Asian Transport Observatory

Rail beyond mobility: climate and resilience pathways

Adwait Limaye
Data and Policy Analyst
Asian Transport Observatory

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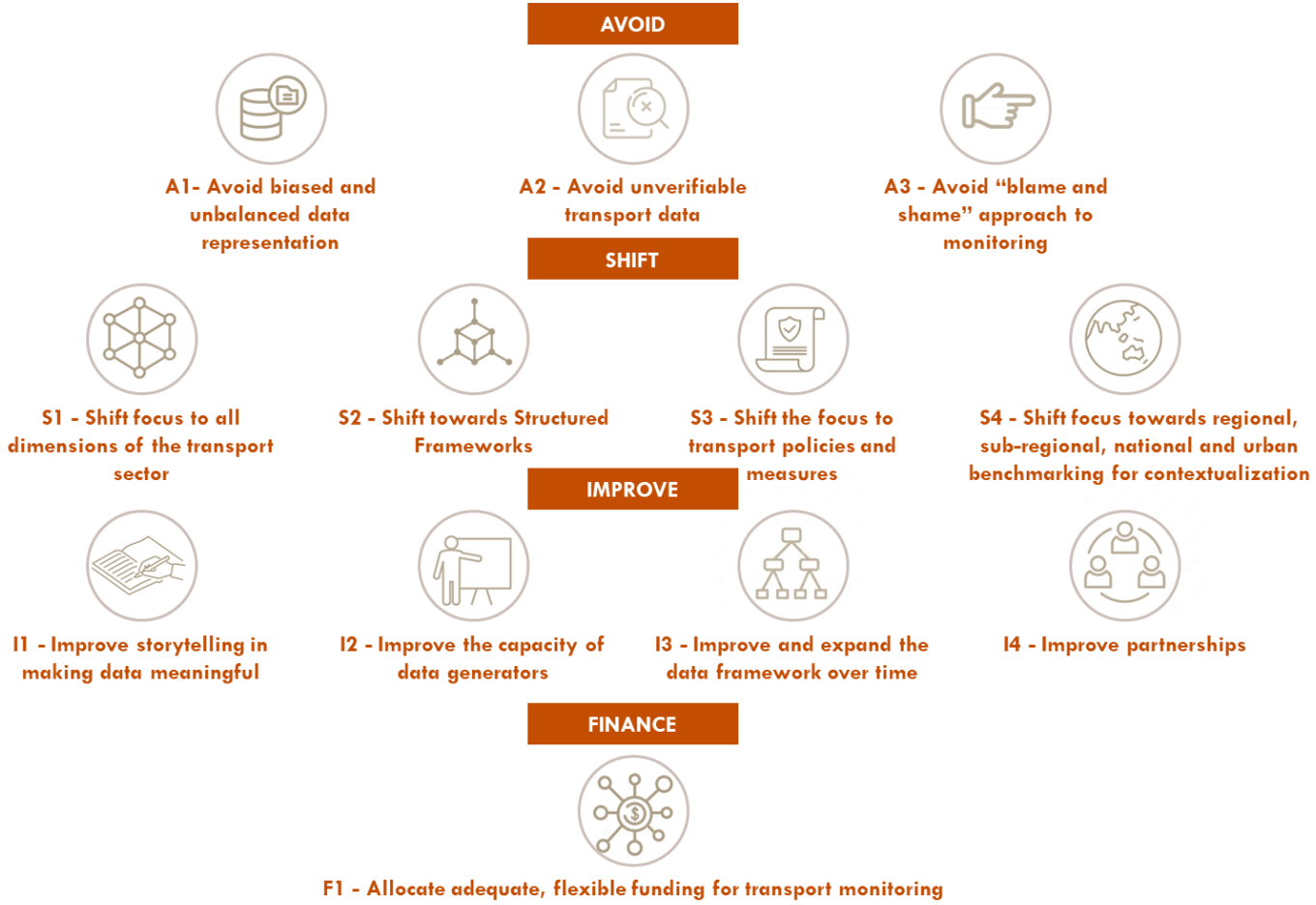
Asian Transport Observatory (ATO): A Catalyst for Sustainable Transport in Asia

asiantransportobservatory.org.

52 Economies (ADB Members + Iran and Russia)

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

50 Urban Centers with a detailed review



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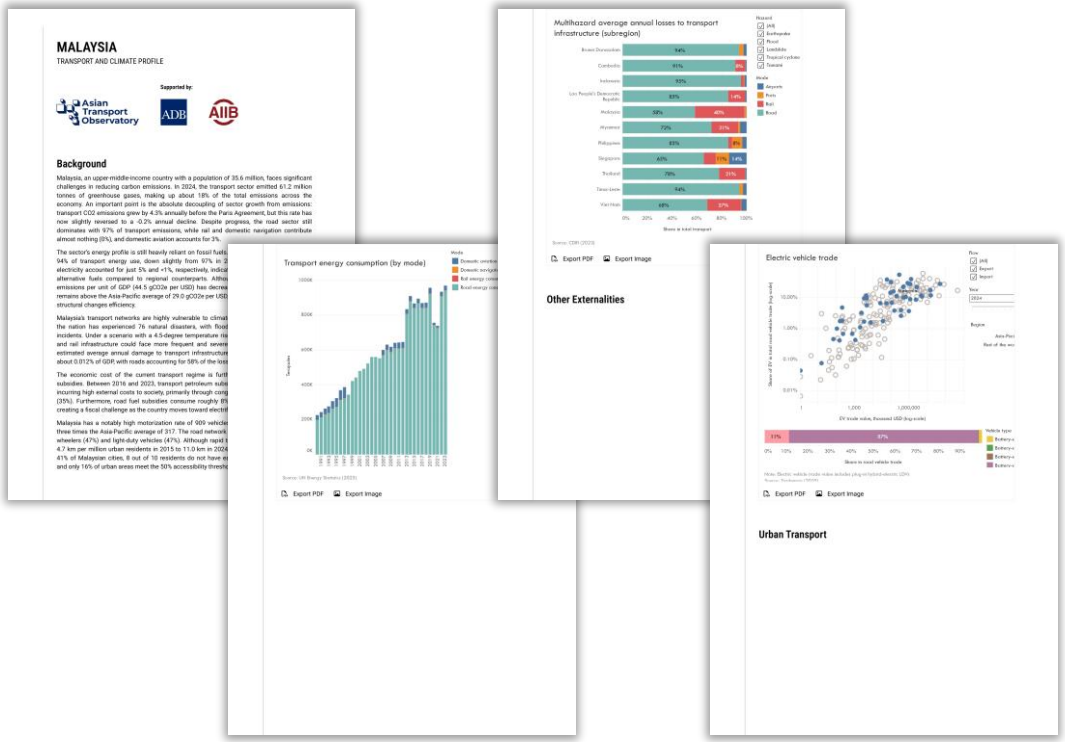
Climate and Transport Profile



