

THIRD INTERNATIONAL TRANSPORTATION CONFERENCE

Towards Safe, Sustainable, Efficient, and Resilient Mobility

April 11-13, 2025

Hotel Yak & Yeti, Kathmandu, NEPAL

Benchmarking – Urban Transport and Beyond : Nepal and Asia

Alvin Mejia and Sudhir Gota

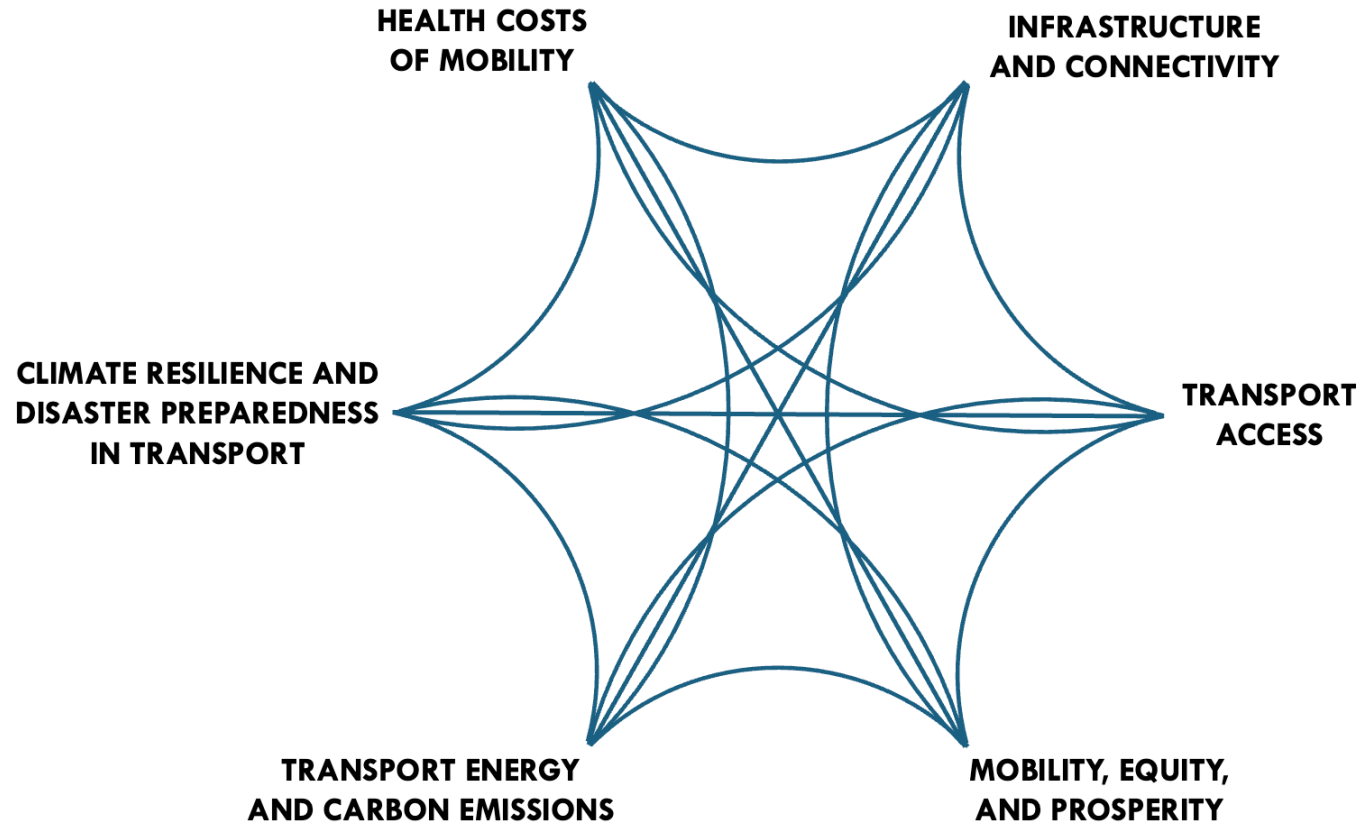
Co-Team Lead, Asian Transport Observatory



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Outline of Presentation



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Asiantransportobservatory.org



51 Economies (ADB Members, Russia and Iran)

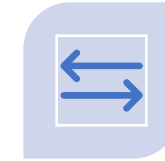
460 Urban Centers (412 Asia-Pacific, 48 International)

NEPAL 494 indicators from 74 sources
24 national policy documents

KATHMANDU 113 indicators from 29 sources
& ITAHARI 4 urban policy documents



Multiple Sources
for single
indicator



Multiple
Dimensions &
Modes



Data and
Policy



Historical &
Outlook



Tracking
Instrument for
SDG/PA/Aichi
Declaration



Incremental
Approach



Partnerships



On-demand
Research

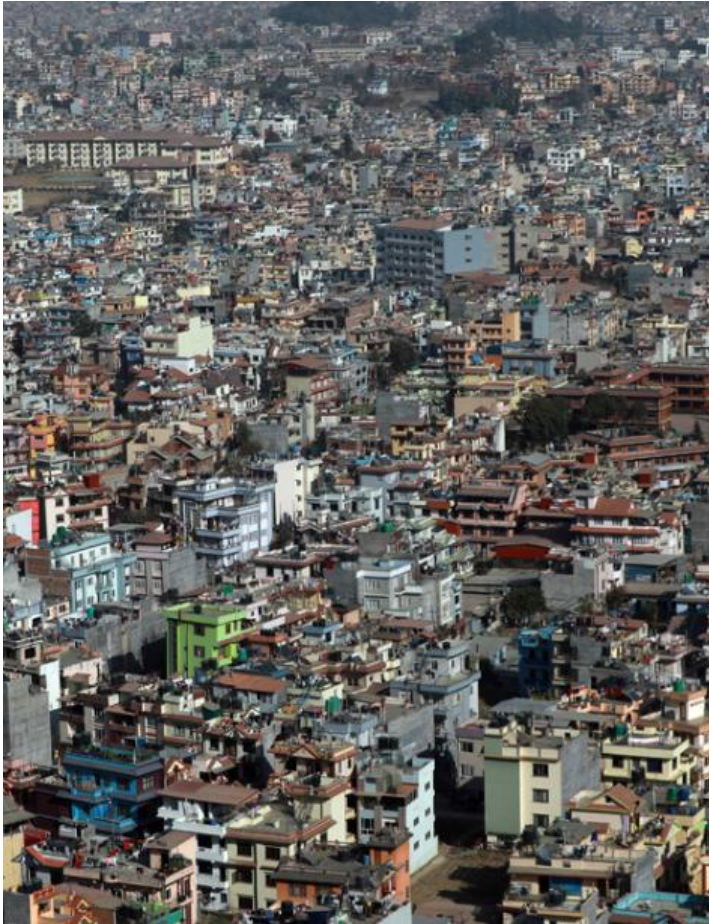
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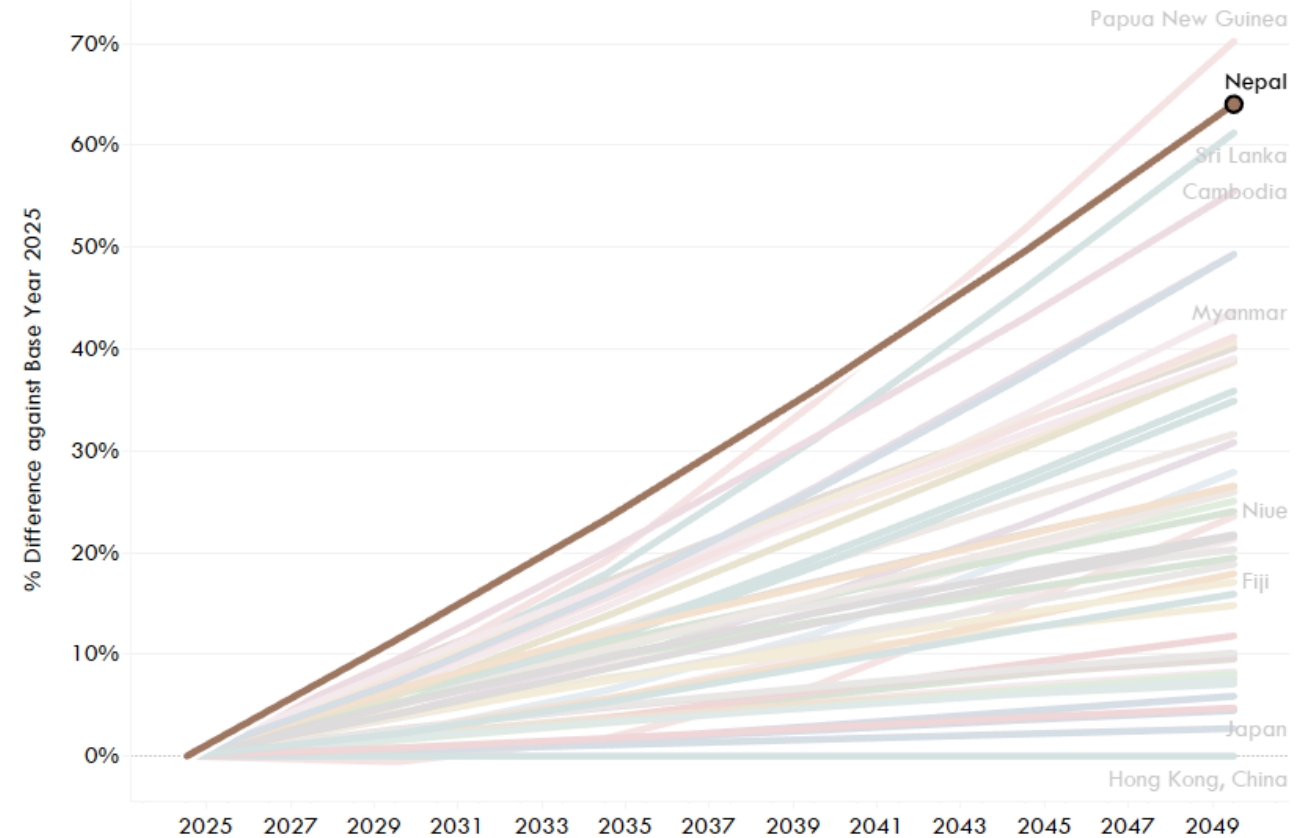
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Urbanization across Asia



Urban Population



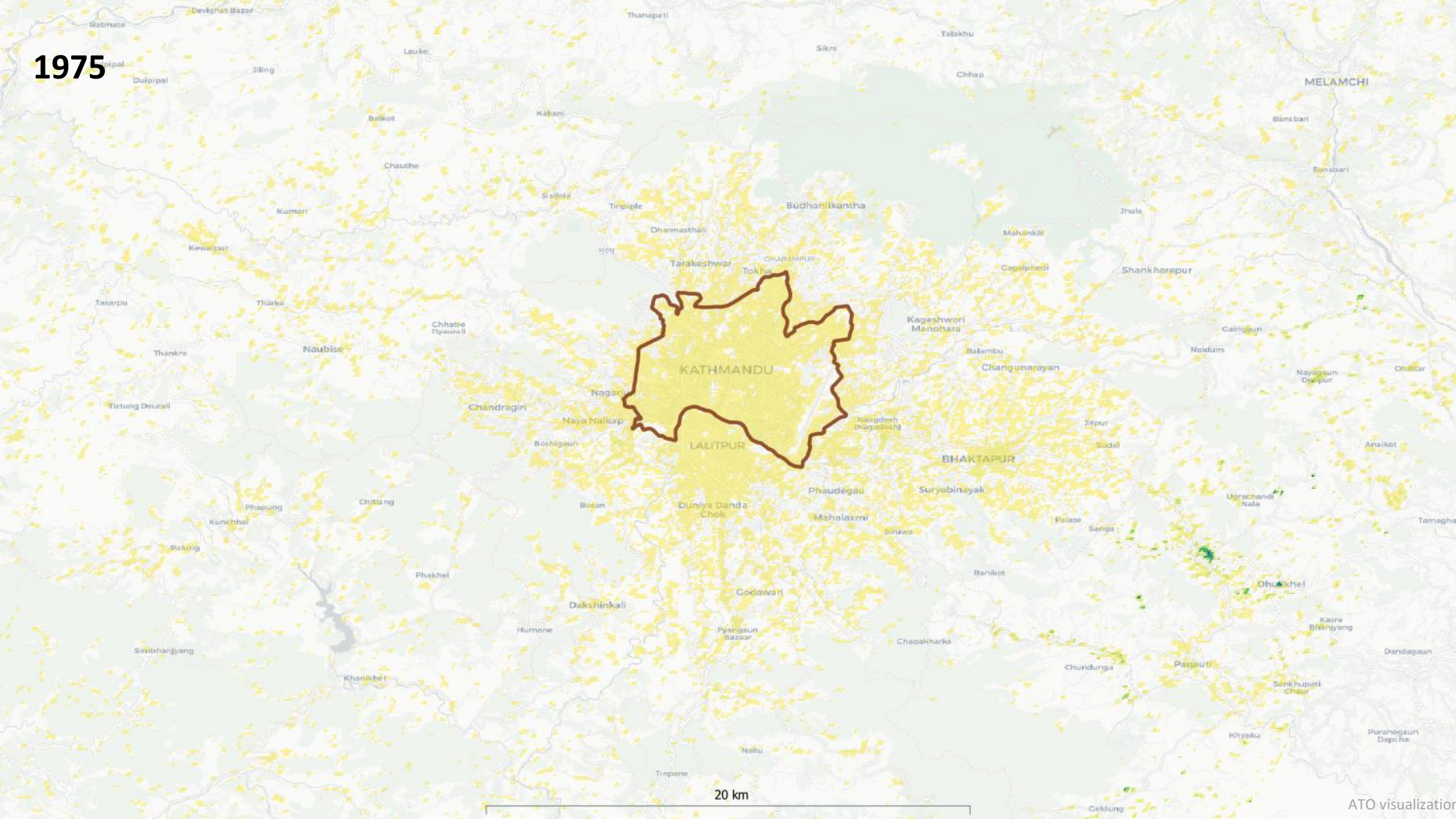
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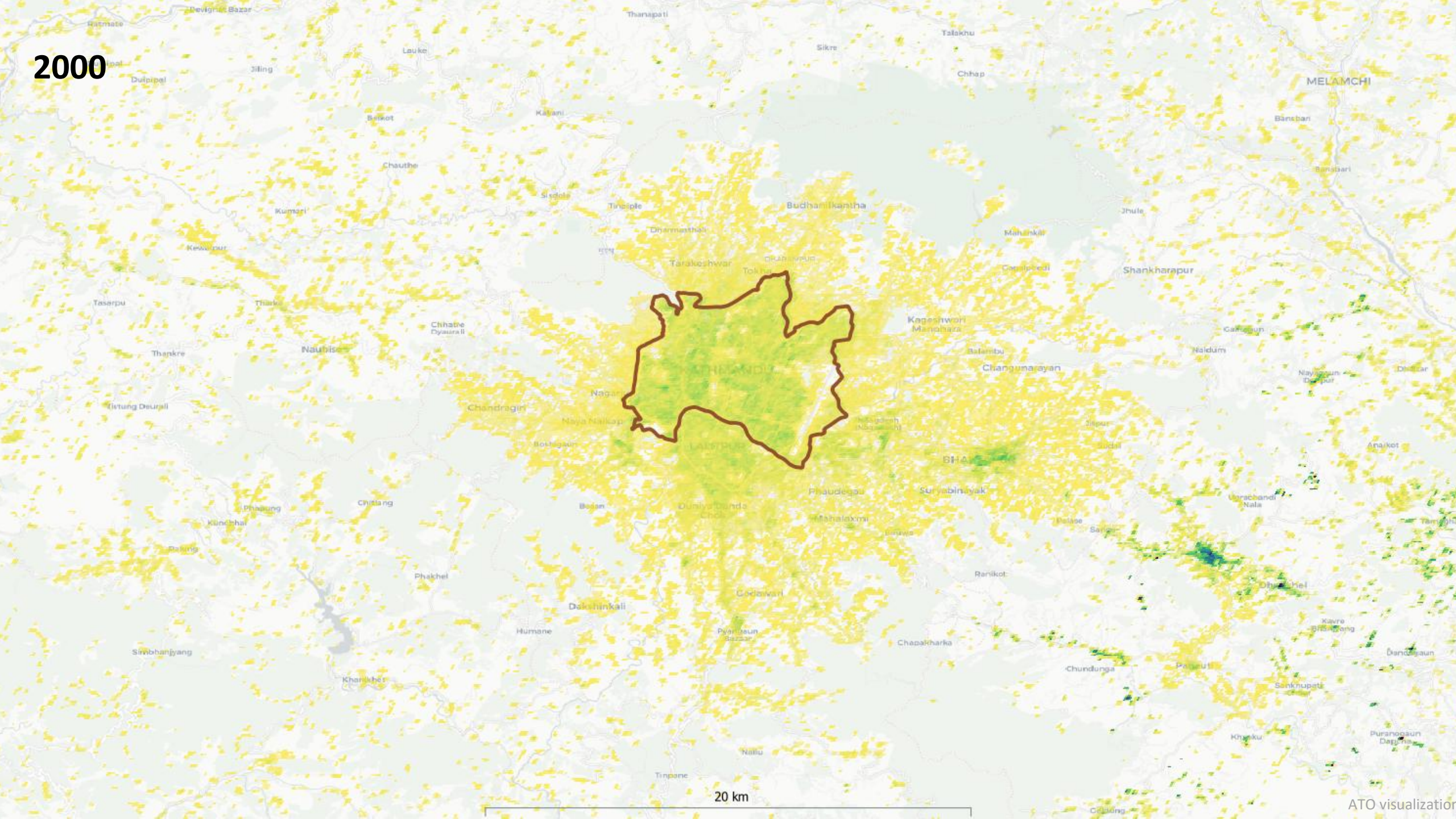
ATO visualization using data from <https://population.un.org/wpp/>



