



Benchmarking Nepal:

Data Trends and Policies for Climate Change Mitigation and Adaptation in the Asian Transport Sector

Insights from the
Asian Transport Outlook (ATO)

Adwait Limaye

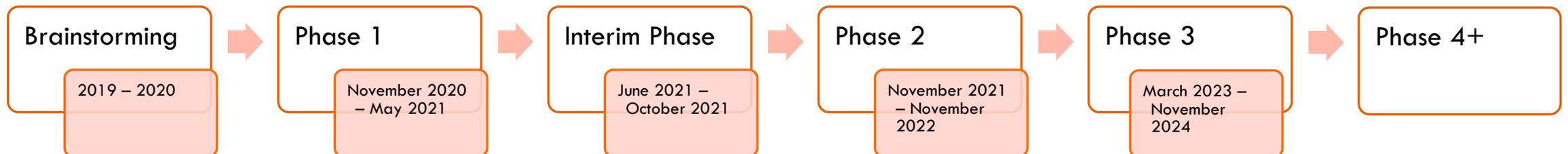
9 June 2024

Asian Transport Outlook (ATO)

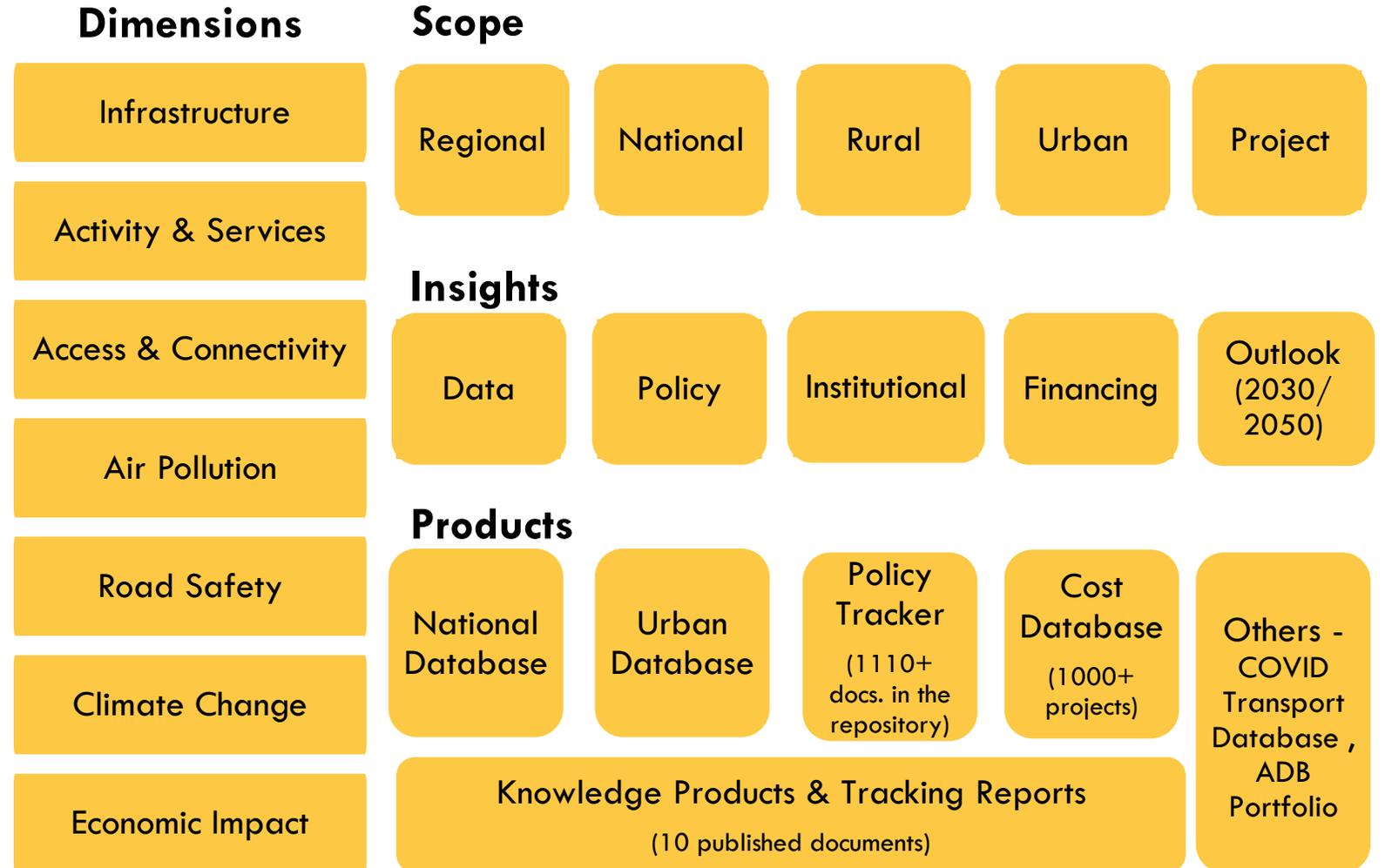
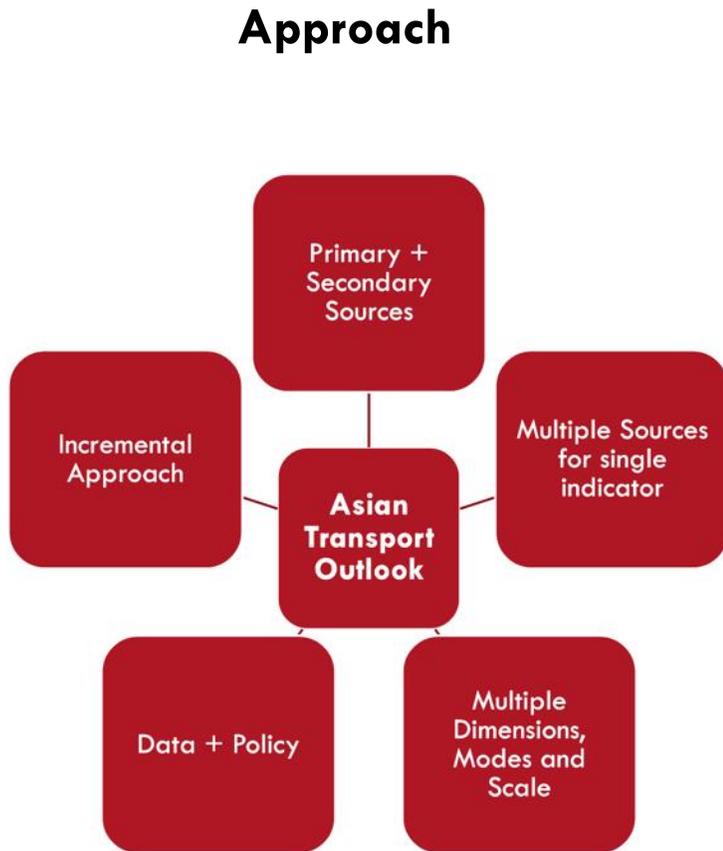
www.asiantransportoutlook.com



- 51** Economies (ADB Members + Russia and Iran)
- 460** Urban Centers (412 Asia-Pacific, 48 International)
- 46** Urban Centers with a detailed review * To be increased to 50



ATO Approach and Implementation



Who is the ATO Team?



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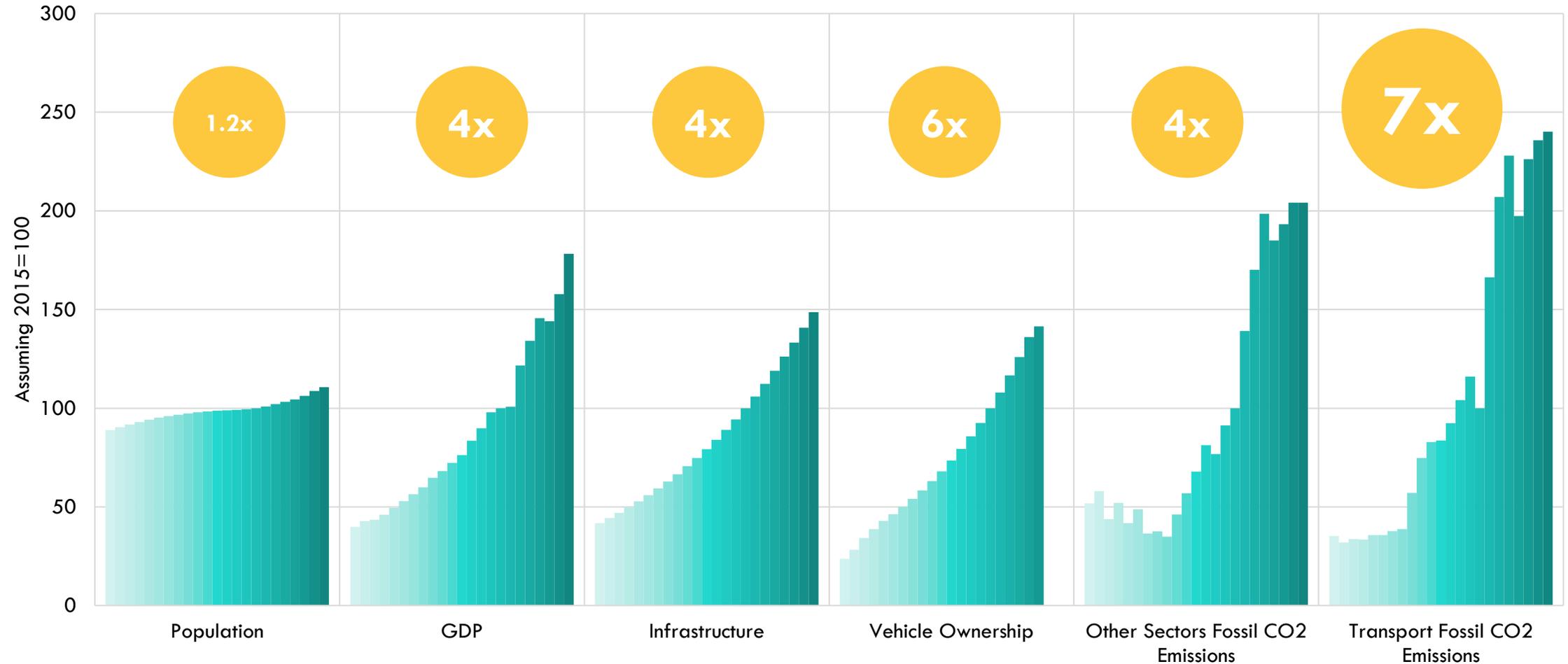
Manuel Bernard

