

Scoping Urban Transport in Kathmandu

Insights from Asian Transport Outlook (ATO)

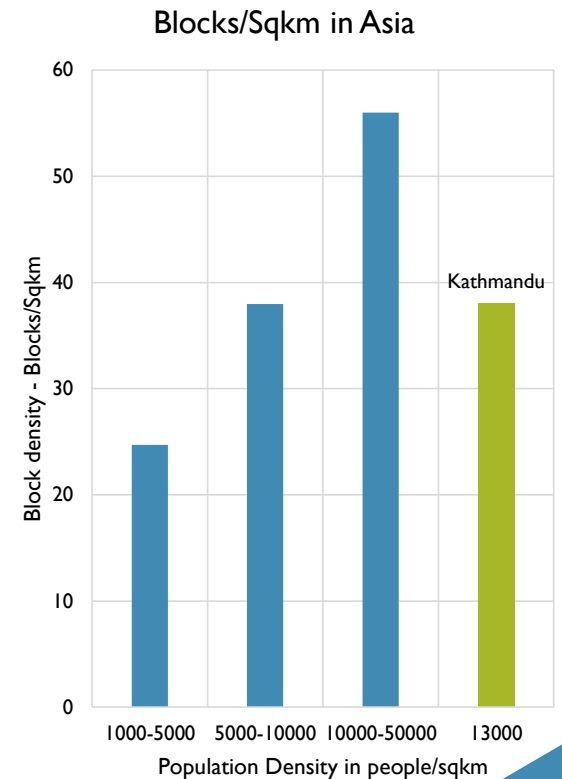
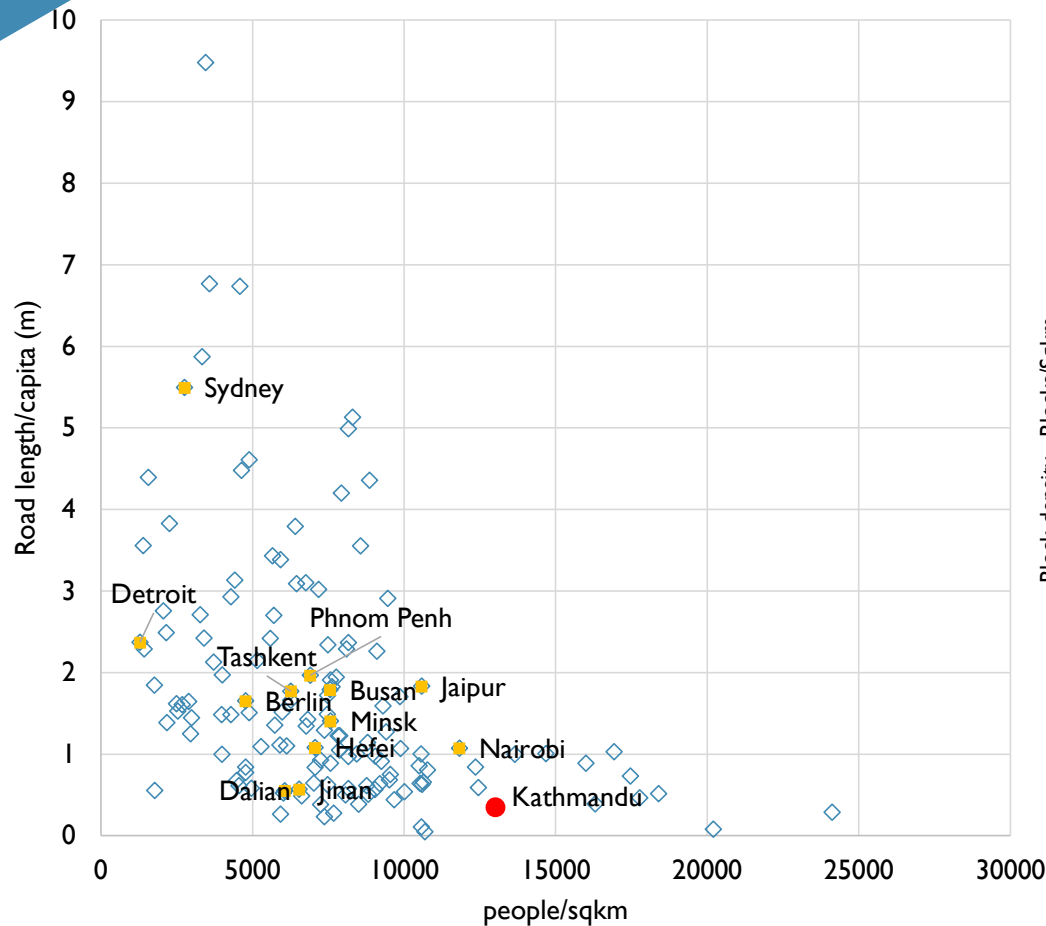
22 April 2023



Urban Form & Structure with Infrastructure

Urban form and structure significantly influence transport infrastructure. In Kathmandu, due to high population density and block density, per capita road requirement is significantly lower compared to other cities of similar size or population.

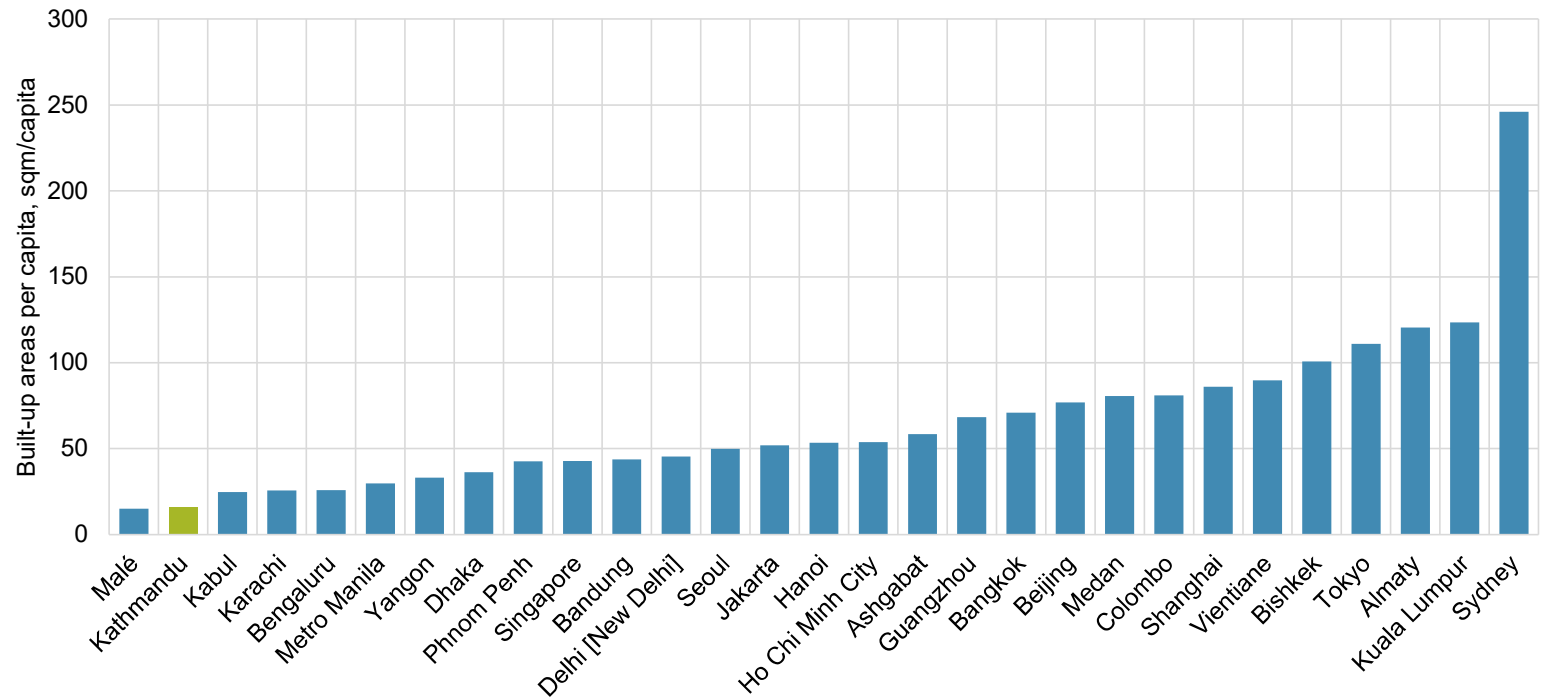
Since 2000, urban population density has increased by 150%, one of the highest increases in Asia



