How Will Next Generation Technology Affect Climate Talks?

Lekha Sridhar
Senior Policy Analyst
WattTime/Climate TRACE

About Climate TRACE

OBSERVE ACTIVITY: satellite data identifies emissions-causing activities

ESTIMATE ACTIVITY: AI, ML, and statistical models estimate activity data

TRAIN THE MODELS: training data (e.g., CEMS, sensors, reported emissions) complements activity observations

COMPLEMENT ACTIVITY DATA: Other datasets to estimate facility size, technology, and emissions factors

EMISSIONS ESTIMATES

Climate TRACE orgs

Johns Hopkins University Applied Physics Lab

OCEAN MIND

EARTHRISE ALLIANCE

Former VP Al Gore

TransitionZero

WattTime

Hypervine.io

RMI

Blue Sky Analytics

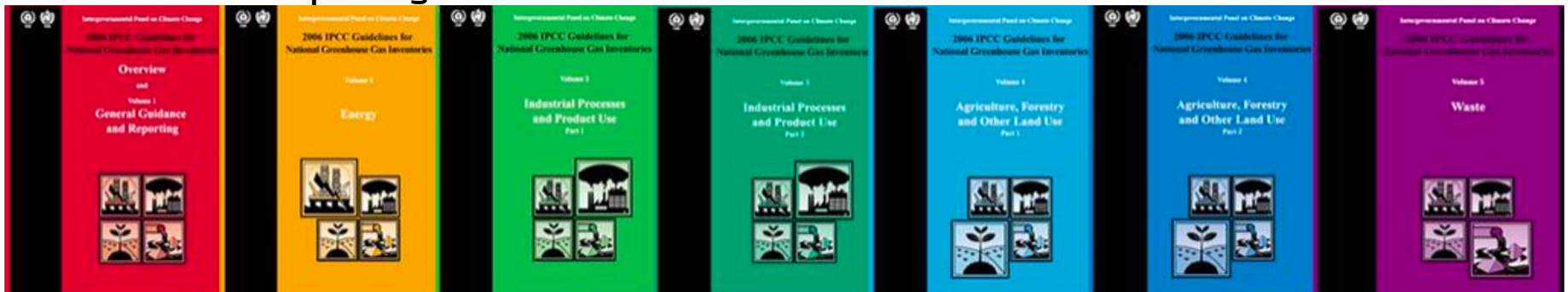
CARBON YIELD

Earth Observation data in climate negotiations

- The 2019 Refinement to the IPCC GHG Inventories Guidelines included a section on the use of satellite retrievals, inverse modeling tools and gridded data as data sources for QA/QC of country inventories.

- Expert meeting on use of atmospheric observation data in emission inventories was convened in 2022 by the IPCC Task Force on National Greenhouse Gas Inventories

- Several countries have begun to incorporate CH4, N2O and F-gas estimates in their national reporting



Climate negotiations also have an impact on EO deployment

- Nearly all countries have recognised the importance of data collection, systematic observation, and integrated systems approaches to achieving their Nationally Determined Contributions

- Several countries have started using earth observation data for monitoring climate risk and for QA/QC of their GHG inventories

- Among developing countries, many have started developing their own capacity to incorporate systematic observation approaches, by funding research, training personnel and improving local observation networks

Earth observation at COP 27

Key highlights

- Decision to implement the Global Climate Observing System 2022 Plan adopted by the Parties
- Methane Alert and Response System (MARS) launched by the UNEP
- ‘Early Warnings for All’ Action Plan calls for funding for systematic observation initiatives for early warning systems, particularly in the Global South

