New observation capabilities and remaining gaps

including regional advances

Osamu Ochiai - JAXA on behalf of CEOS/CGMS and GEO

CEOS Committee on Earth Observation Satellites

CGMS

GEO GROUP ON EARTH OBSERVATIONS

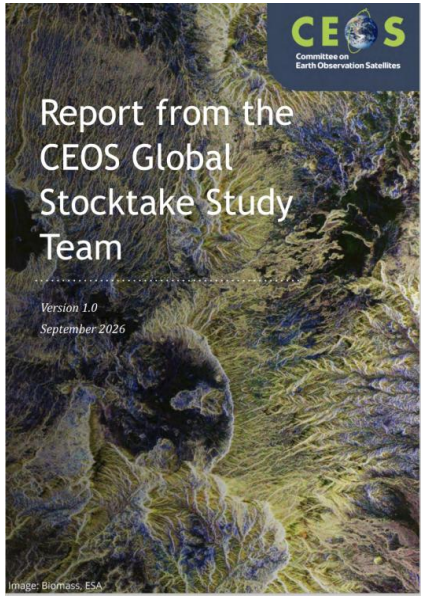
JAXA

Expanding satellite EO capabilities and usability





- CEOS & CGMS agencies are actively contributing to the **global climate observing system.** Launches over the last year include: FLEX, Sentinel-3C, MTG-I2, CLARREO Pathfinder (on the ISS), Sentinel-6B, IRIDE constellation (still deploying), CAS500-2, KOMPSAT-7… And **capabilities** from 2025 launches start to ramp up: GOSAT-GW, MTG-S1, MetOp-SG…
- **Keeping track** of what is available with the **Climate Data Records inventory and gap analysis**: CDRs exist for 40 out of 42 ECVs accessible from space
- Data is only **useful if it is actually used**: aim to reduce friction and increase the interoperability of satellite EO data through the CEOS **Analysis Ready Data** framework.
- Ultimate goal: support **climate action** and specific objective to **GST** efforts



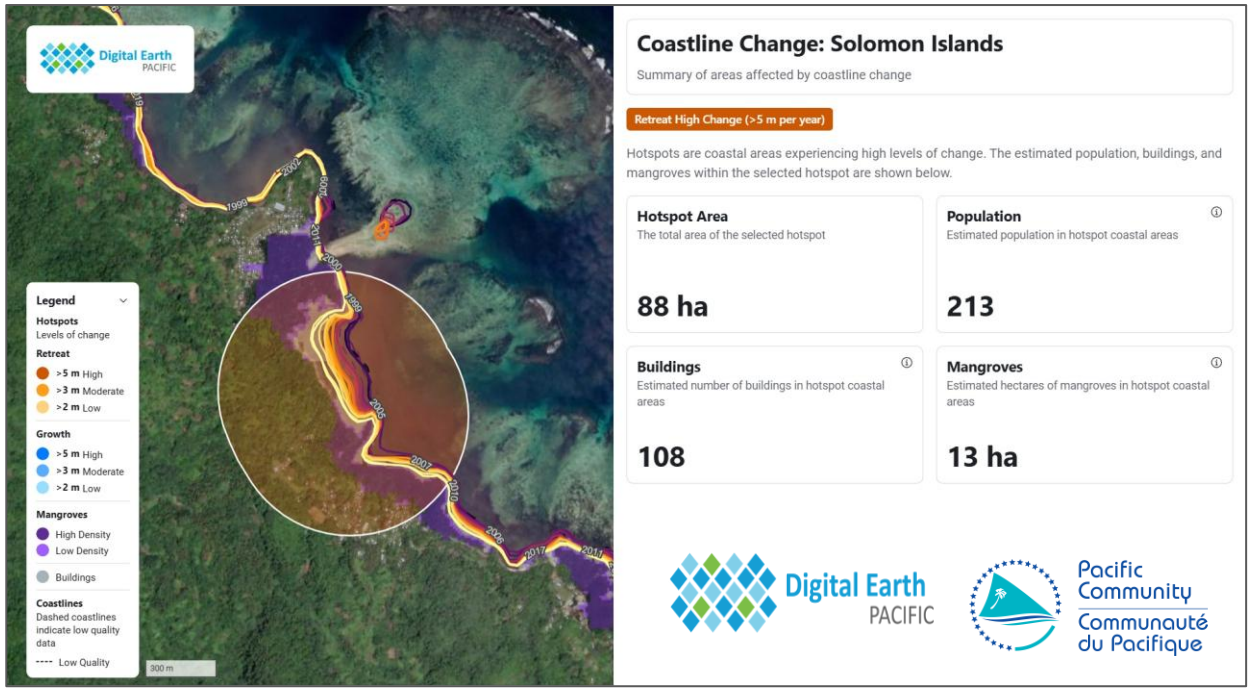
Regional progress / gaps: Pacific SIDS & Cryosphere

