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Research for Community Access Partnership

UKaid
from the British people

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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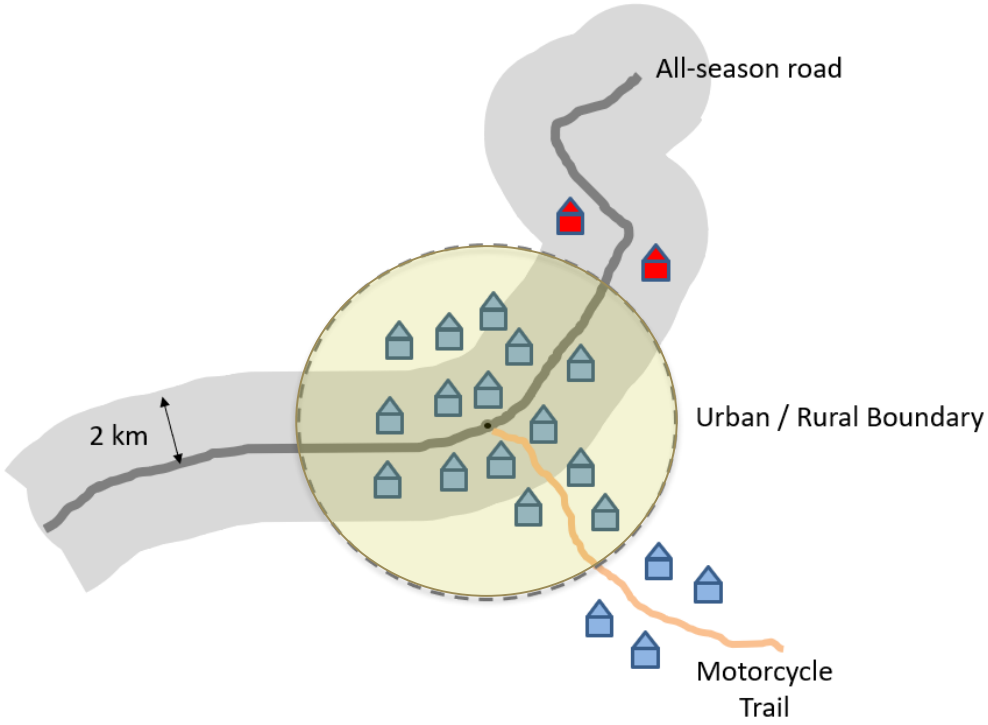
Definition



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

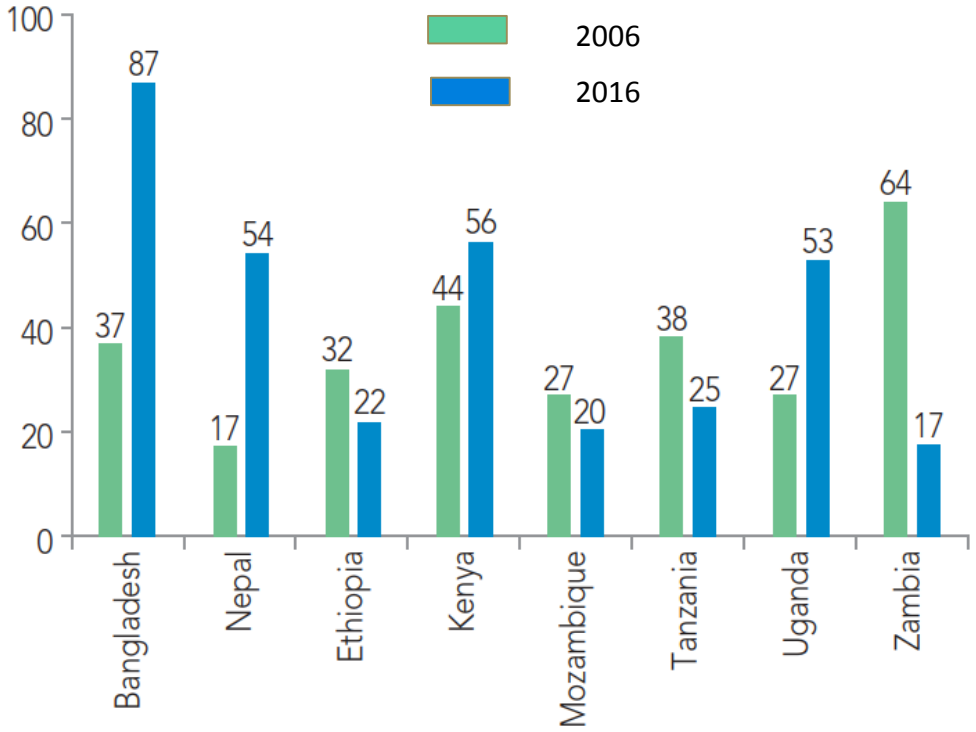
It is defined as ***"the proportion of the rural population who live within 2 km of an all-season road"*.**