1975

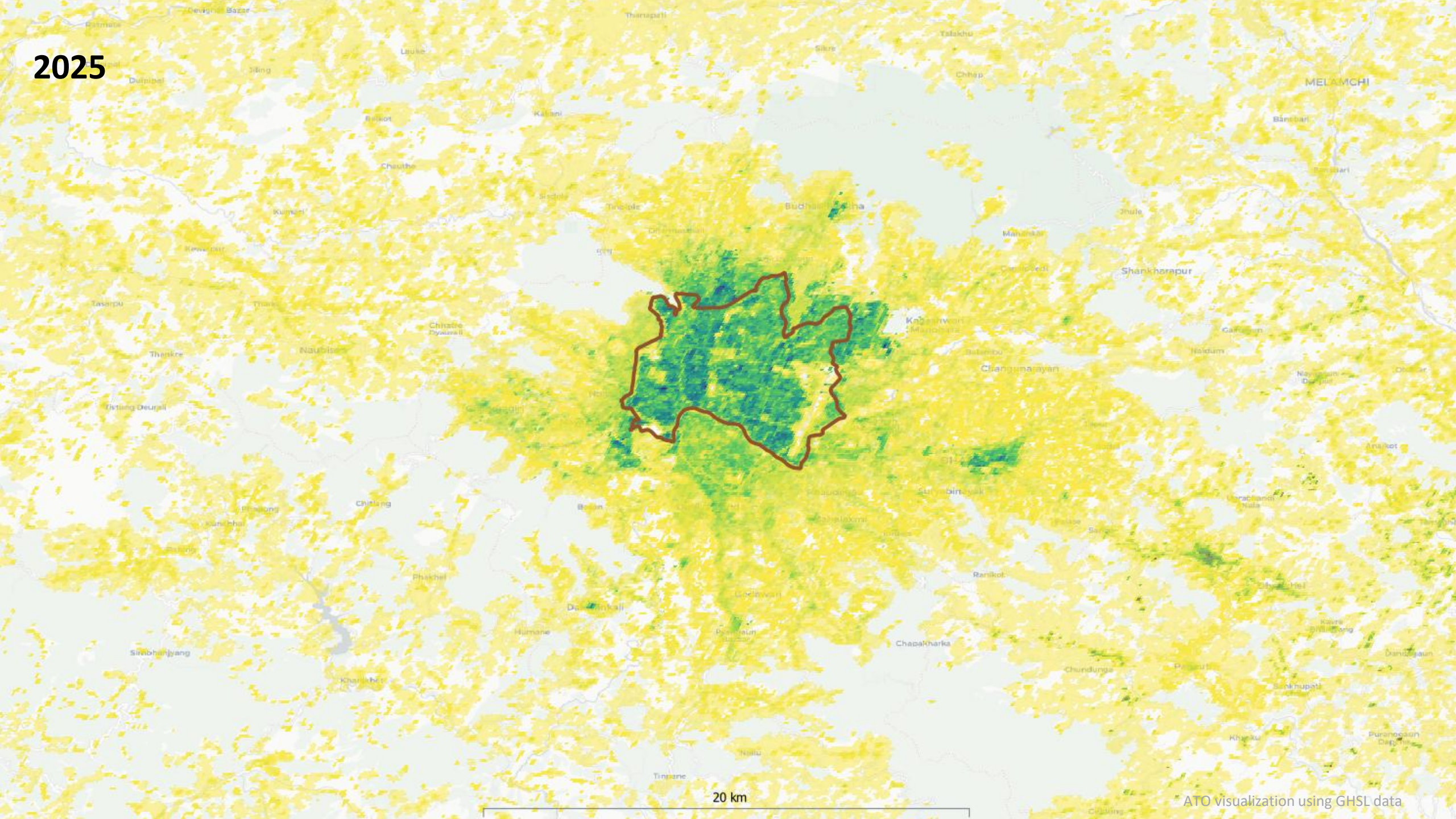


2000



ATO visualization

2025



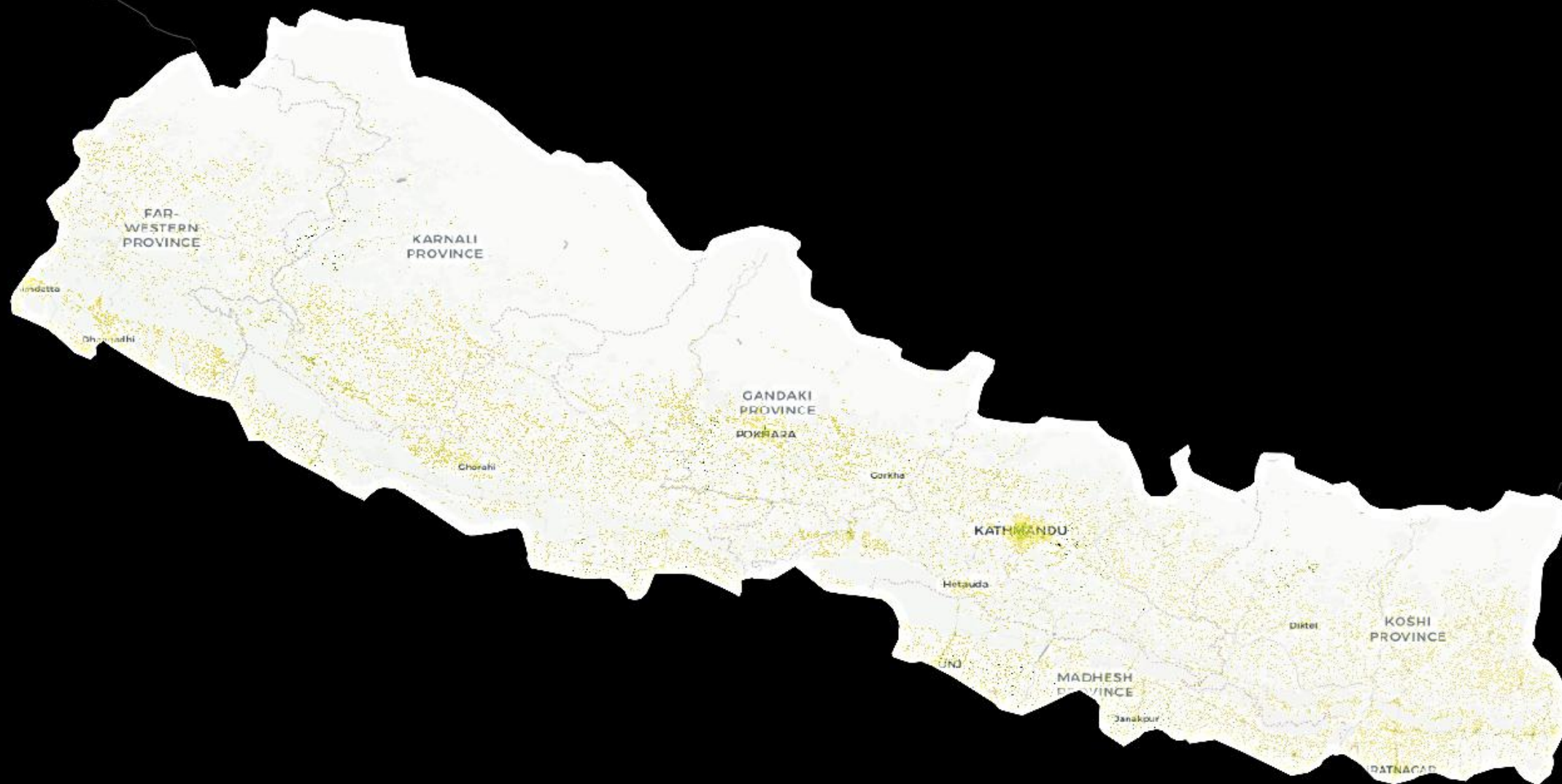
1975



300 km

ATO visualization using GHSL data

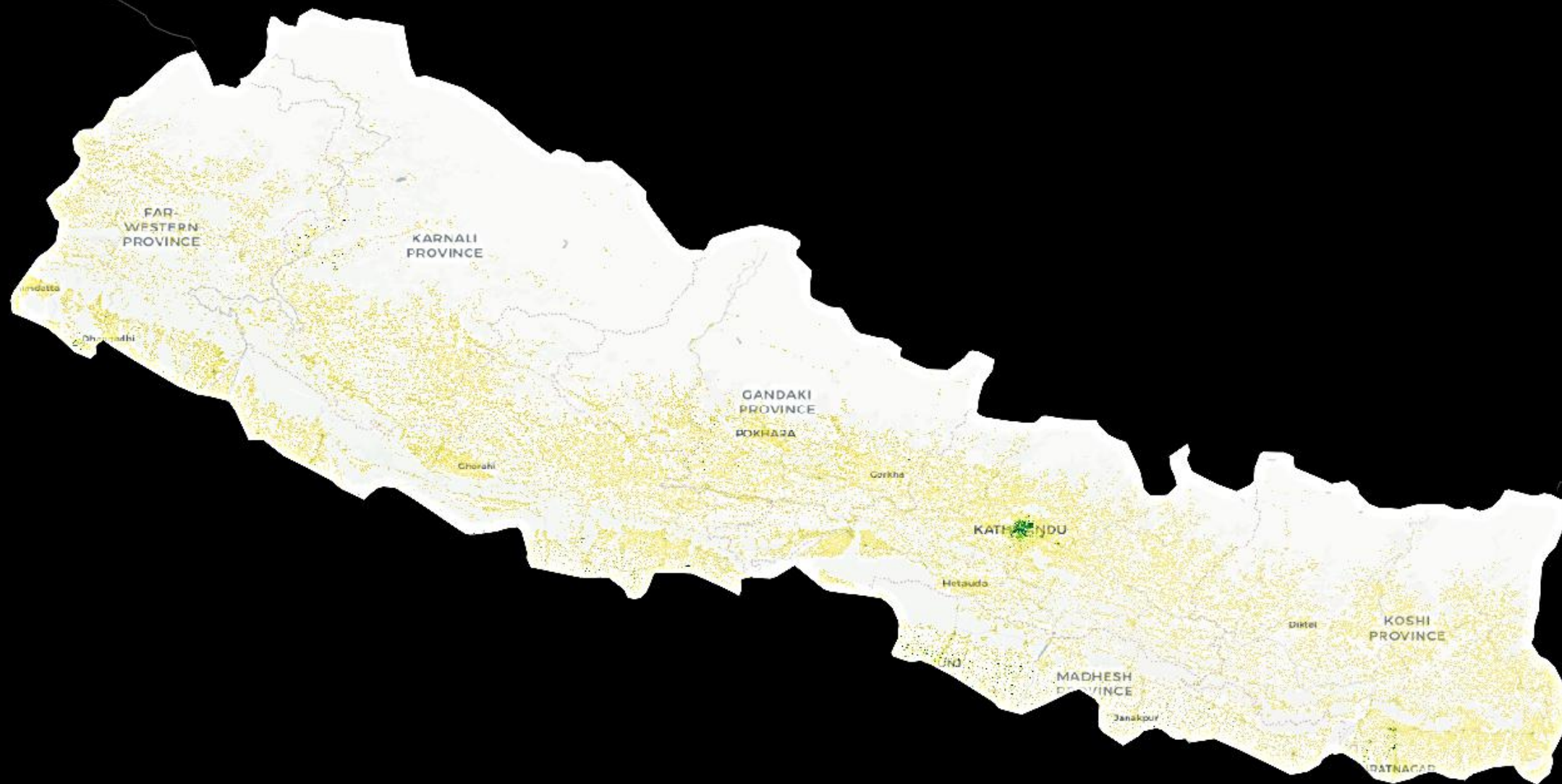
2000



300 km

ATO visualization using GHSL data

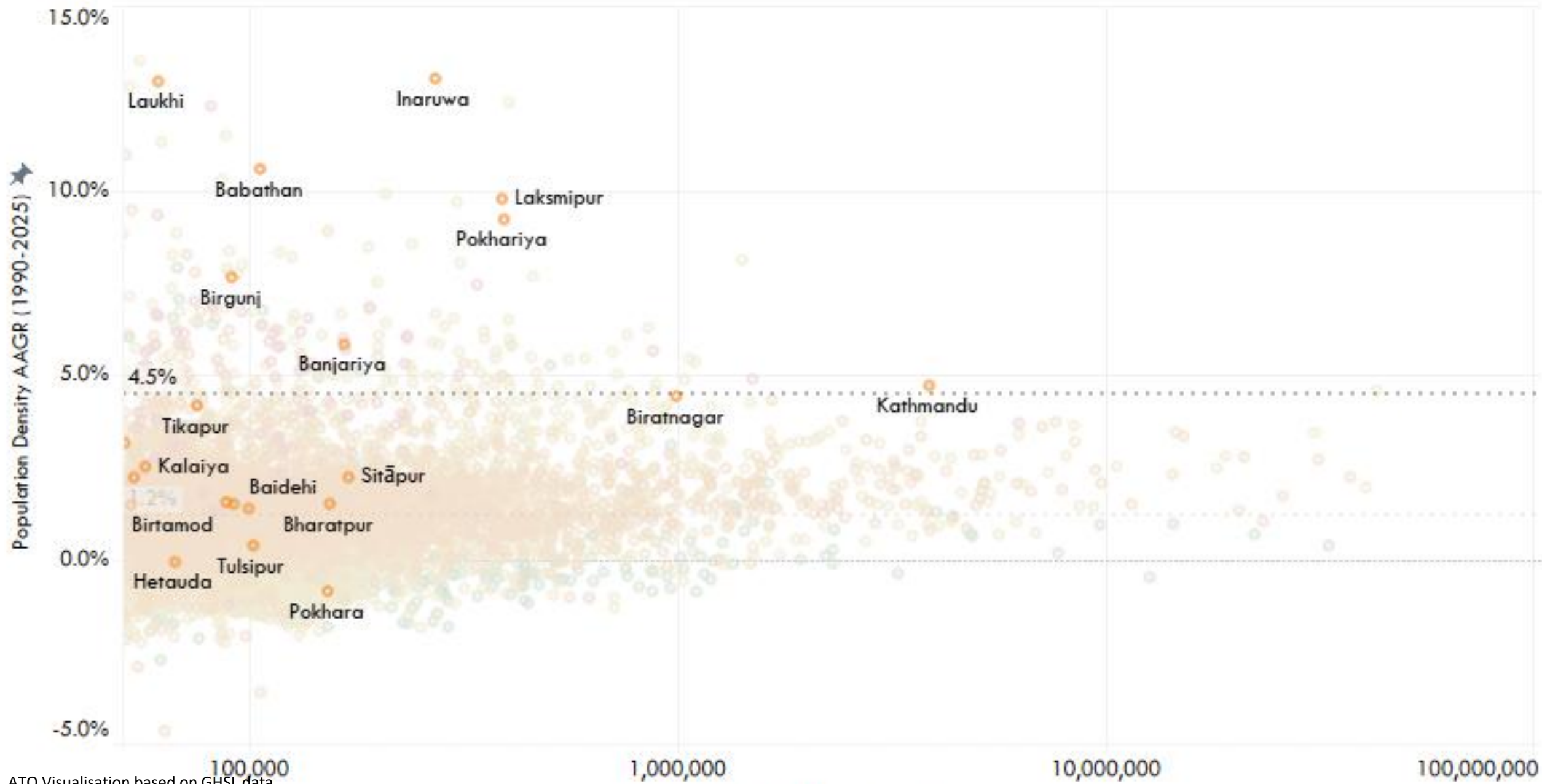
2025

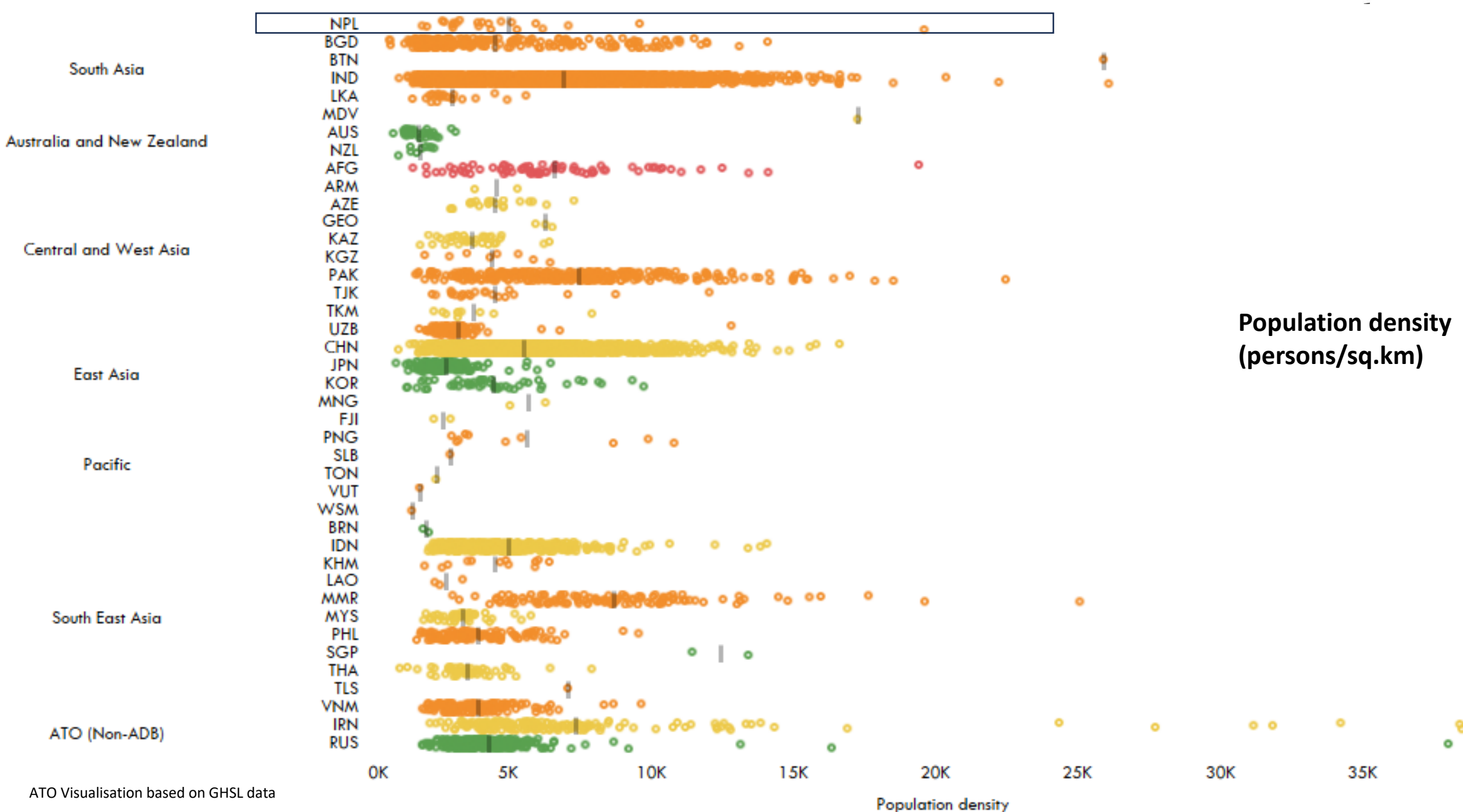


300 km

ATO visualization using GHSL data

