

# Transport-relevant Data and Tools

## Supporting Decarbonization, Resilience and Sustainability Goals in Tajikistan

**Alvin Mejia and Sudhir Gota**

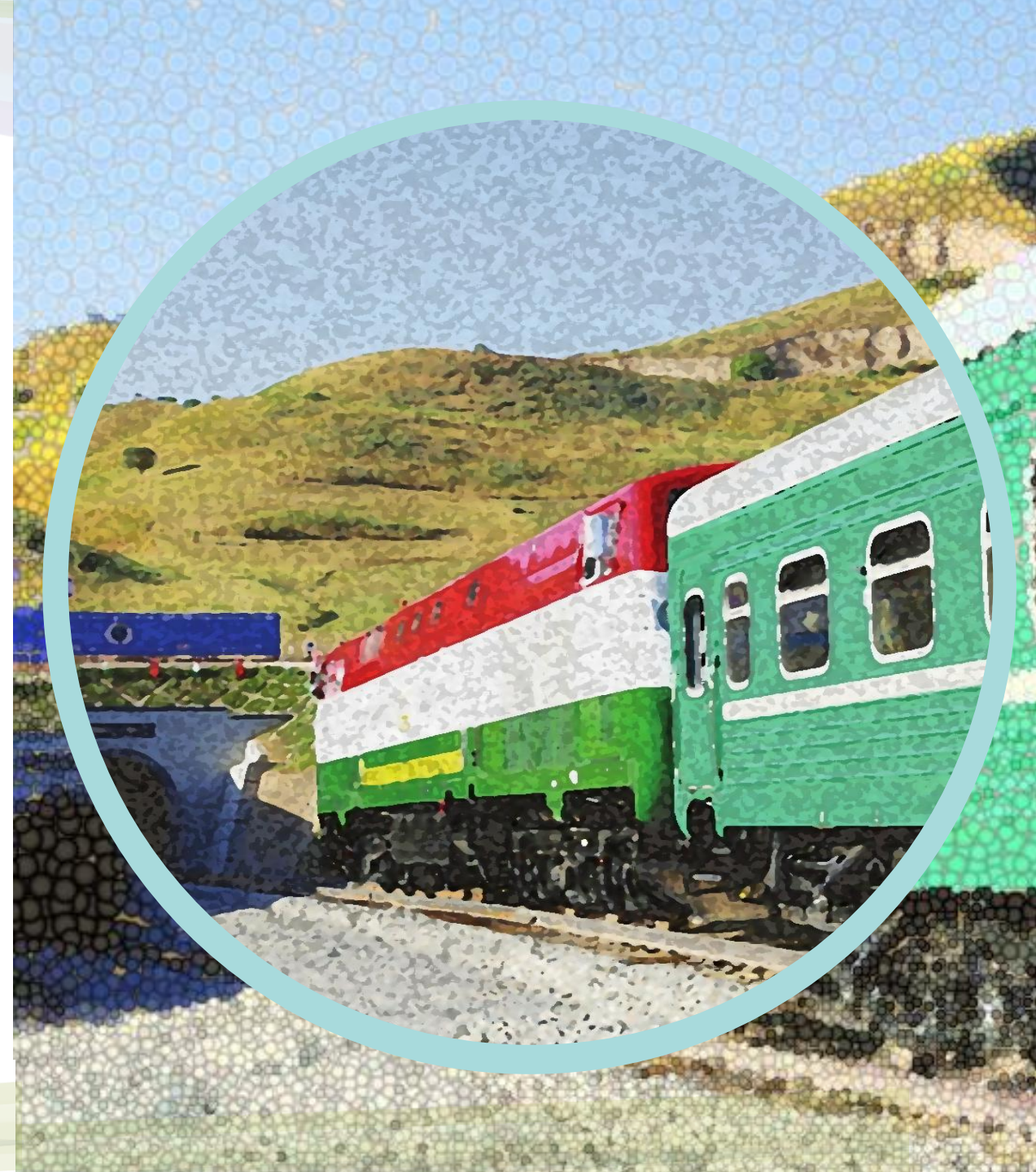
Co-Team Leads

Asian Transport Observatory

Strengthening the Capacity of Tajikistan to Implement Low Carbon and Resilient Transport Action Plans

June 3-4, 2026

Dushanbe



# asiantransportobservatory.org



**52** Economies (ADB Members + Iran and Russia)

**460** Urban Centers (412 Asia-Pacific, 48 Others)

**50** Urban Centers with a detailed review



## Dimensions Covered

-  Access & Connectivity
-  Infrastructure
-  Safety
-  Climate & Environment
-  Resilience
-  Finance & Economics
-  Inclusion & Gender
-  Governance & Policy

## Data Foundations

*Structured and comparable transport evidence*

-  National Data
-  Urban Data
-  Policy Database
-  Cost Database

## Knowledge Products

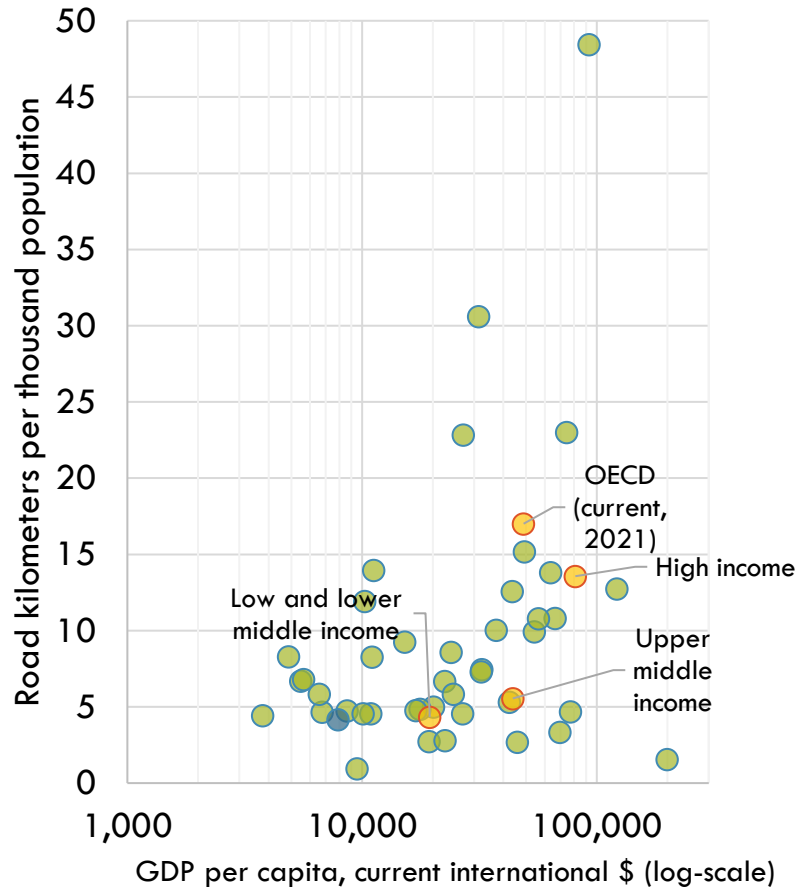
-  Country Profiles
-  Urban Profiles
-  Regional Outlooks
-  Thematic Reports
-  Thematic Profiles
-  Working Papers

## Tools & Insights

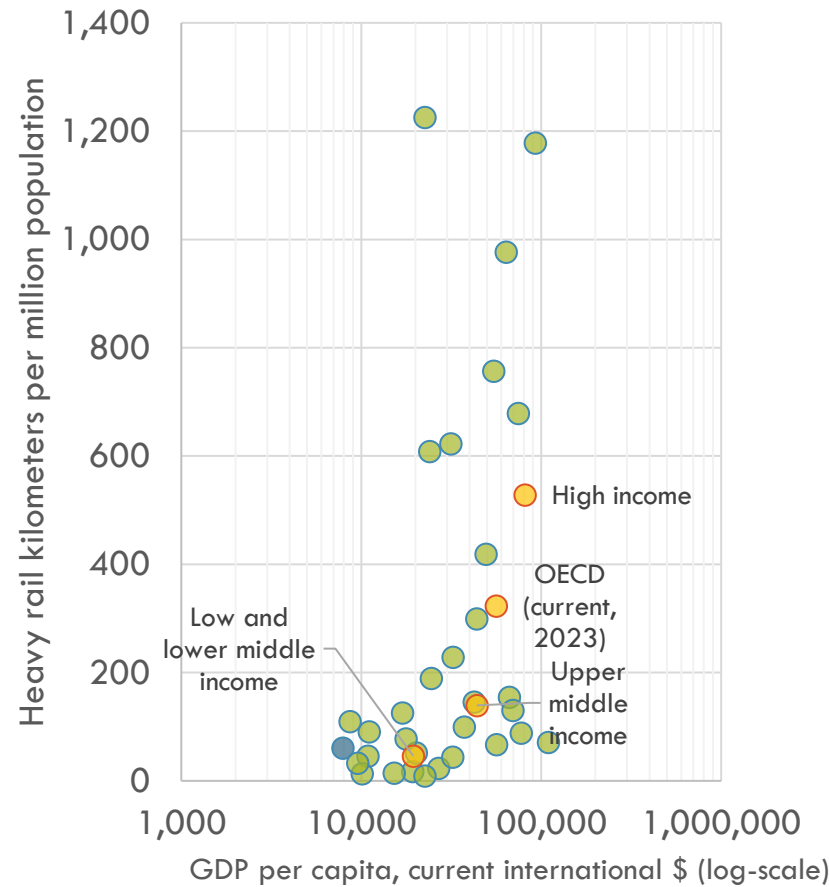
-  Dashboards
-  Data Explorers
-  Interactive Maps
-  Benchmarking
-  Visual Analytics
-  Decision Support Insights

