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UKaid
from the British people

ReCAP Status Review of the Updated Rural Access Index (RAI)

Stephen Vincent, Principal Investigator

CIVIL DESIGN SOLUTIONS

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Establishment of RAI in 2005/2006

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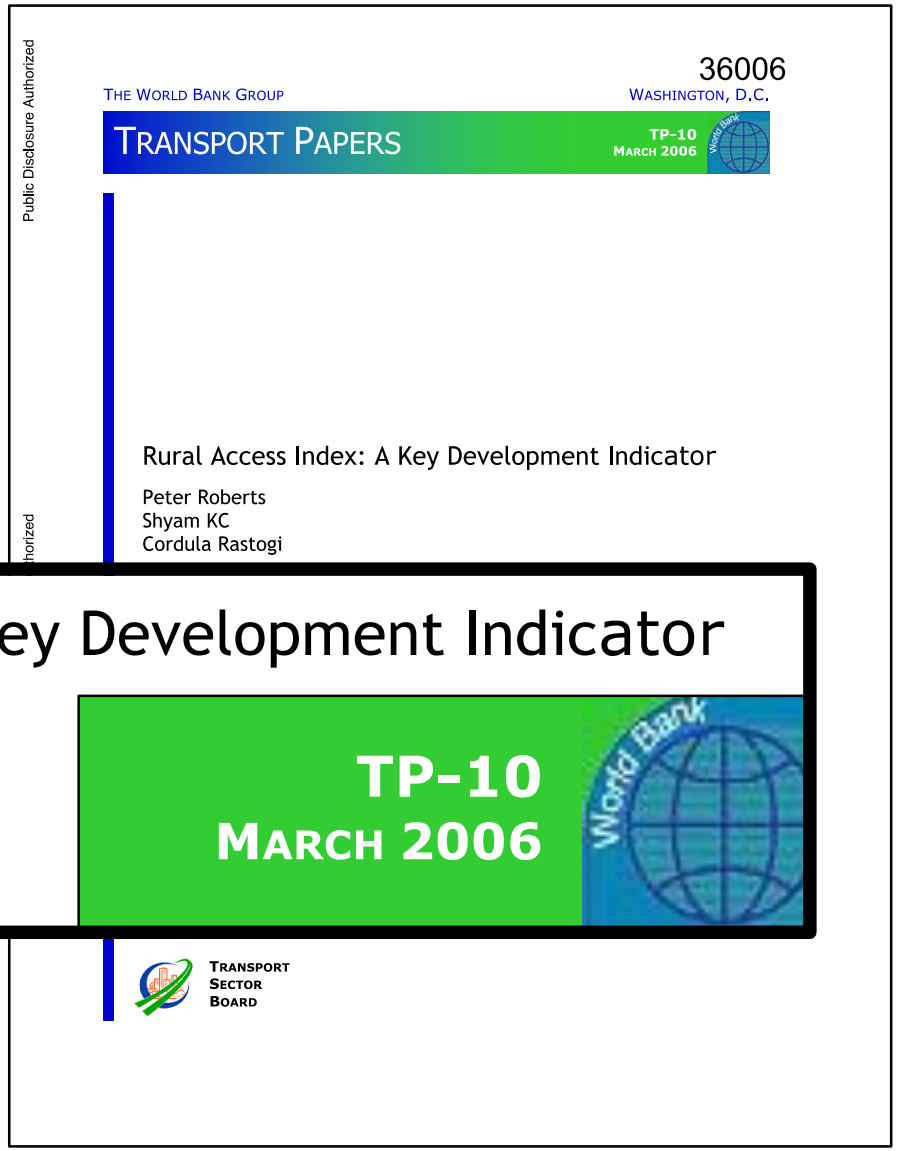
2006



Rural Access Index: A Key Development Indicator

Peter Roberts
Shyam KC
Cordula Rastogi

TP-10
MARCH 2006

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Note by Peter Roberts
Dated September 2005

Definition of the RAI

'Rural Access Index' is the percentage of rural people who live within 2km (typically equivalent to a walk of 20 minutes) of an all-season road as a proportion of the total rural population.

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Note by Peter Roberts
Dated September 2005

Definition of the RAI
(continued)

An “all-season-road” is a road that is motorable all year round by the prevailing means of rural transport … Predictable interruptions of short duration during inclement weather (eg heavy rainfall) are accepted ...

