



ReCAP
Research for Community Access Partnership



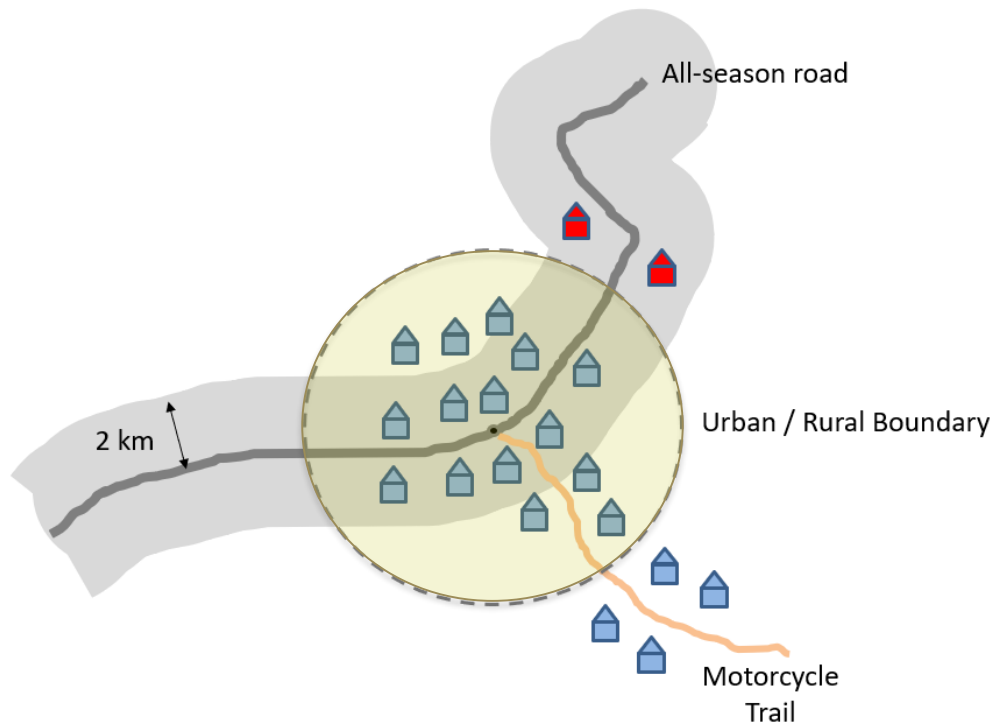
Rural Access Index (RAI) / SDG 9.1.1

6th Conference on Big Data for official Statistics

Session 6: 1st September, 2020

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Definition



The Rural Access Index (RAI) is an indicator used to measure rural accessibility.

It is defined as *“the proportion of the rural population who live within 2 km of an all-season road”*.

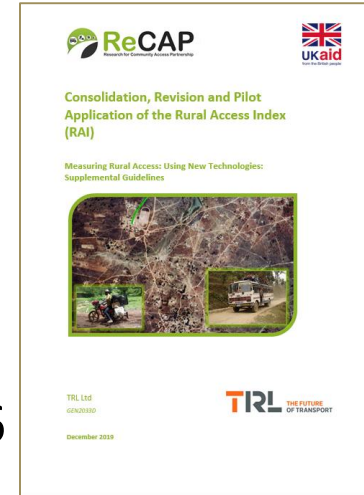
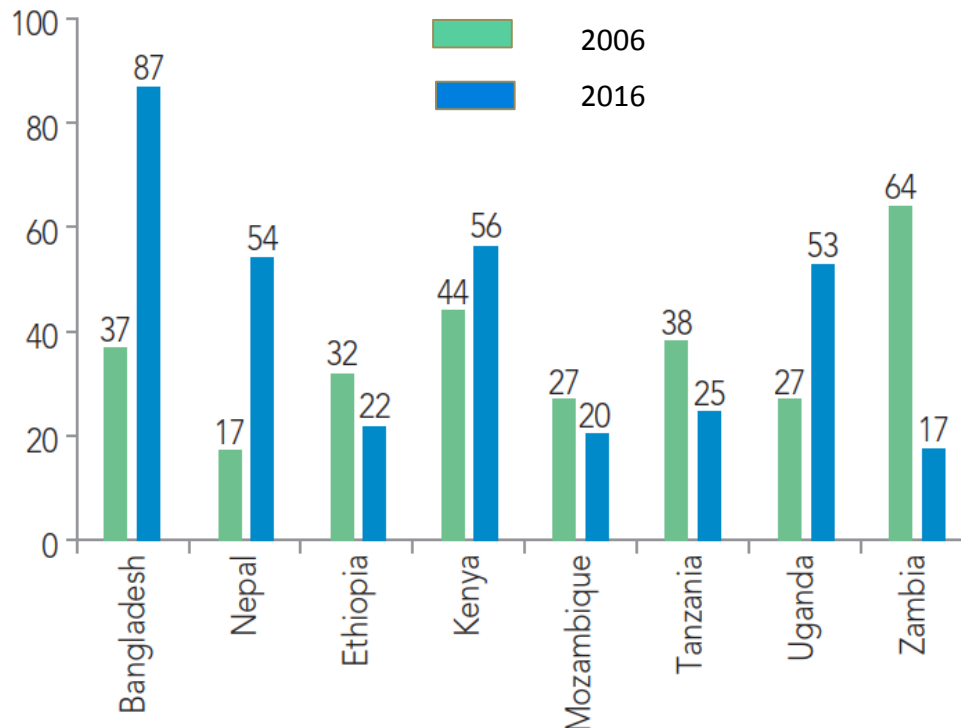
An all-season road is defined as a road that is motorable all year by a four-wheeled vehicle, excluding short interruptions due to extreme weather events of up to a total of 7 days in a year.

