First Expert Group Meeting of the Inter-agency Expert Group on SDG Indicators: Working Group on Geospatial Information (IAEG-SDGs: WGGI)

Discussion materials for definition of scope, quality criteria and innovative approaches to indicator monitoring

Mexico City, Mexico,
13 December 2016

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SUSTAINABLE DEVELOPMENT GOALS

Agenda

- Day 1: Focus on a **shared understanding**
- Day 2: Focus on the **indicators**
- Day 3: Focus on the **way forward**

What gets measured, gets changed…

SUSTAINABLE DEVELOPMENT GOALS

Agenda Day 2

9:00 – 12:00
 	
(coffee break at 10:45)
	Summary of Day 1
	
	Focus on scope
	• The indicators: what are the criteria for inclusion in the scope of the WGGI (PtH)
	  ○ geospatial information definitively informs the indicator directly
	  ○ geospatial information definitively support and augment statistical data
	  ○ geospatial information definitively improves the production of statistical data
	  ○ geospatial information definitively improves disaggregation of statistical data
	• Methodologies: identify and agree quality requirements
	• Short presentation of the indicators in scope
	  ○ description and why could they be in scope
	  ○ discussion on specific indicator
	• Decision about which 6-9 indicators to focus on for breakout sessions
	• Methodology for afternoon breakout sessions
		Methodical approach to agree on which indicators are initially in scope of the WGGI, to focus the work.

12:00 – 13:00	• Breakout in 3 groups • Agree roles: chair, rapporteur • Initial discussion on chosen indicators	
13:00 – 14:00	Lunch	Provided by hosts

13:30 – 17:00	Focus on indicators
	• Breakout in 3 groups
	• Each group discusses methodology for 2-3 indicators (per agreed criteria)
	  ○ Discuss how geospatial information helps (inform, support, augment, improve) the specific indicator
	  ○ Evaluation of methodology based on quality indicators
	  ○ Identify areas for improvement
	  ○ Propose required WGGI activity for the indicator (“who, what and when”)
		Subgroups moderated by Marie, Tim and Olav?

Focus on the indicators

- Definition of Scope
- Quality Criteria

Selection of Indicators

- 17 Goals
- 168 Targets
- 241 Indicators (the current list)

- We must limit the scope to what is relevant for the WGGI

Initial scope

- Tier III and maybe Tier II
- Geospatial “feel”

- Original list (September 2016): 42 in scope:
  - 12 Tier I
  - 13 Tier II
  - 17 Tier III

GEO

- 32 Indicators in scope

Sustainable Development Goals

Earth Observations in Service to *Agenda 2030*

Target — Contribute to progress on the Target yet not the Indicator per se									*Goal*	*Indicator* — Direct measure or indirect support					
							1.4	1.5	1	1.4.2					
						2.3	2.4	2.c	2	2.4.1					
					3.3	3.4	3.9	3.d	3	3.9.1					
									4						
								5.a	5	5.9.1	5.a.1				
		6.1	6.3	6.4	6.5	6.6	6.a	6.b	6	6.3.2	6.4.2	6.5.1	6.6.1	6.6.1	
					7.2	7.3	7.a	7.b	7	7.1.1					
								8.4	8						
					9.1	9.4	9.5	9.a	9	9.1.1	9.4.1				
					10.6	10.7	10.8	10.a	10						
	11.1	11.3	11.4	11.5	11.6	11.7	11.b	11.c	11	11.3.1	11.6.2	11.7.1	11.1.1	11.2.1	11.5.2
				12.8	12.4	12.2	12.a	12.b	12	12.a.1					
					13.2	13.1	13.3	13.b	13	13.1.1					
	14.5	14.1	14.2	14.3	14.4	14.6	14.7	14.a	14	14.3.1	14.4.1	14.5.1			
	15.1	15.2	15.3	15.4	15.5	15.7	15.8	15.9	15	15.1.1	15.2.1	15.3.1	15.4.1	15.4.2	15.1.2
								16.8	16						
17.18	17.8	17.2	17.3	17.6	17.7	17.9	17.16	17.17	17	17.6.1	17.18.1				

Esri

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Criteria for inclusion in Scope

- All Tiers
- The Computational Method (data analysis) uses or could use **geospatial information technology**;
- The methodology benefits (or could benefit) from the use (or better use) of **earth observation data**;
- The methodology benefits (or could benefit) from the use (or better use) of **official geospatial or geostatistical data;**
- The methodology benefits (or could benefit) from the use (or better use) of **crowd sourced geospatial data or volunteered geographic information (VGI)**;
- The methodology benefits (or could benefit) from national and international **institutional alignment**, such as application of knowledge held by national mapping and cadastral agencies.

Metadata Quality Criteria

- **Consistent over time**: data must be recorded and reported in a consistent way throughout the entire SDG period of 15 years. Changes in technology can be applied, but should not lead to incomparable outcomes.
- **Consistent across countries**: data must be recorded and reported in a consistent way for any country in the world, to the maximum degree possible, regardless of the level of development or income of each country.
- **Reliable**: data must be recorded and reported in such a way that results can be trusted, within a declared level of uncertainty.
- **Transparent**: the methodology used is well known, with caveats declared, and for which weaknesses, limitations and strengths are identified.
- **Verifiable**: The resulting information can be traced back to its origin. When using crowd sourced data this creates specific criteria for the methodology applied.
- **Feasible**: data must be recorded in a practical and realistic way, without imposing an extraordinary burden to countries, regions, organisations or communities.
- Taking advantage of **existing data**: there is a preference for using already collected standardized data.
- **Pragmatic**: the collected data and methodology should not only be used for monitoring the indicators but also for strategy planning, awareness raising, risk assessments and the development of policies.
- As for all information, the methodologies should be **SMART**: Specific, Measurable, Achievable, Relevant, Time Bound.

Indicators in initial scope

Tier I: 10

Tier I	Indicator	Logic for inclusion, other comments
1.1.1	Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)	Potential for GI technology in analysis of detailed census results.
6.1.1	Proportion of population using safely managed drinking water services	Currently based on surveys and censuses. EO settlement data overlaid with natural water sources (rivers/lakes) and industry/pollution can give an indication. However: hyperlocal pollution is an issue. Will require hyper-local information and local community input, specifically for detail. Strong potential for crowd sourced data and community input.
6.2.1	Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water	Very similar to 6.1.1
9.c.1	Proportion of population covered by a mobile network, by technology	Potential additional use of GI technology and crowd sourcing
11.1.1	Proportion of urban population living in slums, informal settlements or inadequate housing	EO settlement data augmented with hyper-local information and strong community input
11.6.2	Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)	Existing methodology exists, may need to be reviewed on currency. Can crowd sourced sensor information assist?
14.5.1	Coverage of protected areas in relation to marine areas	Potential additional use of GI technology, sharing data collection and additional EO data
15.1.1	Forest area as a proportion of total land area	Current methodology based on EO More current data sources are available with more modern EO technologies. Current methodology leads to potentially incorrect results
15.1.2	Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type	Similar to 14.5.1
15.4.1	Coverage by protected areas of important sites for mountain biodiversity	Similar to 14.5.1

Indicators in initial scope

Tier II: 5+9

Tier II	Indicator	Logic for inclusion, other comments
1.5.1 – 1.5.3	Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	The 1.5 series indicators are equal or similar to: • 1.5.1 is same as indicator 11.5.1/13.1.2 • 1.5.2 is is almost the same as 11.5.2 • 1.5.3 is same as indicator 11.b.2/13.1.1 • 11.b.1 is a disaggregation of 1.5.3 Indicators only measure impact of disasters. GI can play a significant role in prevention of natural disasters Discussion required to change indicators?
4.a.1	Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) singlesex basic sanitation facilities; and (g) basic handwashing facilities (as per the Water, Sanitation and Hygiene for All (WASH) indicator definitions)	Potential for GI technology in analysis of detailed census results.
11.2.1	Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities	Strong link to geospatial Will require hyper-local information and local community input, specifically for detail. Strong potential for crowd sourced data and community input.
11.3.1	Ratio of land consumption rate to population growth rate	Significant opportunity for EO technology, combined with official geospatial data and crowd sourced data.
11.7.1	Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities	Potential additional use of GI technology and crowd sourcing
15.4.2	Mountain Green Cover Index	Significant opportunity for EO technology, potentially combined with crowd sourcing. Analysis required of suitability of toolset

Indicators in initial scope

Tier III: 13

Tier III	Indicator	Logic for inclusion, other comments
1.4.1	Proportion of population living in households with access to basic services	Potential for GI technology in analysis of detailed census results. Lacks definition of “basic services” - defer
1.4.2	Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by sex and by type of tenure	Institutional alignment: data potentially held by national cadastral agencies or land registries
2.4.1	Proportion of agricultural area under productive and sustainable agriculture	Strong focus on paper surveys in current proposals, significant opportunity for EO technology, potentially combined with crowd sourcing
4.5.1	Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict affected as data become available)	Potential for GI technology in analysis of detailed census results.
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	Institutional alignment: data potentially held by national cadastral agencies or land registries
5.a.2	Proportion of countries where the legal framework (including customary law) guarantees women’s equal rights to land ownership and/or control	Institutional alignment: data potentially held by national cadastral agencies or land registries
6.3.1	Proportion of wastewater safely treated	Will require hyper-local information and local community input, specifically for detail. Strong potential for crowd sourced data and community input. Combine collection with 6.1.1
6.3.2	Proportion of bodies of water with good ambient water quality	Significant opportunity for EO technology
6.6.1	Change in the extent of water-related ecosystems over time	Significant opportunity for EO technology, especially highly frequent micro-satellites
9.1.1	Proportion of the rural population who live within 2 km of an all-season road	Potential additional use of GI technology and crowd sourcing
14.1.1	Index of Coastal Eutrophication (ICEP) and Floating Plastic debris Density	Opportunity for EO technology
14.2.1	Proportion of national exclusive economic zones managed using ecosystem-based approaches	“Green field indicator” with very minimal current description, clear GI potential
15.3.1	Proportion of land that is degraded over total land area	Significant opportunity for reviewing the use of EO technology and official geospatial data

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1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)

- World Bank
- Tier I
- Well established process, based on surveys and censuses
- WGGI: should we pursue a role here? Some option for GI technology in analysis of detailed census results.

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1.1.1 Discussion

- The case for geospatial data or analysis is not very strong.
- Geospatial data is used to decide what is urban and what is rural. Do we still use that data in the collection and analysis process or are these usually fairly straightforward statistical processes?
- Should WGGI propose a definition of Urban/Rural?