Urban Form & Structure with Infrastructure

Kathmandu valley has lowest built-up area per capita among comparable cities.

The percentage of built-up area to increase from 24% in 2011 to reach about 40% of the total area of Kathmandu Valley by 2030



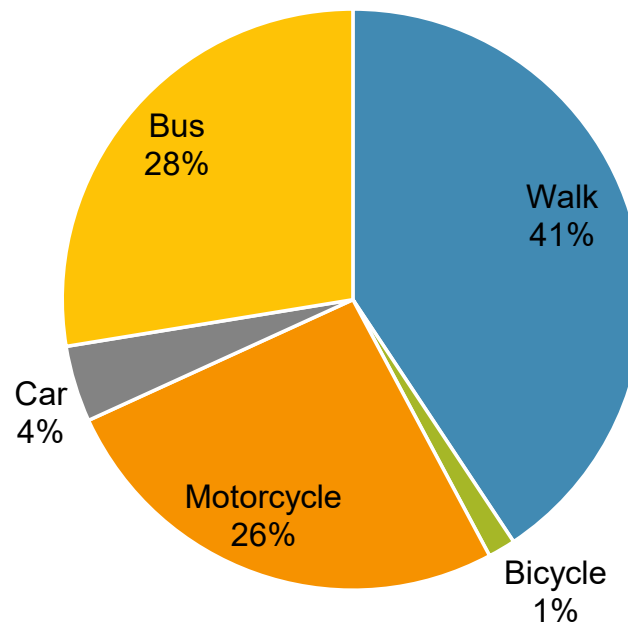
Transport Activity

Two-thirds of the passenger trips in Kathmandu are by walking, cycling or in formal or informal public transit.

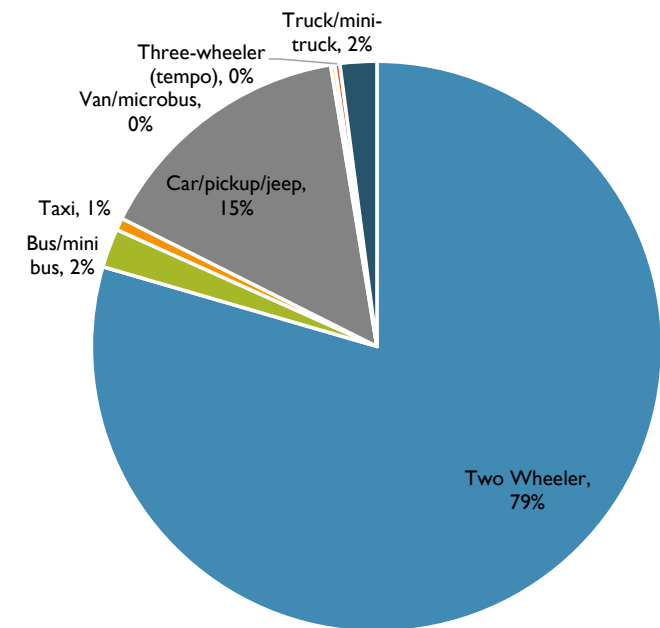
Close to 80% of registered vehicles are motorized two-wheelers

More than 60% of the total vehicles registered in Nepal reside in Kathmandu Valley

2011, Passenger Trip Mode Share



Share in registered vehicles, 2015



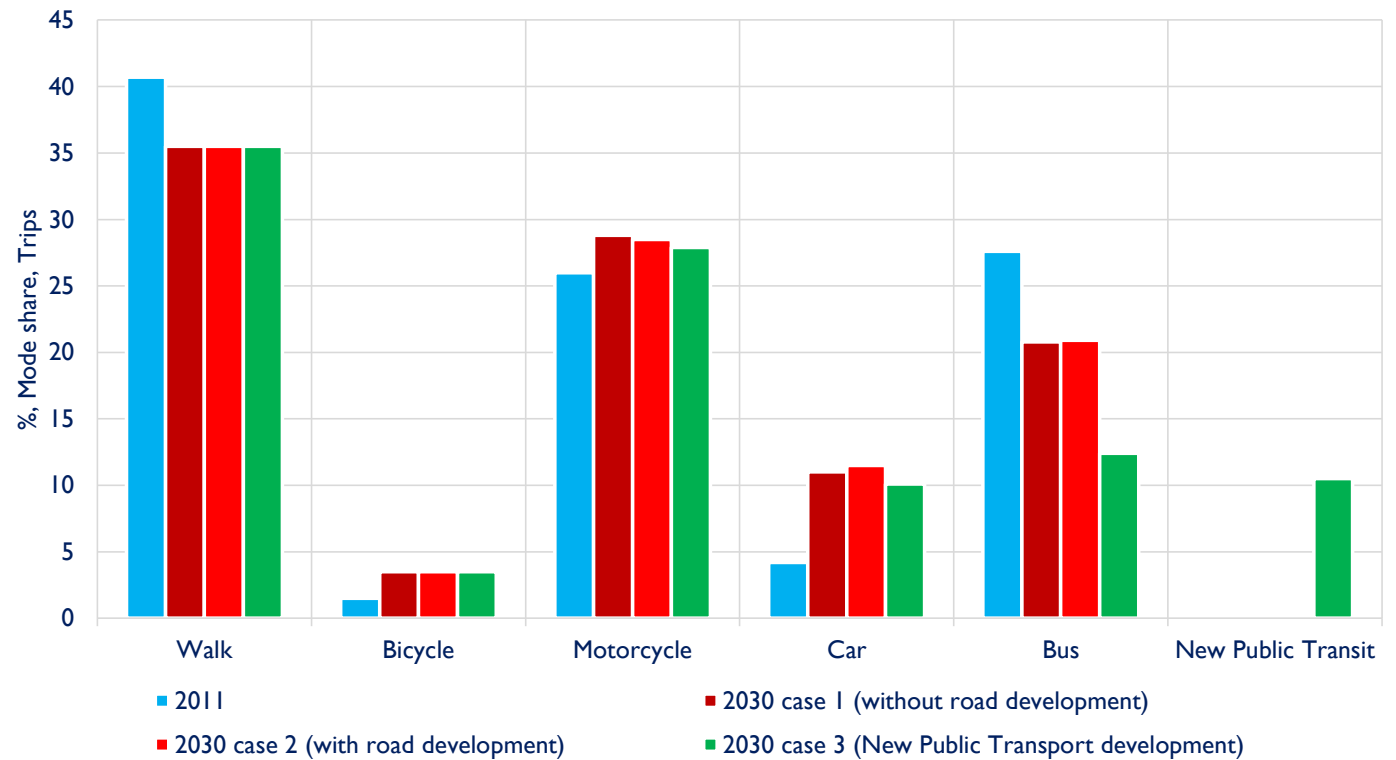
Source: UNESCAP SUTI, ATO Policy database

