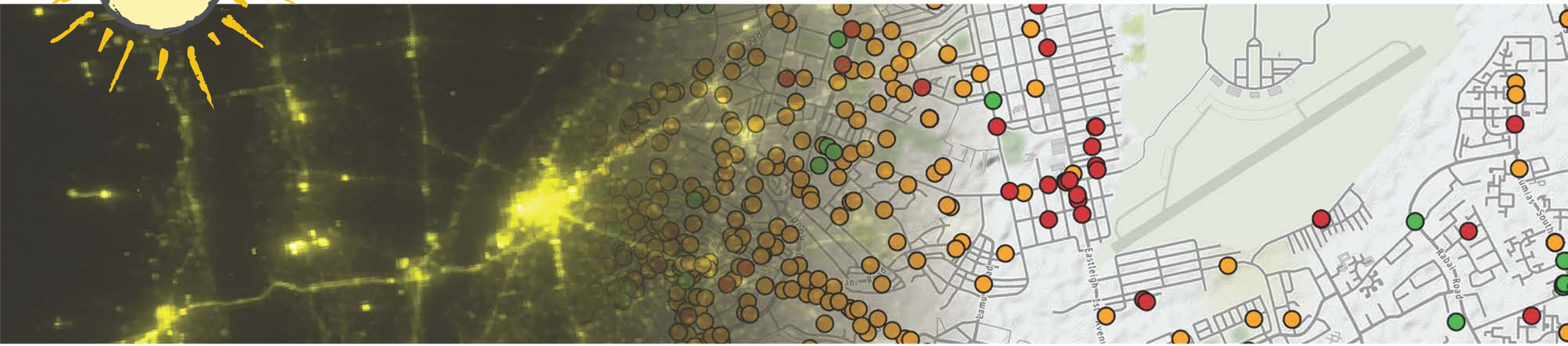
IE CONNECT FOR IMPACT

Transforming the Growth Potential of Transport Investments

Rural Roads Session

Indicators and Potential Technologies



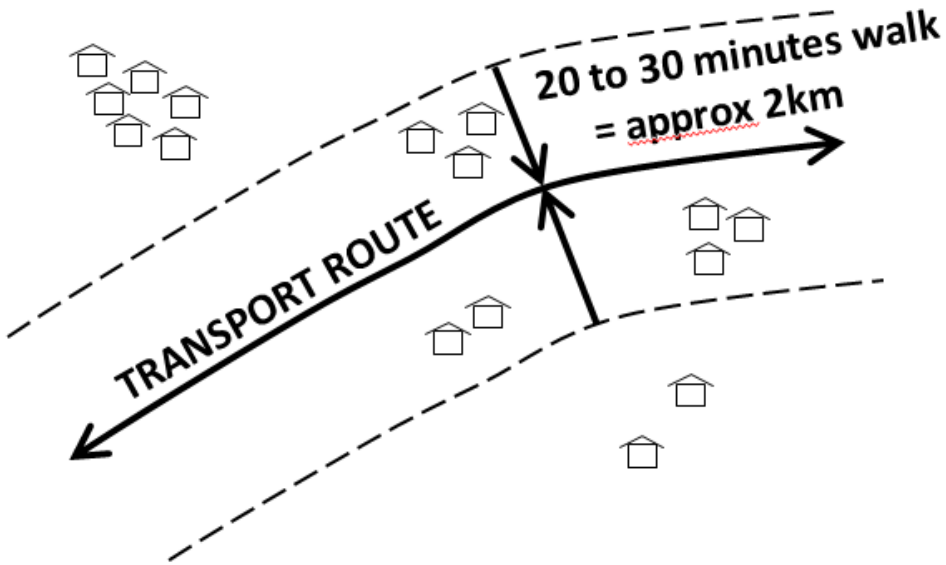
i2i DIME TRANSFORM DEVELOPMENT

WORLD BANK GROUP Transport

SUSTAINABLE mobility FOR ALL

UKaid from the British people

Rural Access Index



Definition

‘The proportion of the rural population living within two kilometres of an all-season road’.