Asia-Pacific Population 2025 and AAGR Population Density 1990-2025





Bharatpur 2016



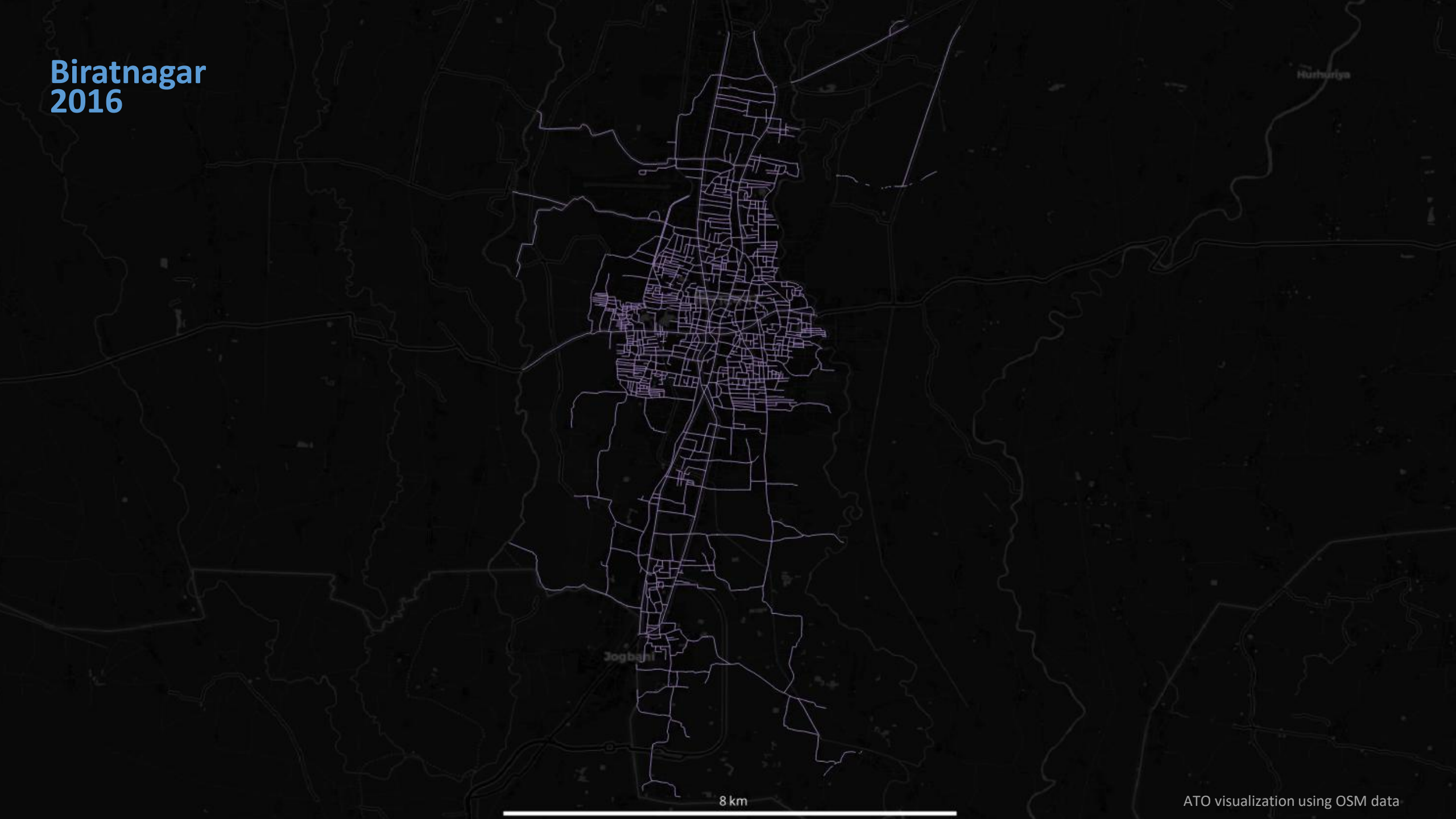
20 km

ATO visualization using OSM data

Bharatpur
2024



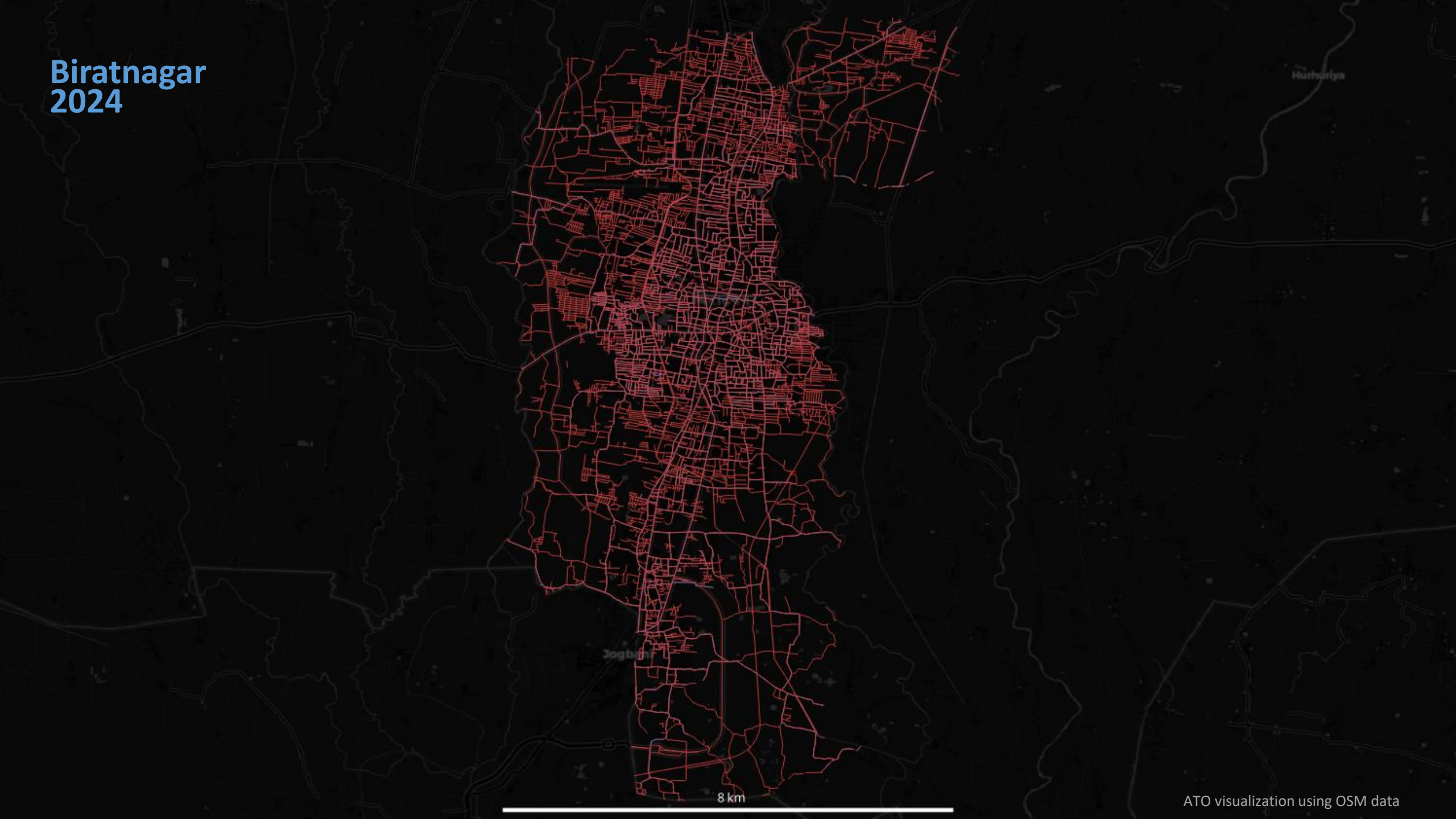
Biratnagar 2016



8 km

ATO visualization using OSM data

Biratnagar
2024



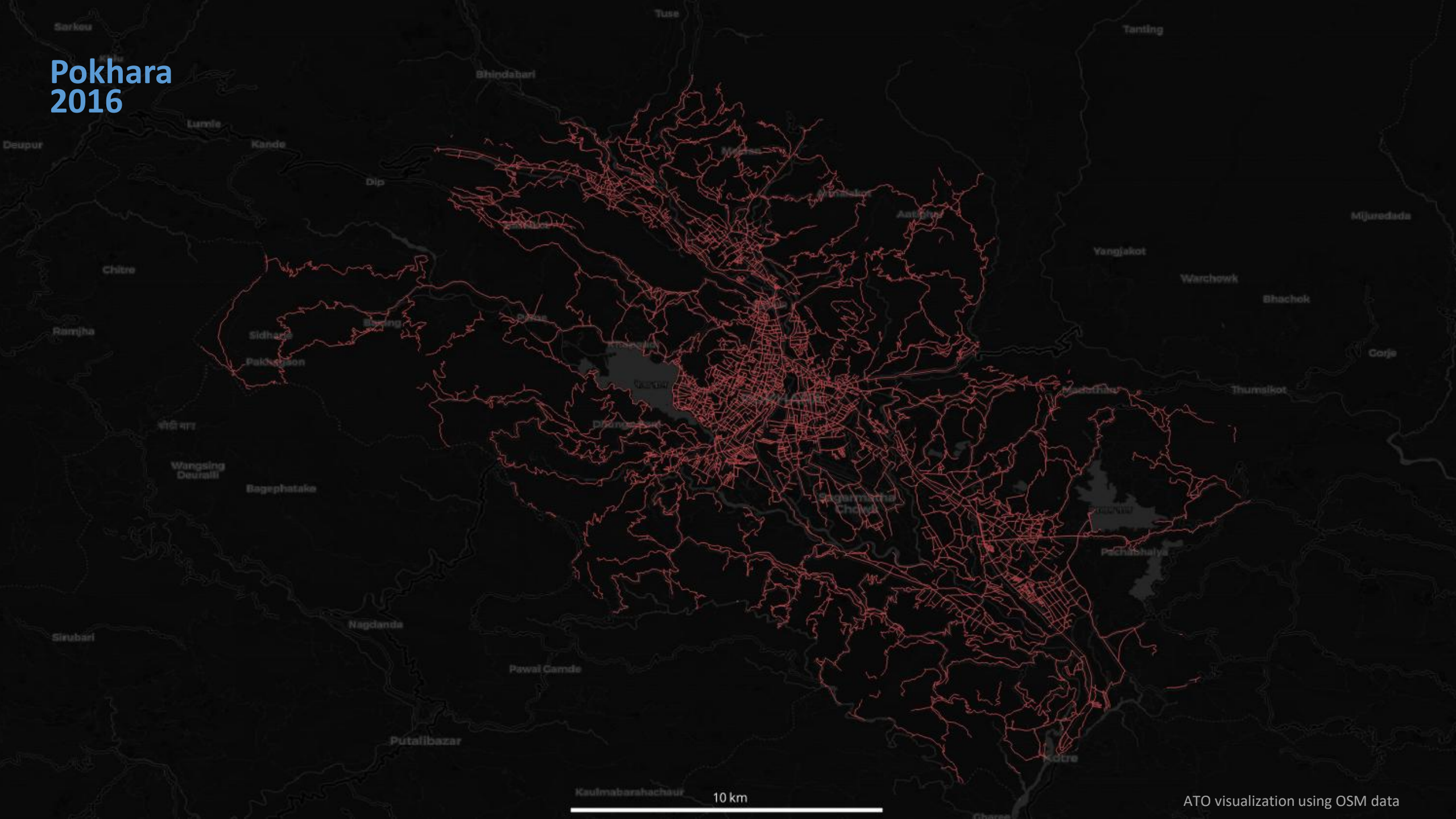
Jogbani

Hurnahiya

8 km

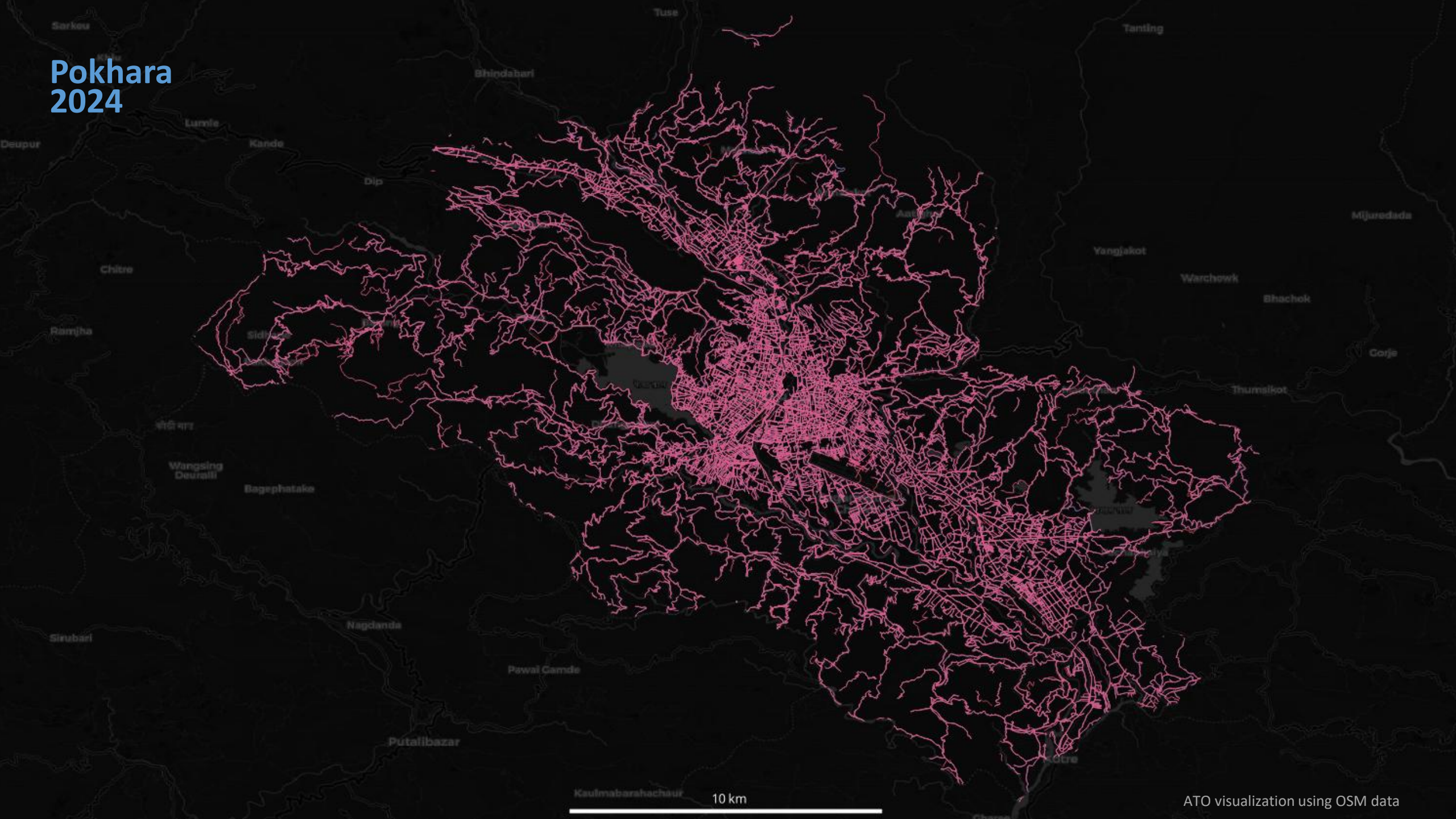