Examples from GEO Initiatives

DE Pacific launched the **Pacific Coastlines Dashboard**:

- Highlighting areas where coastlines are changing by **>2m/year**.
- Identifying **hotspots with rates >5m/year**.
- Quantifying potentially exposed populations, buildings and mangroves in these areas.

Dashboard draws on 25 yrs of satellite data



GEO Mountains published a new paper on crysphere data:

- Rapid decline in snow, ice and glaciers require **more observations,** stronger **coordination** and **interoperatability**.
- **High costs** of documenting and processing EO further constrain access.

Godøy, et al., pre-print, 2026





GEO MOUNTAINS Observing Mountain Environments
MOUNTAIN RESEARCH INITIATIVE
GCW Global Cryosphere Watch

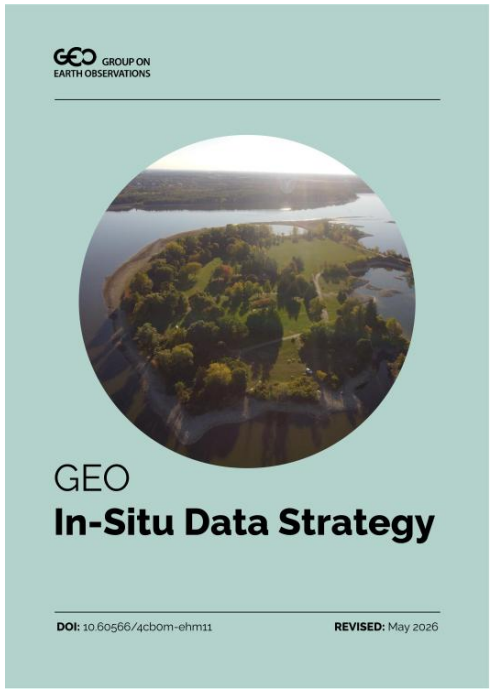
Working closely with GCOS



- Close **cooperation** of CEOS-CGMS Working Group Climate and **GCOS is effective**
- Expert contribution to the **GCOS Status Report 2027** and **High-level Action Plan** (HLAP)

The State of Global Climate Observation
10 November
14:30–15:30
UNFCCC Pavilion

- WMO-GCOS-GEO coordination: strengthening the **EO value chain for ECVs**
- GEO exploring **integrated, coordinated support for GCOS HLAP 3 on data repositories,** leveraging the GEO Knowledge Hub
- GEO **In-Situ Data Strategy** aims to connect fragmented networks, identify observation gaps and **improve data discovery**, **access**, **interoperability** and **reuse**



