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

- Philippine Environmental Impact Statement System
- Philippine Clean Air Act
- Philippine Space Act
- Climate Change Act
- Philippine Environmental Code
- Stockholm Declaration

Years:
- 1970
- 1980
- 1990
- 2000
- 2010
- 2020
- 2030
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;”
Making all **data available and accessible** through the **Space Data Dashboard**

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

**Disaster and response management** such as assessing typhoon strength

**Philippine Microsatellites for Earth Observation**
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

Pandora instrument

Air quality monitoring from GEMS multiple times a day!

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

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)

Plan of Action

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

Thank you.
Maraming salamat po.

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.

Contact Us

W: space.gov.ph
E: info@philsa.gov.ph
FB: PhilSpaceAgency
IG: philspaceagency
TW: PhilSpaceAgency
LI: philspaceagency