WGGI's

National assessment of the SDGs

Observations and issues

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15:
geospatial data is needed

The IAEG-SDG WGGI has reported on a "Geospatial" Shortlist

9:
geospatial data can support

SDG GEODATA

SHORTLIST

SDG	A: Geospatial data is needed	B: Geospatial data can support
1		1.1.1 (I)/ 1.4.2 (III)
2	2.4.1 (III)	
4		4.5.1 (I/II/III)
5		5.2.2 (II)/ 5.4.1 (II)/ 5.a.1 (III)/ 5.a.2 (III)
6	6.3.2 (III)/ 6.5.2 (III) / 6.6.1 (III)	
9	9.1.1 (III) / 9.c.1 (I)	
11	11.2.1 (II)/ 11.3.1 (II)/ 11.7.1 (II)	11.7.2 (III)
14	14.2.1 (III)/ 14.5.1 (I)	
15	15.1.1 (I)/ 15.1.2 (I)/ 15.3.1 (III)/ 15.4.1 (I)	15.4.2 (II)
TOTAL	**15**	**9**

sublist A

geospatial data is needed

Indicator	
2.4.1	Proportion of agricultural area under productive and sustainable agriculture
6.3.2	Proportion of bodies of water with good ambient water quality
6.5.2	Proportion of transboundary basin area with an operational arrangement for water cooperation
6.6.1	Change in the extent of water-related ecosystems over time
9.1.1	Proportion of the rural population who live within 2 km of an all-season road
9.c.1	Proportion of population covered by a mobile network, by technology
11.2.1	Proportion of population that has access to public transport, by age, sex and persons with disabilities
11.3.1	Ratio of land consumption rate to population growth rate
11.7.1	Average share of the built-up area of cities that is open space for public use for all, by sex, age etc
14.2.1	Proportion of national Exclusive Economic Zones managed using ecosystem-based approaches
14.5.1	Coverage of protected areas in relation to marine areas
15.1.1	Forest area as a proportion of total land area
15.1.2	Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type
15.3.1	Proportion of land that is degraded over total land area
15.4.1	Coverage by protected areas of important sites for mountain biodiversity

sublist B

geospatial data can support

Indicator	
1.1.1	Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)
1.4.2	Proportion of total adult population with secure tenure rights to land, by sex and by type of tenure
4.5.1	Parity indices (female/male, rural/urban etc as data become available)
5.2.2	Proportion of women and girls aged 15 years and older subjected to sexual violence, by age and place of occurrence
5.4.1	Proportion of time spent on unpaid domestic and care work, by sex, age and location
5.a.1	a. Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure
5.a.2	Proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control
11.7.2	Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months
15.4.2	Mountain Green Cover Index

SHORTLIST Assessment

- Possible to report or already being reported
- Possible to develop: data integration needed or changes to current surveys
- Very difficult to report, no current survey, no available method
- Not relevant / Global data enough

Voluntary national assessment of Member's readiness to apply geospatial information in the production of indicators

A voluntary review of readiness
to utilize global and national geospatial data and satellite earth observations data sets in the production of indicators (*based on the shortlist of 24 indicators*)

Indicator	Sweden		Germany		Mexico	France		Qatar
	Global	National	Global	National	National	Global	National	National
2.4.1	🔴	🟢	🟡	🟡	🟡	🔴	🟢	🟢
6.3.2	🟢	🟢	🟡	🟡	🟡	🟡	🟢	🟡
6.5.2	🟢		🟢	🟢	🟡	🟢	🟡	⚪
6.6.1	🔴	🟡	🟡	🟡	🟡	🟡	⚪	🔴
9.1.1	🔴	🟡			🟢	🔴	⚪	🟢
9.c.1	🟢		🟢	🟢	🔴	🟢		🟢
11.2.1	🟡	🟡	🟡	🟡	🔴	🔴	⚪	🟢
11.3.1	🟡		🟢	🟢	🟡	🟡	🟢	🟢
11.7.1	🔴	🟢			🟡	🔴	🔴	🔴
14.2.1	🔴					🔴	🟢	🔴
14.5.1	🟢		🟡	🟡	🟡	🟢	🟢	🟡
15.1.1	🟢		🟢	🟢	🟢	🟢	🟢	⚪
15.1.2	🟢	?	🟡	🟡		🟢	🟢	🟡
15.3.1	🔴		🟢	🔴	🟢	🟡	🟡	🟡
15.4.1	🟢	?	🟡	🟡	🟡	🟢	🔴	⚪