Note that these do **not** have to be consecutive days.



Brief History of the RAI

Geospatial methodology trialled in 2016 (World Bank, 2016)



- Refined the 2016 methodology
- Emphasised involvement of NSOs and government agencies
- Included a QA process and related metadata
- Introduced 'accessibility factors' in the event that road condition data is unavailable

SDG 9



HOME SDGS HLPF STATES SIDS UN SYSTEM STAKEHOLDERS TOPICS PARTNERSHIPS RESOURCES

Sustainable Development Goals



RAI was included as SDG indicator 9.1.1 in 2016

World Bank is the custodian, partners include UNECE, UNEP and ADB

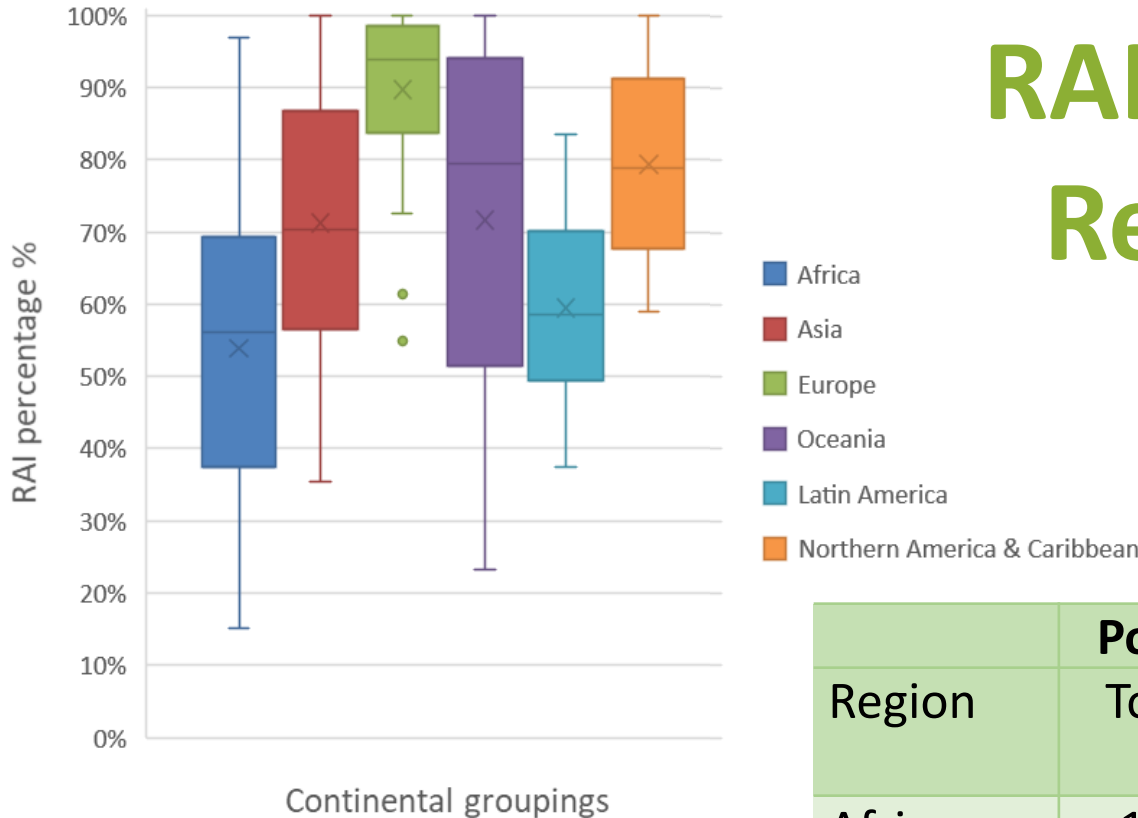
Promoted to Tier 2 in December 2018

RoadMap produced to help achieve Tier 1 status

