

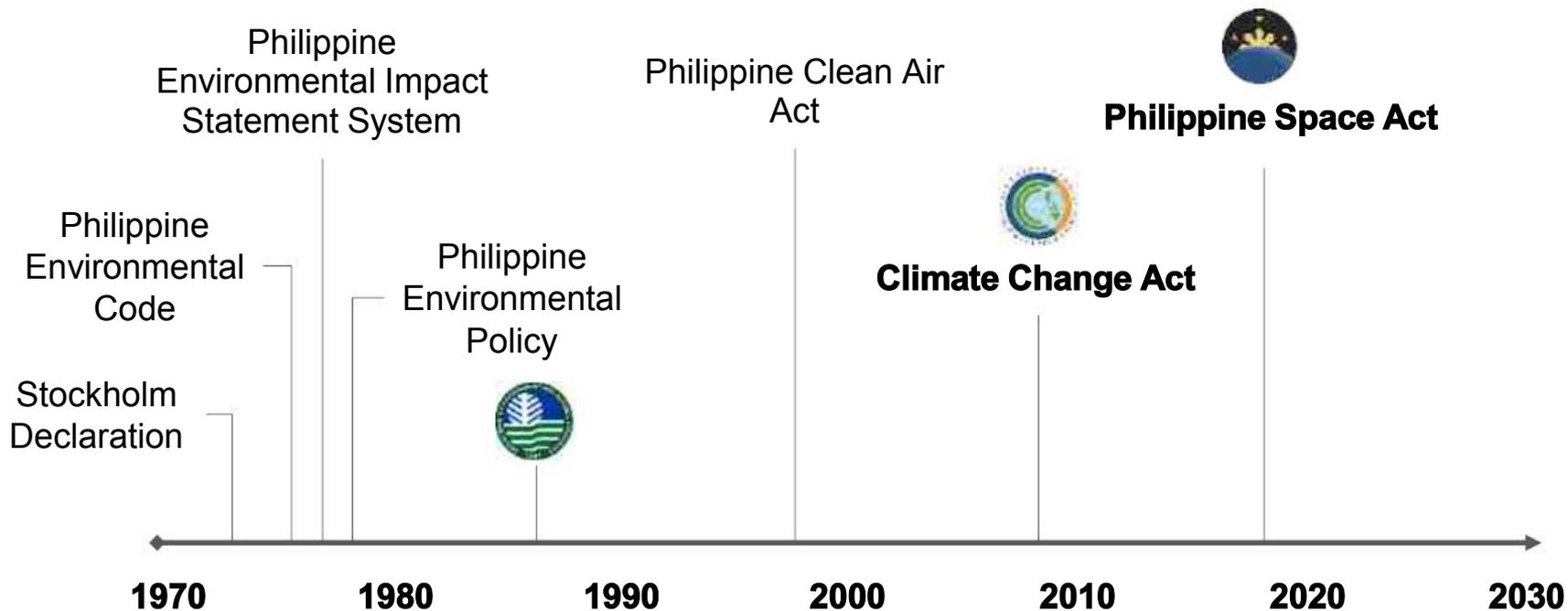


Philippine
Space
Agency

THE CASE OF THE PHILIPPINES: USING SPACE TECHNOLOGY IN RESPONSE TO THE CHANGING CLIMATE

JAMES CESAR REFRAN, D.Sc.
Philippine Space Agency

Climate Change Policies in the Philippines



The Philippine Space Act

By virtue of the Philippine Space Act, the Philippine Space Agency (PhilSA) was created to act as the **central government agency** addressing all national issues and activities related to **space science & technology applications**.

Under Section 5(b), the Philippines shall “develop and **utilize space S&T applications** to enhance its hazard management and disaster mitigation strategy as well as **ensure the nation’s resiliency to climate change**.”