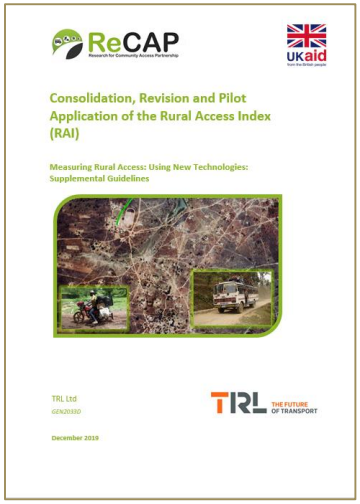
An all-season road is defined as a road that is motorable all year by a four-wheeled vehicle, excluding short interruptions due to extreme weather events of up to a total of 7 days in a year.

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

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

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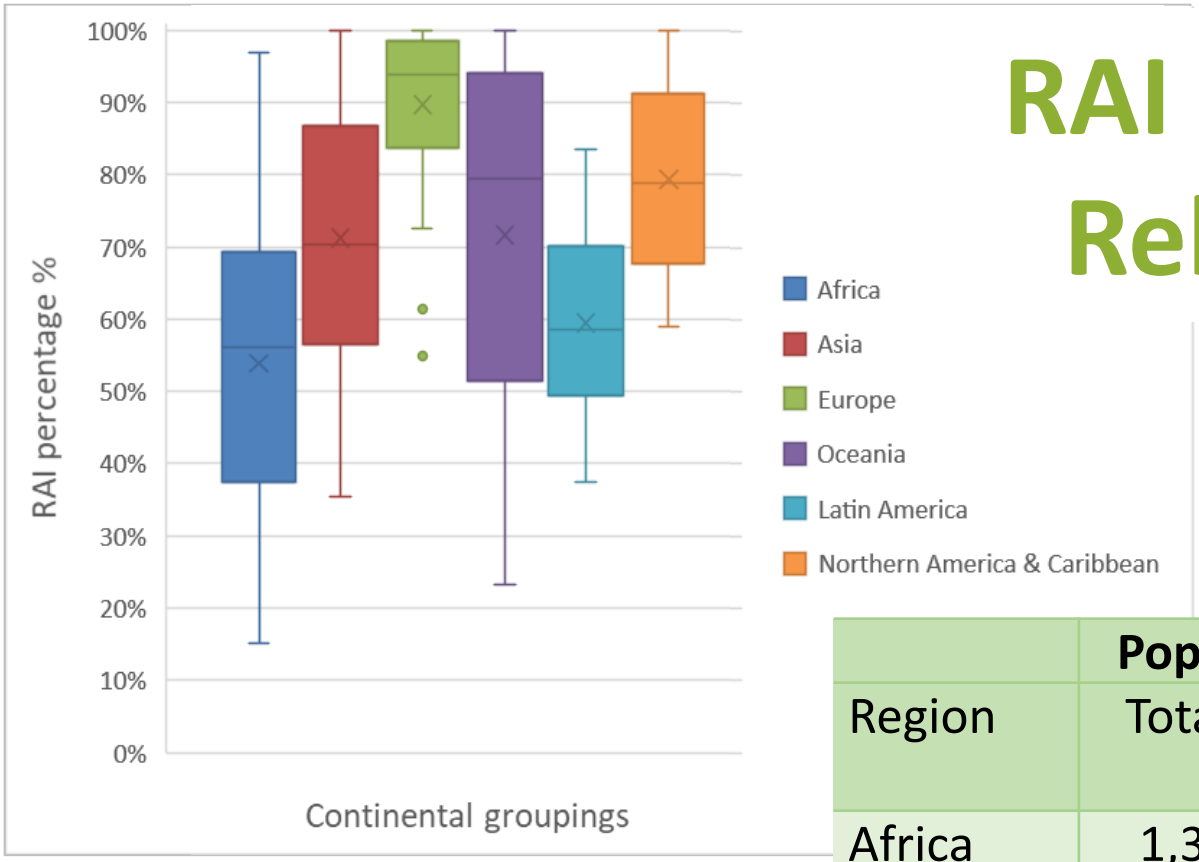
RAI Regional Relevance



RAI Absolute Numbers

Region	Population (millions, 2019) Total	Rural	>2 km from all-season rd	RAI
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**

