

Caraga State University's Space + Geospatial Products and Services for DRRM



Caraga State University Profile

2 **CAMPUSES**
Butuan City (Main Campus)
Cabadbaran City

COLLEGES
ELEVEN

22
GRADUATE
PROGRAMS

83%
PRC board programs having a passing rate equal or higher than the national passing rate

TOTAL LAND AREA IN HECTARES

240

18 **25**

RESEARCH
CENTERS

No. of innovations, patents, or intellectual property generated by the incubated startups



Average passing rate of first-time takers of licensure examination annually.

80%

EIGHT CONSECUTIVE YEARS
PBB-ELIGIBLE

around
17,000
STUDENTS

REVENUE FROM

14 MILLION

TECHNOLOGY
COMMERCIALIZATION

OVER

500 M

Total research funding obtained from public and private sector partner

63

AVERAGE NUMBER OF SCOPUS-ARTICLES PUBLISHED ANNUALLY



Research Centers in CSU using Spatial Tech for DRRM Projects



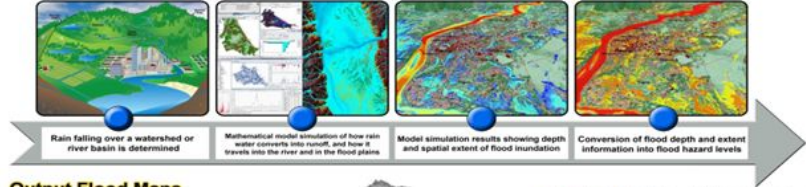
Phil-LiDAR 1 Project - Flood Hazard Mapping (2014-2017)

“Flood Hazard Mapping of the Philippines Using LiDAR: Caraga Region”

- a three-year project amounting to **Php 41M+** funded by DOST.
- This project is a component of the “Phil-LiDAR 1. Hazard Mapping of the Philippines Using LiDAR” program headed by the University of the Philippines (UP) – Diliman.

Flood Hazard Maps Generation

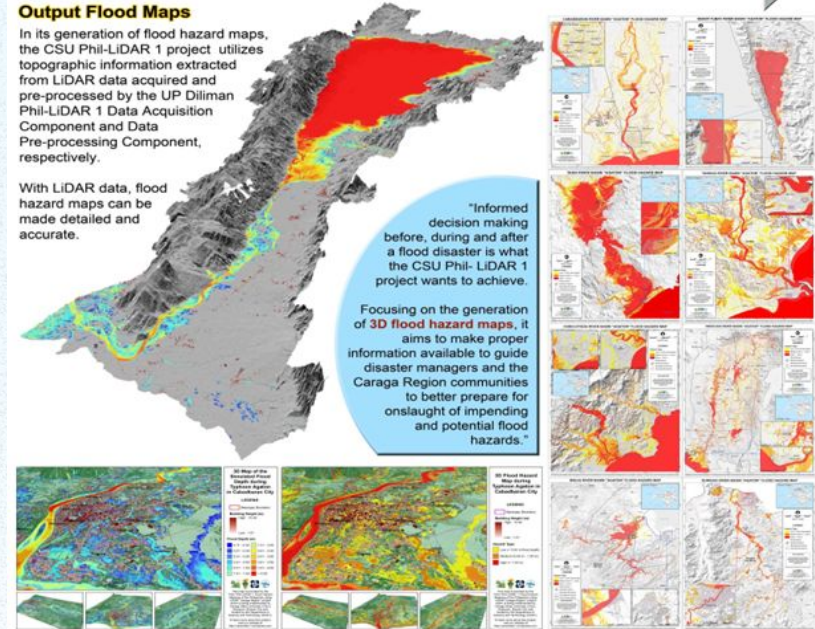
Flood hazard maps are generated through a series of steps. First, information about the volume and intensity of rainfall is obtained. This information is then fed into a mathematical simulation model (or flood model) to compute how much volume of runoff or flood water is generated in the mountains when it rains, and to determine how this flood water flows downwards into the rivers and overflows into the floodplains.



Output Flood Maps

In its generation of flood hazard maps, the CSU Phil-LiDAR 1 project utilizes topographic information extracted from LiDAR data acquired and pre-processed by the UP Diliman Phil-LiDAR 1 Data Acquisition Component and Data Pre-processing Component, respectively.

With LiDAR data, flood hazard maps can be made detailed and accurate.