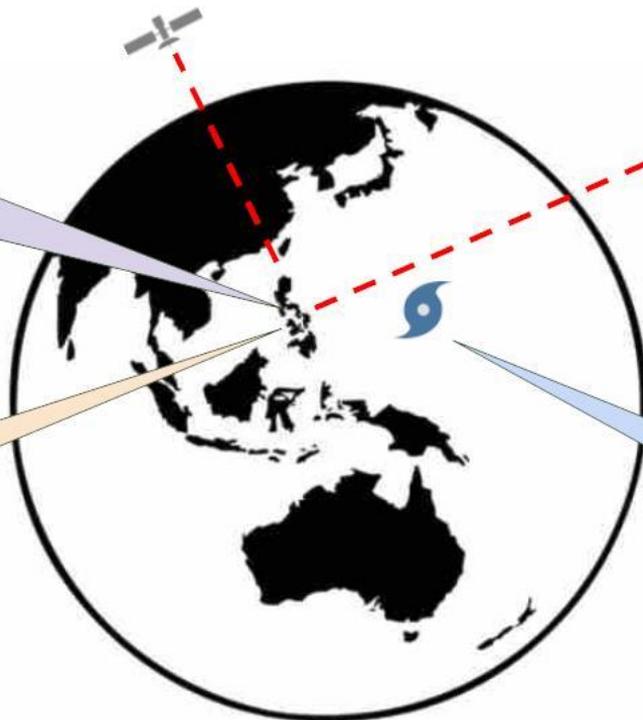


Space Science and Technology Applications on Climate Studies



Making all **data available and accessible** through the **Space Data Dashboard**

Environmental and natural resource assessment such as water quality and volcanic activity monitoring

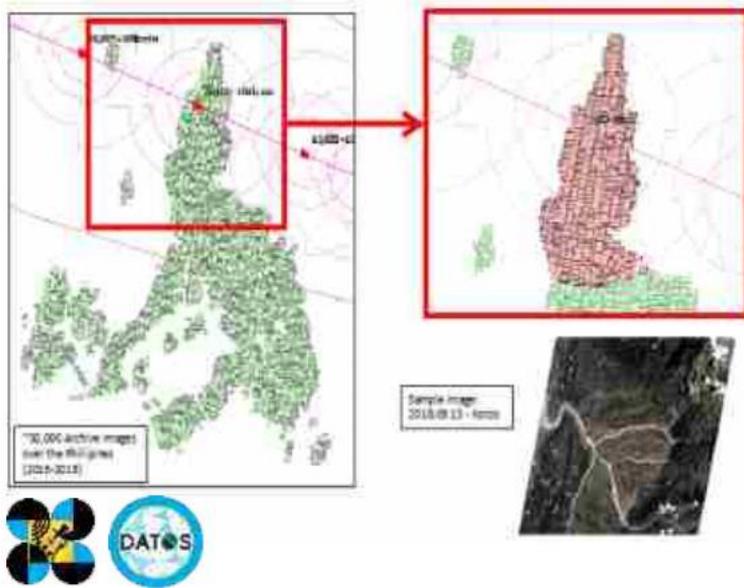


Philippine
Microsatellites for
**Earth
Observation**

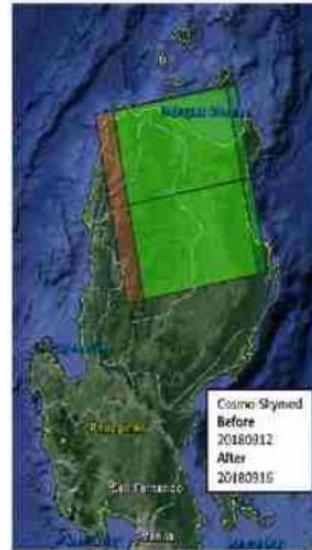
Disaster and response management such as assessing typhoon strength