Goal 9 – Industry, Innovation and Infrastructure



RAI Regional Relevance



RAI Absolute Numbers



Region	Population (millions, 2019)			RAI
	Total	Rural	>2 km from all-season rd	
Africa	1,318	908	421	54
Americas	1,057	223	71	68
Asia	4,633	2,591	659	75
Europe	757	191	20	90
Oceania	37	13	7	42
World	7,802	3,926	1,178	70

RAI Data Sources

Population Distribution

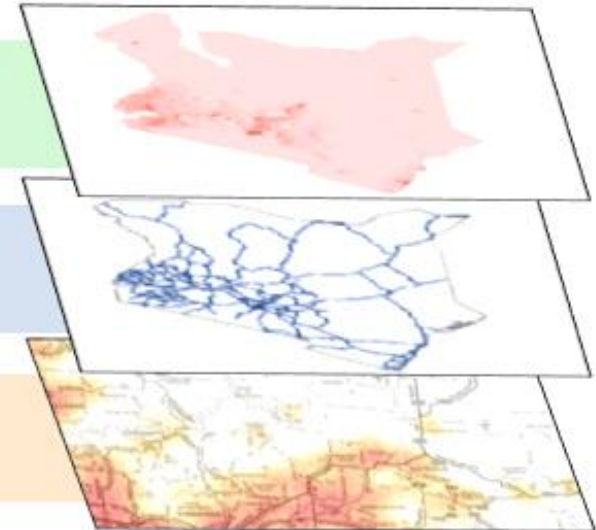
- Where do people live?

Road Network

- Where are the roads?

Accessibility

- Are they all-season?



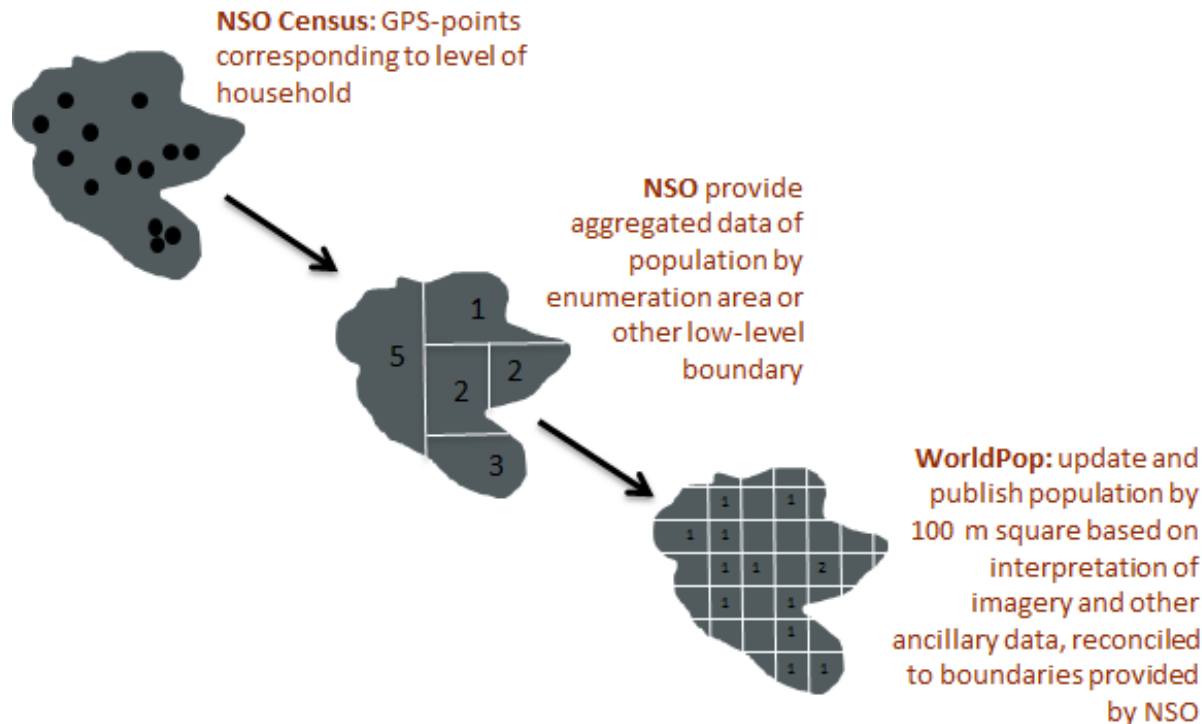
- RAI is essentially calculated through overlaying the above layers in a Geographic Information System (GIS) and applying standard GIS tools
- But what are the sources for these data?



