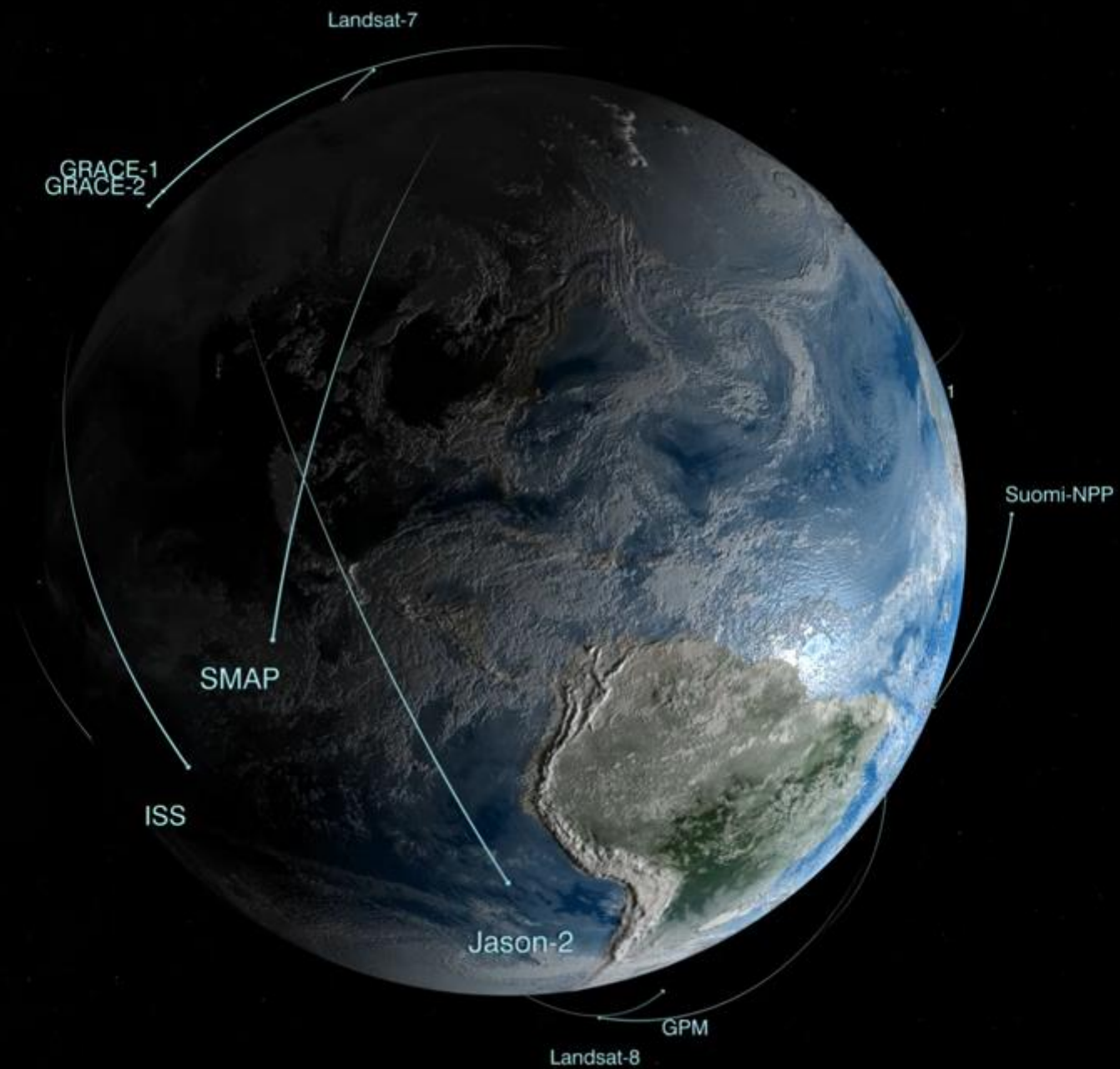


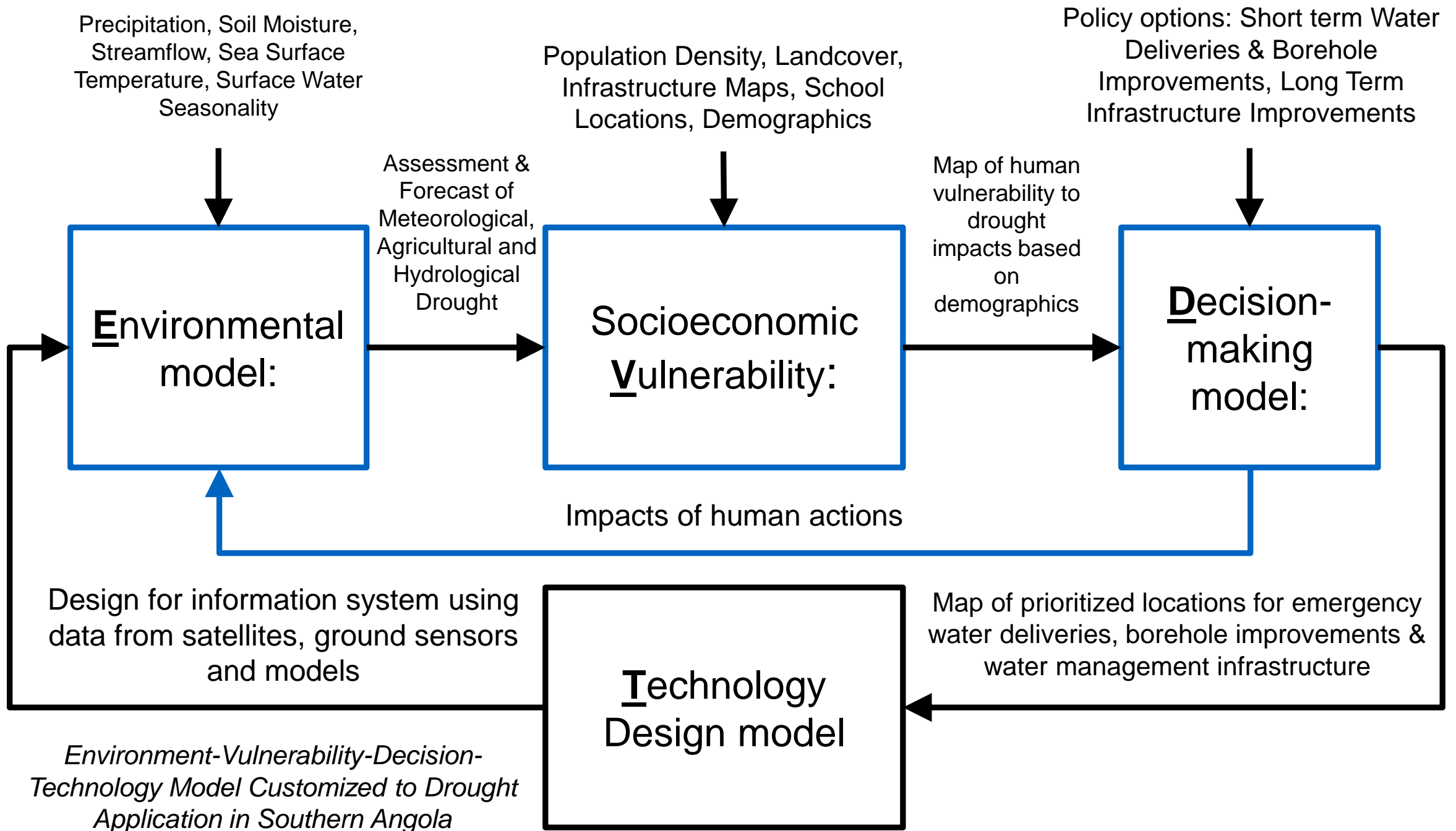
Using Earth observation technologies for socioeconomic benefits in developing countries