Flood monitoring and detection

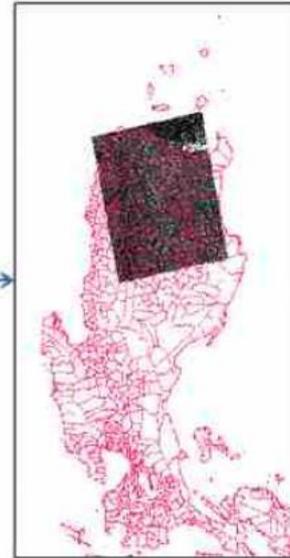
Preparation of archive pre-typhoon



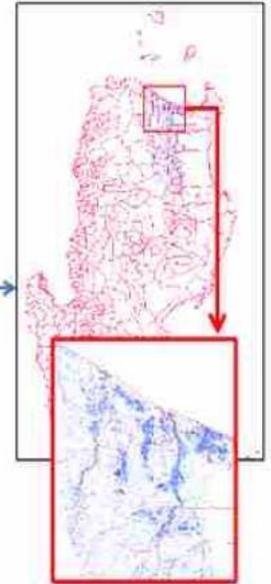
Satellite tasking



Raw data acquisition

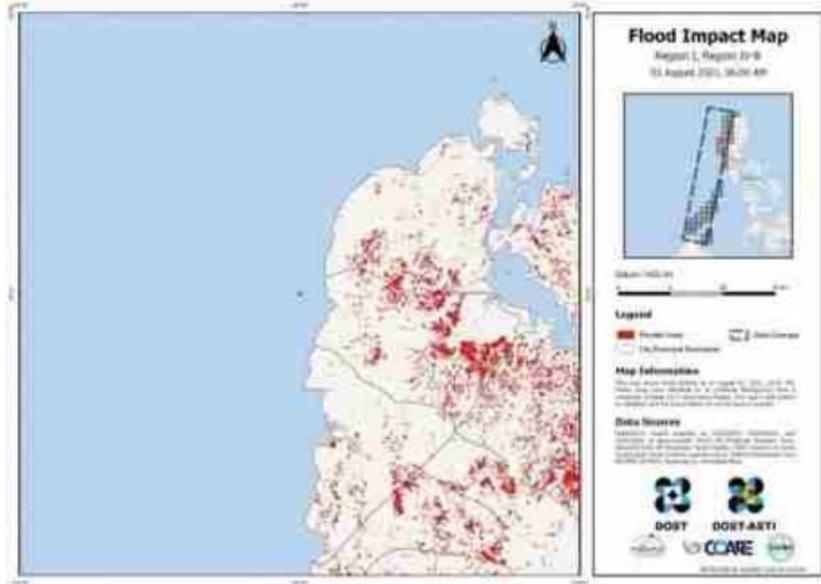


Data processing

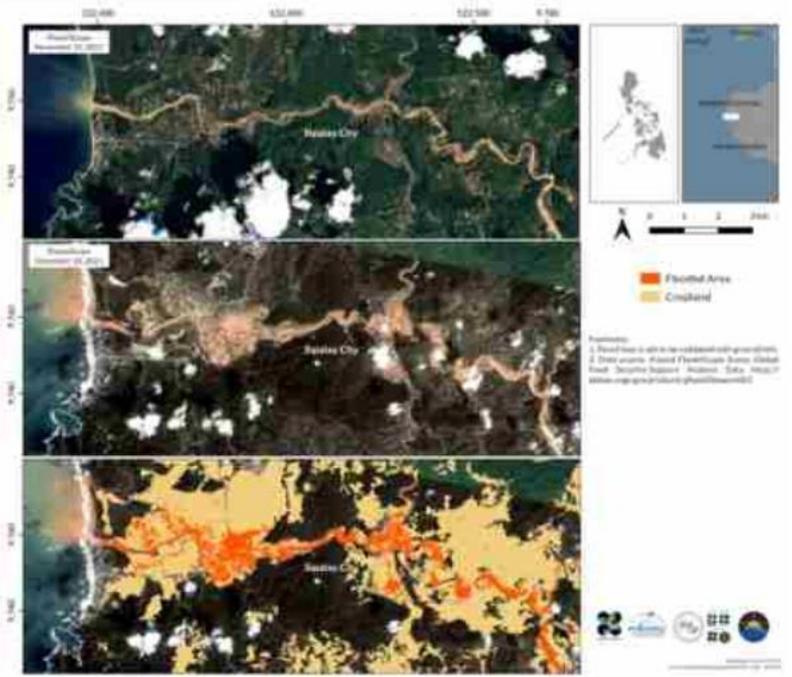


Pre- and post-disaster images when Typhoon Mangkhut (Ompong) hit the country in 2018