Rural Population Distribution Data

WorldPop is the preferred source for population distribution data.

It uses latest national census data to produce **aggregated population data at a 100 metre square resolution** for use in a local GIS platform.



Each country should **decide** its urban and rural boundaries.

If not available, use **GRUMP v1 Urban Extent Polygons**.

UN DegUrba methodology is also developed



Road Network Data



Unclassified

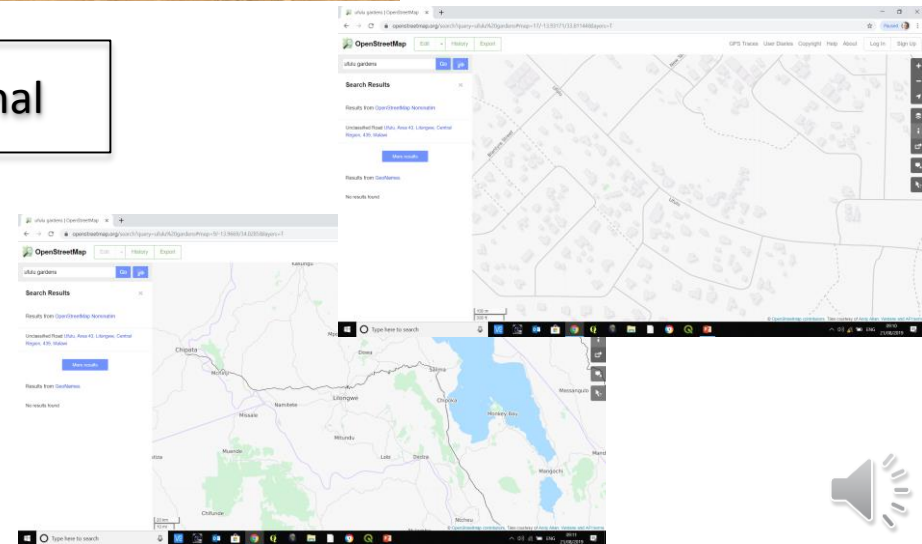


Local

National

Open Street Map
Roads and Other Transport Infrastructure

Buildings, including health facilities, schools etc.



All-Season Roads

Road Condition Data

All-season definition update

A road that it is likely to be impassable to the prevailing means of rural transport for a total of 7 days or more per year is not regarded as all-season.

2016 RAI Methodology used ‘condition’ as a proxy for ‘all-season’

- Paved road with IRI less than 6, and unpaved road with IRI less than 13.
- Paved road in excellent, good, or fair condition and unpaved road in excellent or good condition (when IRI data are not available, visually assessed).

Accessibility factors determine the likelihood of a road being all-season, using **Surface Type, Climate** and **Terrain**



RAI Measurement Tool

Rural Access Index — Built by Azavea

rai.azavea.com

Pause 00:00:00 Select Area Audio Record Pointer

Apps Gmail YouTube Rural Access Index... Groundwork - A pr... RingCentral BBC News Notes for Contribut... Data Catalog Time spent working... UN Global Sustaina...

