

# DEPARTMENT OF SCIENCE AND TECHNOLOGY

Philippine Economic Briefing  
San Francisco, California, USA  
15 November 2023

**#OneDOST4U**



# DOST Overview



## MANDATE

To provide central direction, leadership and coordination of scientific and technological efforts and ensure that the results therefrom are geared and utilized in areas of maximum economic and social benefits for the people

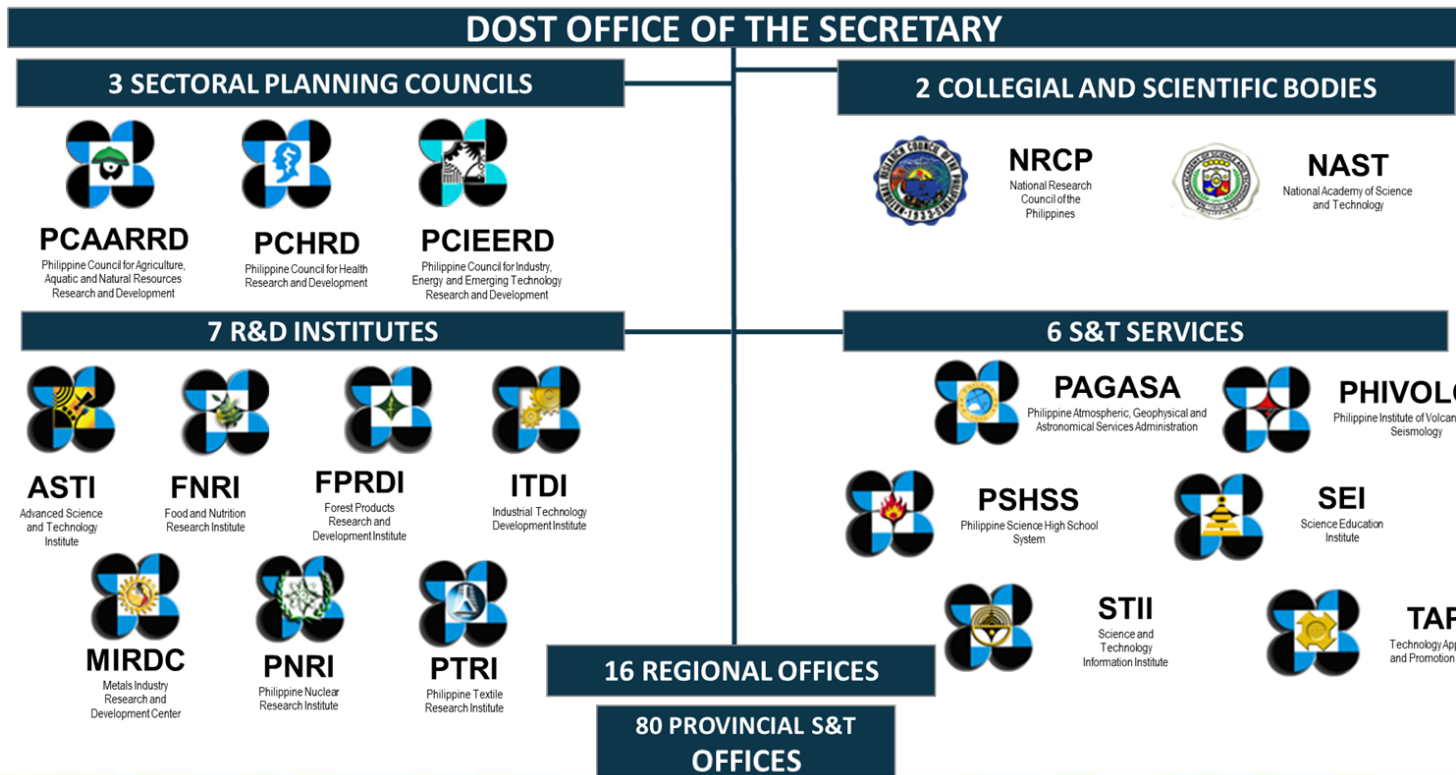
## MISSION

To direct, lead, and coordinate the country's scientific and technological efforts geared towards maximum economic and social benefits for the people.