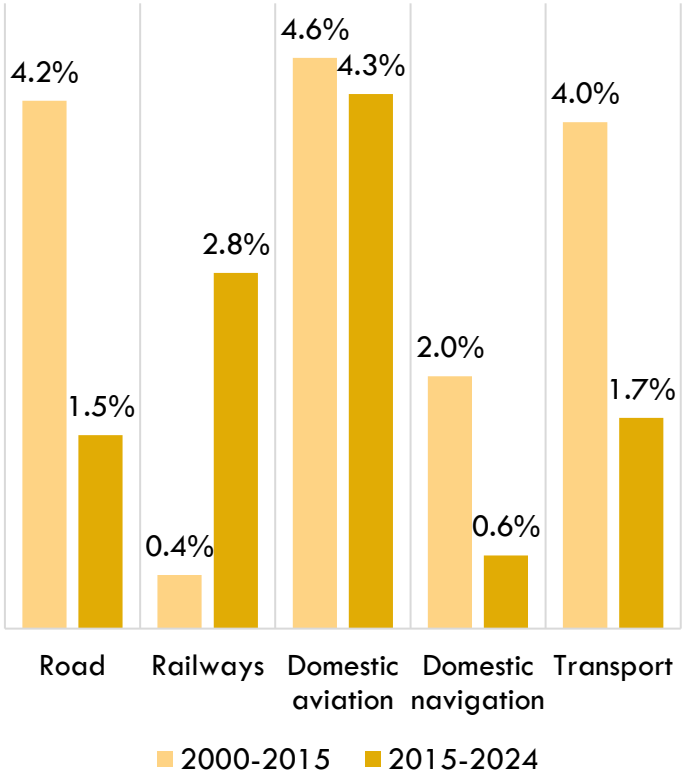
https://asiantransportobservatory.org/analytical-outputs/transportclimateprofiles/

Rail Profile

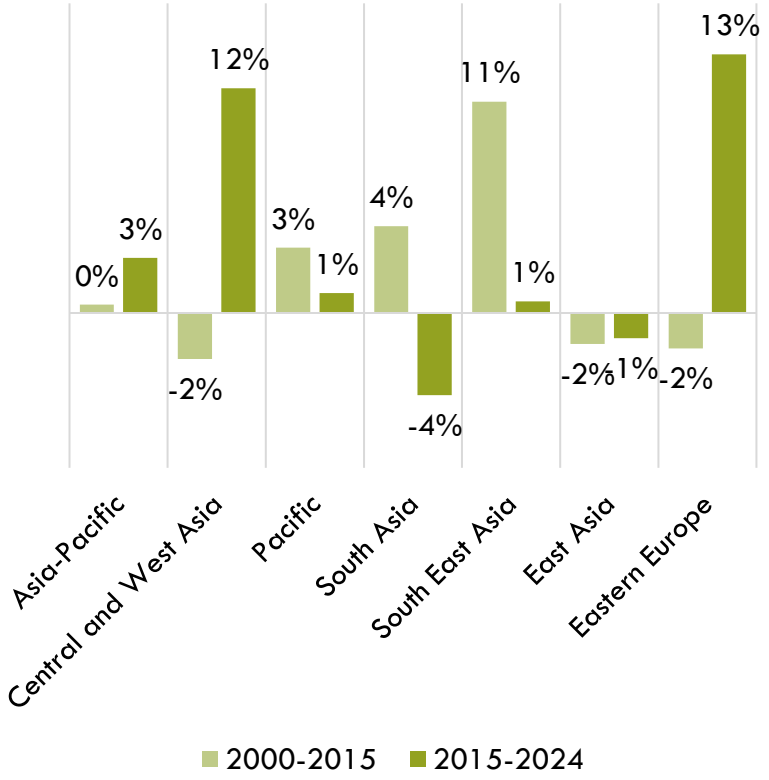
https://asiantransportobservatory.org/analytical-outputs/railsectorprofiles/