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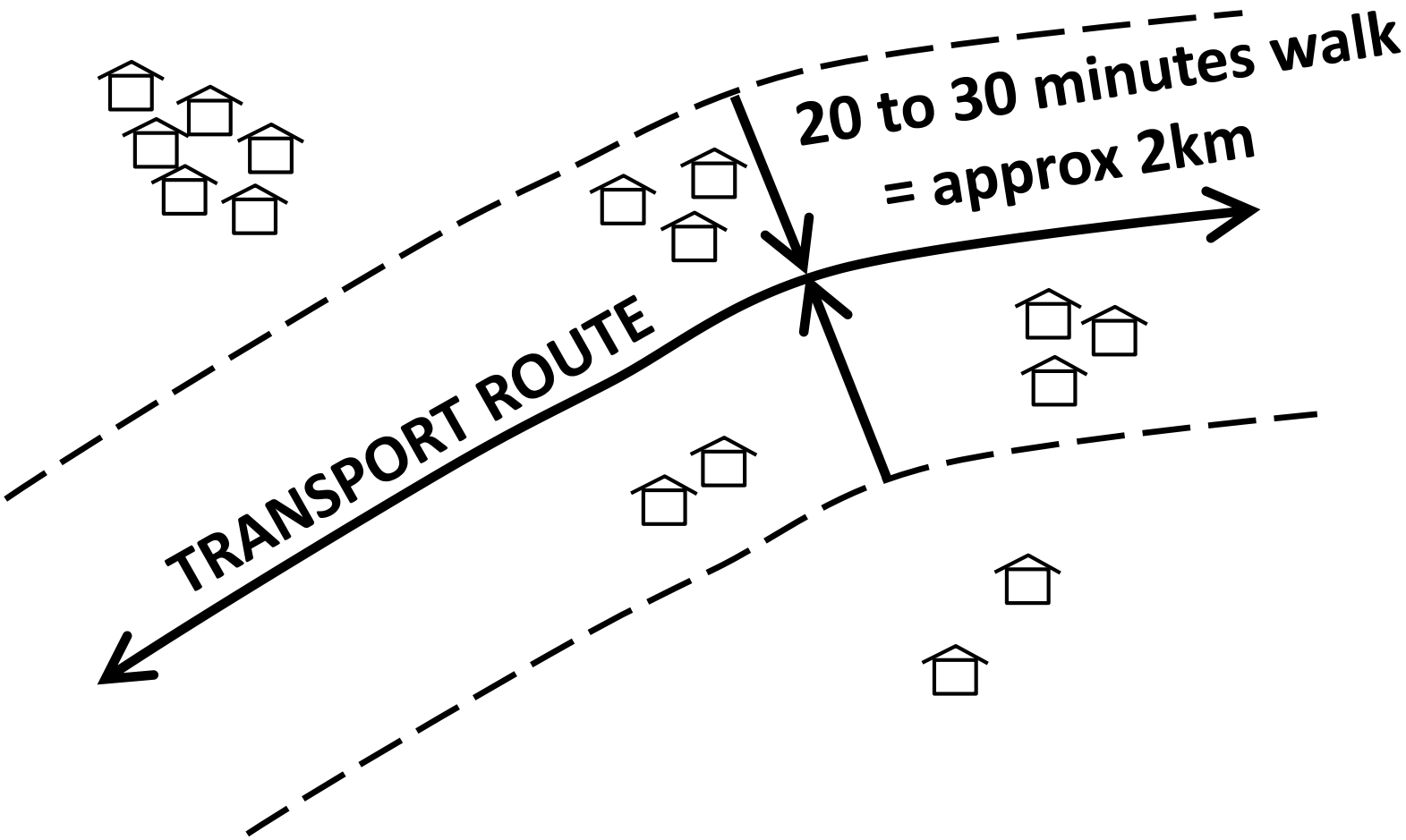
The Rural Access Index (RAI)



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Measurement of RAI

Note by Peter Roberts
Dated September 2005

Two main approaches:

(a) Household surveys that include information about access to transport.

(b) Map data to determine how many people live within the specified catchments of the road network.

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Requirement for RAI

2006 Transport Paper

Adopted for the Results Measurement System (RMS) of IDA-14.

"…The Index was developed in response to the consensus led by borrowers that it identifies an important priority for poverty reduction strategies in view of the established links between physical isolation and poverty …"

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“2006” RAI data

32 IDA countries and 32 non-IDA countries

26 countries based on 5 types of household surveys

10 countries based on GIS analysis

22 countries estimated using modelling techniques

Institutionalisation of the RAI

2006 - Intended to include a suitable question in regular household surveys (eg every 3 years)

Straightforward processing of survey data ("… one day of experienced statistical input…")

Why didn't this happen?

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SDG Indicator 9.1.1

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SDG Target 9.1

Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

SDG Indicator 9.1.1

Proportion of the rural population who live within 2 km of an all-season road.

World Bank is the "custodian" of SDG Indicator 9.1.1

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UN Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs)

- Internationally representative group with members from national statistics offices.
- Recommended the initial list of SDG indicators.
- Recommends status of each Indicator (Tier I, II or III).
- Will review the list of Indicators from March 2018 onwards, and in 2020 recommend any additions, deletions, refinements or adjustments needed (another review is planned for 2025).

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SDG Indicator "Tier" system (***Note: Abbreviated***)

Tier I: Regularly produced for at least 50% of countries.

Tier II: Conceptually clear, established methodology, but not regularly produced.

Tier III: No internationally established methodology or standards, but they are being developed.