1.4.1 Proportion of population living in households with access to basic services

- Tier III
- No agreed custodian
- No agreed definition
- WGGI: Continue to monitor, defer

1.4.2 Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by sex and by type of tenure

- Two part indicator
  - Legally recognised documentation
  - Perception of security
- UN-Habitat and World Bank
- Tier III
- Sources proposed: administrative records, surveys, censuses (and satellite images, remote sensing??)
- WGGI: institutional alignment

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1.4.2 Synergies

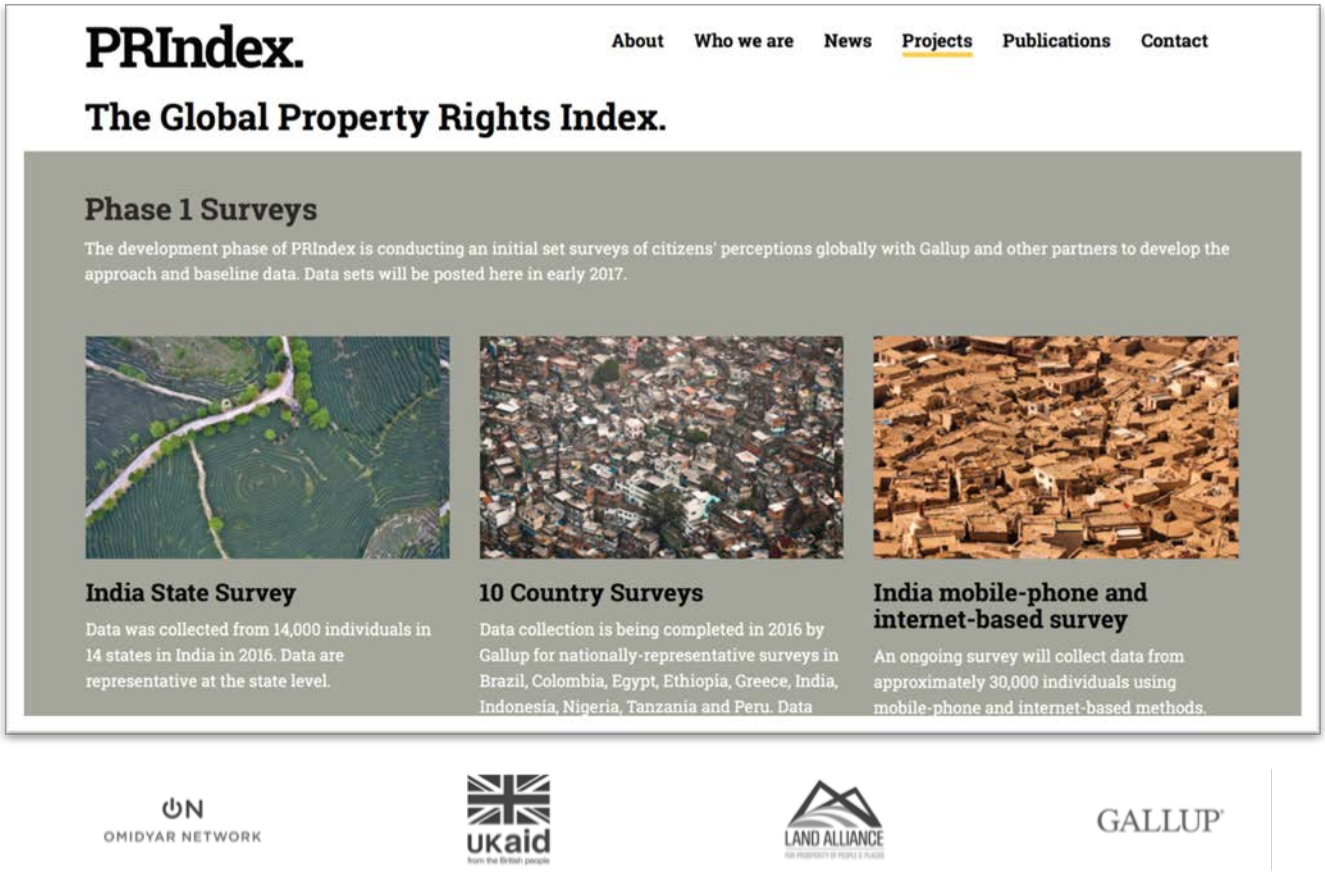
1.4.2 has strong synergies with:

- 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

1.4.2 Alternatives

Part (b):

Omidyar, DFID, Land Alliance and Gallup created Global Property Rights Index (http://prindex.net)



1.4.2 discussion

- Does it help that the UN-GGIM Committee of Experts are primarily representatives of NMCA's? How do we utilise that institutional alignment in the collection of this data?
- We observe strong synergies between indicators: How do we avoid duplication of work?
- Can we and should we encourage collaboration with private sector / third sector initiatives (like the PRIndex)?
- The data produced by prindex.net is open data. Should that be the norm?

1.5.1 – 1.5.3 Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

- Tier II
- Indicators measure impact of disasters:
  - 1.5.1 Number of deaths, missing persons and persons affected by disaster per 100,000 people
  - 1.5.2 Direct disaster economic loss in relation to global gross domestic product (GDP)
  - 1.5.3 Number of countries with national and local disaster risk reduction strategies

UNISDR
The United Nations Office for Disaster Risk Reduction

UN World Conference on Disaster Risk Reduction
2015 Sendai Japan

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1.5 Synergies

The 1.5 series indicators are equal or similar to:

- 1.5.1 is same as indicator 11.5.1/13.1.2
- 1.5.2 is is almost the same as 11.5.2
- 1.5.3 is same as indicator 11.b.2/13.1.1
- 11.b.1 is a disaggregation of 1.5.3

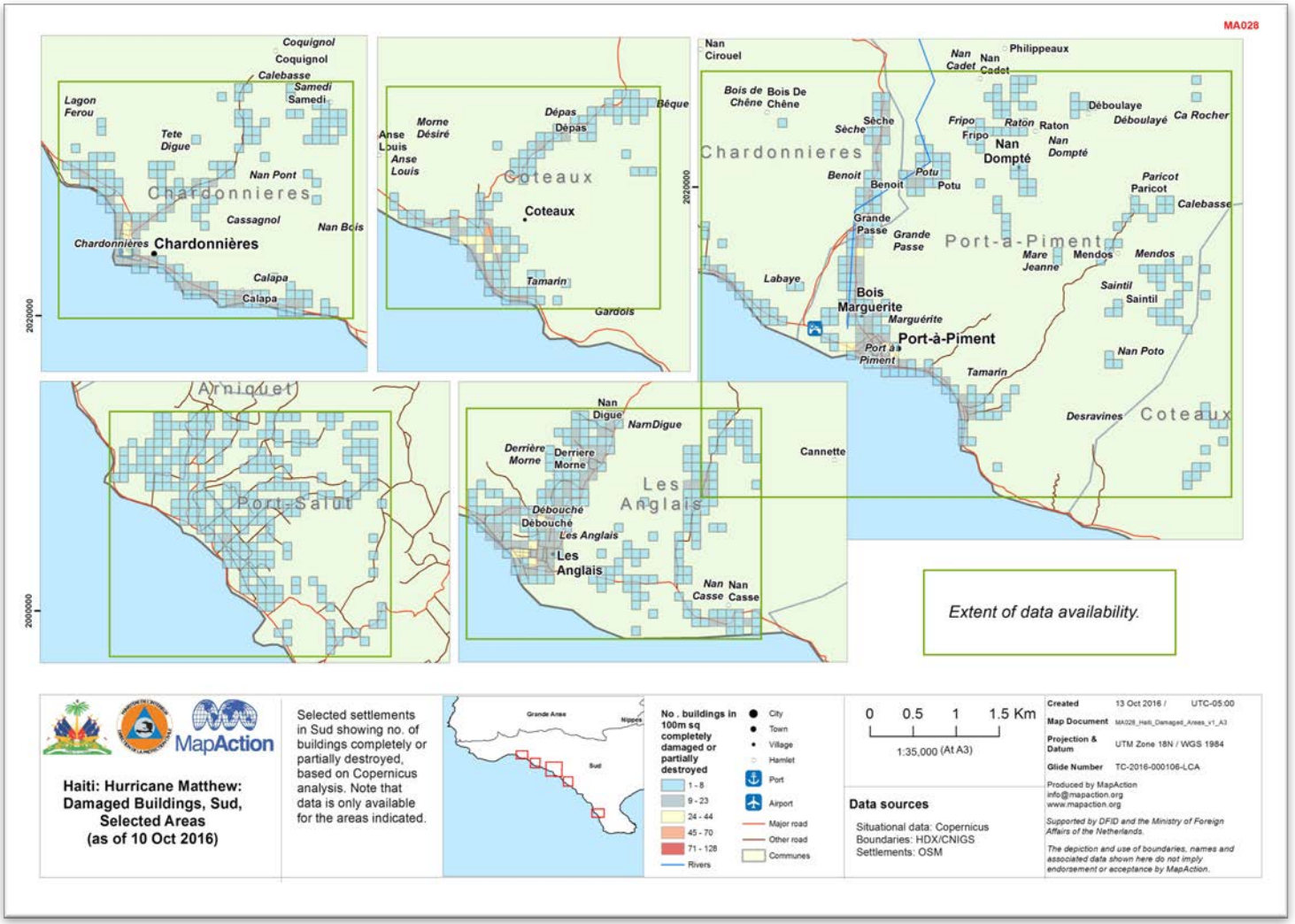
1.5 Work Plan

- Tier III work plan: Methodology developed by OEIWG, completed December 2016. SENDAI Framework.
- Data collection methods: A comparable national disaster loss database, DesInventar. By 2020, it is expected that all countries will build/adjust national disaster loss databases according to the recommendations and guidelines of the OEIWG.
- Providers: The national government in each country takes primary responsibility in data collection and reporting in collaboration within and across levels of governments.
- Frequency: Ideally hazard-by-hazard basis, at least annually.

1.5.1 – 1.5.3 Work Plan

1.5.1 – 1.5.3 Disaster Response

Haiti, Oct. 2016: no. of buildings completely or partially destroyed, based on Copernicus analysis



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1.5.1 – 1.5.3 Discussion

- GI can play a significant role in prevention of natural disasters
  - Should the indicators be amended to focus more on prevention and disaster response?

- Should we promote collaboration with disaster response organisations?

