 th meeting of Committee on Transport |



Analytical Work

Multisectoral and Interdisciplinary Expertise

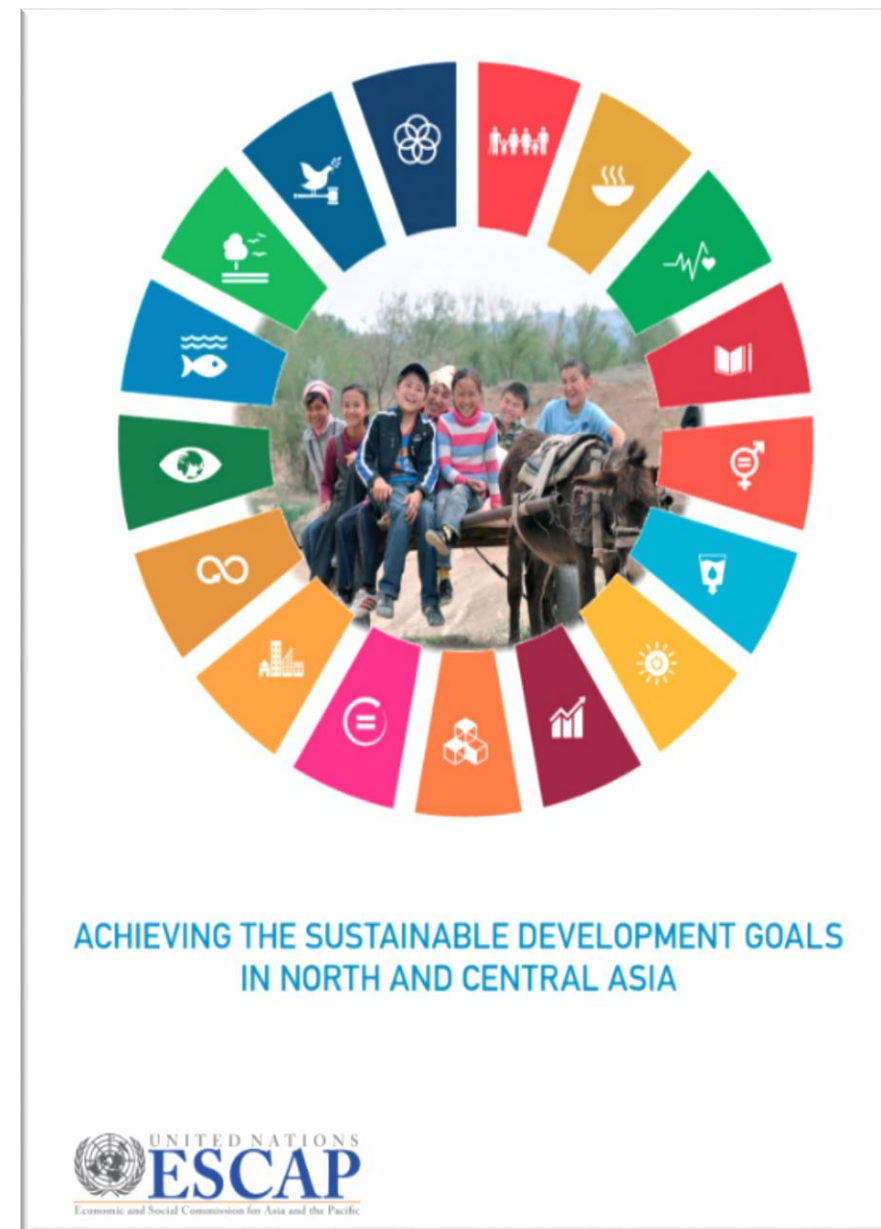
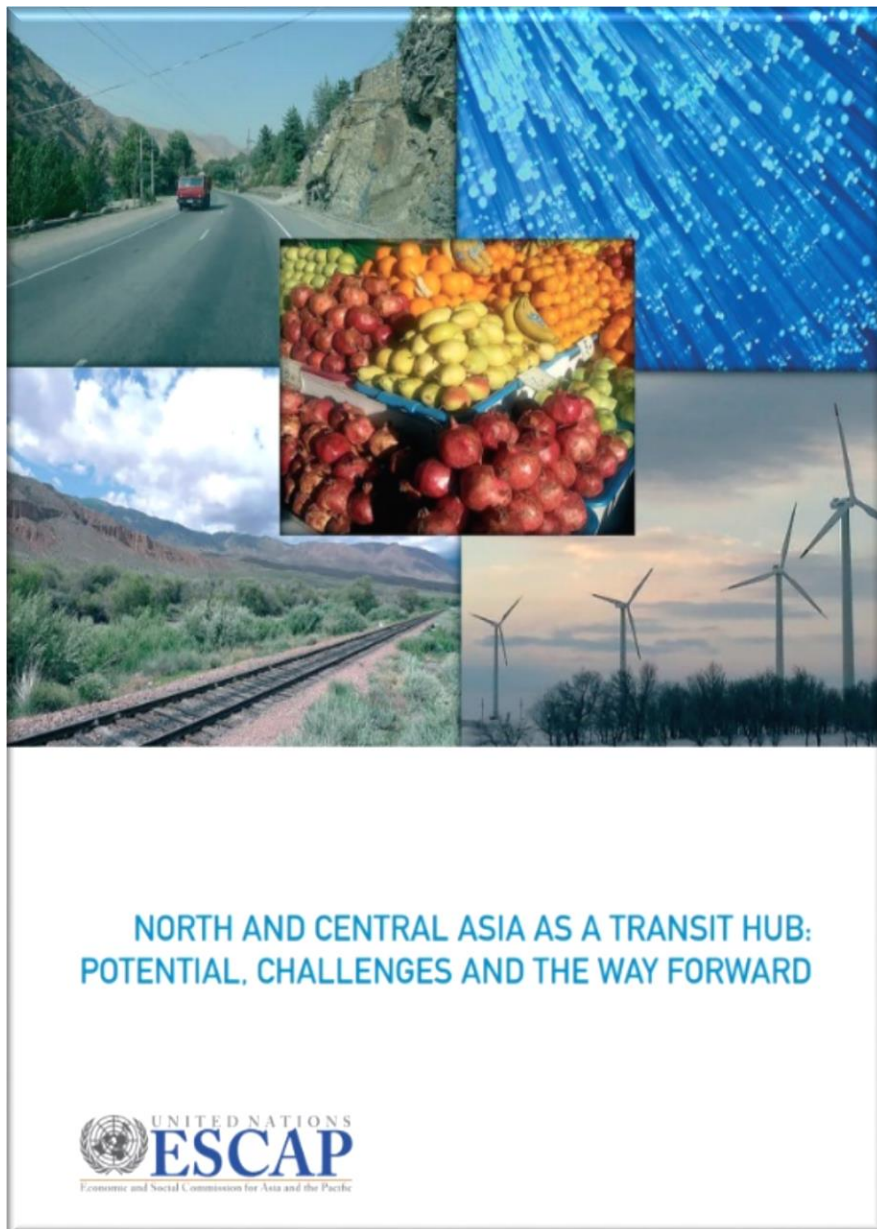
- Transport, ICT and Energy
- Environmental and social dimensions of SDGs

Neutrality

- Studies funded by governments
- Joint studies with other organizations

ESCAP ROLE

Analytical work





ESCAP ROLE



Analytical work

- ESCAP, forthcoming, the Belt and Road Initiative and the Role of ESCAP

Member States can request ESCAP to produce studies and assessment.



THANK YOU



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