Rail emissions are rising, while sectoral share continues to decline

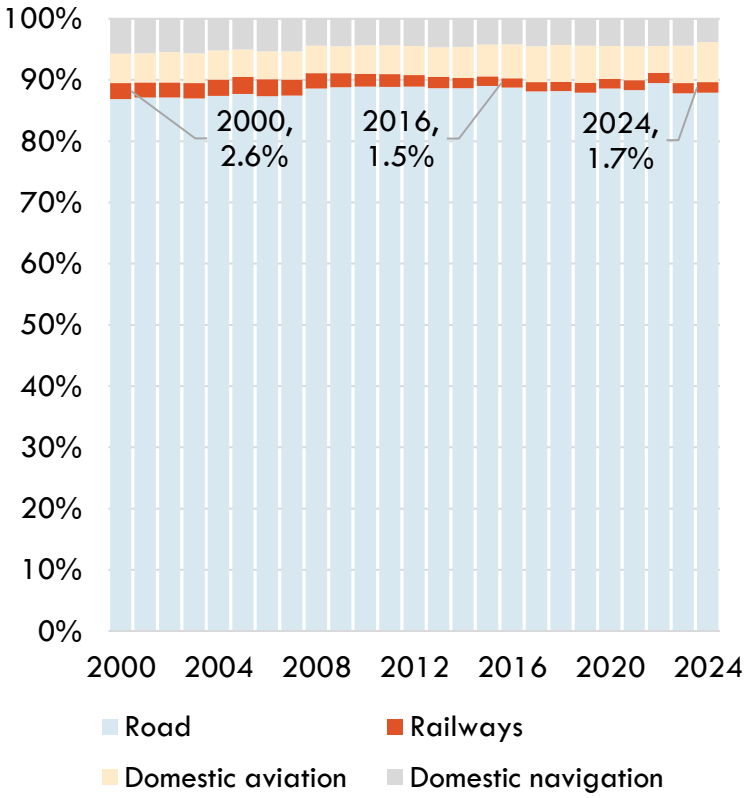
GHG Average Annual Growth Rates



Railway GHG Emissions by Sub-region

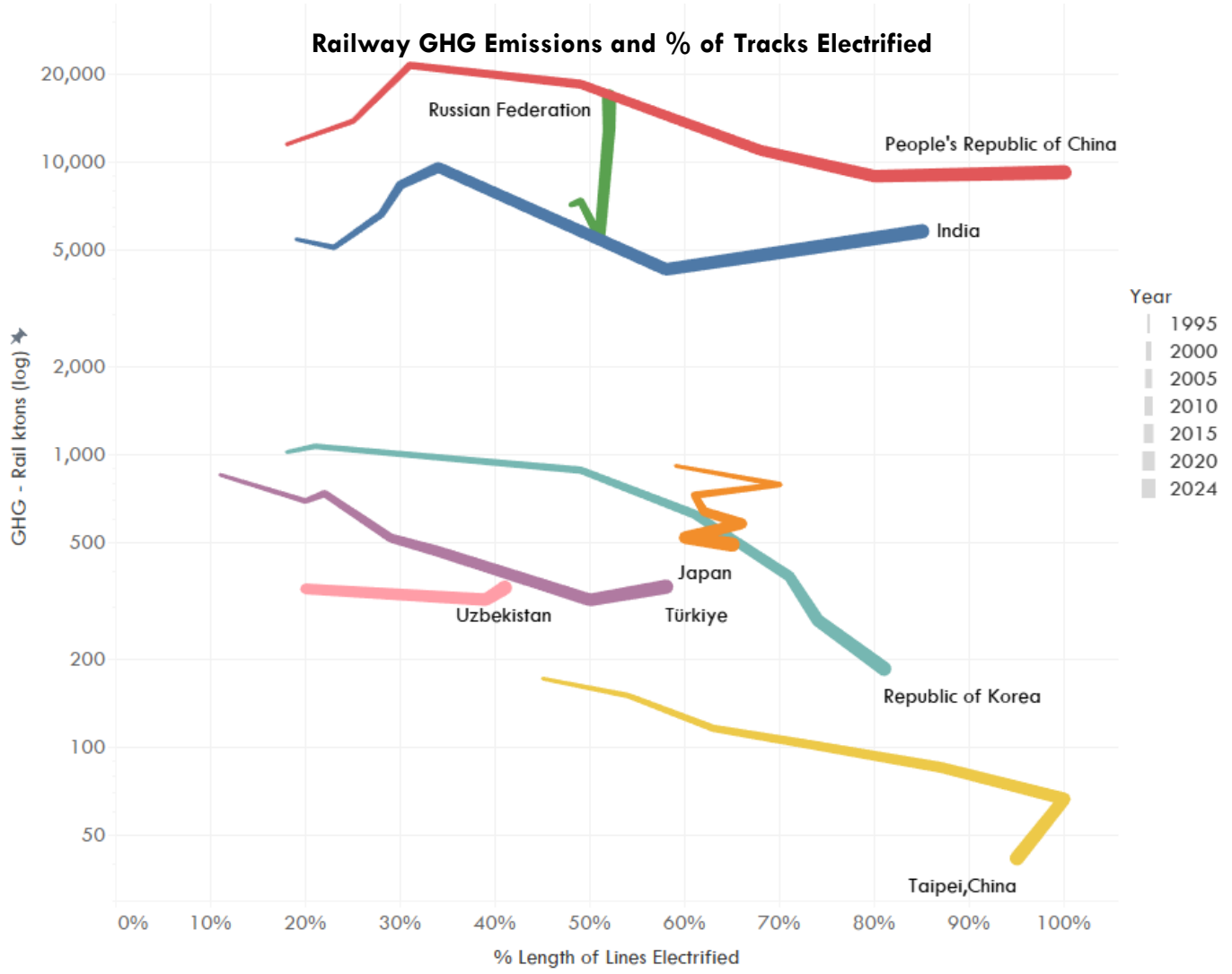


Share of Rail GHG Emissions in Transport



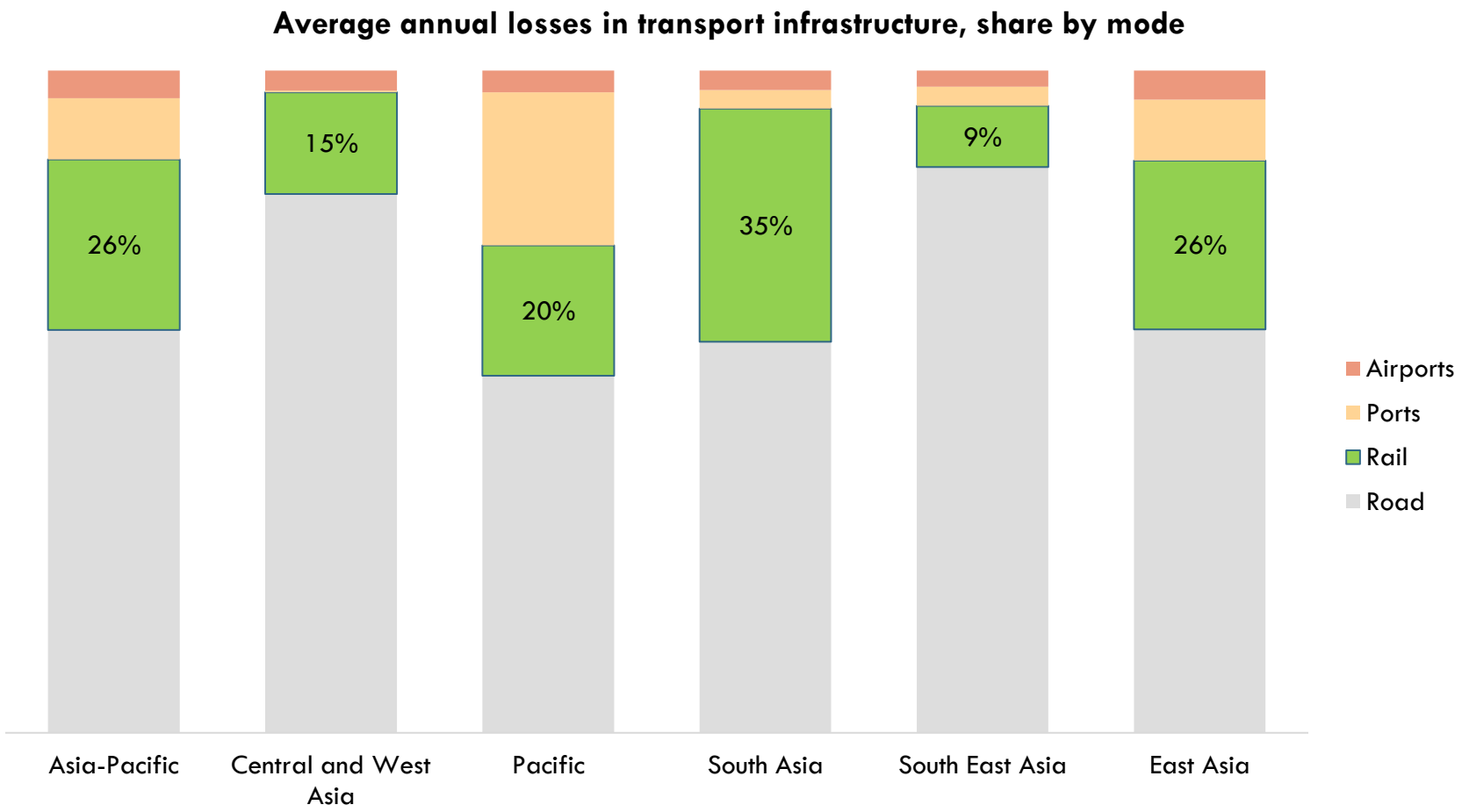
Source: ATO analysis and visualization based on JRC & IEA (2025)

