



24th session of ICC on RESAP
18-19 August 2020

Country Report

Department of Science and Technology
**Philippine Council for Industry, Energy and
Emerging Technology Research and Development**



Outline

- **The status of implementation of Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018-2030)**
- **Good practice in combating covid-19 and lessons learnt**
- **Contributions and emerging needs in implementation**
- **Policy and institutional changes**

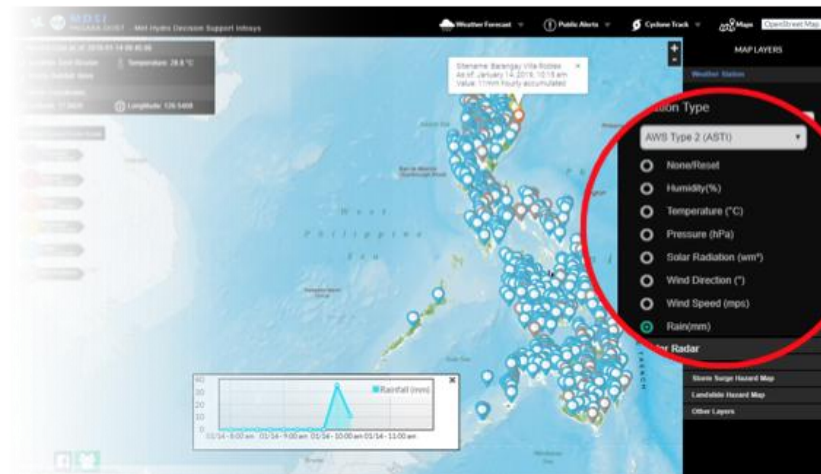
New PAGASA (Weather Bureau) Website

Improved Features:

- Climate Advisories
- Daily Weather Forecast
- 5 Day Weather Outlook
- 5 Day Hourly Forecast (WRF Model)
- Active Alerts and Warnings
 - Tropical Cyclone
 - Flood Bulletin & Advisory
 - Rainfall & Thunderstorm Warning
- Hazard Maps
- Coastal Radars
- Weather Monitoring Tool



Coastal Radars



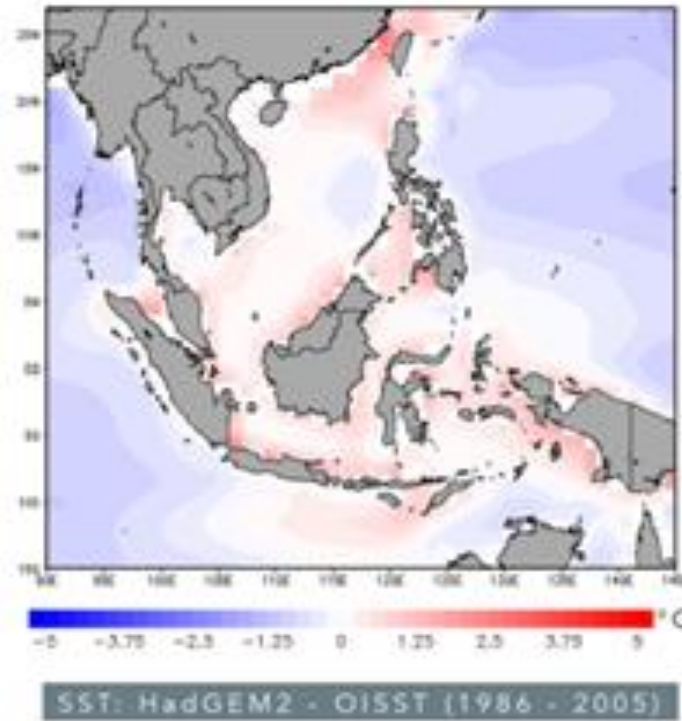
AWS Sensors



Hazard Map

Climate Change

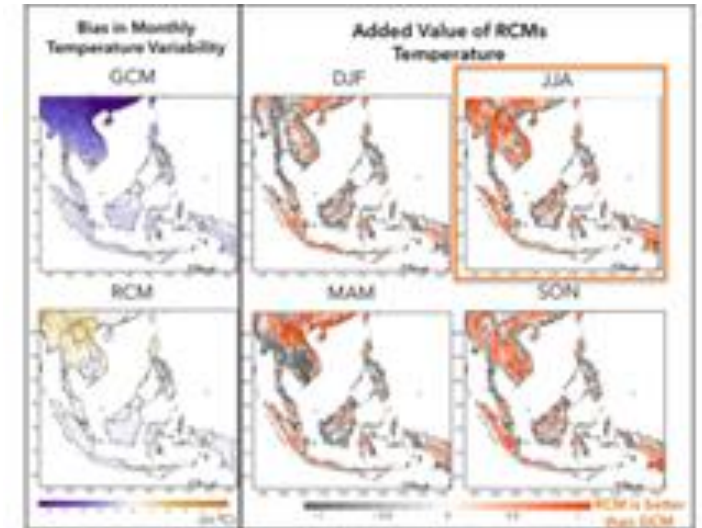
Analyzing CORDEX – South East Asia (SEA) Regional Climate Simulations for Improved Climate Information Over the Philippines: SST influence, variability and extremes, and tropical cyclone activity



Lower SSTs in models compared to observed (**blue**)

Model captured both **warm biases (red)** and **cold biases (blue)** in different bodies of water

Areas with **least bias** (lighter color) **suggest better captured SSTs**



This **added value** of using RCMs is most evident during the **June-July-August (JJA)** season.

Global climate models (GCMs), typically with low spatial resolution, were downscaled using higher resolution regional climate models (RCMs).

Climate variability is generally **better represented in RCMs**.

For example, **RCMs have less difference (bias)** with observed values in monthly temperature variability, compared with GCMs.