# Infrastructure Provision

Road availability



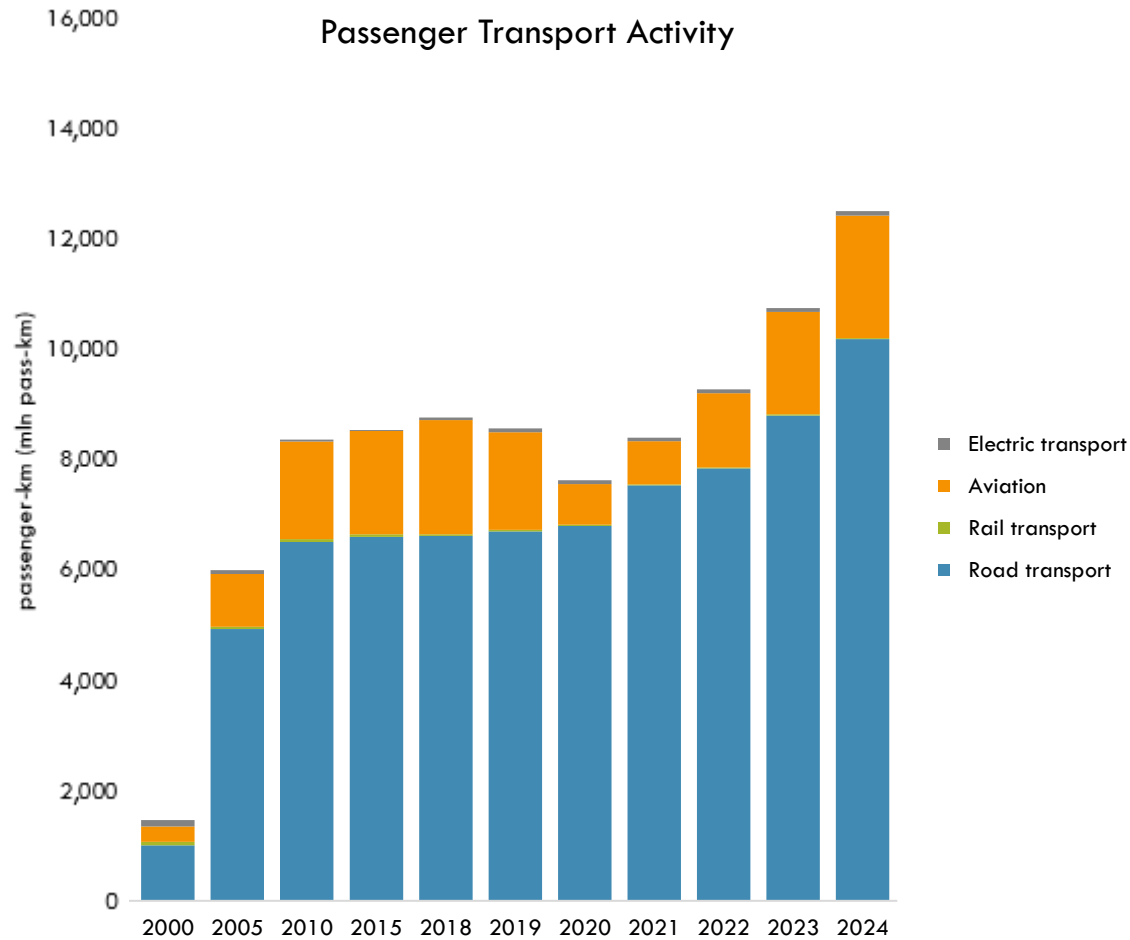
Heavy rail availability



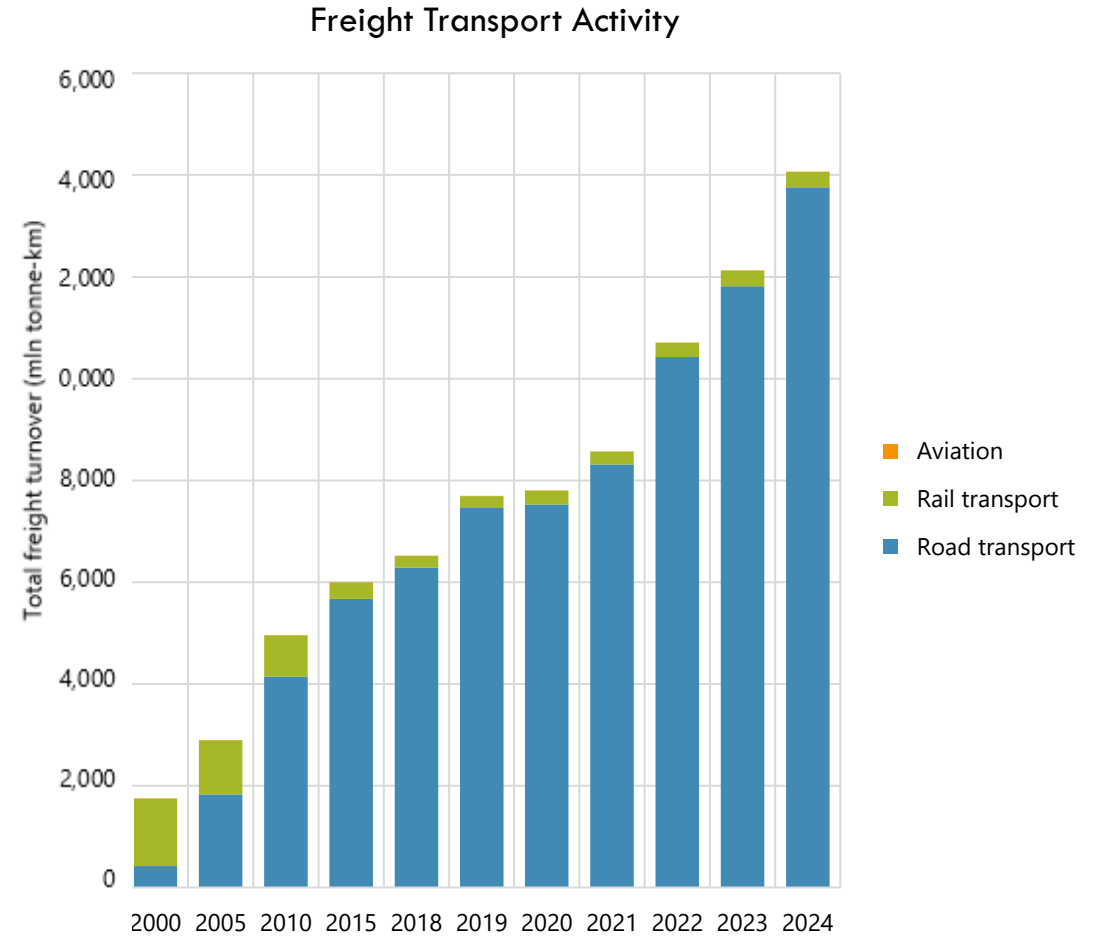
Asian Transport 2035 Outlook: Investment Needs of Low and Middle-Income Economies

Source: OECD, WB, official statistics and other sources

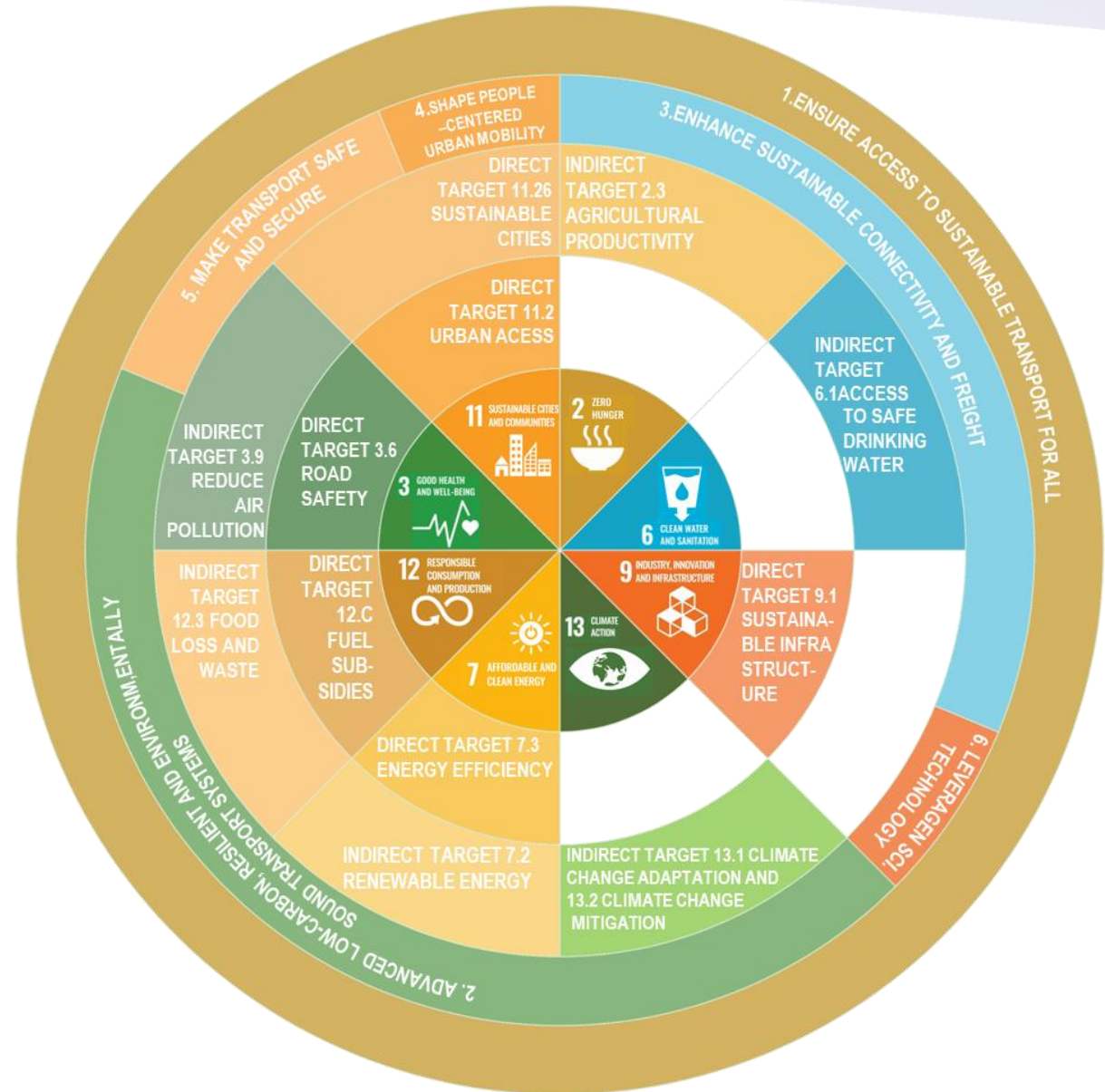
# Transport Activity Estimates



Source: (TAJSTAT 2025)