Flood impact assessment



satellite images to monitor areas at large scale

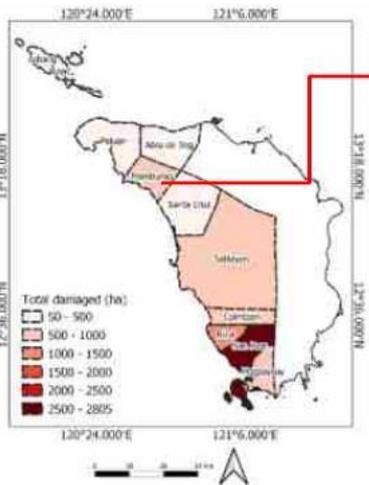


Flood extent mapping during typhoons

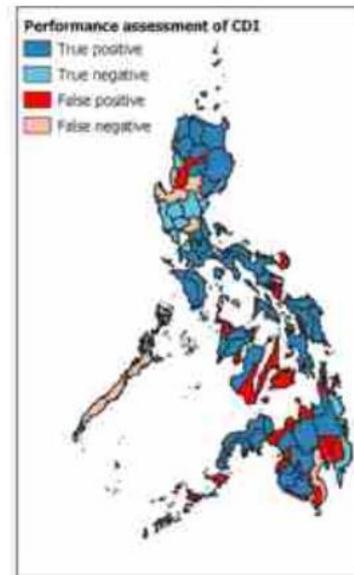
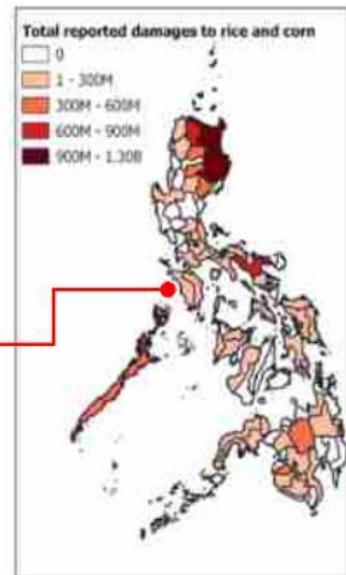
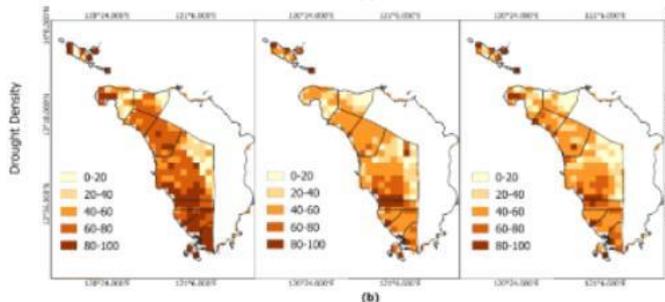
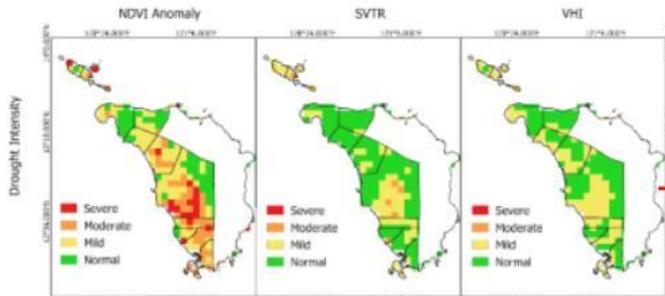