## VISION

The DOST as the leading enabler and provider of science, technology and innovation explicit solutions towards national development

# DOST OVERVIEW



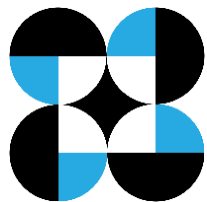
# DOST DIRECTIONS FOR 2022-2028

- Refocus major programs to align with the **economic agenda** of the President
- Align the Grants-in-Aid financing towards a more equitable operation in the national, regional and provincial levels
- Pursue the socio economic agenda through the use of Science, Technology and Innovation for:
  - wealth creation/generation,
  - promotion of Human well-being
  - wealth protection (disaster and climate resilience),
  - and sustainability

## DOST PRIORITIES ALIGNED TO PBBM SOCIO ECONOMIC AGENDA

-  Job Creation / Countryside Development  
Through STI
-  Food Security
-  Health Security
-  Water Security & Environmental Protection
-  Energy Security
-  Transportation System
-  Climate and Disaster Resilience
-  Human Resource Development
-  Facility Upgrading
-  Digital Transformation
-  Smart & Sustainable Cities and Communities

*“DOST can create impact by **REFOCUSING, WORKING TOGETHER, TRANSFORMING WAYS OF DOING THINGS, SHARING WITH THE PUBLIC AND COLLABORATING WITH OTHER DEPARTMENTS.**”*



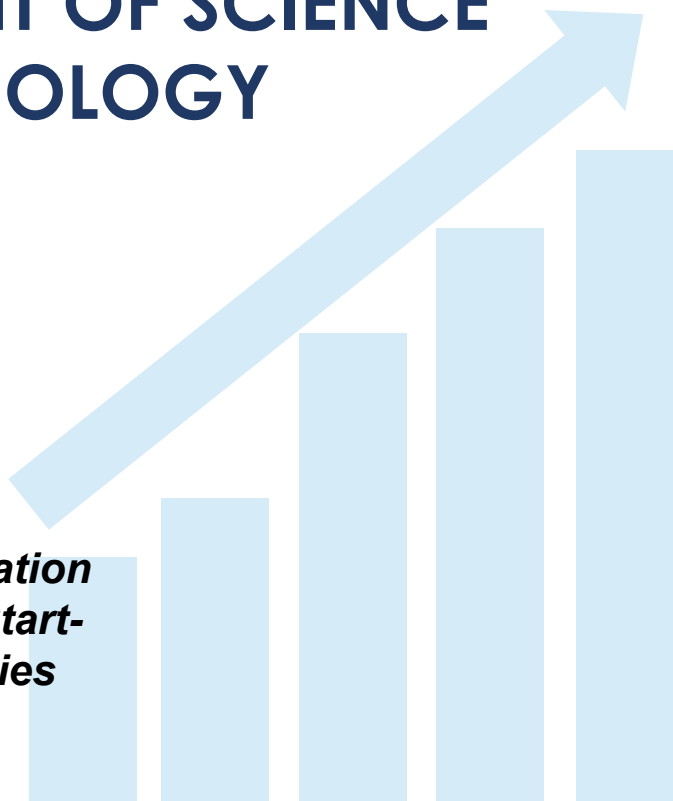
# DEPARTMENT OF SCIENCE AND TECHNOLOGY

## *National Development*

*Increase Productivity,  
Competitiveness, and  
Efficiency*

*Create Value Addition  
for Products and  
Services*

*Maximum Economic  
and Social Benefits  
for the People*



- *Research and Development*
- *S&T Scholarships*
- *S&T Services*
- *Technology Transfer and Commercialization*
- *Technology Business Incubation*
- *S&T Innovation support to Start-ups, MSMEs, and Communities*
- *S&T Policy Advocacy*
- *S&T Enculturation*