Current rating of SDG Indicator 9.1.1, RAI

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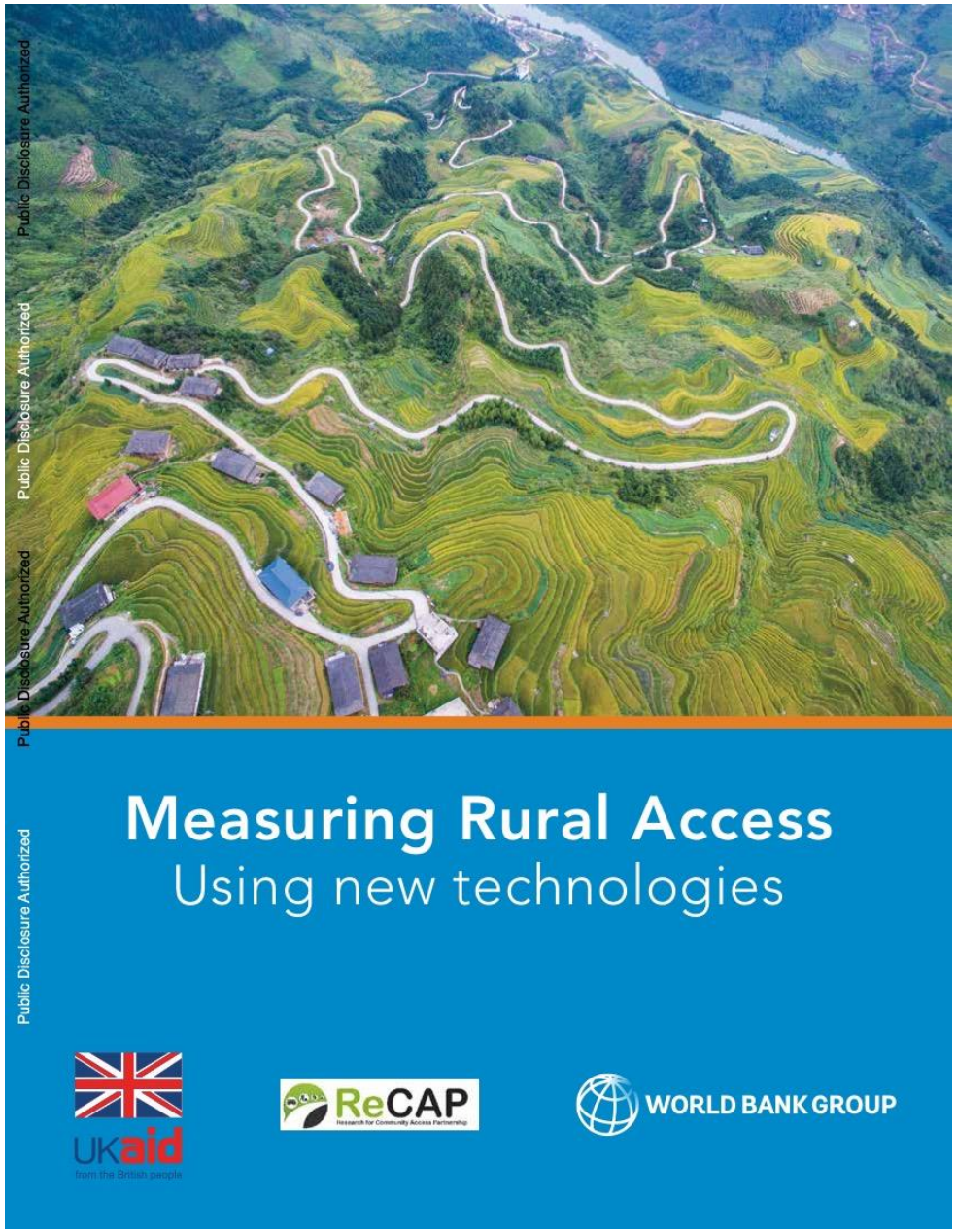
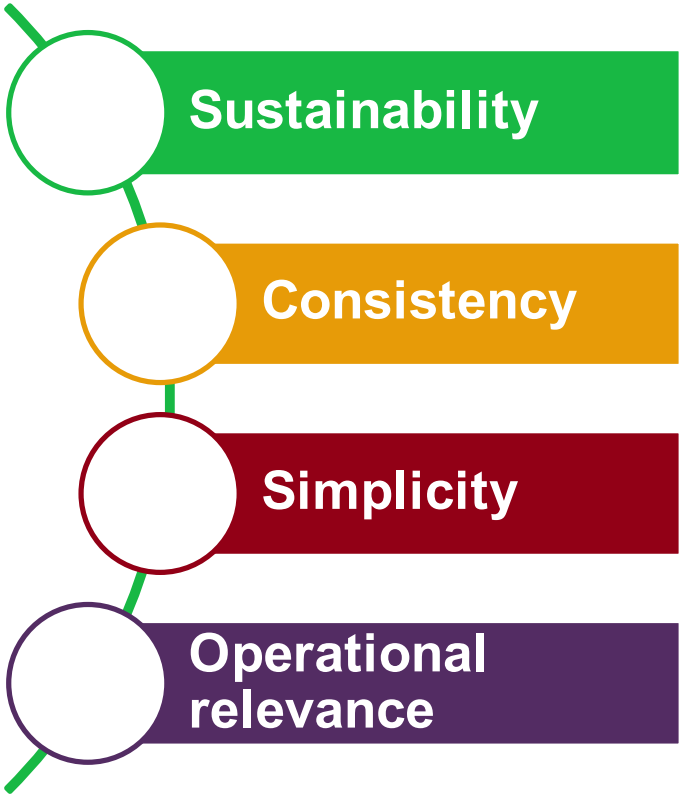
2015/2016

UKAid funding, through ReCAP, to update methods.