AIIB

AIIB's contribution to the ATO is being co-financed by both INF1 and INF2

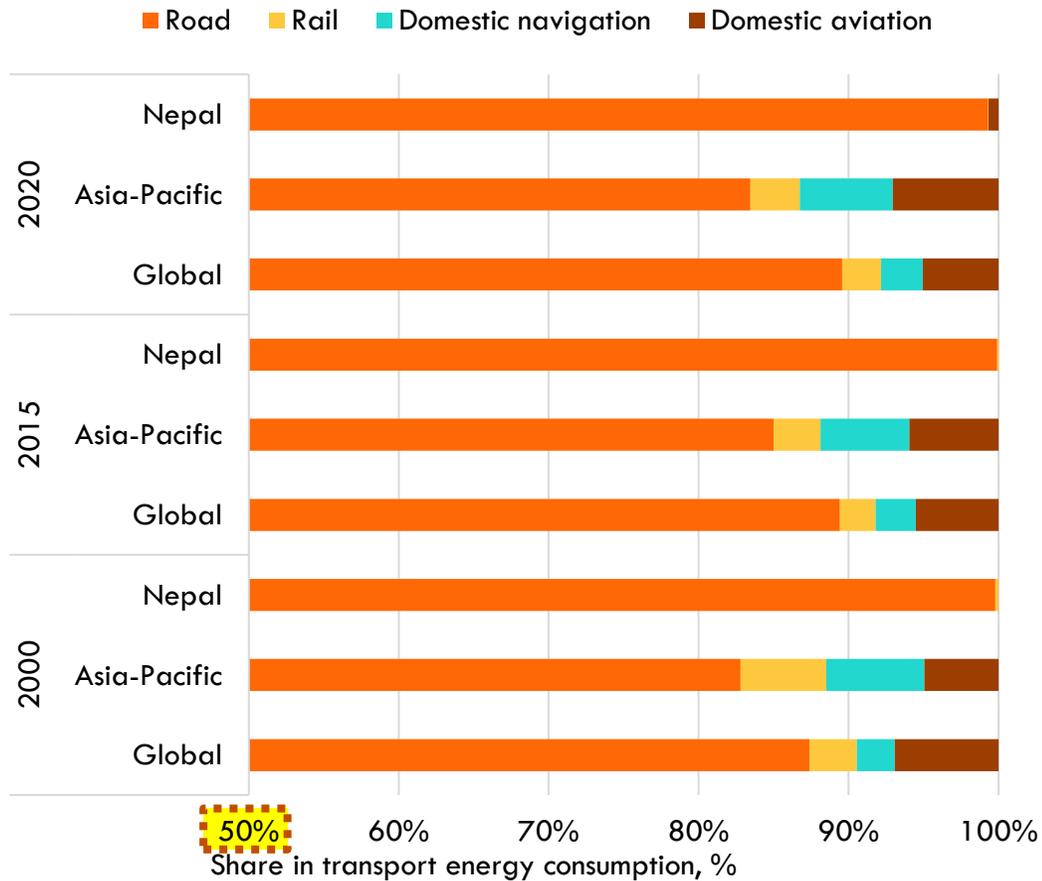
Climate change mitigation: Nepal: Transport sector key drivers

Nepal (2000 - 2022)

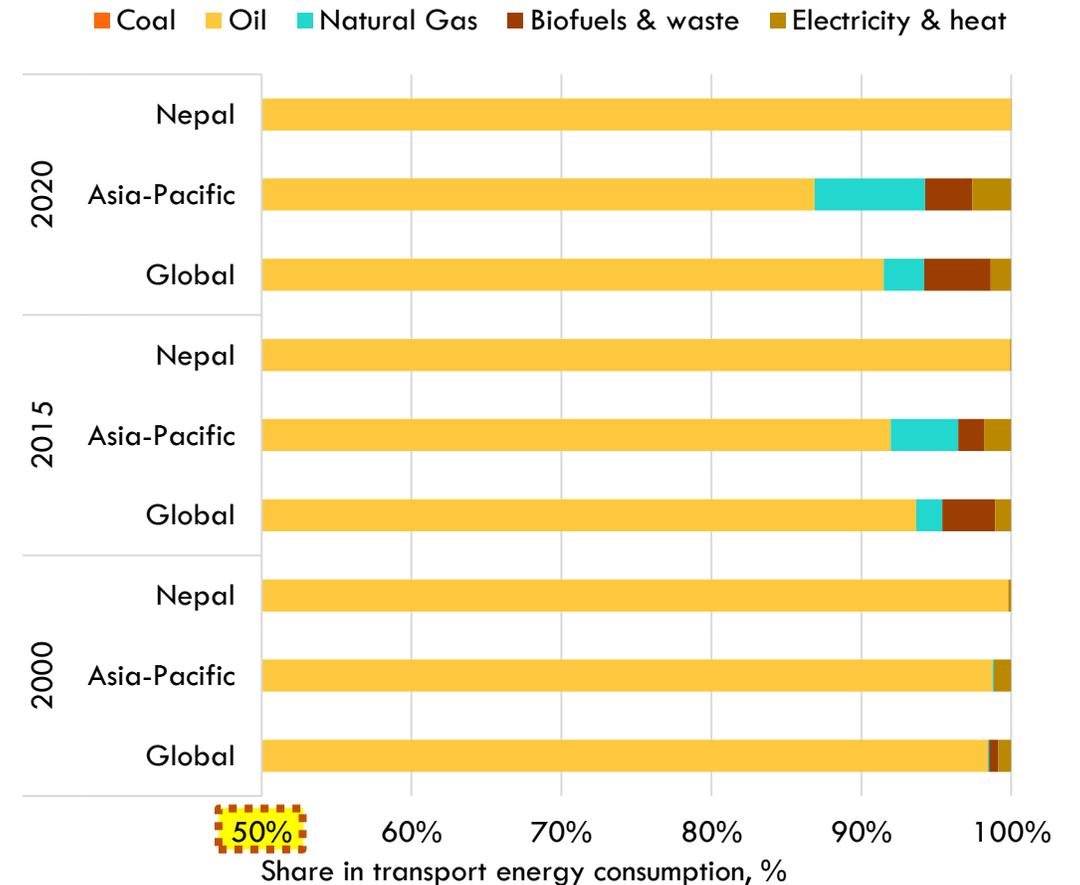


Nepal's energy consumption mode-share and source-share are highly concentrated

Nepal: Transport Energy Consumption Share by Mode

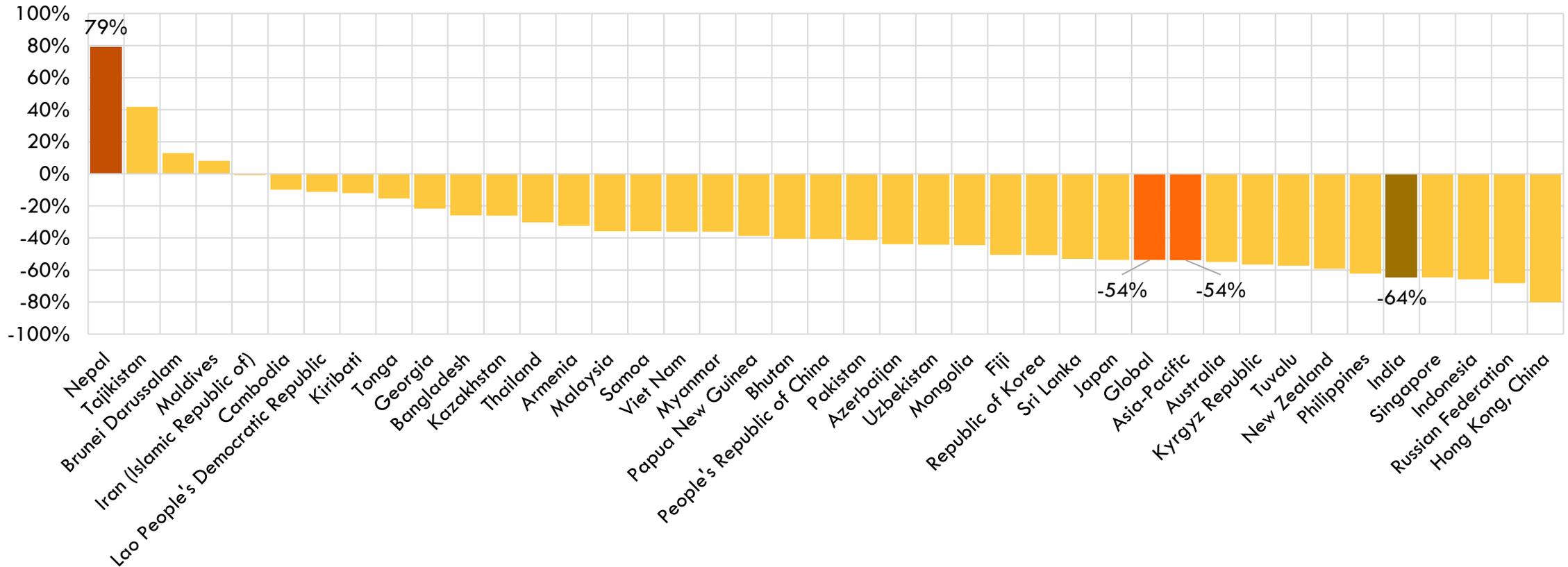


Nepal: Transport Energy Consumption Share by Source



Nepal substantially increased total transport energy consumption intensity

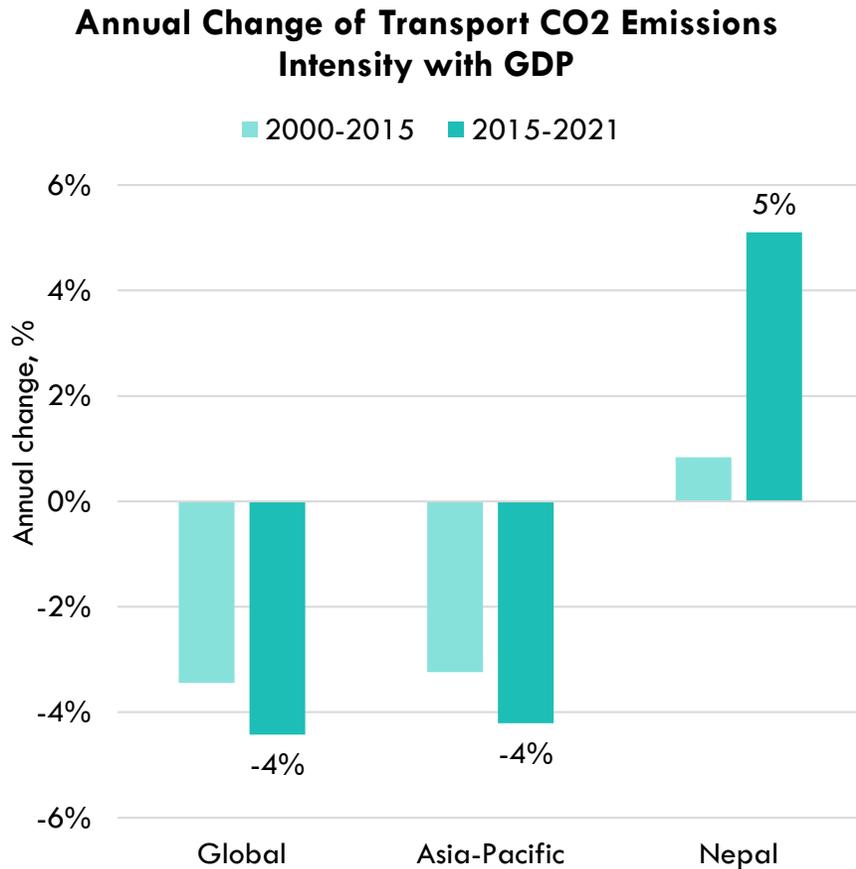
Change in the Total transport energy consumption intensity (PPP) (2000 - 2020)