Electrification is reshaping rail emissions trajectories



Source: ATO analysis and visualization based on JRC & IEA (2025) and UIC (2025)
Note: Data presented in 5-year increments (1995 to 2020, and 2024)

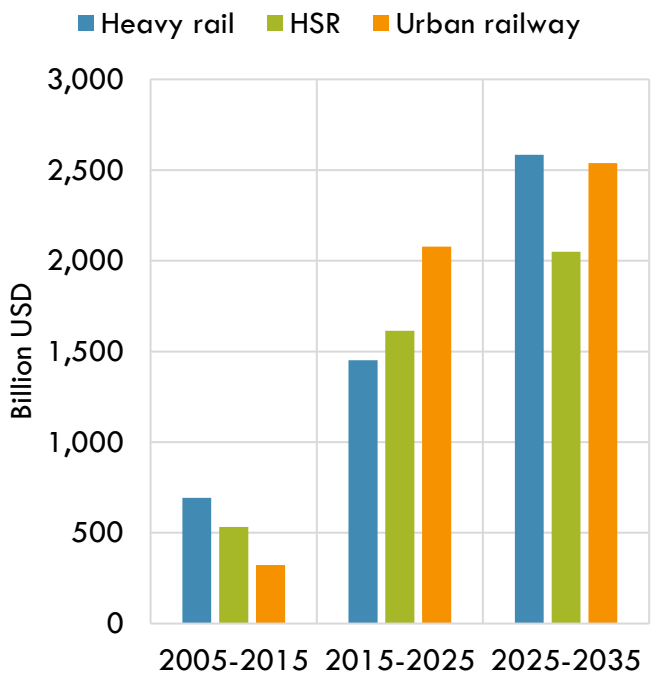
Rail carries a disproportionate climate-risk burden



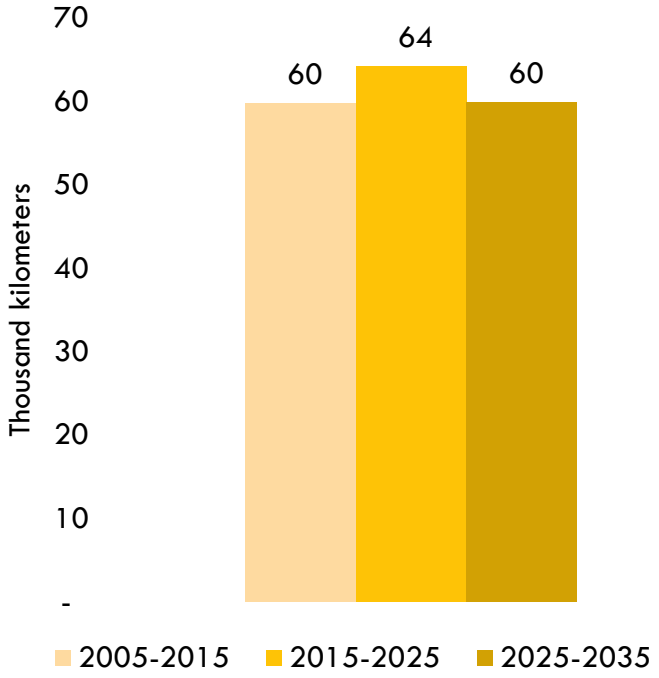
Source: (CDRI n.d.)
Note: *Pacific Includes Australia and New Zealand