2.4.1 Proportion of agricultural area under productive and sustainable agriculture

- Methodology Proposed by Stakeholder (FAO)
- Tier III
- Sources proposed: surveys and censuses
- WGGI: opportunities for EO, VGI and geospatial analysis

2.4.1 Work plan

- Tier III work plan: Methodological work has begun, completed by the end of 2016.
- Data collection methods: Data that are already being collected from the National Statistical System: administrative data, farm surveys (such as Agricultural Integrated Surveys, AGRIS) or similar instruments and possibly supplemented through remote sensing.
- Providers: FAO mainly harvesting existing data, validation at country level. The methodology will be piloted in selected countries. Detailed guidelines will also be developed to help support countries in their monitoring and reporting.
- Frequency: Frequency will depend on the source of data. For administrative information, data can be collected on a regular basis. For farm surveys, data will be collected according to systems that exist at country level..

2.4.1 Alternatives

- Strong focus on paper surveys in current proposals, significant opportunity for EO technology, potentially combined with crowd sourcing

2.4.1 Discussion

- What are the implications of crowd sourced data?
  - Reliability, Provenance (see quality criteria)
  - How can we overcome those limitations?
- Will require additional research on EO suitability
  - How can we promote such research?

4.5.1 Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict affected as data become available)

- Tier I-II-III
- UNESCO
- WGGI: GI mainly for visualisation

4.a.1 Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) singlesex basic sanitation facilities; and (g) basic handwashing facilities (as per the Water, Sanitation and Hygiene for All (WASH) indicator definitions)

- Tier I-II
- UNESCO
- WGGI: GI mainly for visualisation

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

- Tier III
- FAO/UN-Women/UNSD
- work plan: proposals made by The Evidence and Data for Gender Equality (EDGE) project, method: household survey.
- Lessons learned from the country pilots will directly inform the finalization of the methodology for indicator 5a1. Further, all NSOs will have an opportunity to comment on the guidelines (consultation planned for the period December 2016-February 2017) before they are finalised and submitted to the UN Statistical Commission in March 2017

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5.a.1 Discussion

- Institutional alignment like 1.4.2
- Do we have role to ensure that a World Bank/UN-Habitat indicator (1.4.2) aligns efficiently with a UN-Women/UNSD/FAO indicator (5.a.1).

5.a.2 Proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control

- Tier III
- FAO, World Bank, UN Women
- WGGI: Institutional Alignment

- Combine efforts with 1.4.2 and 5.a.1

6.1.1 Proportion of population using safely managed drinking water services

- Tier I
- WHO, UNICEF, UN-WATER
- Currently based on surveys and censuses.
- WGGI: opportunities for EO, VGI and geospatial analysis

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6.1.1 Synergies

- 6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water

6.1.1 Alternatives

- EO settlement data overlaid with natural water sources (rivers/lakes) and industry/pollution can give an indication. However: hyperlocal pollution is an issue.
- Hyperlocal knowledge is required

6.1.1 Alternatives

Dar Ramani Huria mapped safe drinking water and hyperlocal wastewater with crowd sourced efforts (http://ramanihuria.org)

HOT Humanitarian OpenStreetMap Team

6.1.1 Discussion

- VGI / Crowd sourced data / community projects: how can they help?
- Detailed recording of sanitation/wastewater/water flows etc can play a strong role in awareness and prevention. Should we include this in the metadata?

6.3.2 Proportion of bodies of water with good ambient water quality

- Tier III
- WGGI: opportunity for EO technology

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6.3.2 Discussion

- Certain EO technologies are still under development or will require additional research

GEO GROUP ON EARTH OBSERVATIONS

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

- Tier III
- Significant opportunity for EO technology, especially highly frequent micro-satellites
- Ramsar Sites Information Service (http://rsis.ramsar.org)

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6.6.1 Opportunities

Frequent monitoring with microsatellites

planet.

6.6.1 Discussion

- Are there indicators that warrant more frequent monitoring?

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

- Tier III
- Potential additional use of EO technology and crowd sourcing
- Draft methodology developed by World Bank

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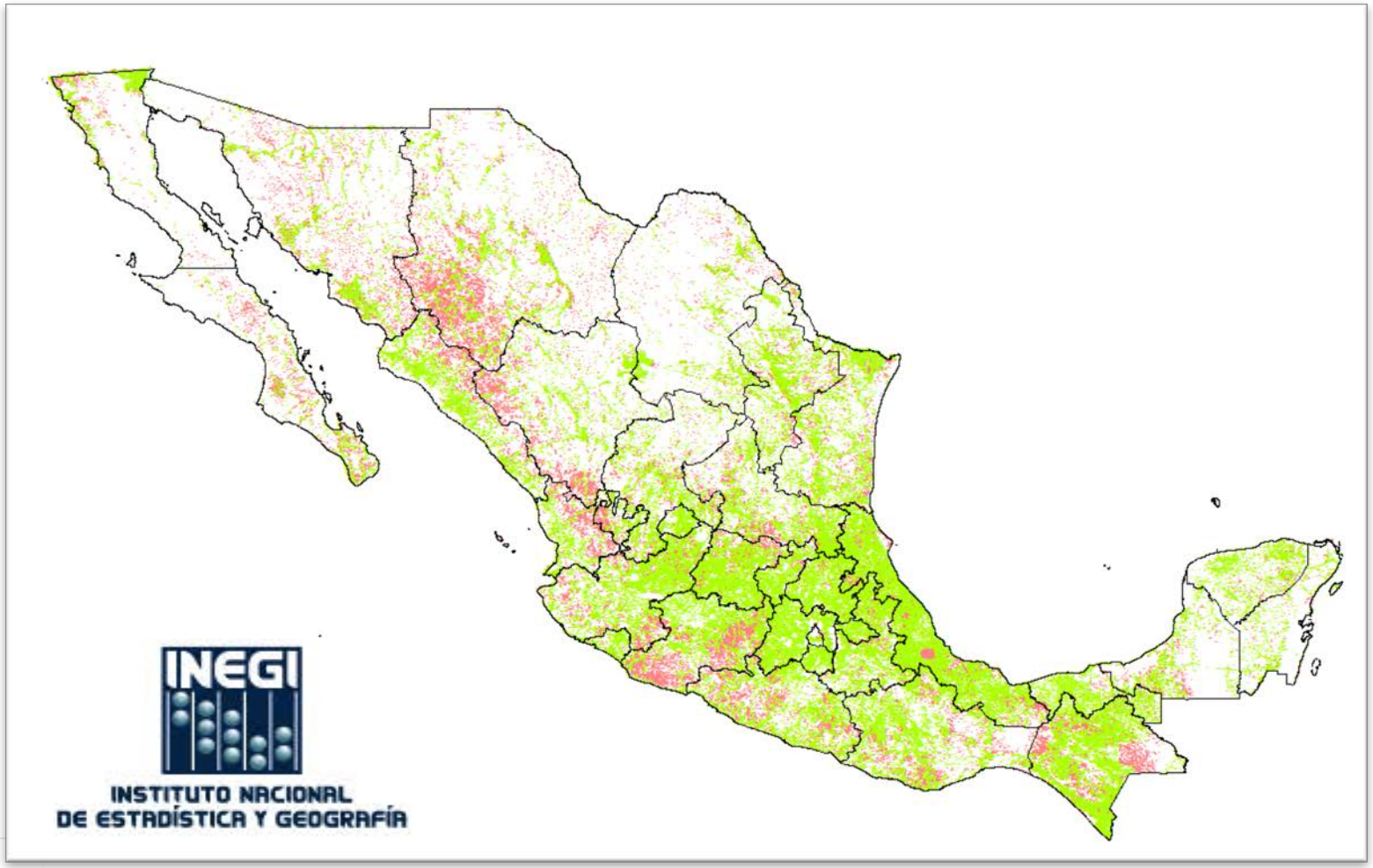
9.1.1 Methodology



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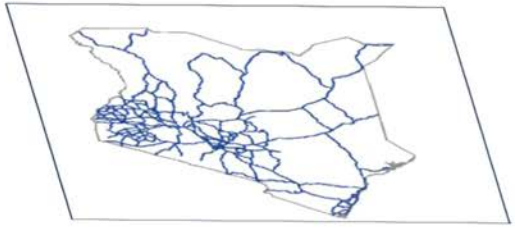
9.1.1 Methodology

Where do rural people live?

Censuses, but new global population datasets available e.g. WorldPop, Landscan of OakRidge, GRUMP (rural population, by CEISN)

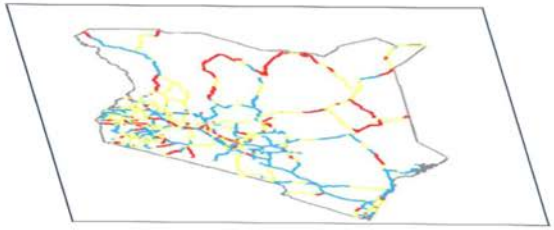
Where are roads?

Georeferenced road network: government datasets, supplemented with other mapping sources e.g. Openstreetmap.



Are they in good condition?

Data available, but fragmented: road asset management systems, road inventory surveys. Weakest area, possible to supplement with satellite data, other tools e.g. RoadLab app.



Combine these datasets with GIS

GeoData Institute
UNIVERSITY OF Southampton

OpenStreetMap

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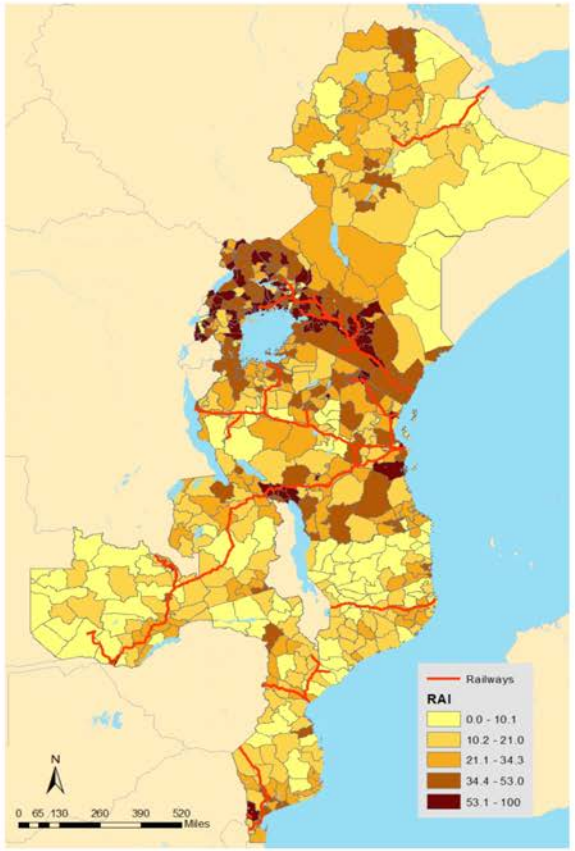
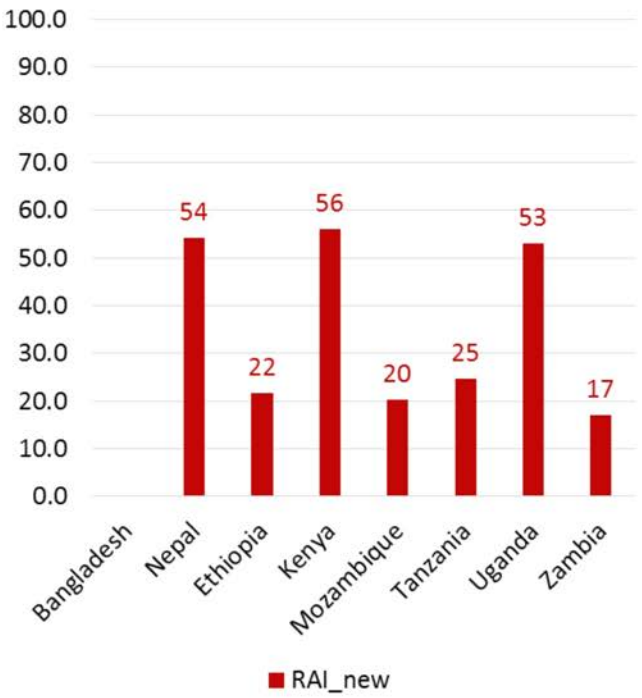
9.1.1 Results