Objective: satisfy SDG Indicator requirements for Tier II/Tier I

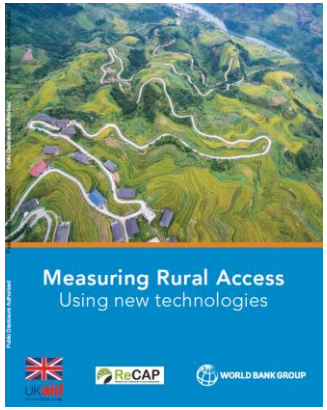


Proposed methodology: Conceptually the same, but measured differently using new data and technologies



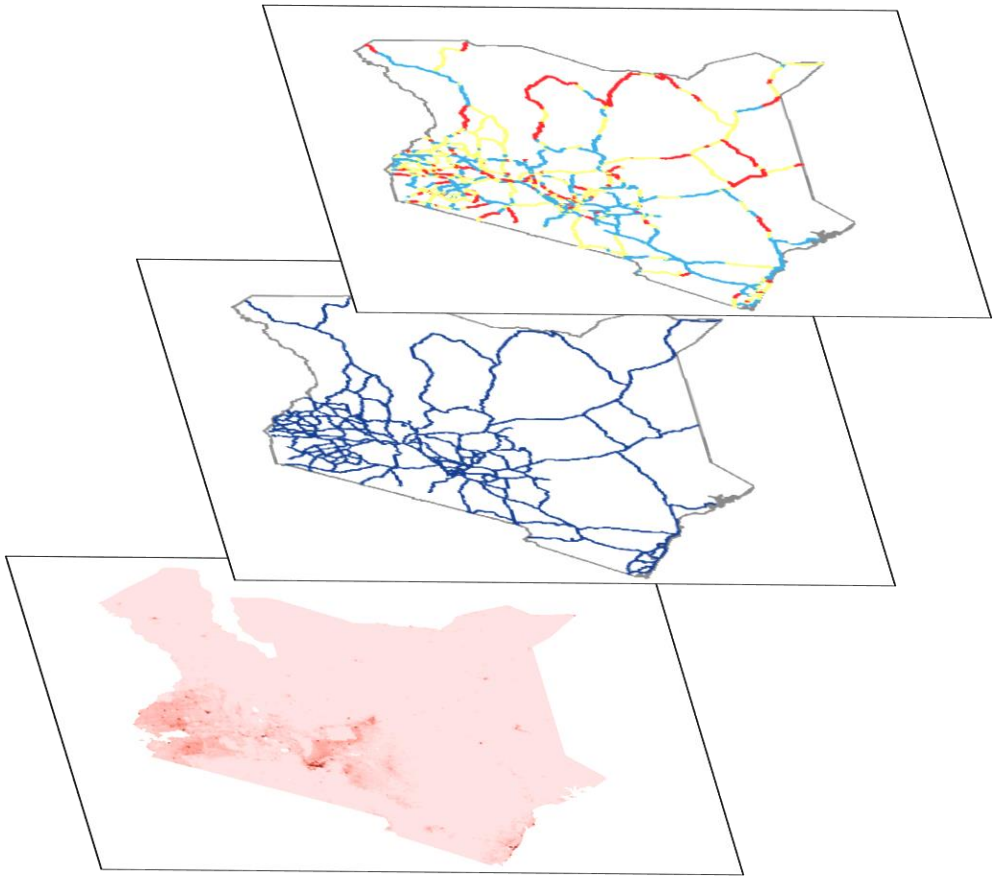
- Global definition:
  - Share of the rural population who live within 2 km of an "all-season" ≈ "good or fair" road
- Flexibility, depending on:
  - What data do we have in our normal operations?
  - What data can we update regularly, as we implement road works?
- Other issues:
  - Proximity to road network or market etc.?
  - 2km or 5km or 25 minutes?
  - What roads?
- See the methodology report

http://documents.worldbank.org/curated/en/367391472117815229/Measuring-rural-access-using-new-technologies