SUB-LIST A:

GEOSPATIAL DATA IS NEEDED

Voluntary national assessment of Member's readiness to apply geospatial information in the production of indicators

A voluntary review of readiness
to utilize global and national geospatial data and satellite earth observations data sets in the production of indicators (*based on the shortlist of 24 indicators*)

Indicator									
	Global	National	Global	National	National	Global	National	National
1.1.1	●		●			●	●	
1.4.2	●		●	●		●	●	
4.5.1	●		●	●		●	●	●
5.2.2	●	●	●	●	●	●	●	●
5.4.1	●		●	●	●	●		
5.a.1	●		●	●		●	●	●
5.a.2	●		●	●		●	●	●
11.7.2	●	●			●	●	●	
15.4.2	●	?	●	●	●	●	●	●

SUB-LIST B:

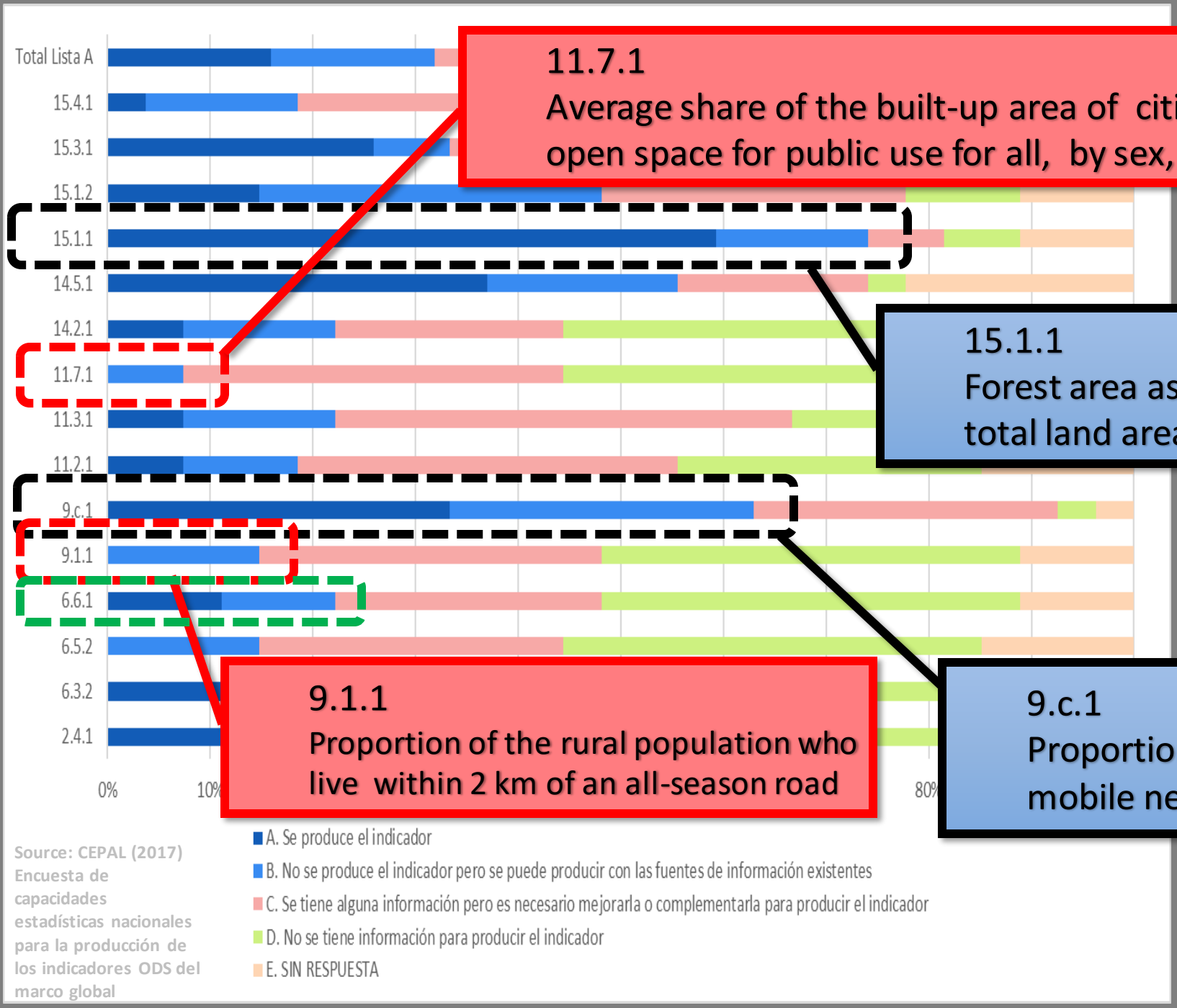
GEOSPATIAL DATA CAN SUPPORT

15:
geospatial
data is
needed

The IAEG-SDG WGGI has reported on a "Geospatial" Shortlist

Regional Panorama

9:
geospatial
data can
support



11.7.1
Average share of the built-up area of cities that is open space for public use for all, by sex, age etc

15.1.1
Forest area as a proportion of total land area

9.1.1
Proportion of the rural population who live within 2 km of an all-season road

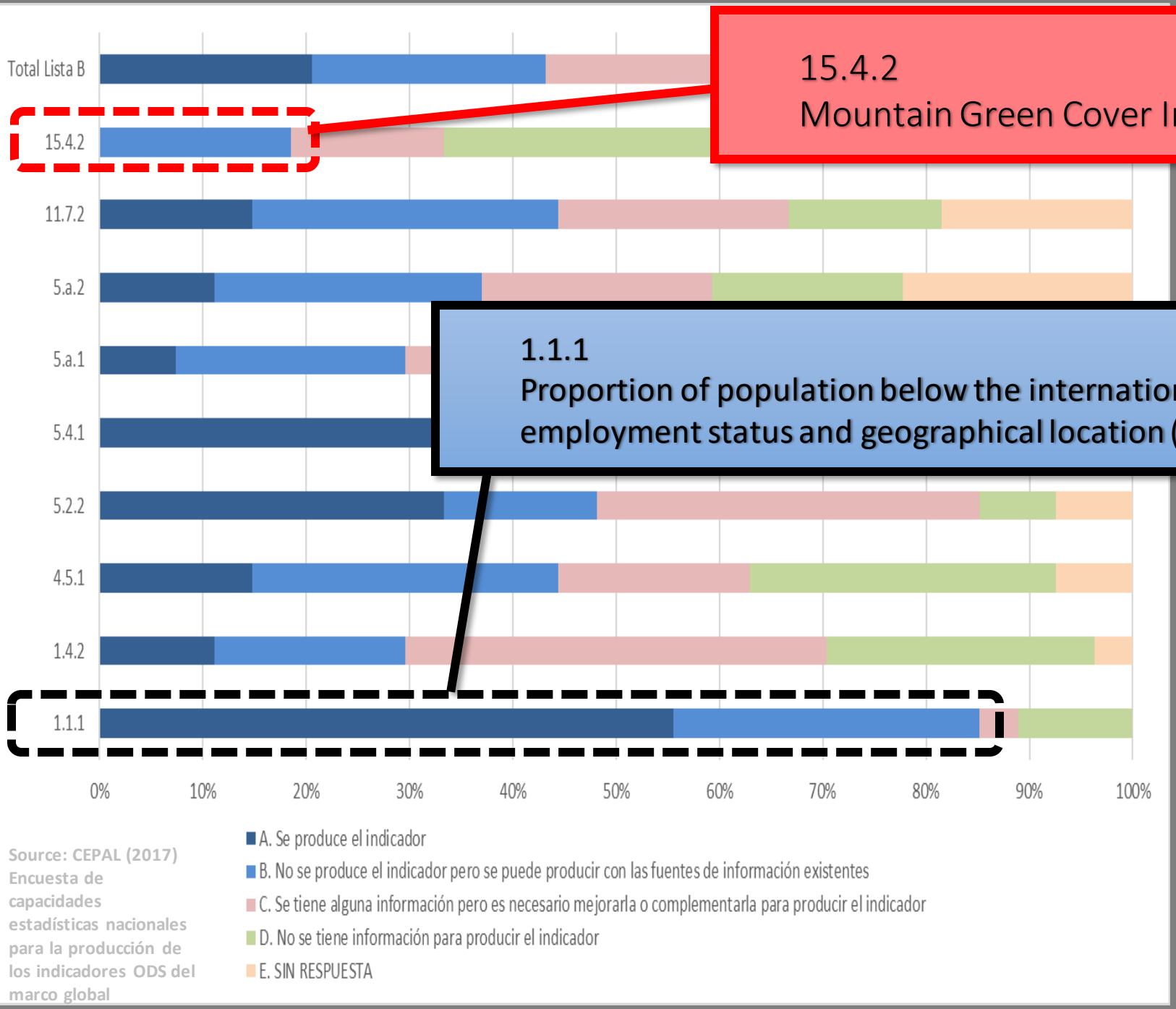
9.c.1
Proportion of population covered by a mobile network, by technology