# Mapping of priorities and goals related to sustainable transport



# ATO Country Dashboards - UN Decade of Sustainable Transport

Dashboard developed with support by:



Ensure access to sustainable transport for all | Advance low- or zero-carbon, resilient, and environmentally sound transport systems | Enhance efficiency and



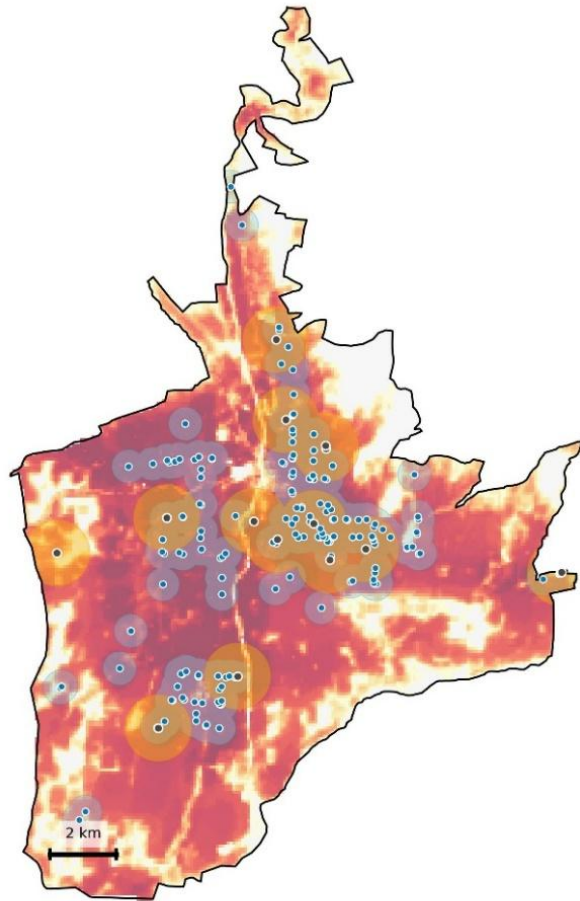
Source: CIESIN. (2023). SDG Indicator 11.2.1: Urban Access to Public Transport, 2023 Release: Sustainable Development Goal Indicators (SDGI). <https://sedac.ciesin.columbia.edu/data/set/sdgi-11-2-1-urban-access-public-transport-2023>

- Ensure access to sustainable transport for all
- Advance low-carbon, resilient and environmentally sound transport systems
- Enhance efficiency and promote sustainable connectivity and logistics
- Shape people-centered urban mobility and liveable cities
- Make Transport Safe and Secure
- Leveraging on Science, Technology and Innovation



# Urban Access

## Dushanbe Public Transport Access, SDG 11.2.1 Approximation



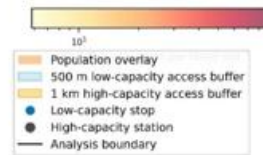
### Summary

**Population summary**  
 Total population: 1,321,539  
 Population with convenient access: 618,127  
 Population without convenient access: 703,413  
 Share with convenient access: 46.8%

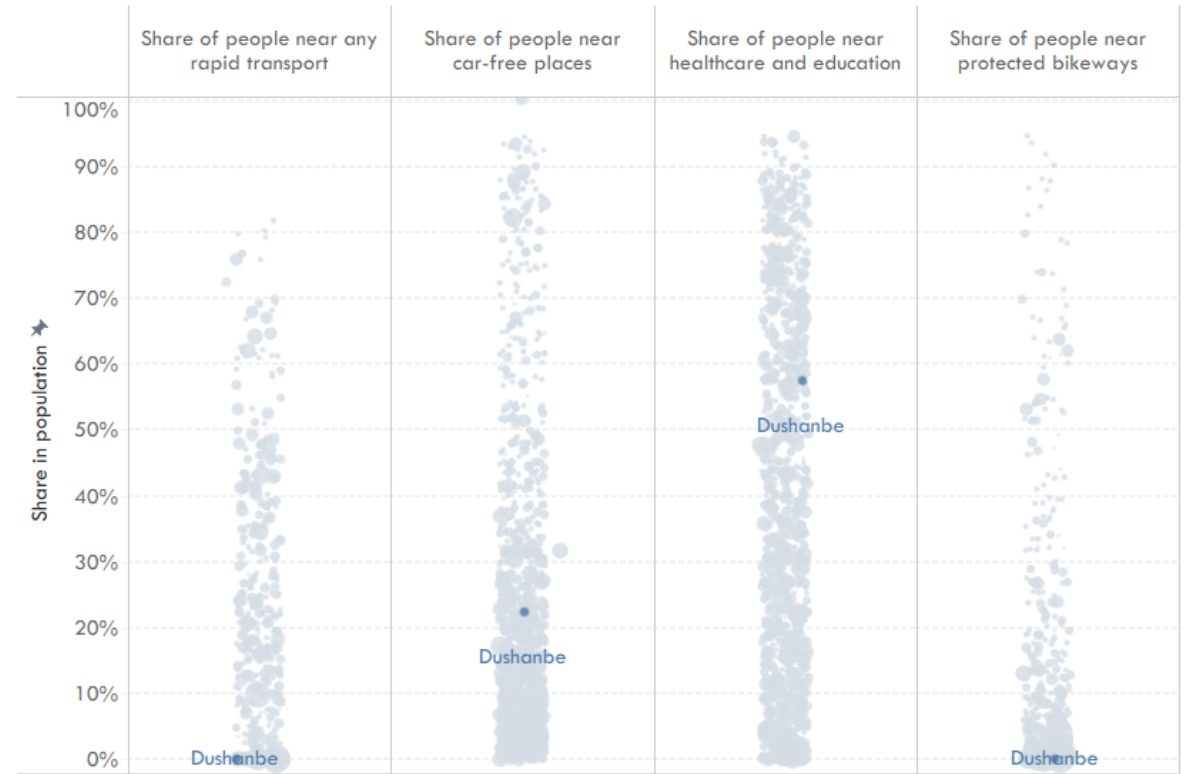
**Public transport features**  
 Low-capacity stops, 500 m: 175  
 High-capacity stations, 1 km: 15

**Geospatial summary**  
 Boundary area: 197.3 km<sup>2</sup>  
 Area within access buffers: 59.1 km<sup>2</sup>  
 Share of area covered: 30.0%

**Method note**  
 Straight-line buffer approximation, not street-network walking distance.



Source: (ATO 2026)



Source: (ITDP 2024)

