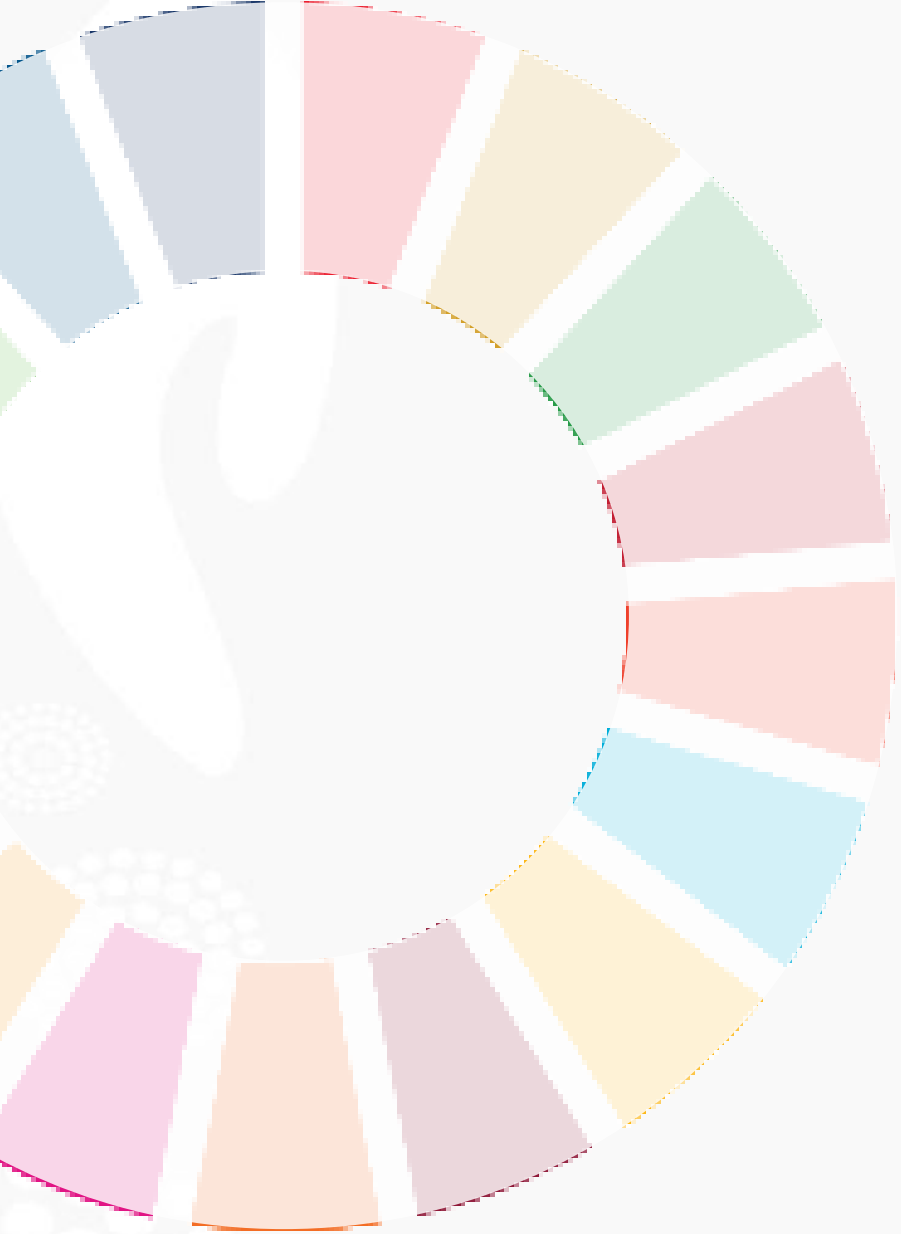
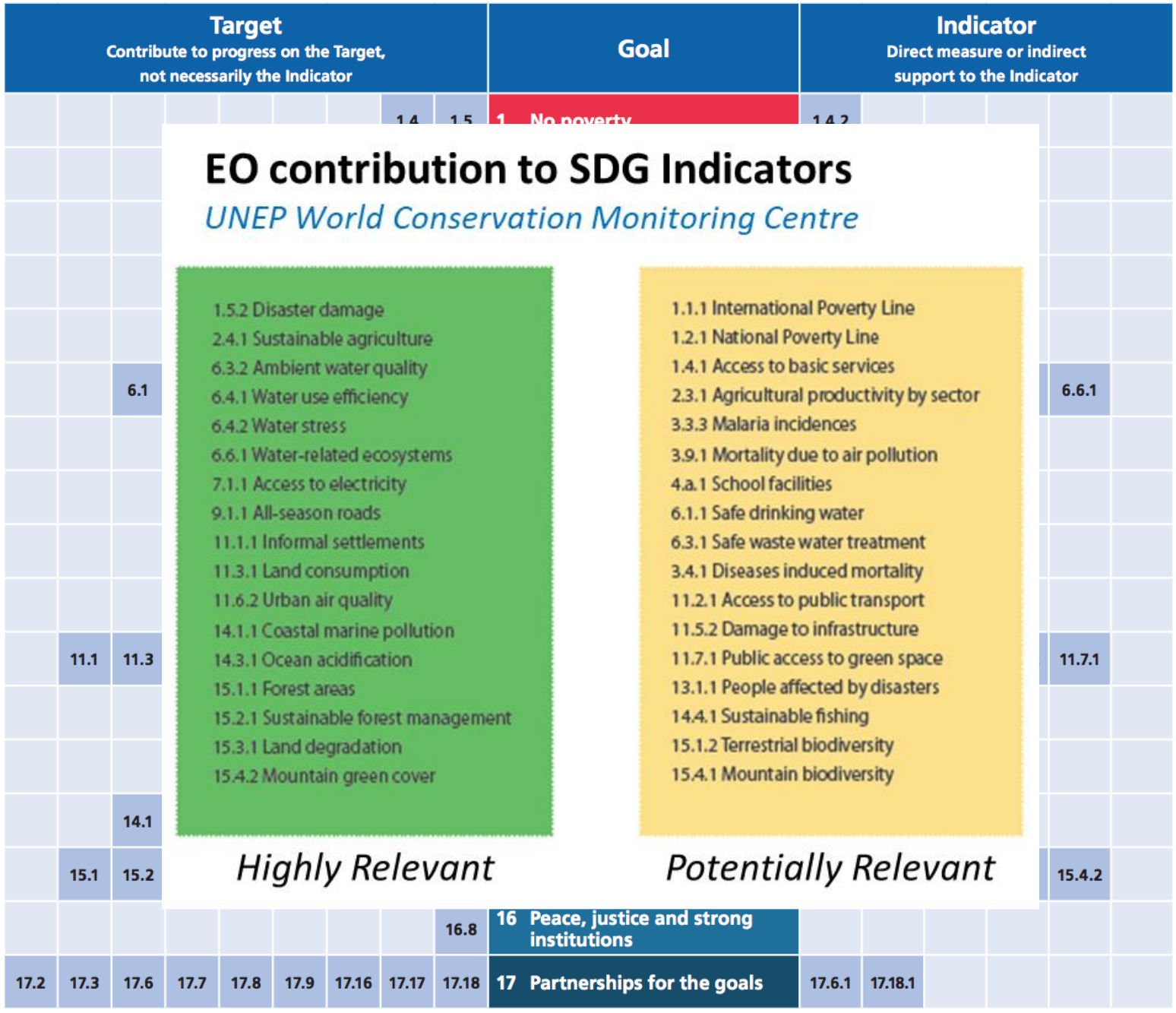