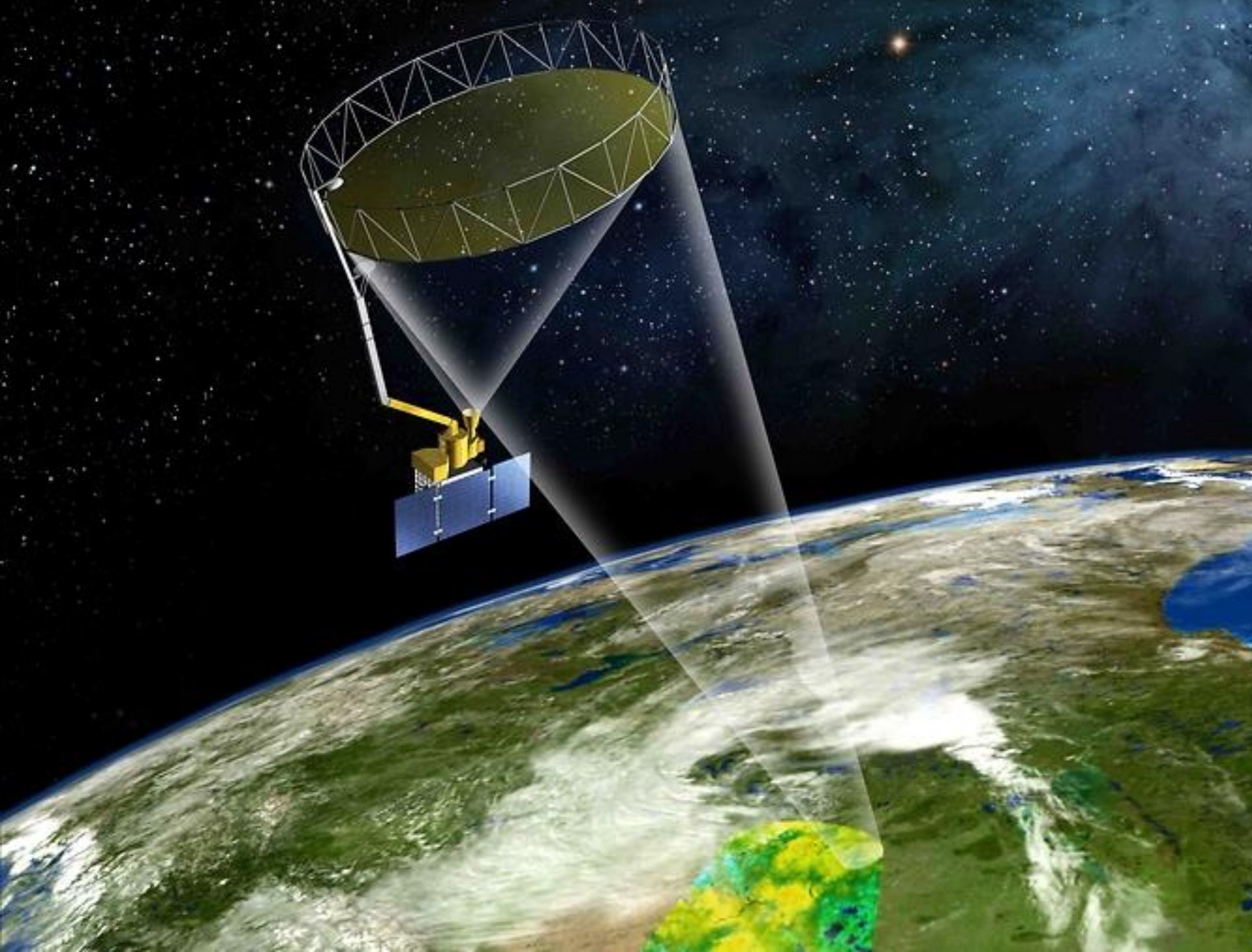
Sharif Islam, PhD

Space Enabled Research Group, MIT Media Lab



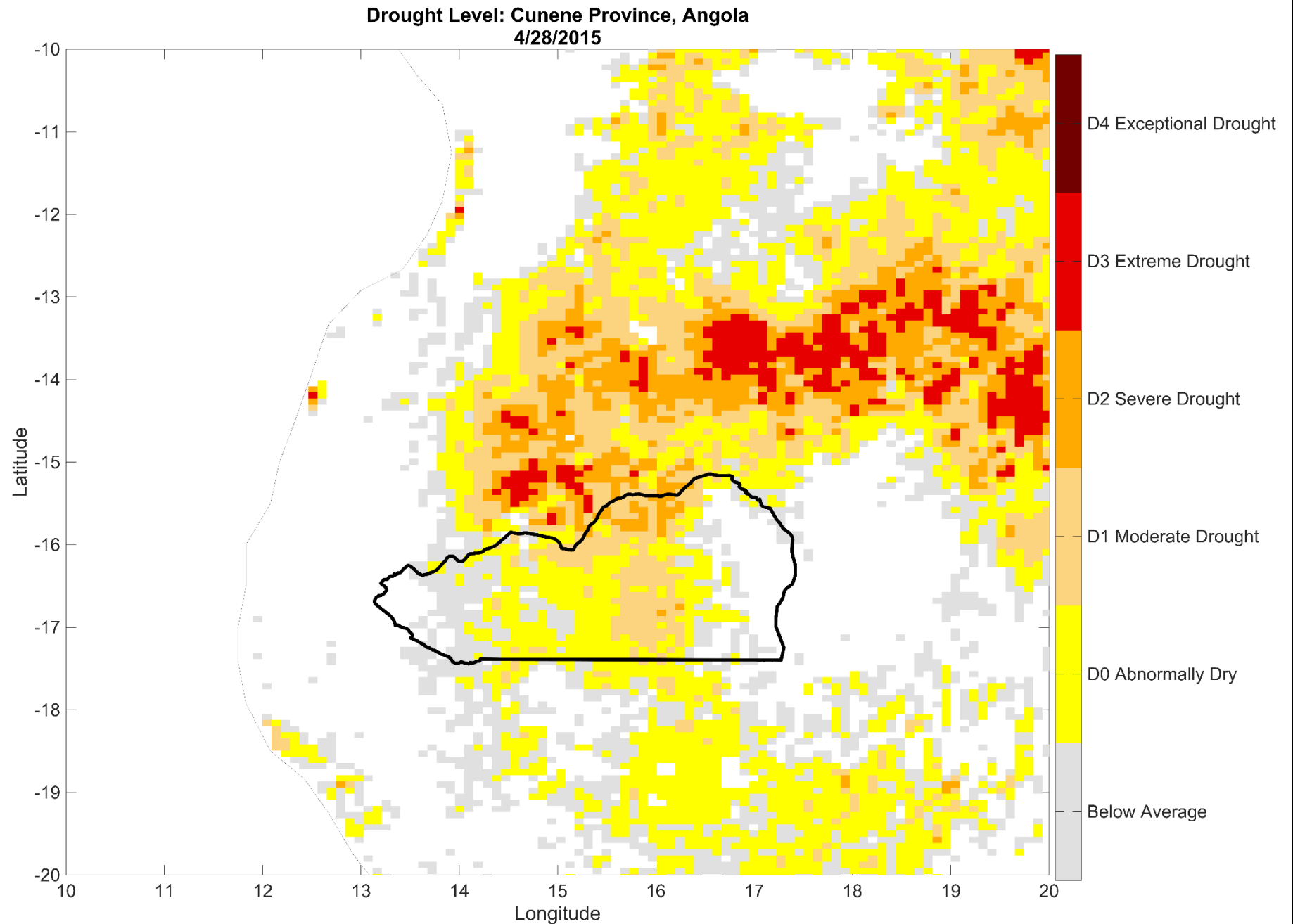




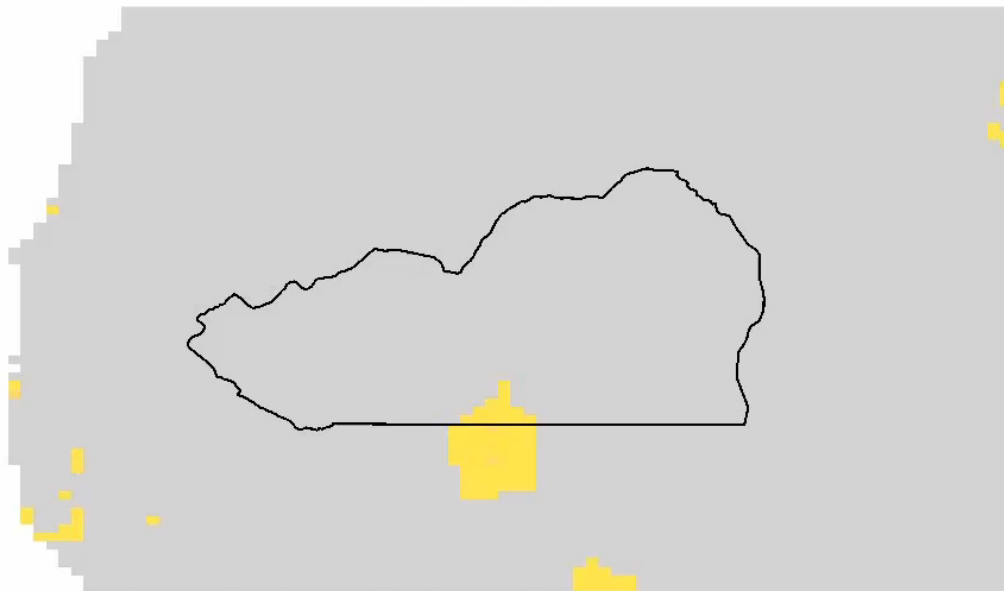


NASA has a satellite called SMAP that has a sensor that can measure the microwaves that reflect from the earth. This allows the sensor to measure water in the soil.