Strong investment momentum masks persistent infrastructure gaps

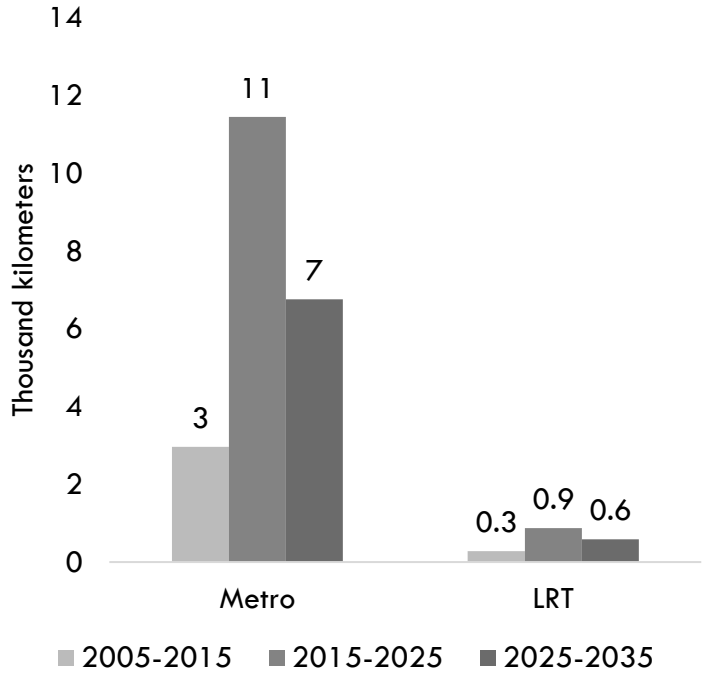
Heavy rail vs. metro infrastructure investment in LMIC (billion USD)



Heavy Rail Infrastructure Kilometers Added in LMICs (thousand km)



Urban Rapid Transit Kilometers Added (thousand km)