Philippine Space Agency




Flood EVIDens (Flood Event Visualization and Damage Estimations)

Home About How to? Data Sources Documentation Technology Used Partner Institutions Acknowledgement Contact



Flood EVIDens
Flood Event Visualization and Damage Estimations



Queries

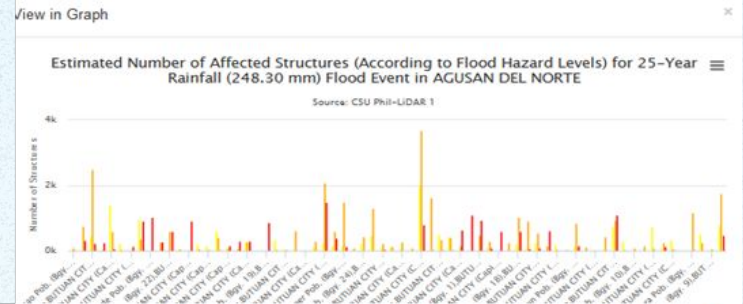
Flood Event Visualization

AGUSAN DEL NORTE BUTUAN CITY (Capital) All Barangays 25-Year Rainfall (248.30 mm)

Show Flood Hazard Stats Show Flood Map Show Affected Building and Structures **Go**

Water Level Monitoring and Forecasting

Select Station: Bangalay Bridge, Bangalay River, Jabonga, Agusan del Norte Show Locations in Map **View Current Status and Fore**



Flood Hazard Information

Estimated Number of Affected Structures (According to Flood Hazard Levels) for 25-Year (Amount: 248.30 mm) Flood Event

The table below shows the estimated number of structures that can be affected by flooding if rain falling over the river basin reaches 248.30 mm in 24 hour scenario has a 4% probability of occurrence in any given year.

Click the barangay name to display the estimated number of affected structures by its type.

View in Graph Print Export Search:

Province	Municipality	Barangay	Total Number of Structures	Total Not Affected	Total Affected	Low	Medium	High
AGUSAN DEL NORTE	BUTUAN CITY (Capital)	Agao Pop. (Bgy 3)	165	4	161	51	84	26
AGUSAN DEL NORTE	BUTUAN CITY (Capital)	Agusan Pequeño	1090	0	1090	8	761	321



The Geo-SAFER Mindanao Program (2017-2019)

Geo-SAFER Mindanao:

Geo-informatics for
the
Systematic
Assessment of
Flood
Effects and
Risks towards a
Resilient **Mindanao**



P200M+ Program Budget
CSU Only: P60M+



GEO-INFORMATICS FOR THE SYSTEMATIC ASSESSMENT OF FLOOD EFFECTS AND RISKS
TOWARDS A RESILIENT MINDANAO

GEO-SAFER MINDANAO



GEO-SAFER AGUSAN
AGUSAN STATE UNIVERSITY



GEO-SAFER ZAMBASULTA
ATENEDE ZAMBASULTA UNIVERSITY



GEO-SAFER NORTHERN MINDANAO/COTABATO
CENTRAL MINDANAO UNIVERSITY



GEO-SAFER WESTERN MINDANAO
MINDANAO STATE UNIVERSITY-TULANGAN INSTITUTE OF TECHNOLOGY



GEO-SAFER SOUTHEASTERN MINDANAO
UNIVERSITY OF THE PHILIPPINES-MINDANAO

2
YEAR RESEARCH
PROGRAM

covering...
97 RIVER
BASINS

5
IMPLEMENTING
UNIVERSITIES
In Mindanao



OUR OBJECTIVES

To produce highly detailed **FLOOD HAZARD MAPS** using **Light Detection and Ranging (LiDAR)** and **Interferometric Synthetic Aperture Radar (IFSAR)** technologies and is expected to benefit 121 Local Government Units located in Mindanao.

To conduct **training and seminars** to the Local Government Units (LGUs) for the **proper interpretation, utilization and application** of its outputs not only for flood disaster management purposes but also for comprehensive land-use planning.