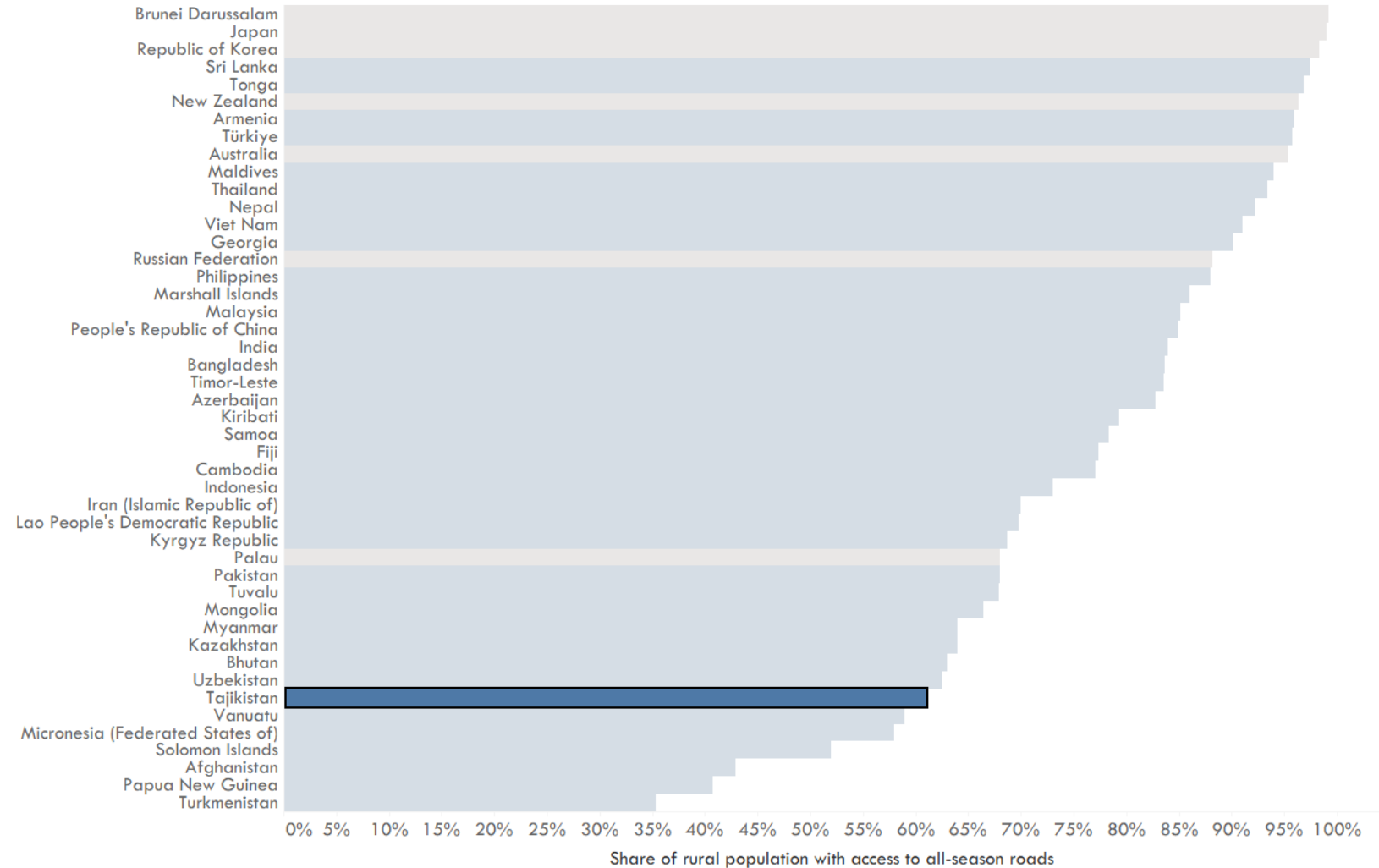


# Shifting Mode Shares



# Rural Access

Rural access index



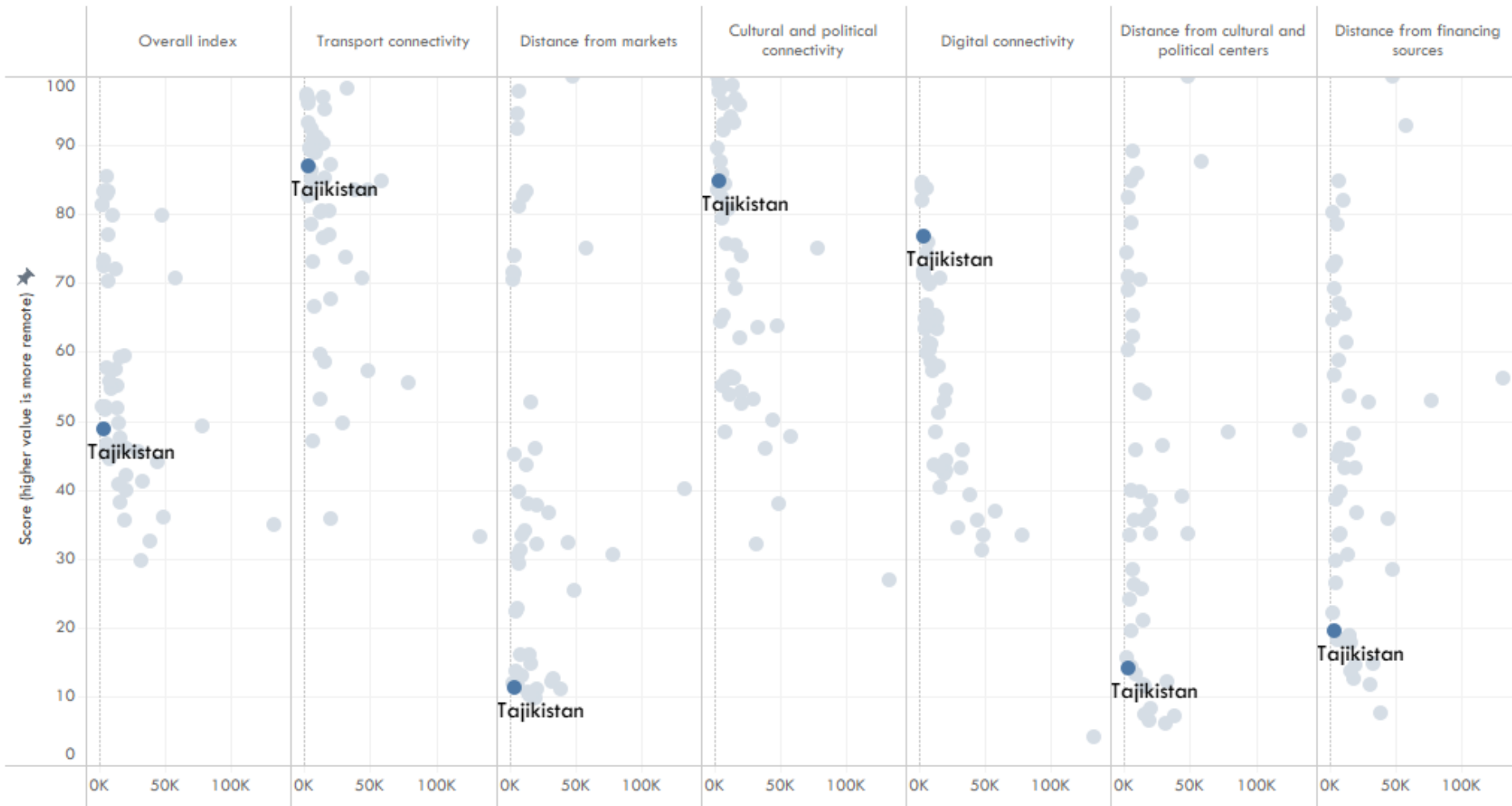
■ Low and middle income  
■ High income

Source: Center for International Earth Science Information Network. (2023). SDG Indicator 9.1.1: The Rural Access Index (RAI), 2023. Release: Sustainable Development Goal Indicators (SDGI) | SEDAC. <https://sedac.ciesin.columbia.edu/data/set/sd-gi-9-1-1-rai-2023>



# Connectivity

Remoteness index



# ATO Road Safety Profiles

## Outline

### Country Summary

Benchmarking

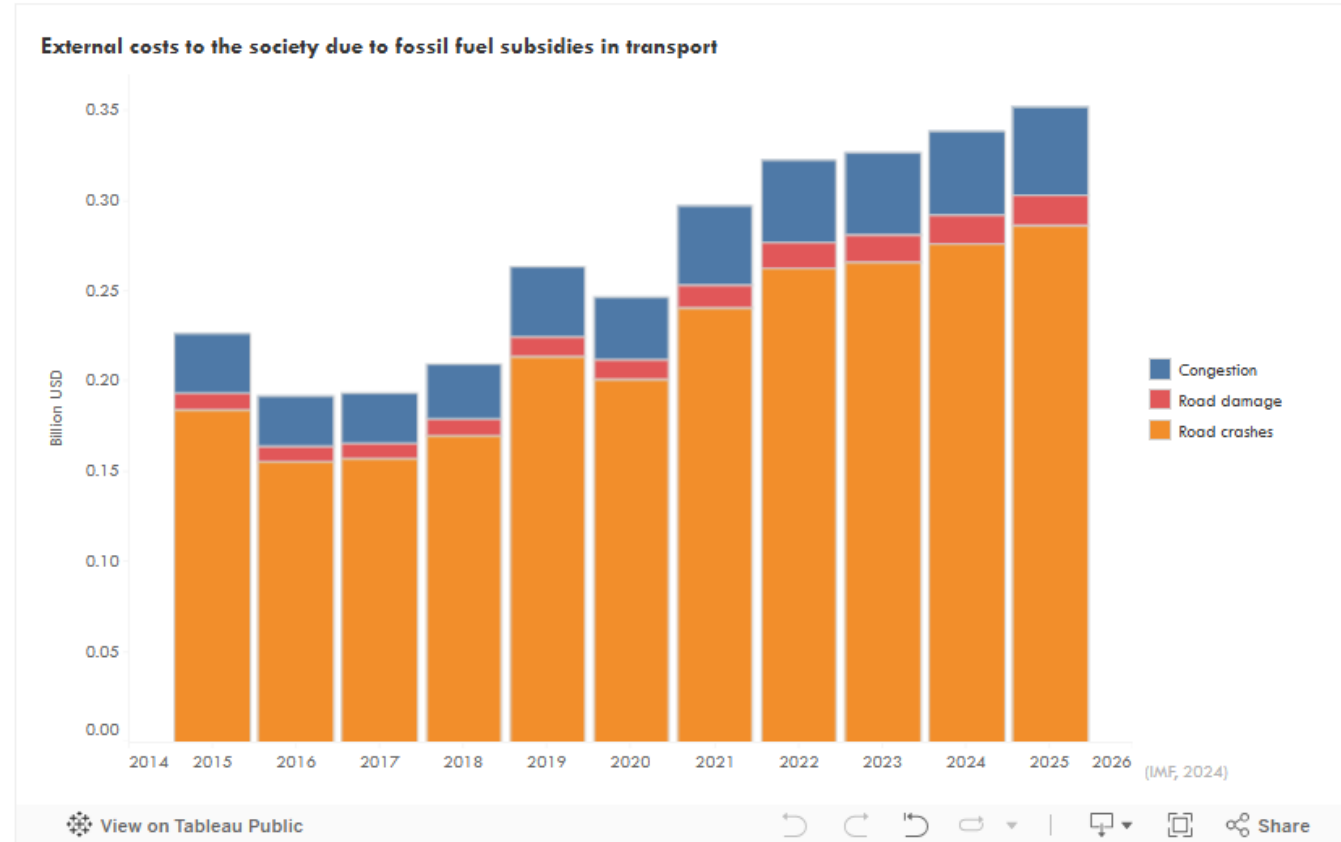
Can Asia meet the 2030 target of halving fatalities?