Sample case: Drought monitoring

Monitoring and assessing impacts of drought in one rice region with respect to the entire country



crop damage reports from local government units

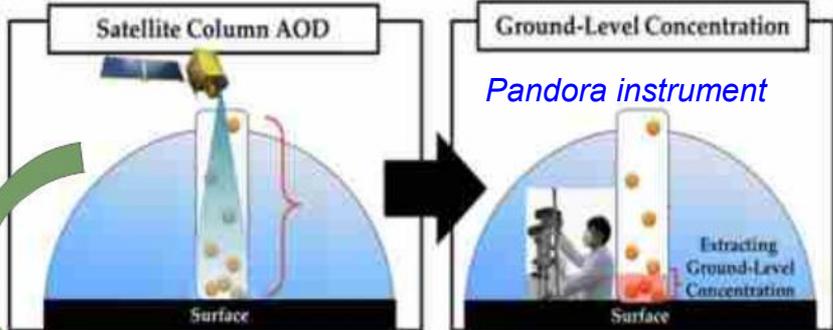


satellite data products to **monitor drought development and impacts** at regional and national scales



Sample case: PAPGAPi-PAN Project

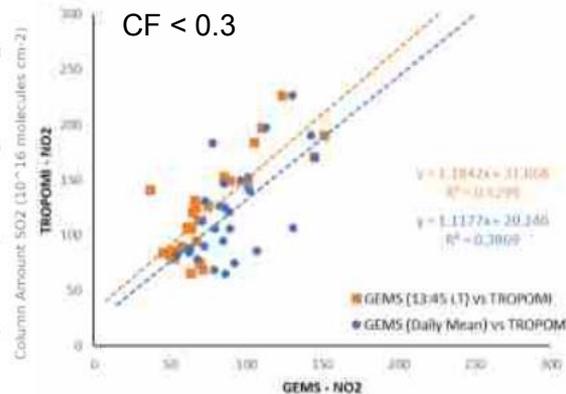
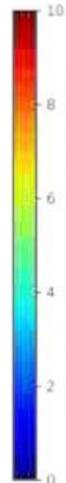
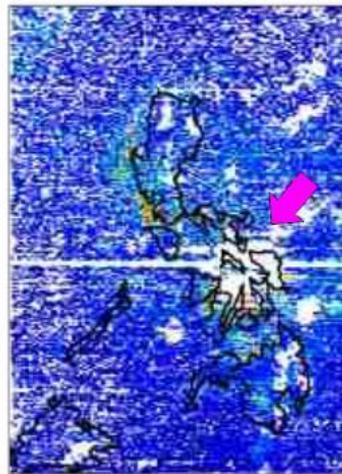
Pan-Asia Partnership for Geospatial Air Pollution Information



Air quality monitoring from GEMS multiple times a day!

O₃, aerosol and their precursors - NO₂, SO₂, HCHO and CHOCHO

SO₂ Column Amount - 20220611 - 0045



Mount Bulusan eruption and dispersion of volcanic SO₂ detected by GEMS Product

Agreement between GEMS and TROPOMI NO₂ retrievals

Engaging with the international community

Leveraging international cooperation initiatives to promote and enhance use of space-based information in the Philippines

UN-SPIDER Technical Advisory and Support Mission, 26-30 September 2022

- ✓ **Enhance** the use of space-based information for disaster risk reduction and emergency response



PhilSA to formally join as a signatory to the Space for Climate Observatory (SCO)

- ✓ **Enhance** meteorological applications of satellite data in the country
- ✓ Promote **exchange of technical know-how** and **open data-sharing** on climate information

Engaging with the international community

Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018-2030)



<https://www.unescap.org/sites/default/d8files/knowledge-products/3rdMC-SASD-Plan-of-Action.pdf>

Plan of Action

- ✔ Disaster Risk Reduction and Resilience
- ✔ Climate Change
- ✔ Management of Natural Resources
- ✔ Social Development



MULA Satellite

Space Data Dashboard



Decadal Survey





Philippine
Space
Agency

Our Vision

The PhilSA envisions a Filipino nation **bridged, uplifted, and empowered** through the peaceful uses of outer space.

Our Mission

We will promote and sustain a robust Philippine space ecosystem that **adds and creates value** in space **for and from Filipinos and for the world.**

Thank you.
Maraming salamat po.

Contact Us

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