FUNDED BY



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

23

PROVINCES

to be provided with
detailed **flood hazard**
maps

MAJOR ACTIVITIES



FIELD SURVEYING



DATA PROCESSING



FLOOD MODELLING



Philippine
Space
Agency



MInDSEt: Mindanao Integrated Data Sharing Environment



Butuan City, Agusan Del Norte 100 Year Flood Hazard Map

Download Document

View Metadata

Download Metadata

Resources using this document

This document is not related to any maps or layers

About

Owens, Point of Contact, Metadata Author

Ran Marulan (M. Morales)

Geo-SAFER Agusan Project - Caraga State University

Title: Butuan City Agusan Del Norte 100 Year Flood Hazard Map

License: Open Data Commons Attribution License (ODC-BY)

Abstract: This map depicts the numerical model simulated flood extent and hazard levels that may be experienced if the rain falling in the watersheds upstreams the municipality reaches 308.60 mm in 24 hours. This rainfall scenario has 1% probability of occurrence in any given year.

Publication Date: Nov. 26, 2019, 1:18 p.m.

Keywords: 100-year, butuan, city, flood, map

ISO 19115 topic: Inland Waters

Category: Flood Hazard

MinDSET Data

Regions: Global - Philippines - Mindanao - Caraga (Region XIII), Agusan del Norte

Uploader: Nest Morales (M. Morales)

Organization: Geo-SAFER Agusan Project, Caraga State University

More info -

Welcome! - MinDSET

Not secure | mindset.ccgeo.info:81

MinDSET Dataset About

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MinDSET

Mindanao Integrated Data Sharing Environment

Learn More Explore Datasets

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Share or Contribute Dataset

Collaborate!

MinDSET is an online facility for Mindanao wherein stakeholders and the community of end-users, both private and in government sectors can collaborate, have access to and/or exchange of datasets and information not limited to flood hazards.

405 Datasets

6 Organizations

11 Collaborators

56 Downloads

Register to get started.