Geospatial Information Management & Analysis Project for Hazards & Risk Assessment in the Philippines (GeoriskPH)

- A webGIs platform that uses crowdsourced data for geohazard mapping of disaster-prone areas in the country.
- Aims to formulate protocols and complement existing government coding standards for efficient access and input of information to and from government databases.
- Targets to engage mandated agencies involved in hazard assessment and other related studies to use standard codes to harmonize information contribution.
- Creates a centralized exposure database and digital platforms that provide and showcase innovative methods and analytics for data analyses.
- Divided into three sub projects:



GeoMapper



Hazard Hunter



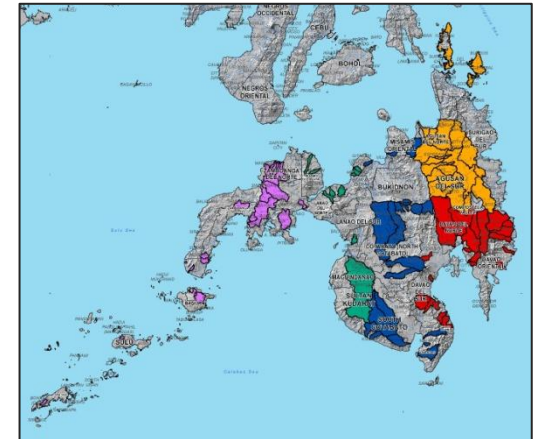
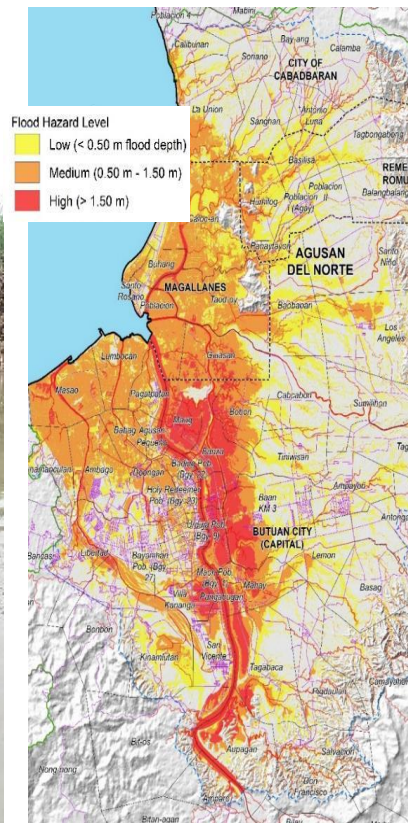
GeoAnalytics



Map and Feature
Services

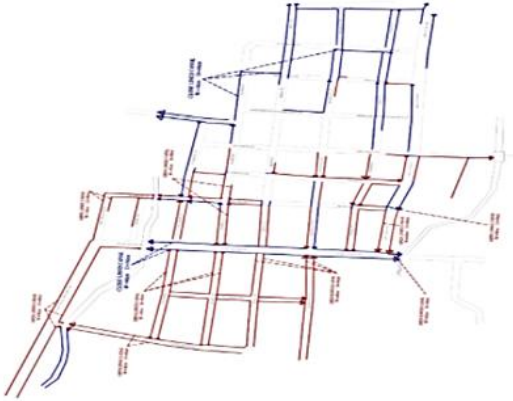
Geo-SAFER Mindanao Program: Geo-informatics for the Systematic Assessment of Flood Effects and Risks for a Resilient Mindanao

- Generated Flood Hazard Maps of the 97 River Basins comprising 121 cities and municipalities in 23 provinces, and 6 regions in Mindanao



Flood Risk Assessment for Mitigation and Effective Response (FRAMER)

To create a master drainage plan of Infanta, Quezon using Lidar DEM for flood mitigation