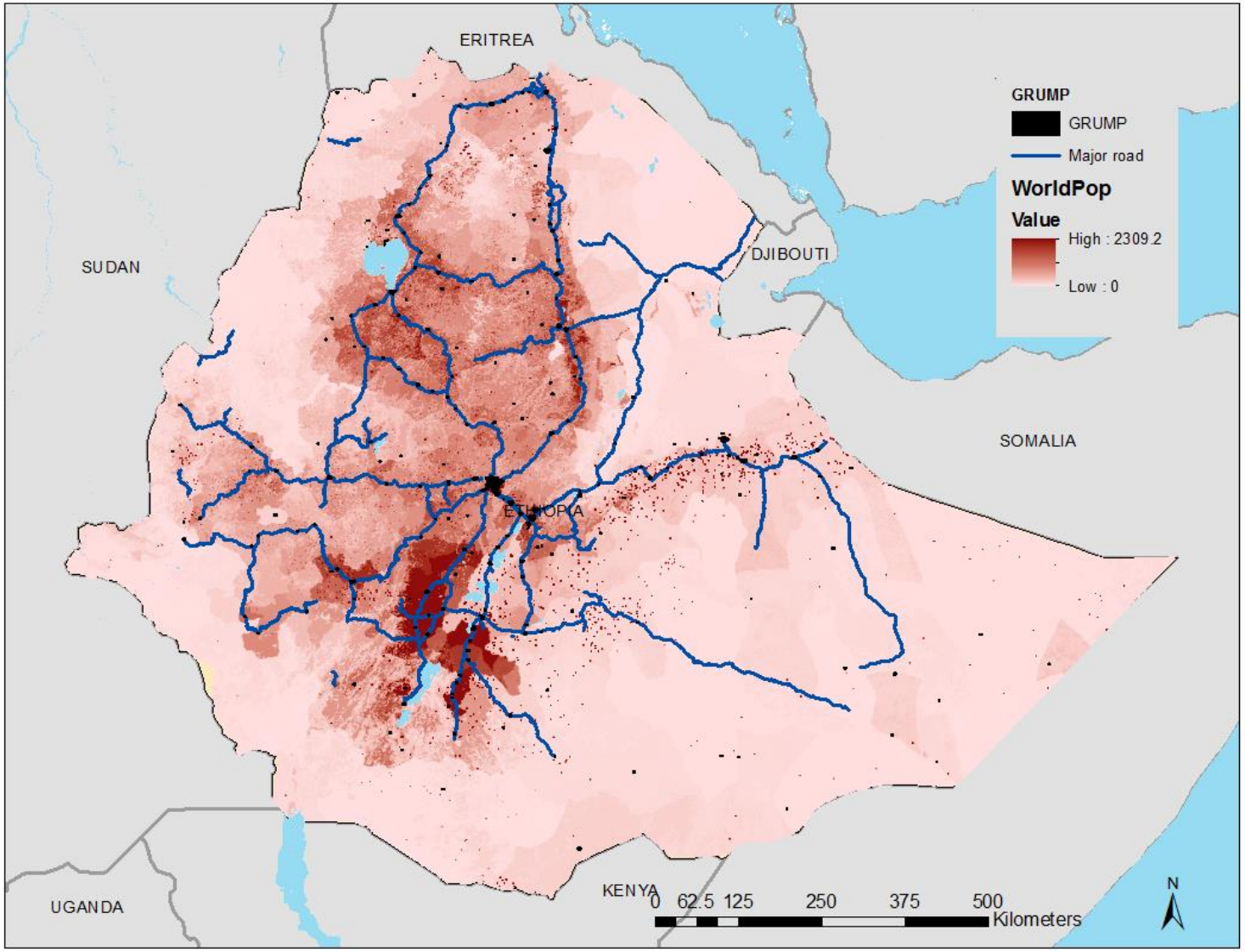


Taking advantage of available (and sustainable) spatial data, RAI is calculated by spatial software

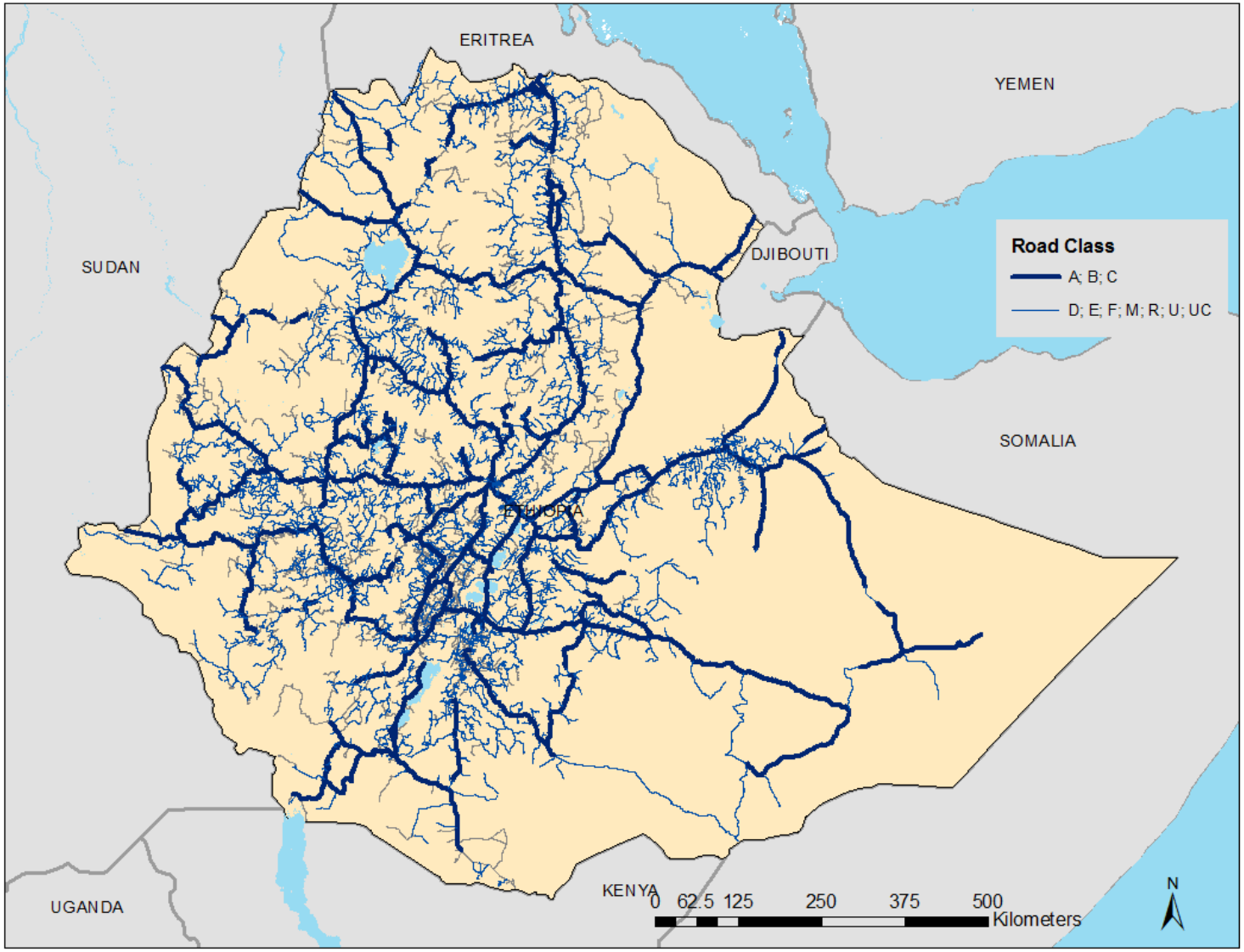
- Where do people live?
  - Global population data are available
- Where does the road network exist?
  - Georeferenced road network (government-owned, open data)
- In what condition?
  - Data exist, though often fragmented
  - Relevant issues: How to maintain road asset management system?
- Overlapping the above, the RAI is estimated by spatial software



