

Asian Transport Outlook (ATO)

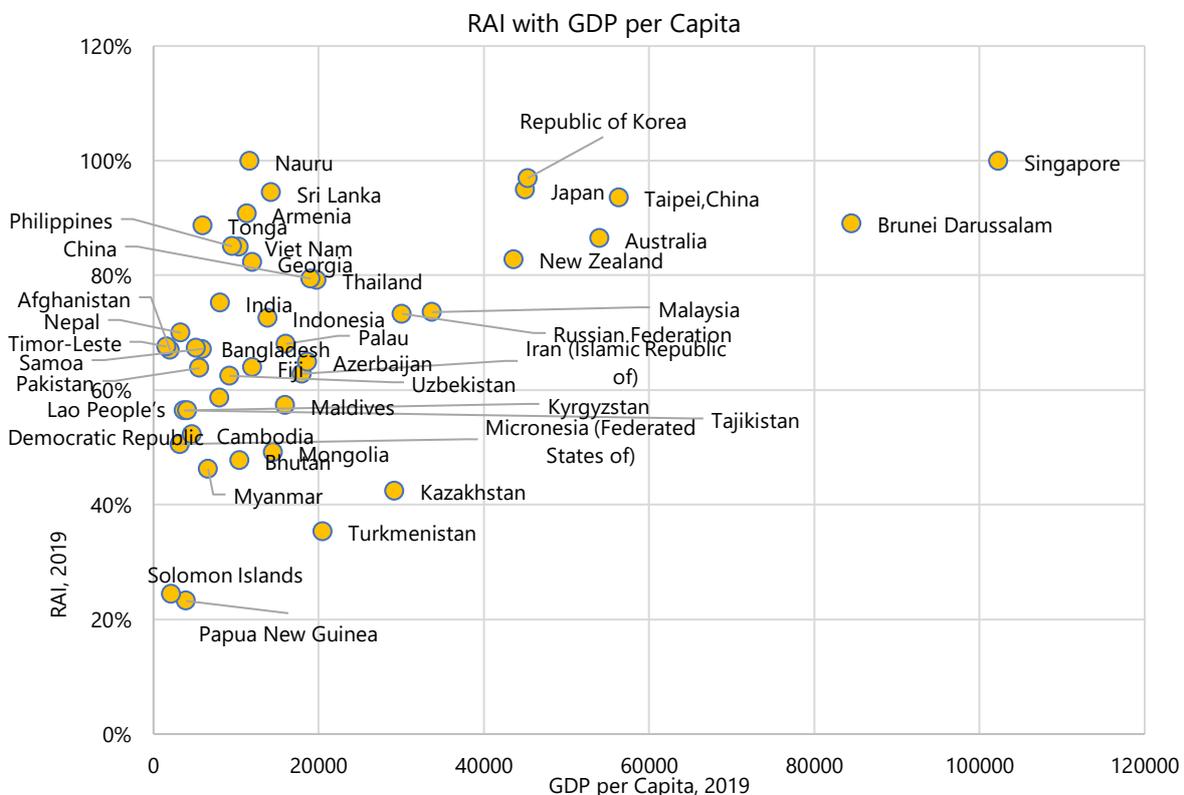
What is the status of Rural Access in Asia?

Poor access to economic and social opportunities in rural areas is a significant barrier to socio-economic development of the rural areas. Sustainable Development Goal (SDG) Target 9.1 states "develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all". SDG Target 9.1 has its defined indicator: "Proportion of the rural population who live within 2 km of an all-season road".

Rural Access Index (RAI), i.e., defined as the share of a country's rural population that lives within 2 km (a walking distance of) of an all-season road combines three sets of geospatial data: where people live, the spatial distribution of the road network, and road passability.

The RAI estimated using geospatial techniques and innovative technologies (Fig. 1), shows that rural population in the ATO members who live within 2 km of an "all-season" road varies significantly, i.e. from 23% in Papua New Guinea to above 90% in Armenia, Japan, the Republic of Korea, Taipei,China and Sri Lanka Rural accessibility is marginally better in the ATO economies (75%) compared to the global average of 70%.