Lay out Plan of Drainage of Poblacion Area

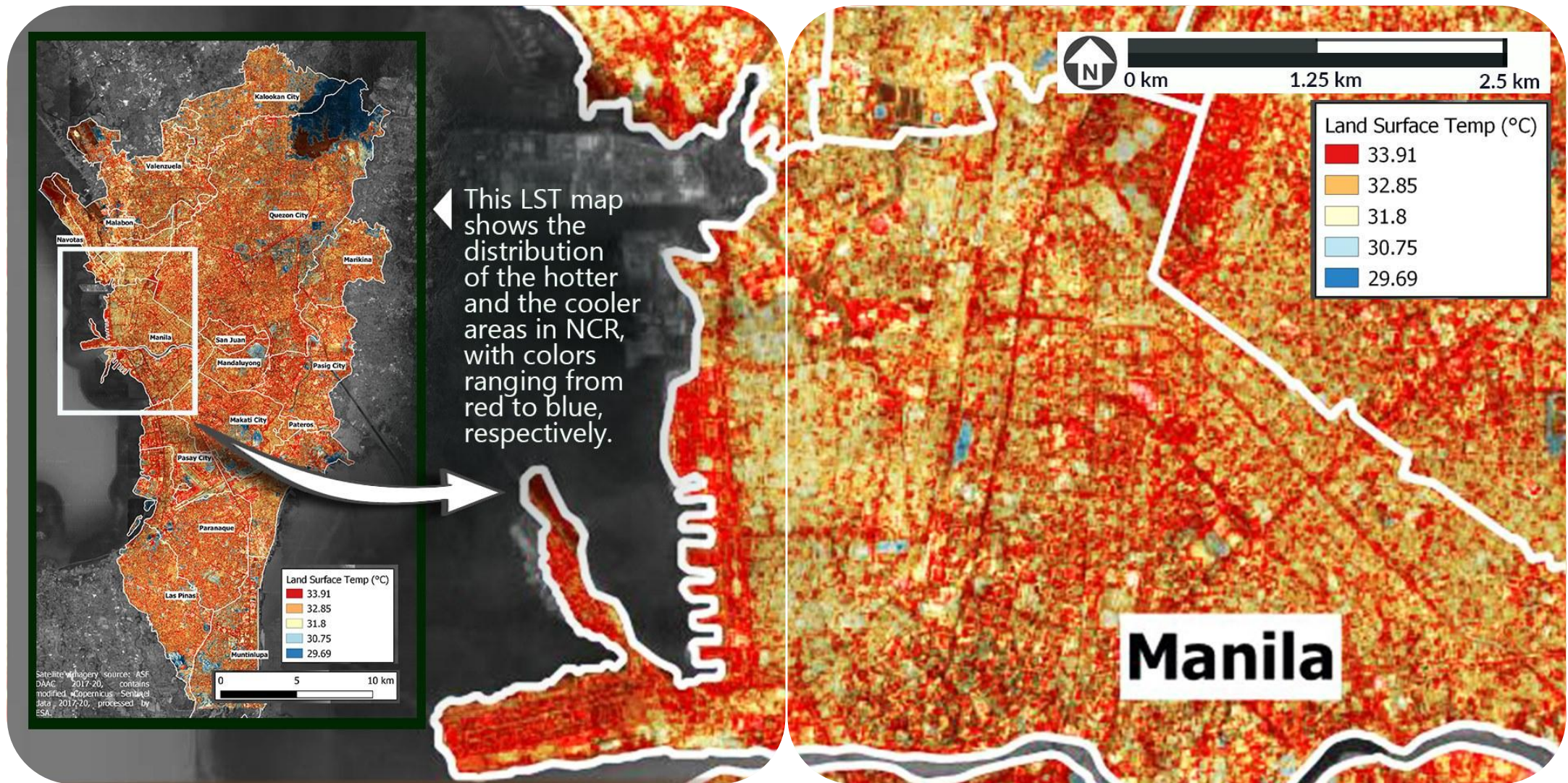


Satellite Image of Location with Tributary Area

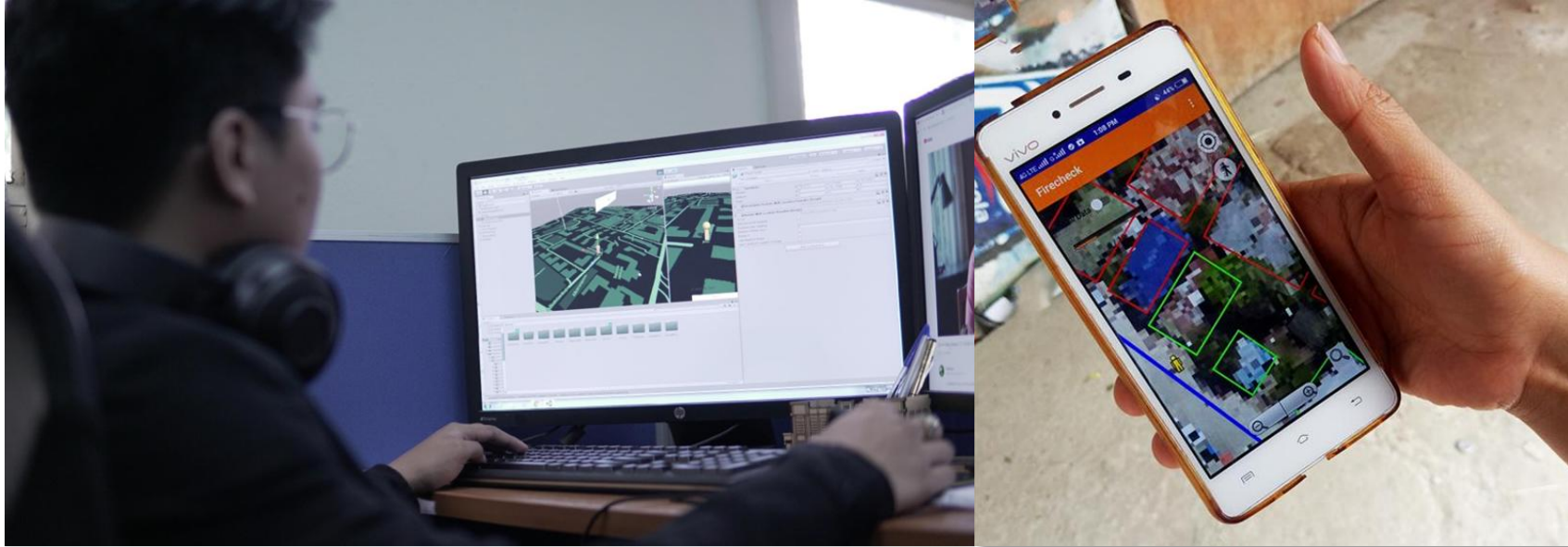


- Similar to GeoSAFER Mindanao, the overall objective of the FRAMER Project is to create models, maps and tools to help in the mitigation of flood hazards in selected riverine towns in Cavite, Batangas, and Quezon Provinces.
- An additional feature is the creation of a master drainage plan of Infanta, Quezon using LIDAR DEM for flood mitigation.