SDG EO Toolkits

By: Argyro Kavvada, Ph.D., NASA

@EO4SDG

6th WGGI Meeting
March 09, 2020



Alignment of Earth Observations to the Sustainable Development Goals, Targets, and Indicators

SDGs with most opportunities:

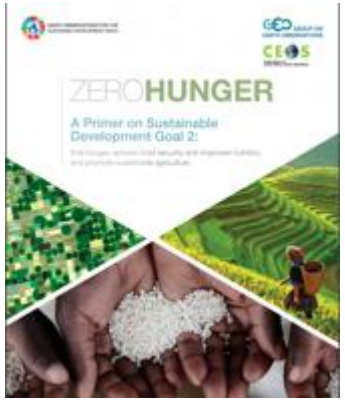
GEO GROUP ON EARTH OBSERVATIONS

CEOS The Committee on Earth Observation Satellites

EO applicability to SDGs, including national examples & use cases

Target Contribute to progress on the Target, not necessarily the Indicator									Goal	Indicator Direct measure or indirect support to the Indicator					
							1.4	1.5	1 No poverty	1.4.2					
						2.3	2.4	2.c	2 Zero hunger	2.4.1					
					3.3	3.4	3.9	3.d	3 Good health and well-being	3.9.1					
									4 Quality education						
								5.a	5 Gender equality	5.a.1					
		6.1	6.3	6.4	6.5	6.6	6.a	6.b	6 Clean water and sanitation	6.3.1	6.3.2	6.4.2	6.5.1	6.6.1	
					7.2	7.3	7.a	7.b	7 Affordable and clean energy	7.1.1					
								8.4	8 Decent work and economic growth						
					9.1	9.4	9.5	9.a	9 Industry, innovation and infrastructure	9.1.1	9.4.1				
						10.6	10.7	10.a	10 Reduced inequalities						
	11.1	11.3	11.4	11.5	11.6	11.7	11.b	11.c	11 Sustainable cities and communities	11.1.1	11.2.1	11.3.1	11.6.2	11.7.1	
				12.2	12.4	12.8	12.a	12.b	12 Responsible consumption and production	12.a.1					
					13.1	13.2	13.3	13.b	13 Climate action	13.1.1					
		14.1	14.2	14.3	14.4	14.6	14.7	14.a	14 Life below water	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 Life on land	15.1.1	15.2.1	15.3.1	15.4.1	15.4.2	
								16.8	16 Peace, justice and strong institutions						
17.2	17.3	17.6	17.7	17.8	17.9	17.16	17.17	17.18	17 Partnerships for the goals	17.6.1	17.18.1				