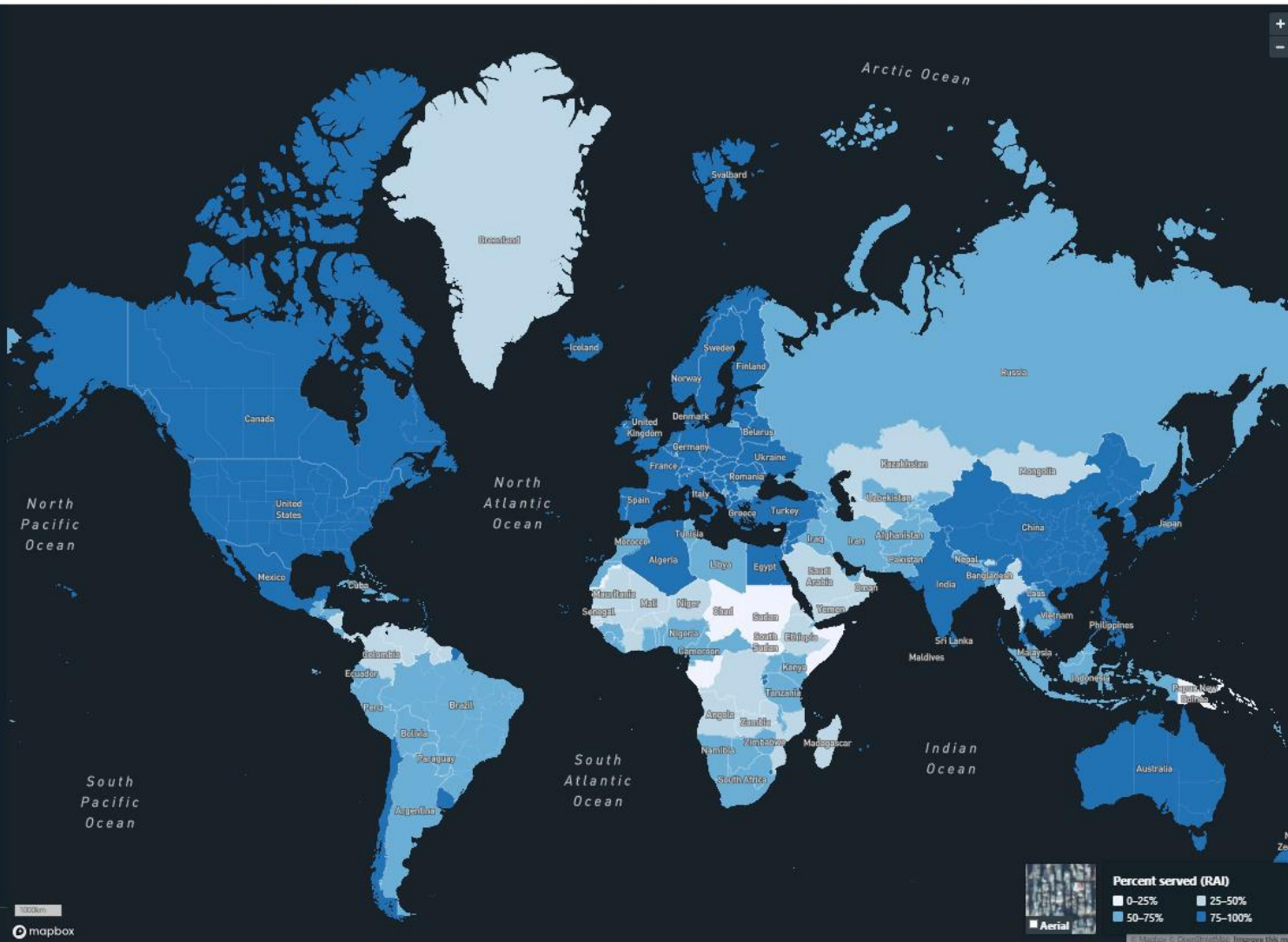
Rural Access Index Measurement Tool

About

The Rural Access Index (RAI) was developed by the World Bank in 2006, and is one of the most important global development indicators in the transport sector. The RAI is defined as the **proportion of the rural population who live within 2 km of an all-season road**.

This map, developed in partnership with the [Research for Community Access Partnership \(ReCAP\)](#), TRI, and Azavea is a proof of concept tool that displays an estimate RAI for all countries based on three open datasets: [OpenStreetMap](#), [WorldPop](#), [GRUMP](#).

For three trial countries in the ReCAP 2019 project (Nepal, Malawi, and Myanmar), country-specific datasets have been used that are regarded as more accurate than the current open datasets. These country-specific datasets have been used to generate scores that better reflect the RAI for those countries.





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Thank you for your attention

www.research4cap.org/sitepages/RAI.aspx

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