Geospatial Assessment and Modelling of Urban Heat Islands (GUHeat) of Manila



Fire Check: Urban Fire Hazard mapping, a smart solution against fire disasters

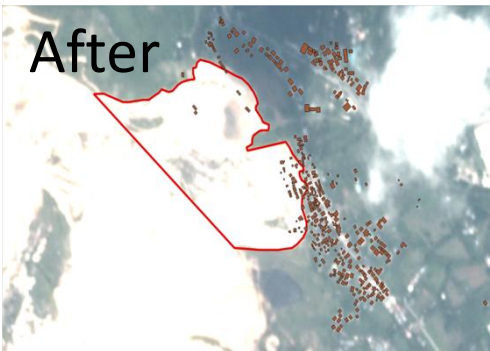
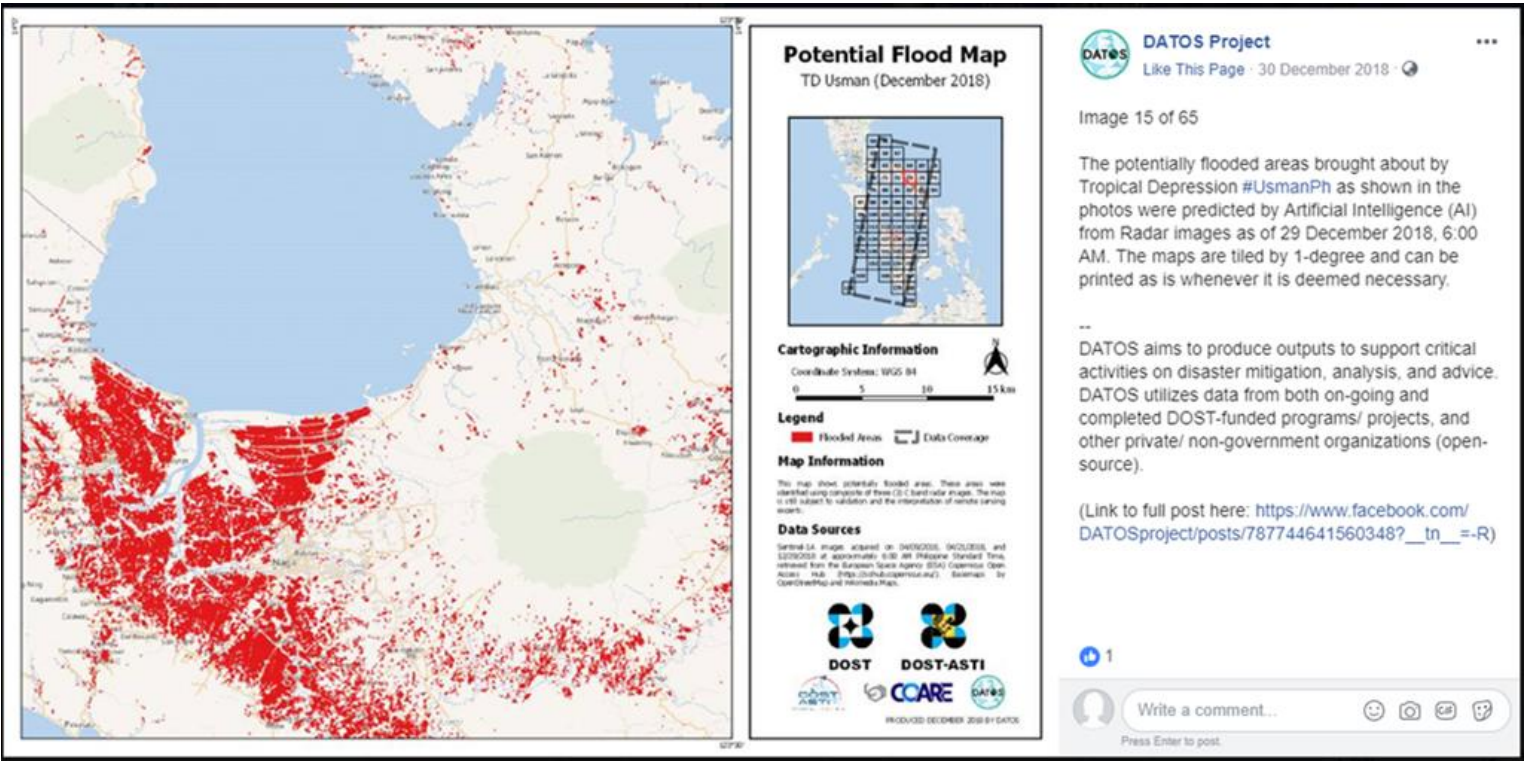


- This Cebu-based project produces information that aids emergency responders and officials, as well as planners and policymakers in **fire disaster assessment and risk evaluation**.
- This is done through fire hazard maps, 3D maps of high-risk communities, fire spread modeling and simulation, neighborhood evacuation plans, and fire risk reduction management and investment plans.

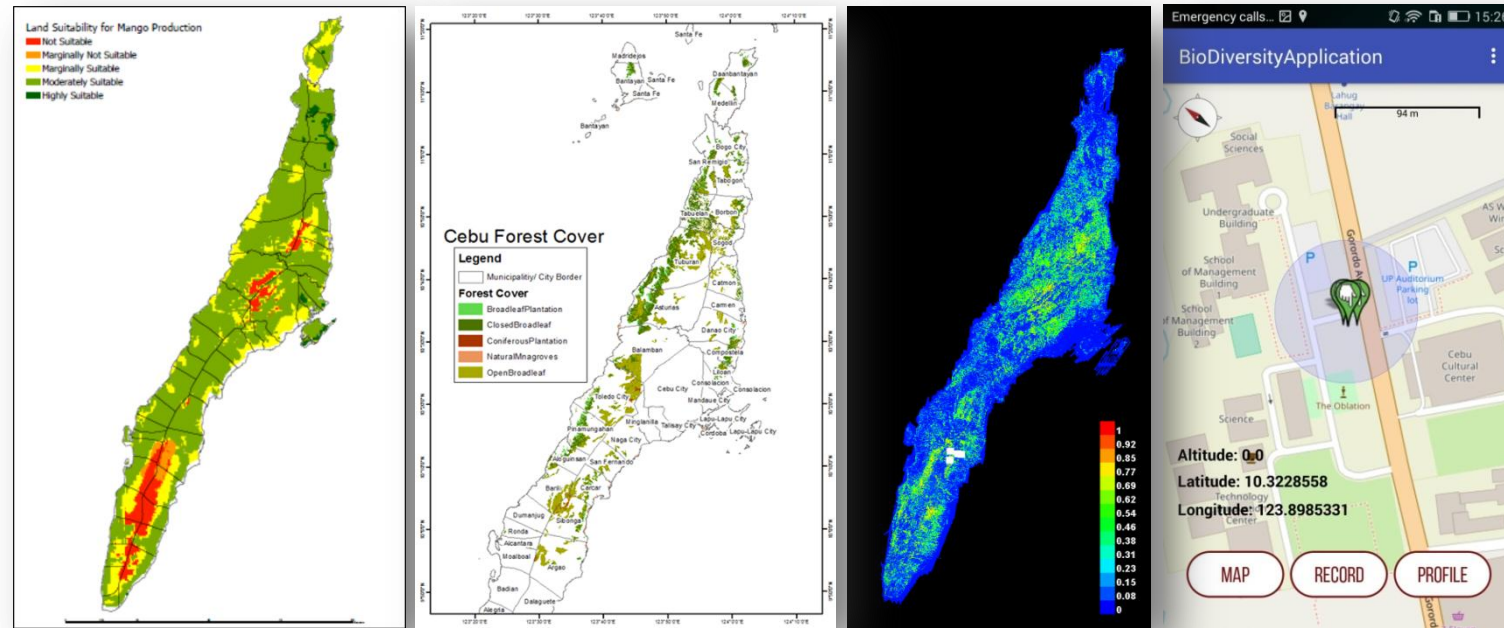
Remote Sensing and Data Science (DATOS) Helpdesk