Provides national and sub-national estimates: very important for planning road investments





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9.1.1 Discussion

- Clear link with investments into improvement: how do we ensure monitoring is not its own goal
- How do we get NMCA's to provide data to these efforts?
- At the WB this is still clearly a pilot: should we actively support pilots or always aim straight for a permanent solution?

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

- Tier I
- Methodology: surveys and censuses, well established
- Potential additional use of GI technology, crowd sourcing and use op network operator's data
- Potential use of sensors

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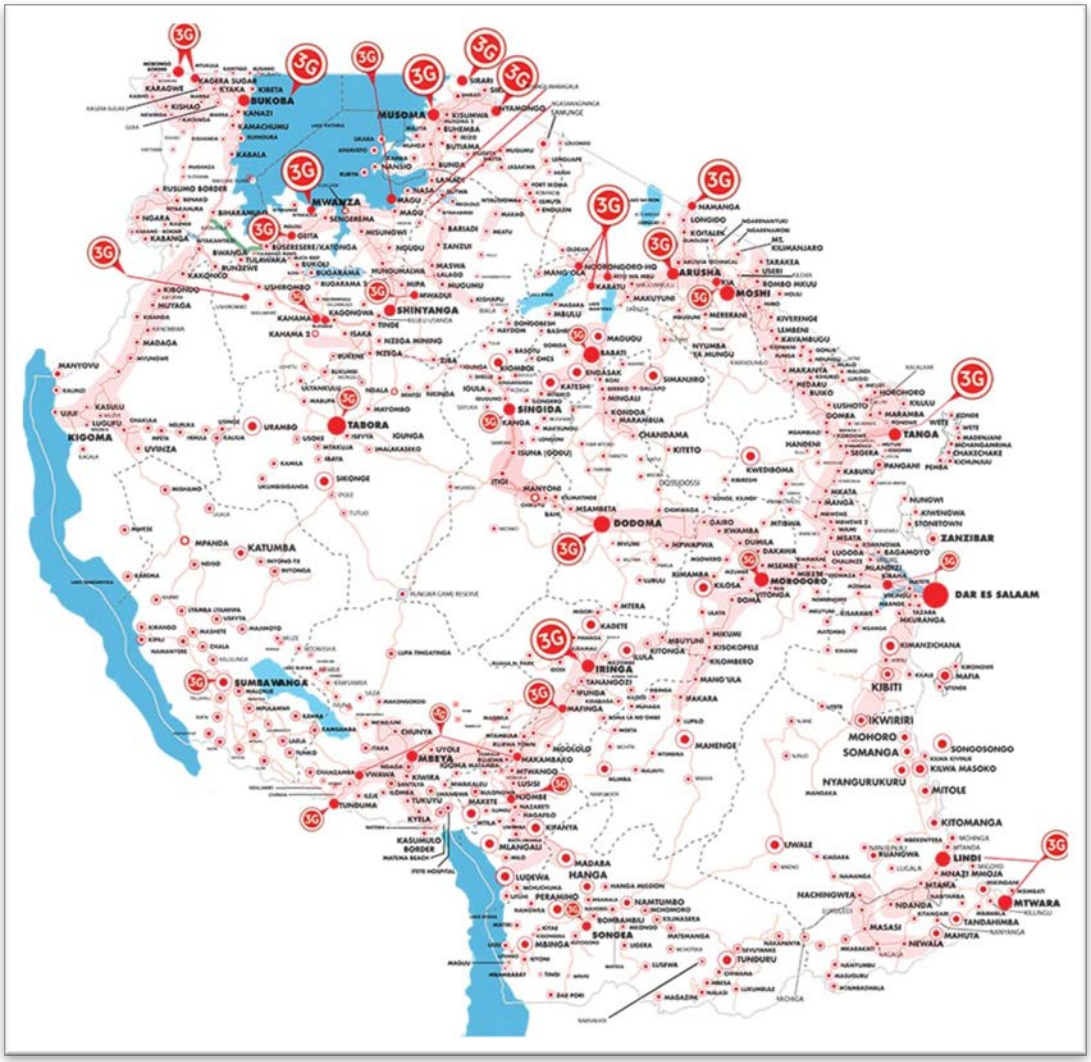
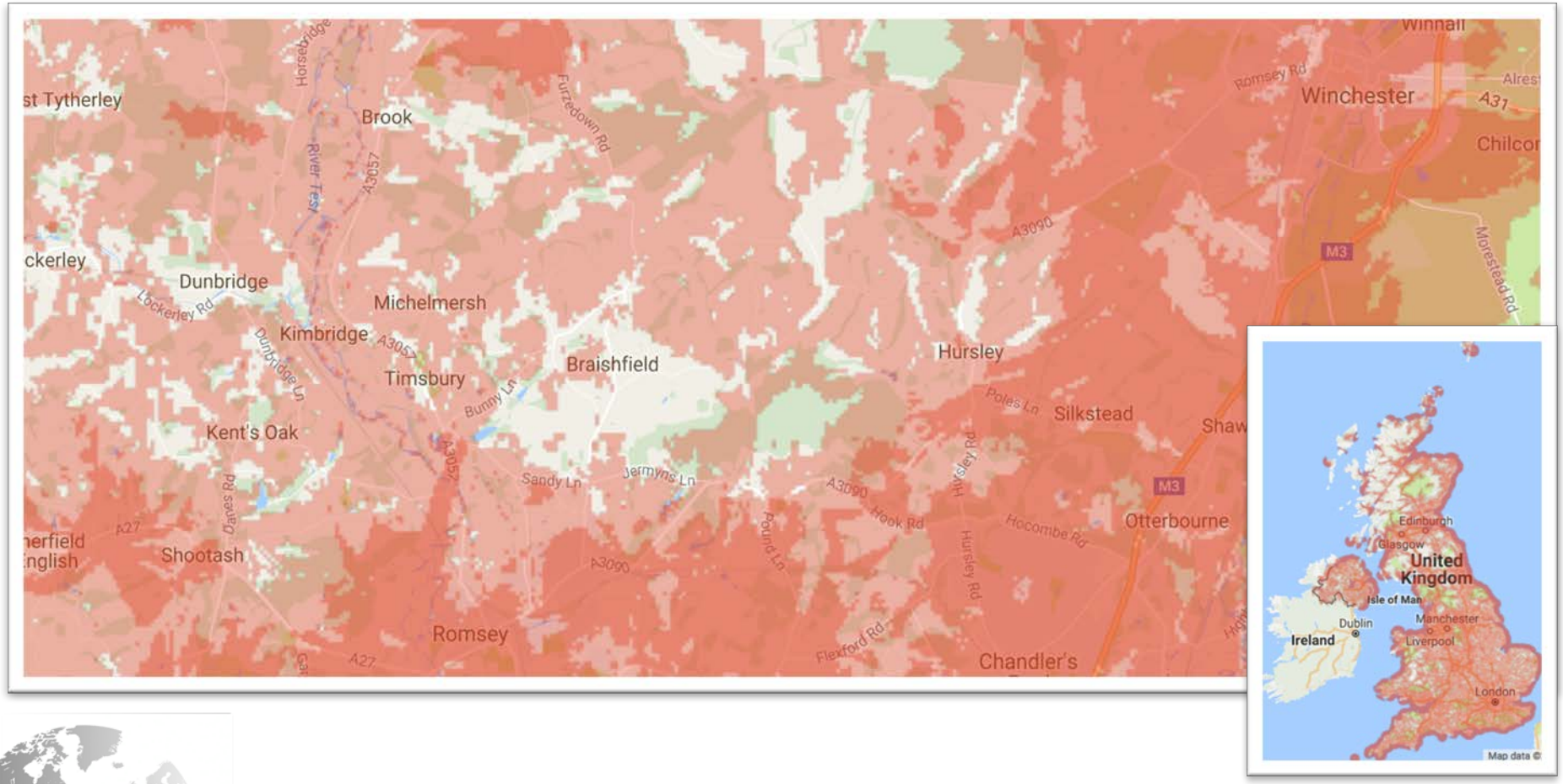
9.c.1 Real impact of location

Tanzania



9.c.1 Real impact of location

The UK has 99% coverage, yet many villages have poor connection



9.c.1 Discussion

- Most mobile operators use network coverage (geospatial) data for customer service and network planning. Should we strive that this data is made available?