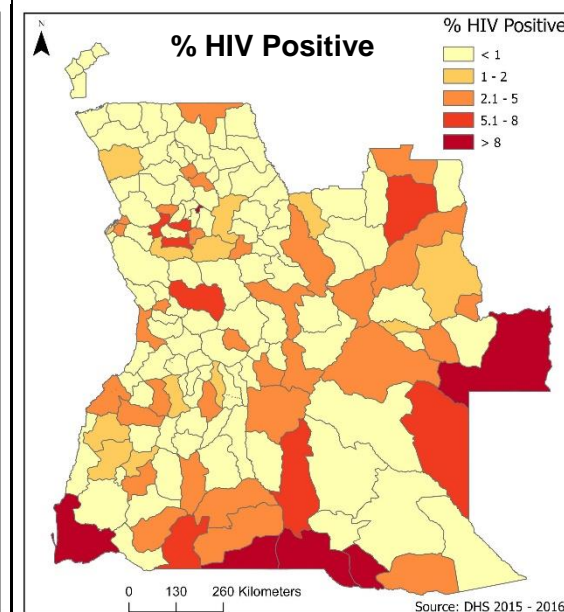
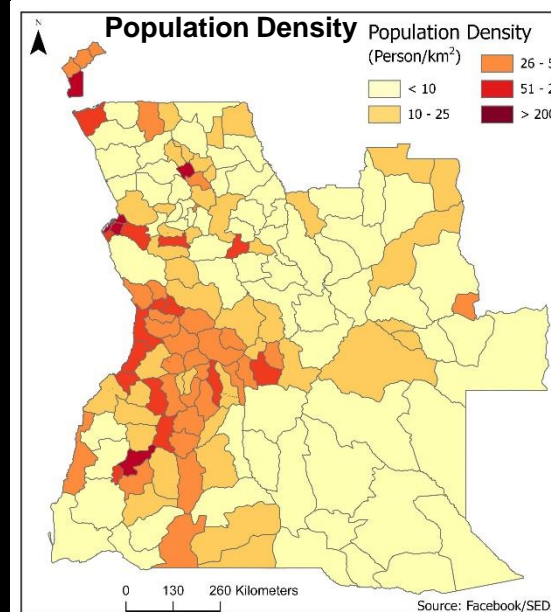
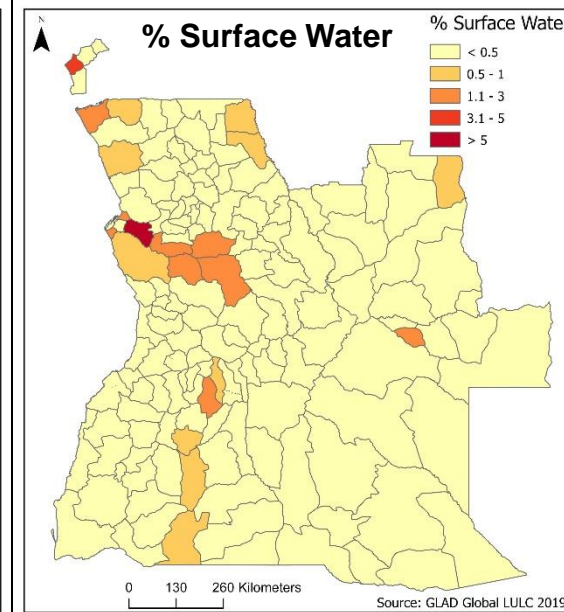
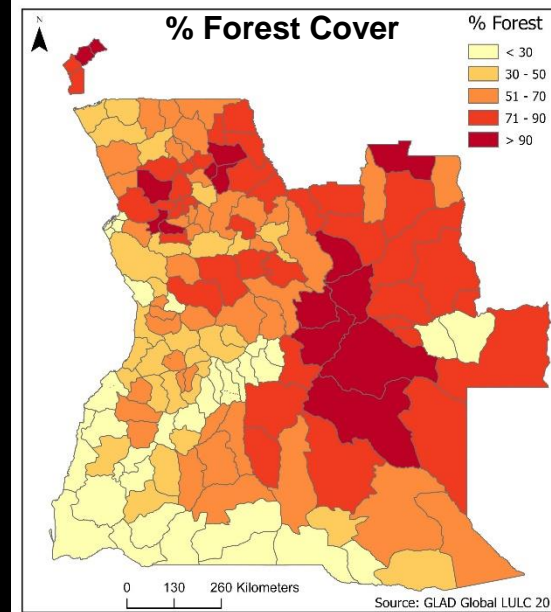
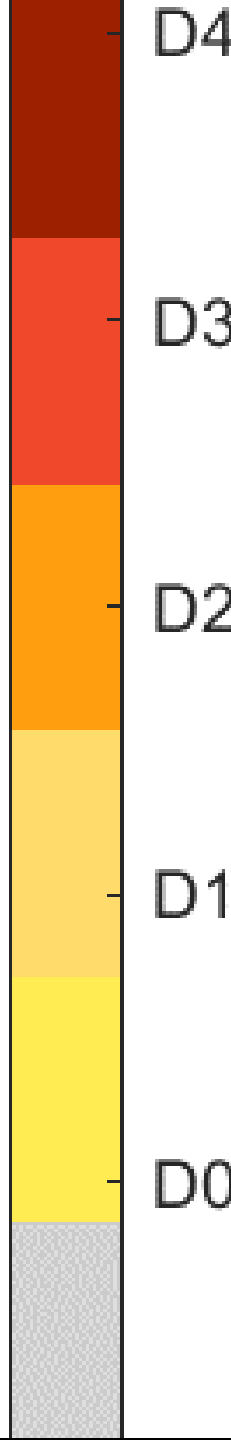