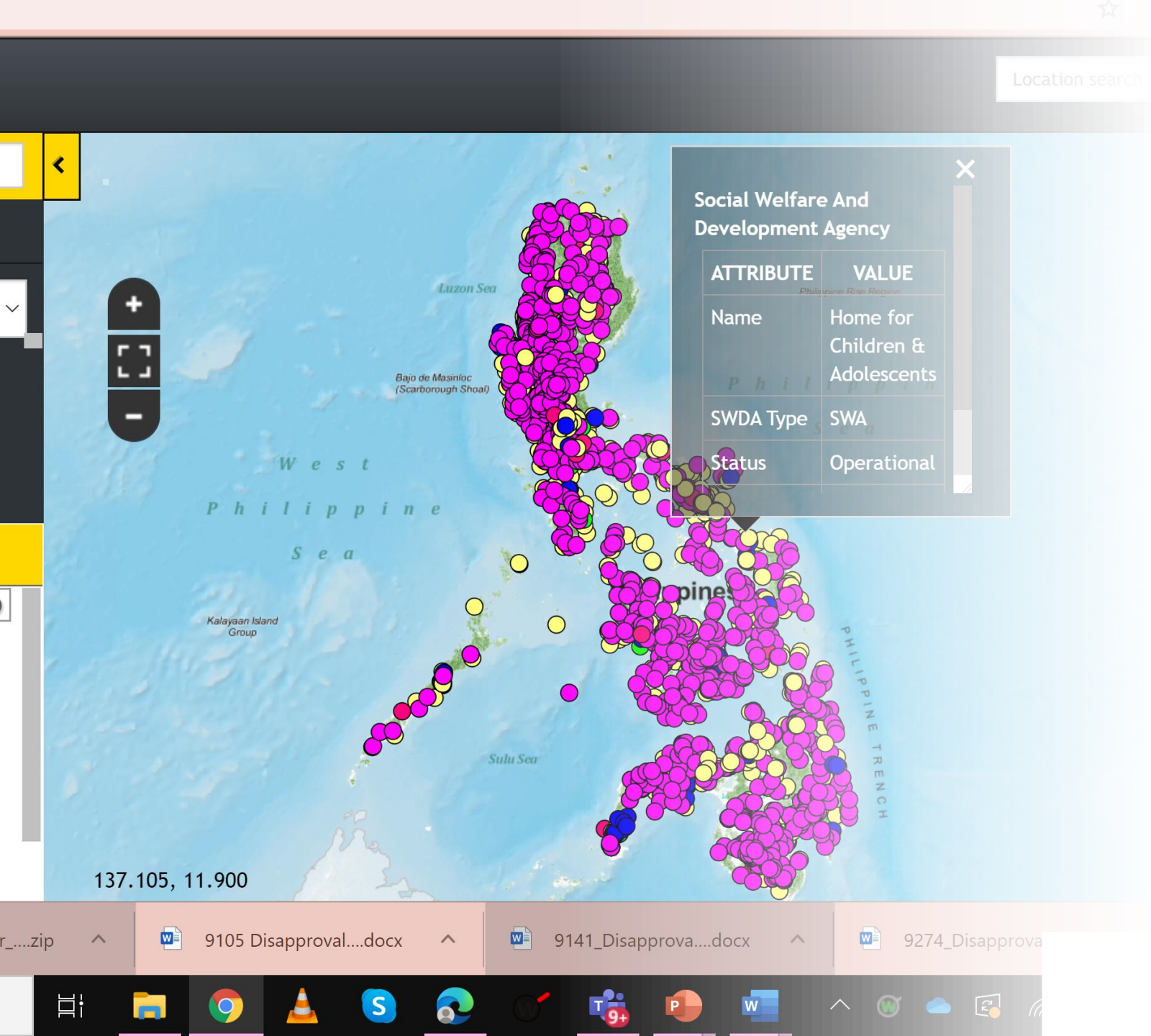
A 24/7 help desk for pre-, during, and post- disaster events providing remote sensing data and data science applications to support critical activities on disaster mitigation, analysis, and advice.



Central Visayas Center for Environmental Informatics (CENVI)

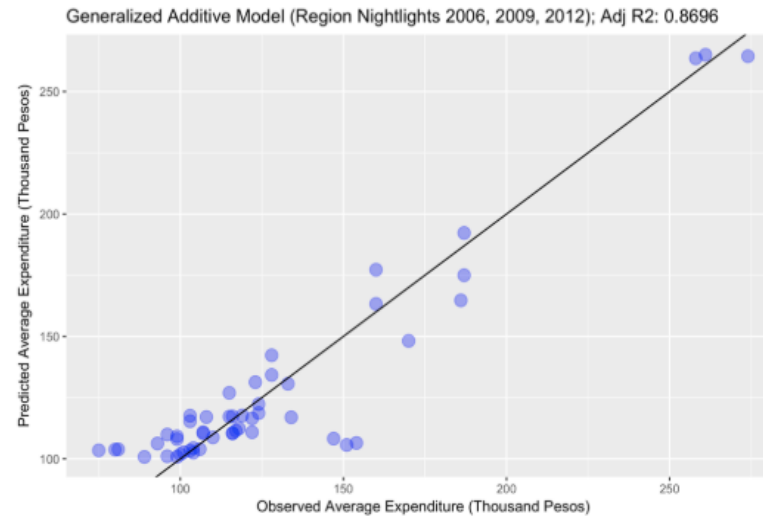
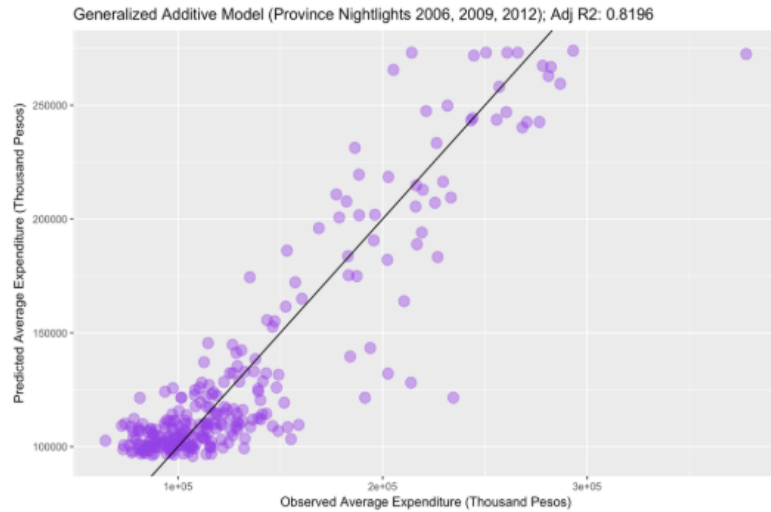


CENVI aims to address pressing environmental problems in Central Visayas such as **natural disasters**, **emerging pest and vector-borne diseases** for **agricultural crops**, **water scarcity**, **forest degradation** and **loss of biodiversity** – through data science, remote sensing based systems and Information and Communications Technology (ICT) based technologies.