Transport Activity in 2030

The total number of trips to increase by 55% from 2011 to 2030.

Two-wheelers per 1000 capita to increase from 184 to 221

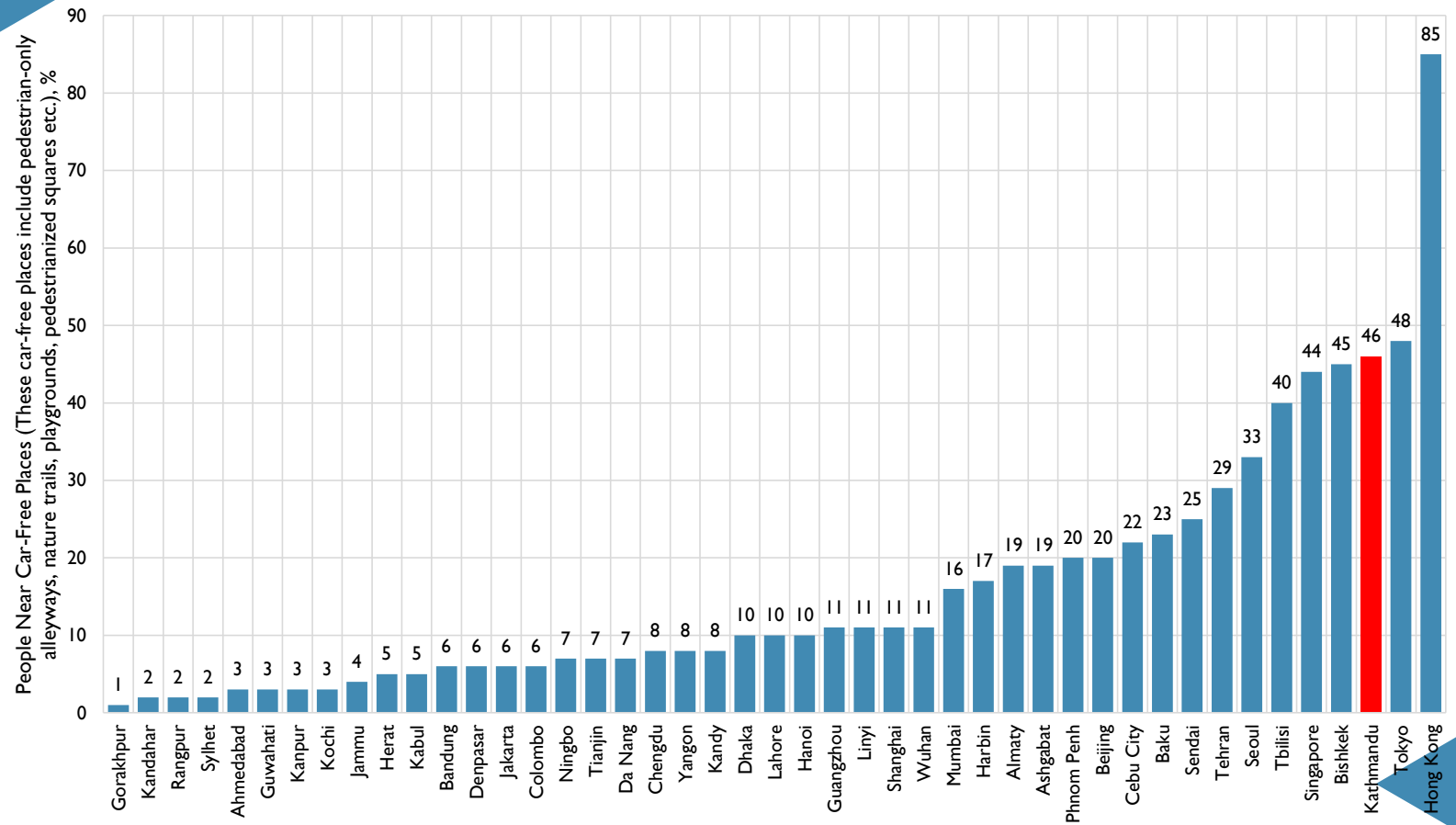
Cars per 1000 capita to increase from 25 to 61