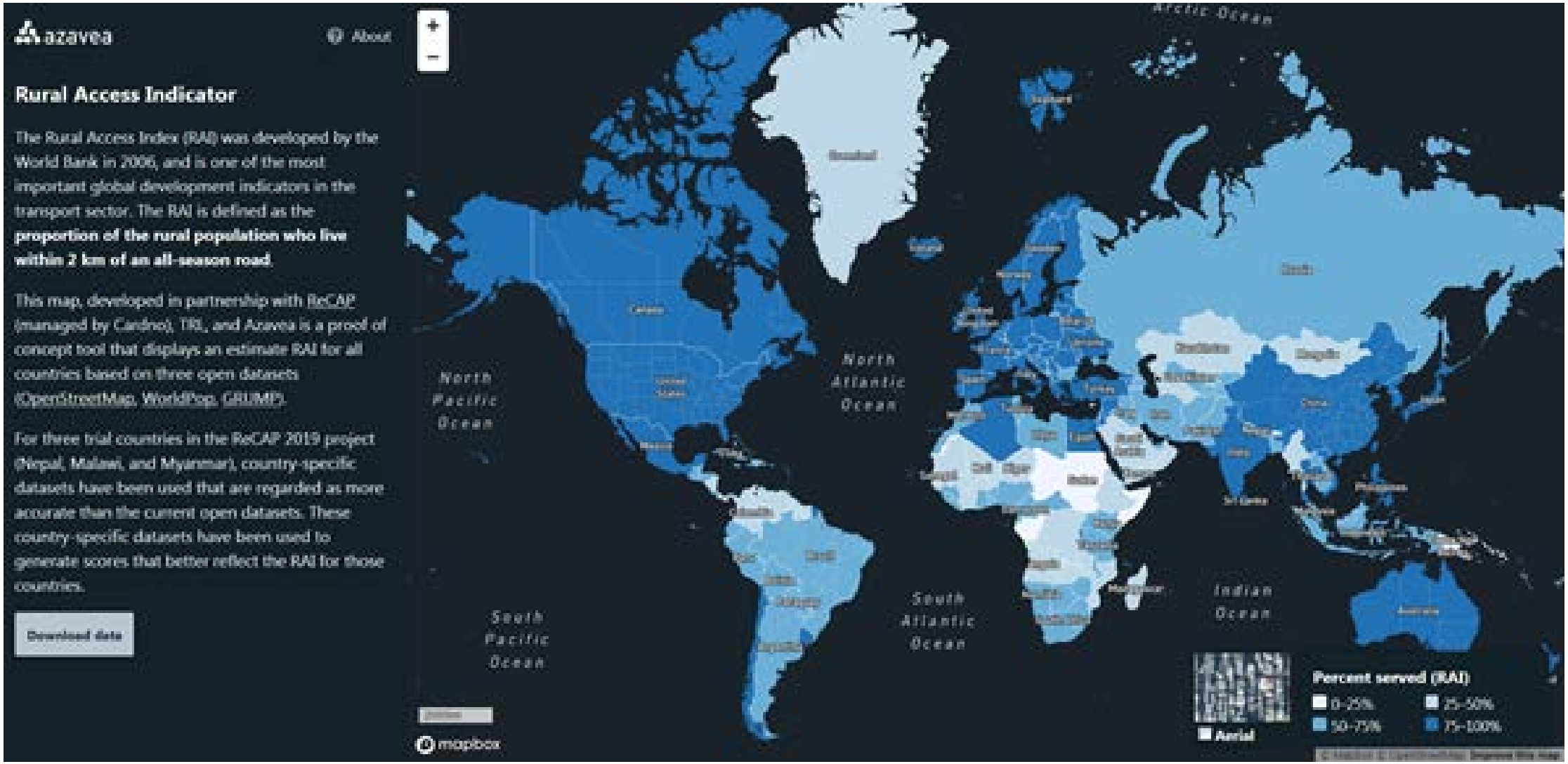
All-season = “a road that is motorable all year round by the prevailing means of rural transport (often a pick-up or a truck which does not have four-wheel-drive), with some predictable interruptions of short duration during inclement weather (e.g., heavy rainfall) allowed.”