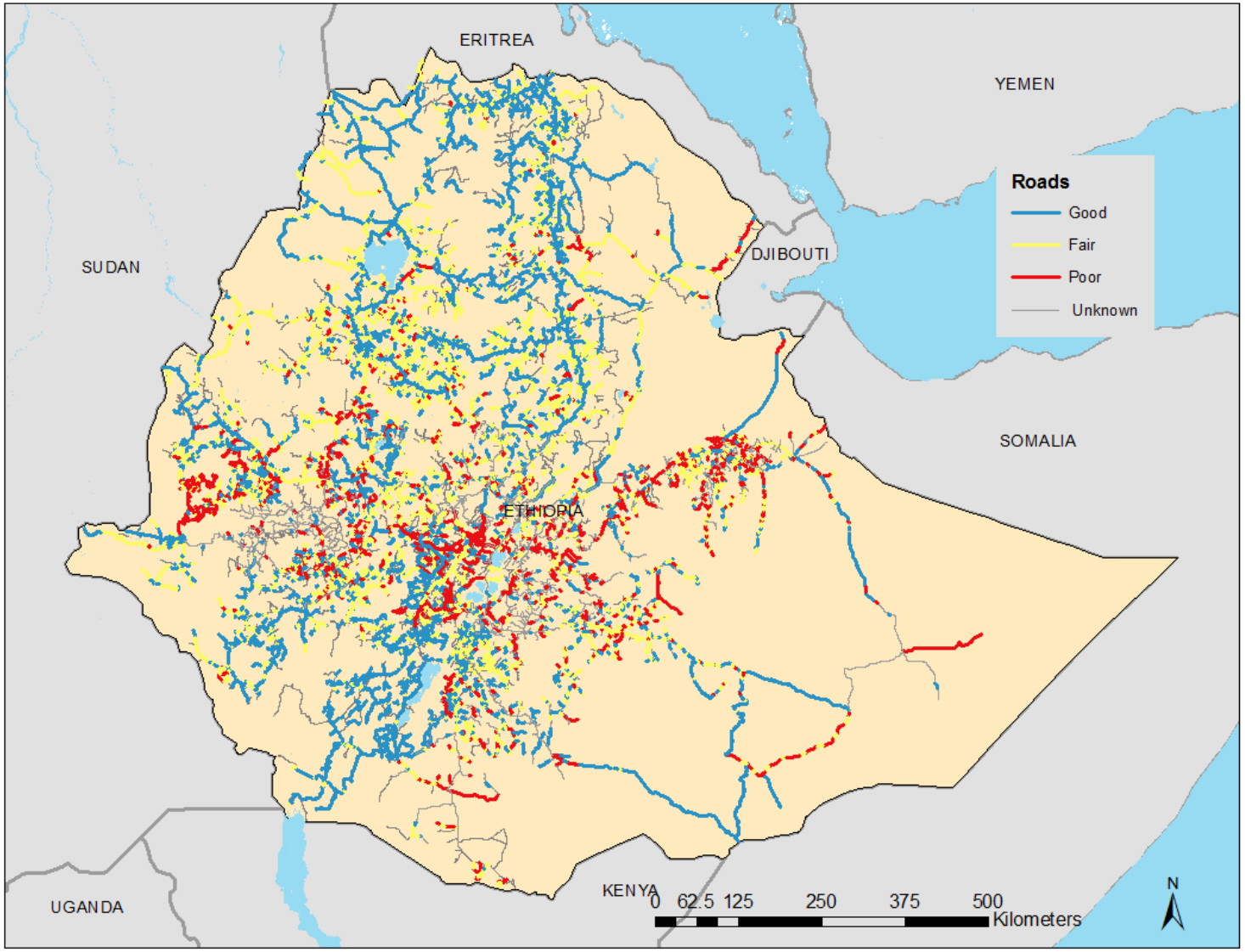
An example: 81.3 million people live in rural areas