Earth Observation and Geospatial Information Linkages to SDG Goals, Targets & Indicators



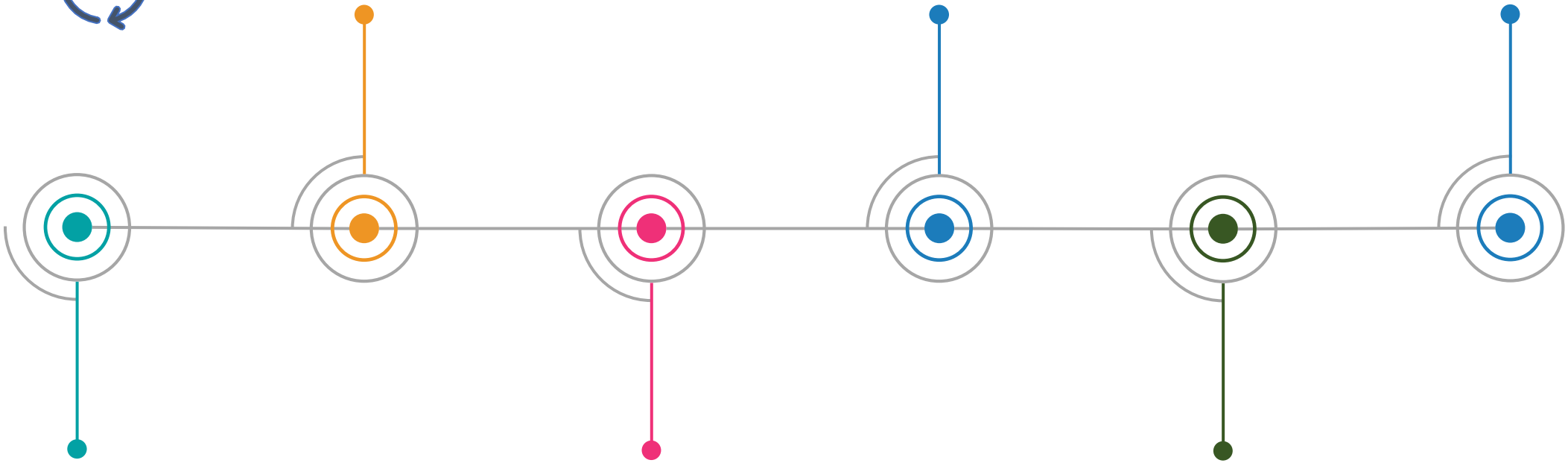
Under Review

Under Review

EO integration in global methodologies testing, piloting

Tools dissemination, practical guidance on EO uses in support of sustainable urbanization