Rural Access Index / SDG 9.1.1

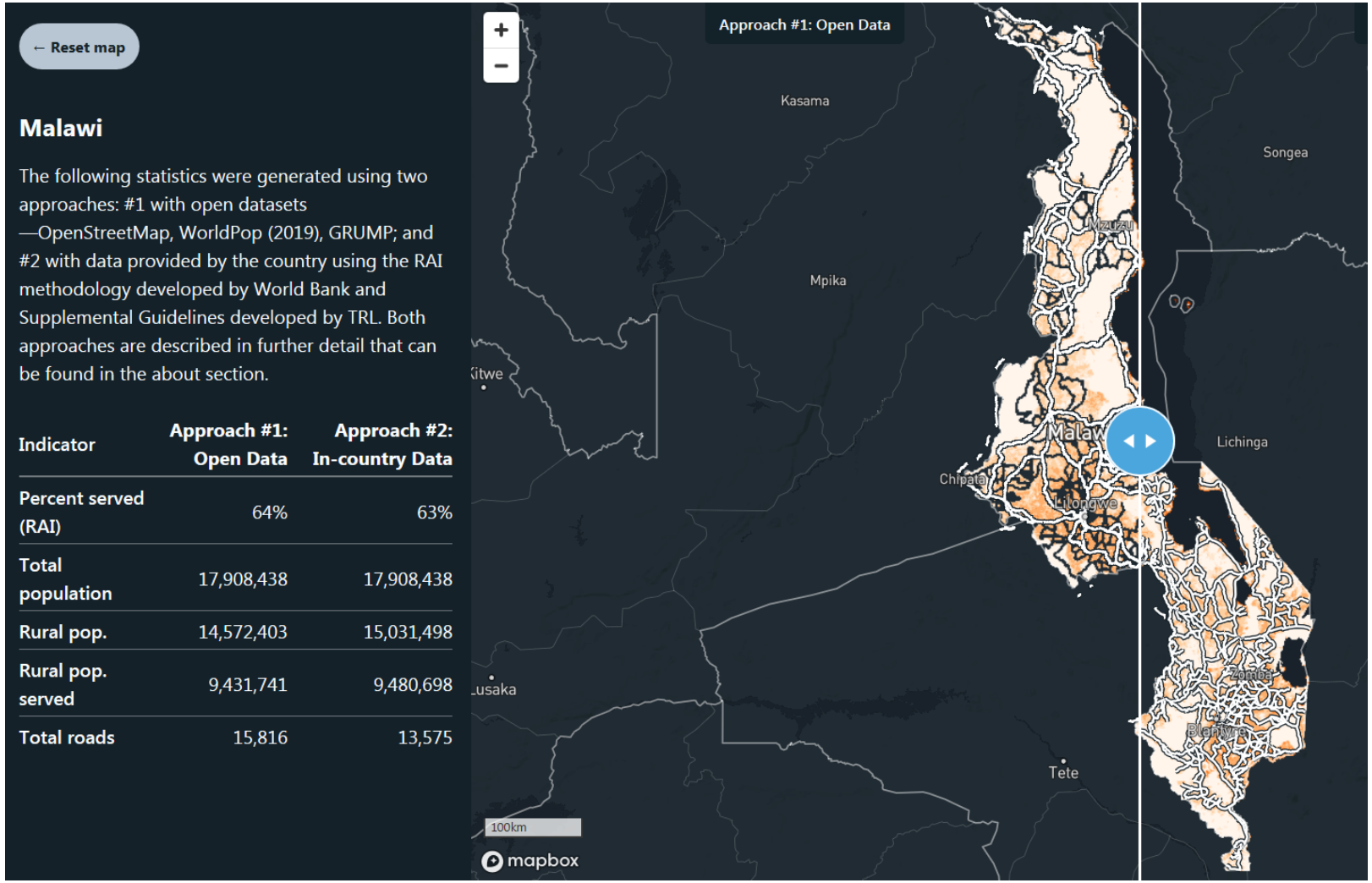
It is the only SDG indicator for rural transport