11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing

- Tier I
- UN-Habitat
- Methodology: surveys and censuses
- WGGI: EO settlement data augmented with hyper-local information and community input

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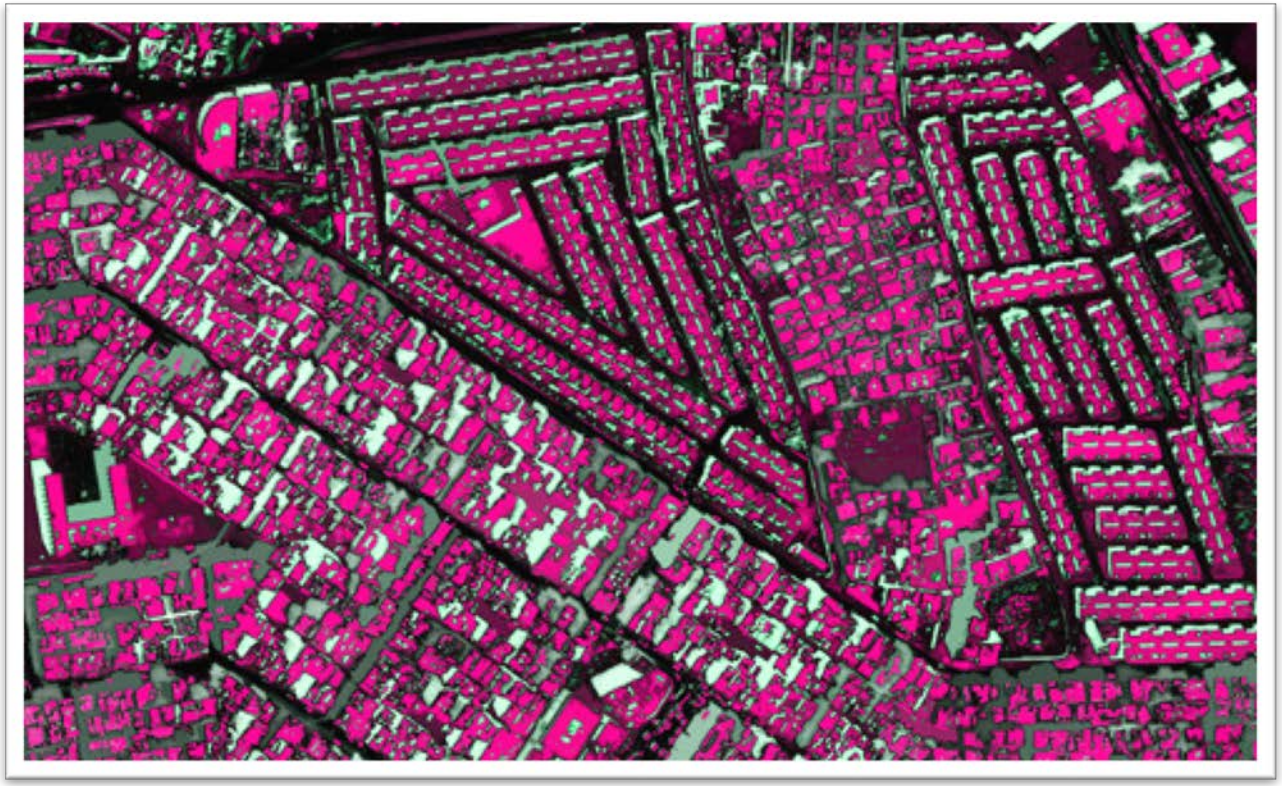
11.1.1 Solutions

Overlay EO data
with official geodata



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11.1.1 Change detection

Targeted surveys

sansa
SOUTH AFRICAN NATIONAL
SPACE AGENCY

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SUSTAINABLE DEVELOPMENT GOALS

11.2.1 Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities

- Tier II
- UN Habitat
- Methodology: surveys, geospatial data, geospatial analysis
- Data availability: limited
- WGGI: strong geospatial link; will require hyper-local information and local community input, specifically for detail

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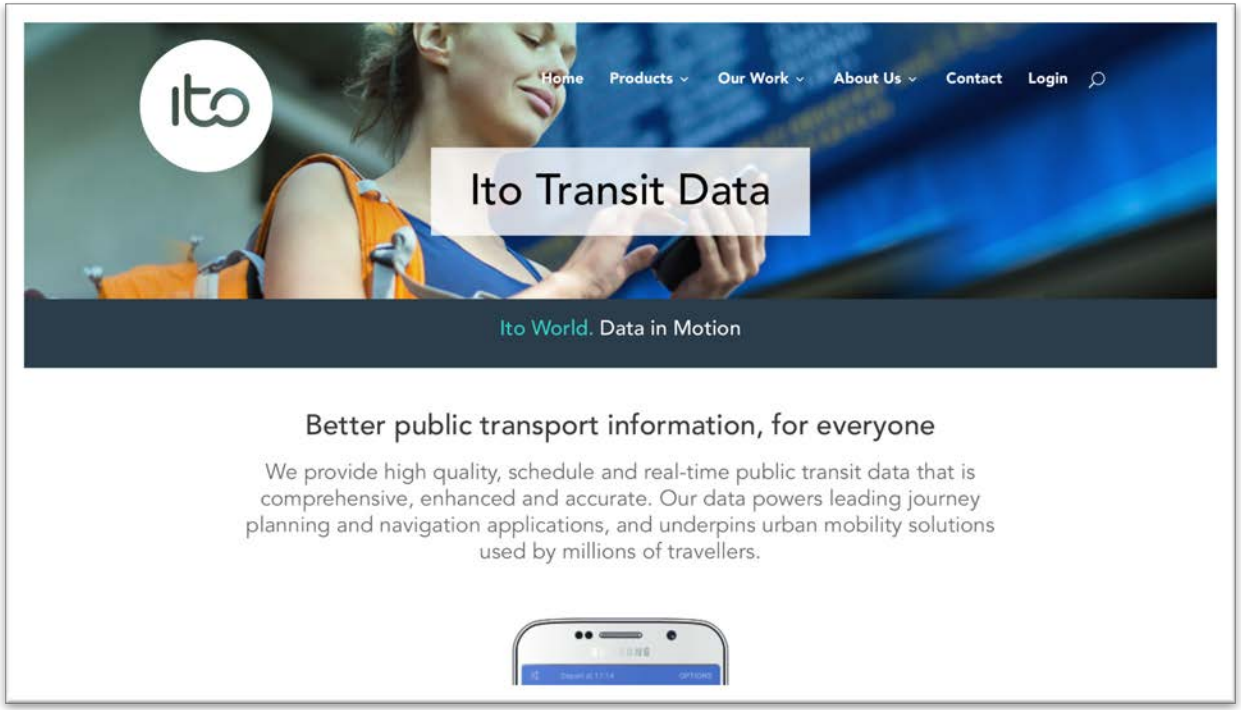
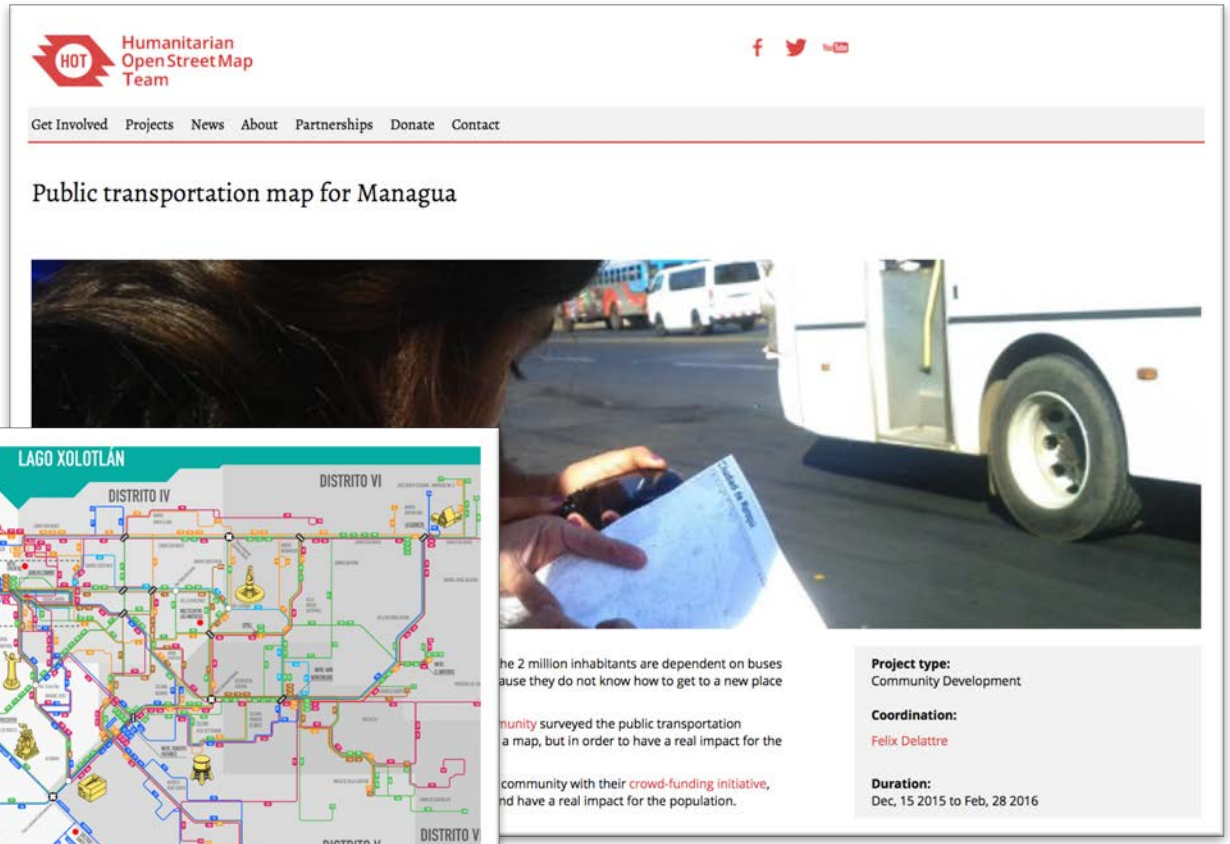
11.2.1 Alternatives

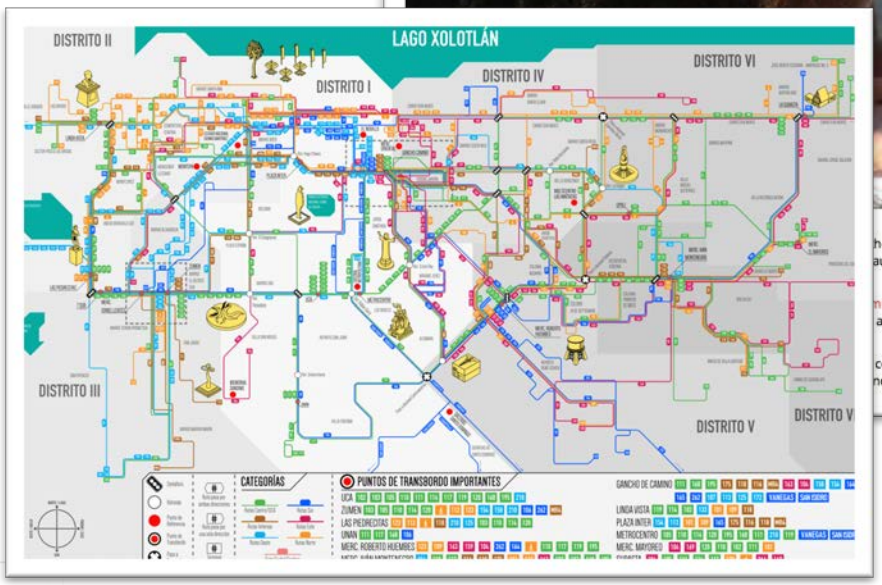
Collaboration with private sector.
ITO World is strongly rooted in open data community



11.2.1 Alternatives

HOTOSM project in Managua: also available as geospatial data





11.3.1 Ratio of land consumption rate to population growth rate

- Tier II
- UN-Habitat
- WGGI: EO opportunities, Geospatial processing

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11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)

- Tier I
- World Health Organisation
- Existing methodology, may need to be reviewed on currency.
- WGGI: Can citizen science assist?