SDG EO Toolkit & Coordinated Capacity Development

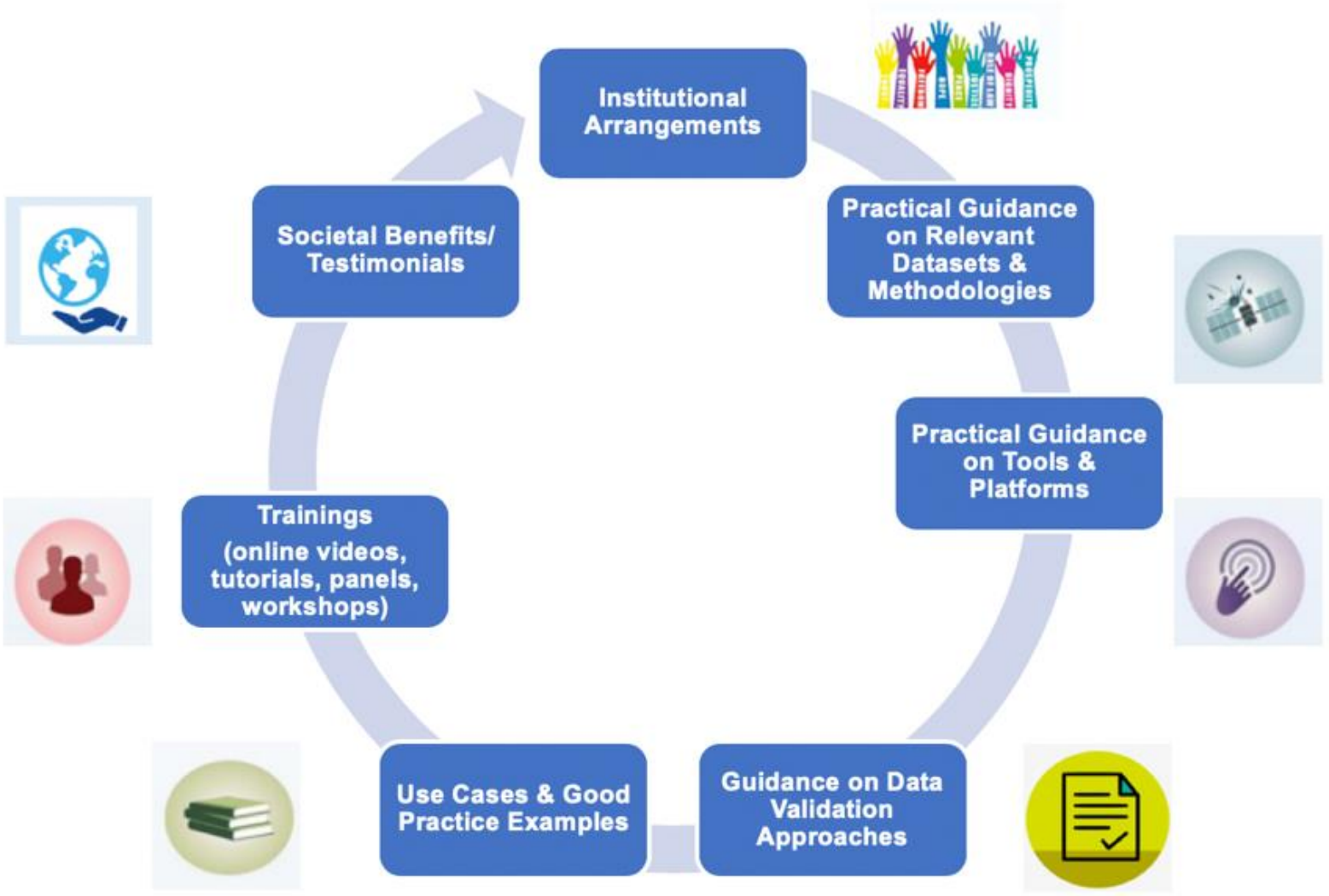


End-user needs assessment, opportunities for collaboration

Collaboration support to countries for monitoring & to inform decisions

Exploring and testing usability of emerging EO data/products for local and global monitoring

Key components of SDG EO Toolkits



Some examples of ongoing country- focused activities

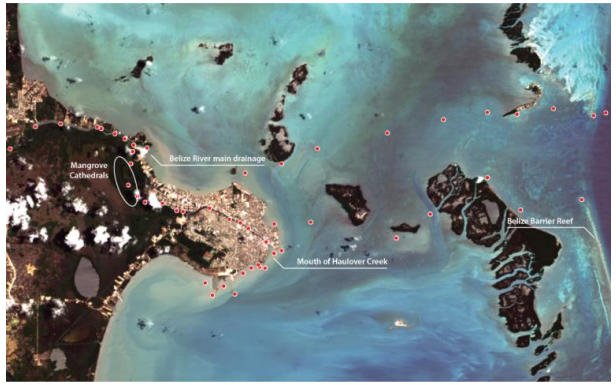
Belize

PI: Robert Griffin, U. Alabama in Huntsville

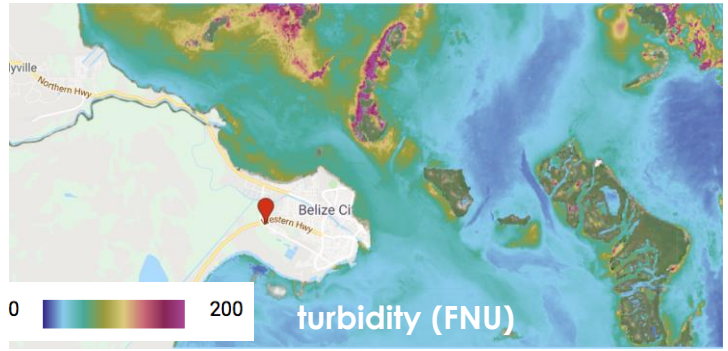
Science PI: Emil Cherrington (UAH)

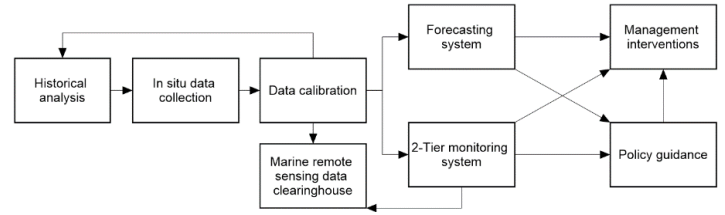
Goals: Support Belize w/ implementation of SDG 14 (“life below water”) and SDG 15 (“life on land”)