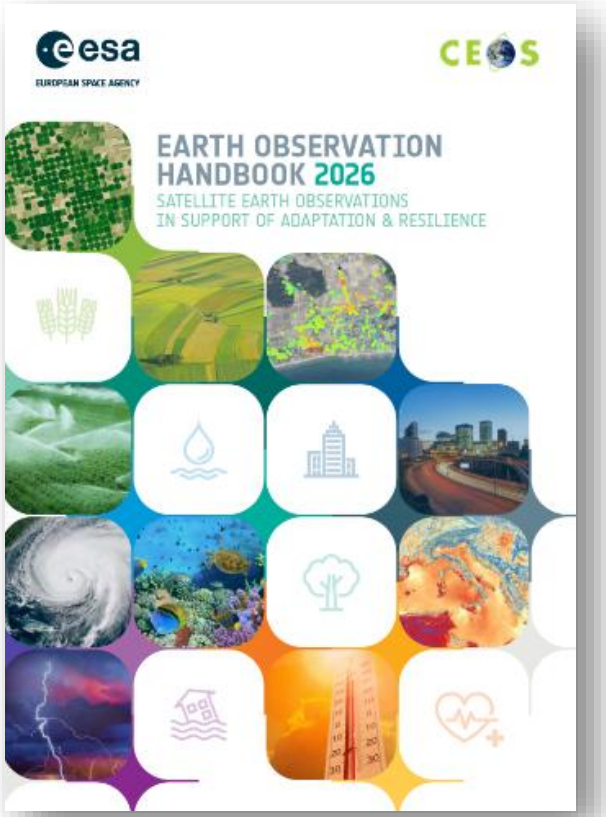
Approved at GEO-21 Plenary in May 2026

GEO Knowledge Hub

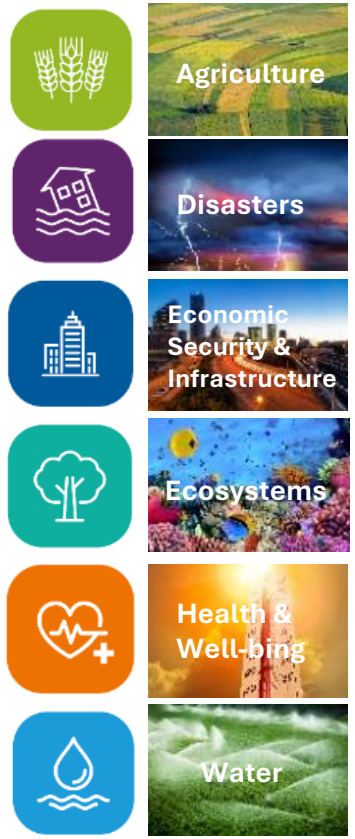
iClimateAction
WMO • GCOS • GEO

The 2026 EO Handbook on Adaptation & Resilience

- showcases **demonstrated EO applications** across **6** adaptation areas
- demonstrating how **existing EO tools** **inform adaptation planning, NAP-related decisions and resilience**
- gathered use cases from the **CEOS + the wider GEO community**







Examples

Disasters Region — Americas

Global Volcano Early Warning and Eruption Response from Space (GVEWERS)

GVEWERS is a permanent and sustainable effort intended to support volcano hazards assessment and risk mitigation globally. The initiative builds on previous CEOS activities that started with a Pilot (2014-2017) and continued with a Demonstrator (2019-2023), which showcased how open, low-latency satellite data can aid responses to volcanic eruptions and related hazards.