Reached Tier II status in January 2019

RAI “Proof of Concept” Tool



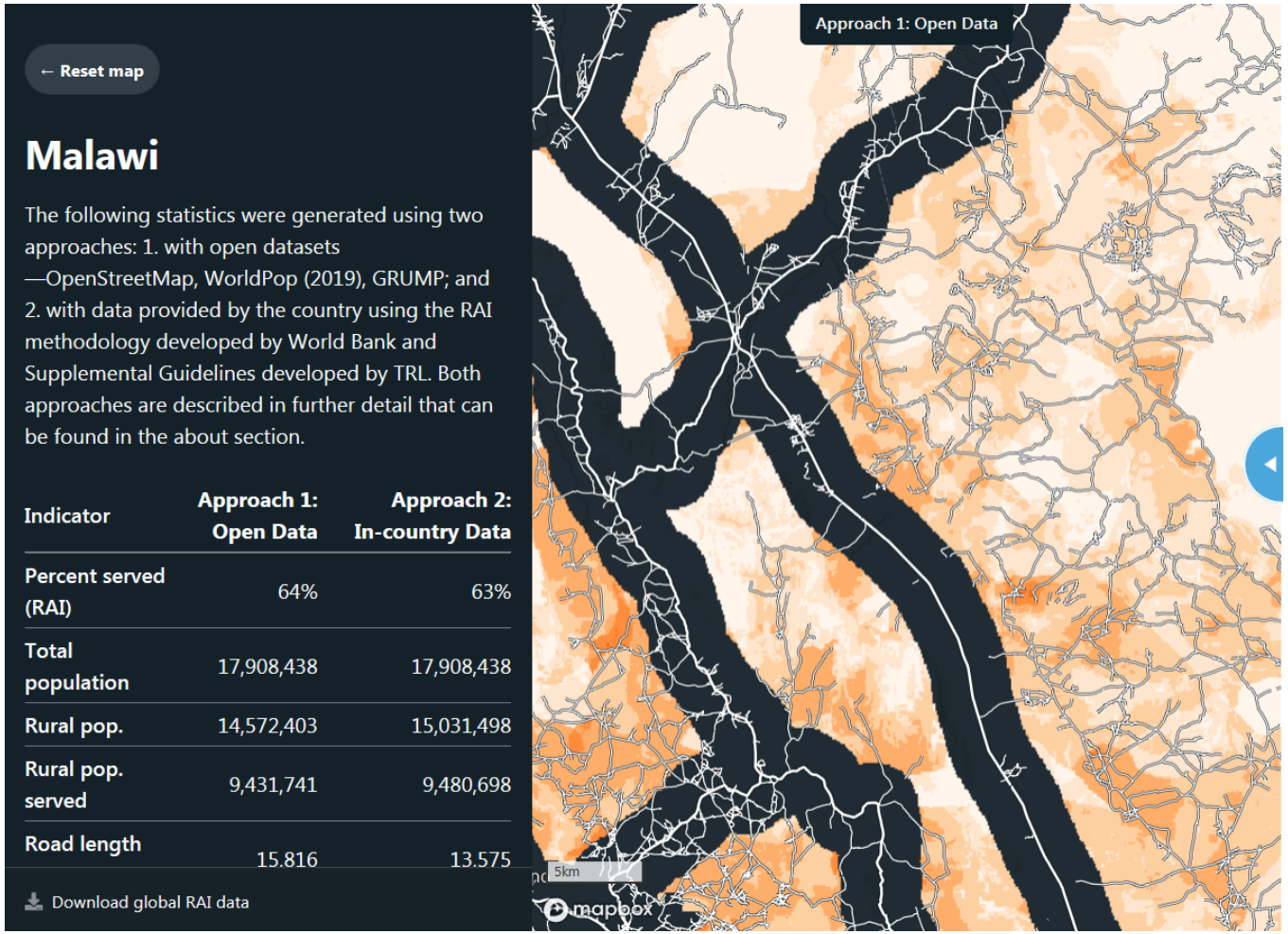
RAI “Proof of Concept” Tool



Encourages NSOs to upload their own data to be used instead of the “default”