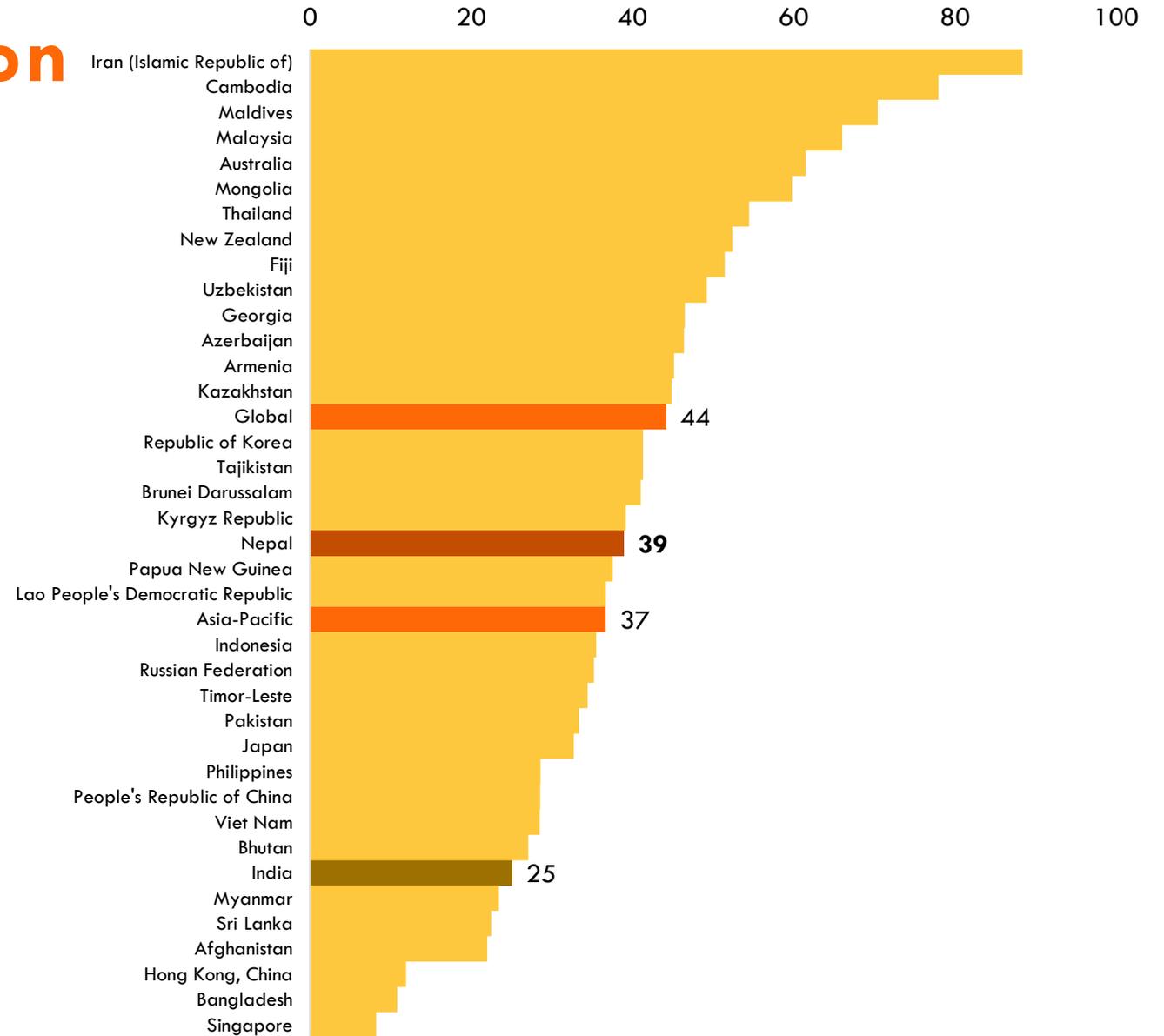
10% of the economies
increased intensities

90% of the economies
decreased intensities

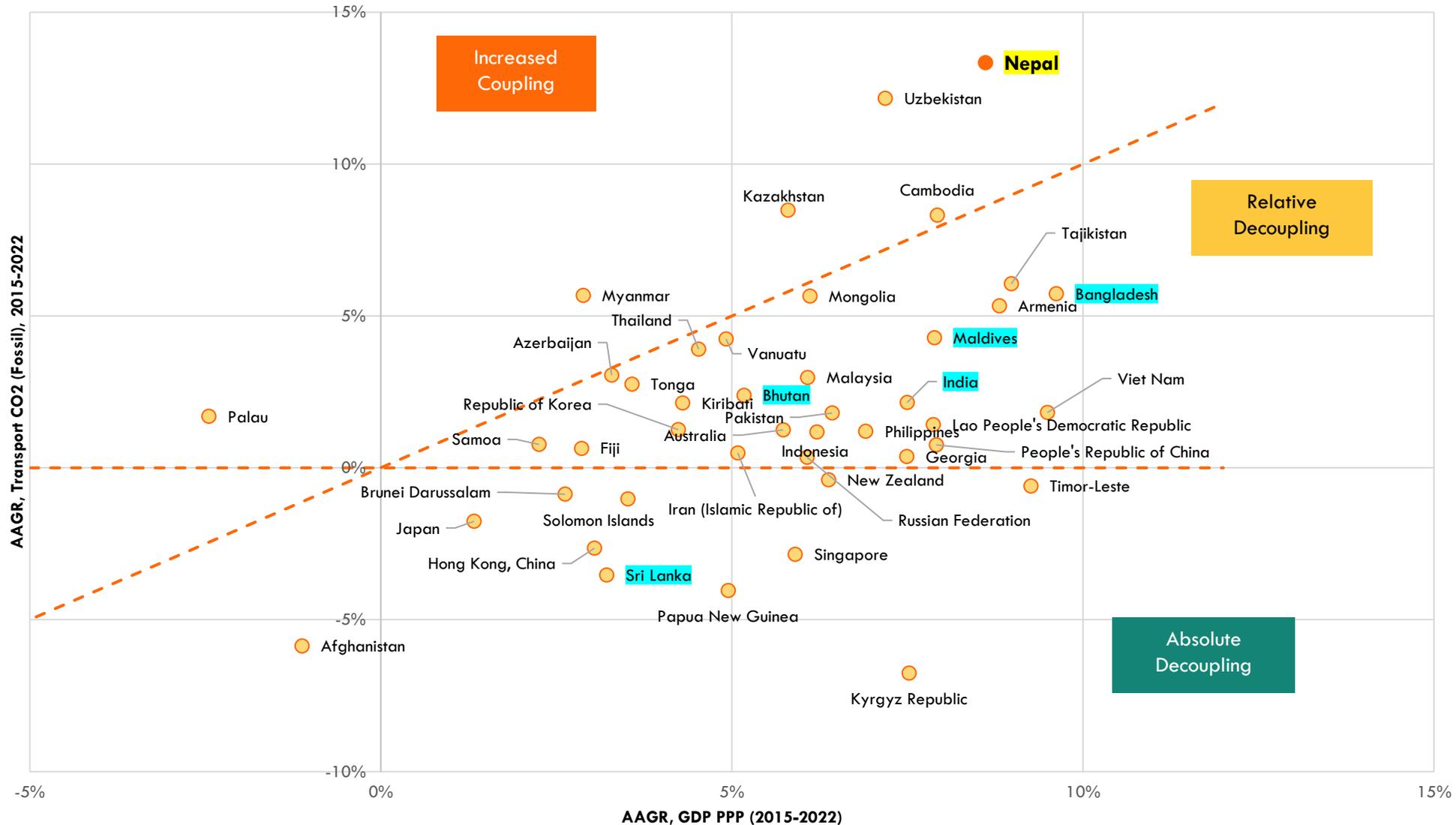
Nepal's transport sector is becoming more carbon intensive



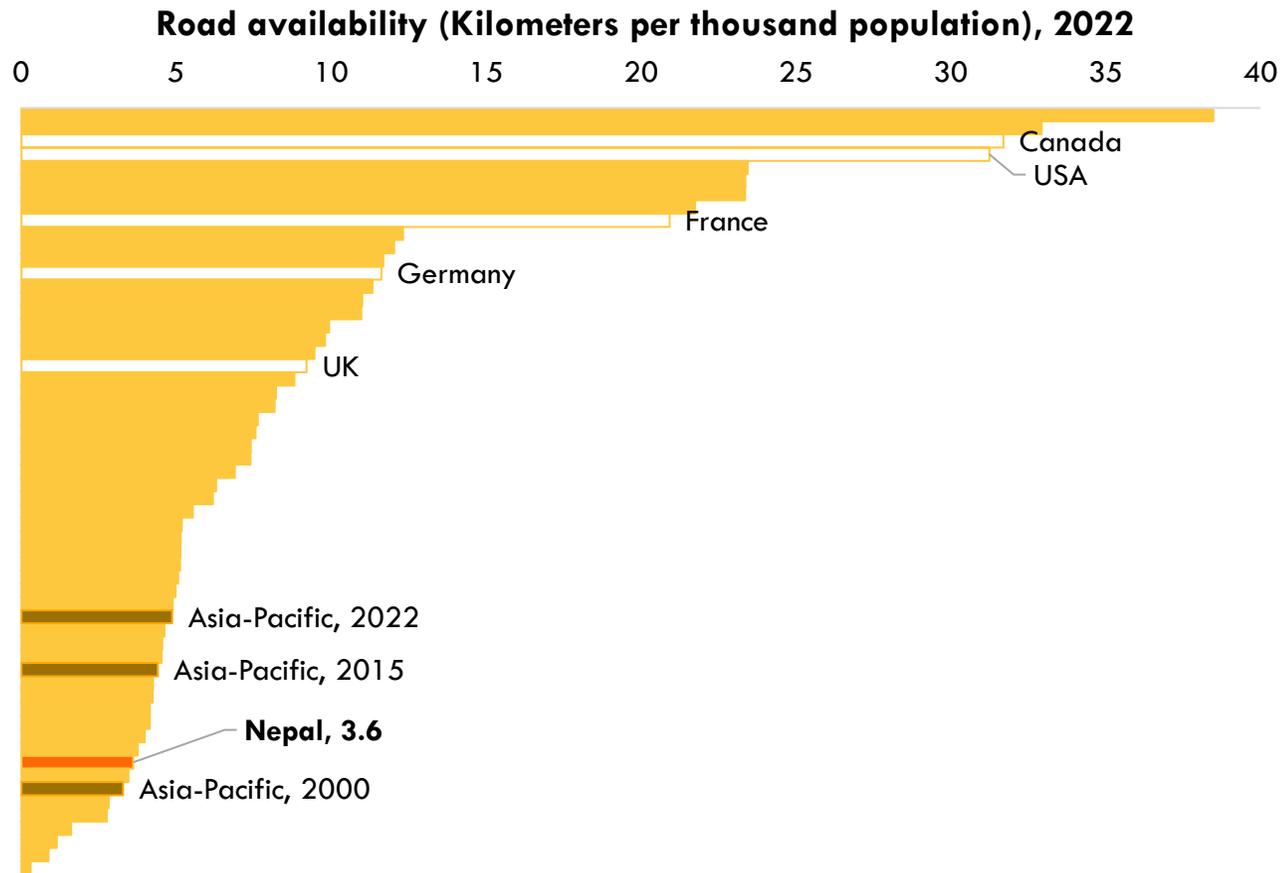
Fossil Transport CO2 emissions intensity (grams per USD) (2022)



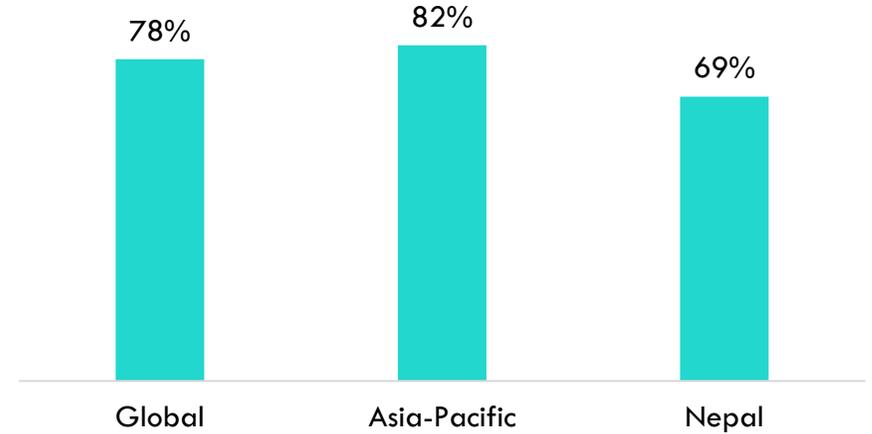
Nepal is increasingly coupling transport fossil CO₂ emissions growth with the GDP



