



SDG 9: Relevant UNECE Work on Resilient Infrastructure

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SDG 9: How to Measure?

- Custodian agency: World Bank
- Basis: Rural Access index
- 9.1.1: proportion of rural population who live within 2 km of an all-season road
- How to measure?
 - This cannot be done by surveys; mapping and/or satellite data combined with road network information, possibly censuses too
- 9.1.2: Passenger and freight volumes, by mode of transport
- How to measure?
 - Passenger km, goods vehicle km (or ton-km), consistent across modes
 - Measured by UNECE for all transport modes except aviation and maritime



Overview

- Introduction
- Infrastructure Observatory
- Climate Change Impacts and Adaptation for Transport
- Benchmarking Infrastructure Construction Costs
- Data Collection for SDG9



SDG 9: Resilient Infrastructure

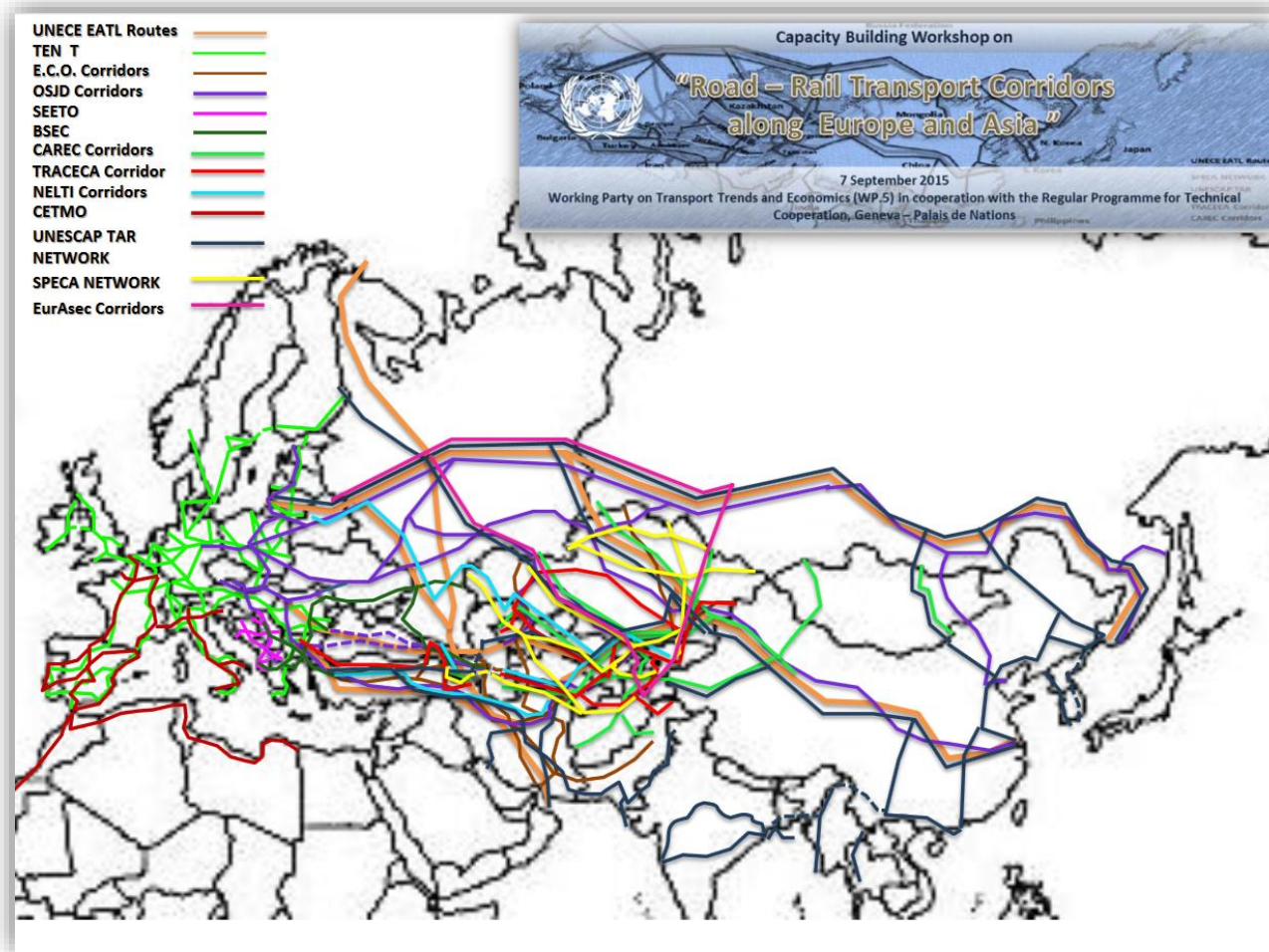
‘Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation’