Could be done at sub-national level too

RAI “Proof of Concept” Tool



Can also be calculated at project level in order to identify the actual populations that would be impacted by addition or upgrading of an existing road

Rural Access Index (RAI)

	Population (millions, 2019)			
Region	**Total**	**Rural**	**Living >2 km away from an all-season road**	**RAI**
Africa	*1,317.7*	*908.4*	*421.1*	*53.6*
Americas	*1,057.3*	*222.7*	*71.0*	*68.1*
Asia	*4,632.8*	*2,590.6*	*658.9*	*74.6*
Europe	*757.1*	*190.6*	*19.8*	*89.6*
Oceania	*37.4*	*12.8*	*7.4*	*42.2*
World	***7,802.3***	***3,925.0***	***1,178.2***	***70.0***

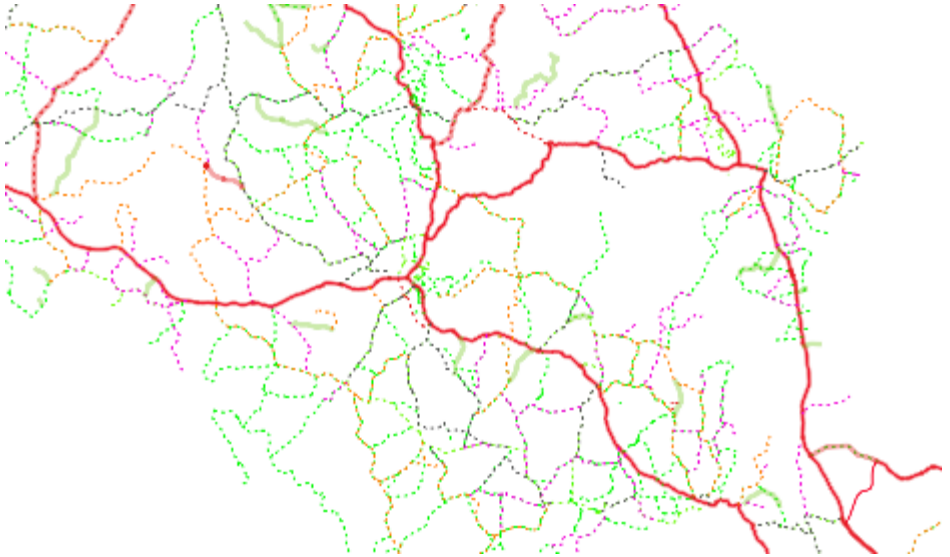
Because it works at all levels, it can be used to roll up to the global level

These are latest world estimates from the tool

Upgrading the Base Data in OSM

Roads Datasets

- Malawi Roads Authority. Roads Data Management (RDM)
- Department of Surveys. Roads, tracks, paths, etc.
- Open Street Map (OSM). Roads and attributes available



Upgrading the Base Data in OSM

Research | ML Applications

Mapping roads through deep learning and weakly supervised training

July 23, 2019 Written by Saikat Basu, Derrick Bonafilia, James Gill, Danil Kirsanov, David Yang

Share

Creating accurate maps today is a painstaking, time-consuming manual process, even with access to satellite imagery and mapping software. Many regions — particularly in the developing world — remain largely unmapped. To help close this gap, Facebook AI researchers and engineers have developed a new method that uses deep learning and weakly supervised training to predict road networks from commercially available high-resolution satellite imagery. The resulting model sets a new bar for the state of the art for accuracy, and because it is able to accommodate regional differences in road networks, it can effectively predict roads around the globe.