Resilience challenge: Nepal is underserved with Road infrastructure

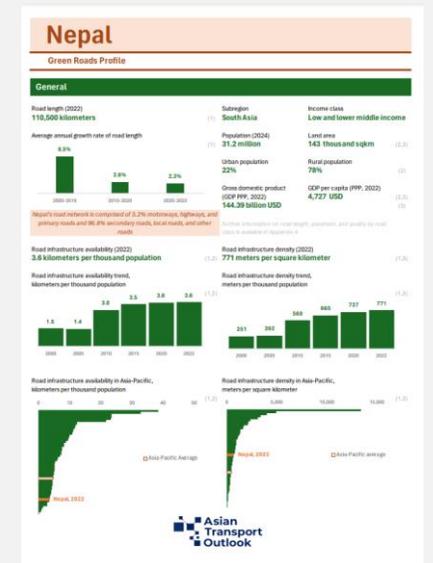


Share of Rural Population with access to All-Season Roads, 2022

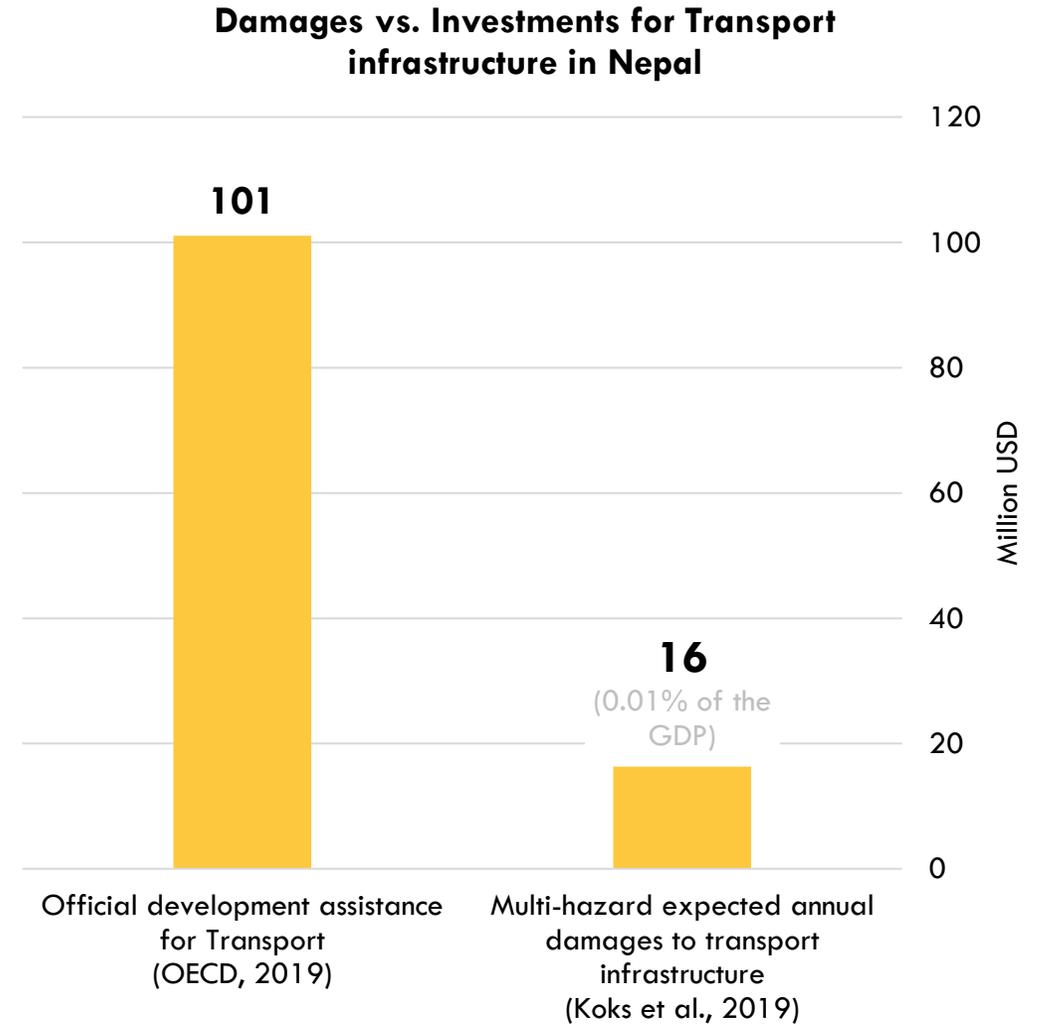
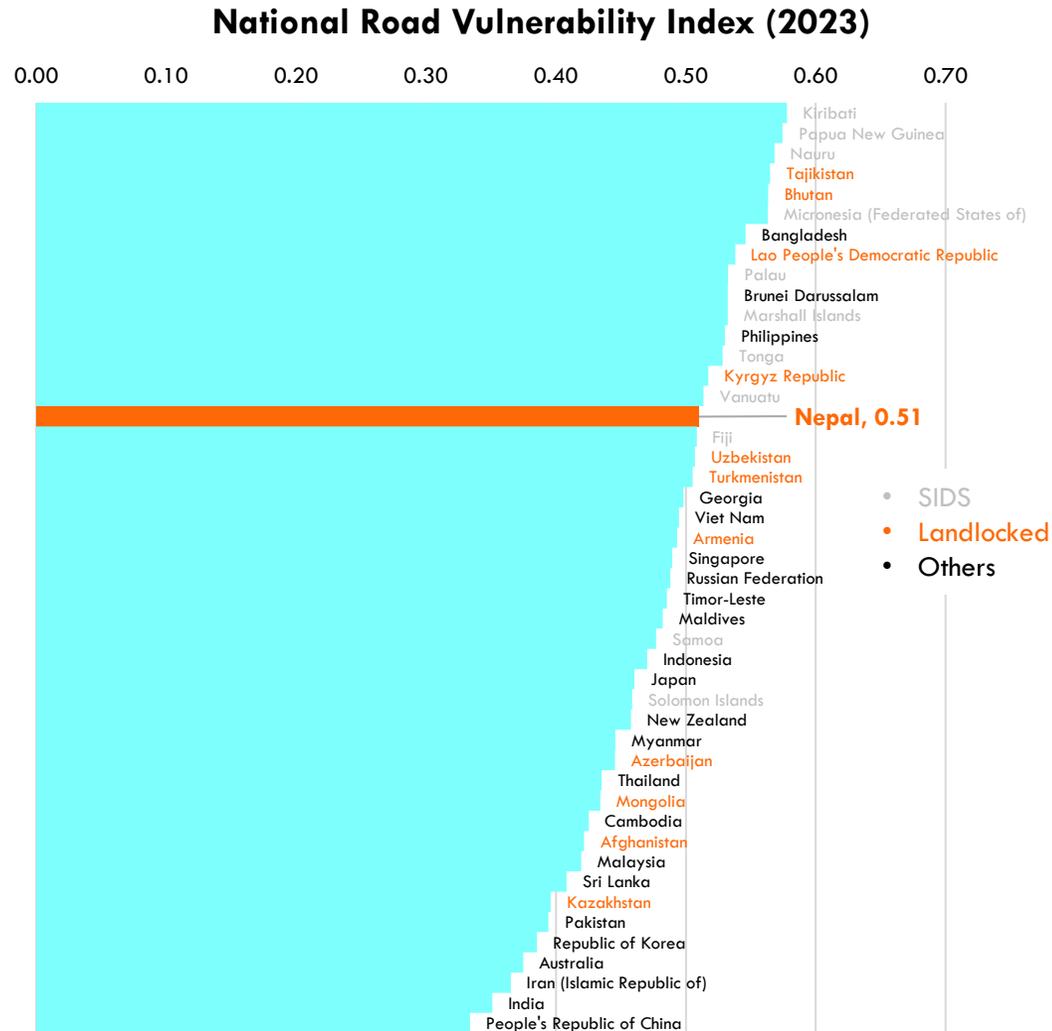


The Asian Transport Outlook

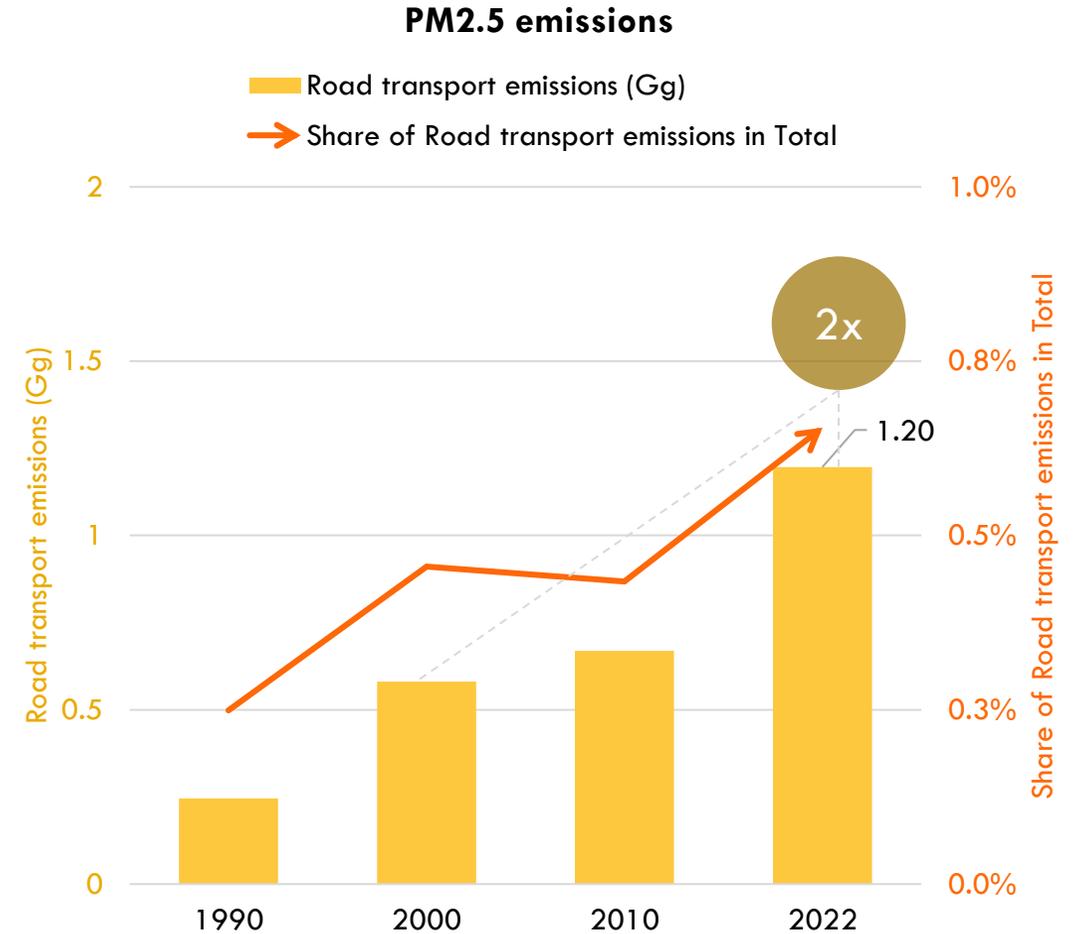
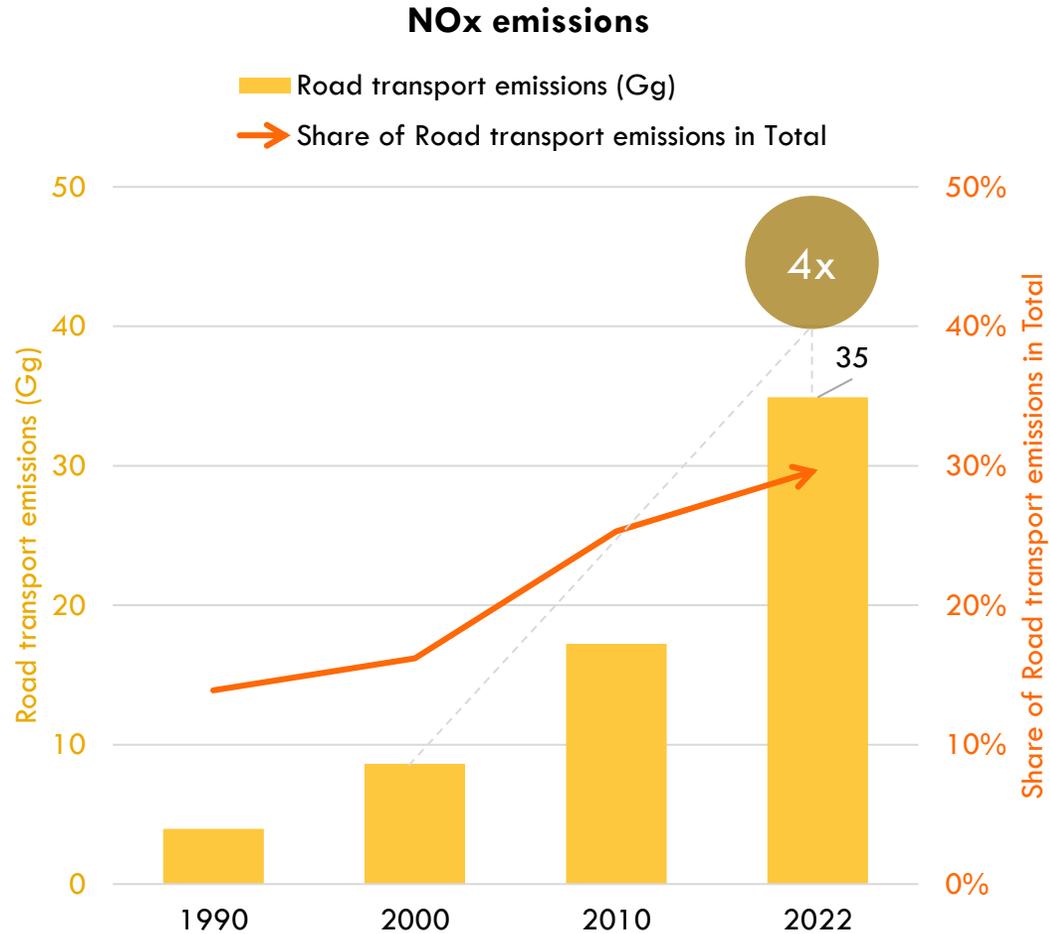
has developed
Green Roads profile
for Nepal.