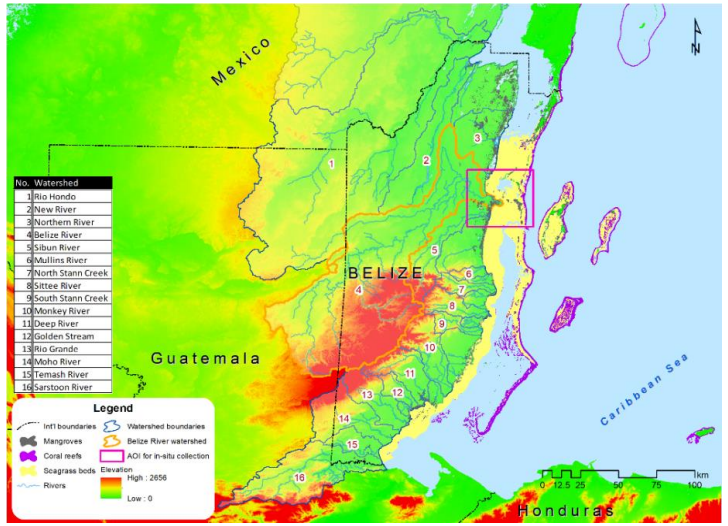
Partners: WCS, UGA, NASA JPL

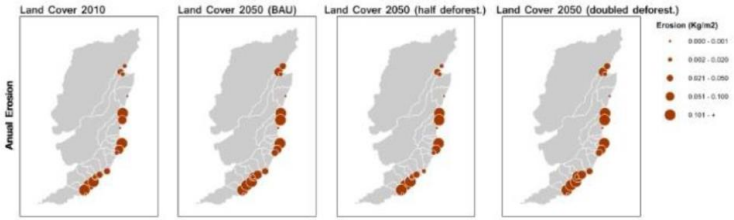


- **Earth Observation and Model Data:**
  - Coastal water quality: in situ and satellite (Landsat, MODIS, Sentinel-2, Sentinel-3)
  - Land cover (historical: Landsat, MODIS, Sentinel-2 derived; scenarios)
  - Ocean circulation (NOAA)
  - Climate projections (CMIP5)
- **Expected deliverables:**
  - National coastal / marine pollution monitoring + forecasting system
  - Strengthened scientific + technical capacity of Government of Belize agencies
  - Policy recommendations re: meeting SDG 14, 15 targets
- **Geographic focus:** Belize Barrier Reef Lagoon (marine segment), Belize River Watershed (terrestrial segment)









Panama

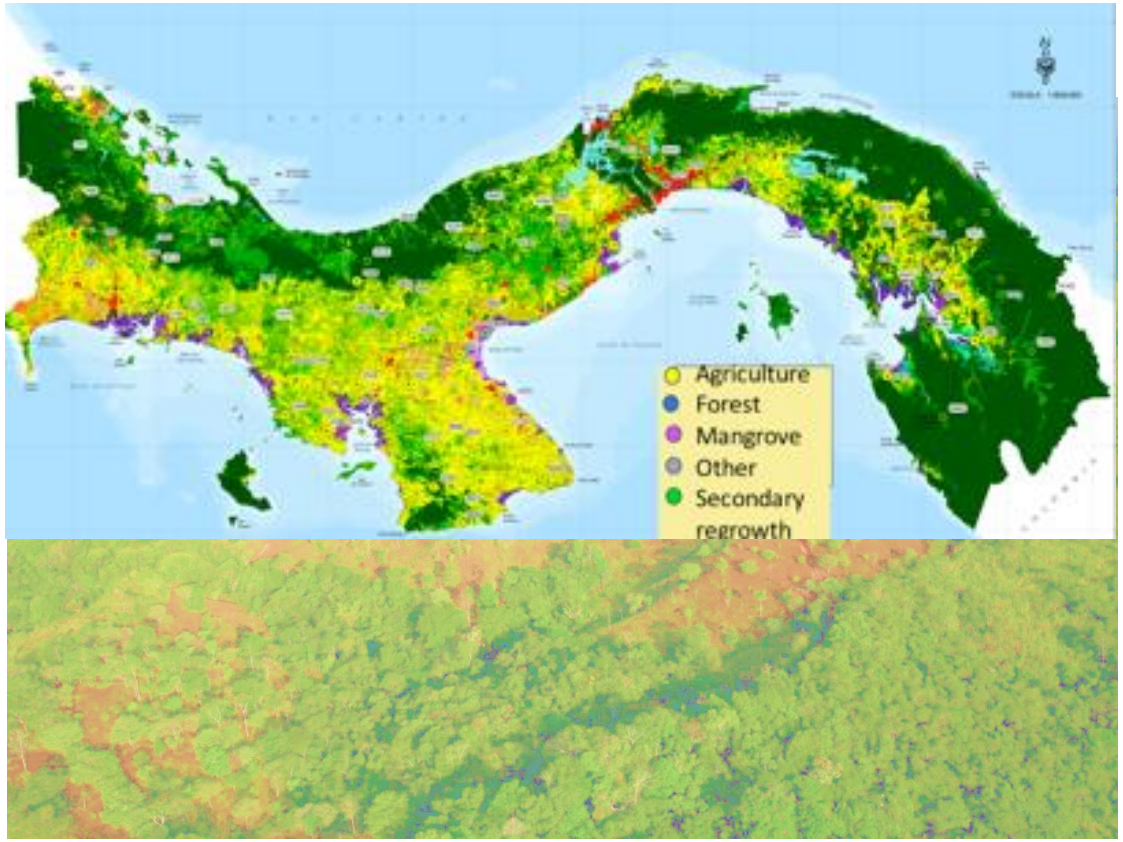
A Sustainable Forest Management and Information System (SFMIS) Tool

PI: Erika Podest, NASA- JPL

Goals: To develop a Sustainable Forest Management and Information System (SFMIS) for addressing Sustainable Development Goal (SDG(15.2.1, “progress towards sustainable forest management”, within the context of climate variability and change in Panama, using remote sensing-based forest cover and climate model outputs for various scenarios.