Related posts

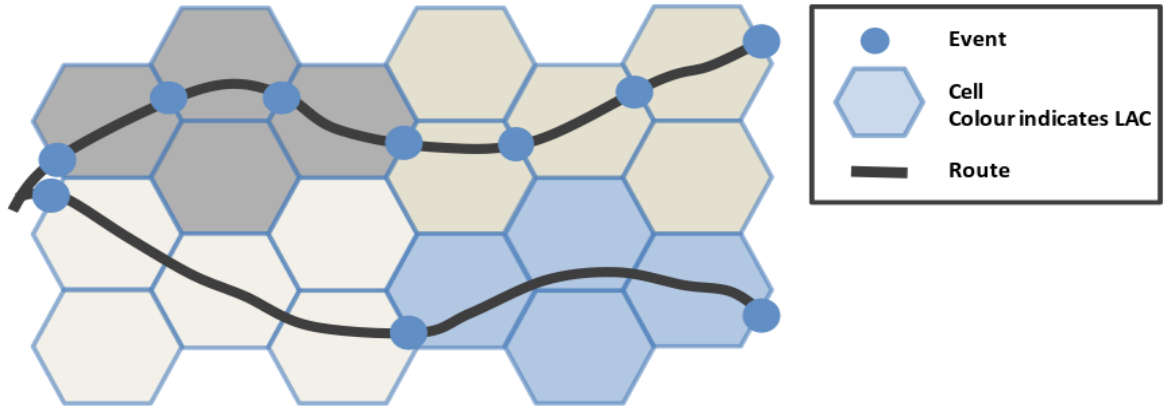
Mapping the world to help aid workers, with weakly, semi-supervised learning