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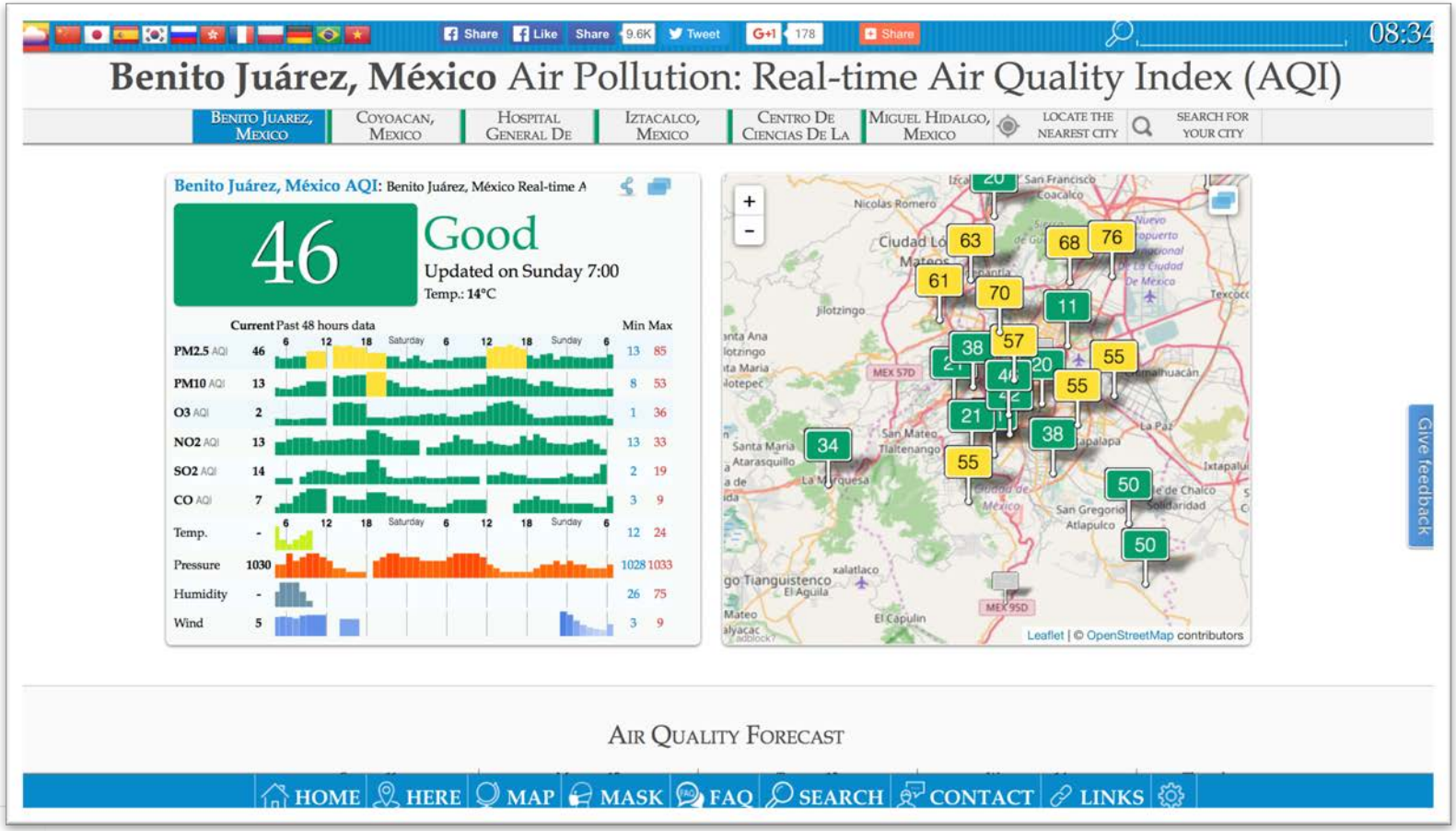
11.6.2 Alternatives

Citizen Science: the World Air Quality Index project



http://aqicn.org

11.6.2 Alternatives

smartcitizen.me

Plantower PMS 7003 Laser based $PM_{2.5}/PM_{10}$ sensor **20USD** (130CN¥)	Plantower PMS 5003 Laser based $PM_{2.5}/PM_{10}$ sensor **18USD** (120CN¥)	Plantower PMS 3003 Laser based $PM_{2.5}/PM_{10}$ sensor **14USD** (90CN¥)	Plantower PMS 1003 Laser based $PM_{2.5}/PM_{10}$ sensor **14USD** (90CN¥)
Plantower PMS A003 Laser based $PM_{2.5}/PM_{10}$ sensor **24USD** (160CN¥) Comming Soon	Novafitness SD011 Laser based $PM_{2.5}/PM_{10}$ sensor **23USD** (150CN¥)	Novafitness SD018 Laser based $PM_{2.5}/PM_{10}$ sensor **19USD** (128CN¥) Comming Soon	Novafitness SD021 Laser based $PM_{2.5}/PM_{10}$ sensor **23USD** (155CN¥)
Yuntong YT-001 Laser based $PM_{2.5}/PM_{10}$ sensor **20USD** (130CN¥)	Sharp DN7C3JA001 Virtual Impactor for Sharp GP2Y1051AU0F **20USD** (135CN¥) Comming Soon	Shinyei PPD42NS LPO Optical PM sensor **5USD** (35CN¥)	Samyoung DSM501 LPO Optical PM sensor **4USD** (24CN¥)
Modified Shinyei PPD42NS Analog Optical PM sensor **5USD** (35CN¥)	Dylos DC1100 Laser based $PM_{2.5}/PM_{10}$ integrated monitor **300USD** (2000CN¥)	Alphasense OPC-N2 Laser based $PM_{2.5}/PM_{10}$ sensor **500USD** (3333CN¥) Comming Soon	

11.6.2 Discussion

- Can citizen science assist in monitoring?
  - Accuracy
  - Reliability
  - Political expedience

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

- Tier II
- UN Habitat
- Methodology: strong base of geospatial information
- Data: data availability is an issue
- WGGI: Potential additional use of crowd sourcing

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11.7.1 Progress

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11.7.1 Discussion

- Best practice examples and knowledge sharing

14.1.1 Index of Coastal Eutrophication (ICEP) and Floating Plastic debris Density

- Tier III
- UNEP
- Most debris consists of small plastic particles suspended at or just below the surface, making it difficult to accurately detect by aircraft or satellite.
- Tier III work plan: An ongoing discussion is led by the University of Hawaii and NASA involving e.g. UNEP on **remote sensing technologies** that could be relevant for marine litter. The methodology on beach litter will be ready by 2017, and the final indicator on Floating Plastics debris Density will be made ready by 2020.

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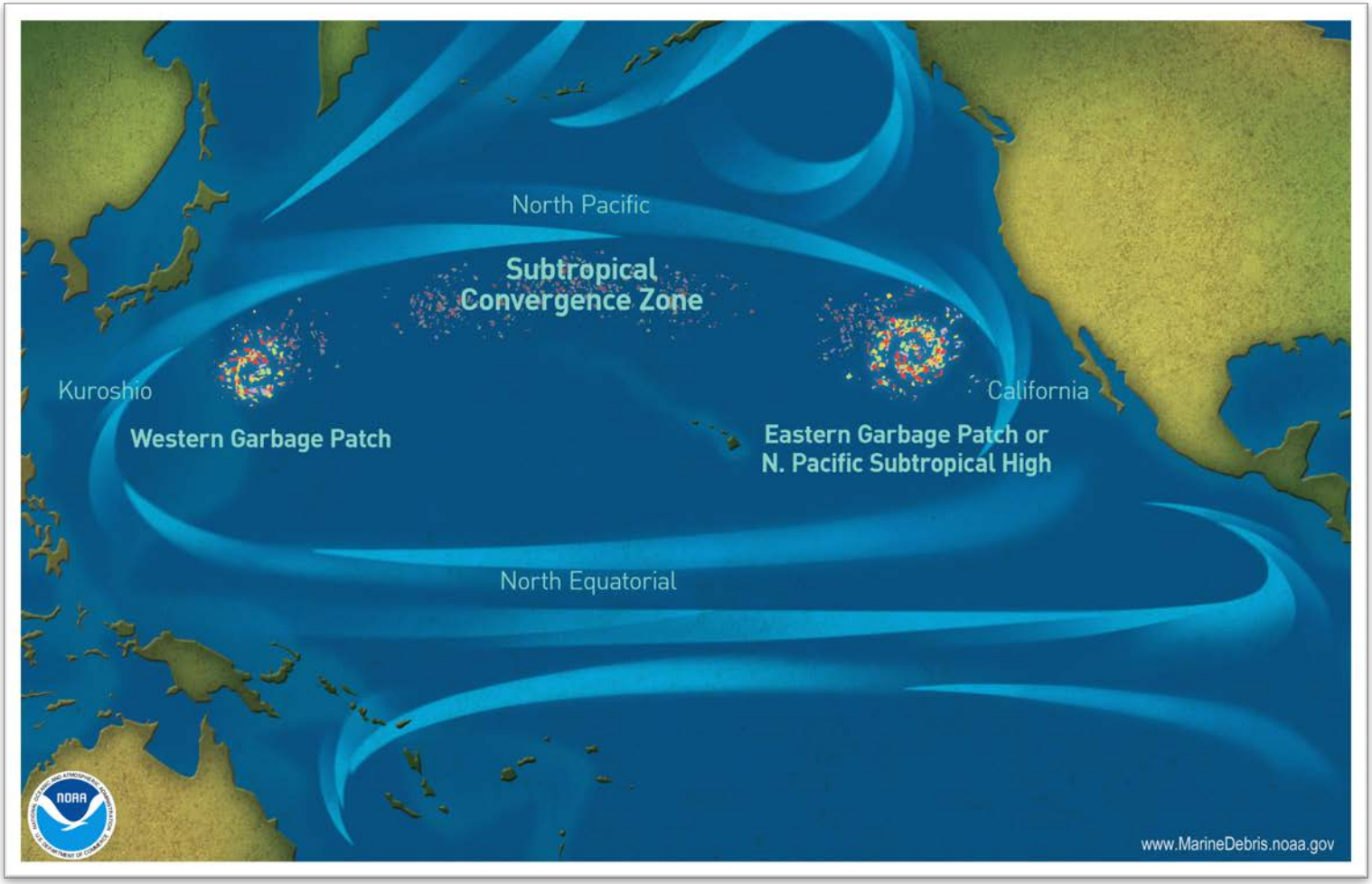
14.1.1 Work Plan



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SUSTAINABLE DEVELOPMENT GOALS

14.1.1 Discussion

- “work on methodology until 2020”: should we strive for quicker results

14.2.1 Proportion of national exclusive economic zones managed using ecosystem-based approaches

- Tier III
- UNEP
- Work plan: Identification and validation of markers to assess implementation of ecosystem-based management frameworks building on existing national plans related to integrated coastal zone management, marine spatial planning, marine protected areas, marine resource management plans and other related area-based management initiative. In a second step, the development of spatially derived tracking system to assess changes in national/regional adoption and implementation of agreed defined principles of ecosystem approach.
- Work on methodology until 2020.
- Data collection: proposed reporting on national progress towards Regional Seas ICZM protocols; need marker of actual implementation of ICZM plans.
- Inputs will be required from other maritime sectors, e.g. fisheries (FAO), transport (IMO), national planning agencies.