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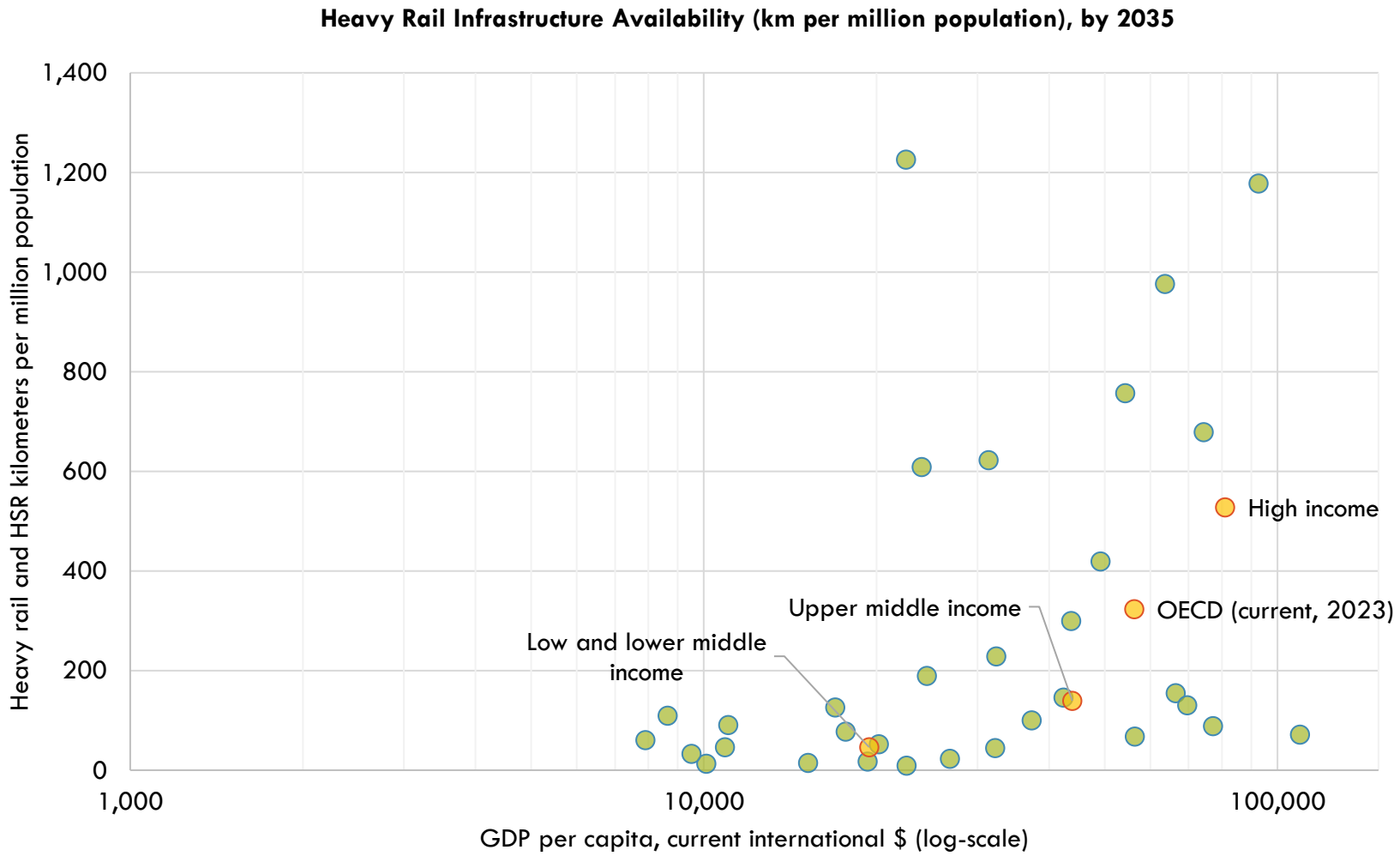
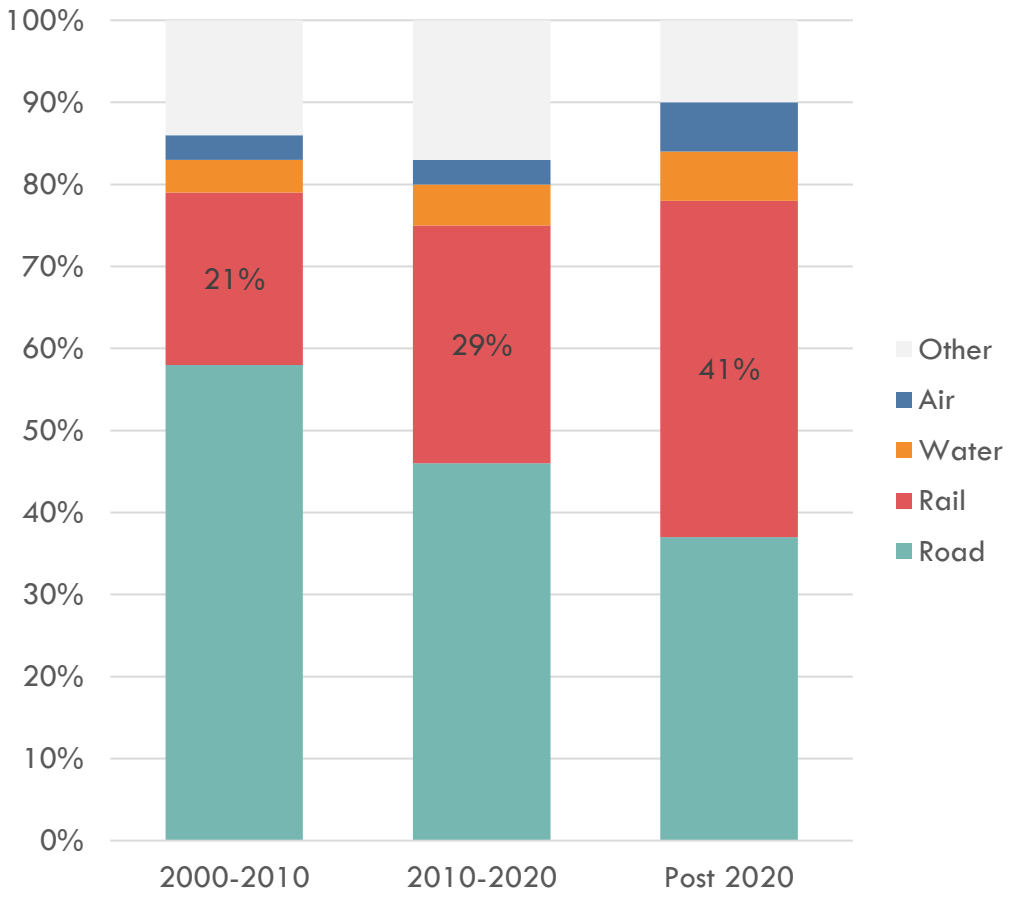
Source: ATO analysis and visualization