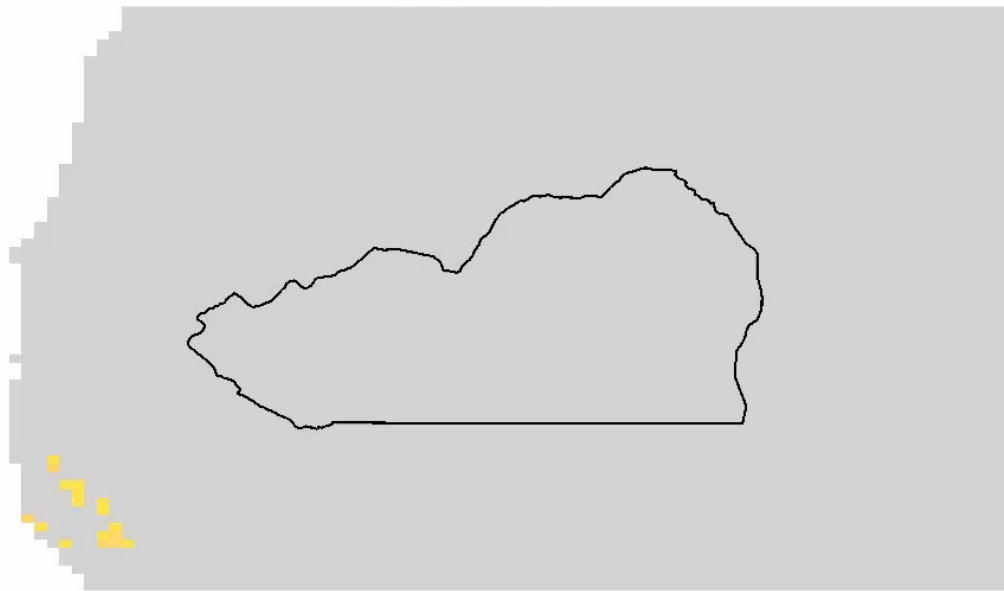
This project maps the level of drought intensity in Angola for multiple years using data from SMAP. Dark red means very dry soil.