Latin American and the Caribbean:

% of countries by production level of sublist A indicators

(27 countries, 2016)

geospatial data is needed



Latin American and the Caribbean:

% of countries by production level of sublist B indicators

(27 countries, 2016)

geospatial data can support

[Example]

15:
geospatial
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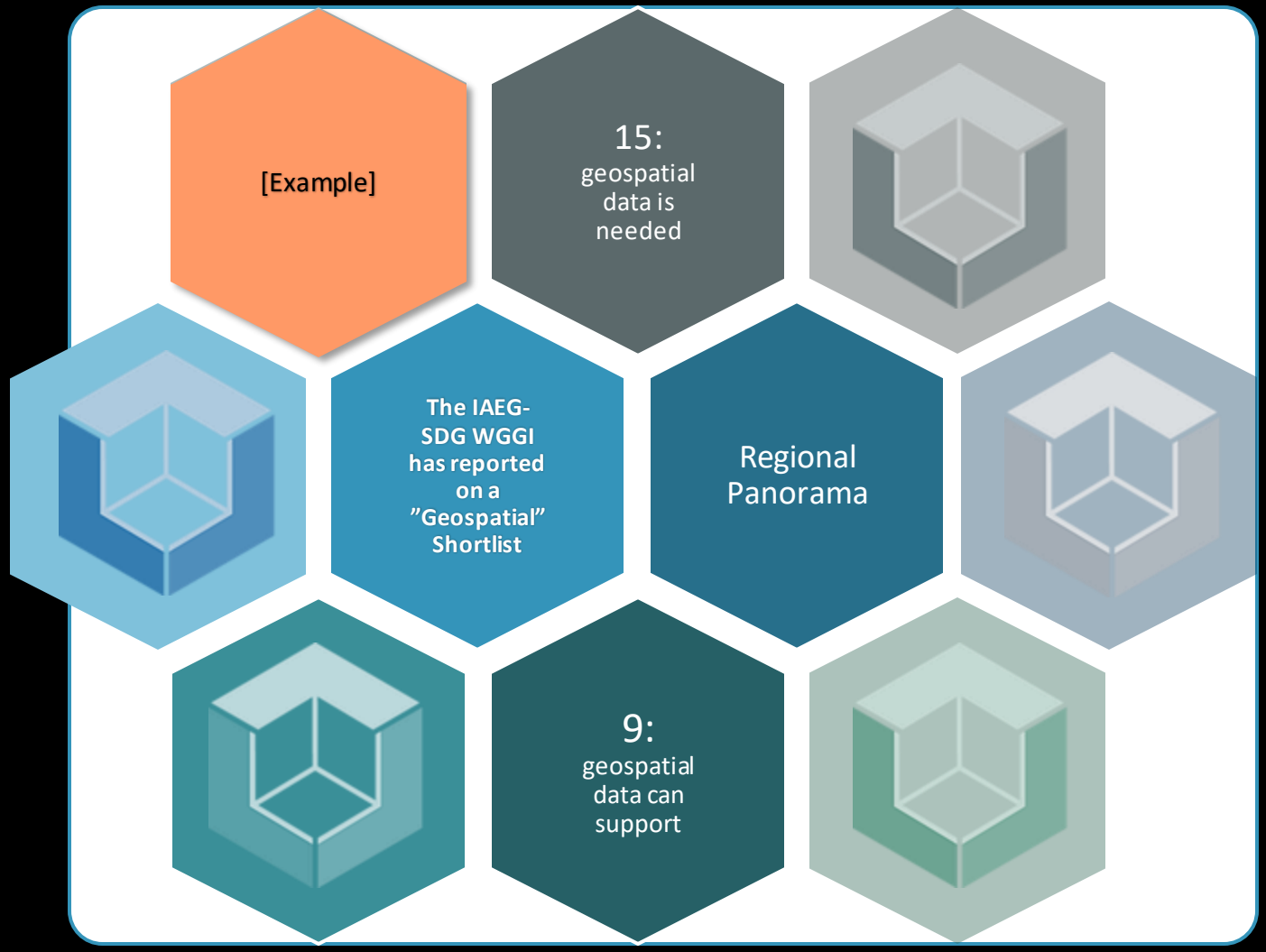
Regional Panorama