# DOST STRATEGY FRAMEWORK 2023-2028

PAGTANAW 2050 - TO BECOME A PROSPEROUS, ARCHIPELAGIC,  
MARITIME NATION BY 2050

2040

MATATAG, MAGINHAWA AT PANATAG NA BUHAY

2028

ECONOMIC TRANSFORMATION FOR A PROSPEROUS, INCLUSIVE, AND RESILIENT SOCIETY

Science, Technology, and Innovation (STI) for a Resilient, Unified and Sustainable Philippines



# DOST Strategy Framework 2023-2028



## HUMAN WELL-BEING

- Accelerate generation of knowledge, technologies and innovations to:
  - ensure food security
  - boost health/strengthen health systems
  - improve quality of life
- Develop human resource through Science, Technology and Innovation (STI) interventions
- Build a strong STI culture

R&D on Environment, Agriculture & Health, S&T Scholarship Programs, Balik Scientist Program, Human Capacity Building



## WEALTH CREATION

- Enhance productivity and competitiveness of industry, agriculture, fisheries through transfer and commercialization of R&D outputs/knowledge and appropriate technologies
- Support S&T-based regional development
- Nurture start-ups and spin-off companies
- Scale-up/upgrade technology-based enterprises and provide livelihood opportunities to communities
- Develop capabilities and application of new and emerging technologies (4IR, artificial intelligence, blockchain, etc)

R&D on Agriculture, Forestry, and Natural Resources, Industry, Energy S4CP, SETUP, CEST, iFWD iSTART, TBI, STARTUP, and TECHNICOM



## WEALTH PROTECTION

- Intensify development and transfer of more-climate and disaster-resilient technologies
- Provide STI-based information and services for warning, disaster preparedness and mitigation

R&D on Disaster Risk Reduction and Climate Change Adaptation DRR-CCA Services



## SUSTAINABILITY

- Strengthen R&D for environmental preservation and conservation
- Protect R&D outputs ownership rights through Intellectual Property application and management
- Establish, enhance and improve access to R&D, testing and innovation facilities and expertise
- Recognize and reward outstanding S&T achievements/achievers
- Widen market-base reach through online digital platform
- Strengthen STI partnerships and governance
- Provide STI smart solutions for addressing challenges in sustainable development
- Integrate smart practices for managing governance, services, data and systems across the city in an open, collaborative, citizen-centric and digitally enabled way

R&D, Intellectual Property Management, S&T Infrastructure Development, Recognition and Rewards System, DOST Digitalization Program, Partnerships and Linkages



Republic of the Philippines  
Department of Science and Technology

# HARMONIZED NATIONAL RESEARCH AND DEVELOPMENT AGENDA 2022-2028







# Human Well-being

## R&D Programs on Agriculture, Aquatic and Natural Resources Sector

**Focus  
Areas  
2023-2028**



Crops R&D  
Agenda



Livestock R&D  
Agenda



Aquatic R&D  
Agenda



Forestry R&D  
Agenda



Natural Resources  
and Environment  
R&D Agenda



Climate Change  
Adaptation and  
Disaster Risk  
Reduction R&D  
Agenda



Technology  
Transfer R&D  
Agenda



Socio-Economics  
and Policy R&D  
Agenda



# Human Well-being

## R&D Programs on Basic Research

**Focus  
Areas  
2023-2028**



Water Security  
TUBIG Agenda



Food and Nutrition Security  
SAPAT Agenda



Health Sufficiency  
LIKAS Agenda



Clean Energy  
ALERT Agenda



Sustainable Communities  
SAKLAW Agenda



Inclusive Nation-Building  
ATIN Agenda



# Human Well-being

## R&D Programs on Health

**Focus Areas  
2023-2028**



Tuklas Lunas  
(Drug Discovery  
and Development)



Functional Foods



Nutrition and  
Food Safety



Re-Emerging and  
Emerging Diseases



Diagnostics



Omic Technologies  
for Health



Biomedical Devices  
Engineering for  
Health



Digital and Frontier  
Technologies for  
Health



Disaster Risk  
Reduction/Climate  
Change Adaptation in  
Health



Mental Health



COVID-19 R&D  
(ARCHER)

# HEALTH INNOVATIONS



## RxBox Telemedicine Device

A multi-component program designed to provide better access to life-saving health care services in isolated and disadvantaged communities nationwide.