Nepal's road infrastructure is highly vulnerable



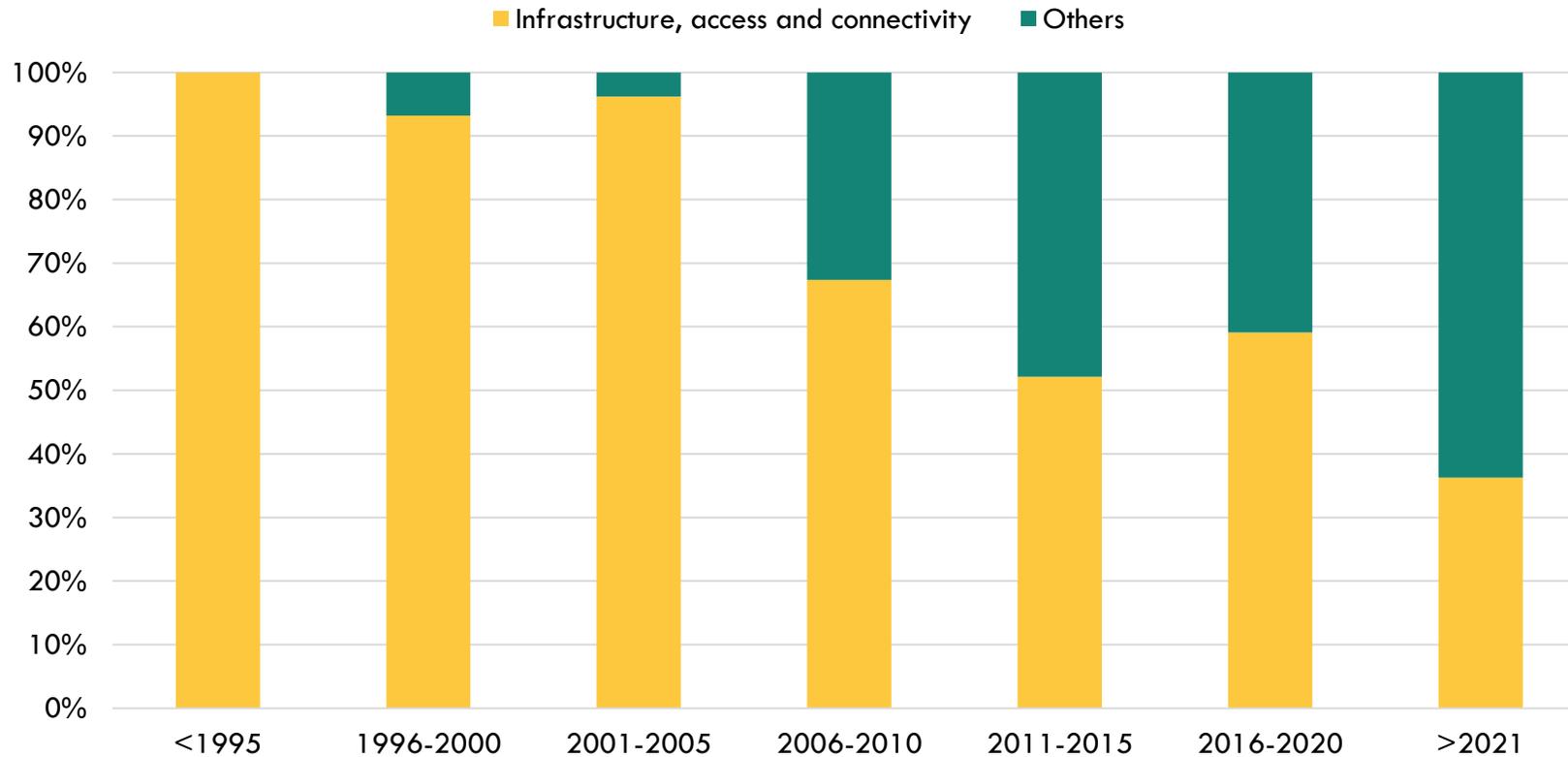
Road transport air pollutant emissions: Nepal is on ever-increasing trajectory, but better than CO₂



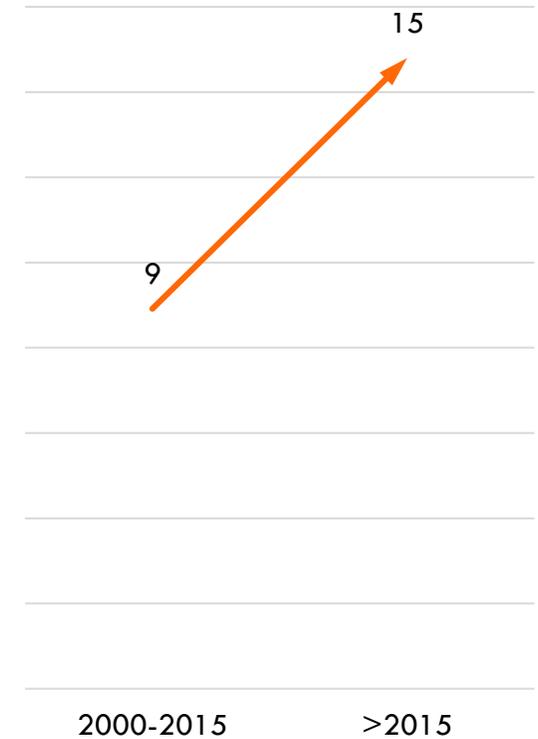
Overall, transport policies are becoming **more comprehensive**

Measures other than Infrastructure, access and connectivity are also being included

Distribution of policy measures by source document tags



Average number of total measures per document

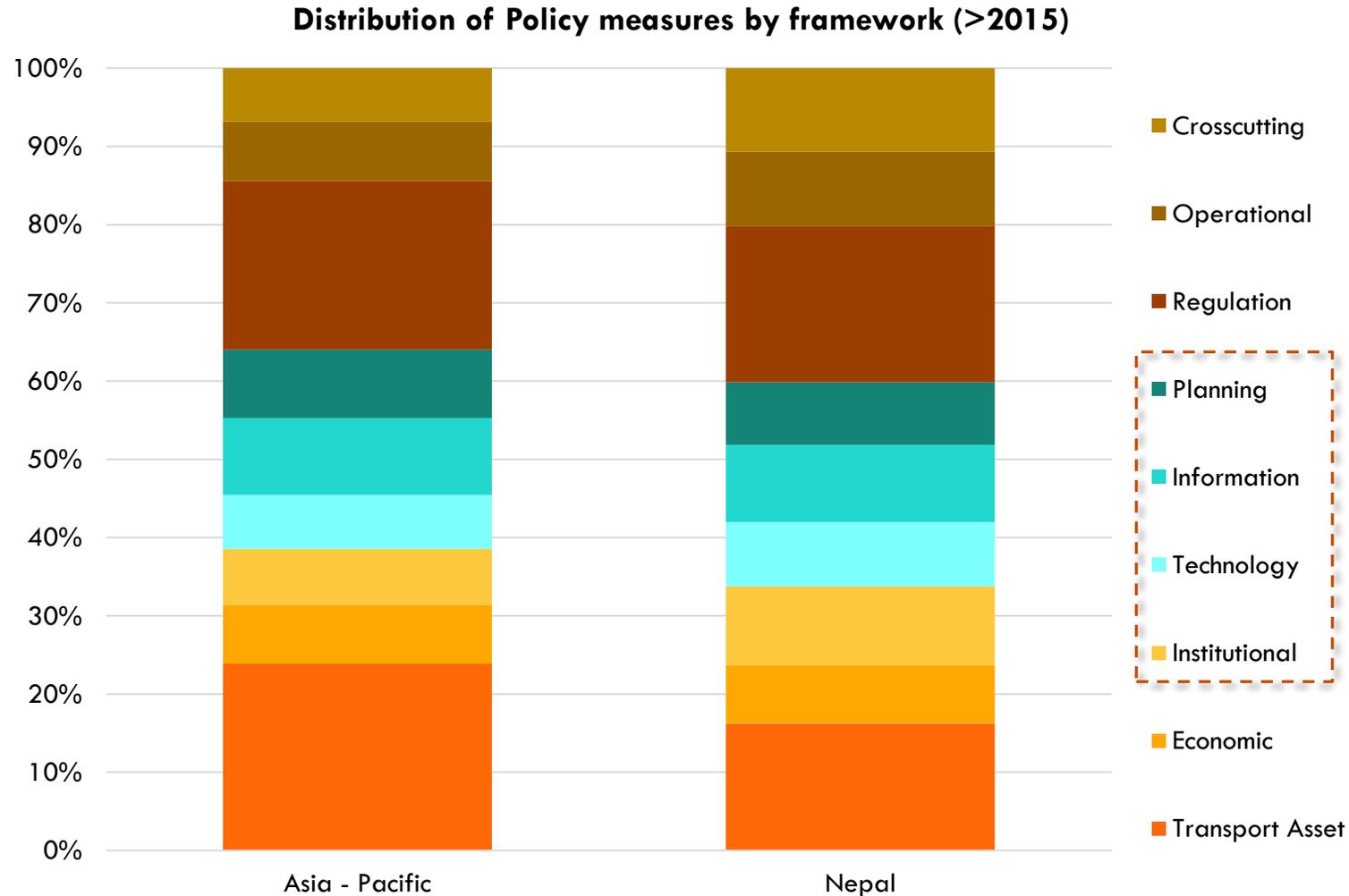


Note: Others include - Air Pollution, Climate, Energy, Road Safety, SDG, and Gender