9:
geospatial
data can
support

INEGI is currently working in the implementation of the Mexican Geospatial Data Cube

It allows for **big data** time series analysis and will be oriented towards calculating SDG indicators, among other tasks…

Current tests are done for indicator 15.4.2 and 6.6.1



Currently implementing Open Data Cube at INEGI

WORKS ON indicator 15.4.2
mountain Green cover index

First classification is a conversion from the 2014 Land Use/Land Cover map to 6 classes

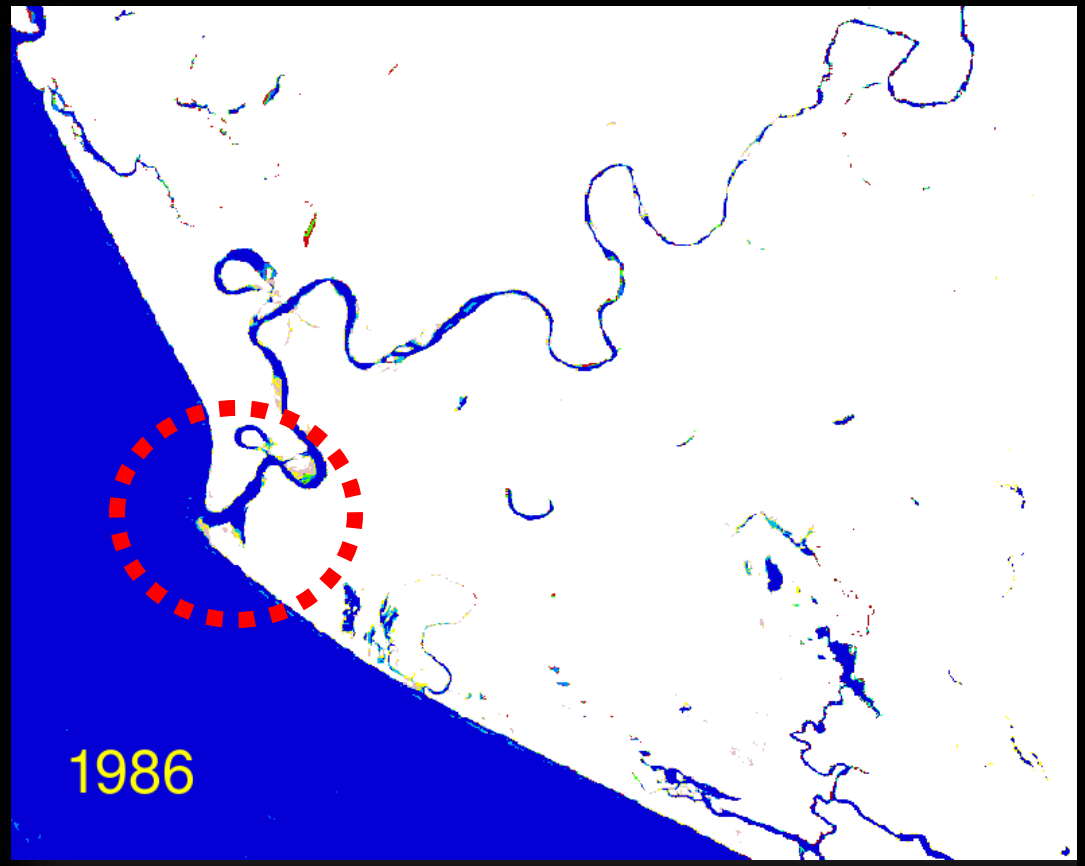
ODC process allows constant update to the national classification because it is generated automatically