## GenAmplify™ COVID-19 rRT-PCR Detection Kit

A locally-developed low-cost technology for detecting SARS CoV2



**FASSTER**

Feasibility Analysis of Syndromic Surveillance Using a Spatio-Temporal Epidemiological Modeler For Early Detection of Diseases

## Disease Modelling Tool

A web application designed for use by disease modelers, disease surveillance units, planners, and researchers.



# Human Well-being

## DOST Scholarship Program

Focus Areas  
2023-2028



Specialized Secondary  
Scholarship Program



Undergraduate and  
Graduate Scholarship  
Program

| Academic Year           | Target No. of PSHS Scholars | BS            | MS           | PhD          |
|-------------------------|-----------------------------|---------------|--------------|--------------|
| 2023-2024               | 10,513                      | 50,518        | 3,863        | 1,045        |
| 2024-2025               | 10,651                      | 52,152        | 4,143        | 1,117        |
| 2025-2026               | 10,871                      | 53,507        | 4,372        | 1,222        |
| 2026-2027               | 11,006                      | 55,247        | 4,533        | 1,263        |
| 2027-2028               | 11,124                      | 57,759        | 4,701        | 1,320        |
| 2028-2029               | 11,219                      | 57,632        | 4,850        | 1,507        |
| <b>Average per year</b> | <b>10,897</b>               | <b>54,569</b> | <b>4,410</b> | <b>1,246</b> |



### Balik Scientist Program

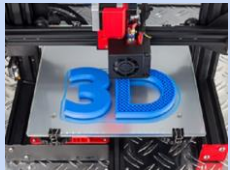
| Year | Target No. of Balik Scientist engaged |
|------|---------------------------------------|
| 2023 | 111                                   |
| 2024 | 122                                   |
| 2025 | 134                                   |
| 2026 | 147                                   |
| 2027 | 162                                   |
| 2028 | 178                                   |
|      | Average = 142                         |



# Wealth Creation

## R&D on Industry, Energy & Emerging Technology

### Focus Areas 2023-2028



Additive Manufacturing (AM)



Advanced Materials



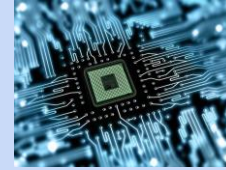
Materials for Energy



Nanotechnology



Optics and Photonics



Electronics Industry



ICT Innovations



Industry 4.0



Quantum Technology



Smart Cities



Artificial Intelligence



Creative Industries



Space Technology Applications (STA)



# Wealth Creation

## R&D on Industry, Energy & Emerging Technology

### Focus Areas 2023-2028



Transportation



Energy



Utilities



Disaster Risk  
Reduction and Climate  
Change Adaptation



Unmanned Vehicle  
Systems (UVS)



Food



Metals and  
Engineering



Environment



Process



Mining and  
Minerals



Technology  
Transfer Program



Startup  
Development  
Program



Technology  
Business Incubation  
Program



# Wealth Creation

## Focus Areas 2023-2028



Science for Change Program



Small Enterprise Technology Upgrading Program



Community Empowerment thru Science & Technology



Innovation, Science and Technology for Accelerating Regional Technology-Based Development Program