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14.2.1 Discussion

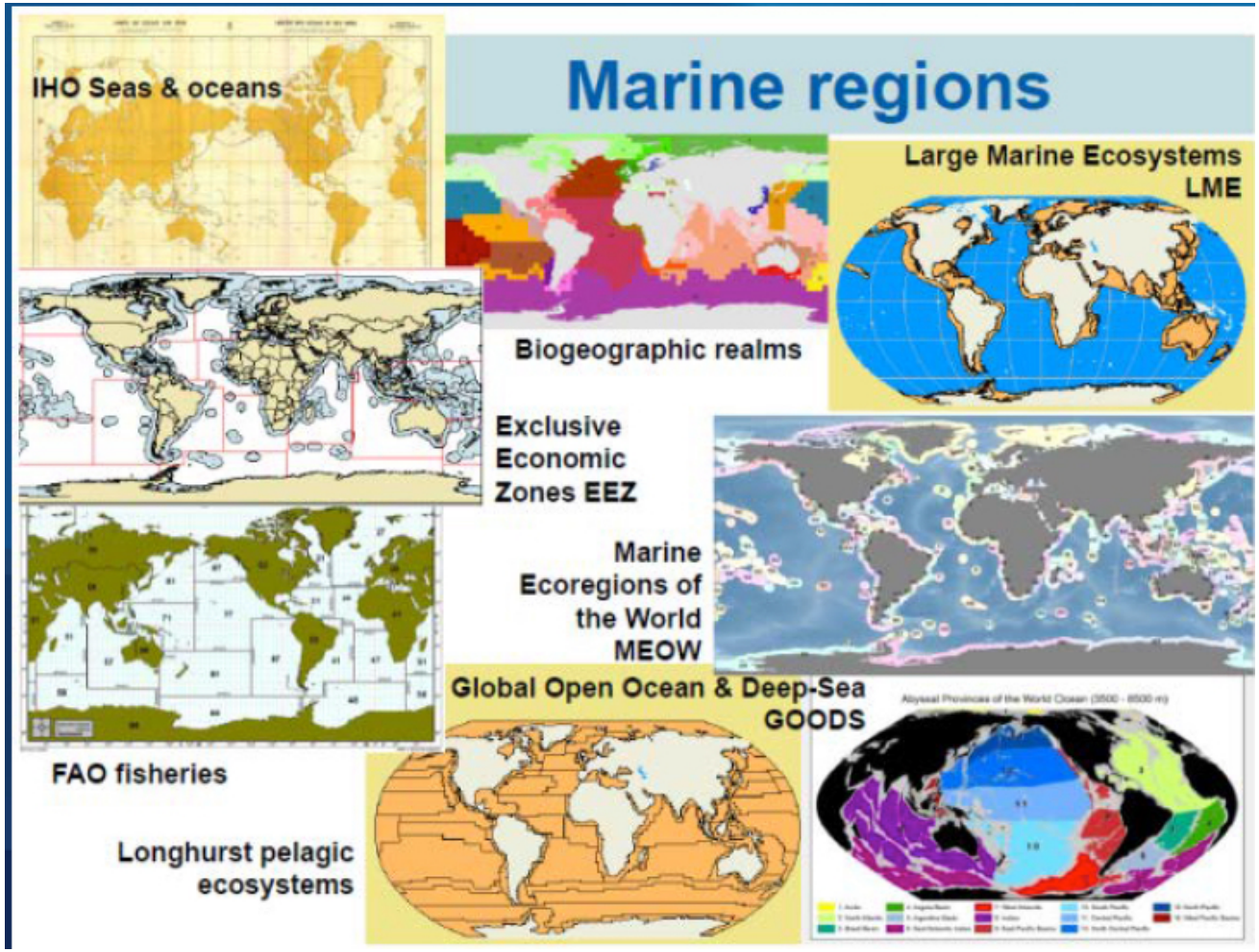
- “work on methodology until 2020”: should we strive for quicker results

14.5.1 Coverage of protected areas in relation to marine areas

- Tier I
- Potential additional use of GI technology, sharing data collection and additional EO data

14.5.1 Data sources

Many existing data sources in the marine field



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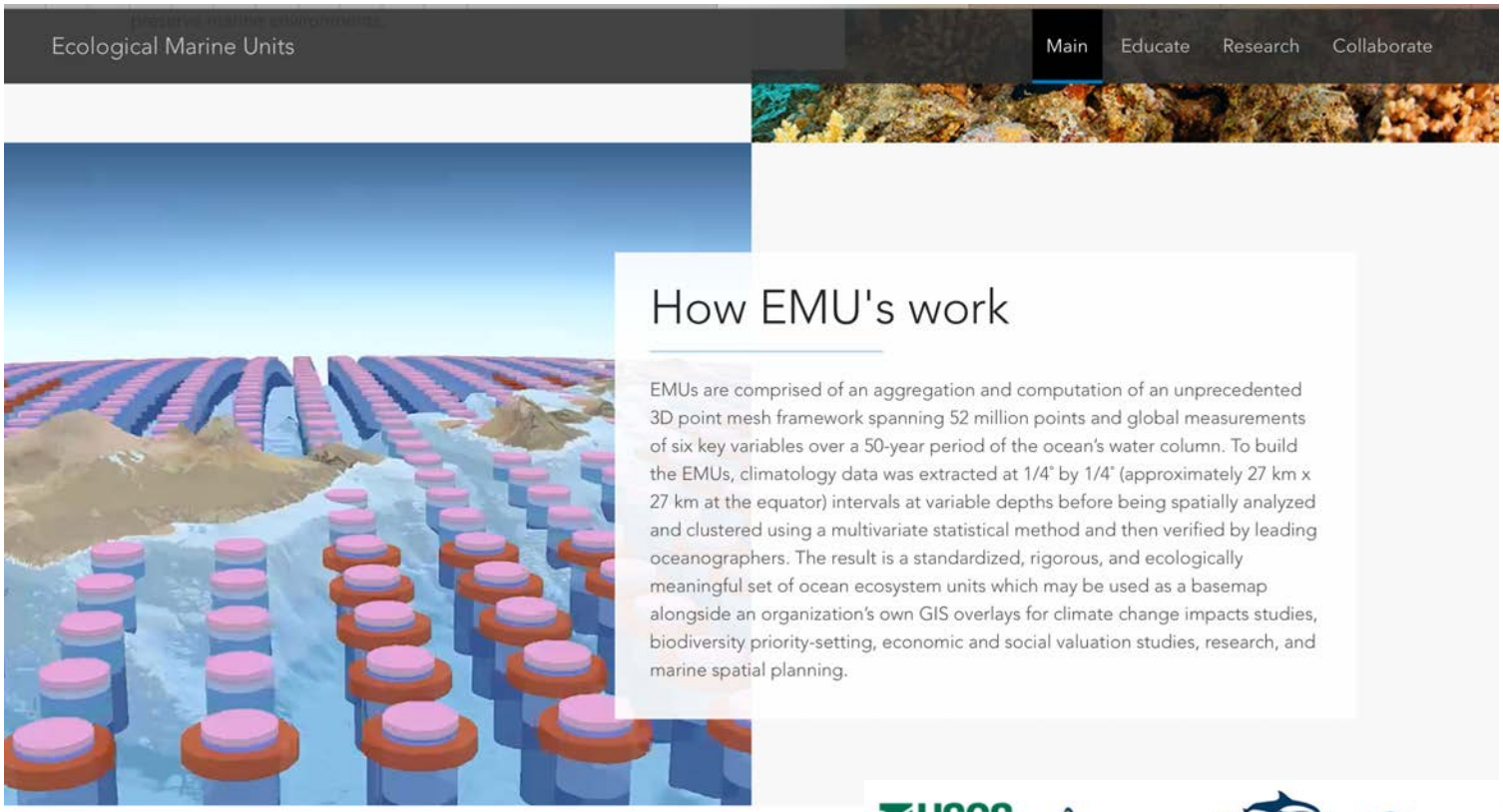
14.5.1 New initiatives



Public Private Partnership

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14.5.1

- Sometimes new initiatives seem to be capturing new insights, leading to true global (independent from national) insights. Should we encourage those?
- Public Private Partnerships may speed up processes

15.1.1 Forest area as a proportion of total land area

- Tier I
- FAO
- Current methodology based on EO
- More current data sources are available with more modern EO technologies. Current methodology leads to potentially incorrect results