Figure 1: Rural Access Indicator and Gross Domestic Product Per Capita



Source: <https://rai.azavea.com/> , World Bank

ATO data used: ACC-RAC-001(1), SEC-SEG-002

The RAI has been measured for some time now but it would not be appropriate to compare RAI across the time series due to data and methodology challenges¹. The RAI estimates developed before 2018-2019 are developed mainly through the household surveys², while the latest assessment (2019) is using spatial techniques and data collected using innovative technologies³.

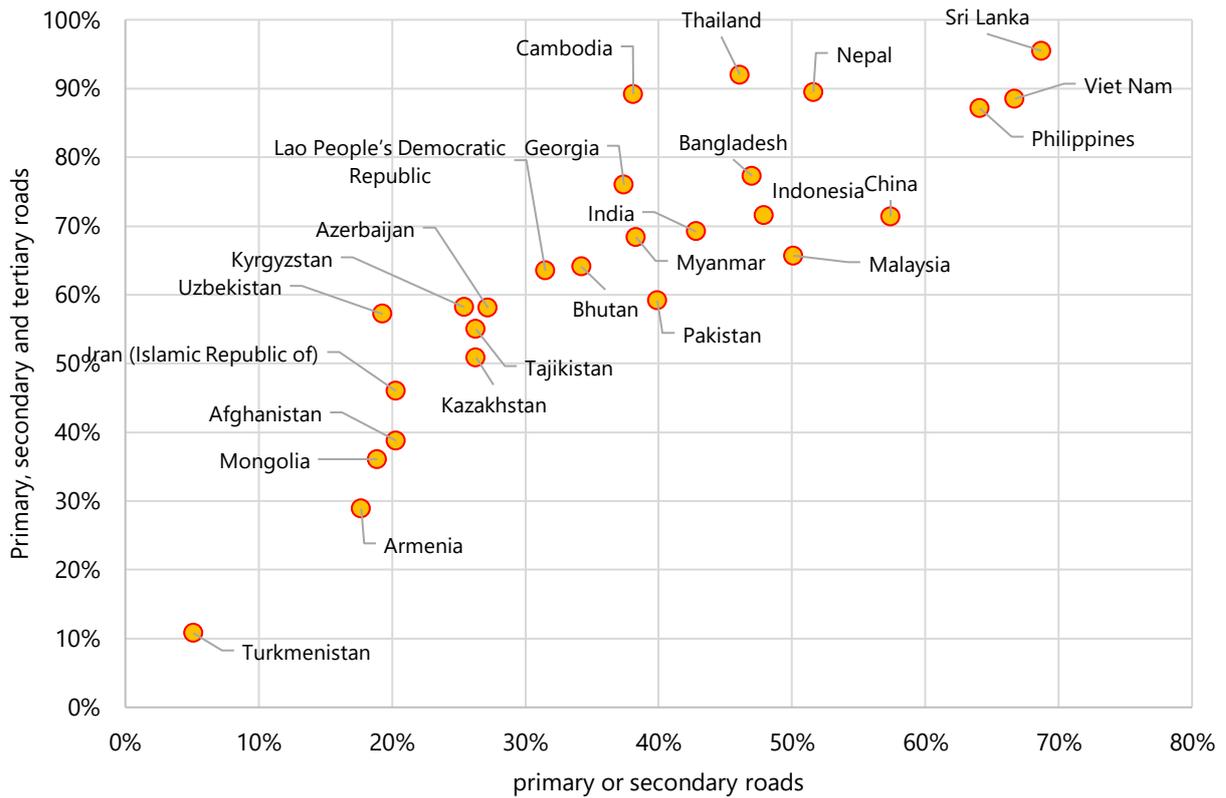
The RAI only considers the roads "all-season" if they are paved roads in 'good' or 'fair' condition and unpaved roads in "good condition". Tertiary roads are often not included in the RAI, by improving the "tertiary roads" especially the unpaved tertiary roads, ATO members can significantly enhance rural accessibility⁴.

¹ The ATO indicator, ACC-RAC-001(3) & ACC-RAC-001(1), provides insights into Rural access indicators' historical changes.