Earth Observations and Model Data :

- Land cover from MODIS, Landsat, PALSAR-1 & PALSAR-2, Sentinel-1 A & B SAR
- Land Temperature from MODIS, LANDSAT
- Precipitation from TRMM and GPM
- Topography from SRTM
- Climate change information from The NASA Earth Exchange Global Daily Downscaled Climate Projections (NEX-GDDP)
- In situ information on deforestation/reforestation, vegetation type, structure, and biomass

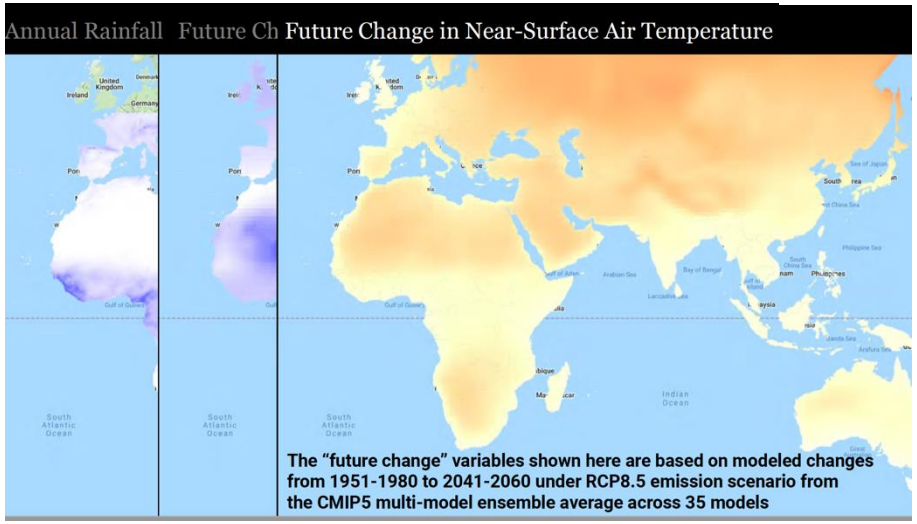


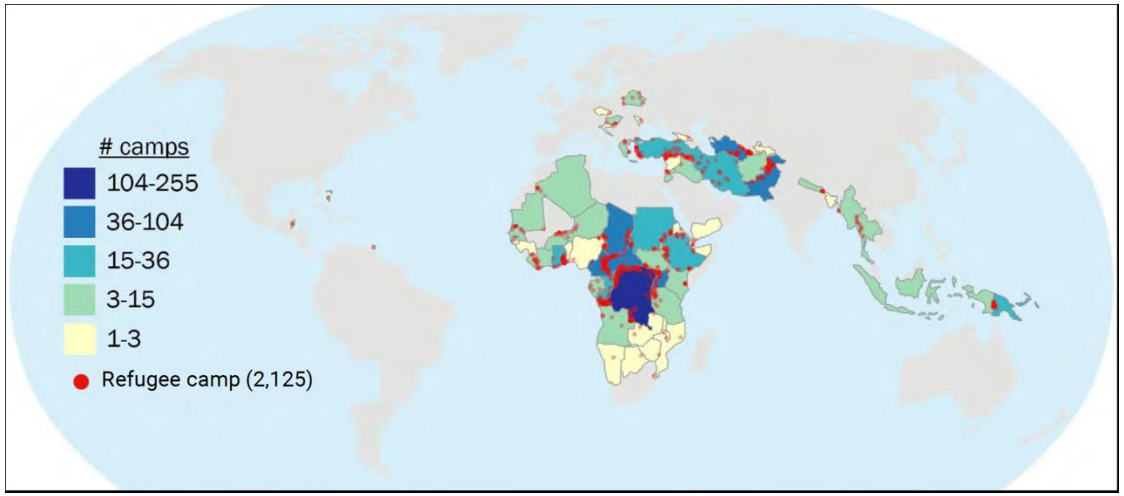
Expected Deliverables:

- Net annual forest change under different management practices from 1990-present
- Statistical methodology to assess forest change related to climate variability and change
- SFMIS – A GIS-based tool with a visual display indicating forest change and the most vulnerable areas to climate change
- SFMIS will be transferred to the Climate Change Unit in Panama to facilitate their reporting of SDG 15.2.1 to FAO (the custodian agency for this SDG)

Refugee Camps as Climate Traps?: Mapping Current and Future Climate Marginality at One Thousand Refugee Camps with Google Earth Engine

- Locate & assess SDG indicators at informal settlements belonging to “missing millions”
- MME CMIP5 outputs; Landsat, Sentinel-2, MODIS,CHIRPS, VHR imagery, imagery-derived infrastructure, settlement & population displacement datasets;
- Partners: Humanitarian OpenStreetMap (HOT), DevSeed, local stakeholder organizations