Social welfare,
energy services,
COVID-testing
centers all in one
portal:
geoportal.ph

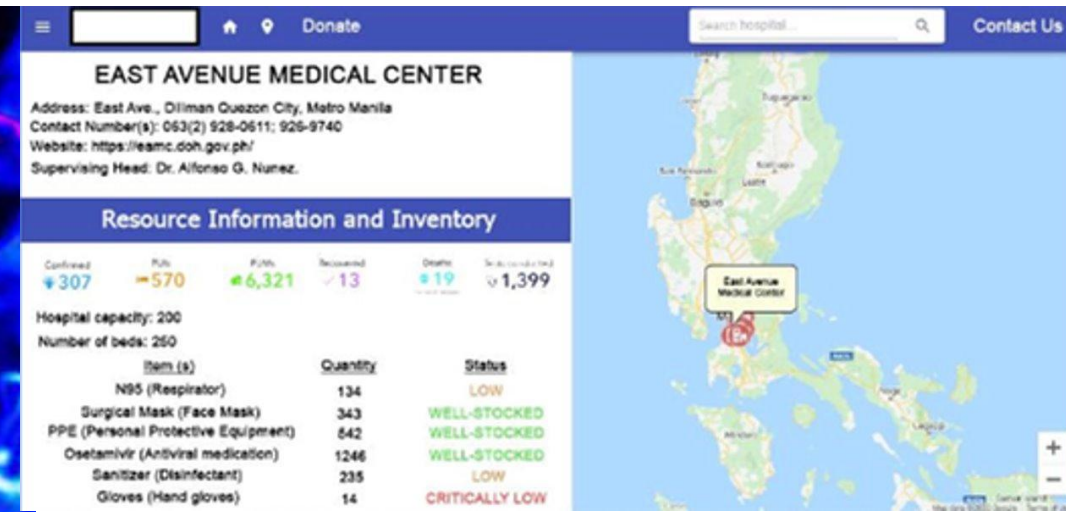
Predicting Poverty and Consumption-based Wealth Using Nightlights



Generalized Additive Model (Province Nightlights and Observed Average Expenditure (Thousand Pesos) (Philippine Statistics Authority)



Current Landscape of COVID-19 Apps in the Philippines



Geospatial Solutions

Tracker

DOH COVID Tracker

Symptom Tracker

TANOD COVID

COVID Toolkit

C.L.E.A.R

QVID

COVID19 Tracker PH

Medical / Hospital Inventory

DOH Supply Mgt Tracking System

TrAMS

IHEALS

Relief

RAMDAM

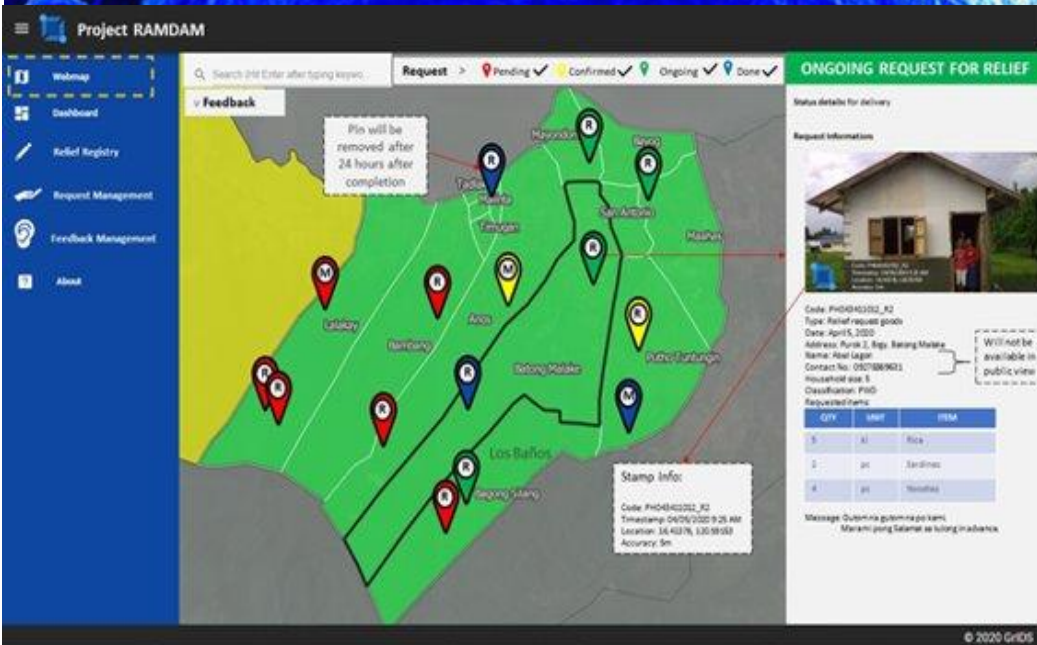
Bangon Bayan

Other Services

BIRDSEYE

COVID ALERT

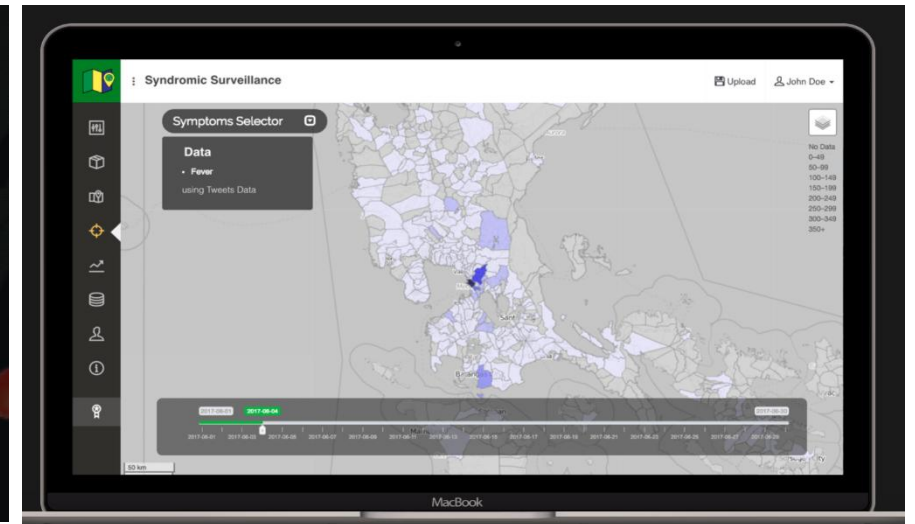
COVID WATCH



COVID-19 Philippines LGU Monitoring Platform

REGISTER

LOGIN



Flexible Platform

FASSSTER is a flexible platform that will generate projections based on a combination of selected scenarios. The model relies on assumptions for accurate interpretation. Different assumptions will affect the way numbers are interpreted.



