Sustainable Rural Access and the Rural Access Indicator

Robin Workman, TRL

Specialised Technical Session on Sustainable Transport
25 November 2019, Vic Falls, Zimbabwe
Establishment of the RAI in 2006

Definition

**Rural Access Index** = ‘the proportion of the rural population living within 2 km of an all-season road’.

All-season = “a road that is motorable all year round by the prevailing means of rural transport (often a pick-up or a truck which does not have four-wheel-drive), with some predictable interruptions of short duration during inclement weather (e.g., heavy rainfall) allowed.”

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2015 - SDG Indicator 9.1.1

SDG Target 9.1
Develop quality, reliable, sustainable and resilient infrastructure

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
UKAid funding, through ReCAP, to update method of measuring the RAI. Pilot measurements in 8 ReCAP countries. Support moving SDG Indicator 9.1.1 to Tier II.
2018/19 – RAI Consolidation & Revision

- Refine, propose, and agree on harmonised approach
- Refine the measurement framework to provide a clear framework for data collection and validation
- Trial proposed measurement framework in 4 countries

SDG Indicator “Tier” system

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
Issues:

- Data quality
- Data completeness
- Rural/urban boundaries
- Coordination between agencies
- SDG reporting
- Resources
- Secondary access
- Open source data
Population Data
WorldPop, Rural / Urban boundaries

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Open Street Map – almost the *de facto* standard for mapping of road network, buildings, health centres, schools etc.
GIS process

1. Download Road Network
2. Map of Road Network
3. Classify, Filter and apply 2 km Buffer to Road Network
4. Buffered Map of Rural Population
5. Apply Accessibility Factors
6. RAI
7. Download Population Data
8. Map of Total Population
9. Subtract Urban Areas
10. Map of Rural Population
11. Get Urban / Rural Boundaries
12. Map of Rural Population Living > 2 km away from an All-Season Road

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Accessibility factor as a proxy for ‘all-season’

Alternative approach based on “accessibility factors” defined by each country, to be used where road condition is unavailable or unreliable. Ground truth to determine the accessibility factors.

<table>
<thead>
<tr>
<th>Paved roads</th>
<th>Terrain</th>
<th>Low Risk (e.g. Flat, Rolling)</th>
<th>High Risk (e.g. Mountainous, Flood plains)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate</td>
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<td>1</td>
<td>1</td>
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<td>1</td>
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Accessibility Factor applied
(example Myanmar)

Accessibility factor map: Unpaved roads

Accessibility factor table for unpaved roads (from Figure 1)

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2020 – Next Steps for RAI

RAI Calculation Tool (by Azavea)
https://rai.azavea.com/
Discussion:

- Feedback on methodology: practical, achievable, sustainable?
- Future technologies to measure RAI?
- Does anyone measure RAI already?.. if so, what methodology is being used?
- Is RAI data useful for local planning?
- Is the data sensitive, i.e. any concerns with using the calculation tool?
- Do countries have the resources to measure RAI?
Thank you for your attention

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