Source: JICA, ATO Policy database

People Near Car-Free Places

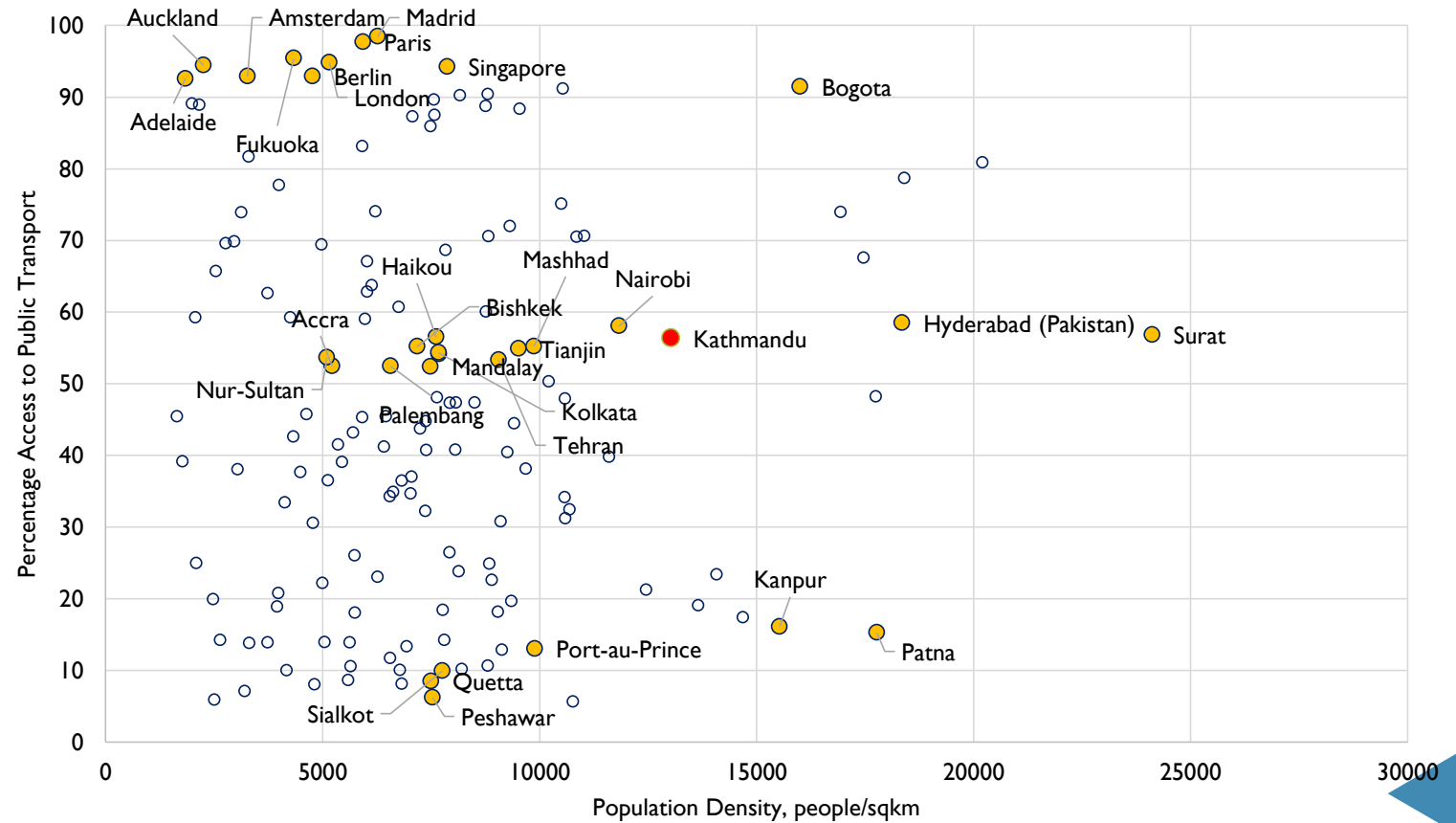
Due to supportive urban form and structure, 46% of urban residents in Kathmandu live near Car-Free places. This results in a high share of walking trips.



Access to Public Transit

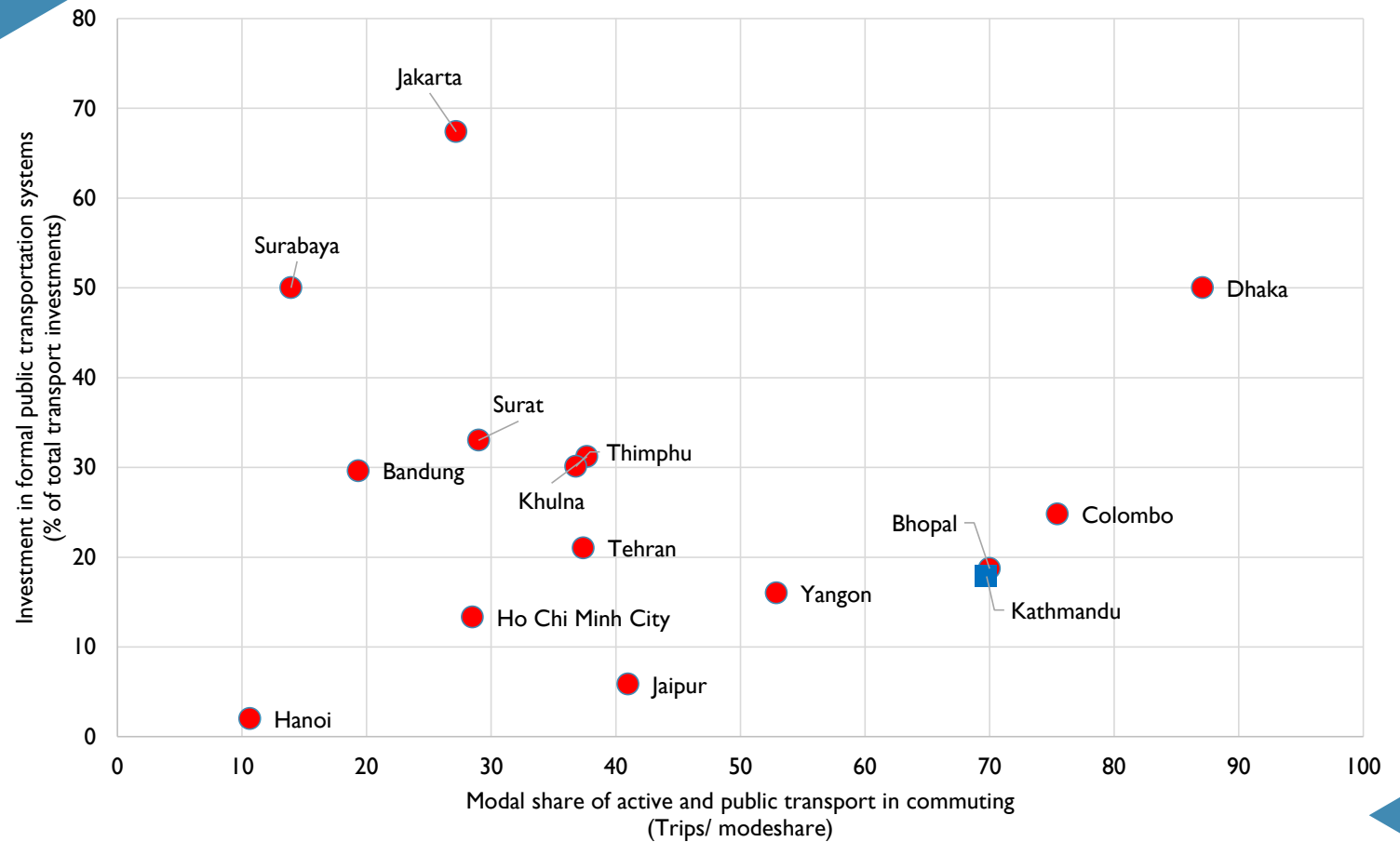
About 56% of Kathmandu has convenient access to public transportation i.e. access to bus stop.

Access is measured as the share of the population within 500 metres walking distance of low-capacity transport systems (buses and trams) and 1,000 metres distance to high-capacity systems (trains, subways and ferries).