Infrastructure per capita shows a constrained picture

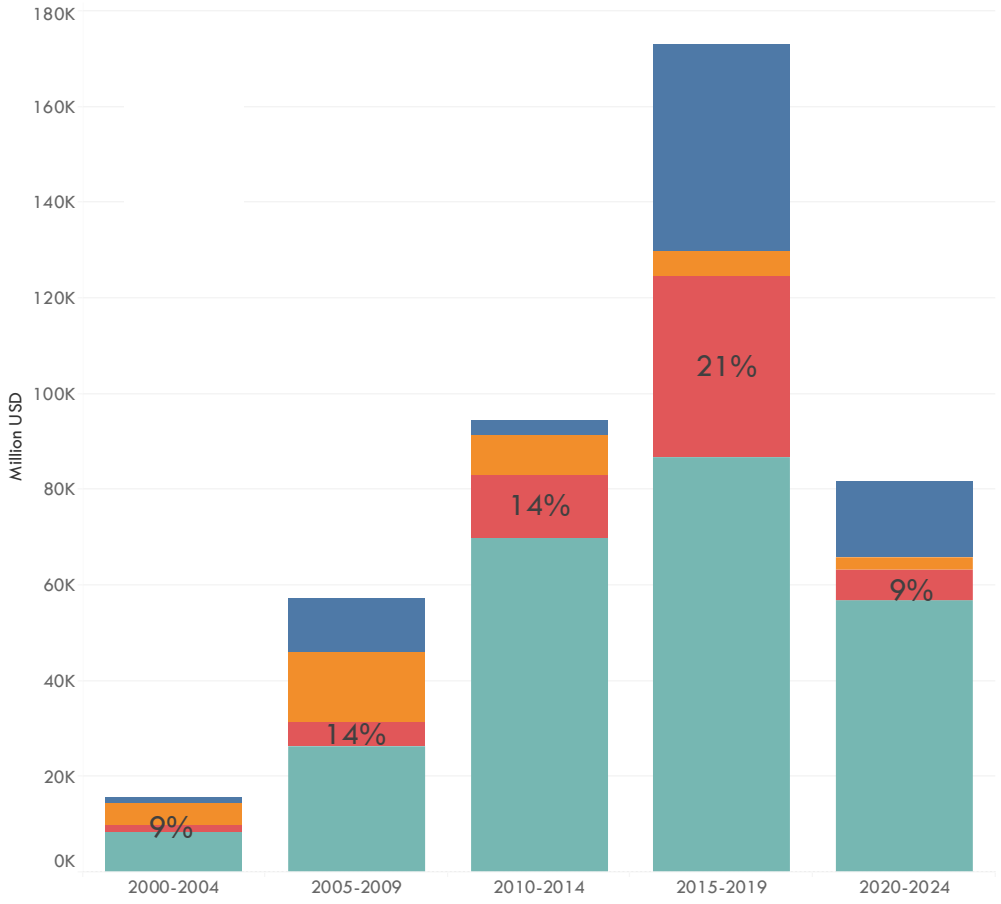


Development Aid is shifting toward rail, while private finance remains mixed

Share in commitments per transport subsector



Public-private partnership investments in the transport sector of Asia LMICs



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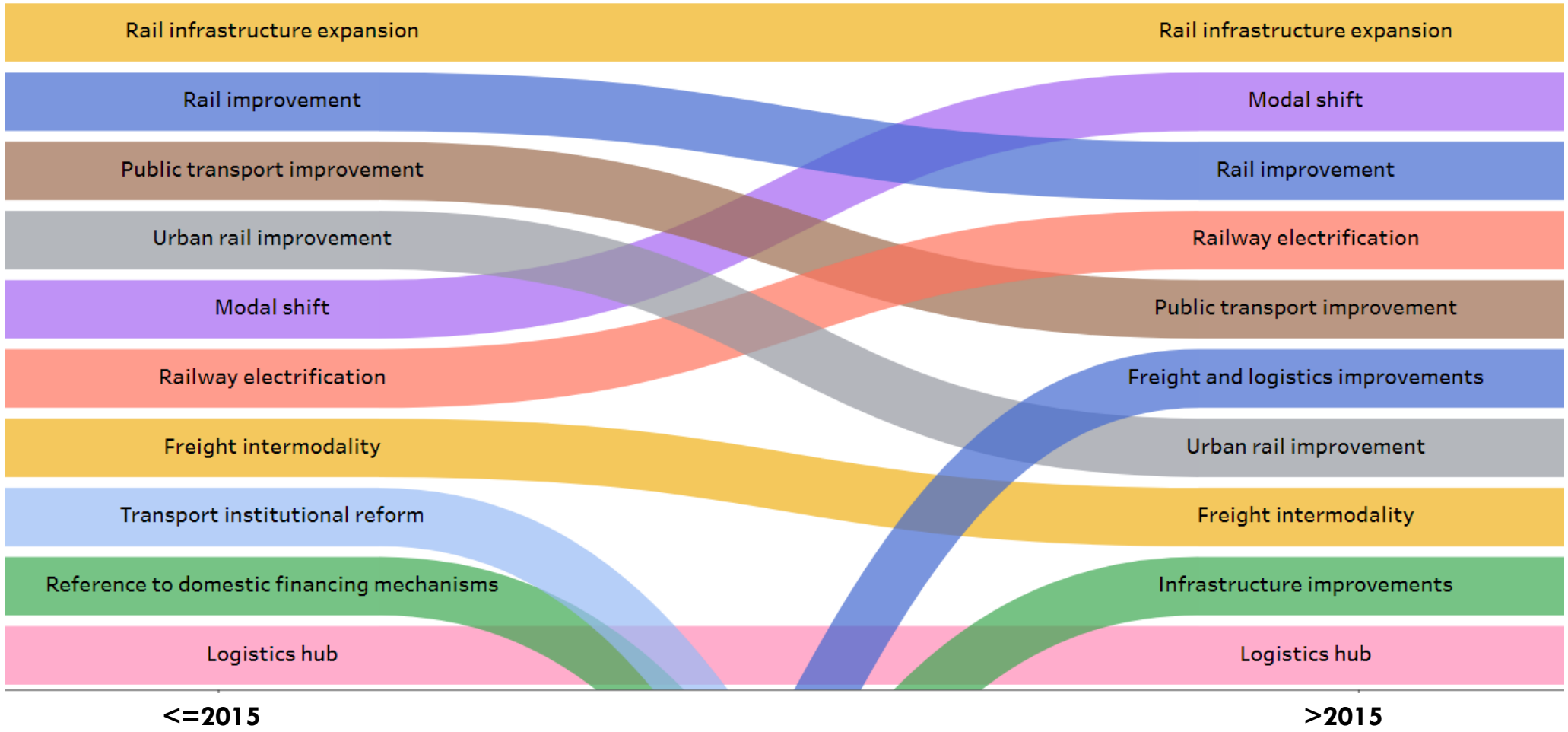
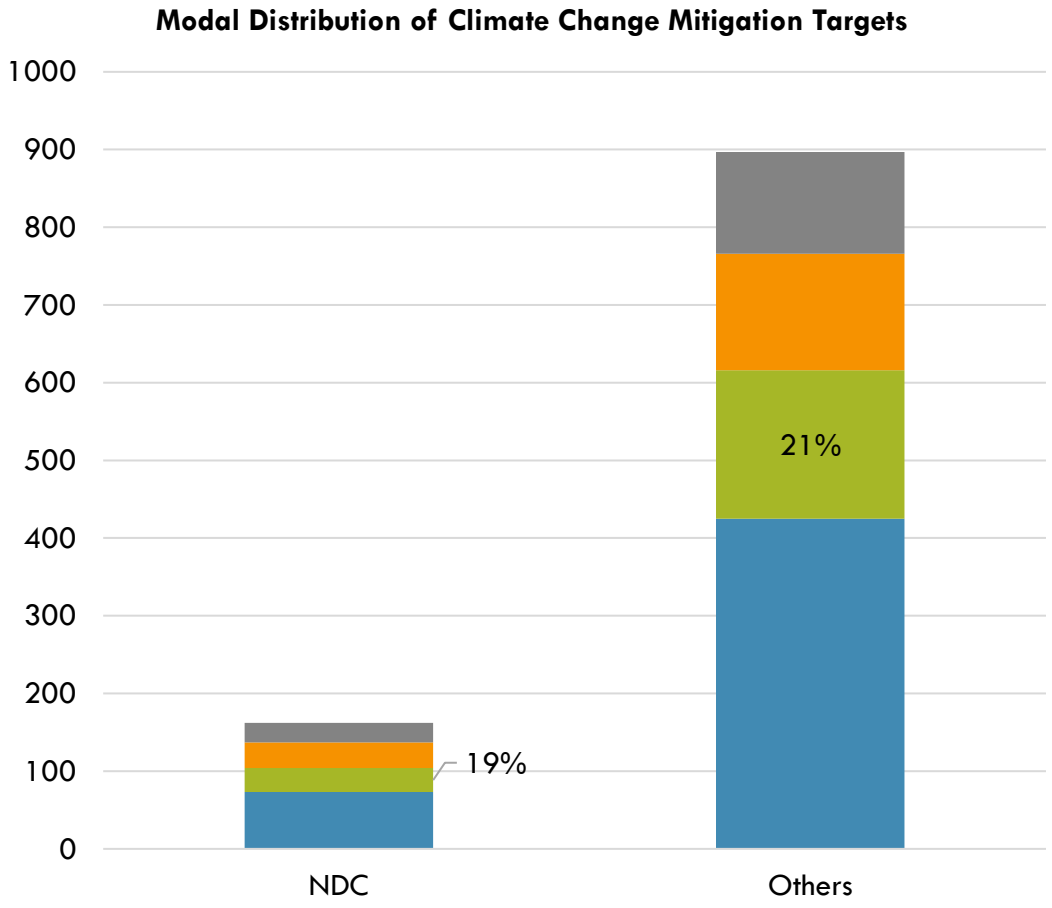
Source: ATO analysis and visualization based on OECD, WB