Policy Landscape

References

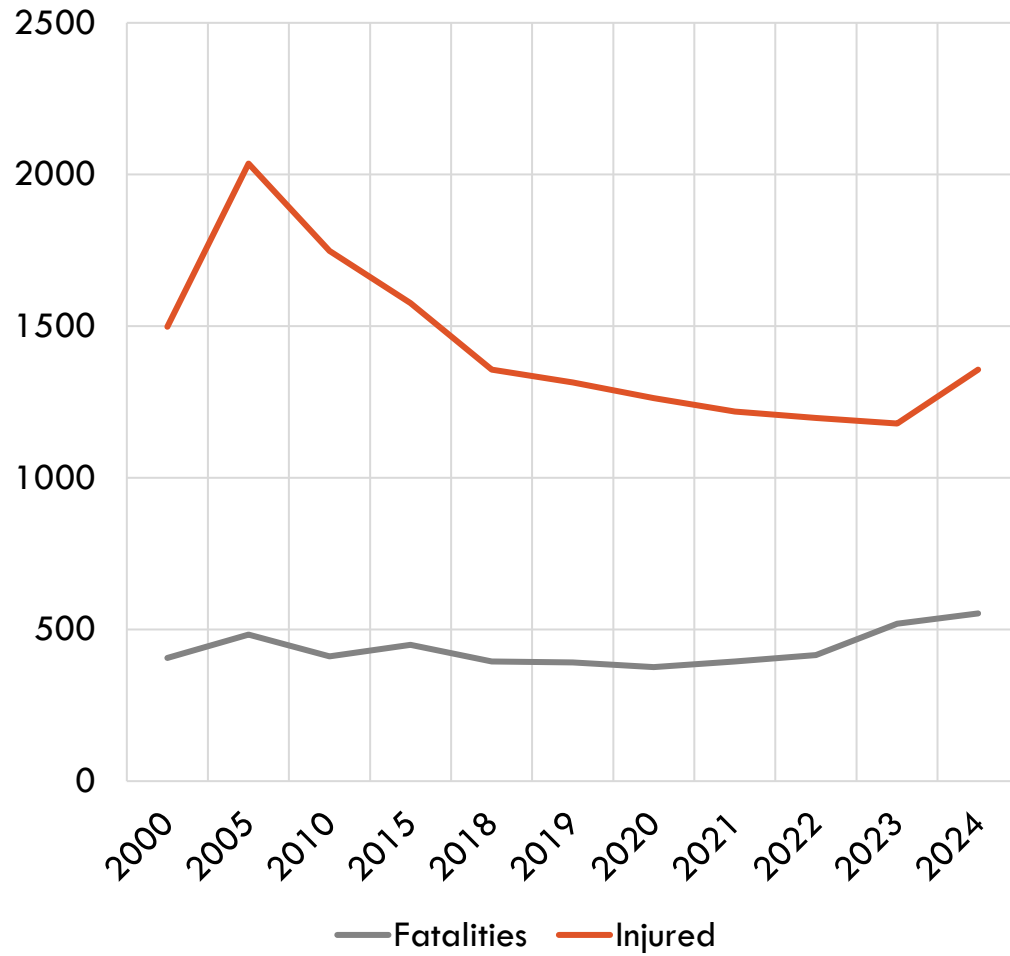


Road crashes constitute about 81% of the total implicit costs due to fossil fuel subsidies in transport. IRAP estimates that an annual investment of 62 million USD, or just about 0.7% of Tajikistan's GDP, could save about 500 fatalities annually.

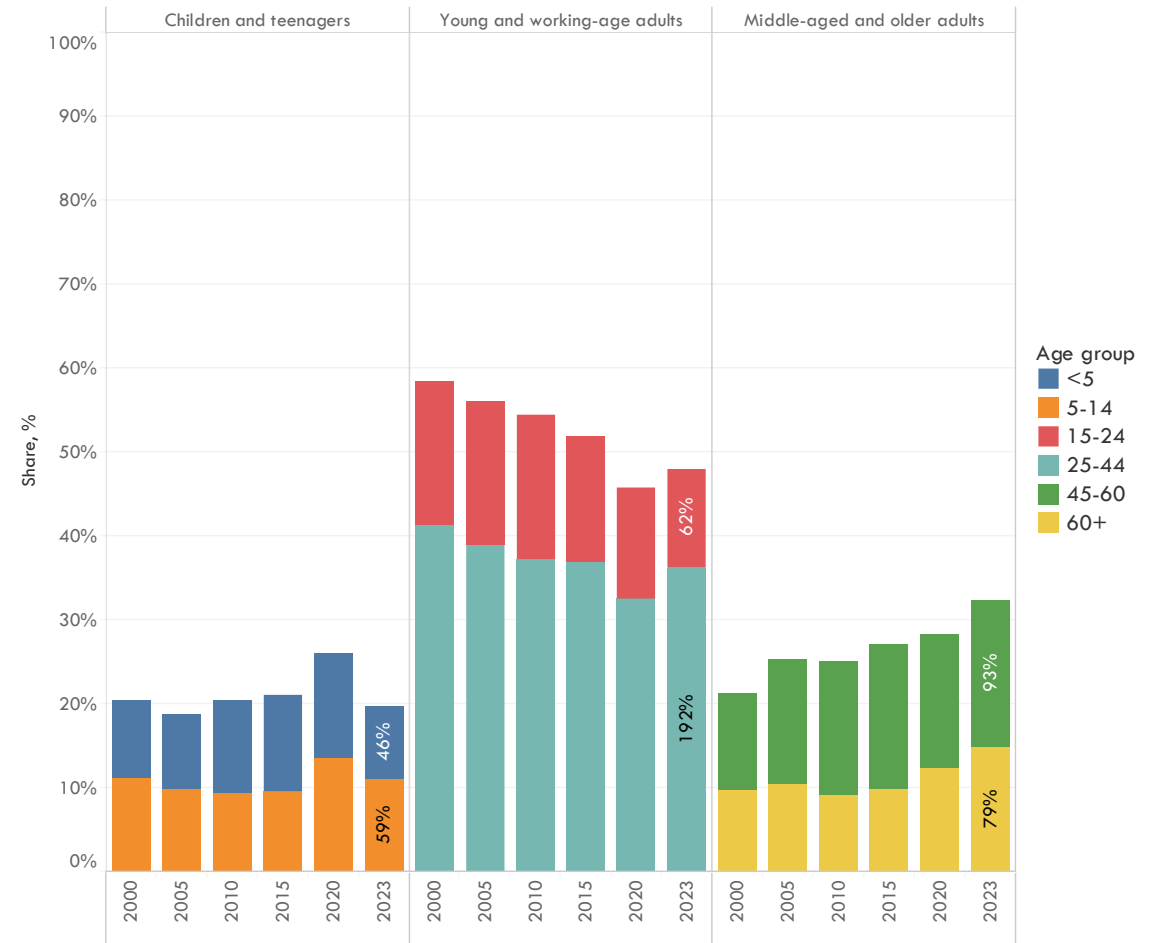


Source: ATO analysis and visualization based on IMF

# Road Safety



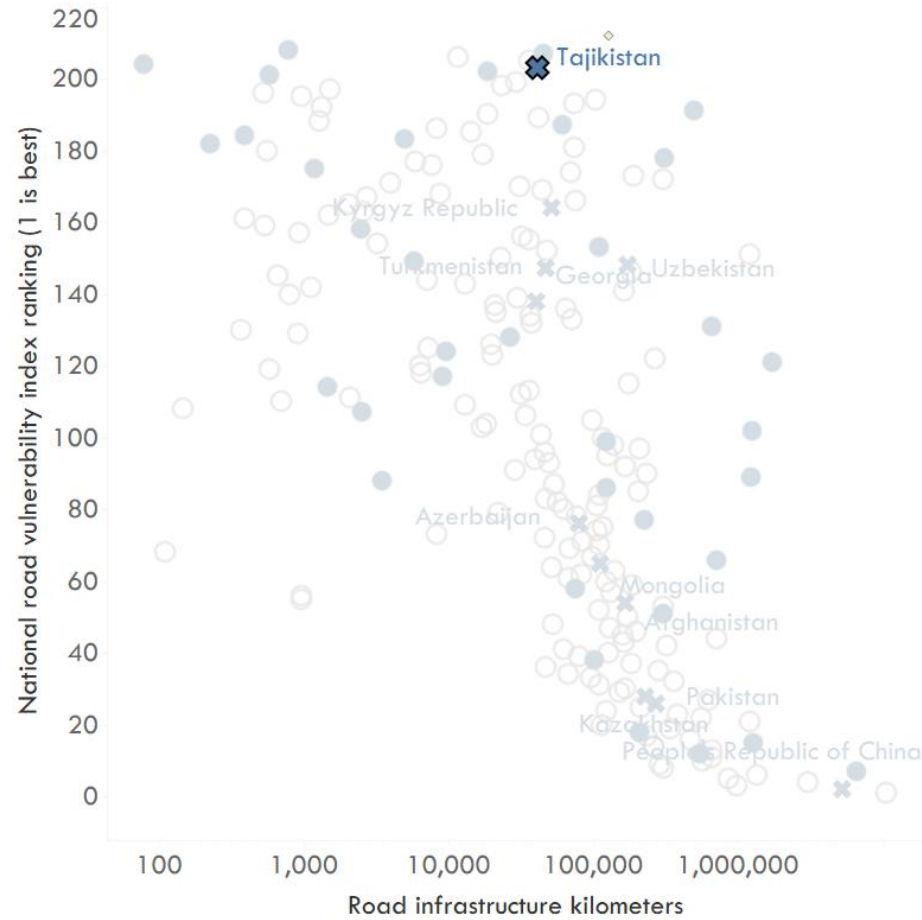
Source: (TAJSTAT 2025)



Source: (IHME, 2026)