Public Transit Investments

While 28% of Kathmandu residents rely on formal or informal public transit, only about 18% of the transport budget is allocated to transit. Thus, high access to bus stops does not translate in high transit mode share

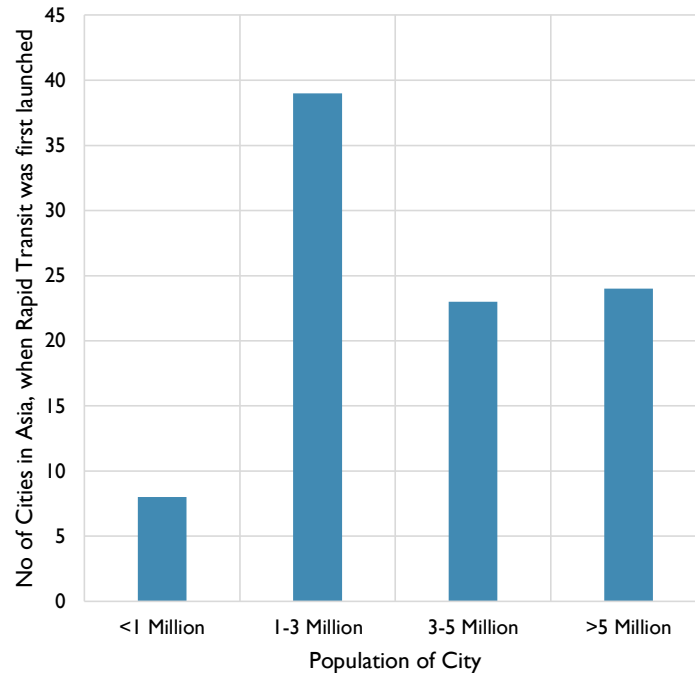


Source: UNESCAP SUTI

Access to rapid Public Transit

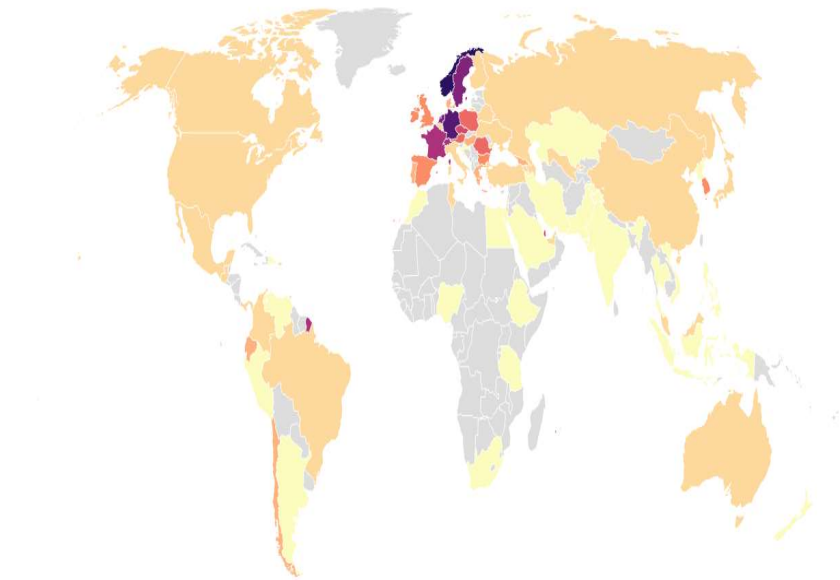
Close to 50% of urban rapid transit systems in Asia were launched before the city population reached 3 million. Kathmandu Valley with a population of close to 3 million (JICA), is one of the fastest-growing metropolitan areas in South Asia.

City Population, when the MRT was first launched in Asia



Kilometers of Rapid Transit/Million Population

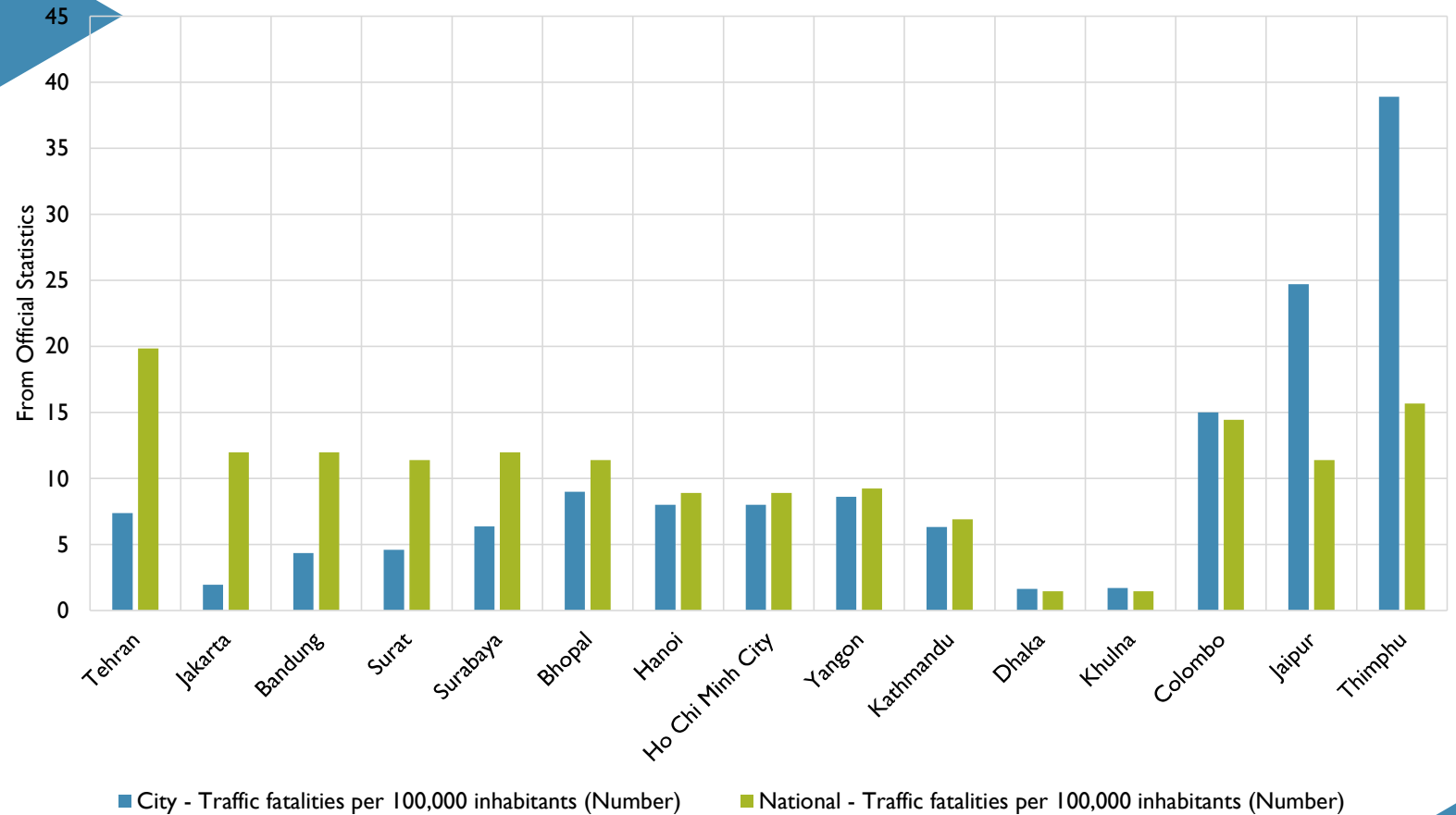
< 10 10-20 20-30 30-40 40-50 50-60 60-70 70-80 80-90 ≥ 90