ATO visualization using OSM data

Pokhara
2016



Kaulmabarshachaur 10 km

Pokhara 2024



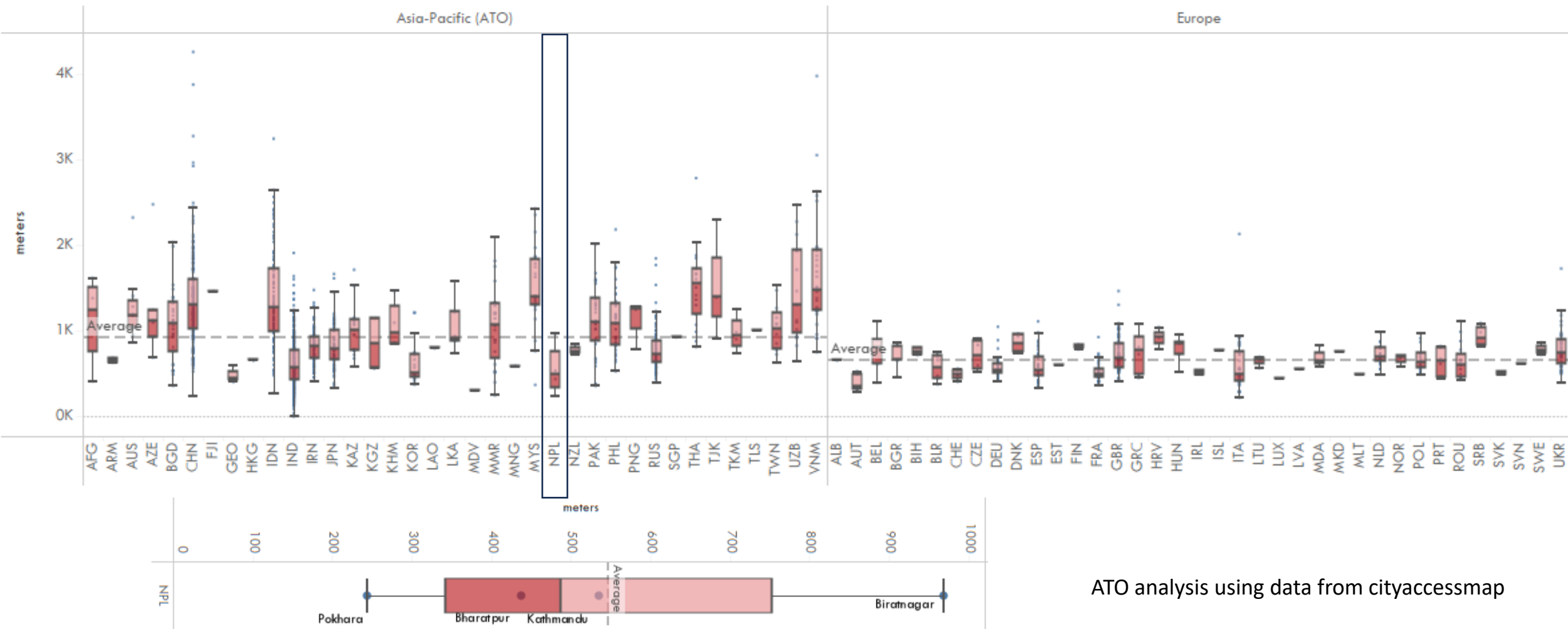
Kathmandu
2016



Kathmandu
2024



Average Distance to Health Facilities in Urban Centers



ATO analysis using data from cityaccessmap

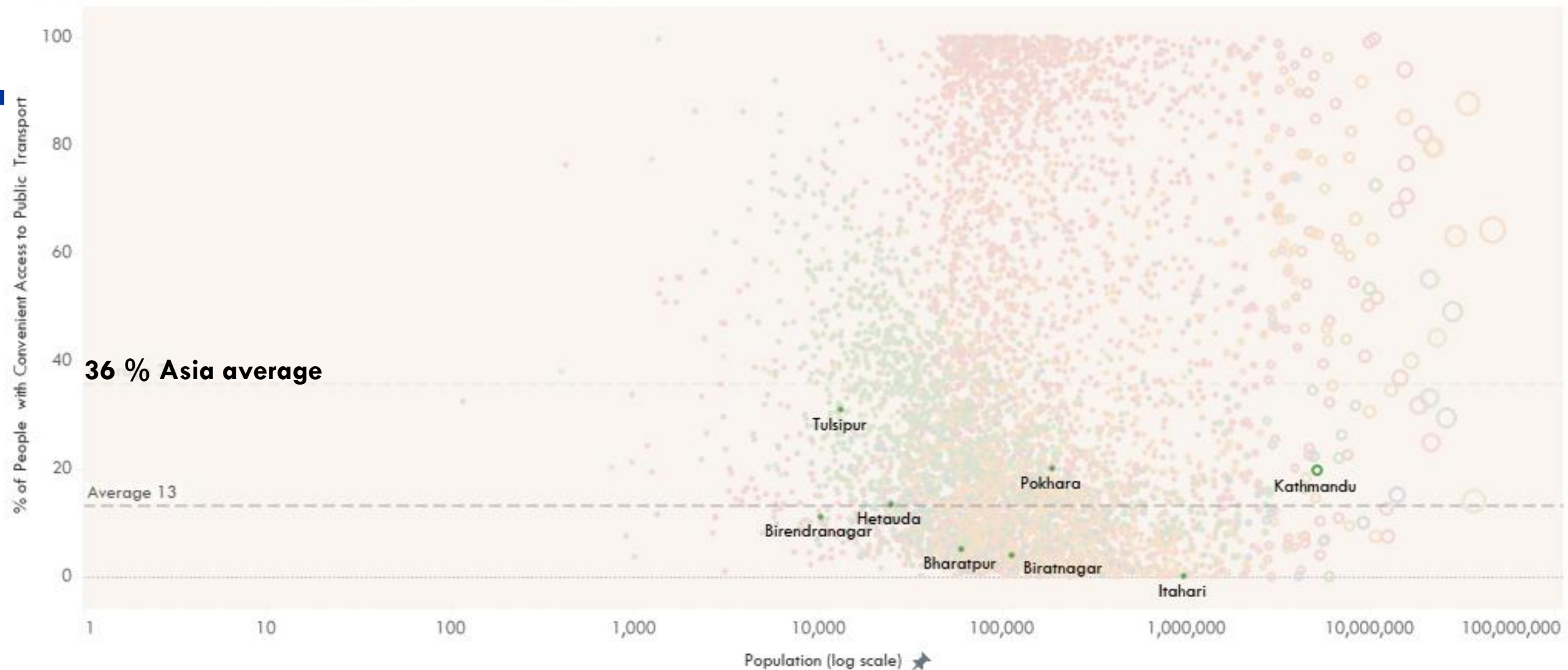
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Urban Access to Public Transport Visualization