² it is generally costly to rely on a household survey, which limits the sustainability of the index. In addition, the household-based approach cannot be spatially representative enough, limiting operational usefulness. See <http://documents1.worldbank.org/curated/en/367391472117815229/pdf/107996-REVISED-PUBLIC-MeasuringRuralAccessweb.pdf>

³ The innovative approach requires broadly three types of data: (a) population distribution, (b) road network spatial data, and (c) road condition. Geospatial techniques are used to combine the three types of data in the same format

⁴ Unfortunately, data extracted from the Open Street Map does not provide information on the type of pavement or the quality of the road. World Bank researchers have extracted RAI using different typology of roads and validated this against fraction of paved roads provided by the International Roads Federation and came to conclusion that best proxy for all-season roads are primary and secondary roads. Read more @ <http://documents1.worldbank.org/curated/en/759461550242864626/pdf/WPS8746.pdf>



Source: <https://rai.azavea.com/> , ATO data used - ACC-RAC-001(2)

Currently, about half of the population in the ATO economies are rural dwellers⁵. Based on the latest RAI scores this means that 630 million persons in the Asia Pacific region are unconnected to a good quality road network.

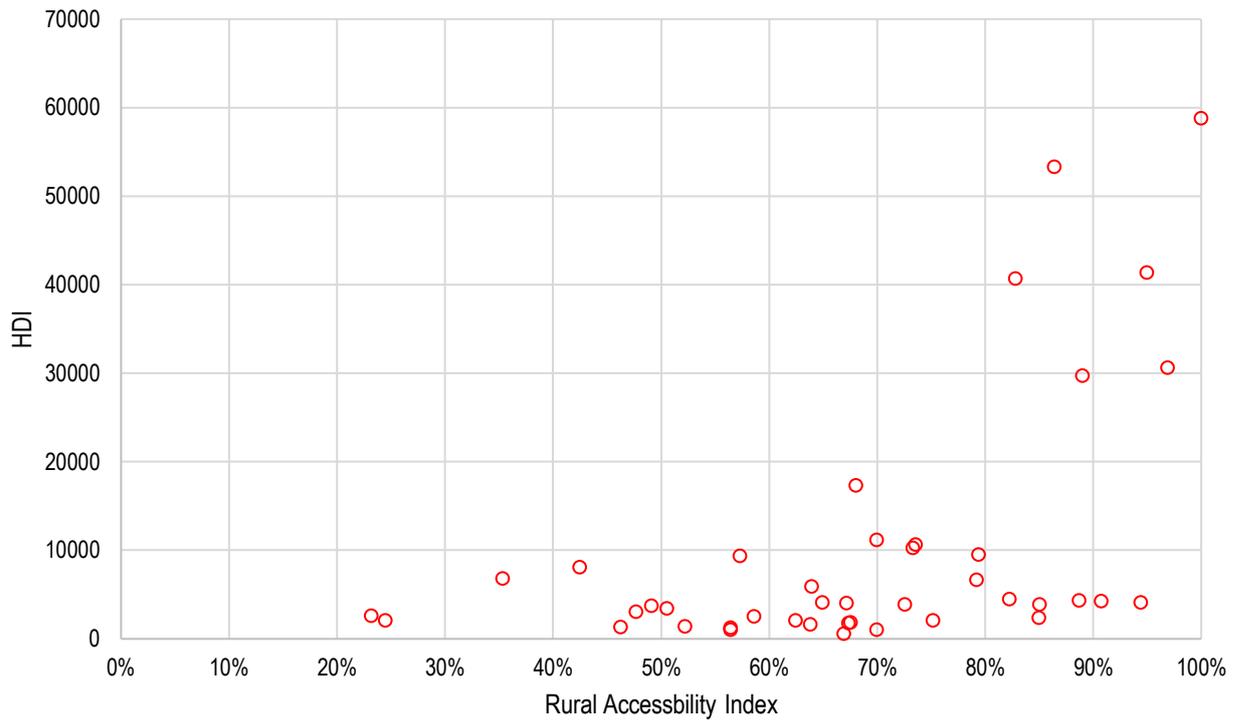
Populations without physical access⁶ to economic and social services are more impoverished than those with access. In 2019, low-income, lower middle-income, upper middle-income and higher-income economies had a rural accessibility index score of 67%, 73%, 78% and 91%.

In the ATO economies, rural access shows a correlation with the income and human development index (Fig. 2).

⁵ SEC-DEV-004

⁶ Physical access is only one part of the coin, the other part being rural transport services.

Figure 2: Rural Accessibility Index and Human Development Index, 2019



Source: <https://rai.azavea.com/> (RAI), UNDP

ATO data used: ACC-RAC-001(1), SEC-SEG-006