Disease Modeling

Approach to the design of disease models include: deterministic, stochastic and network analysis.



Web Application

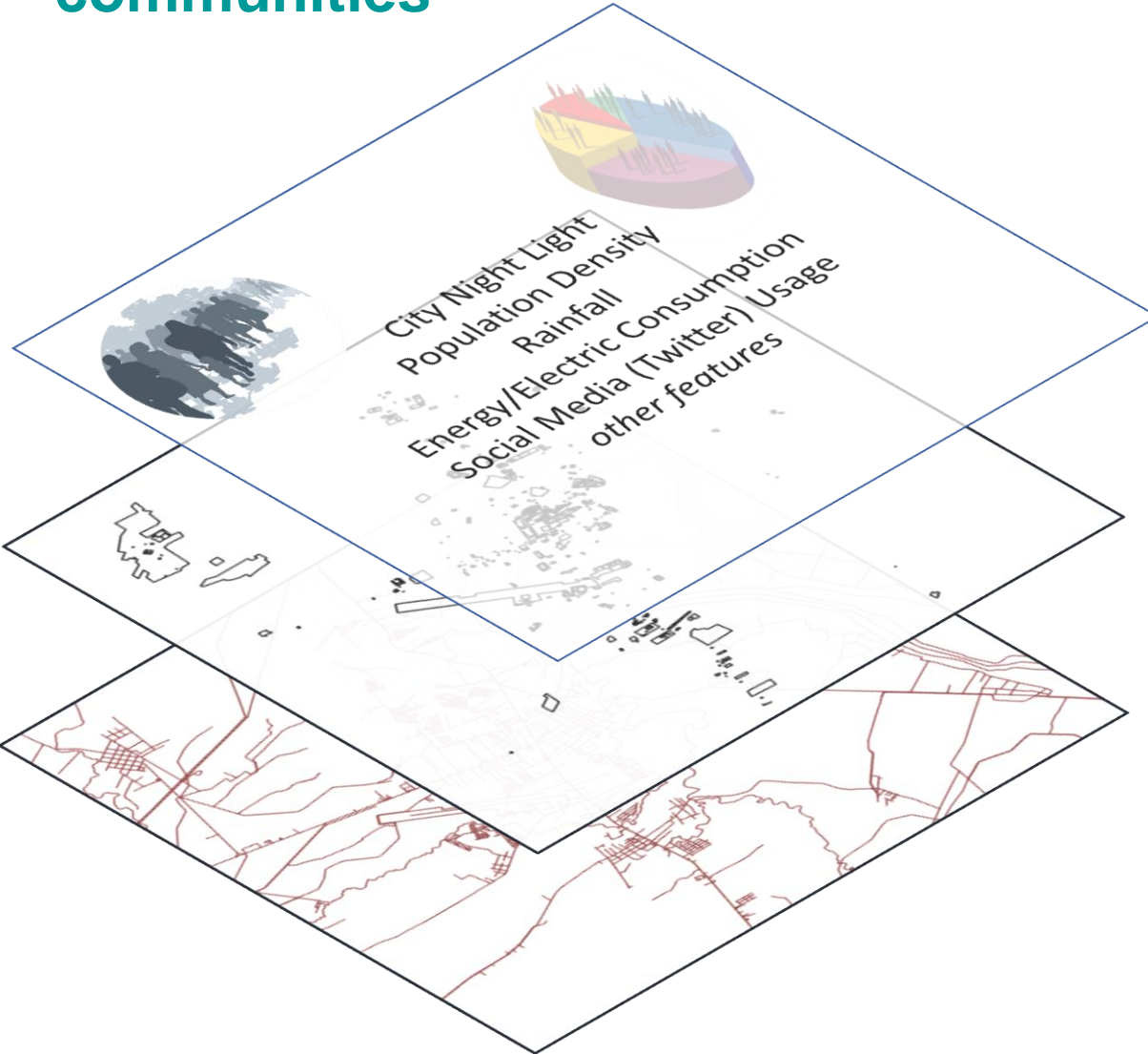
The web application is designed for use by disease modellers, disease surveillance units, city planners, and researchers.

FEASIBILITY ANALYSIS OF SYNDROMIC SURVEILLANCE USING SPATIO-TEMPORAL EPIDEMIOLOGICAL MODELER FOR EARLY DETECTION OF DISEASES (FASSSTER)

<https://fasser.ehealth.ph/covid19/index.html#whatis>.

Cross-cutting thematic areas:

Smarter and sustainable cities and communities



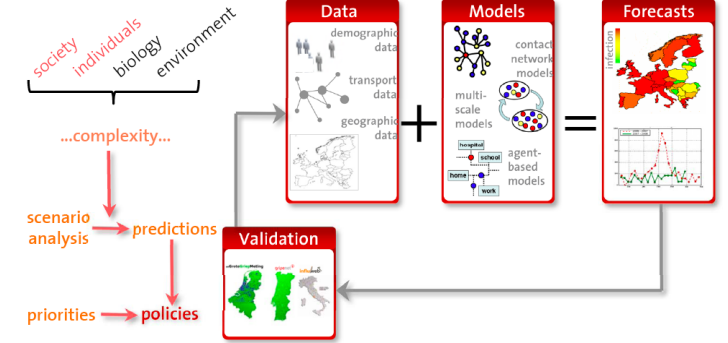
Socioeconomic
Data

Land-Use and Amenities

Transport Network

Greeneries

SPECIFIC OBJECTIVES

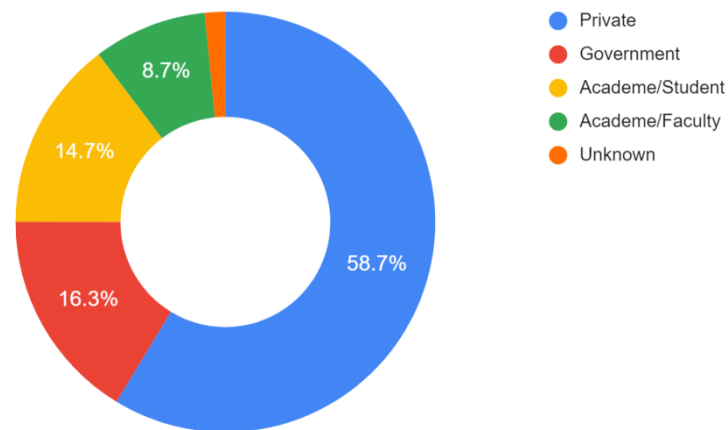


- ① Build a **Data Hub**.
- ② Develop and deploy an interface to the Data Hub, to allow **interactive access** to the data and enable **extraction of insights**
- ③ Build **mathematical models and/or simulations** to be used to generate features to define a **smart index**
- ④ Build a dashboard showcasing different levels of analytics (from descriptive to prescriptive).

Contributions and emerging needs

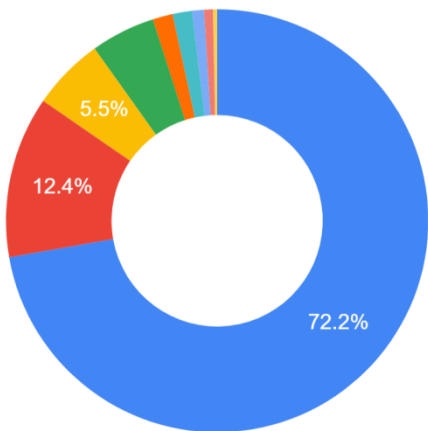
Data Science and Analytics Scholarships (SPARTA)

Affiliation



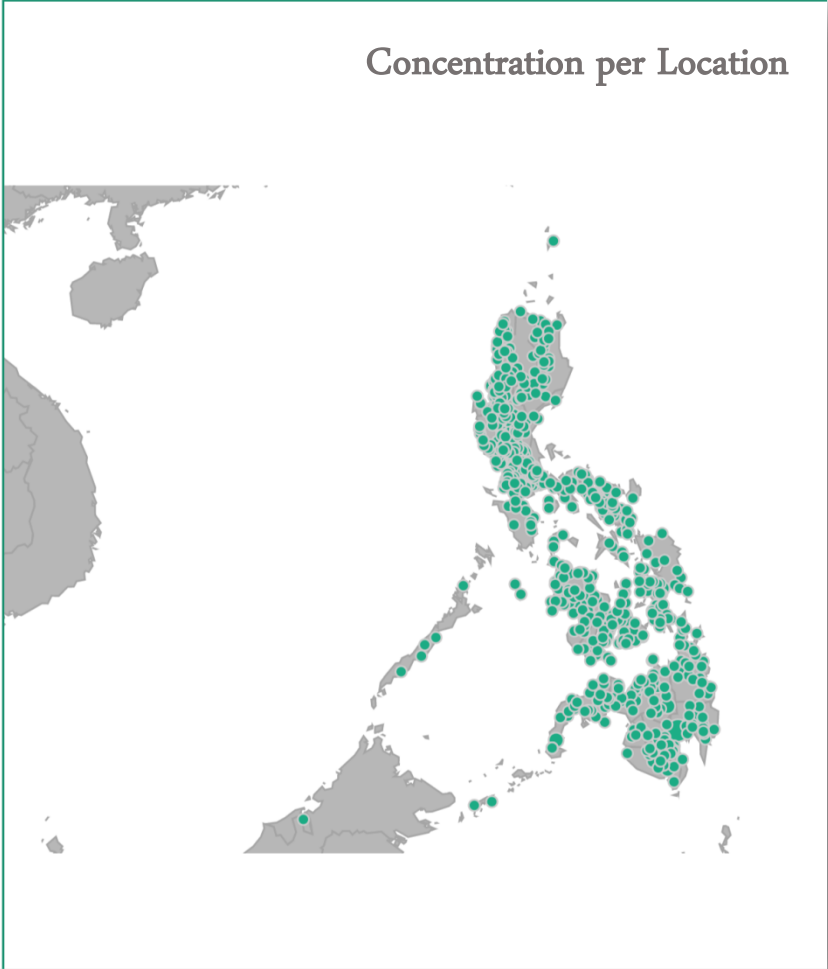
Highest Education Attained

- Bachelor's Degree
- Master's or Professional Degree
- Senior High School
- Secondary/High School
- Associate Degree
- Doctorate
- Elementary/Primary School
- Other Education
- Junior Secondary/Junior High/Middle School



Region	Count ^
BARMM	38
MIMAROPA REGION	105
REGION XII (SOCCSKSARGE...	109
REGION IX (ZAMBOANGA P...	114
REGION VIII (EASTERN VISA...	164
REGION II (CAGAYAN VALLE...	175
REGION XIII (Caraga)	182
CORDILLERA ADMINISTRATI...	183
REGION I (ILOCOS REGION)	235
REGION VI (WESTERN VISAY...	304
REGION V (BICOL REGION)	307
REGION XI (DAVAO REGION)	441
REGION X (NORTHERN MIN...	478
REGION VII (CENTRAL VISAY...	686
REGION III (CENTRAL LUZON)	1,267
REGION IV-A (CALABARZON)	2,963
NATIONAL CAPITAL REGION...	5,120

Concentration per Location



Policies and Institutional Changes

- **Republic Act 11363** An Act Establishing the Philippine Space Development and Utilization Policy and **Creating the Philippine Space Agency (PhilSA)**, and for other Purposes enacted on August 8, 2019.
- **Republic Act 11337** Innovative Startup Act (April 26, 2019)
- **DBM National Budget Circular 580** Adoption of Economy Measures in the Government Due to the Emergency Health Situation (April 22, 2020)

THANK YOU

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