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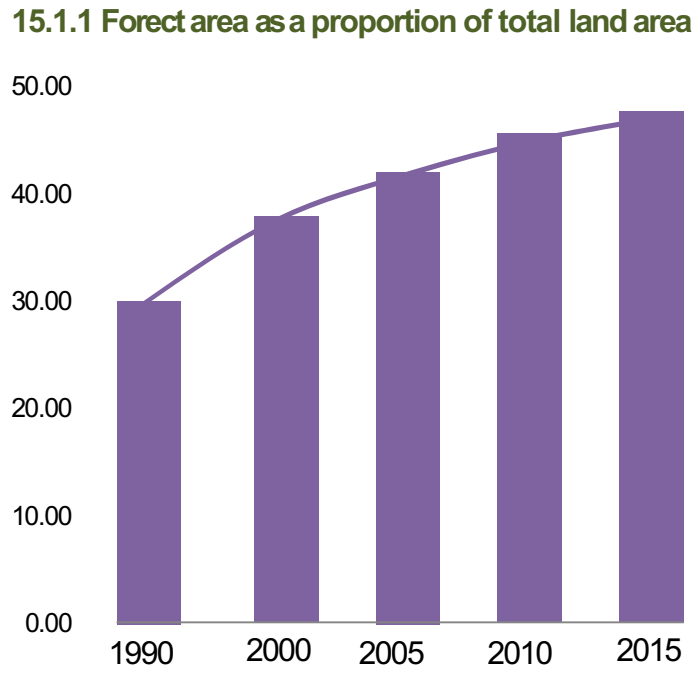
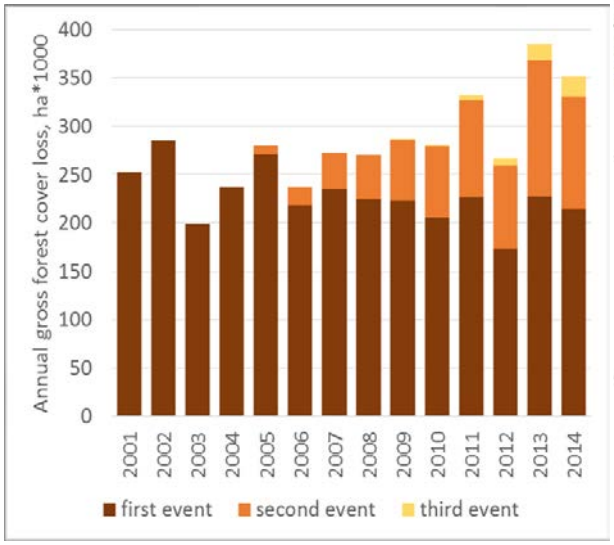
15.1.1 Quality issues

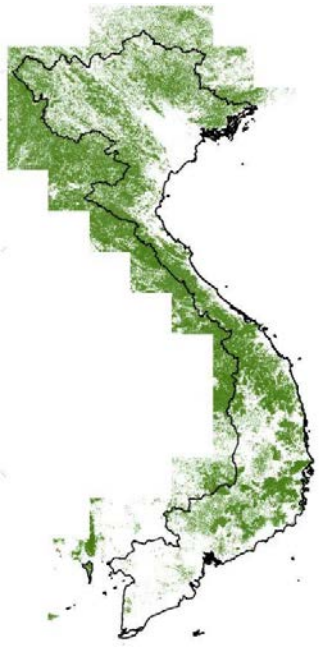
Different methodologies give very different results



vs

Total annual gross forest cover loss
2001-2014: ***3.2 million ha.***





http://unstats.un.org/sdgs/indicators/database/?indicator=15.1.1

Credit: Matthew C. Hansen, Univ. Maryland, et al.

15.1.1 Discussion

- Should we review methodologies if they appear to be developed for different purposes?

15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type

- Tier I
- UNEP
- Similar to 14.5.1

15.3.1 Proportion of land that is degraded over total land area

- Tier III
- UNCCD (UN Convention to Combat Desertification)
- WGGI: Significant opportunity for the use of EO technology and official geospatial data: LU/LC

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15.4.1 Coverage by protected areas of important sites for mountain biodiversity

- Tier I
- Similar to 14.5.1

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15.4.1 Education

http://esriurl.com/elu

15.4.2 Mountain Green Cover Index

- Tier II
- FAO
- Methodology: strong focus for a specific toolset (Collect Earth), based on Google Earth technology
- Significant opportunity for EO technology, potentially combined with crowd sourcing. Analysis required of suitability of toolset

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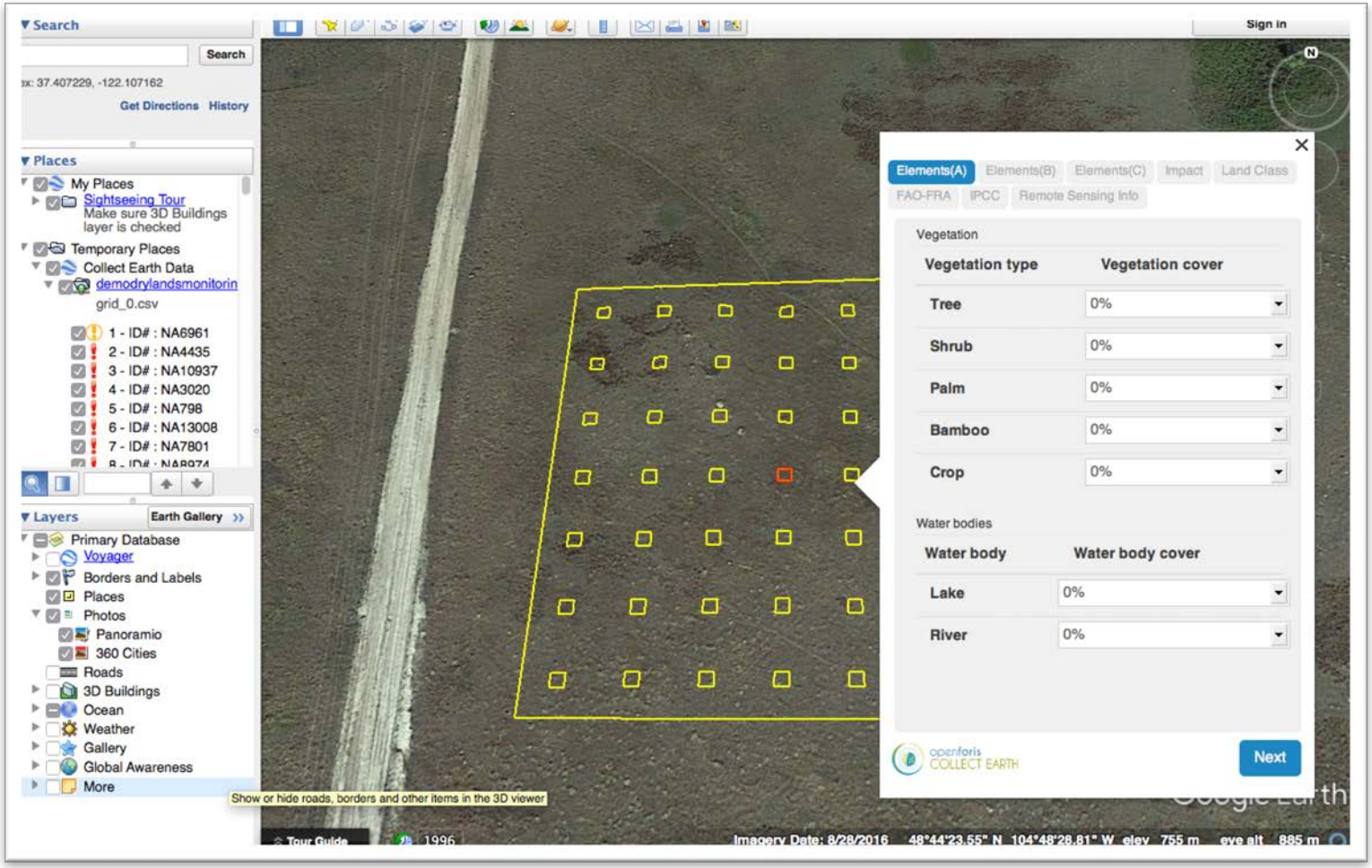
15.4.2 Toolset & Data

Collect Earth toolset: (risk: Google Earth API “end of life” by 31/12/2016)



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15.4.2 Discussion

- Methodology leans on specific toolkit: Collect Earth:
  1. Provenance of Google data is unknown (how old is the data that is used?)
  2. Google Earth API “end of life” announced for end of 2016
- Q: is the toolkit important or should the focus be on the quality of the data?

SUMMARY

Custodians (14)

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SUSTAINABLE DEVELOPMENT GOALS

Indicators in scope

For discussion in breakout groups

Discussion Topics

1. Review the “short list” of the indicators as presented and suggested and discuss how GI helps, supports, informs the indicators.
2. Is the list appropriate, or should others be considered? Can we agree on a first definitive list? Can we reach a landing point?
3. How should we approach them? Tier III or what?
4. What are the first 5-10 low hanging ones that we should target for best examples?
5. Do we have the required methodologies, or do they need to be evaluated, established, and modified/improved?
6. Who do we need to partner with to achieve them?
7. Do we consider levels of data aggregation and disaggregation? How?
8. Periodicity of data – baselines, synthesis, refresh rates, annual, biennial, etc.
9. Do we have the data? Is it consistent – national, global, a mix?
10. What data resolution, accuracy, currency is required?
11. Where do we get the data from? By when?
12. Are we able to provide more rigor to the process?

Group 1

- Sweden (co-Chair): Ms Marie Haldorson
- Botswana: Mr. Thapelo Maruatona
- France: Mr. Frederic Vey
- Uganda: Mr. Justus Bernard Muhwezi
- INEGI, Mexico: Ms Ana de Lara
- UN-GGIM: Europe (Germany): Mr. Pier-Giorgio Zaccheddu
- GEO: Mr. Giovanni Rum
- Wageningen University: Mr. Martin Herold
- INEGI, Mexico: Jose Luis Ornelas

Group 2

- Denmark: Mr. Olav Eggers
- Cabo Verde: Mr. Clodomir Pereira
- Colombia: Mrs. Sandra Liliana Moreno Mayorga
- South Africa: Lawrence Modise
- INEGI, Mexico: Mr. Eduardo de la Torre
- UN-GGIM: Asia Pacific (China): Dr. Chen Jun
- GEO: Mr. Bill Sontag
- INEGI, Mexico: Jesarela Lopez

Group 3

- UN-GGIM: Americas: Mr. Tim Trainor
- Brazil: Mr. Claudio Stenner
- Germany: Mr. Stephan Arnold
- Jamaica: Mr. Mirko Morant
- UN-GGIIM: Africa (Ethiopia): Mr. Sultan Mohammed Alya
- GEO: Dr. Chu Ishida
- Hong Kong Polytechnic University: Prof. John Shi
- IMEGI Mexico: Arturo Flores

Materials

- Documentation:
  - Document on Scope
  - Document on Quality Criteria
  - Document with Issues / Discussion topics raised

- Flipcharts, paper, etc

Discussion Outcomes

- Scope (5-6 primary and others)
- Examples & best practice
- Opinion
- Programme
- Activities/Tasks (who, what, when)
- Planning