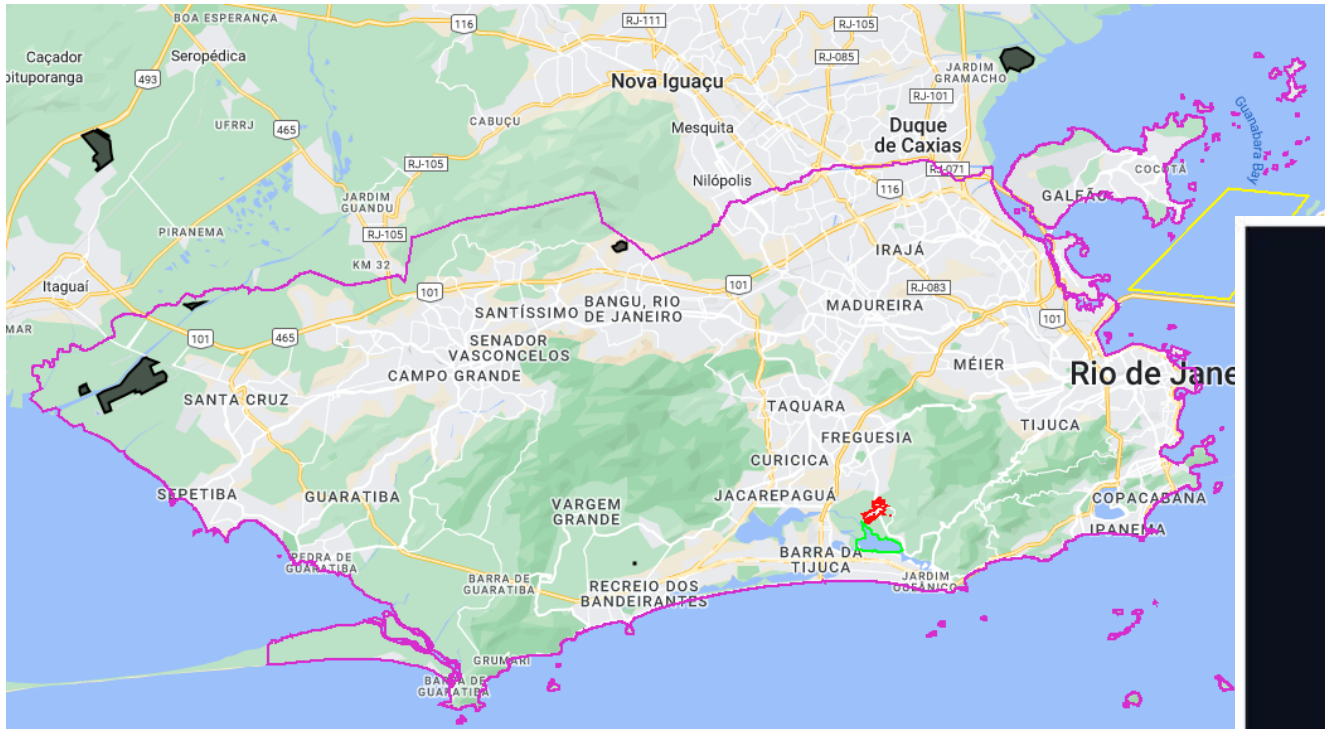
01-Jan-2019



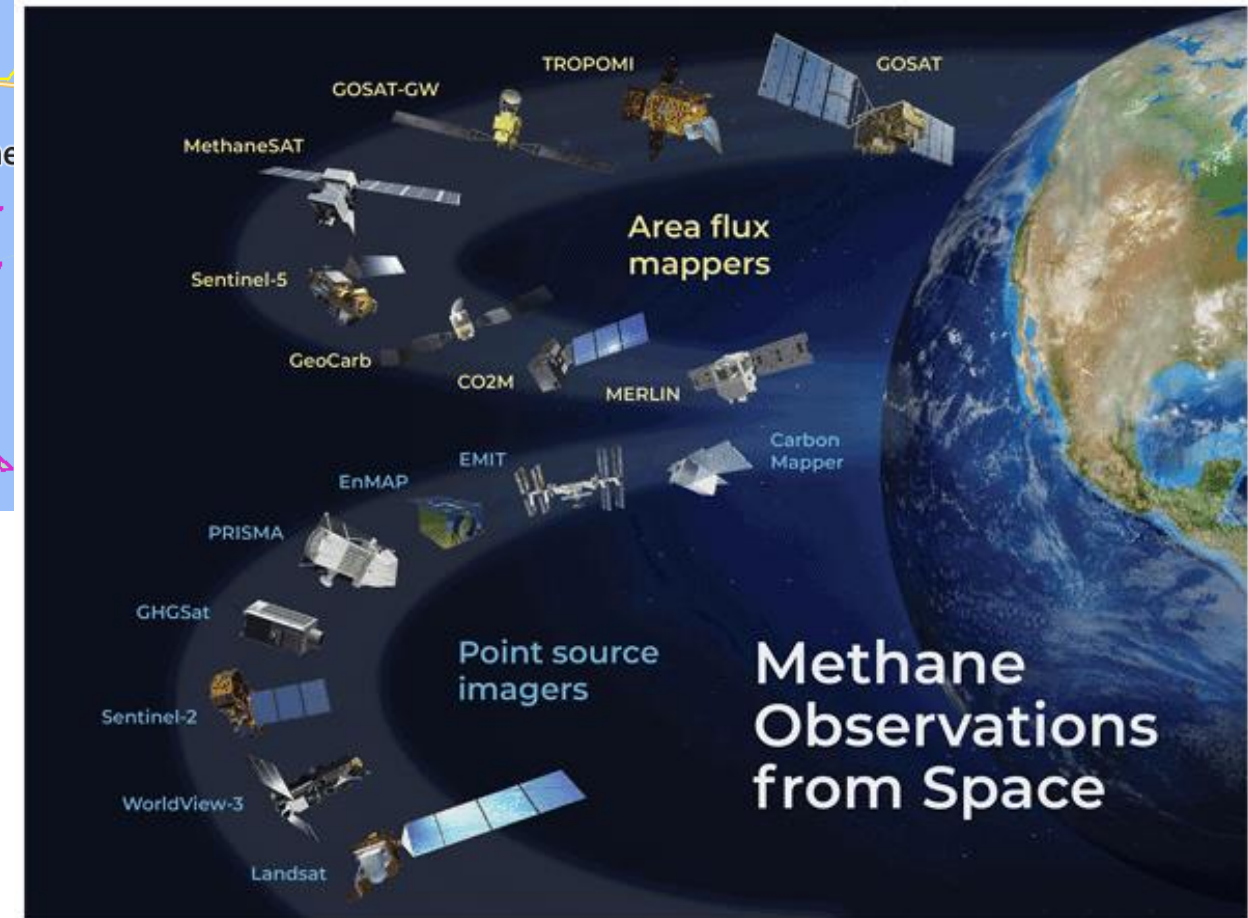
04-Jan-2020



Methane Emission Estimation

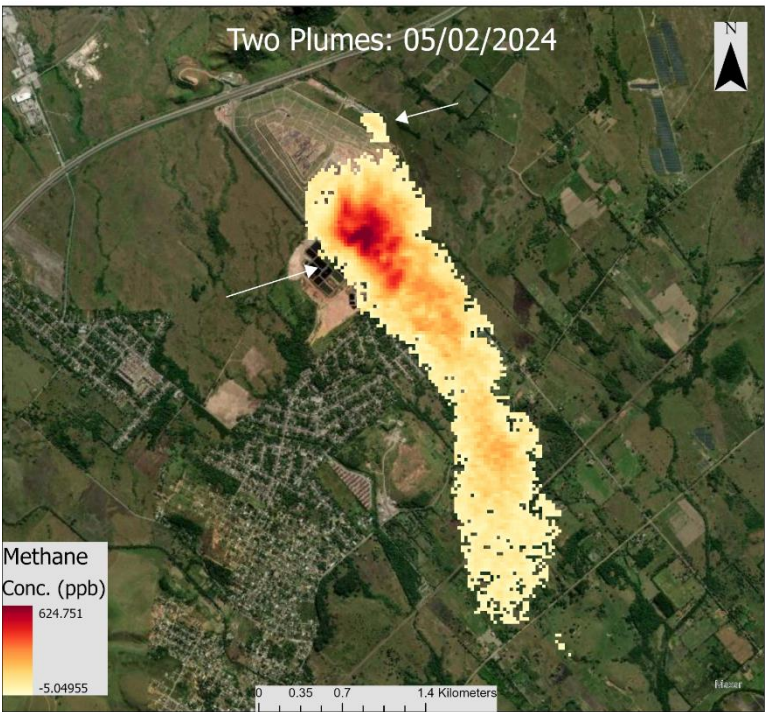
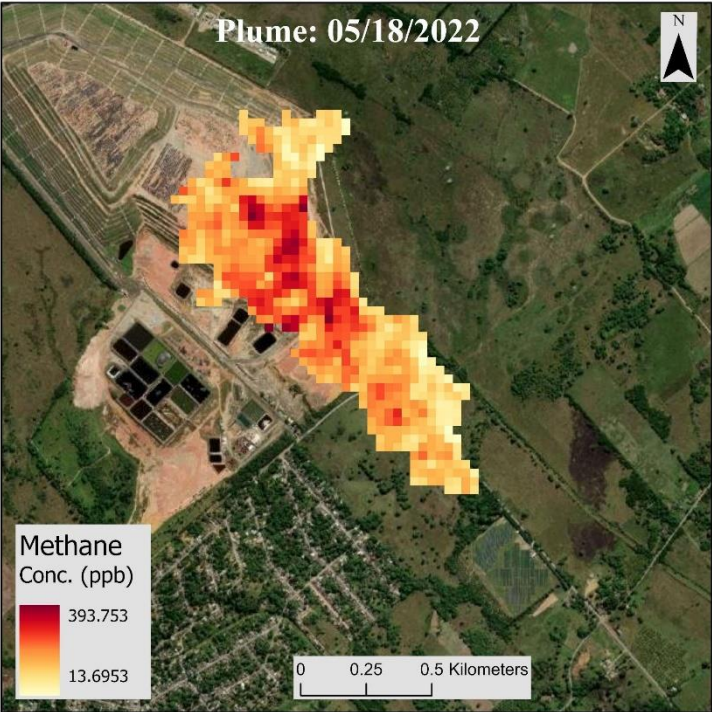


Objectives: 1) to supplement Rio de Janeiro's GHG emissions inventory process; 2) to provide timely, geolocated emissions data to enable more targeted interventions; and 3) to build capacity so that this methodology could be adopted by other cities currently using the methodology recommended by the GHG Protocol for Community-Scales (GPC).



Detecting methane plume

Estimated GHGSat Emission Rate generally agrees with the city Inventory.



Estimator	Method	Wind Speed (m/s)	WS Data Source	Emission Rate (kg/hr)
City of Rio De Janeiro	IPCC			4574
GHGSat	IME	3.2	GEOS-FP	4225
Space Enabled	IME	2.44	MERRA-2	4344

Questions?

shariful@media.mit.edu

