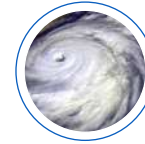




Open Data



Neutral
Platform



Transformative
Impact

Anne Hale Miglarese, CEO

Big Data for the SDGs

January 18, 2018 – Hyderabad, India

BILL & MELINDA
GATES foundation


OMIDYAR NETWORK
A WORLD OF POSITIVE RETURNS

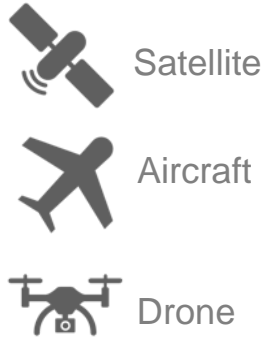
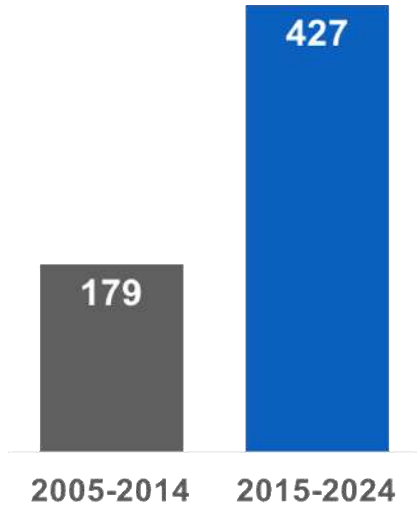
Open geospatial data for positive global impact



To connect people worldwide to Earth imagery, geospatial data, tools, and knowledge to meet the world's most critical challenges.



Earth Observation Satellites (>50kg)



Dramatic increase in imagery supply



Cloud Computing



Machine Learning

Rapid Innovation



New Solutions

CHALLENGE

OPPORTUNITY

SOLUTIONS

Earth Observations potential contribution to the SDG Targets and Indicators



SDGs with most opportunities for EO data

Analysis performed by the GEO EO4SDGs initiative

Target		Goal	Indicator	
<i>Contribute to progress on the Target yet not the Indicator per se</i>			<i>Direct measure or indirect support</i>	
1.4	1.5	1	1.4.2	
2.3	2.4	2.c	2.4.1	
3.3	3.4	3.4	3.9.1	
		5.a	5.a.1	
6.1	6.3	6.4	6.5	6.6
		6.a	6.b	6.3.1 6.3.2 6.4.2 6.5.1 6.6.1
7.2	7.3	7.a	7.b	7.1.1
		8.4		
9.1	9.4	9.5	9.a	9.1.1 9.4.1
	10.6	10.7	10.a	
11.1	11.3	11.4	11.5	11.6
		11.7	11.b	11.c
	12.2	12.4	12.8	12.a
		12.b		12.a.1
	13.1	13.2	13.3	13.b
				13.1.1
14.1	14.2	14.3	14.4	14.6
		14.7	14.a	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
			16.8	
17.2	17.3	17.6	17.7	17.8
		17.16	17.17	17.18
				17.6.1 17.18.1



Sanitation Facility Monitoring in Dakar, Senegal

Problem Statement

- Estimating fecal sludge volume at a treatment facility.
- Developing a ML algorithm to use multi-spectral and SAR data from Sentinel satellites.
- Case Study: Three sites in Dakar, Senegal

Status

- POC under development.
- Weekly data provided by the operating company.
- Investigation of Sentinel-2 data shows potential value, but Sentinel-1 SAR data can be used to monitor the dry sludge as well.
- DG has agreed to provide sample data for POC.



Malaria Risk Mapping

Team: BMGF, Clinton Health & Radiant.Earth

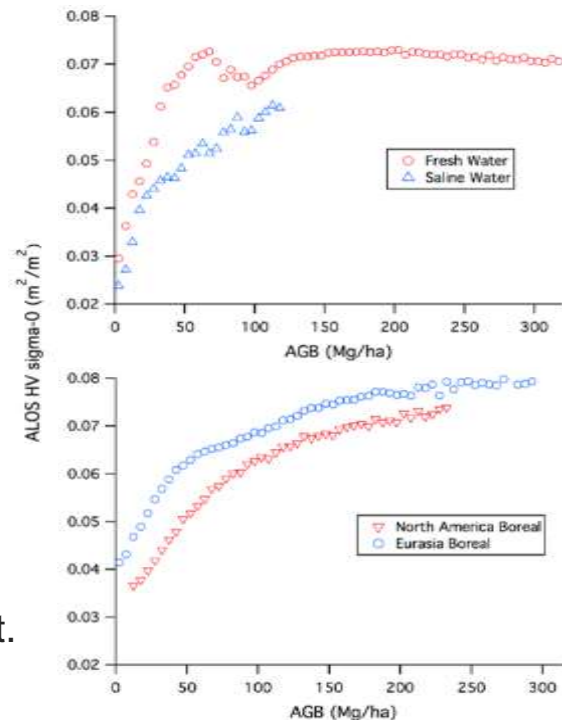
- Jonathan Cox (BMGF), Io Blair-Freese (BMGF), Arnaud Le Menach

Problem Statement

- Monitoring vector habitat in tropical regions
 - Forests in South East Asia
 - Agricultural water sources in Central America
- Monitoring development of new settlements
- Both cases require use of Sentinel-1 SAR data due to cloudiness

Status:

- Pipeline for using SAR to estimate forest area is under development.
- Greater Mekong region (Cambodia) is selected as a case study.
- Ground truth data will be provided by Clinton Health team.



Yu and Saatchi, 2016



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