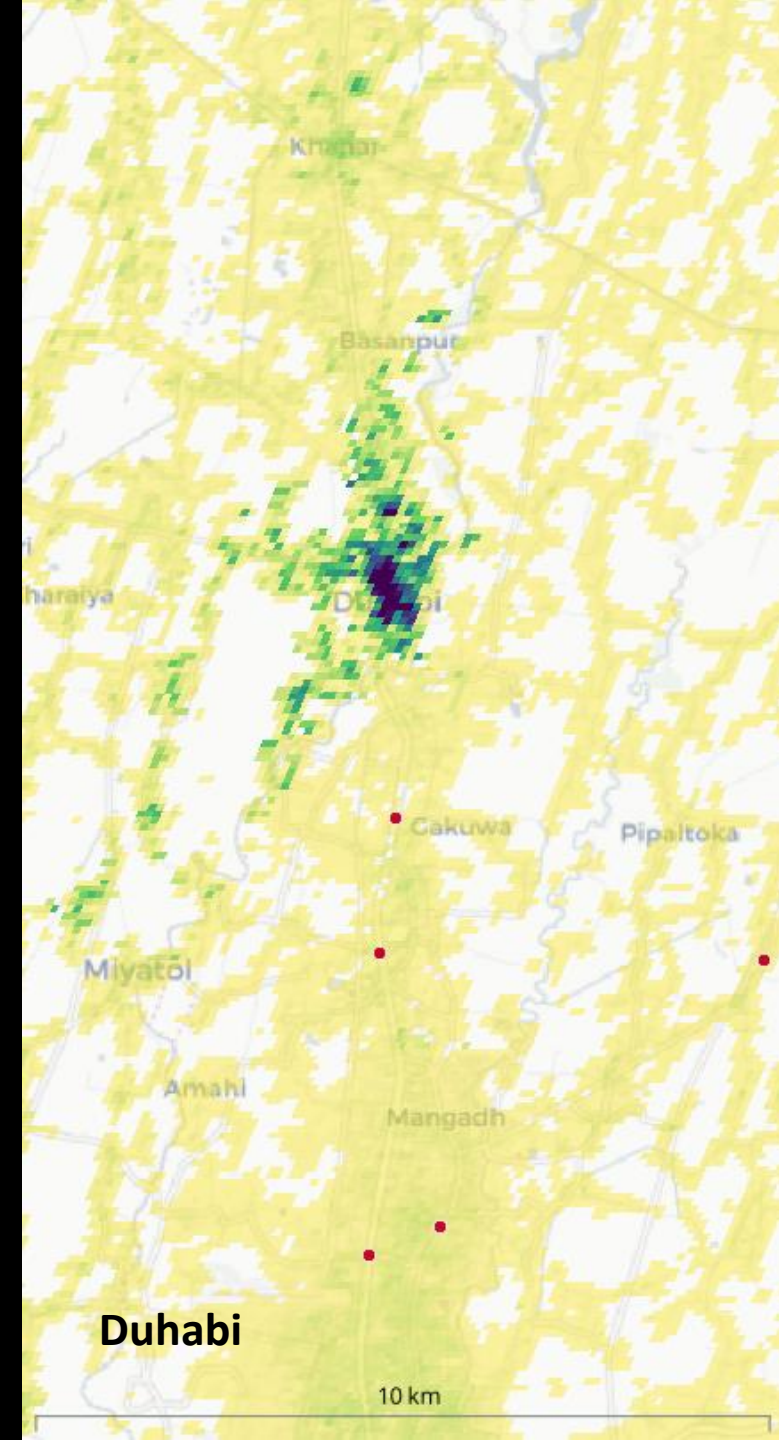
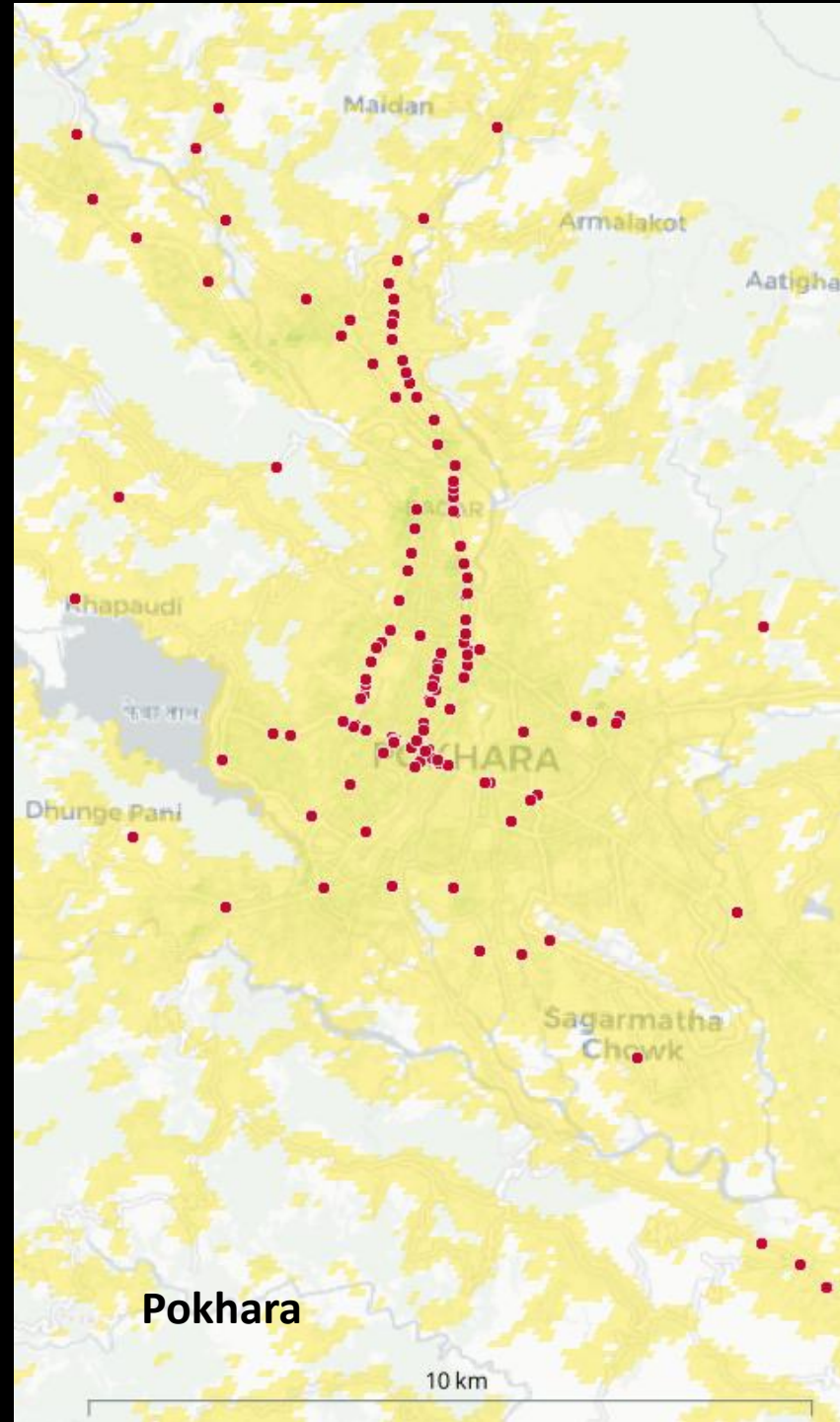
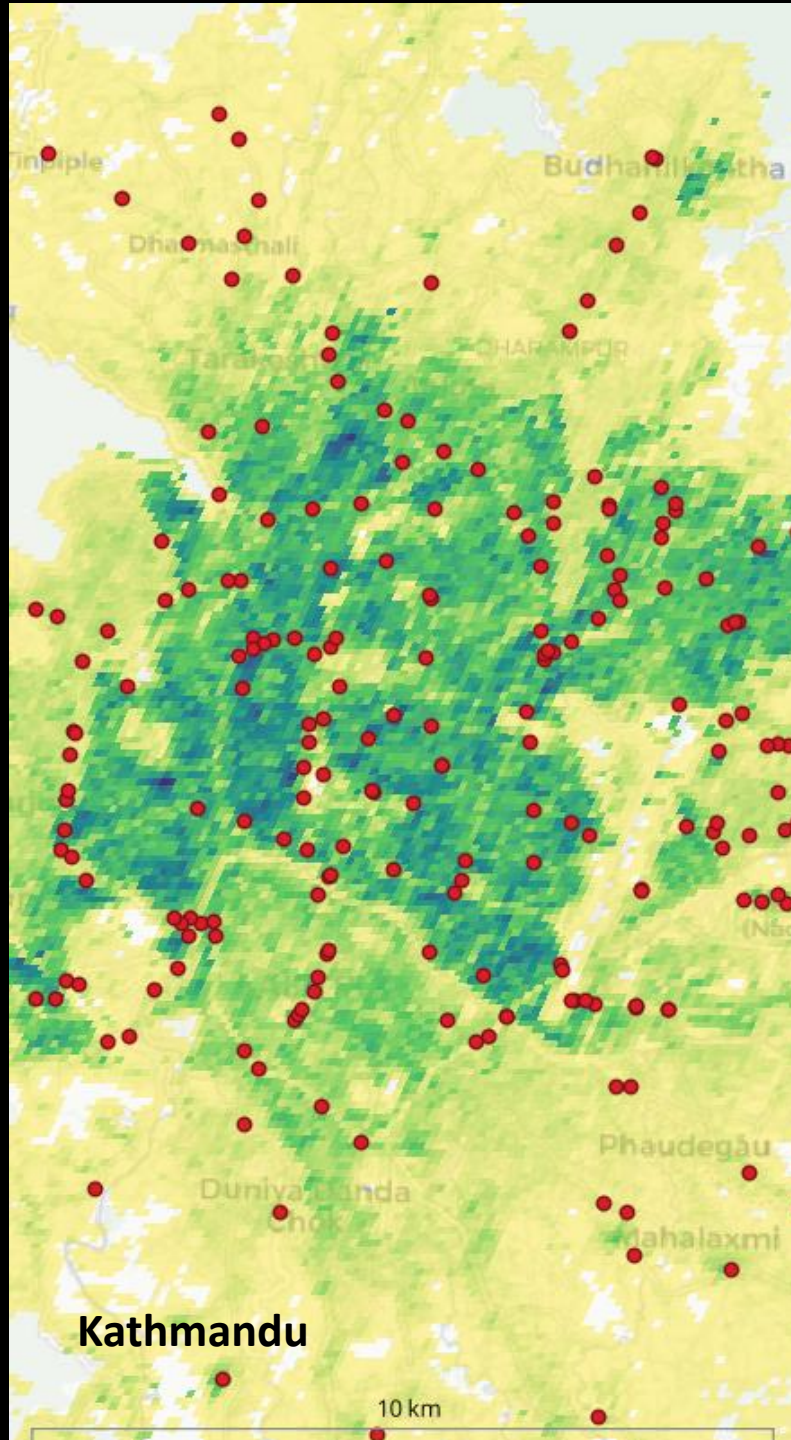
Source: ATO visualization based on data from CIESIN (2023)

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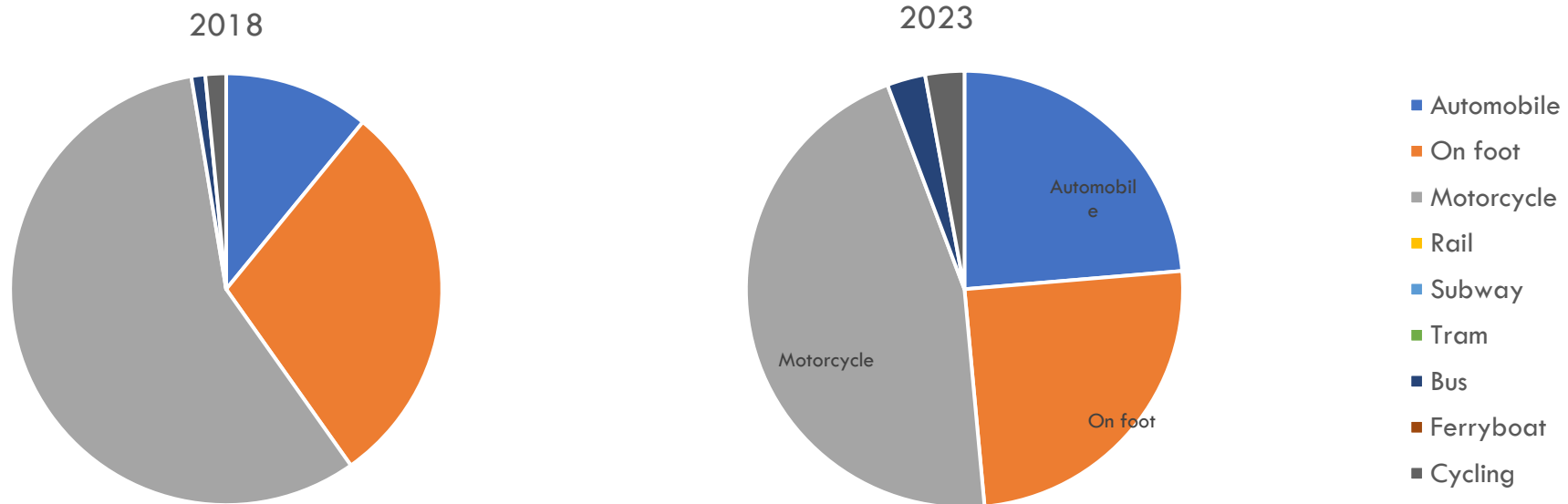
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Modeshare - Over Time