Innovations for Filipinos Working Distantly from the Philippines Program



Grassroots Innovation for Inclusive Development Program



Technology Innovation for Commercialization



Technology Business Incubation Program

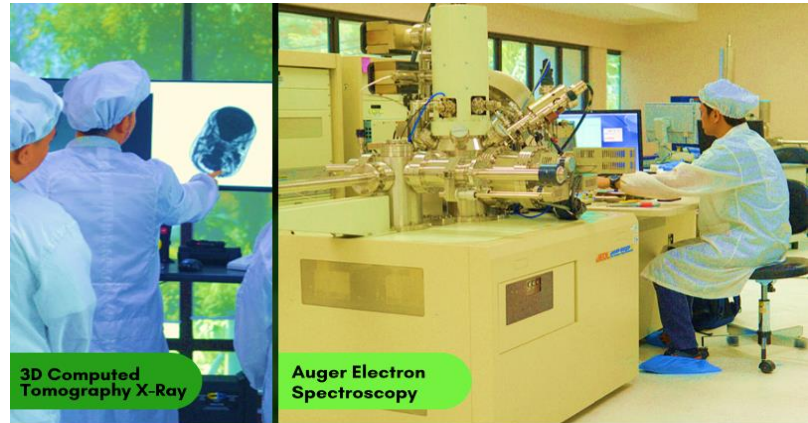


Start-up Grant Program





## Advanced Device and Materials Testing Laboratory



1<sup>st</sup> Philippine-owned Laboratory for Failure Analysis and Materials Characterization established to find solutions to prevalent manufacturing challenges while empowering local industries towards long-term competitiveness.

## Electronic Product Development Center

The country's electronics design facility that provides prototype design and fabrication of printed circuit boards (PCB) and assemblies, and electronic product testing for Electromagnetic Compatibility (EMC) and product safety for global standard compliance.

### Facilities and Services:

- Electronics Products Prototyping
- Electromagnetic Compatibility Testing
- Product Safety Testing
- Parametric Testing Services



# Wealth Creation



## Advanced Additive Manufacturing Center

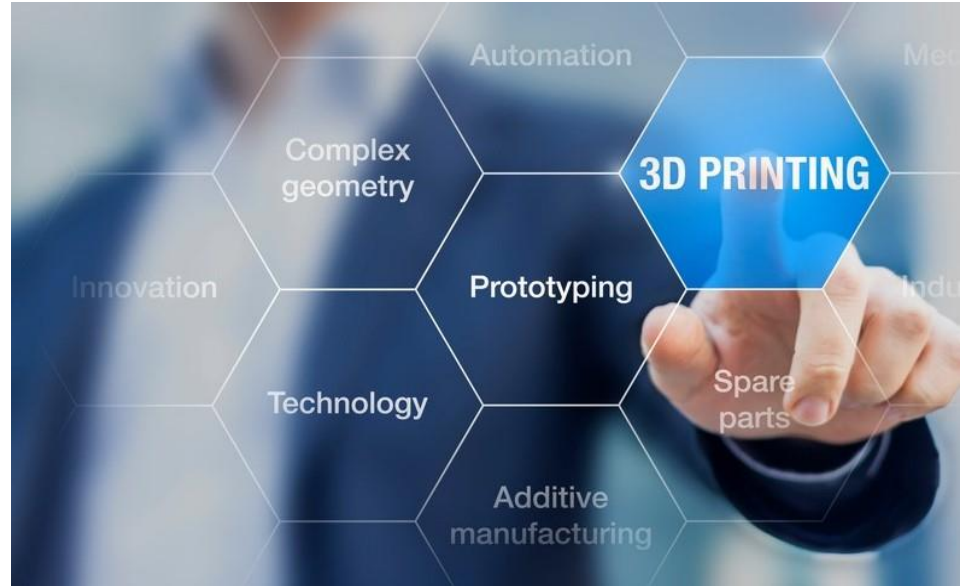


### DOST'S AMCEN PUSHES PHL MANUFACTURING FORWARD TO THE FOURTH INDUSTRIAL REVOLUTION

The new age in Philippine manufacturing has arrived as the Department of Science and Technology-Metals Industry Research and Development Center (DOST-MIRDC) launched on 14 June 2021 the top-of-the-line and advanced manufacturing hub in the country that is poised to boost the manufacturing capability of the country.