Agriculture Region — Africa

GEOGLAM Global Agricultural Monitoring

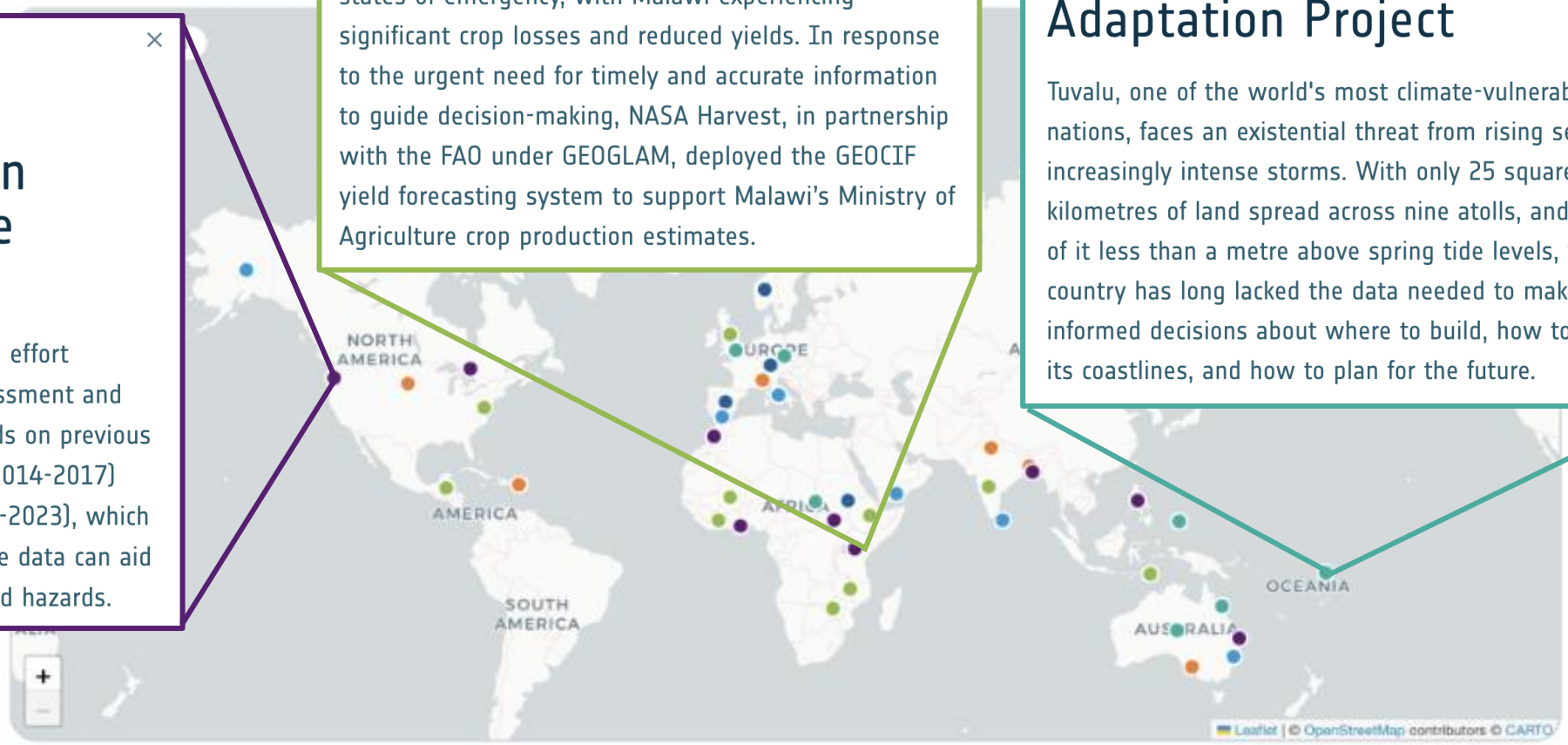
In Season Yield Forecasting for Decision Making in Malawi

The 2023–2024 El Niño event triggered a severe drought across Southern Africa, affecting over 27 million people and prompting multiple countries to declare states of emergency, with Malawi experiencing significant crop losses and reduced yields. In response to the urgent need for timely and accurate information to guide decision-making, NASA Harvest, in partnership with the FAO under GEOGLAM, deployed the GEOCIF yield forecasting system to support Malawi's Ministry of Agriculture crop production estimates.

Ecosystems Region — Oceania & Pacific

The Tuvalu Coastal Adaptation Project

Tuvalu, one of the world's most climate-vulnerable nations, faces an existential threat from rising seas and increasingly intense storms. With only 25 square kilometres of land spread across nine atolls, and much of it less than a metre above spring tide levels, the country has long lacked the data needed to make informed decisions about where to build, how to protect its coastlines, and how to plan for the future.



Useful links