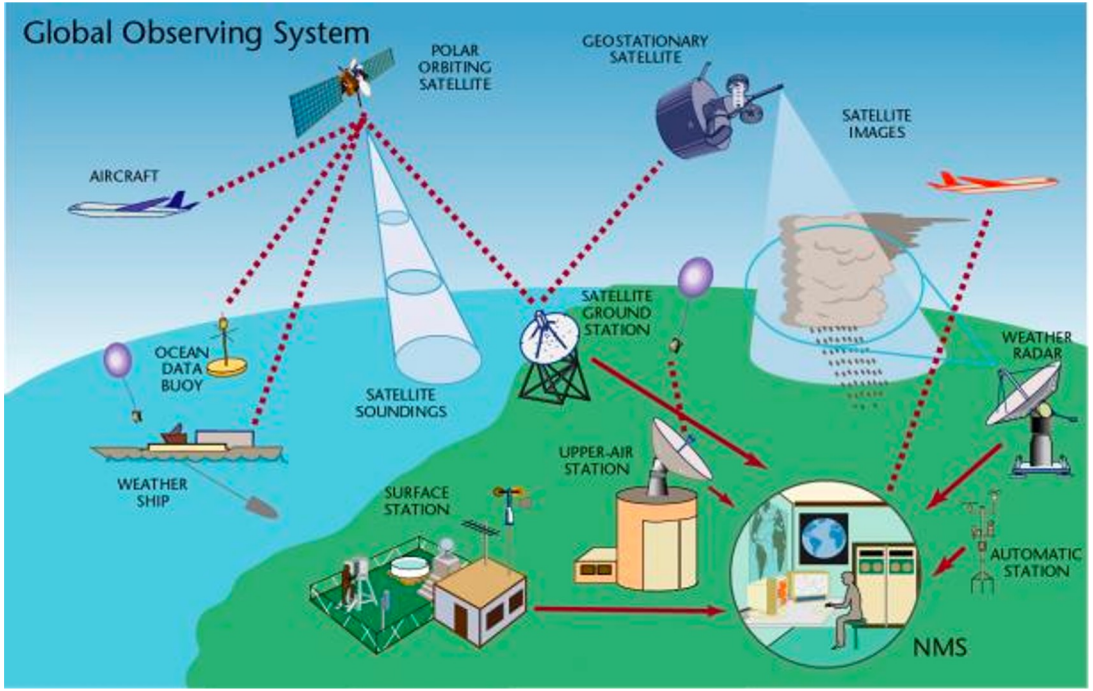


Image Source: WMO

What can we expect at COP 28?

The 'Global Stocktake' COP

- Findings from the first Global Stocktake – a two year process – will be presented and discussed at COP 28
- EO data and integrated systems approaches likely to play an important role in the assessment
- Several observation organisations and space agencies emphasized the importance of satellite data in the Global Stocktake
- The Synthesis Reports for the technical assessment component also assessed the systematic observation capacity building done by countries and where the biggest gaps were

Opportunities for further engagement on earth observation

- 2024 – the year when countries have to submit their GHG inventories using the 'Enhanced Transparency Framework' – opens up opportunities for non-Annex 1 countries to use EO-approaches and build capacity

- More geographic diversity in observation sites, and research organisations involved is key.

- Corporate and non-national inventory emissions reporting could also benefit from the use of EO-data in a much more systematic manner.

New and innovative approaches can improve emissions reporting

- GHG emissions estimation can be enhanced by AI/ML approaches.
- Many new initiatives and organisations are now combining other types of data to improve estimates (trade data, traffic congestion data, smart device metadata).

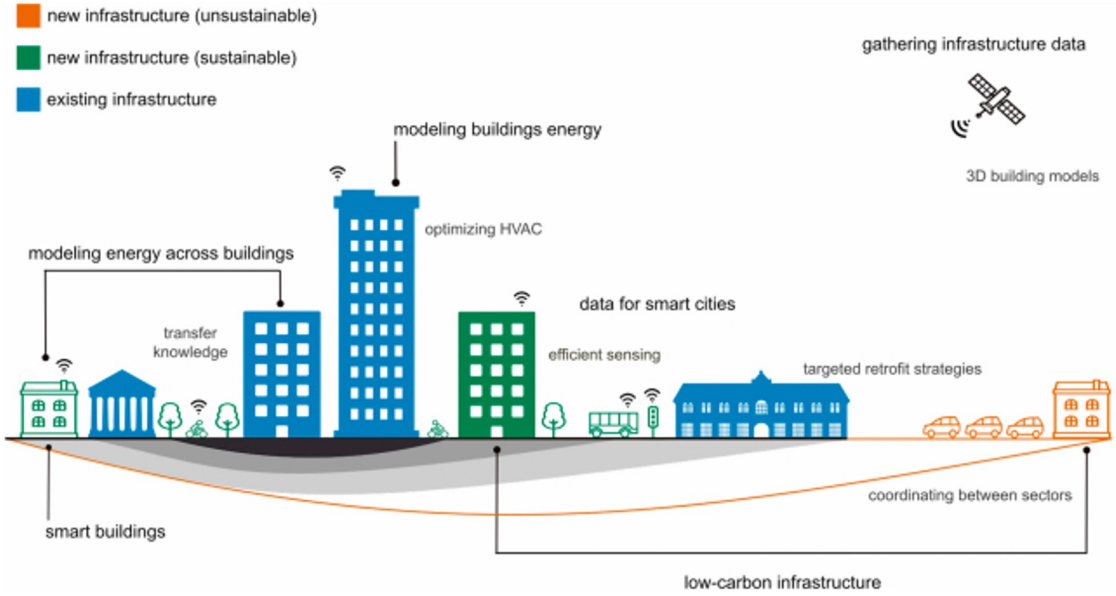


Image Source: Rolnick et al (2022)

Contact us

coalition@climatetrace.org