Created with Datawrapper

Road Crash Fatality

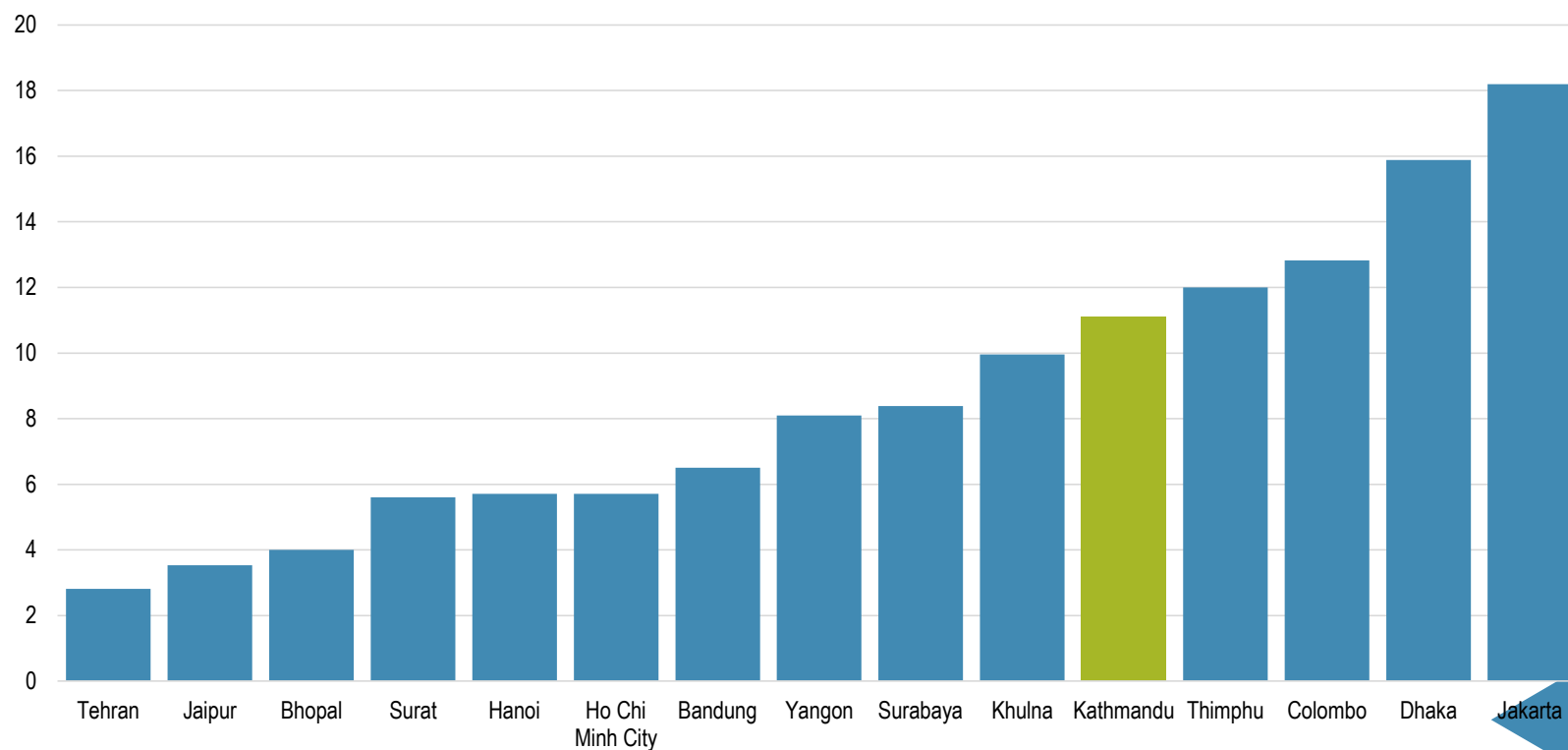
Globally and regionally, crash fatality rates have been consistently higher in rural areas than in urban areas. However, the crash fatality rates in Kathmandu mirror the fatality rates in Nepal.



Source: UNESCAP SUTI

Transport Affordability

Affordability – travel costs as part of income (%)



In Kathmandu, travel costs as a share of income is about 11%

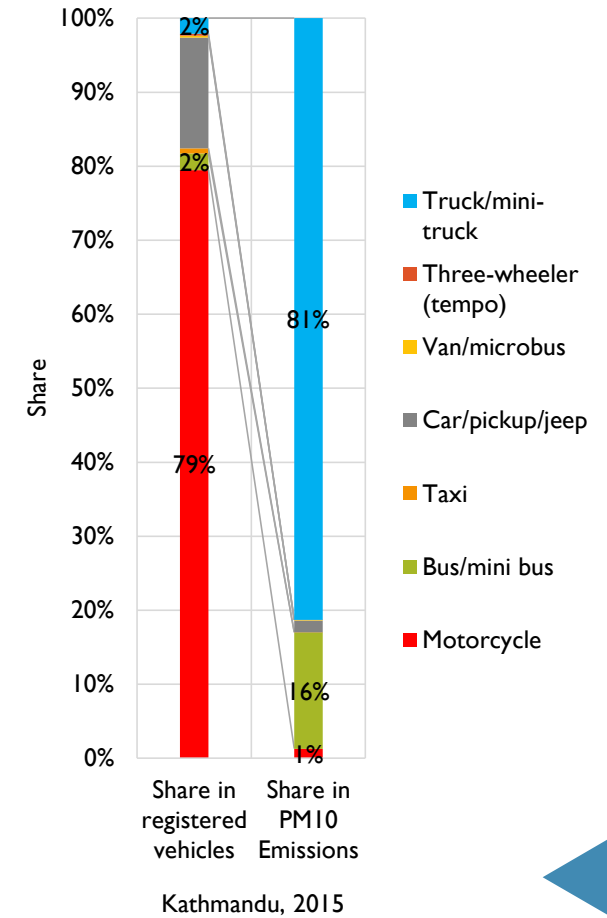
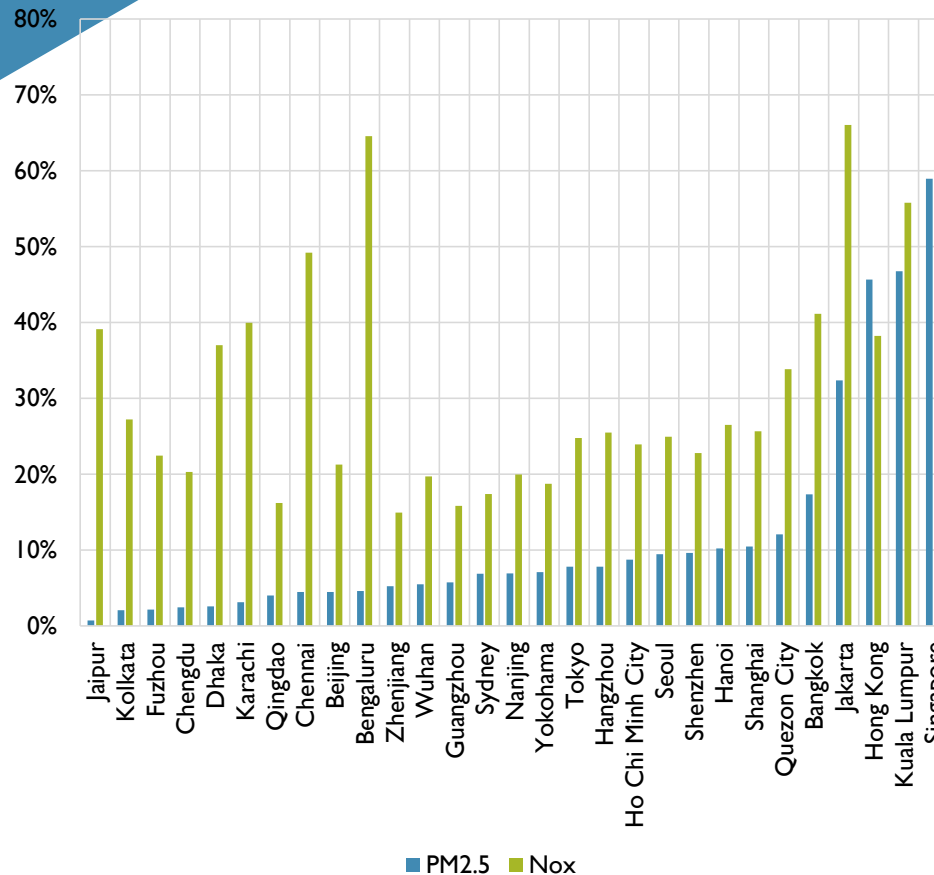
In Nepal, transport costs as a share of household expense is only 2%