Source: ATO national policy trackers developed for 26 economies

Transport policies are also diversifying

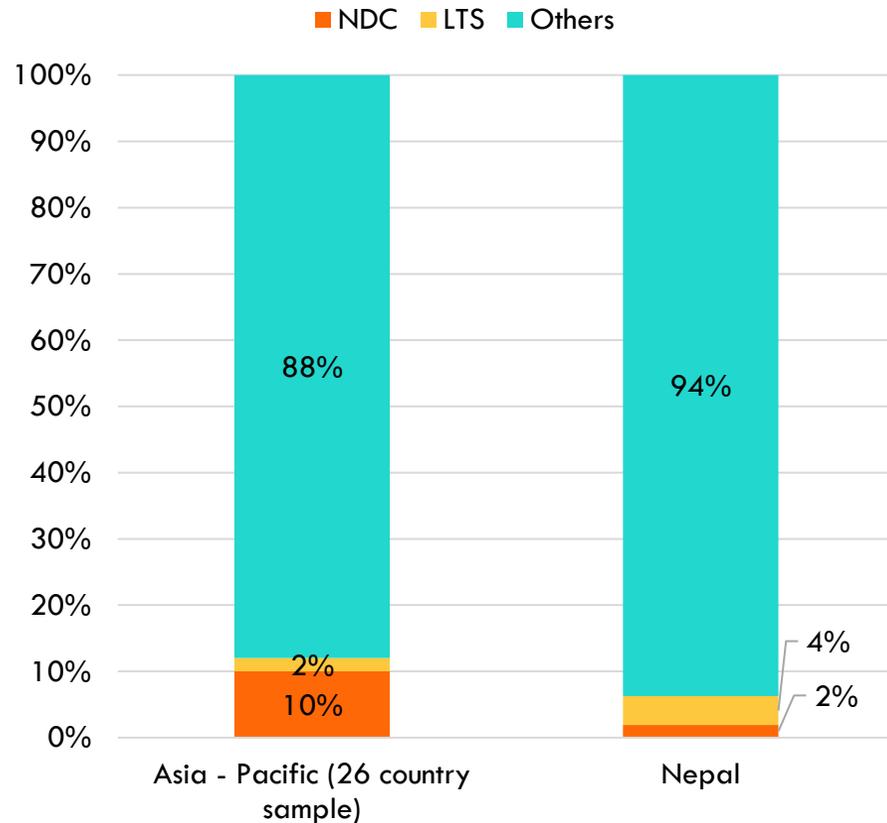
Transport system planning and improvement is gaining focus in multiple forms



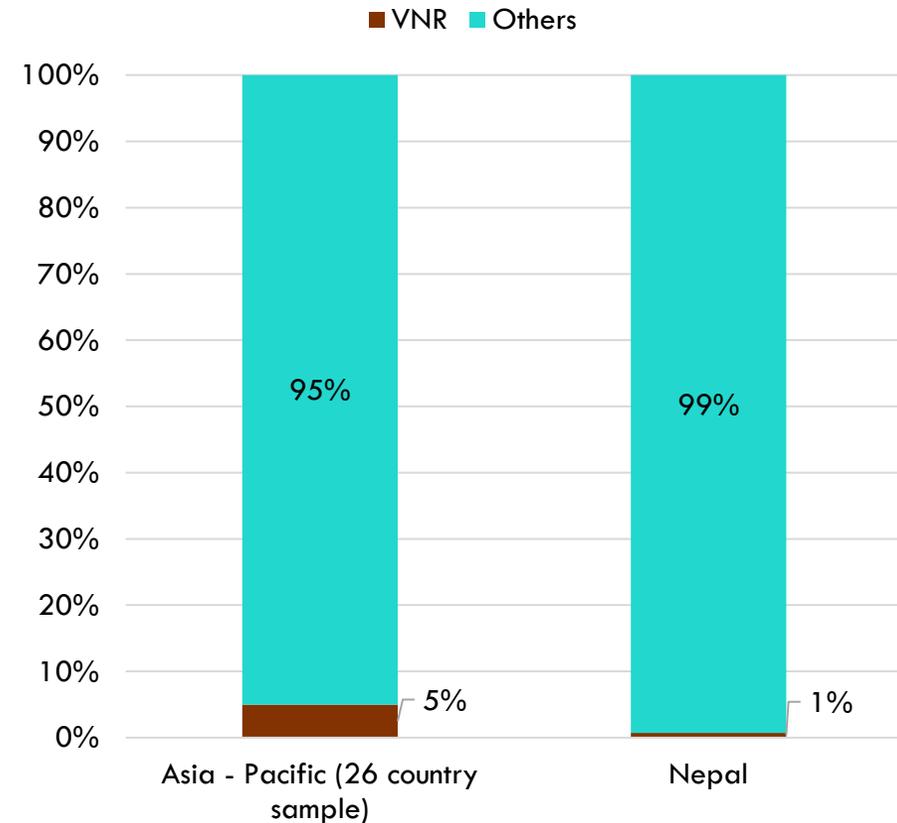
Policy landscape:

National transport policy and related documents reflect real ambition

Document source for the Climate Change Mitigation related measures (>2015)



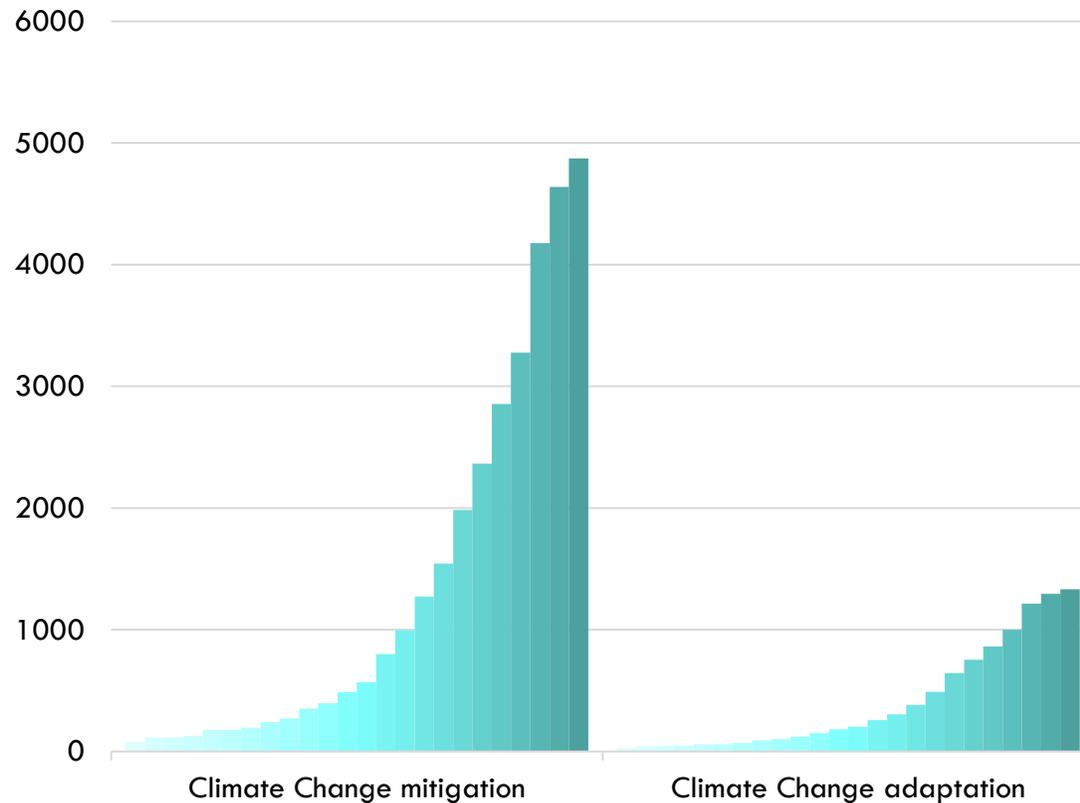
Document source for the SDG relevant policy measures (>2015)



Climate Change Adaptation remains subdued focus

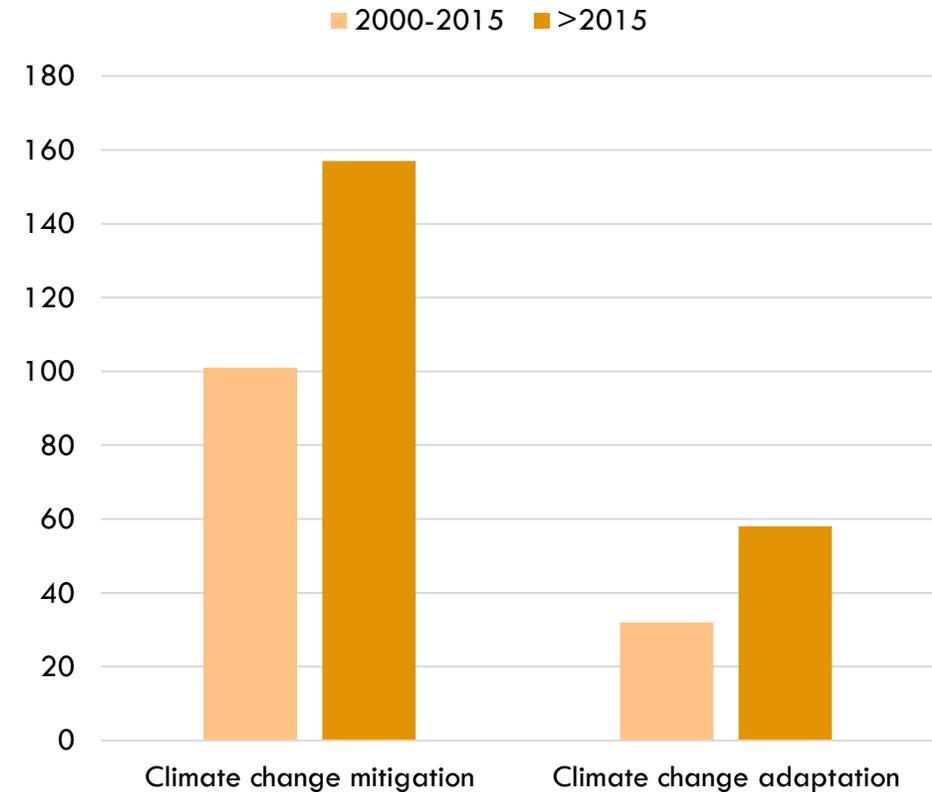
Asia-Pacific

Cumulative number of Measures by Transport Dimensions (2000-2023)