UNECE WORK

- Identifies main **Euro-Asian links** for priority development and cooperation
- Ensures **seamless connections** throughout Europe through Trans-European Motorways and Railways (TEM and TER)
- Facilitates **border crossings** (TIR convention)



Infrastructure Observatory



Infrastructure Observatory

- Given large number of different identified transport networks, Observatory will act as online repository for users to exchange basic information on projects, meetings, and to seek cooperation
- In the future, all international corridors should be hosted in a GIS environment. Hopefully ready by end-2018





Transportation Network

Rail Network and Auxiliary Infrastructure

Rail Projects

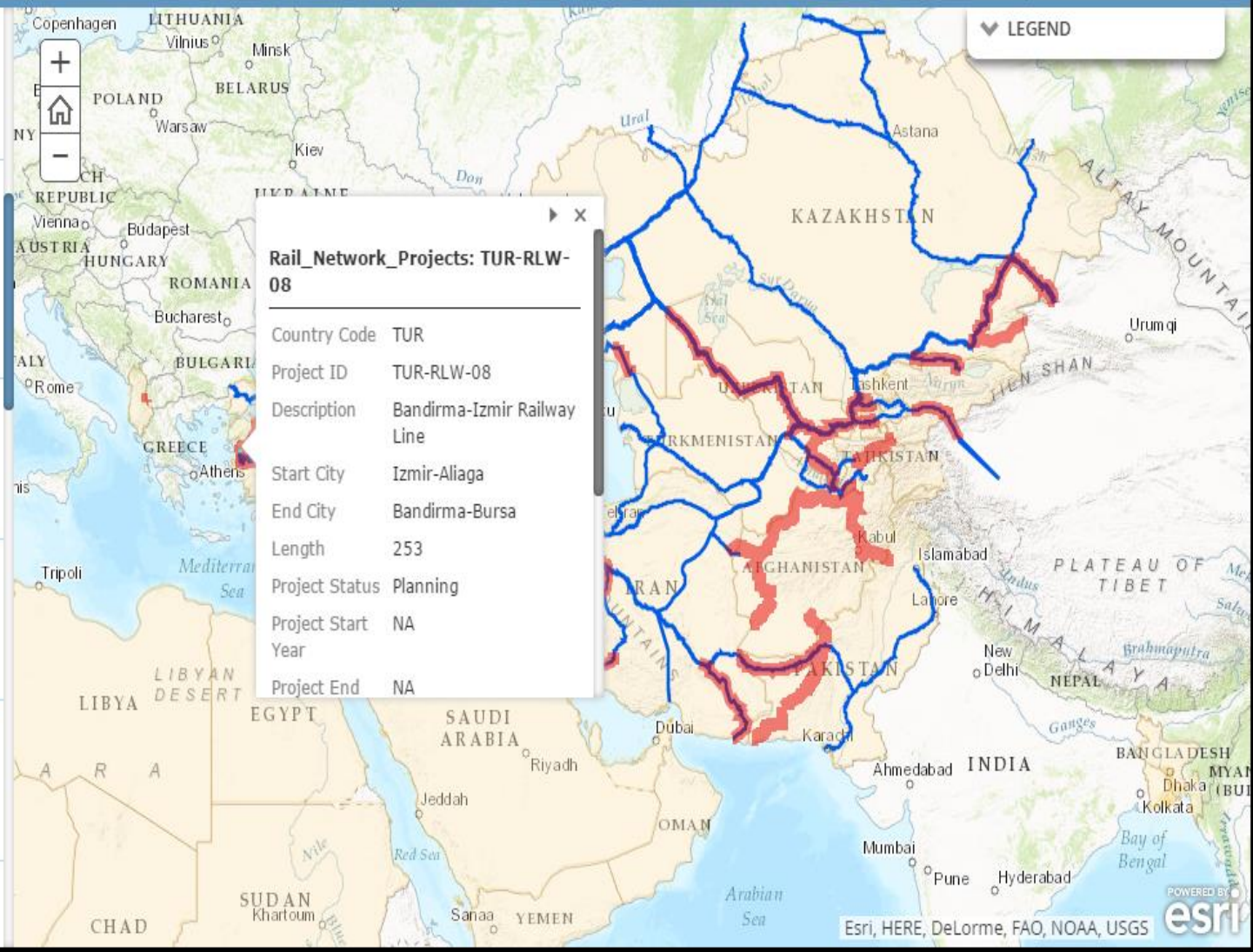
Rail Projects

Border Crossing

Dry Ports

Maritime Ports

Rail Network by Legal



Climate change adaptation

- Group of Experts on Climate Change Impacts and Adaptation for Transport Networks and Nodes (WP.5/GE.3) active since 2010
- Identifies parts of transport networks vulnerable to climate change impacts
- Develops tools to address potential extreme hazards to transport infrastructure
- Assess potential economic, social and environmental impacts and provide cost/benefit analysis of adaptation options
- Has a focus on geospatial applications (uses E-Road and E-Rail Census maps)



Infrastructure Costs

- Group of Experts on Benchmarking Transport Infrastructure Construction Costs (WP.5/GE.4)
- Identifies tools for **evaluating** infrastructure construction costs
- Identifies **terminologies used** for construction costs
- Collects data to **benchmark construction costs**, by country and transport mode



Infrastructure Costs

Examples of Cost Terminologies

Construction Service: Activity that supports the construction process or subsequent maintenance (SOURCE: EN 15804:2012+A1:2013)(2).

Construction Works: Everything that is constructed or results from construction operations. Note 1 to entry: This covers both building and civil engineering works, and both structural and non-structural elements. Note 2 to entry: Adapted from the definition in ISO 6707-1 (2).

Construction Administration Cost: The normal cost of administration, management, reporting, design services in construction, and community outreach required in the construction phase of a project (4).

Construction Allowance: An amount of additional resources included in an estimate to cover the cost of known but undefined requirements for a construction activity or work item. A construction allowance is a normal cost (4).