Source: UNESCAP SUTI

Transport Air Pollution

Research indicates that the transport sector contributes a relatively higher share of PM emissions when compared to similar cities (~ 38% to 66%).

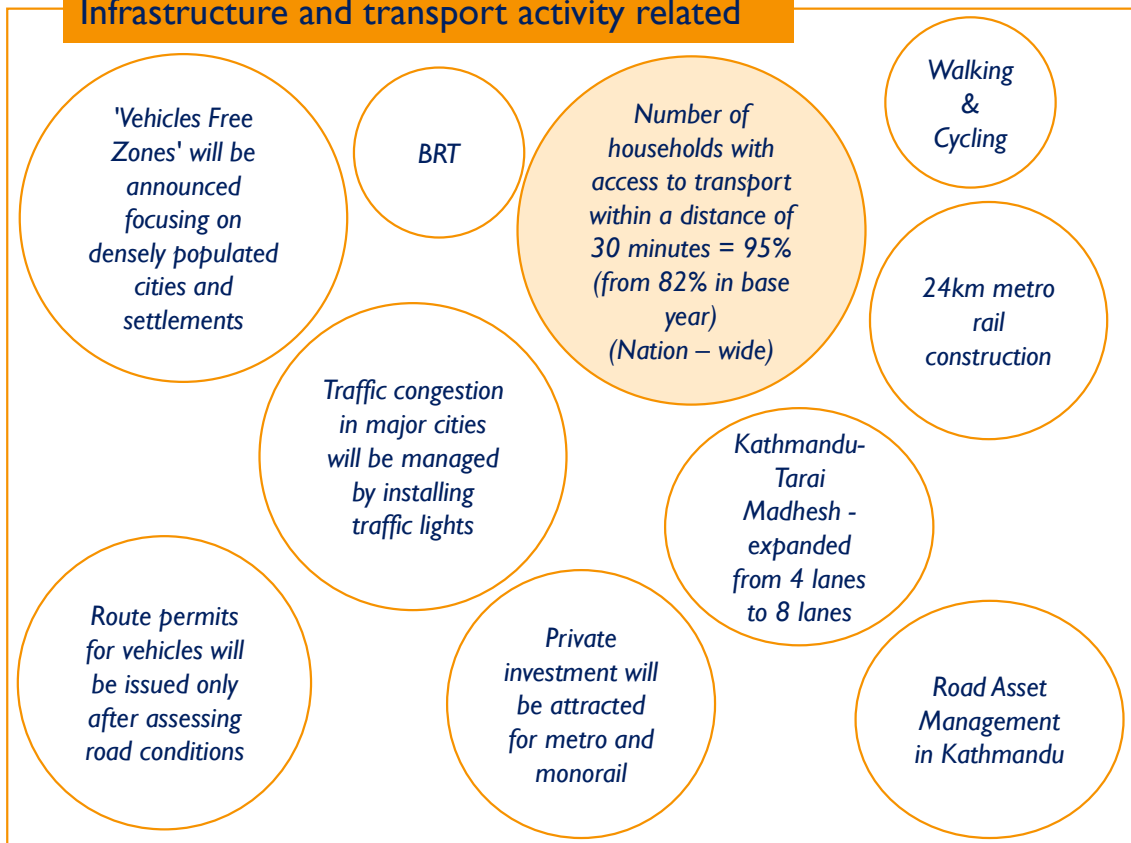
Most of the pollution comes from the diesel-powered vehicles in the valley



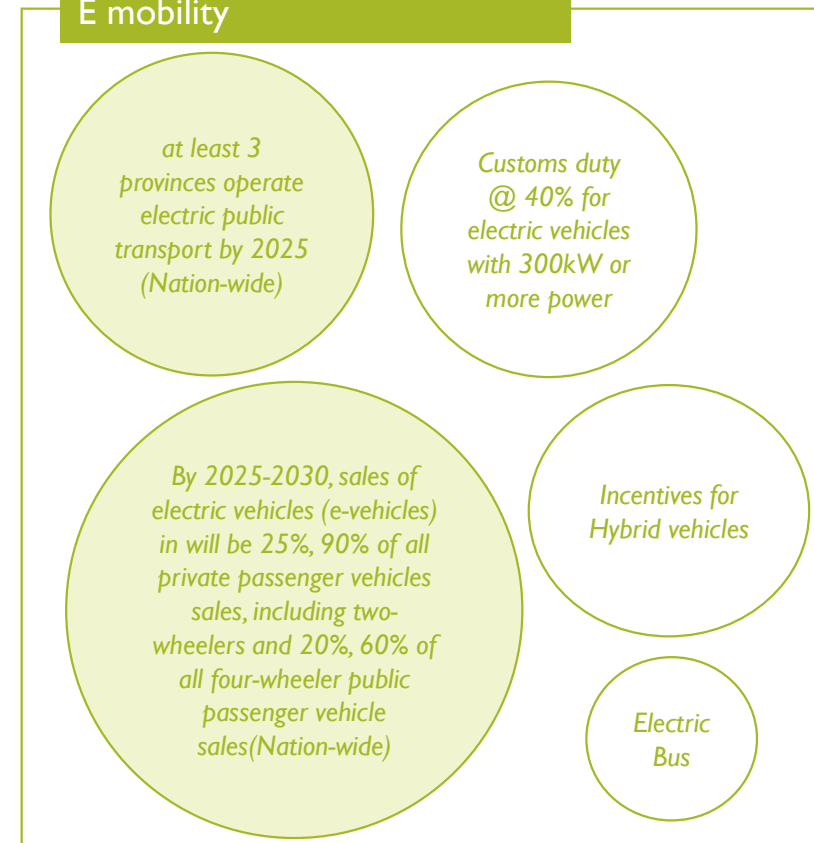
Source: <https://acp.copernicus.org/articles/19/8209/2019/>,
<https://www.sciencedirect.com/science/article/pii/S1352231022002990?via%3Dihub#appsec1>