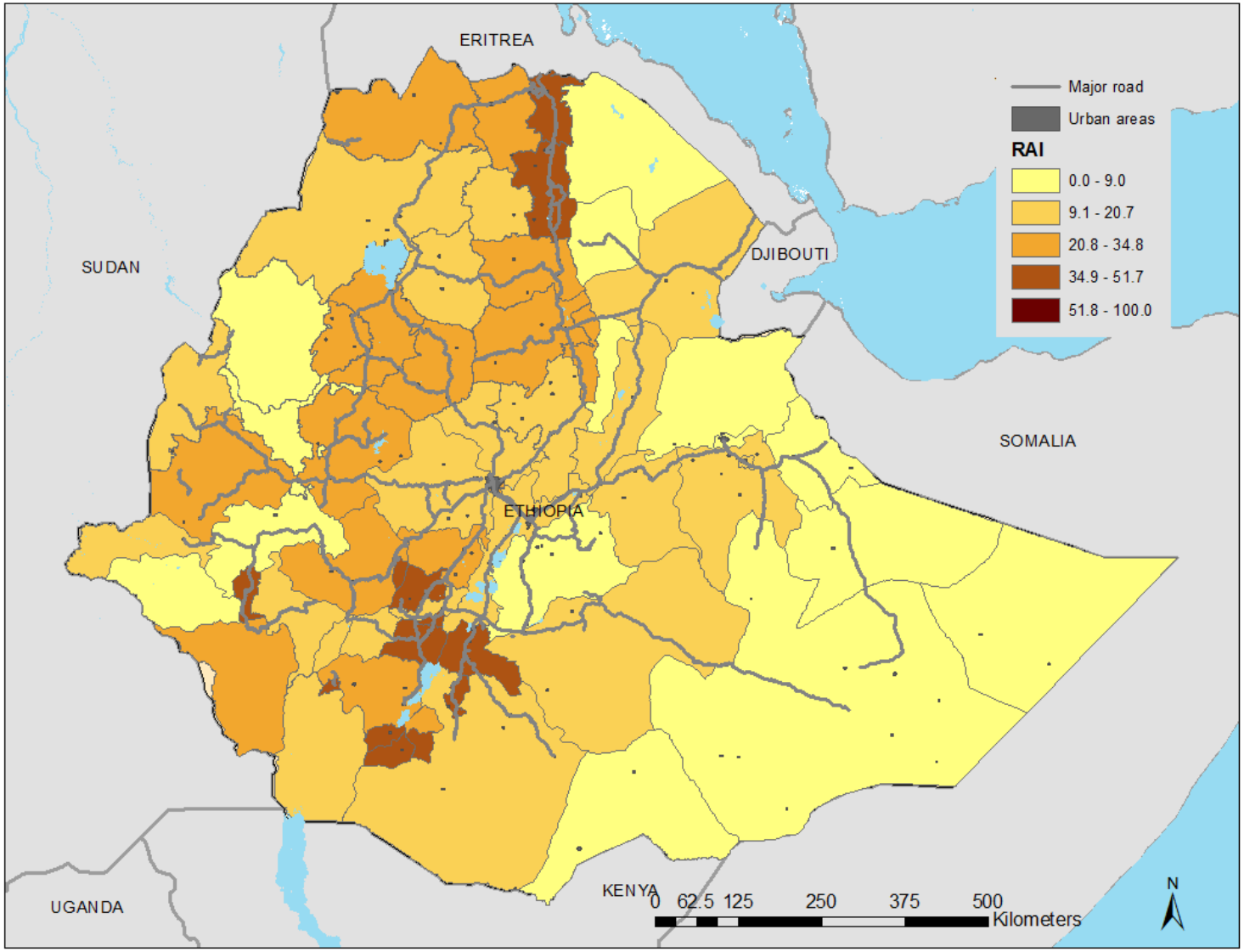
Ethiopia – 85,880 km of roads



31% of roads are good/fair for RAI purposes



RAI=21.6%, with significant inequality across regions



ReCAP RAI Status Review ADB 03 April 2018

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ReCAP RAI Status Review

- Concerns raised by ReCAP member countries; technical differences between new methodology and original methodology, and differences in results.
- Requirement identified for status review by ReCAP to determine appropriate way forward.
- Includes consultations with World Bank, regional development banks, and selected countries.

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Regional development banks

African Development Bank

- RAI used as a project level impact indicator on many projects.
- Strengthen local capacity to measure.

Inter-American Development Bank

- Lack of suitable data.
- Measure access to health centres, schools etc instead.

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Country visits - Africa

Ethiopia

- RAI used each year for many years to monitor progress with rural roads program.
- Limited local detail of rural road network.

Uganda

- RAI not used.
- Rural road mapping incomplete.

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Country visits - Asia

Nepal

- Recent administrative change to 7 provinces with 753 urban/rural municipalities.
- Working to achieve road access to every municipality – Local plans & GIS data.
- Many roads closed in rainy season.

Bangladesh

- Comprehensive GIS of all rural roads.
- Spreadsheet method of calculating RAI.
- High level of rural access (RAI = 84%)
- Only paved roads are all-season

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Issues for discussion

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Issues for consultation/discussion

Compatibility between the use of SDG Indicator 9.1.1 and the use of RAI in development planning

SDG Indicator 9.1.1

- Standardised method for comparisons between countries.

RAI for planning

- Measurement methods adapted to local resources, terrain & transport.
- Innovation welcomed.

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Issues for consultation/discussion

Use of alternative local methods?