Spared resources can be applied to expert and field validation for quality assessments

STEPS (chronological)	without ODC	Progress	with ODC	Progress
Use Intergovernmental Panel on Climate Change definitions (6 classes)	✓	✓	✓	✓
Land Use/Land Cover Map	✓	✓	✓	✓
Obtain converted classification (original to 6 classes)	✓	✓	✓	✓
Draw sample from converted data			✓	design
Use sample and *6 other ODC indicators* as training dataset for classification			✓	ODC indicator (geomedian)
Run national classification with Machine Learning			✓	
Link result raster to Digital Elevation Model (DEM) for mountain areas	✓	✓	✓	
Calculate Green Cover index on DEM mountain area mask	✓	✓	✓	
Possible field validation for quality assurance in subsampled dataset			✓	
Provide feedback to FAO	✓	✓	✓	

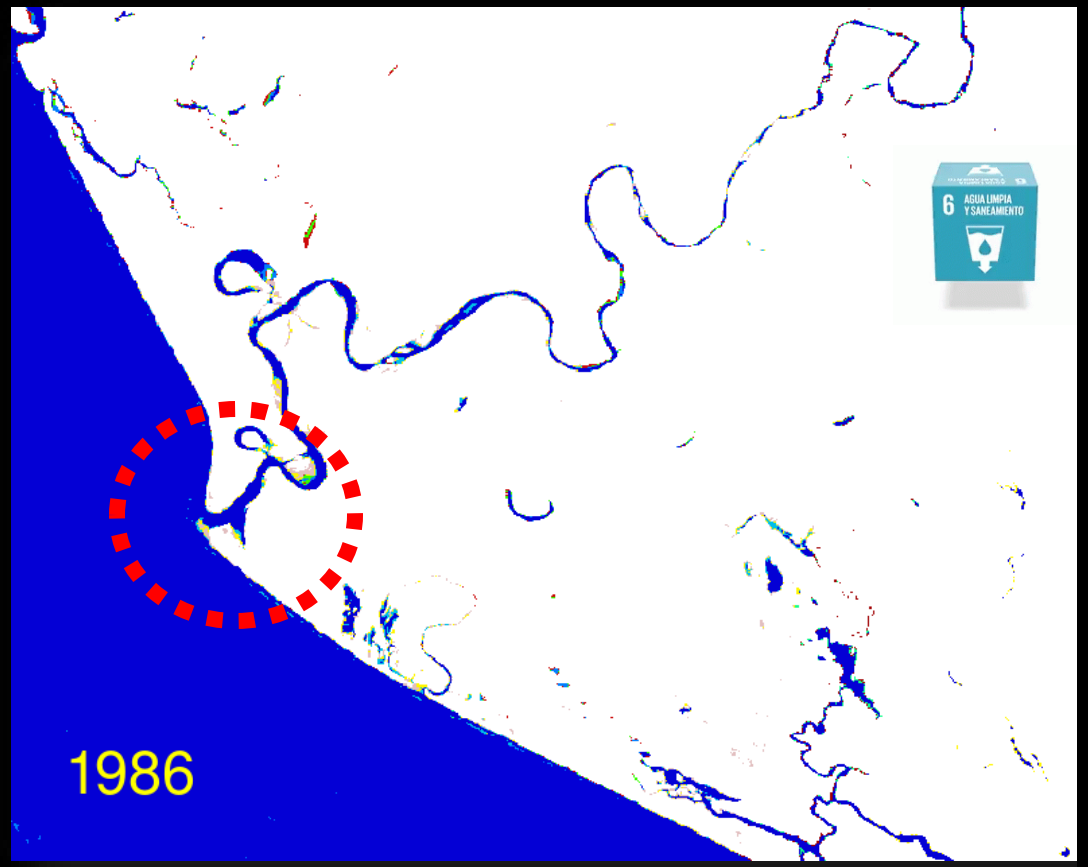
Mexican Geospatial Data Cube

Coast Erosion in the Mouth of Santiago River → Open Data Cube Altorithm:
Water Observations from Space,(WOfS)

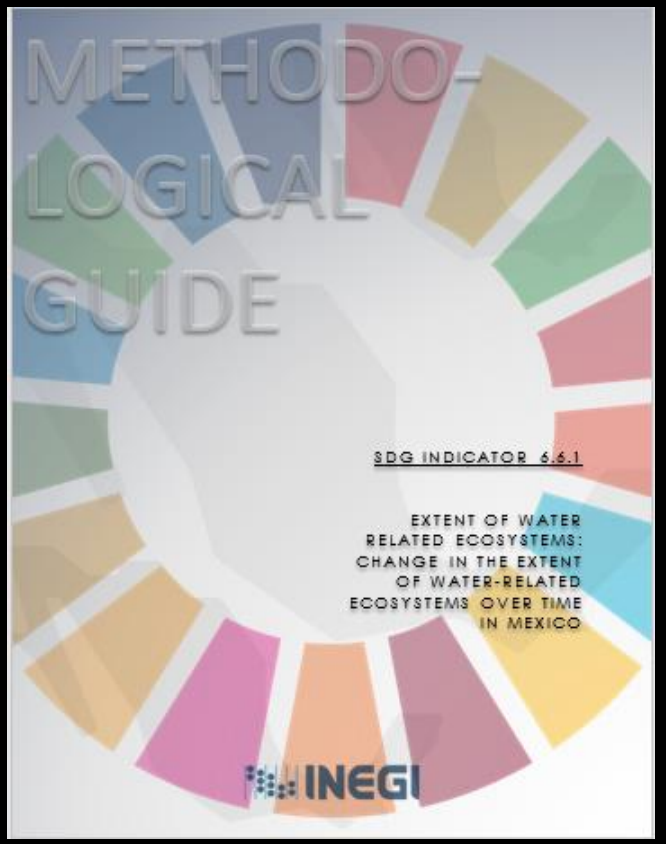


Mexican Geospatial Data Cube

Coast Erosion in the Mouth of Santiago River → Open Data Cube Altorithm: Water Observations from Space,(WOfS)



Indicador 6.6.1
Change in the extent of water-related ecosystems over time.



Methodological guide

Mexican Geospatial Data Cube

...[this project] presents a comprehensive way of reporting the rate of change of water bodies over time as is suggested should be captured in some manner in SDG Indicator. 6.6.1., as a means of tracking progress.

The project shows a strong endeavour to establish collaborative efforts between two government institutions (INEGI Mexico and Geoscience Australia) from very geographically distant nations. Through science and a common work programme this initiative, links and makes the connection between UN's SDGs and Earth Observations.

Dr. Alan Yusen Ley-Cooper
Principal Director
Geophysical Acquisition
GEOSCIENCE AUSTRALIA

Mexican Geospatial Data Cube

This is a thorough implementation of WOfS outside Australia and demonstrates not only the applicability of WOfS to the SDGs but of the benefits available from using standardised ODC algorithms. INEGI have followed the standard WOfS algorithm and then further developed it to their needs, producing something that looks extremely useful to Mexico's water monitoring needs and international reporting. Nice work!

Considered
and full endorsement by
primary author of the paper
referenced (WOfS)

Dr. Norman Mueller
Director, Product Development
Digital Earth Australia
Environmental Geoscience Division
GEOSCIENCE AUSTRALIA

THANK YOU.

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