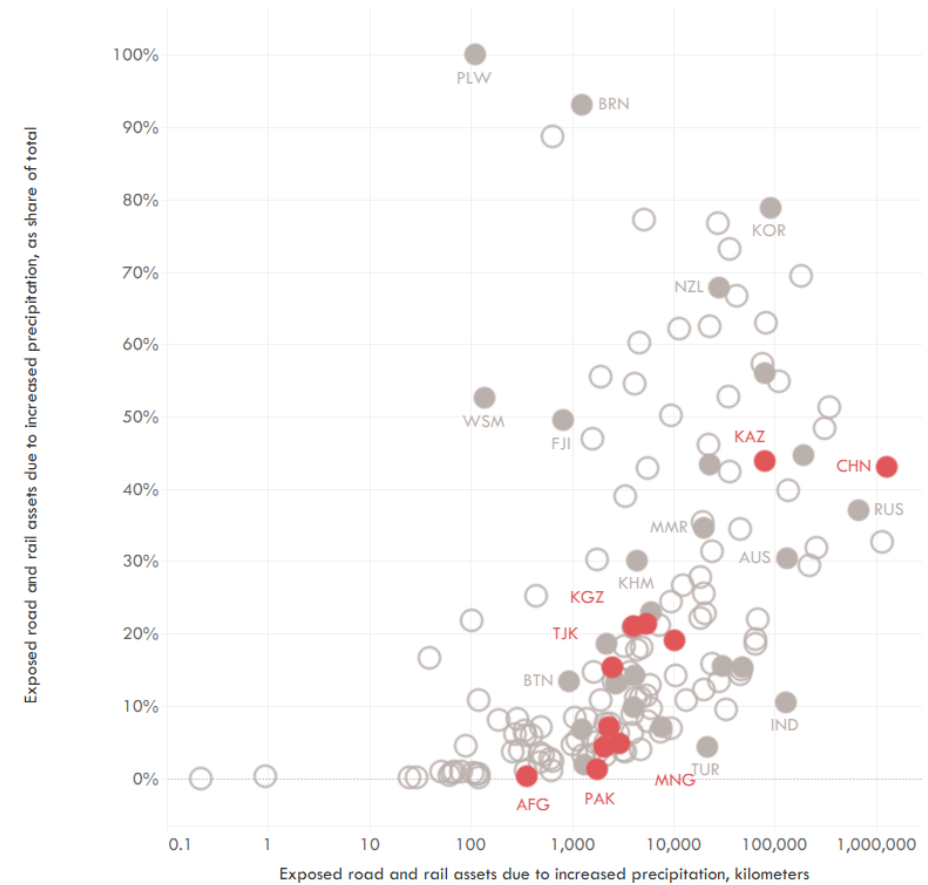
# Resilience

National road vulnerability index



Source: ATO analysis and visualization based on Koks, E., Rozenberg, J., Tariverdi, M., Dickens, B., Fox, C., van Ginkel, K., & Hallegatte, S. (2023). A global assessment of national road network vulnerability. *Environmental Research: Infrastructu..*

Exposed road and rail infrastructure to heavier precipitation in RCP 4.5 mid-century scenario



Source: ATO analysis and visualization based on Liu, K., Wang, Q., Wang, M., & Koks, E. E. (2023). Global transportation infrastructure exposure to the change of precipitation in a warmer world. *Nature Communications, 14*(1), ..

# Transport Flows and Climate Risks

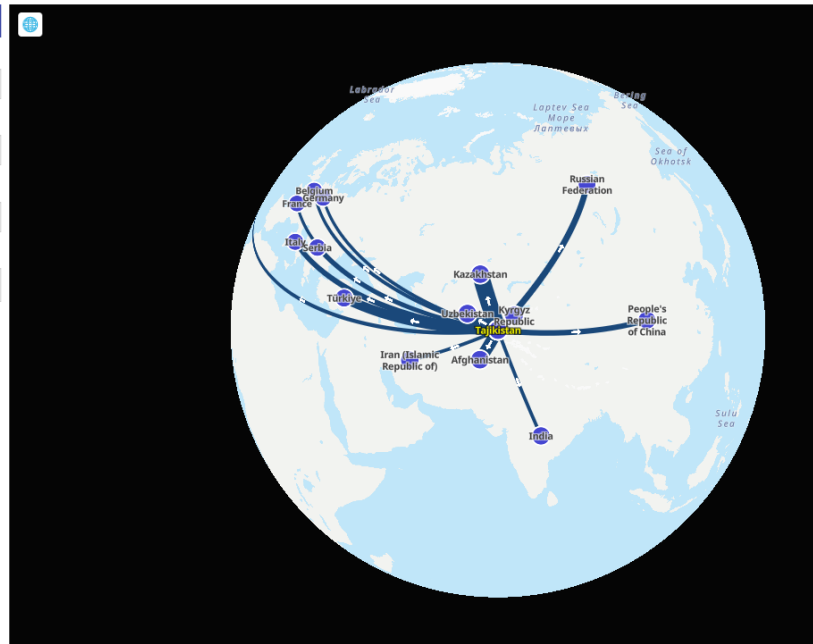
**Open instructions**

**Trade Indicator**  
Freight transport work in thousand ton-km

**Economy**  
Tajikistan

**View Mode**  
Origin

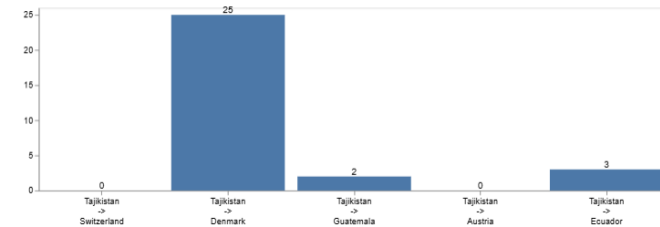
**Partner Economy**  
-- X



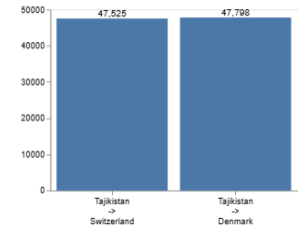
World Bank

Origin	Destination	Per unit freight rate USD/kg	Ports Risk million USD	Road and Rail Risk km exposed
Tajikistan	Switzerland	93 USD/kg	NaN + NaN million USD	3,427 + 44,098 km exposed
Tajikistan	Denmark	57 USD/kg	NaN + 25 million USD	3,427 + 44,371 km exposed
Tajikistan	Guatemala	17 USD/kg	NaN + 2 million USD	3,427 + 6,891 km exposed
Tajikistan	Austria	9 USD/kg	NaN + NaN million USD	3,427 + 38,971 km exposed
Tajikistan	Ecuador	8 USD/kg	NaN + 3 million USD	3,427 + 33,696 km exposed
Tajikistan	Kenya	6 USD/kg	NaN + 3 million USD	3,427 + 11,201 km exposed
Tajikistan	Peru	5 USD/kg	NaN + 6 million USD	3,427 + 115,302 km exposed
Tajikistan	Chile	5 USD/kg	NaN + 11 million USD	3,427 + 7,319 km exposed
Tajikistan	United States	4 USD/kg	NaN + 976 million USD	3,427 + 0 km exposed
Tajikistan	Dominican Republic	3 USD/kg	NaN + 55 million USD	3,427 + 0 km exposed
Tajikistan	France	3 USD/kg	NaN + 312 million USD	3,427 + 313,977 km exposed
Tajikistan	Costa Rica	3 USD/kg	NaN + 5 million USD	3,427 + 2,383 km exposed
Tajikistan	Republic of Korea	3 USD/kg	NaN + 226 million USD	3,427 + 105,018 km exposed
Tajikistan	Seychelles	2 USD/kg	NaN + 0 million USD	3,427 + NaN km exposed
Tajikistan	Trinidad and Tobago	2 USD/kg	NaN + 35 million USD	3,427 + 0 km exposed