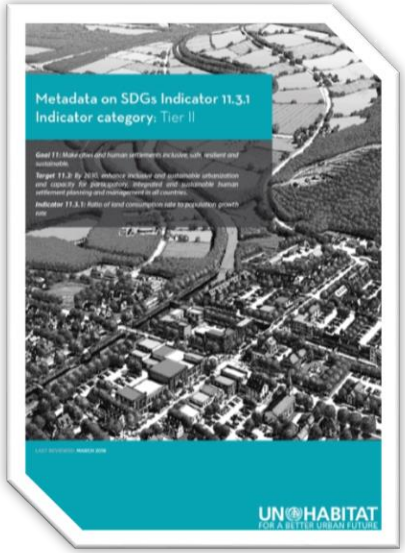


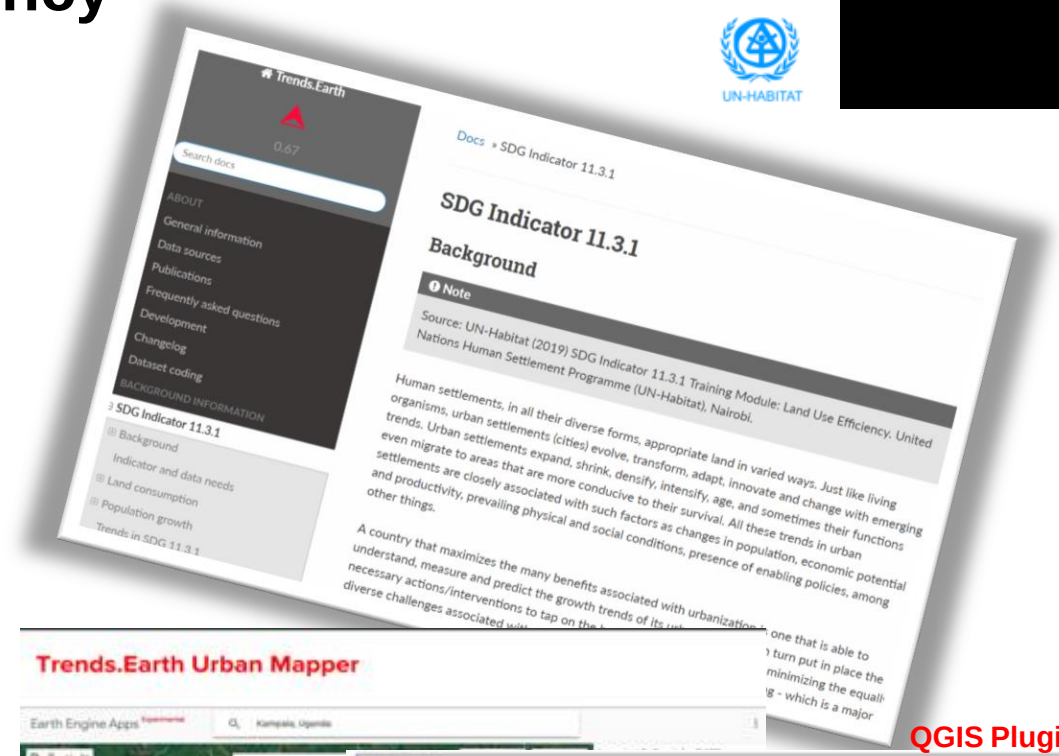
PI: Jamon Van Den Hoek, Oregon State University

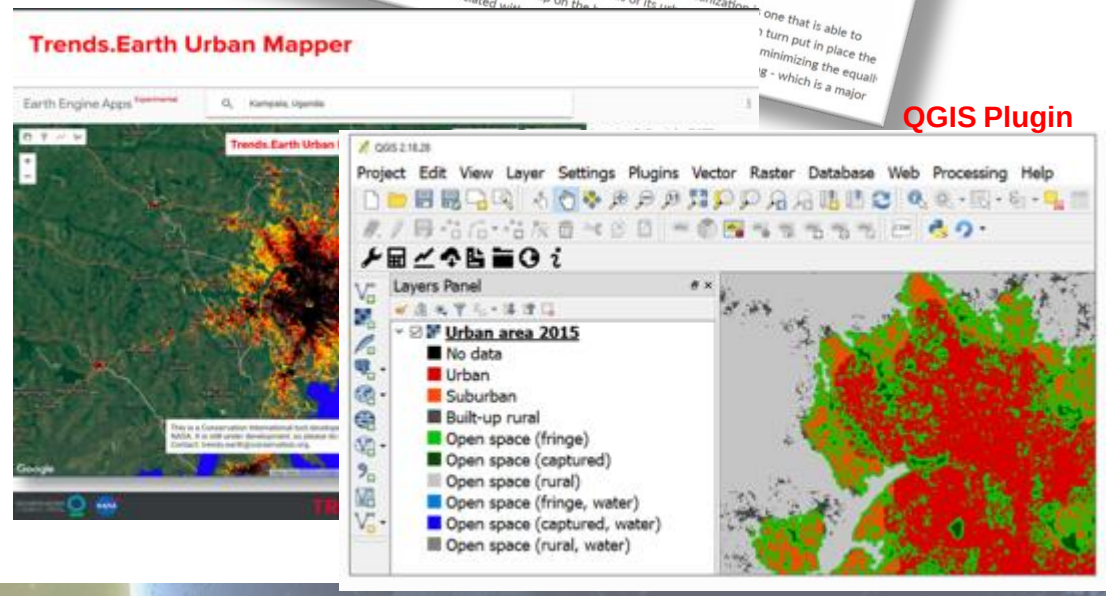
- 20.4 million refugees were under UN mandate as of mid-2018
- More than 2/3 of refugees live in protracted refugee scenarios where “basic rights and essential economic, social, and psychological needs remain unfulfilled after years in exile.”