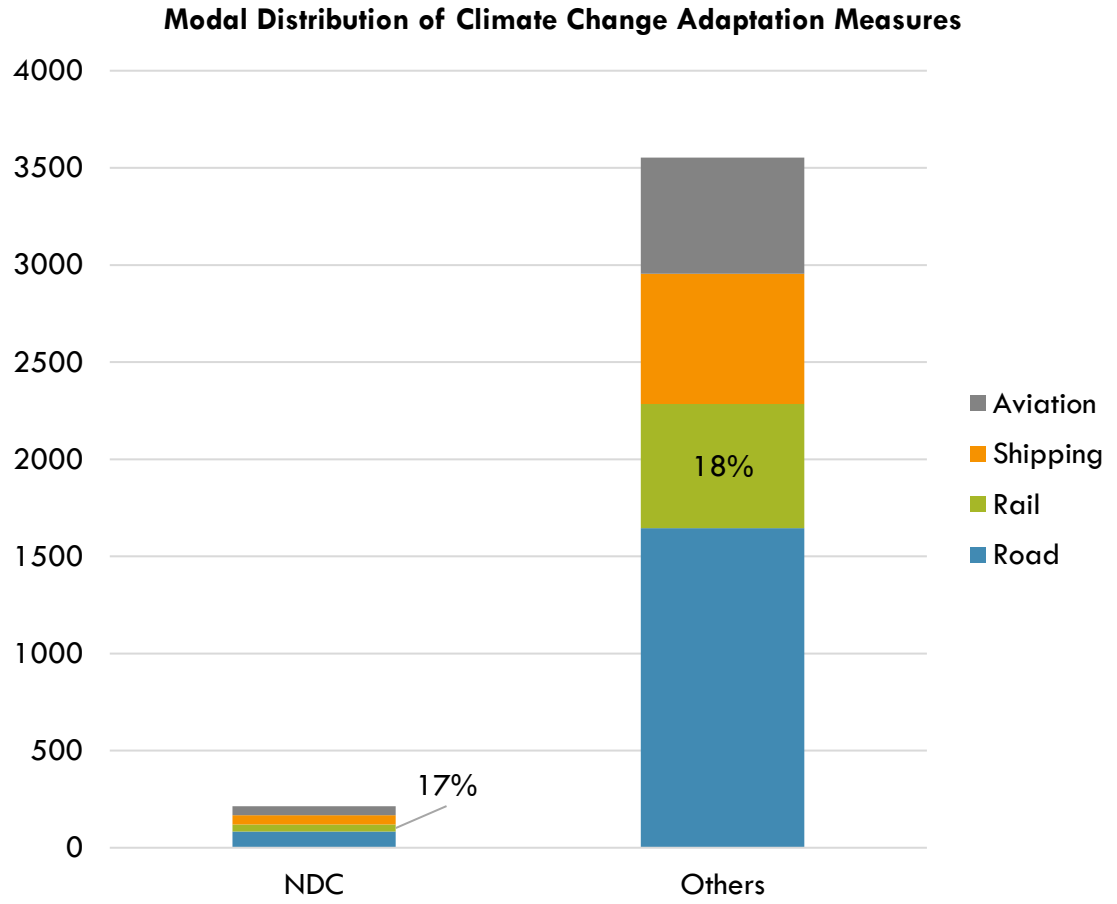
Rail climate policies are moving toward system transformation



Source: ATO Policy Tracker

Rail remains underrepresented in climate commitments





Source: ATO Policy Tracker

Positioning: Rail as climate infrastructure

asiantransportobservatory.org

"ATO translates data into insights, policies, and investments"

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

X: @transportATO
Linkedin: bit.ly/ATOlinkedin