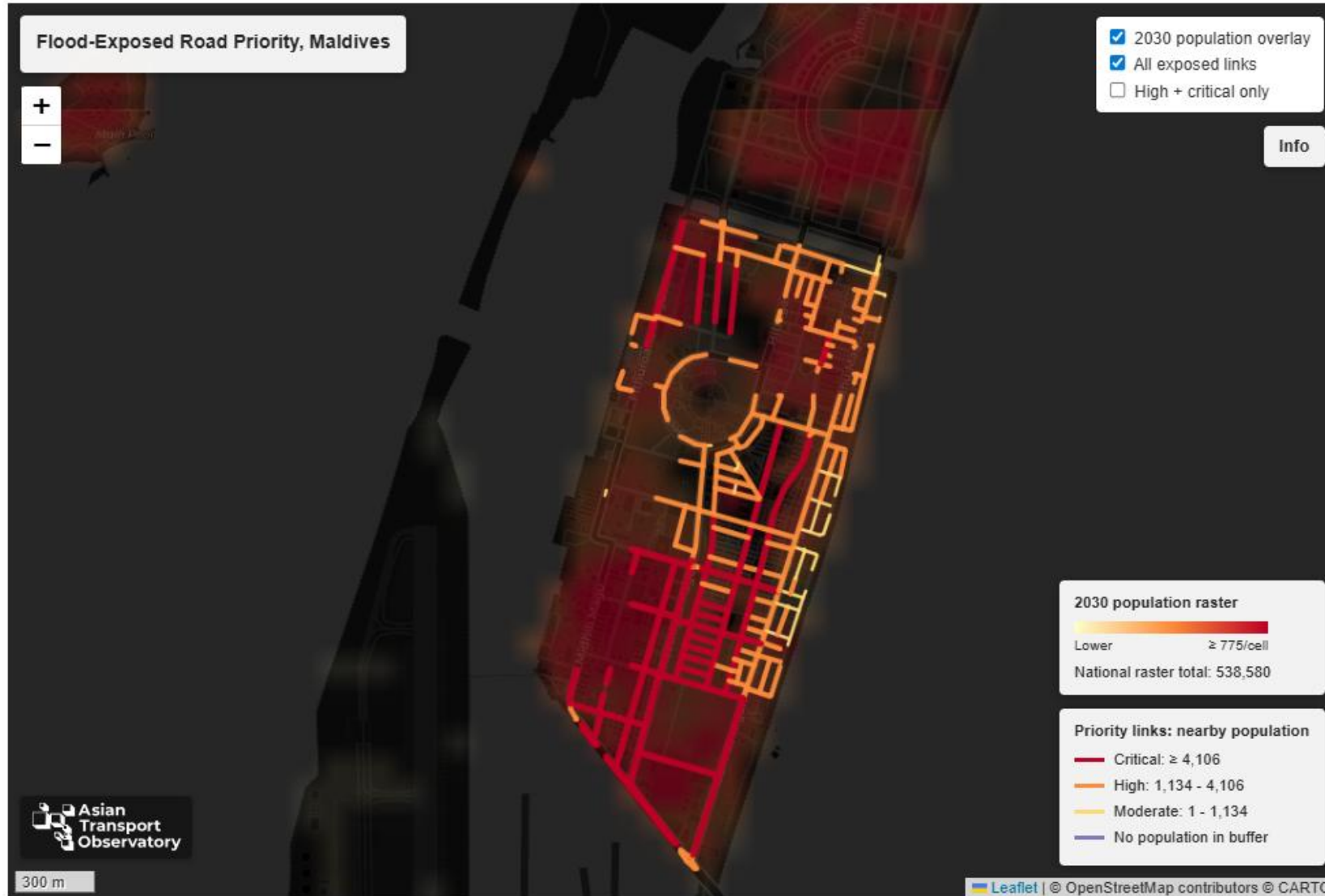
Port Risk in million USD



Road and Rail Risk km exposed

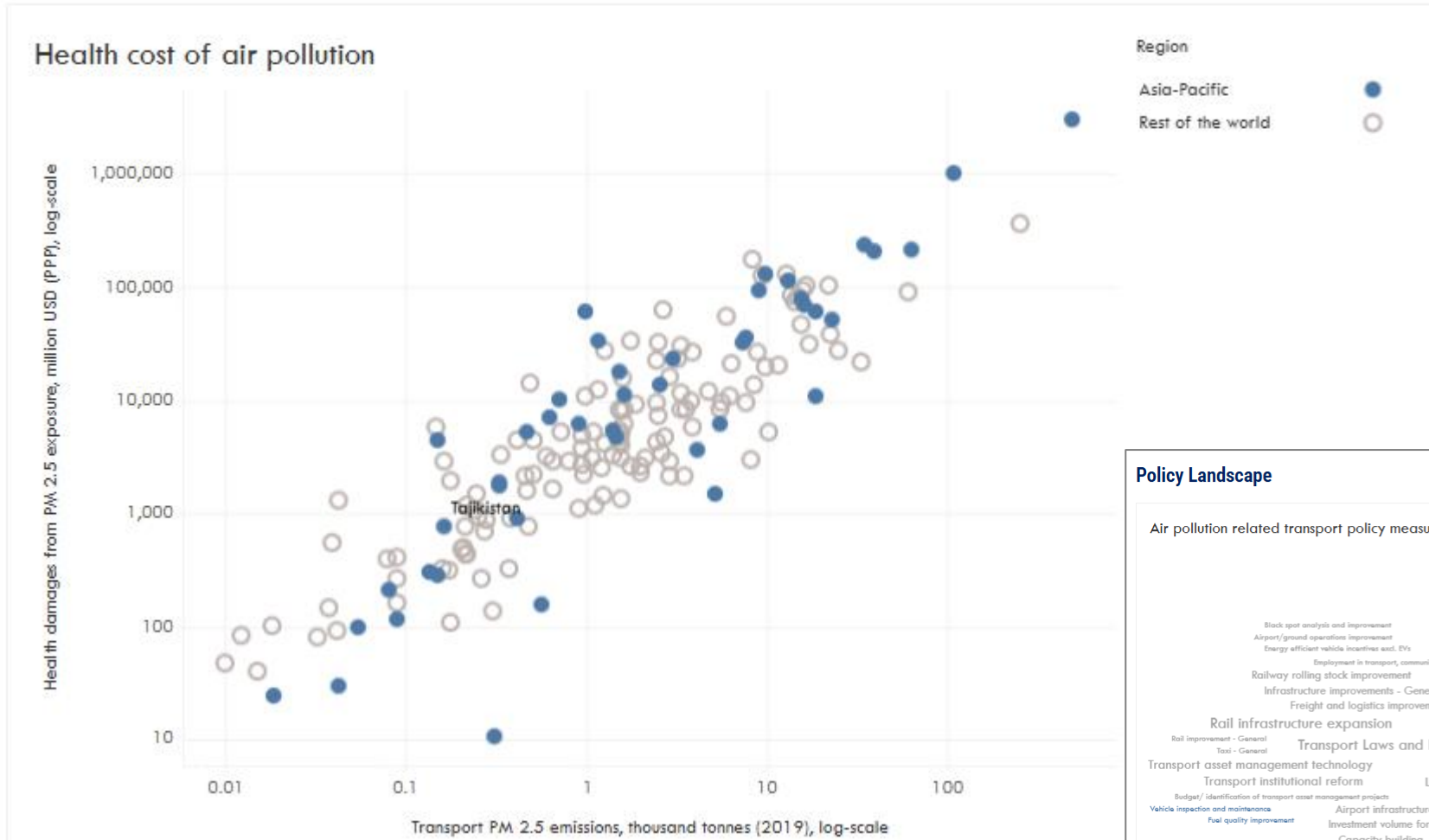


# Hazards and Assets Mapping

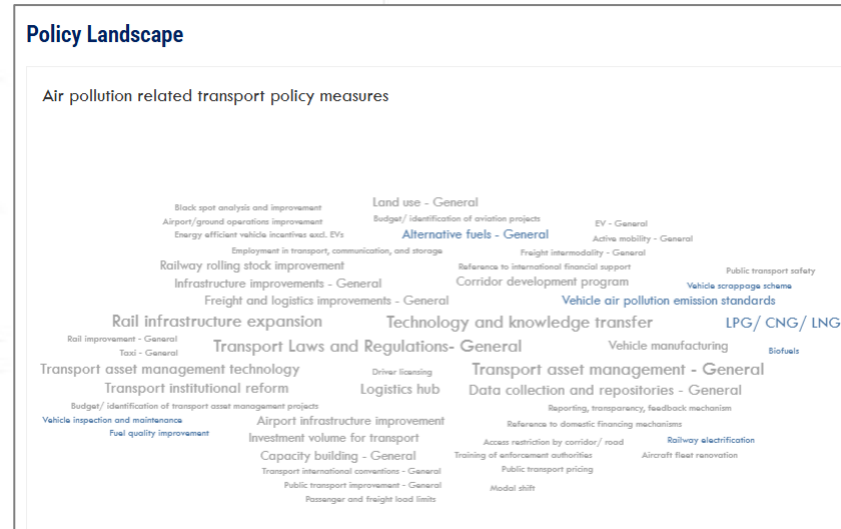


# Transport and Air Pollution Profiles

## Health Burden



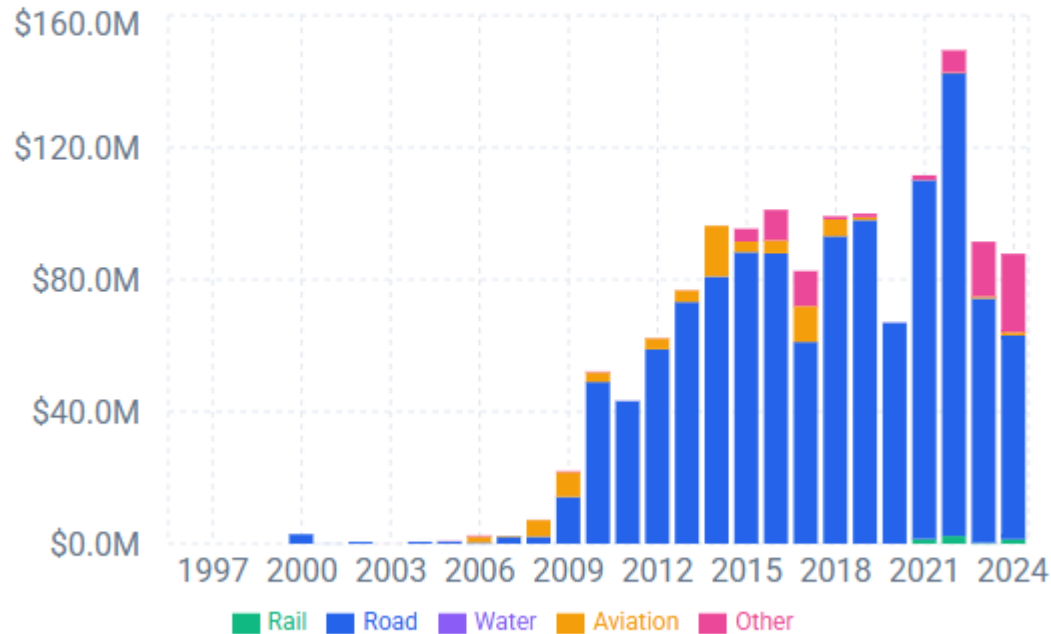
Source: World Bank (2022), European Commission (2024)



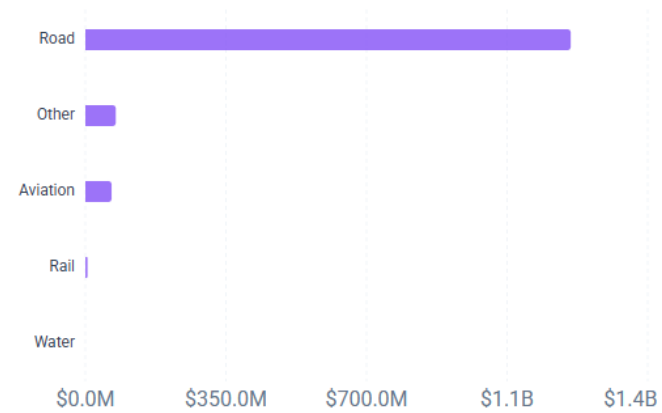
# Transport Development Finance Explorer

## Development Finance over Time

Yearly disbursements received by the selected recipient by transport mode, constant 2024 USD.