Kathmandu



Source: Data from Google data explorer

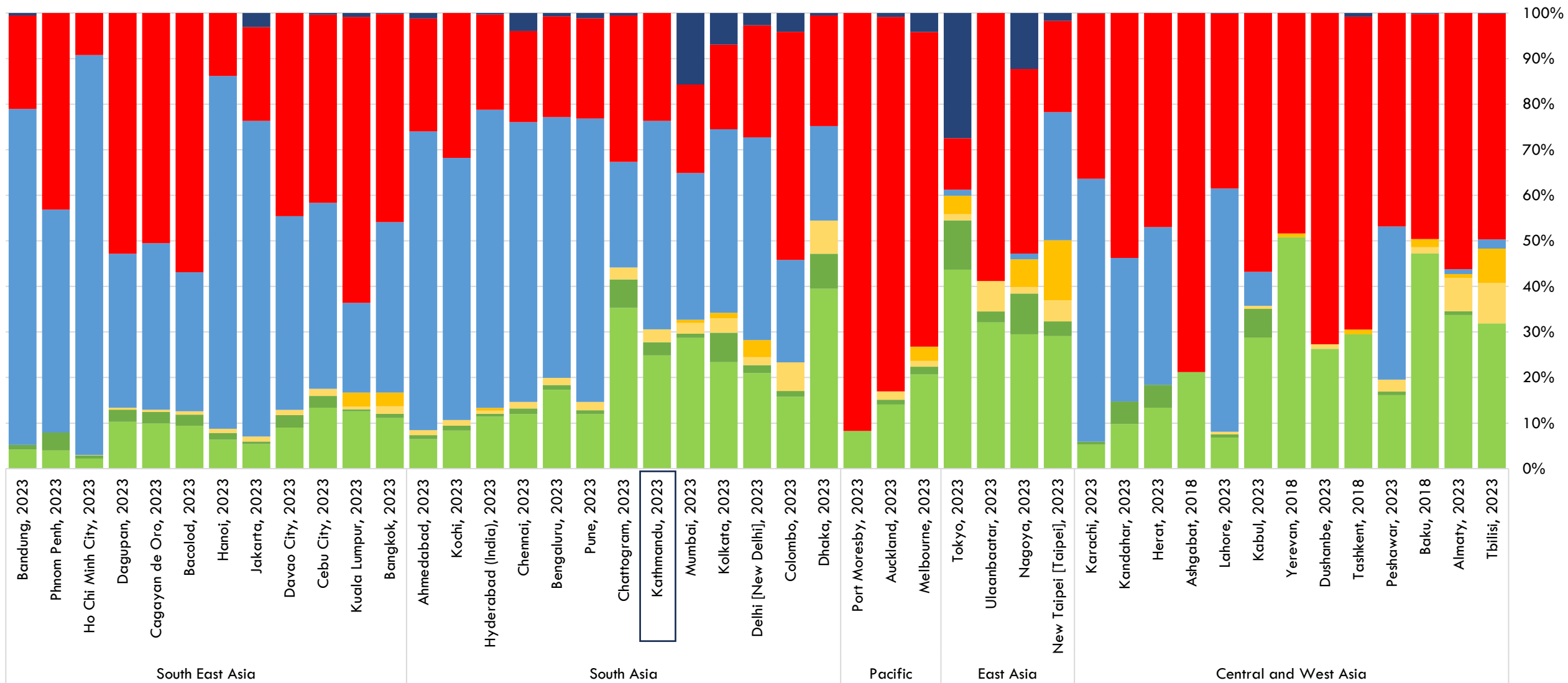
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Source: Google data explorer

Modal split (Passenger) - by trips

Walk Cycle Bus Urban rail 2W Car Other modes



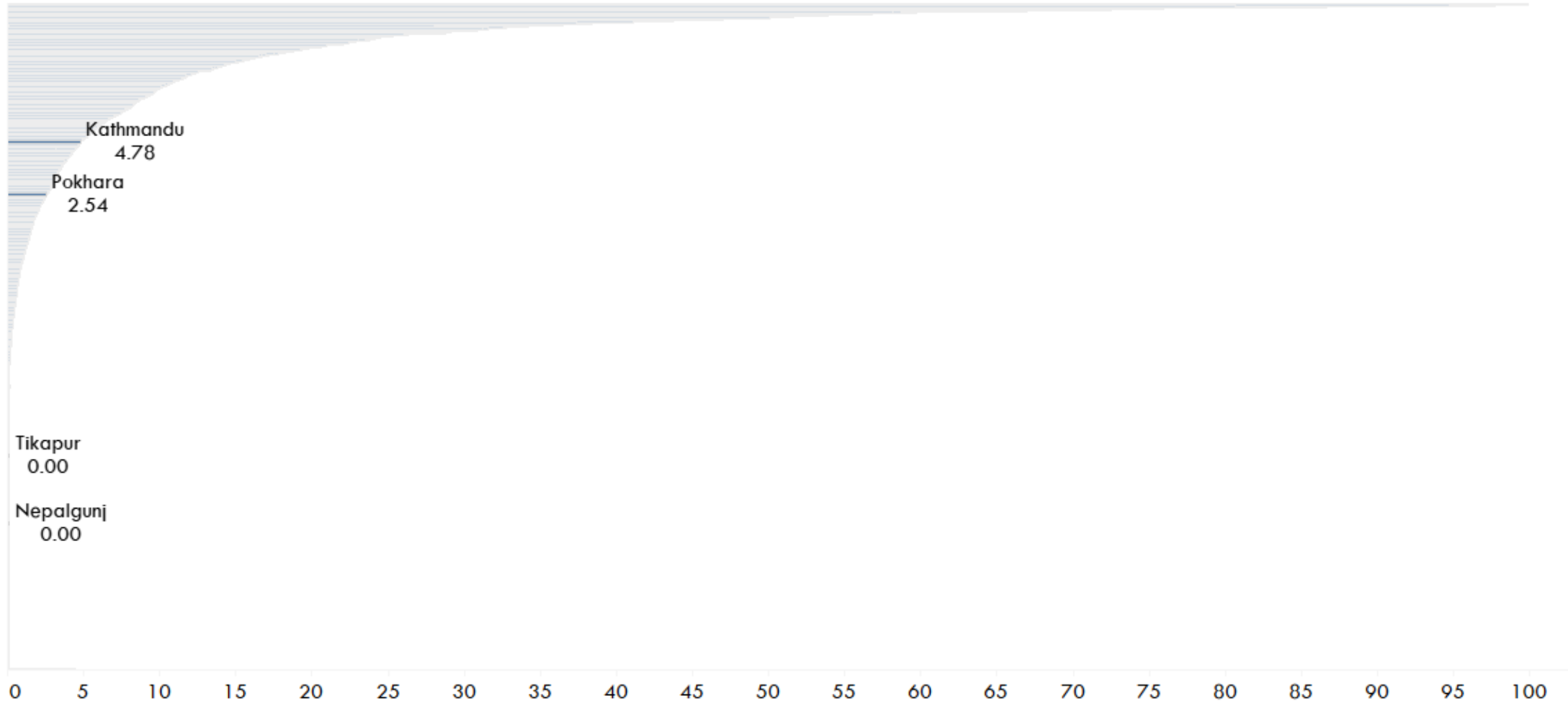
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Share of Urban Population Exposed to 100 Year Floods

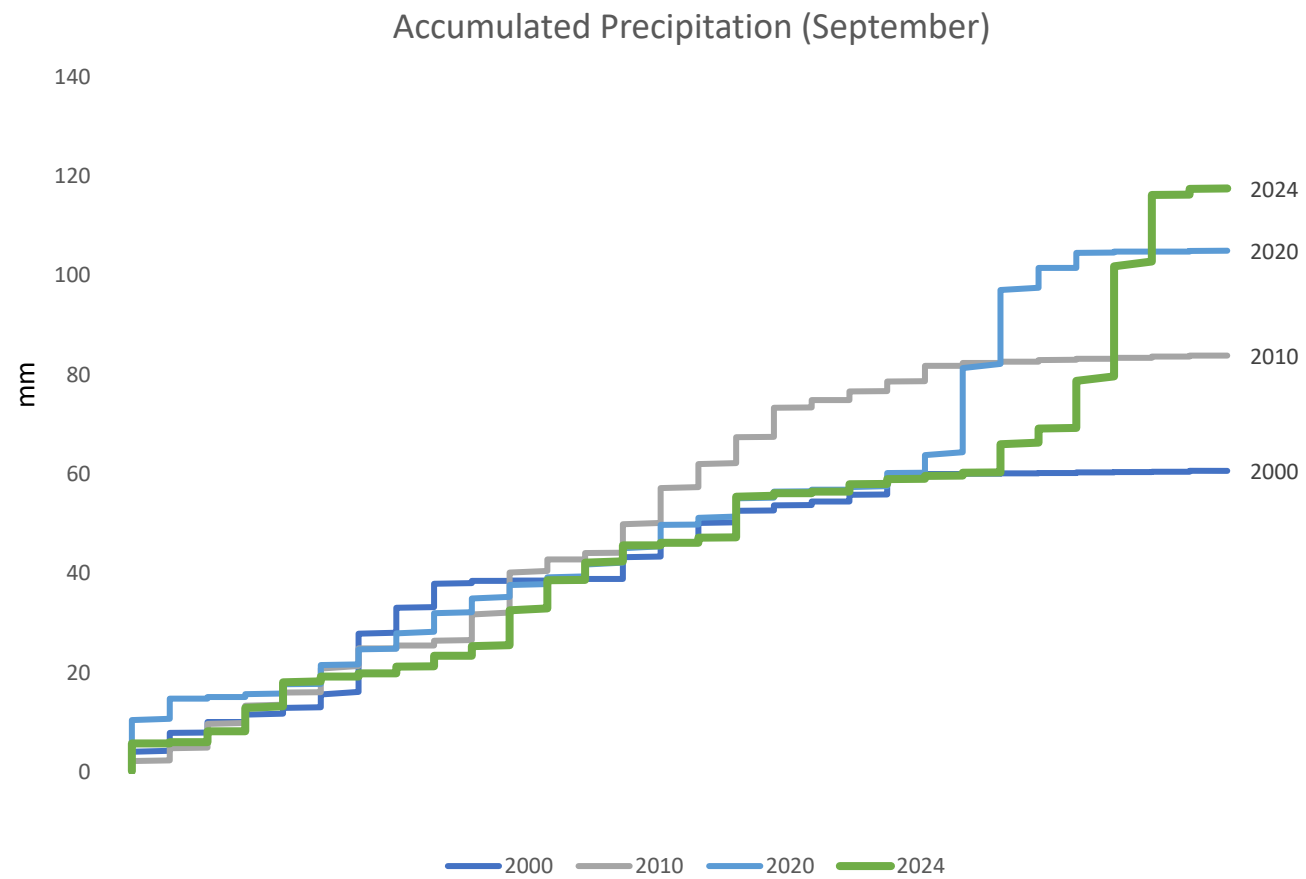


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Source: ATO visualization based on GHSL data

Precipitation



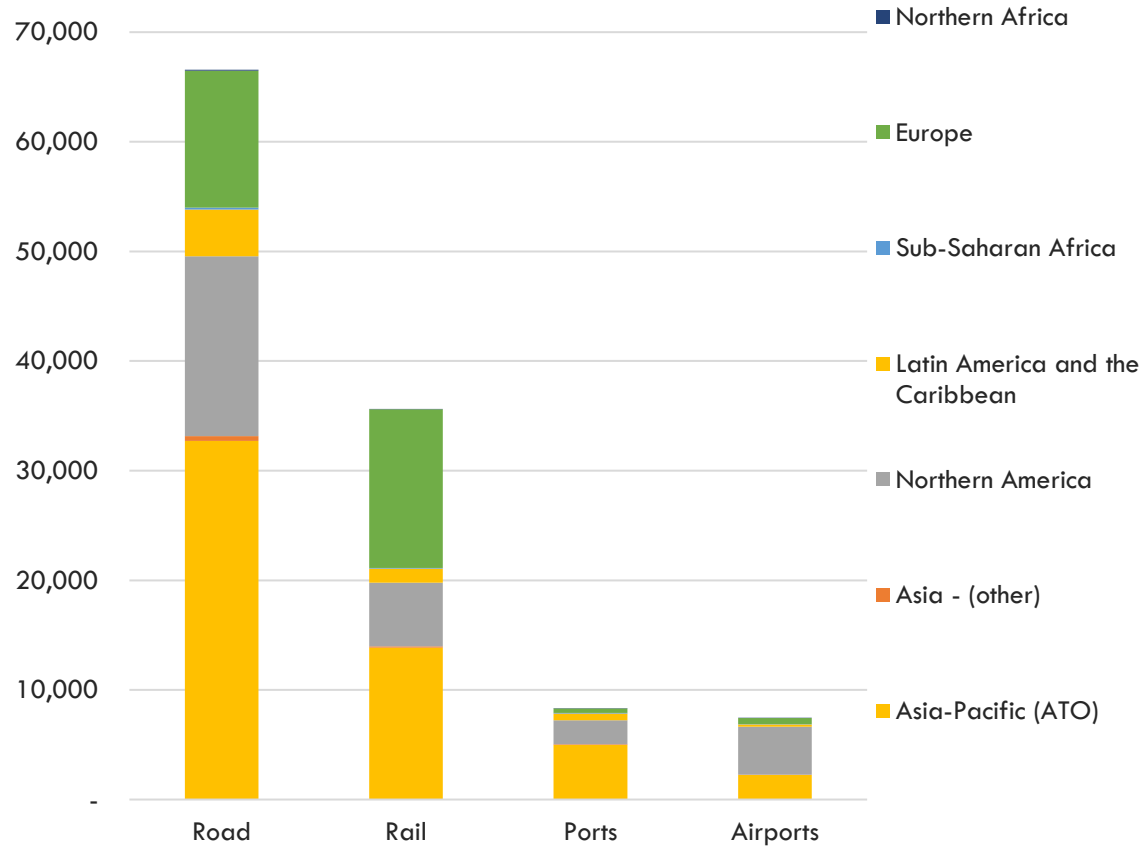
September 27, 2024 ; data from Jaxa Global Rainfall Watch



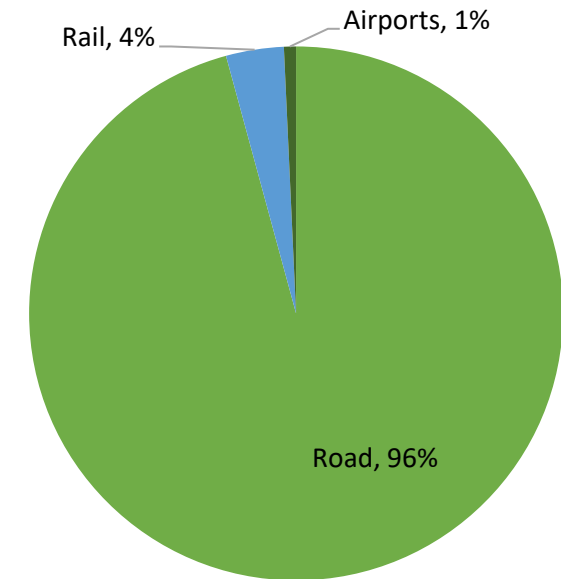
Multi-hazards Costs to Transport Infrastructure



Average annual losses to transport infrastructure, by mode and region



Nepal:
\$14 million
0.1% of GDP

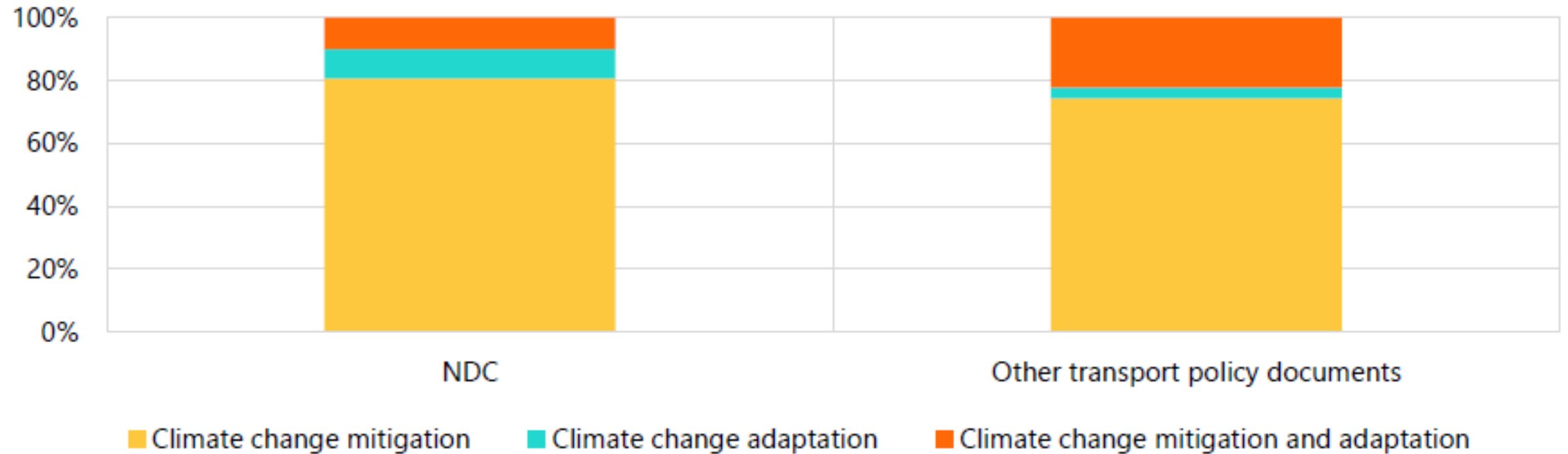


Source: CDRI

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Balance between Mitigation and Adaptation Policy Measures is needed