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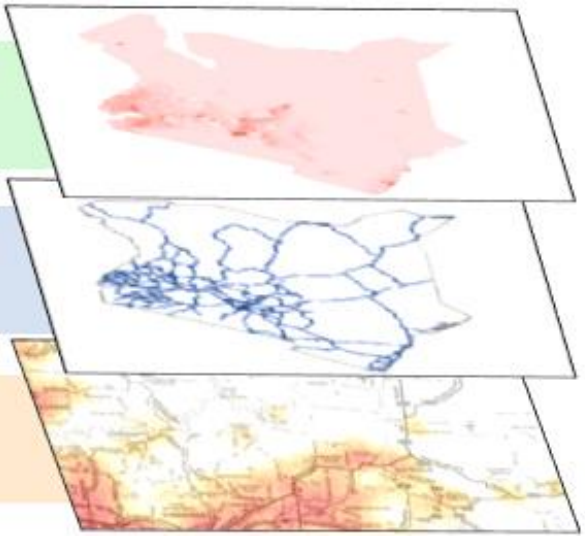
RAI Data Sources

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?

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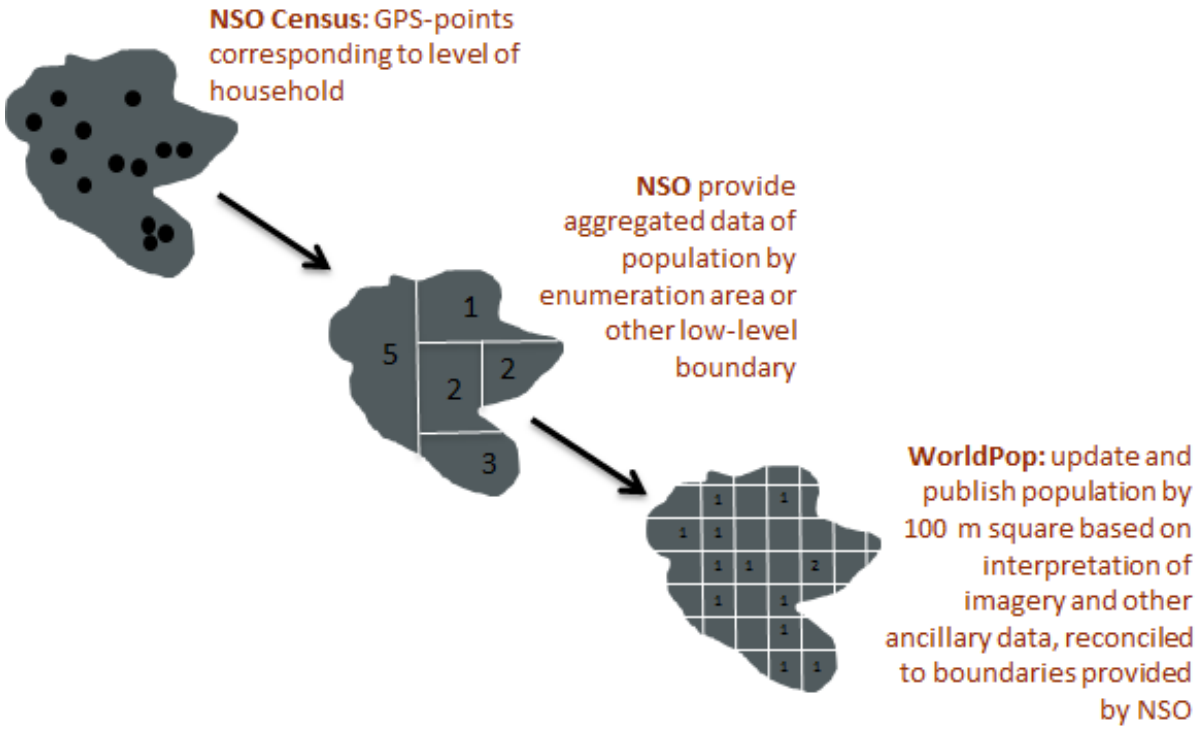
Rural Population Distribution Data