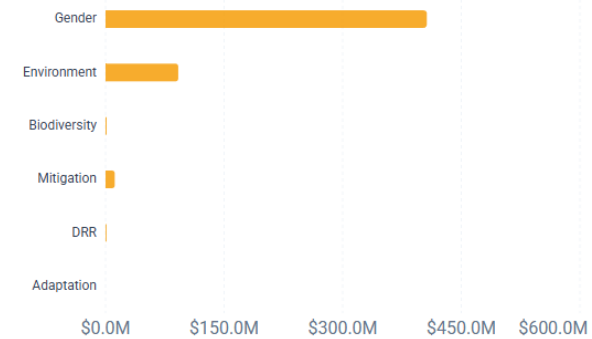


**\$1.4B**



### Sustainability-related Tags

Mitigation, adaptation, gender, DRR, biodiversity, and environment sustainability-related tags.



Pre-defined tags based on the OECD CRS database.



Developed with the support of

# Transport and Climate Profiles

## TAJIKISTAN TRANSPORT AND CLIMATE PROFILE



**Outline**

Background

**Transport and Climate Change**

Transport Energy Consumption

Adaptation and Resilience

Other Externalities

Vehicle Fleet

Urban Transport

Transport Investments

Transport and Climate Policy Documents

Representation of Transport in Key Climate Policy Documents

Distribution of Transport and Climate Policy Measures in Policy Documents

National Policy Priorities on Transport

Direct GHG Targets

Indirect Transport Climate Change Targets

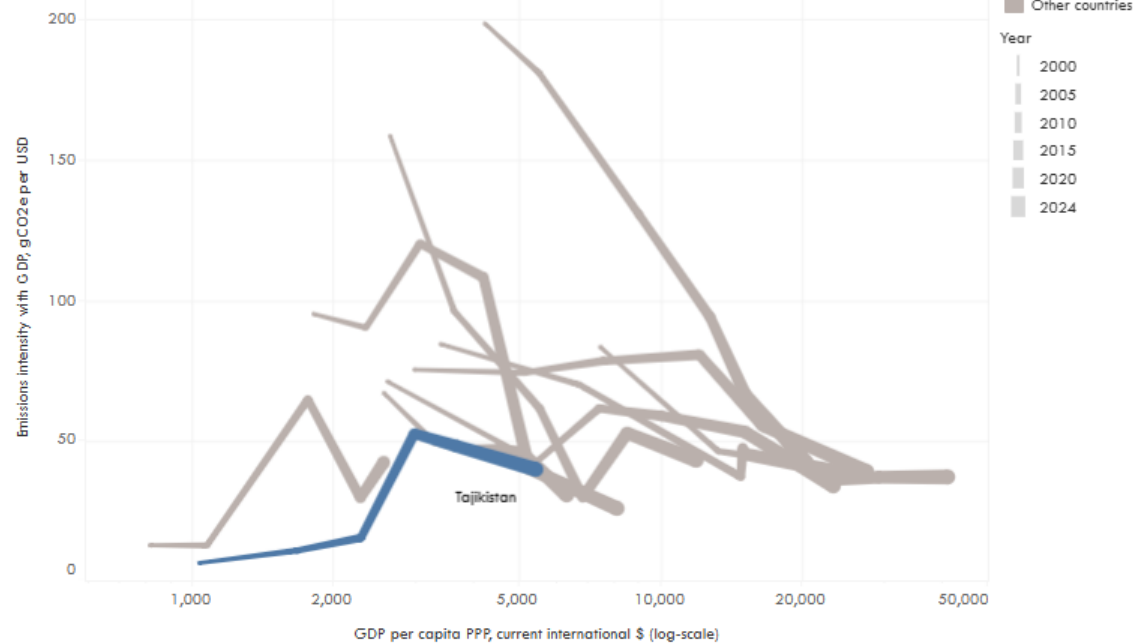
Transport and Climate Policy Measures

Disclaimer

References

Export PDF Export Image

Domestic transport GHG emissions intensity



Source: EDGAR (2025), World Bank (2025a, 2025b)

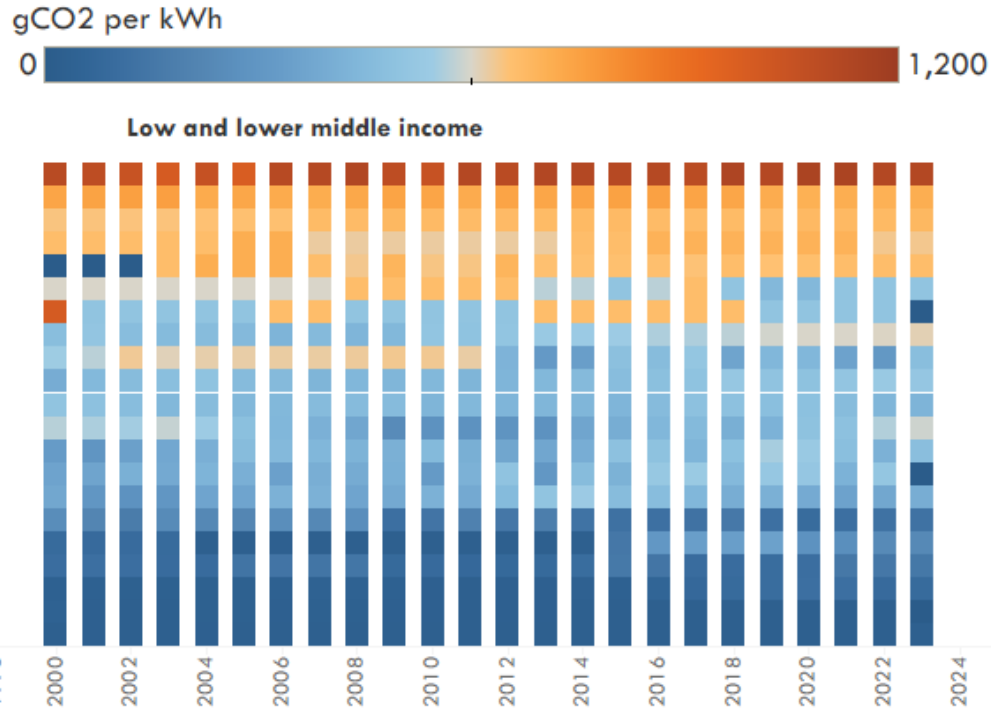
Export PDF Export Image

Transport GHG emissions per capita

Substance  
 Bio CO2  
 CH4  
 Fossil CO2  
 GHG



Grid emission factor



Source: ATO analysis and visualization based on Ember. (2024). *Electricity Data Explorer* [Dataset]. <https://ember-energy.org/data/electricity-data-explorer>

Tajikistan EV Charger Locations



Summary

Charger summary  
EV chargers found: 21  
Map type: Hex  
Primary data source: OpenStreetMap  
Overpass

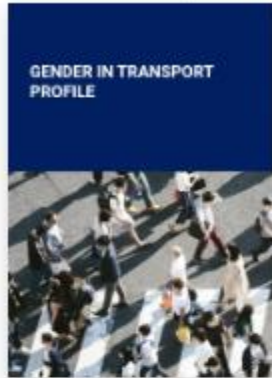
Geospatial summary  
Boundary area: 141,432.1 km<sup>2</sup>  
Charger density: 0.15 per 1,000 km<sup>2</sup>  
Hex cells shown: 4



EV charger density hex  
Analysis boundary

Source: ATO analysis based on OSM data

Gender in Transport Profile

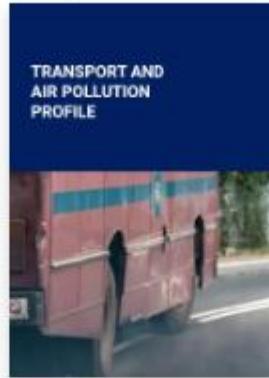


version March 2026



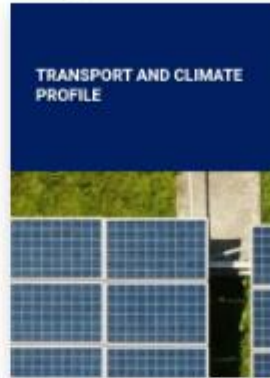
version July 2024

Transport and Air Pollution Profile

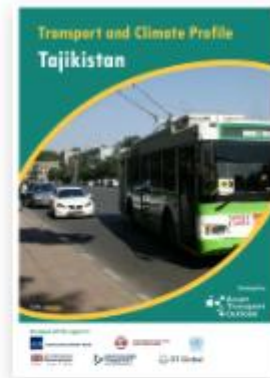


version March 2026

Transport and Climate Profile



version February 2026

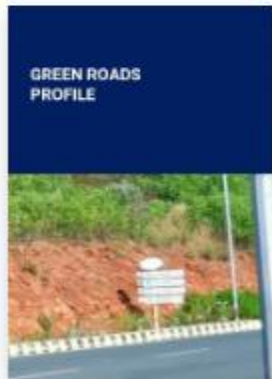


version October 2024



version May 2024

Green Roads Profile



version December 2025



version May 2024

Road Safety Profile



version September 2025



version December 2023



version September 2023

E-mobility Profile



version January 2024



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**“ATO translates data into insights, policies, and investments”**

**alvin.mejia@asiantransportobservatory.org**

<b>ATO Team</b>	info@asiantransportobservatory.org
<b>Jamie Leather</b>	jleather@adb.org
<b>Andres Pizarro</b>	andres.pizarro@aiib.org
<b>Manuel Benard</b>	manuel.benard@aiib.org
<b>Alvin Mejia</b>	alvinmejia@asiantransportobservatory.org
<b>Sudhir Gota</b>	sudhirgota@asiantransportobservatory.org
<b>Mel Francis Eden</b>	meleden@asiantransportobservatory.org
<b>Adwait Limaye</b>	adwait@asiantransportobservatory.org
<b>Benjamin Soco</b>	benjaminsoco@asiantransportobservatory.org
<b>Aaron Salang</b>	aaronmsalang@gmail.com