April 09, 2019

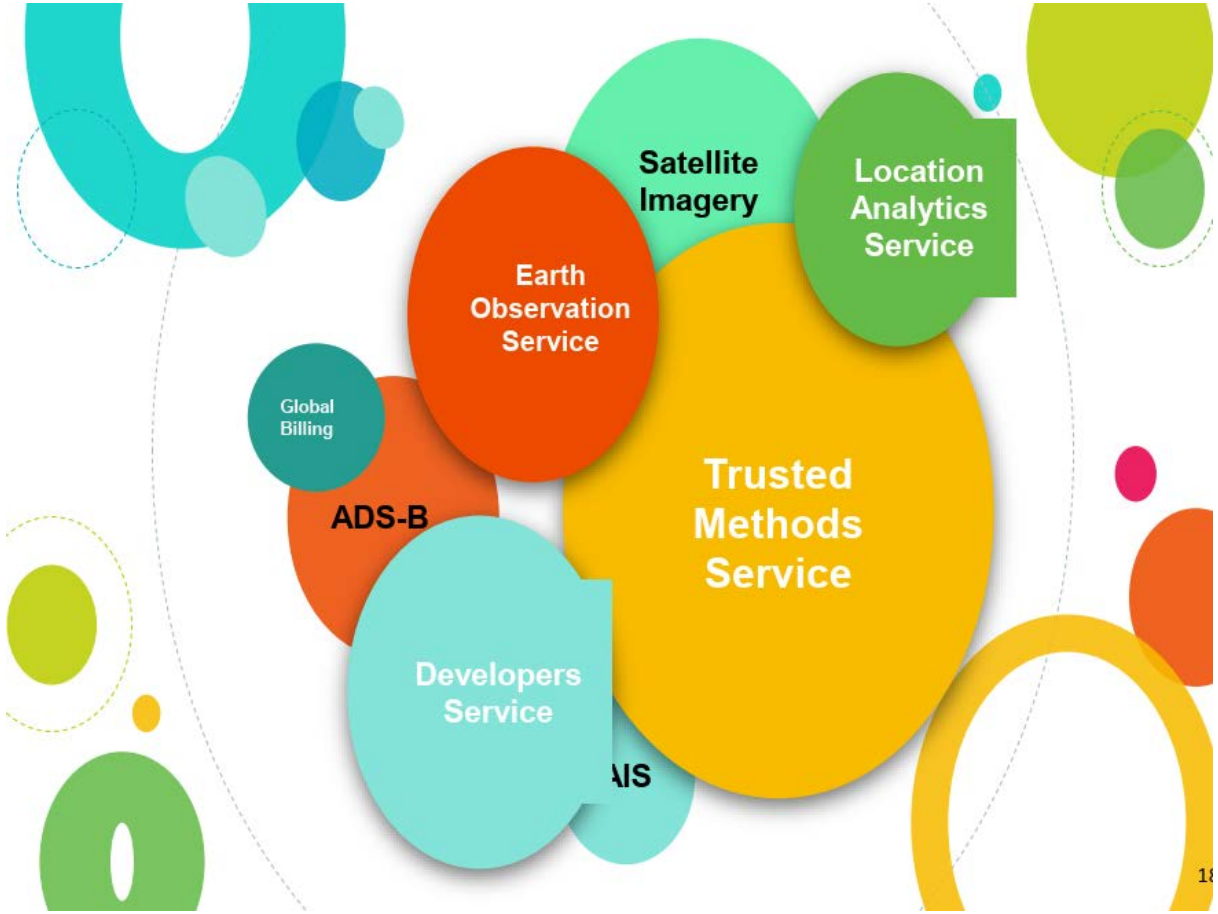
Facebook Data for Good Programme

Potential for use of Mobile Phone Network Data

- Increasingly being used for transport surveys, and to monitor traffic in real time
- Potential for mobile data to indicate whether a road is being used, and how fast the people using the road are travelling, average speeds etc.
- Cell to cell:



UN Global Platform



UN Global Platform

BigData UN Global Working Group
Marketplace Alpha

Collaboratives | Datasets | Methods | Learnings | Services

Home > Collaboratives

Filter your results

Big Data Source

- Satellite imagery or aerial imagery data (8)
- Mobile phone data (17)
- Web scraping data (24)
- Smart meter electricity data (5)
- Scanner data (21)
- Other (30)
- Credit card data (3)
- Road sensor data (5)
- Ships identification data (2)
- Social media data (6)
- Public transport usage data (1)

Collaboratives

Trusted Data Collaboratives working with the Global Platform to produce new trusted methods, learnings and statistics

Items 1-10 of 185 | Name A-Z

Collaborative

"Now-casting" Food Prices in Indonesia Using Social Media Signals

"Now-casting" Food Prices in Indonesia Using Social Media Signals

→

HD Imagery in UK

Some companies in UK have created on-line cloud of geo-referened High Definition Imagery

Been doing this annually for 10 years, on spec

HD Imagery in UK

Machine Learning Applications:

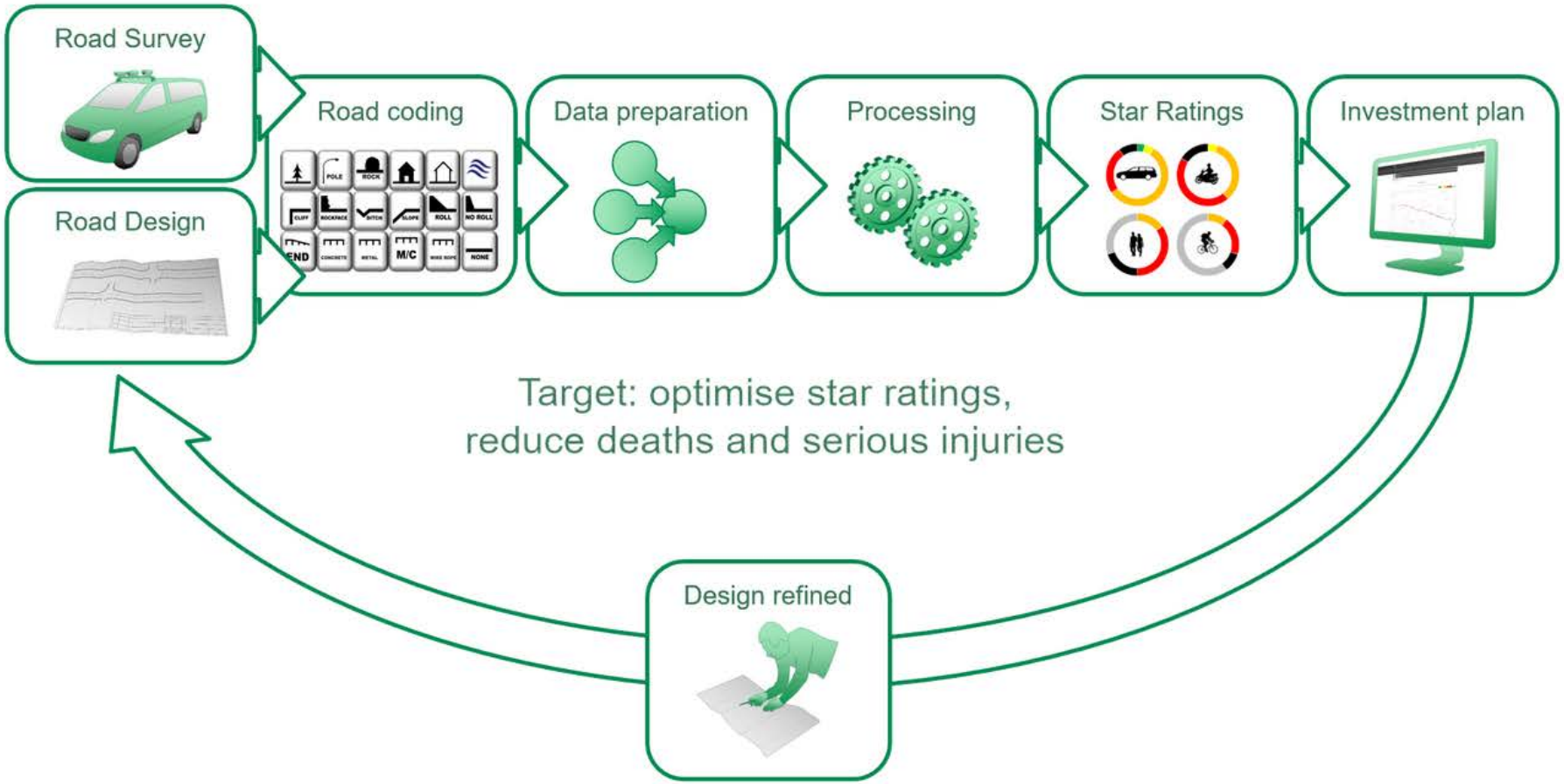
Asset Management

Change Detection

Road Deterioration

Others*

International Road Assessment Programme (iRAP)



iRAP Star Ratings

So it's possible to take the imagery and do a Road Safety Rating using Machine Learning tool, without having to conduct a new survey

Can also go back and do it historically if you wish

Many countries are building Star Ratings into their national indicators and their safety policies

Road Safety Implementation

You don’t always need machine learning to tell you what the safety issues are

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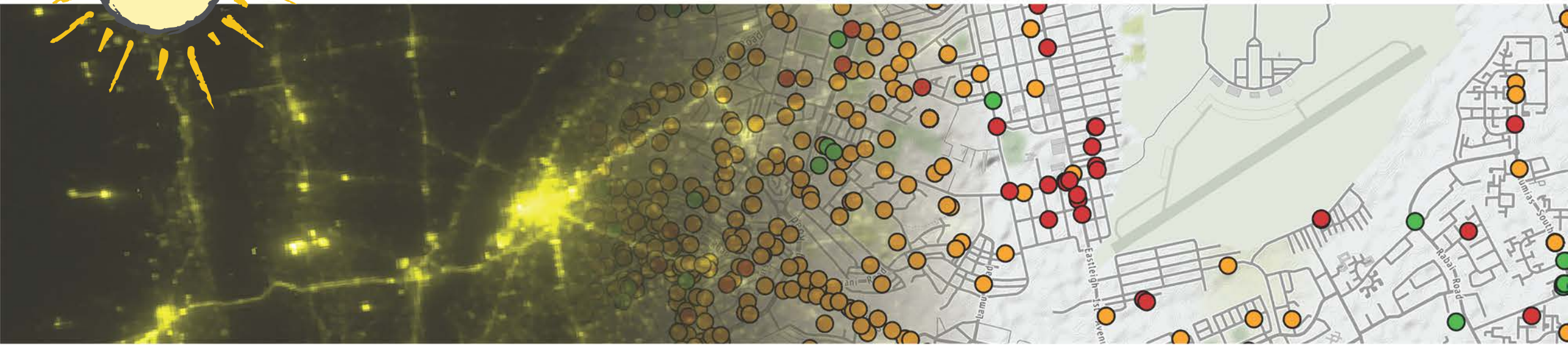
Thank you



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