Current policy landscape: targets and policy measures

Infrastructure and transport activity related



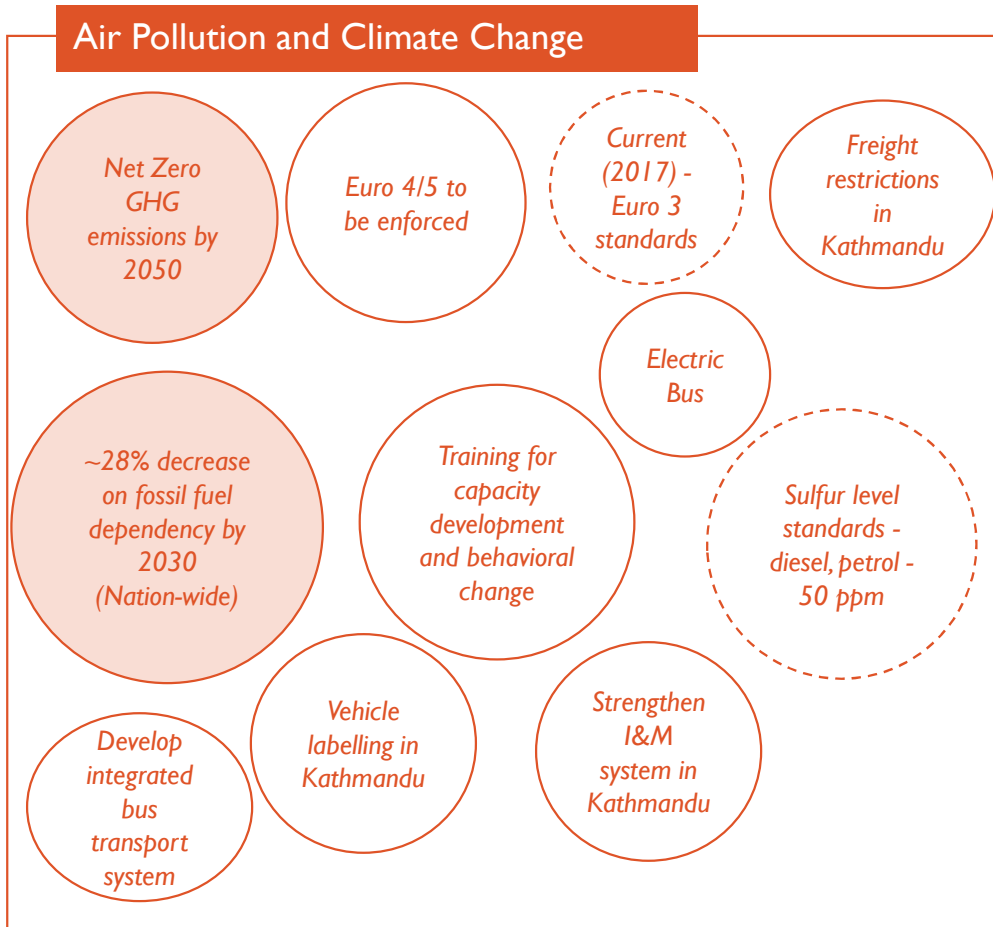
E mobility



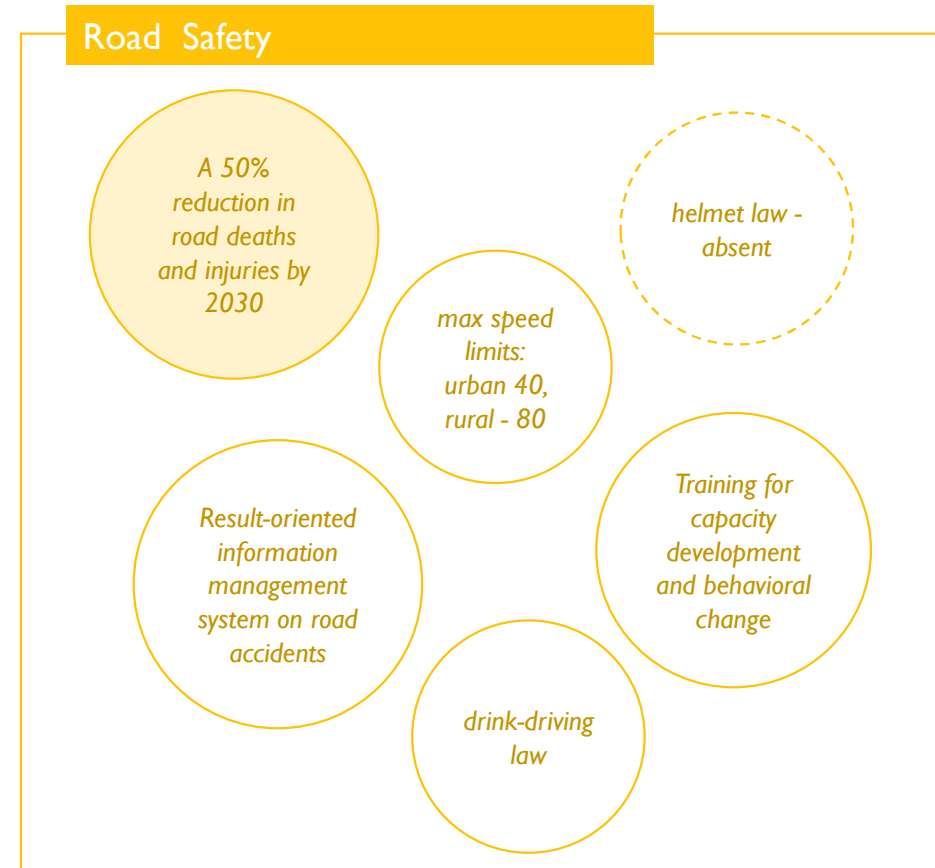
Source: Asian Transport Outlook – Policy database, Traffic improvement survey, Air quality management action plan

Current policy landscape: targets and policy measures

Air Pollution and Climate Change



Road Safety



Source: Asian Transport Outlook – Policy database, Traffic improvement survey, Air quality management action plan