Nepal

Distribution of Climate Change related measures



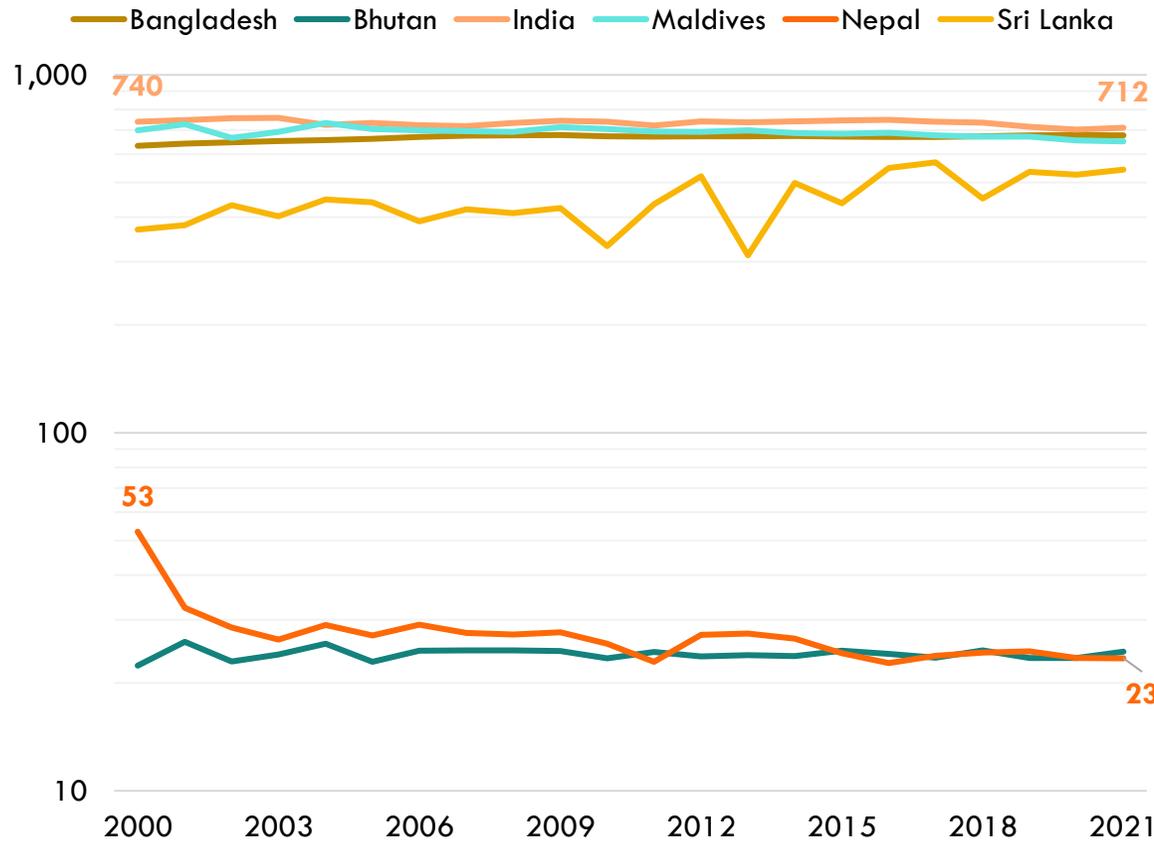
Nepal: Electrification and Public transport improvement are the most significant climate change mitigation related policy measures

Distribution of climate change mitigation related measures

General e-mobility	General data repositories and data collection	General infrastructure improvement	General parking measures	General transport institutional reform	Others
	Rail infrastructure expansion	General transport finance	Reference to finance mechanisms within country	Renewable energy	
General public transport	EV charging infrastructure	Vehicle inspection and maintenance	General land use	Railway electrification	
	General capacity building	General active mobility	Reporting, transparency, feedback...	Road-side checks on overloading	
			Road infrastructure expansion	Traffic management	

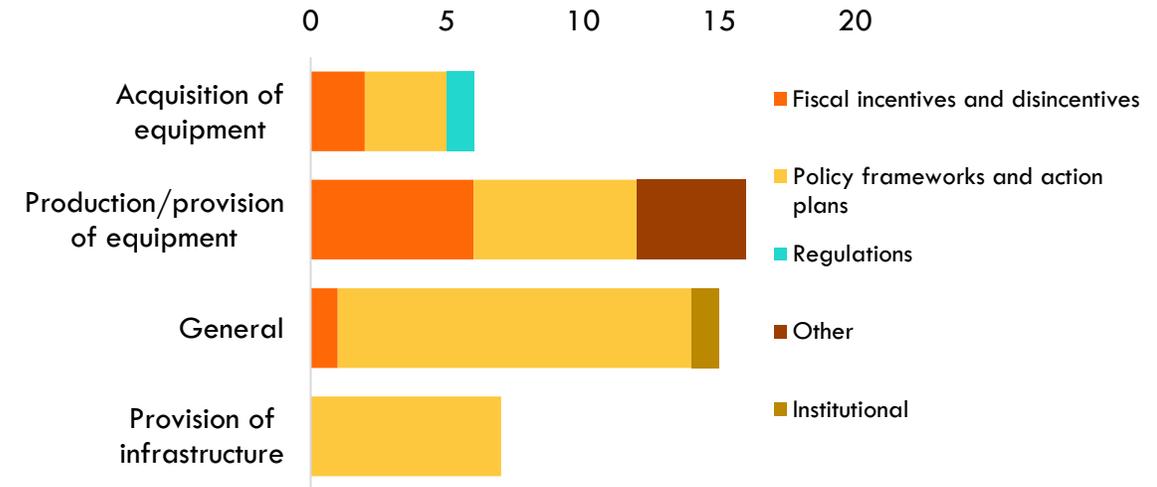
Are the e-mobility policies mature enough?

Grid emission factors for electricity (gCO₂/kWh)



Source: ATO Analysis using the data sourced from EMBER

Distribution of Electric mobility related Policy Measures



Source: ATO national policy trackers developed for 9 economies

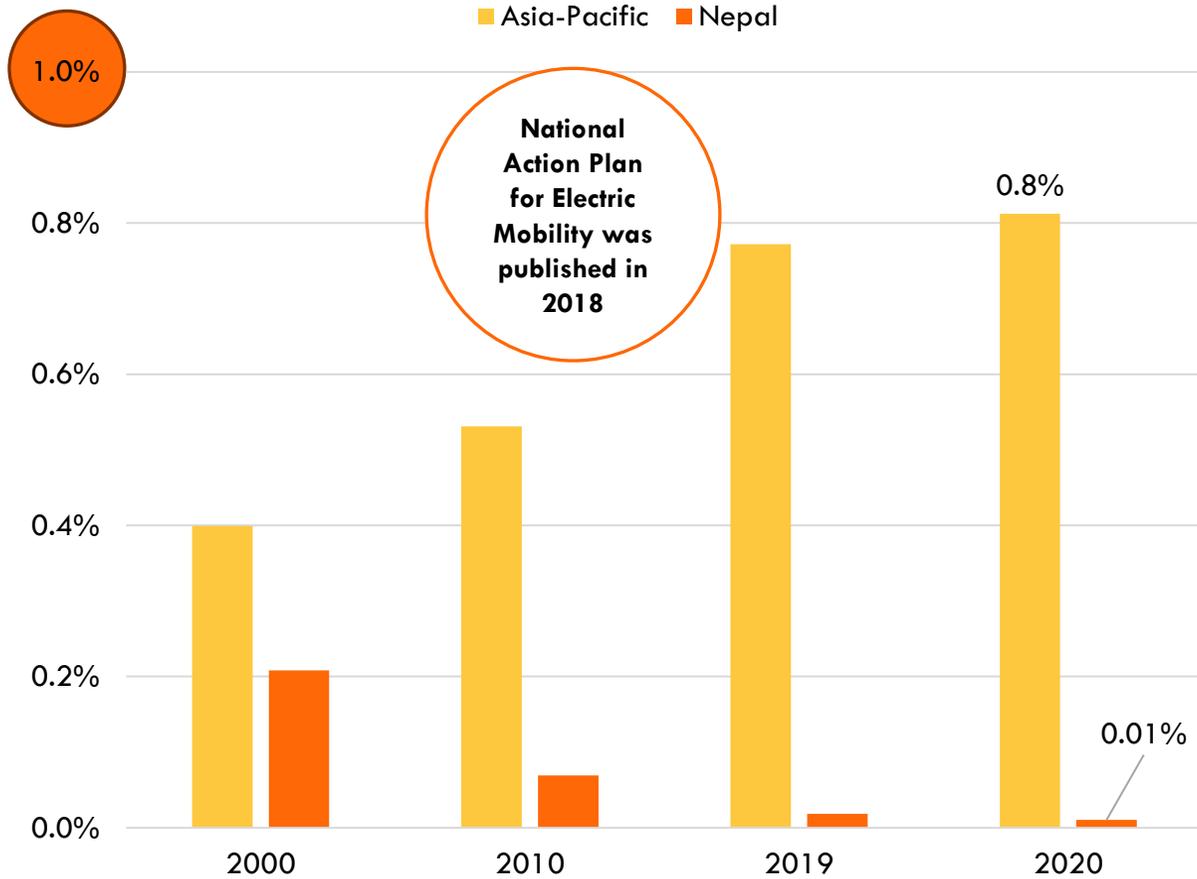
The **Asian Transport Outlook** has developed E-mobility profile for Nepal.



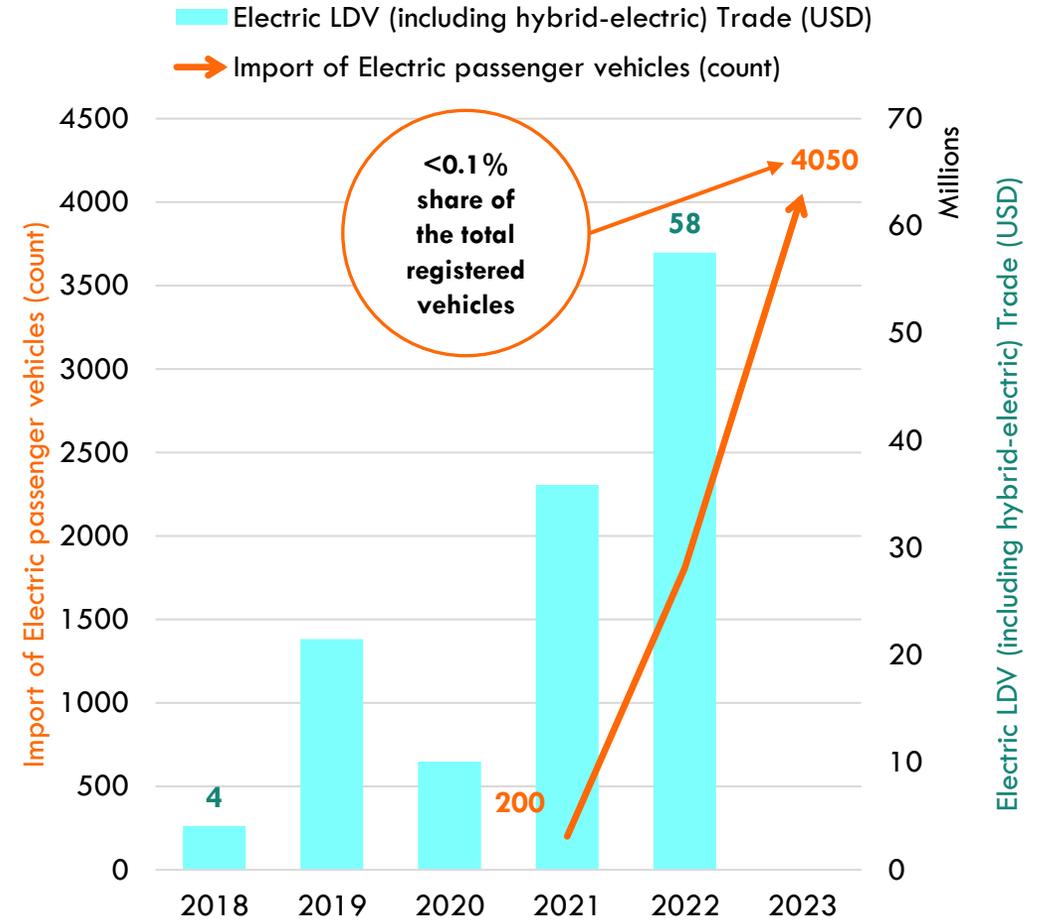
<https://asiantransportoutlook.com/analytical-outputs/emobilityprofiles/>