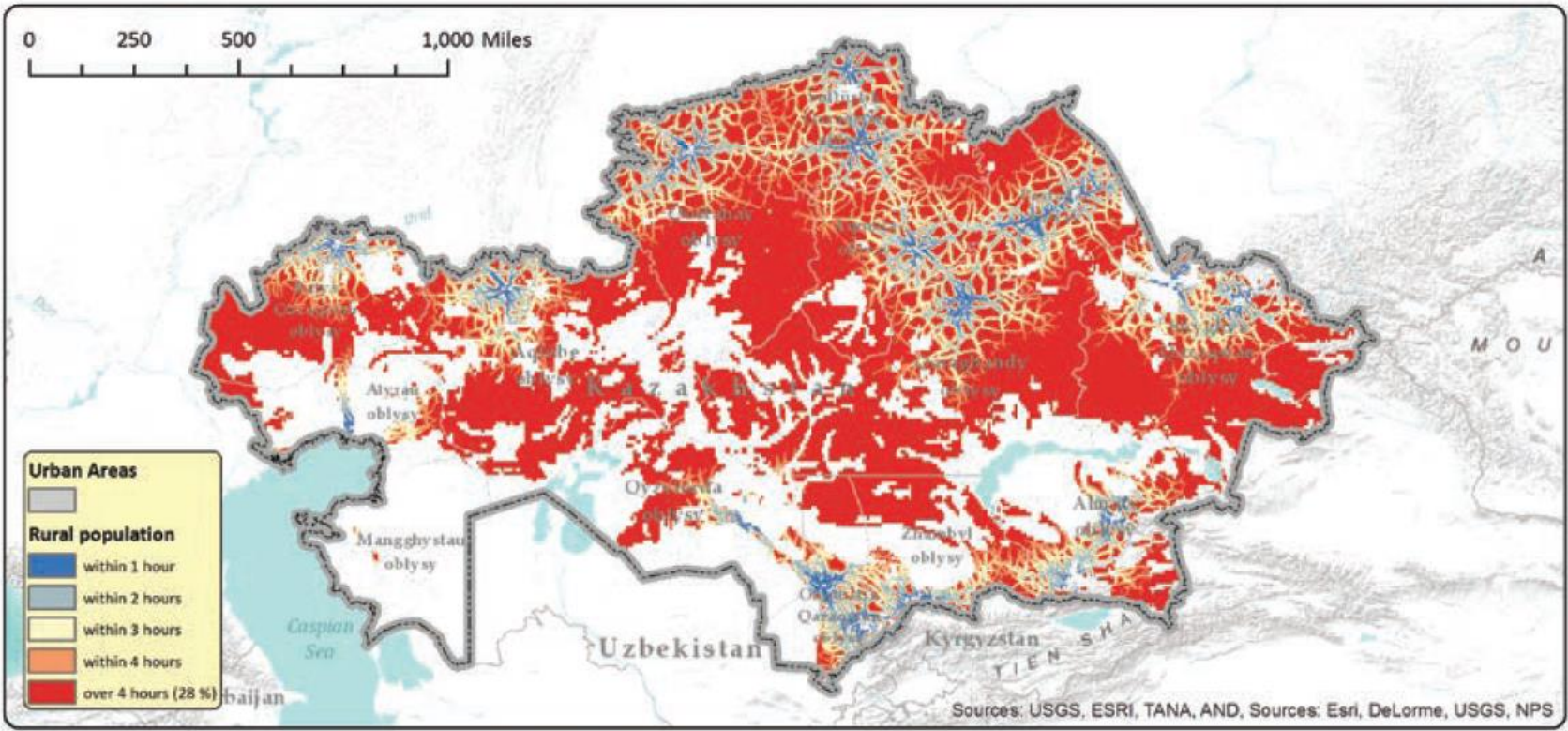
See <https://www.unece.org/fileadmin/DAM/trans/doc/2017/wp5/ECE-TRANS-WP5-GE4-2017-01r1e.pdf>

SDG 9: How to Measure?

- 9.1.1: proportion of rural population who live within 2 km of an all-season road
- How to measure? Not surveys; mapping and/or satellite data combined with road network information, plus population density data
- 9.1.2: Passenger and freight volumes, by mode of transport
- How to measure?
 - Passenger km, goods vehicle-km (or ton-km), consistent across modes (using Glossary definitions)
 - Measured by UNECE for all transport modes except aviation and maritime



Rural population (in crop suitable areas) & travel time to the nearest city over 100 k in population KAZAKHSTAN



habitat INFO developed an urban mask (v. 1) using 2012 LandScan (ORNL) and 2013 lights at night data (NOAA). This was used to extract rural populations from the LandScan 2012 data. From this areas suitable for crop growing were extracted (FAO/IIASA). This map presents the travel time from rural populations in crop suitable areas to the nearest city. Travel time dataset by habitat INFO based on cities larger than 100 k using CityPopulation.de (2011), GLOBCOVER landcover (v. 2.2), ADGI WorldMap (v. 7.0) & GTOPO30 DEM data. Map produced by habitat INFO, 22/1/15.

Transport & ICT. 2016. Measuring Rural Access: Using New Technologies. Washington DC: World Bank, License: Creative Commons Attribution CC BY 3.0



Summary

- UNECE works on improving infrastructure in countries by sharing information, best practices and comparison tools, and identifying networks for improvement
- Key passenger and freight volume statistics feed into measuring SDG 9.1.2



Suggestions? Comments?
We are here to help!

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