Tracking Progress Towards Land Use Efficiency Using Satellite EO

- Supporting UN Habitat step-by-step indicator computation modules & country piloting
- Indicator production tools for local & global monitoring
- Exploring & testing usability of global data products for local & global monitoring
- Capacity development activities
- Participation in global forums
- Country pilot activities







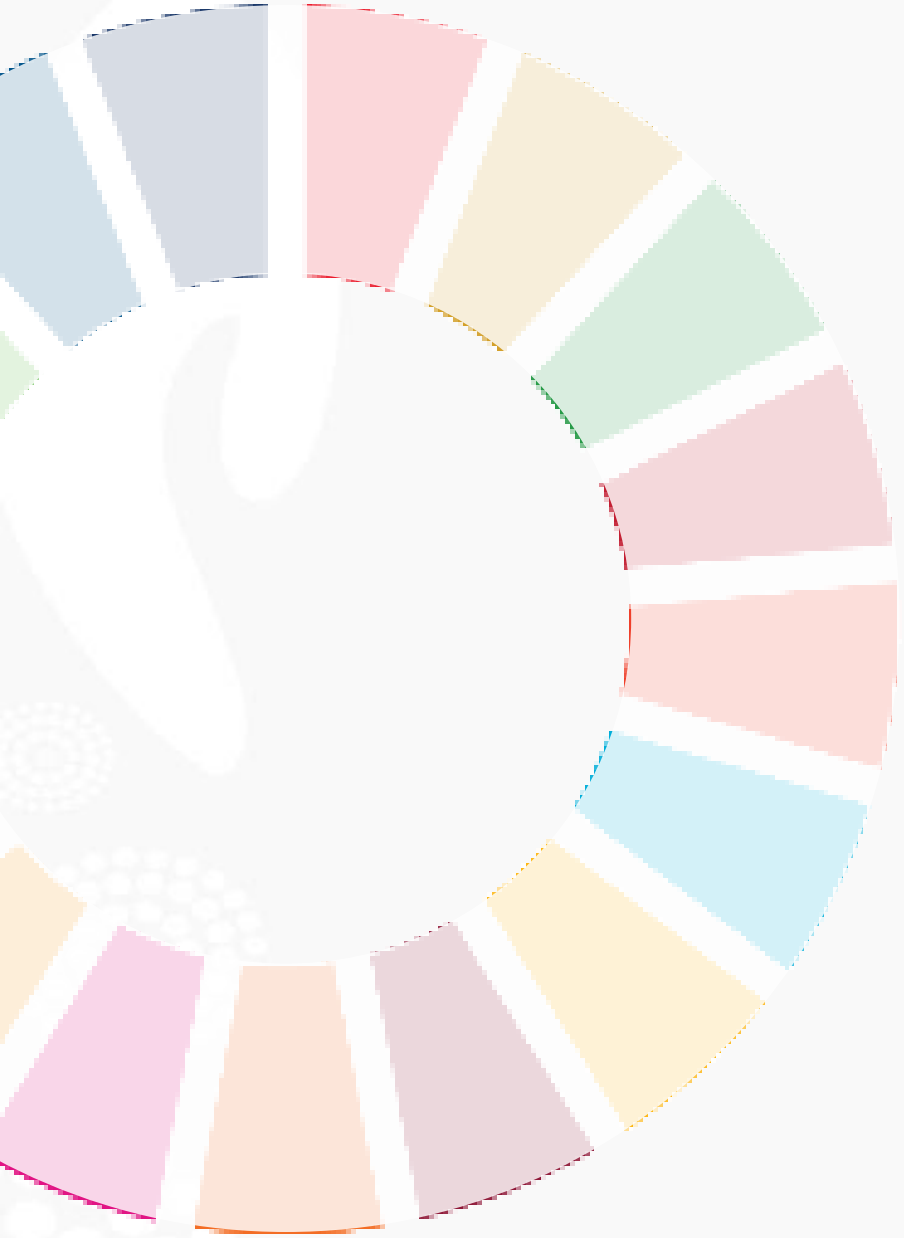
NASA ARSET SDG Webinar in English & Spanish

- 971 Participants, 696 organizations, 105 countries, 33 US States
- 99% of respondents in a post-training survey indicated the training met or exceeded their expectations
- The greatest benefit of the training is "to be able to access and use already processed data to generate my own maps and charts on topics for which LAC has little data so far (land degradation)." *- Attendee from Bolivia, Multi-National Organization*

https://arset.gsfc.nasa.gov/sdgs

Opportunities for UN IAEG-SDG WGGI

- Help showcase method applicability across regions on specific SDG themes such as urban / water/ land/ ocean/ food - related SDG
- Support enhanced awareness of EO core missions, associated data products (including analysis ready data) & tools that can inform SDG targets/ indicators
- Support GEO SDG EO Toolkits activity to provide customizable, iterative guidance on tools, good practices, information products, contributory project results, training material etc.



Thank you!

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http://eo4sdg.org

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