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

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Road Network Data

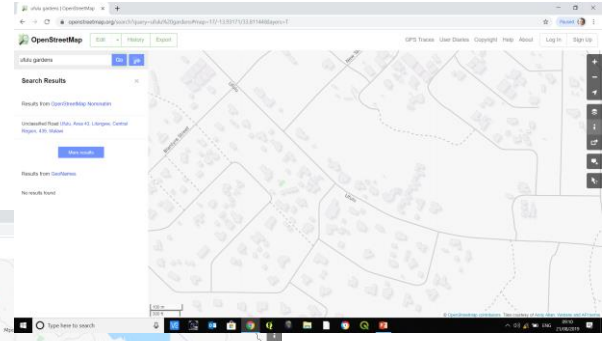
Unclassified

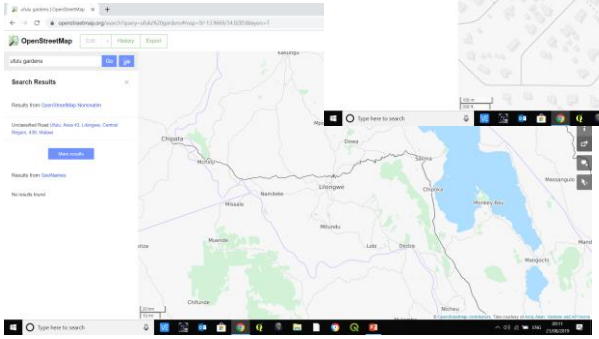
Local

National

Open Street Map

Roads and Other Transport Infrastructure





Buildings, including heath facilities, schools etc.

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All-Season Roads

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.

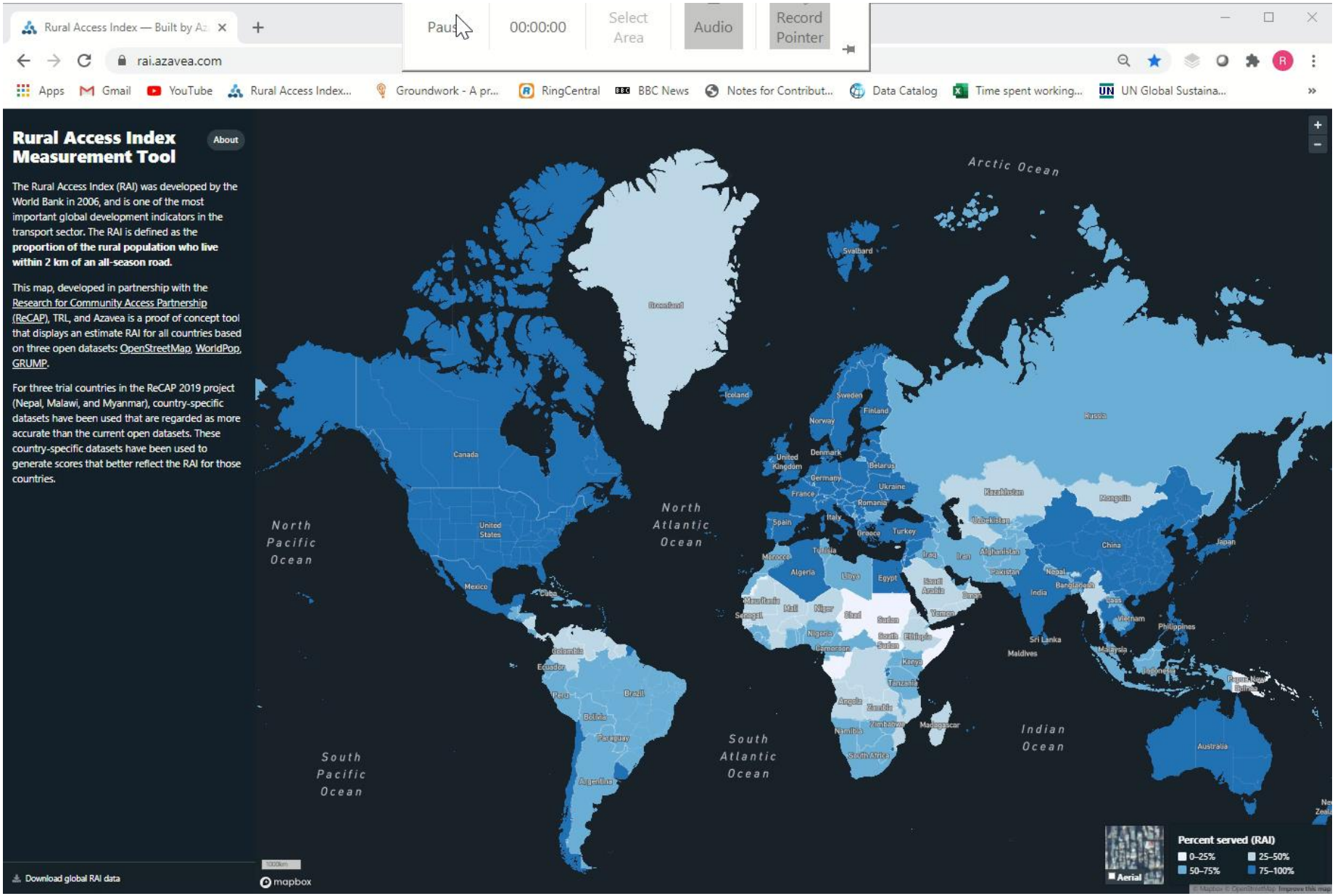
Road Condition Data

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



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