Vehicle stock is very slowly reconfiguring

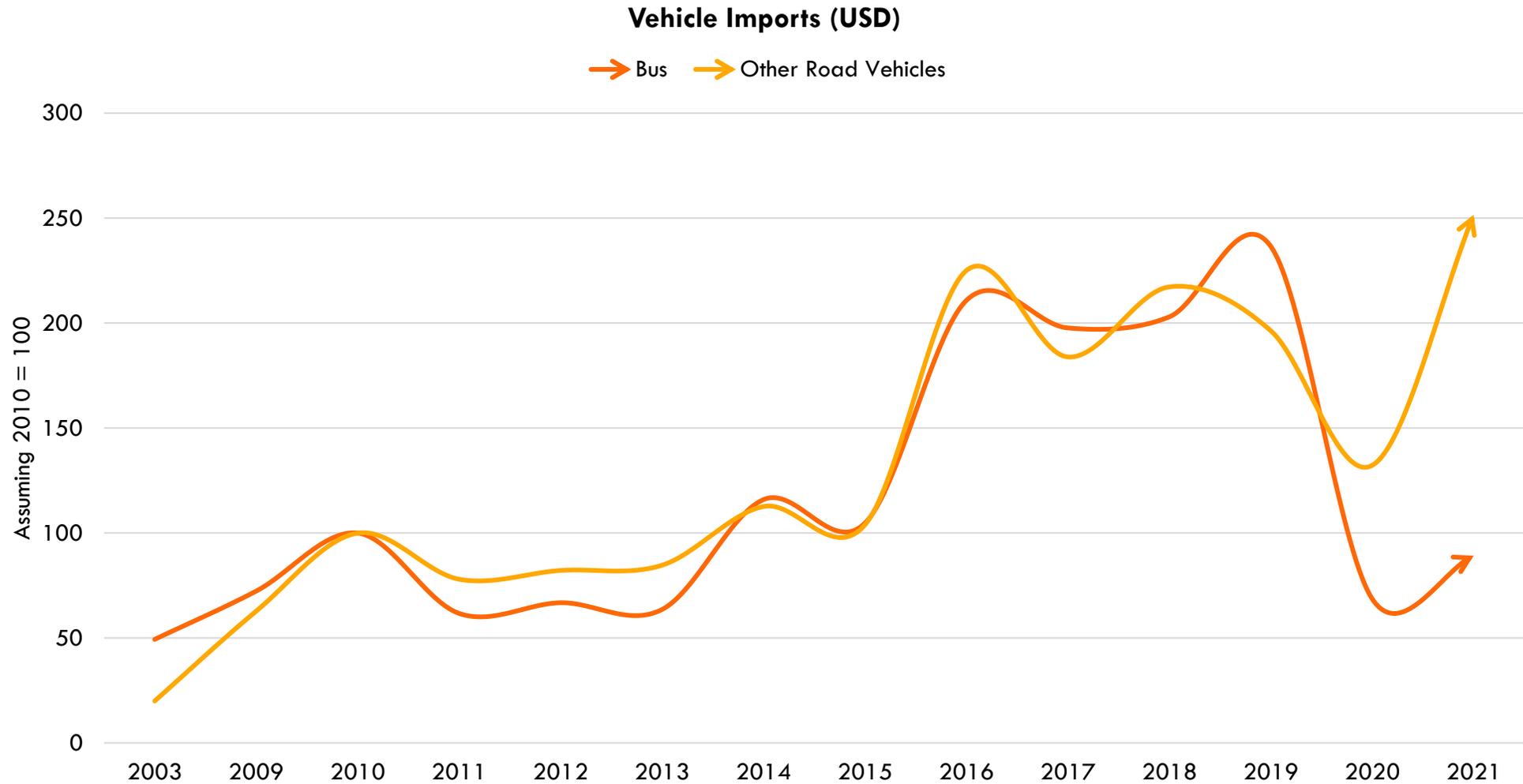
Share of Electricity consumption in Total Transport Energy Consumption



Electric vehicle (LDV) trends



Bus growth is stalling?



Climate change related Policy measures and targets

General e-mobility	General public transport	General data repositories and data collection	General infrastructure improvements	<p><u>Adaptation transport laws, regulations and programmes</u></p> <p>Undertake climate vulnerability and risk hazard mapping of the road sector (National Adaptation Plan (NAP) 2021 - 2050)</p> <p><u>Biofuels</u></p> <p>E10 and B05 blends (National Energy Strategy of Nepal)</p> <p><u>Public transport (Electric)</u></p> <p>Promotion of electric mass public transport (LTS)</p> <p><u>Vehicle efficiency standards</u></p> <p>Improve vehicle energy efficiency standard (NSTS)</p> <p><u>Vehicle scrappage</u></p> <p>Identify and co-fund battery recycling (National Action Plan for Electric Mobility)</p>	<p><u>General e-mobility</u></p> <p>By 2025: 25% of all private passenger vehicle sales and 20% of all 4W public passenger vehicle sales (Second NDC)</p>
General parking measures	General transport institutional reform	Rail infrastructure expansion	EV charging infrastructure		<p><u>Transport improvement</u></p> <p>By 2024: Families with access to transportation within the 30 min. = 95% Baseline = 82% (2018/19) (Fifteenth Plan)</p>
General capacity building	General transport finance	Reference to finance mechanisms within country	Renewable energy		<p><u>Rail expansion/ electrification</u></p> <p>By 2030: 200 km of the electric rail network (Second NDC)</p>
Vehicle inspection and maintenance	General active mobility	General land use	Railway electrification		<p><u>Road expansion</u></p> <p>By 2024: Road density = 0.74 km/sqkm Baseline = 0.55 (2018/19) (Fifteenth Plan)</p>
Reporting, transparency, feedback mechanism	Road infrastructure expansion	Road-side checks on overloading	Traffic management		
Transport law	Transport infrastructure resilience	Climate-resilient design standards	Resilient transport technologies		

SDGs: Economies' focus differ with differing priorities

Economy - SDG matrix by avg. no. of SDG relevant measures per doc. (>2015)

	1: No Poverty	2: Zero hunger	3: Good health and well-being	5: Gender equality	6: Clean water and sanitation	7: Affordable and clean energy	8: Decent work and economic growth	9: Industry, Innovation and Infrastructure	11: Sustainable cities and communities	12: Responsible consumption and production	13: Climate action	14: Life below water	16: Peace, justice and strong institutions	17: Partnerships for the goals
Azerbaijan	2	0	13	0	0	4	9	8	11	3	6	0	3	2
Bangladesh	3	0	14	0	1	6	11	10	15	4	7	1	2	2
Bhutan	4	0	17	1	0	6	13	13	17	5	10	0	4	4
Cambodia	4	0	12	0	1	5	9	8	13	3	10	1	3	2
Indonesia	3	0	10	0	1	3	8	8	11	2	7	1	2	2
Kazakhstan	3	0	14	0	0	2	7	6	8	2	6	0	5	4
Kyrgyz Republic	2	0	7	0	0	2	5	5	6	1	3	0	2	2
Laos	0	0	0	0	3	4	8	8	9	6	6	0	3	3
Malaysia	0	0	0	0	1	10	21	21	29	17	17	0	7	7
Maldives	0	0	0	0	2	3	7	6	10	7	7	0	3	3
Moldova	0	0	0	0	0	3	3	4	7	4	4	0	1	1
Mongolia	0	0	0	0	2	5	10	11	14	8	8	0	3	3
Nauru	2	0	0	0	1	2	3	4	7	1	5	0	2	1
Nepal	6	0	18	0	0	5	14	14	16	2	10	0	6	5
Pakistan	3	0	24	0	1	7	17	17	20	4	13	1	6	7
Palau	1	0	7	0	1	2	5	4	5	1	2	1	0	0
Philippines	2	0	11	0	1	3	7	7	10	1	7	1	3	2
Solomon Islands	4	1	9	0	2	3	8	8	11	2	8	2	2	2
Sri Lanka	6	1	18	0	2	5	16	16	20	4	12	2	5	4
Tajikistan	4	0	11	0	0	3	9	9	10	2	6	0	3	3
Thailand	2	0	16	0	2	5	10	11	16	3	10	2	4	3
Timor-Leste	5	1	8	0	1	2	8	8	11	2	7	1	3	3
Uzbekistan	3	0	18	0	1	8	13	13	19	4	11	1	4	3
Vanuatu	3	0	4	0	1	2	4	4	6	1	4	1	1	2
Viet Nam	4	0	13	0	3	5	11	11	13	3	8	3	3	3

1: Building climate resilience

2: Rural access improvement

3: Road safety and air pollution measures

12: Fuel intensity improvement, FF subsidy elimination

16: Institutional strengthening, Stakeholder involvement

17: Financing, PPP, Logistics improvement, Capacity building

Transport policy and related documents

The Asian Transport Outlook

has developed policy trackers for

26 economies recording

500+ documents and

7000+ measures

Transport related 20 policy documents for Nepal	Year	Document Type
Motor Vehicles and Transport Management Act, 2049 (1993)	1993	Transport Laws/ Regulations
National Transport Policy	2001	National Transport Policy
Convention on the Rights of Persons with Disabilities 2006	2006	Secondary Source
National Energy Strategy of Nepal	2013	Other Transport-related Policy
National Sustainable Transport Strategy (NSTS) for Nepal (2015-2040)	2015	National Transport Policy
Nepal Civil Aviation Act, 2073	2017	Transport Subsector Policy
National Review of Sustainable Development Goals	2017	National Report to International/ Regional Processes
Global Status Report on Road Safety 2018	2018	Secondary Source
National Action Plan for Electric Mobility	2018	Transport Subsector Policy
Nepal Urban Road Standard- 2076	2019	Transport Laws/ Regulations
The Fifteenth Plan (Fiscal Year 2019/20 – 2023/24)	2020	National Development Policy
Second Nationally Determined Contribution	2020	Nationally Determined Contributions
Road Safety Opportunities and Challenges: Low- and Middle-Income Country Profiles	2020	Secondary Source
National Adaptation Plan (NAP) 2021 - 2050	2021	Other Transport-related Policy
Assessment of Electric Mobility Targets for Nepal's 2020 Nationally Determined Contributions (NDC)	2021	Transport Subsector Policy
59 UN Transport Agreements/ and Conventions Serviced by ECE	2021	Secondary Source
Nepal LTS	2021	Long-term Strategies
Nepal Road Safety Action Plan (2021-2030)	2022	Transport Subsector Policy
National Implementation Plan for Climate Change Mitigation and Adaptation (2080-2087)	2023	Other Transport-related Policy
Strategy and Initiatives for Electrification of Public Transportation in Nepal	n.d.	Transport Subsector Policy

ATO Transport profiles for Nepal

<https://asiantransportoutlook.com/analytical-outputs/countryprofiles/profile-nepal/>



Nepal

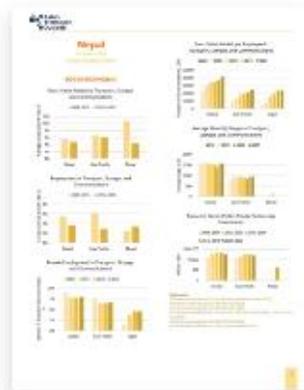
Home / Analytical Outputs / ATO Country Profiles / Nepal

Information

Name: Nepal

Income Group: Lower middle income

Transport Sector Profile



version September 2023

Transport Climate Profile



version May 2024

Road Safety Profile



version December 2023

E-mobility Profile



version February 2024

Green Roads Profile



version May 2024

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

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