<https://asiantransportobservatory.org/analytical-outputs/ndc-analysis/>

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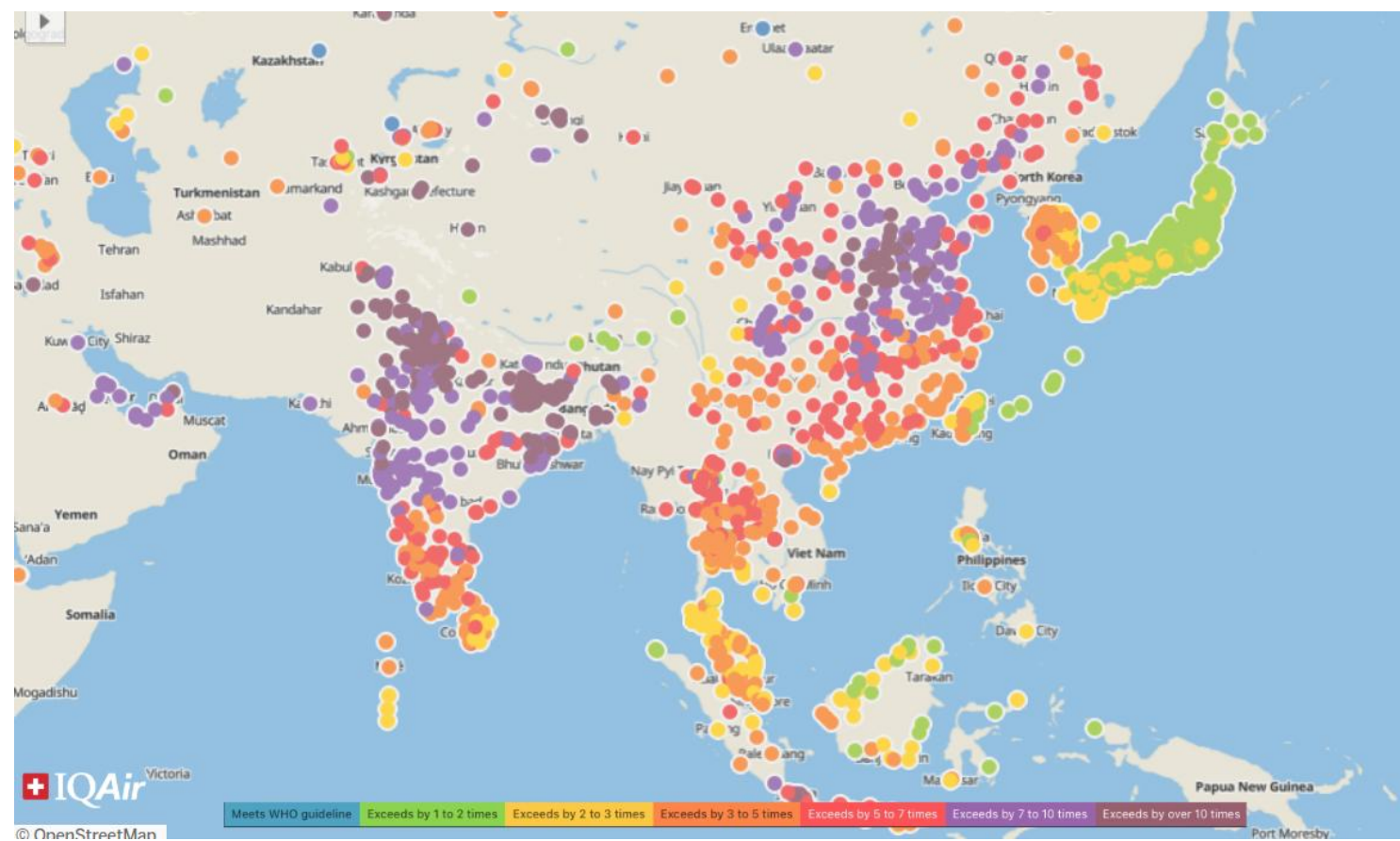
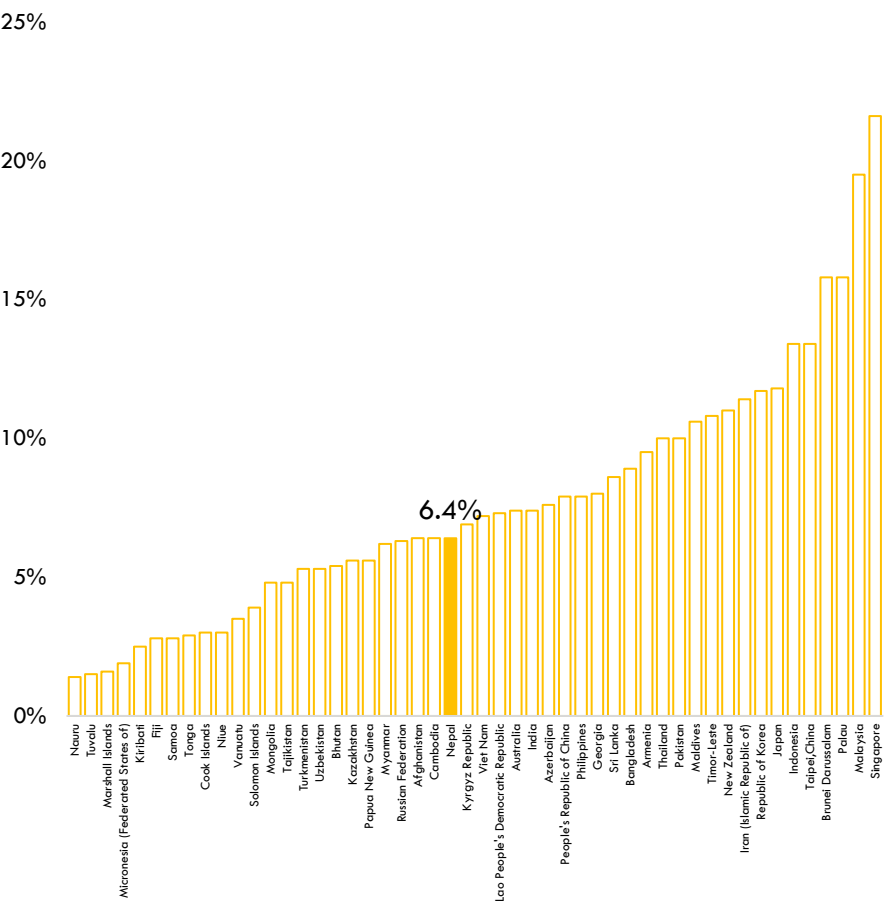
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Air Pollution (PM2.5)



Transport contribution to ambient PM 2.5



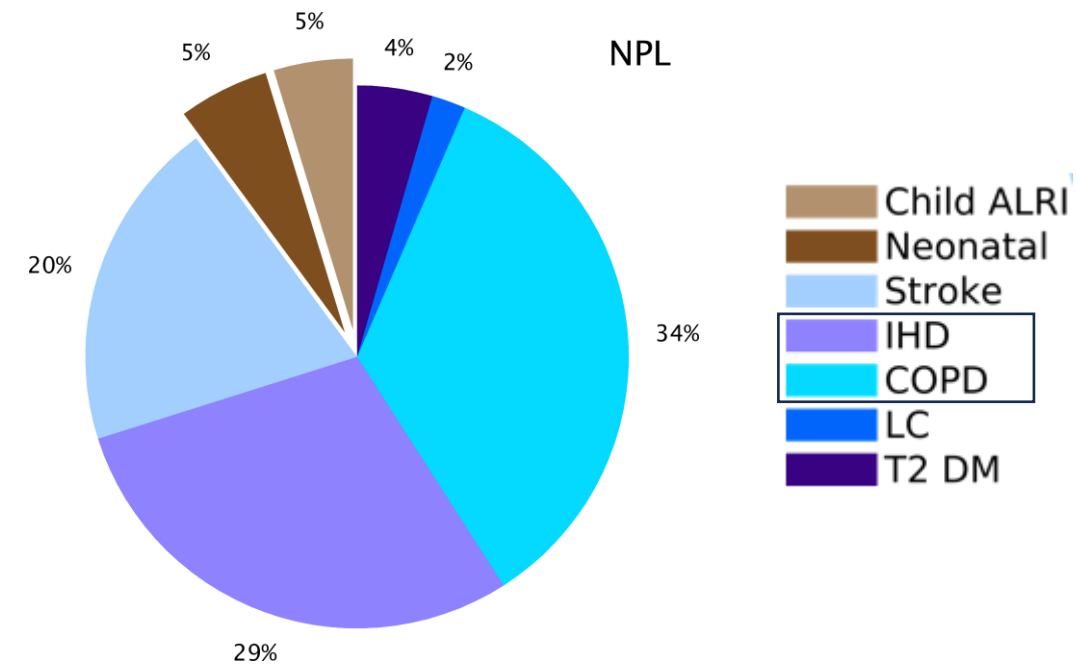
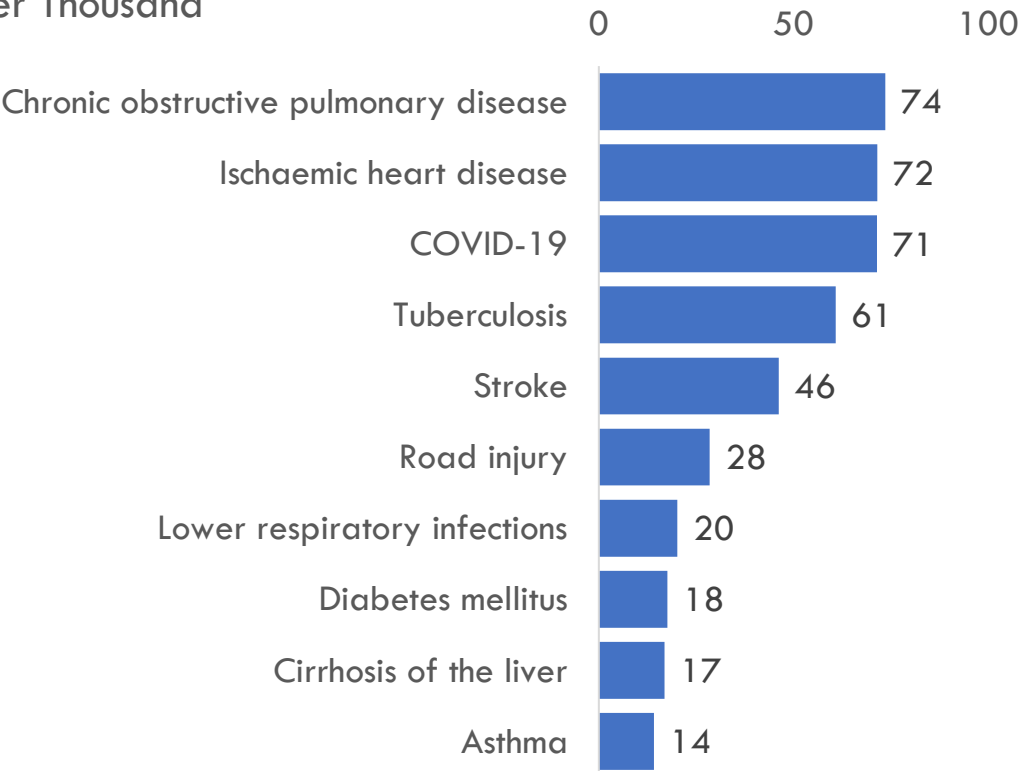
Source: IQAir

Causes of Deaths in Nepal



Top Causes of Death – Nepal (2021)

Deaths per Thousand



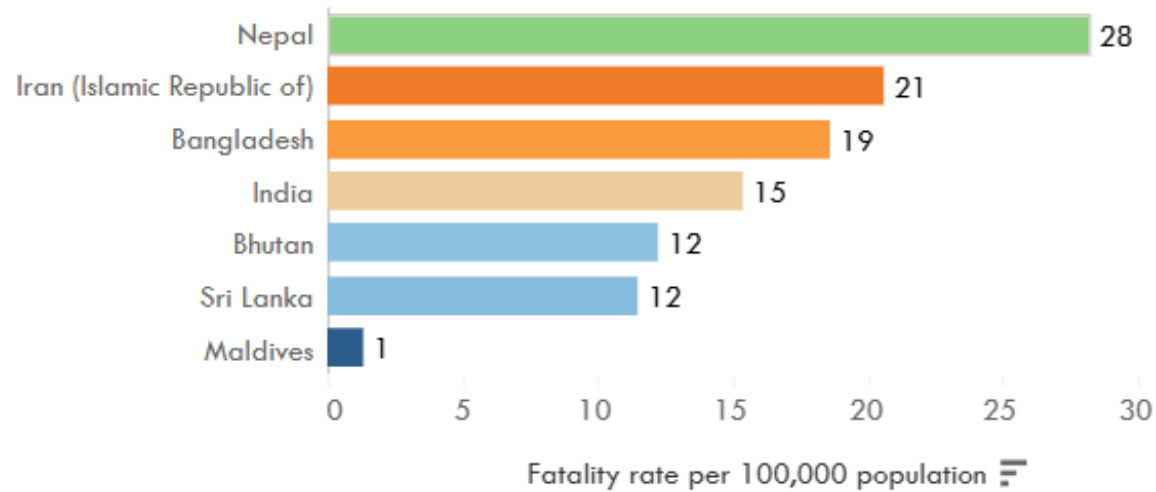
<https://data.who.int/countries/524>

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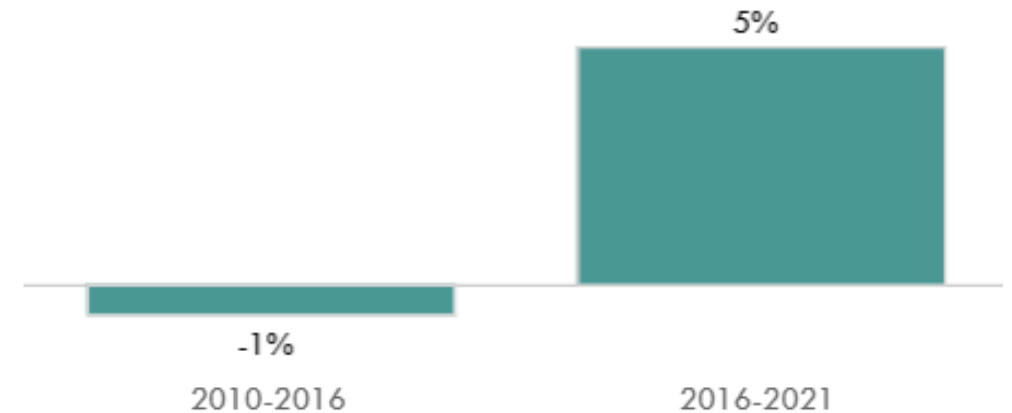
Road Safety