Examples

- Bangladesh: Working with Bureau of Statistics, spreadsheet method identifies individual villages without access, hence calculates RAI at district and sub-district level from population data.
- Timor Leste: Detailed mapping of household locations relative to roads, hence calculate RAI.

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Issues for consultation/discussion

Effect of use of motorcycles on RAI

- Extensive use of motorcycles in some countries.
- Motorcycles can access areas that larger vehicles cannot.
- Is motorcycle access relevant for RAI?
- Possibly have an extra value, the difference that considering motorcycles would make?

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Issues for consultation/discussion

Transport services, rather than roads?

- Should there be an intention to measure access to a suitable transport service, rather than just a road, at some time in the future?

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Issues for consultation/discussion

Catalogue of RAI data?

- How can a catalogue of all existing RAI datasets be assembled?

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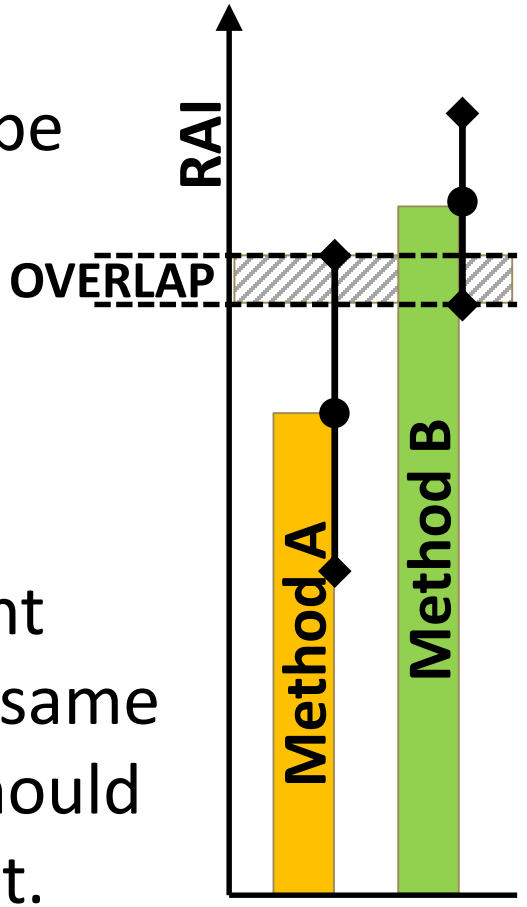
Issues for consultation/discussion

Accuracy of each data set?

- Should the accuracy of each dataset be assessed and recorded?
- Consider the accuracy of each data source, hence calculate overall likely accuracy.
- When different methods give different results, they are both measuring the same thing (RAI), so the accuracy ranges should overlap if the assessments are correct.



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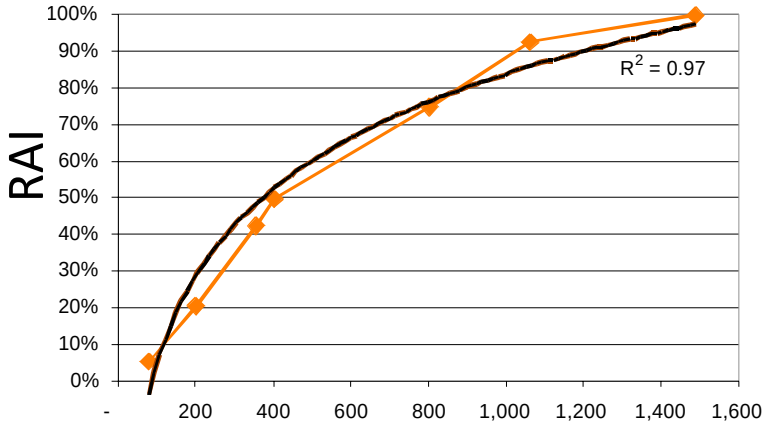
Issues for consultation/discussion

Financing of infrastructure & maintenance

- What level of RAI can be achieved within realistic infrastructure spending?



- What level of RAI can be sustained by future road maintenance finance?

- See 2008 AICD analysis

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Issues for consultation/discussion

Sustainable financing of updates?

- Who should pay the long term cost of maintaining and publishing RAI datasets?
- How will regular data collection be paid for?
- How will the cost of processing data to calculate RAI be paid in the future?

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Issues for consultation/discussion

Define an additional new rural access Indicator?

Possibility of an additional SDG Indicator

- Keep original RAI as SDG Indicator 9.1.1 unchanged.
- Define an additional SDG Indicator? – 9.1.3?

  Designed for the future, for example:
  - Proportion of the rural population within 30 minutes walk of a reliable , sustainable, resilient, affordable and equitable transport service.
  - Disaggregated by gender and age

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Summary of discussion topics

1. Compatibility between Indicator 9.1.1 and RAI?
2. Use of alternative local methods of calculation?
3. Effect of use of motorcycles on RAI?
4. Transport services, rather than roads?
5. Catalogue of RAI data?
6. Accuracy of each data set?
7. Financing of infrastructure and maintenance?
8. Sustainable financing of updates?
9. Define an additional new rural access Indicator?

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Information requested:

1. Knowledge of existing RAI datasets.
2. Details of the application of RAI on projects.

Stephen Vincent
sprvincent@gmail.com

Thank you for your attention

Stephen Vincent sprvincent@gmail.com

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