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# Wealth Creation

AMERIAL



## Advanced Mechatronics, Robotics, and Industrial Automation Laboratory



21 PRESS RELEASE #DOSTBig21in2021 #ScienceforthePeople

**AMERIAL HUB TO ENHANCE PH INDUSTRIAL CAPACITY FOR IR 4.0**

AMERIAL was built with a PHP 40.9-million project of the Department of Science and Technology (DOST) through the Metals Industry Research and Development Center (MIRDC) in partnership with the Mechatronics and Robotics Society of the Philippines.

science people DEPARTMENT OF SCIENCE AND TECHNOLOGY

f DOSTph dost.gov.ph

## Virology and Vaccine Institute of the Philippines (VIP)

The VIP will support research and innovation on human, animal, and plant viruses.



President Bongbong Marcos commits to prioritize passage of VIP and CDC bills

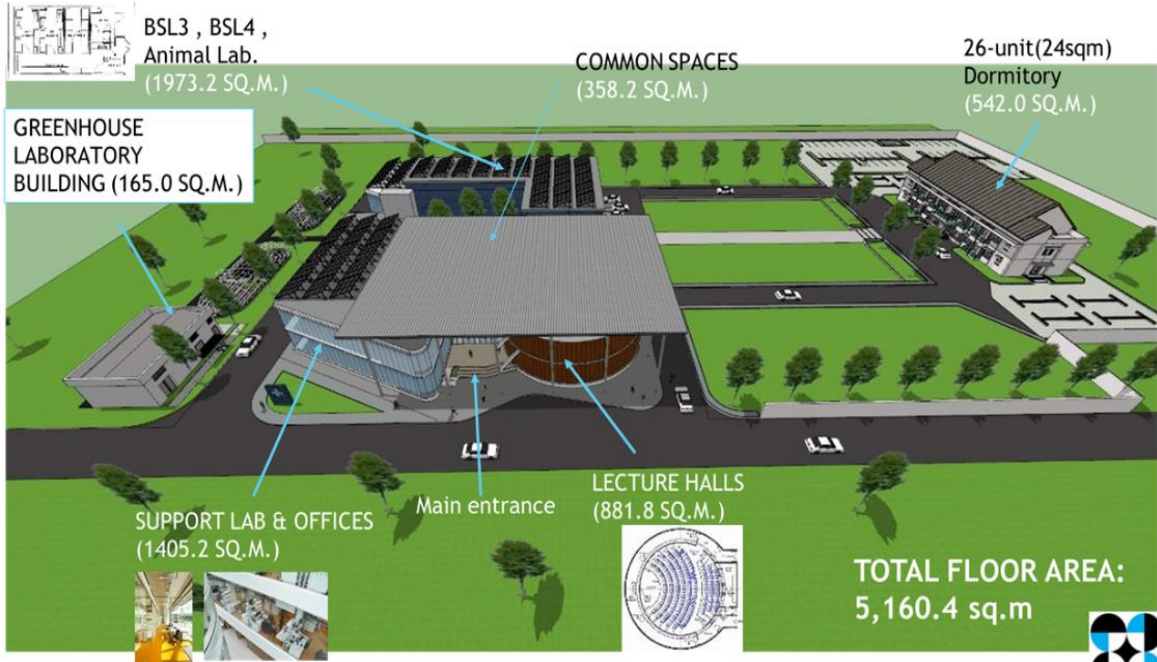


BCDA, DOST vow cooperation for the completion of virology institute

House OKs bill creating Virology and Vaccine Institute of the Philippines



P419 million set aside for virology-related projects in 2023





# Wealth Protection

## DISASTER RISK REDUCTION AND CLIMATE CHANGE ADAPTATION



DOST, through PAGASA, provides weather forecasts and tropical cyclone warnings, flood bulletins and advisories, hydrological, climatological and farm weather forecasts, and conduct research and development particularly on metrology



DOST - PHIVOLCS serves the country in mitigating disasters that may arise from volcanic eruptions, earthquakes, tsunami and other related geotectonic phenomena.



DOST – Advanced Science and Technology Institute (ASTI) capitalizes current the advancements on computing technology and applies it in the fields of Geographic Information Systems (GIS), Remote Sensing (RS), Artificial Intelligence (AI) and Data Science to provide maps and other information for Disaster Risk Reduction applications.