Road crash fatality rate in Nepal compared to other countries in South Asia (2021)



(WHO, 2023)

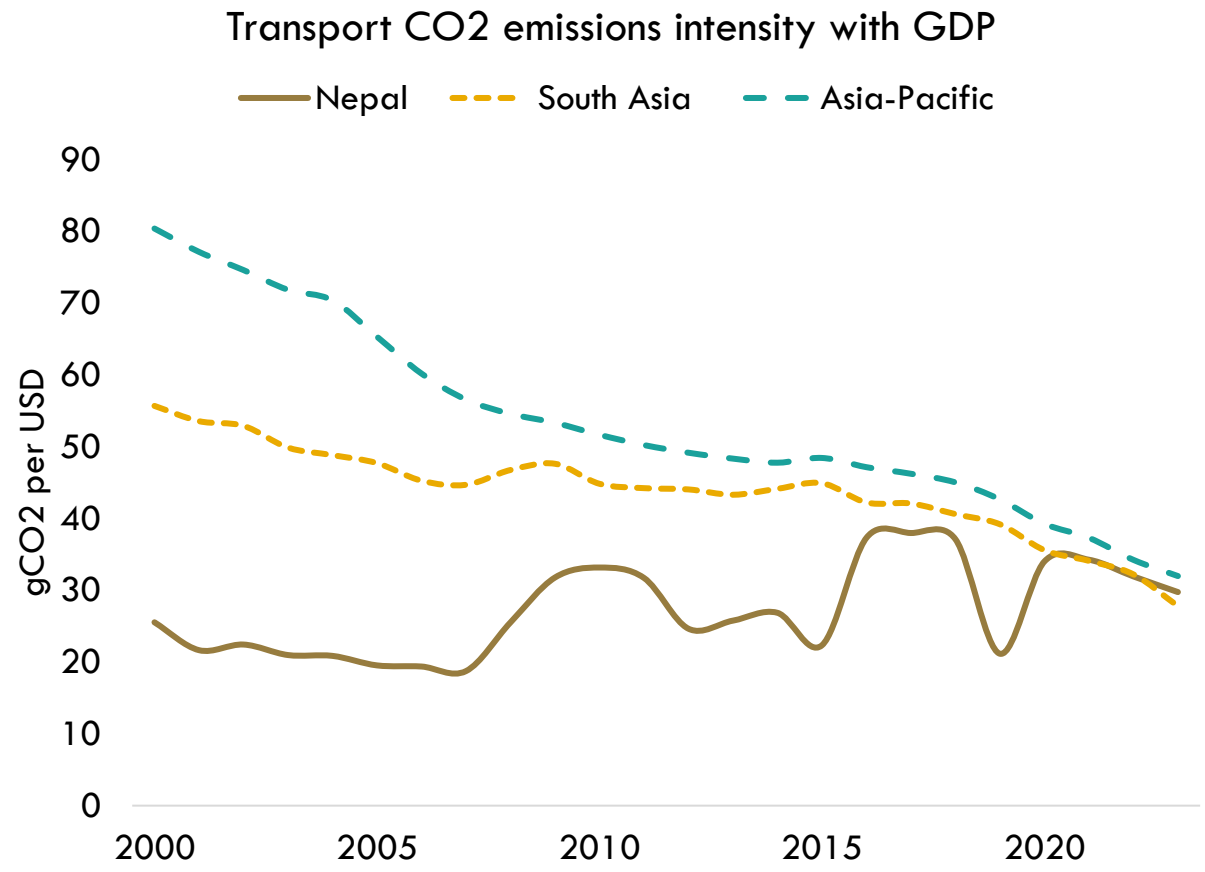
Annual average growth rate of road crash fatalities



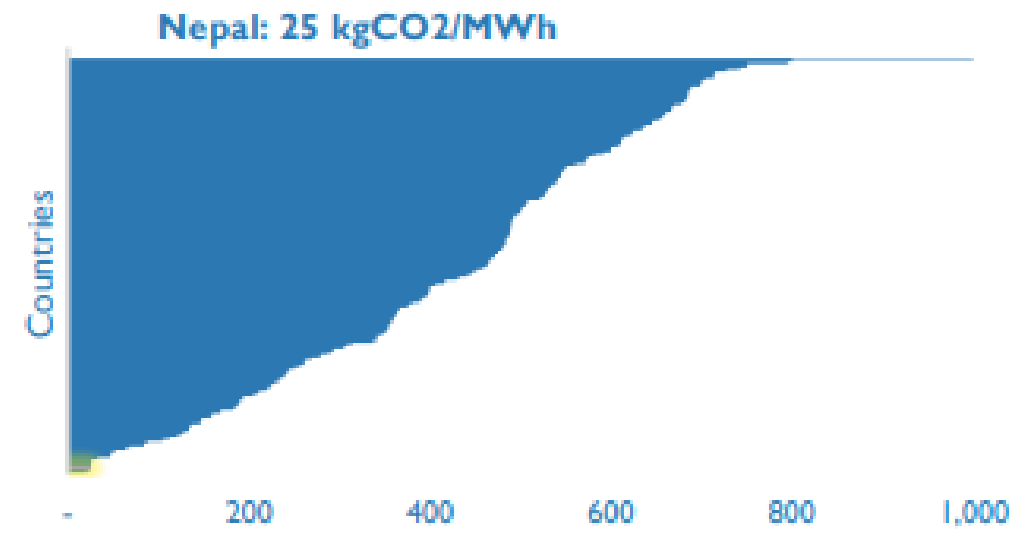
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CO2 Emissions Intensity



ATO calculations based on United Nations Statistics Division, 2024; World Bank, 2023a

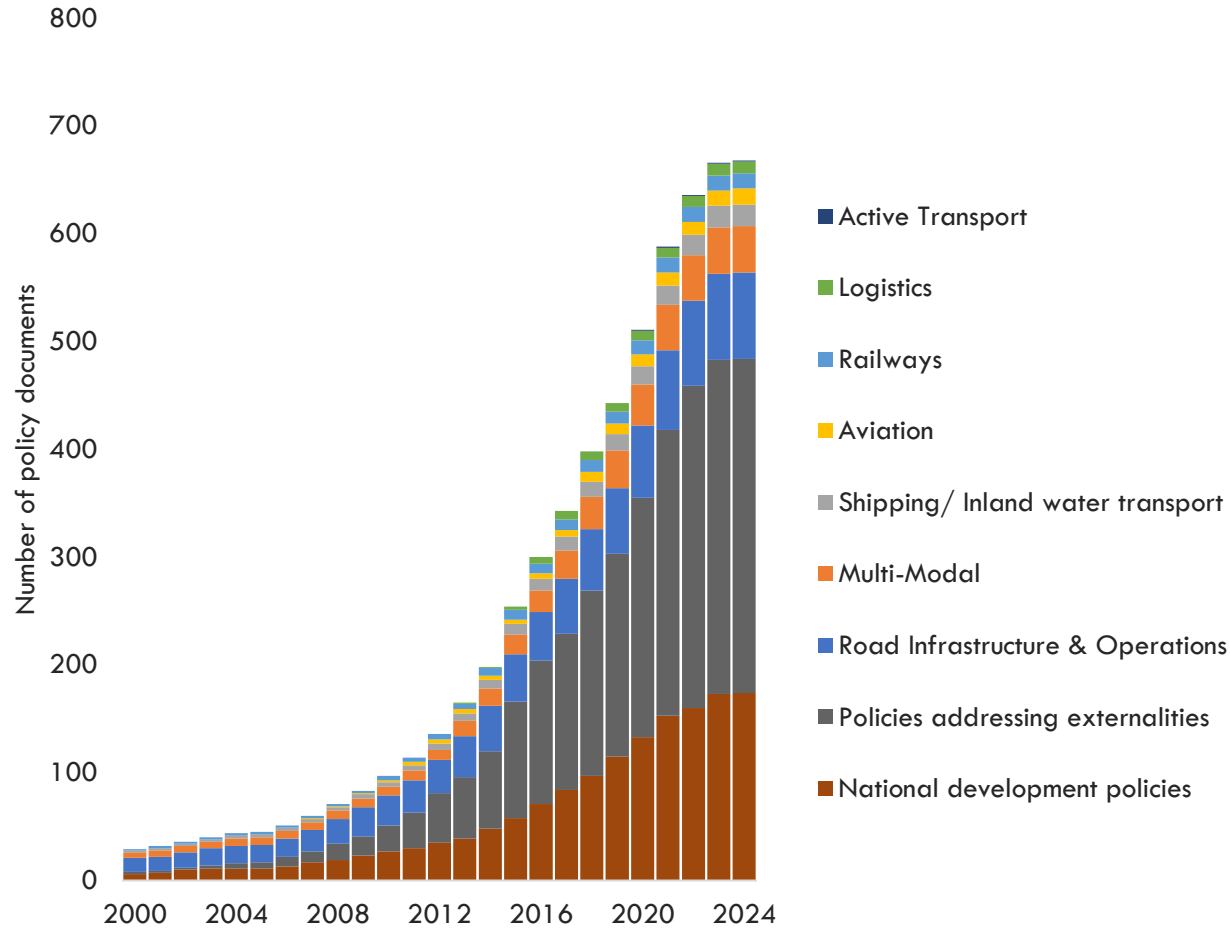


Based on Ember

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Trajectory of transport policy ambition



Policy measures before 2015

Port infrastructure improvements
General inland waterways (IWT) improvement
Technical standards for road infrastructure
Measures to improve rural-urban connectivity
Public transit integration
Urban passenger rail infrastructure improvement
General rail improvement
General public transport
General transport asset management
Logistics hub
Rail infrastructure expansion
Road infrastructure expansion
Transport infrastructure resilience
General infrastructure improvements
Active transport infrastructure expansion
Technical standards for general transport infrastructure
General aviation improvements
Intermodality measures

Policy measures after 2015

EV charging infrastructure
Port infrastructure improvements
Urban passenger rail infrastructure improvement
Logistics hub
Transport infrastructure resilience
General transport asset management
General rail improvement
Road infrastructure expansion
General infrastructure improvements
Railway electrification
General aviation improvements
General public transport
Technical standards for general transport infrastructure
Active transport infrastructure expansion
Rail infrastructure expansion
Measures to improve rural-urban connectivity
General shipping improvement
General inland waterways (IWT) improvement
General e-mobility
Public transit integration

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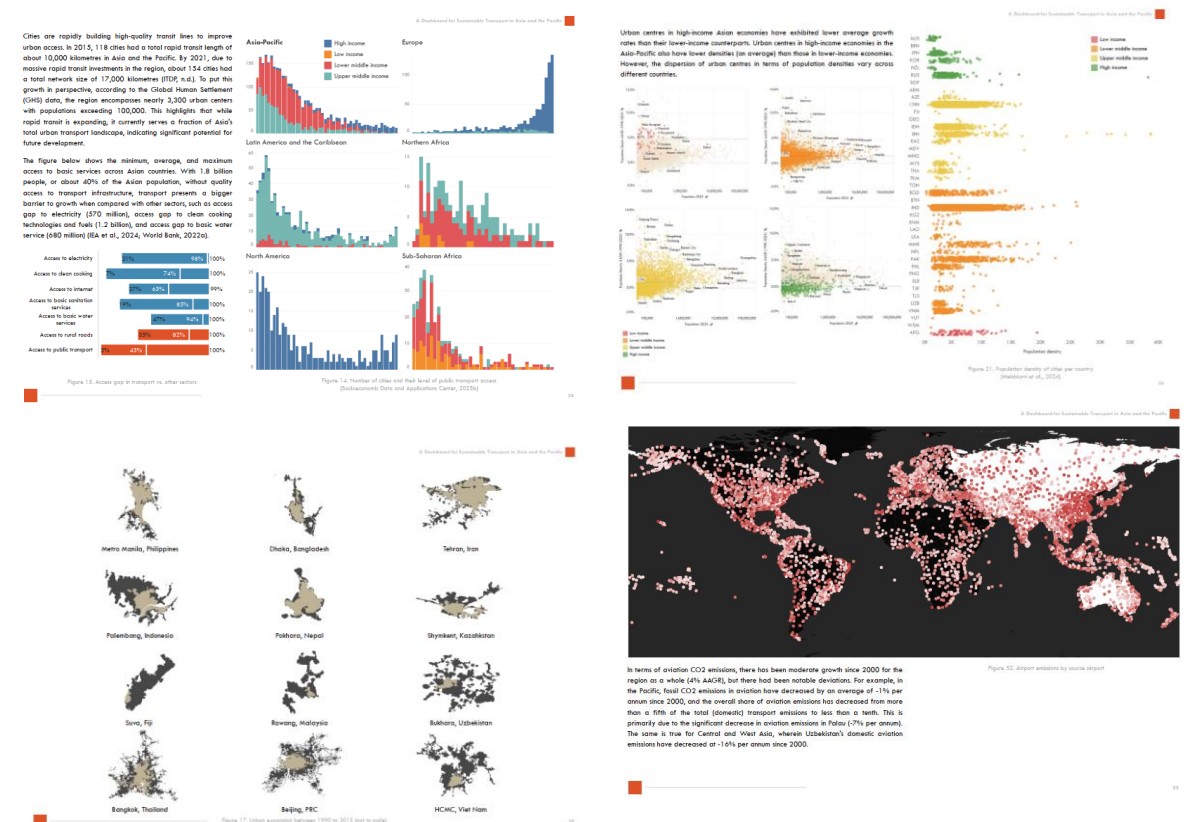


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A Dashboard for Sustainable Transport in Asia and the Pacific

Asian Transport Observatory



To be released in May : <https://asiantransportobservatory.org/analytical-outputs/sdg-and-decade-of-action-2025/>

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information extracted from a range of documents

The profiles were created by the Asian Transport Federation (IRF)— as an input to global discussions

Road Safety Profiles

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- ▶ ATO Green Roads Profiles
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- ▶ ATO Rail Sector Profiles
- ▶ ATO Aichi Profiles

ATO Urban Profiles

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- ▶ ATO Urban Transport State of Play Presentations

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

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