# Wealth Protection

STI Services on Disaster Risk Reduction and Management and Climate Change Adaptation and Mitigation

## Focus Areas 2023-2028

Establishment, development and maintenance of monitoring and warning systems for climate and weather events and hazards

Establishment, development and maintenance of monitoring and warning systems for volcanic eruptions, earthquakes and tsunamis - volcano observatories and sensors, seismic stations, earthquake intensity meters, sea level gauges, tsunami alerting stations





# Wealth Protection

R&D on Disaster Risk Reduction and Management and  
Climate Change Adaptation and Mitigation

Focus Areas  
2023-2028

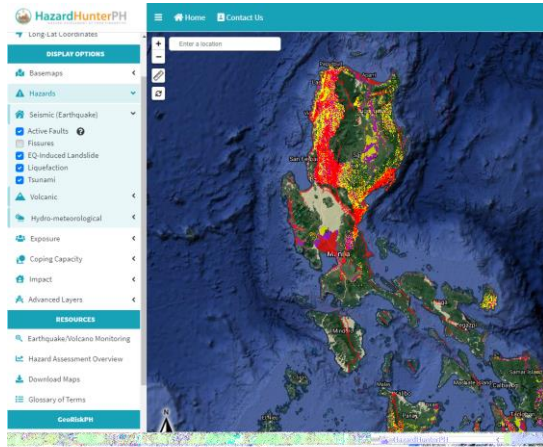




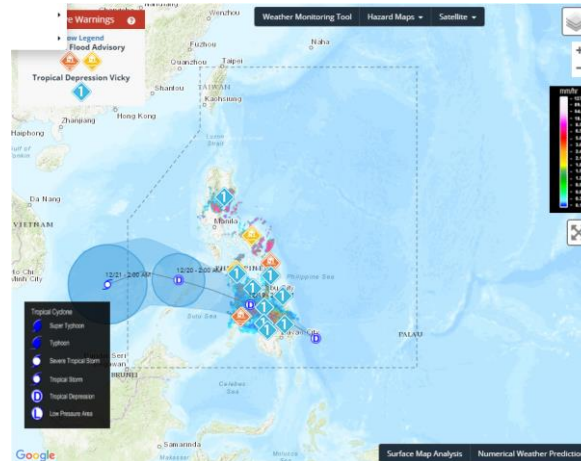


# Wealth Protection

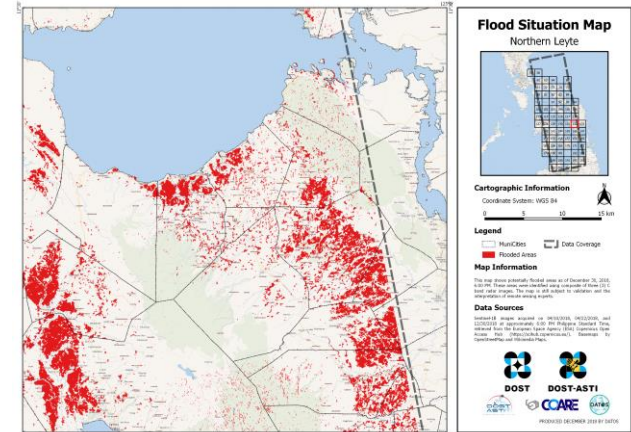
## R&D on Disaster Risk Reduction and Management and Climate Change Adaptation and Mitigation



**HazardHunterPH**  
country's one-stop shop for hazard assessment



**Typhoon Tracker**  
Monitors typhoons and generates information that aids in preparedness and response activities



**DATOS Flood Map**  
Uses Remote Sensing and GIS to produce geospatial outputs for various purposes including in disaster risk management



# Sustainability

## Digital Transformation Program

### Focus Areas 2023-2028

#### E-Commerce



#### Services



### Smart and Sustainable Cities and Communities



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# Science For The People OneDOST4U

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