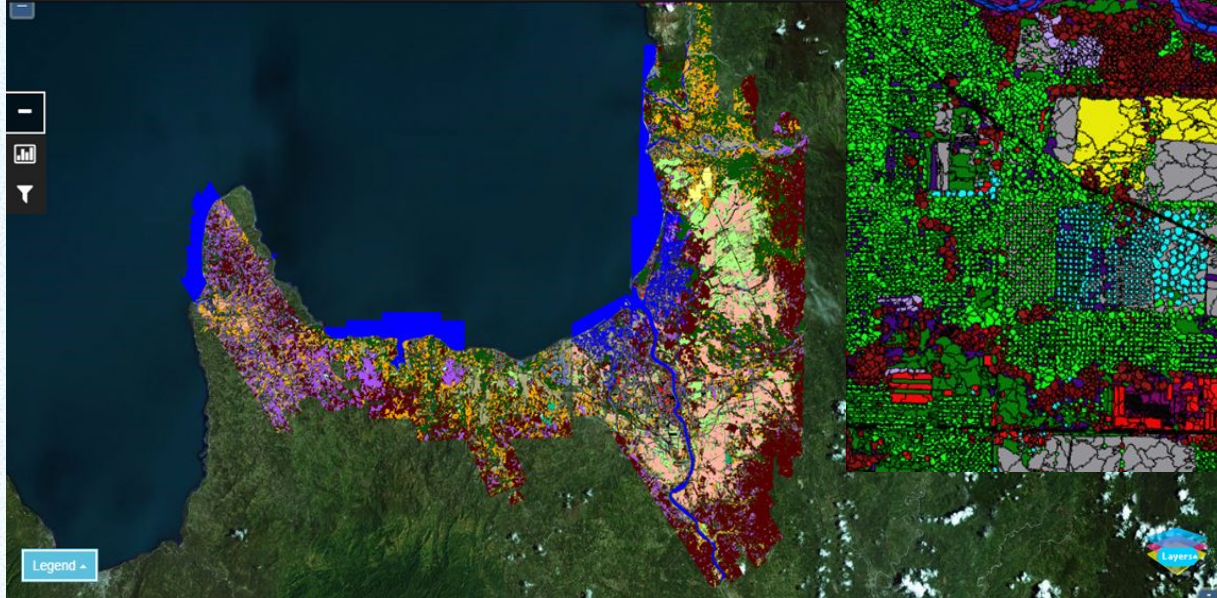
Upload Spatial Data Upload Document



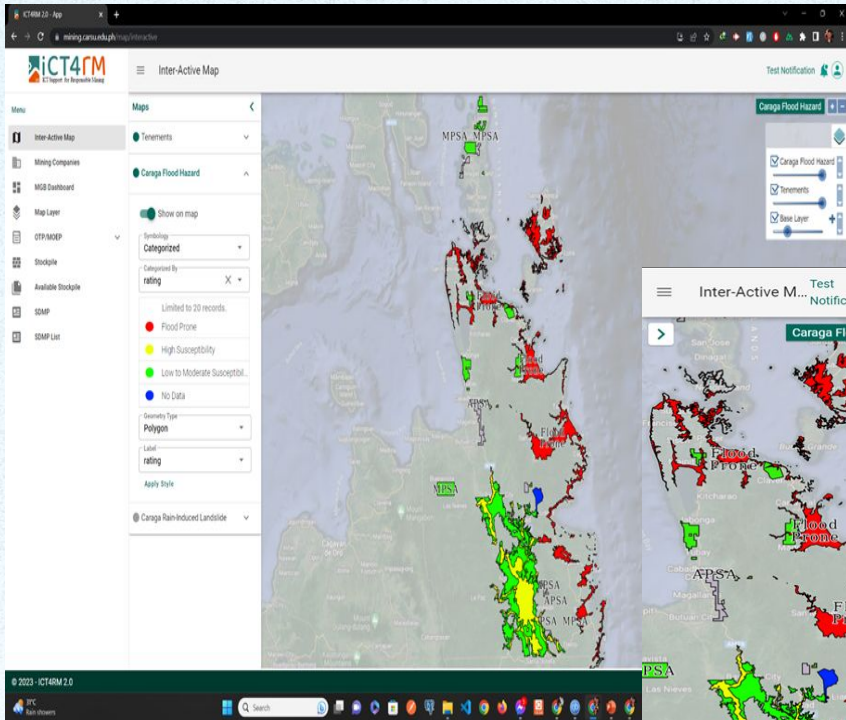
Phil-LiDAR 2 Project - Nationwide Resource Mapping



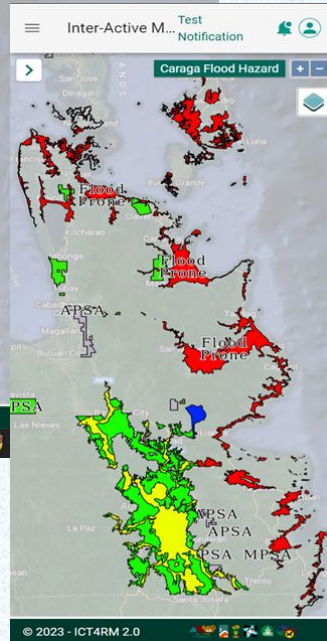
Phil-LiDAR 2.B.14 CARAGA Detailed Resource Maps



ICT4RM : ICT Support for Responsible Mining



- Mining Tenement Map
- Hazard Map
- Simulation of water runoff



UNFAO-Funded EPRiMA Project - Disaster Preparedness and Response



- Drought Monitoring Maps
- Overlaid with Hazard Maps and LandCover Maps
- Dynamic Cropping Calendar
- 10-day Forecast
- Drought Watchlist



Home Interactive Map About Cropping Calendar PDNA Watchlist

Region

REGION III (CENTRAL LUZON)

Province

All Province

City/Municipality

All Municipalities

Crop Information

- ▼ Crop Mask
- ▼ Crop Standings
- ▼ Crop Damages
- ▼ Crop Planting
- ▼ Crop Harvesting

Map Layers

- ▲ Risk Maps
- ▲ Monitoring

Other Maps

- ▲ Other Layers

Download PNG

REGION II (CAGAYAN VALLEY), ISABELA, ILAGAN CITY (Capital)

Choose crop and variant

corn - rainfed - opv Corn - Rainfed - Hybrid

corn - rainfed - opv, Forecast As Of: 2019-09-25

LEGEND:

- 5% chance
- 25% chance
- 50% chance
- 75% chance
- 95% chance

% chance of getting == yield

RECOMMENDATION:

CROP FORECAST:

Below are the possible yields when planted in the following planting periods. These are based on the area's historical climate, prevalent agricultural management practices, and 6-month seasonal forecasts of PAGASA.

Chance	75%	50%	25%
01-Oct-19	3,096	3,355	3,838
11-Oct-19	2,998	3,328	3,825
21-Oct-19	2,925	3,261	3,539
13-Oct-19	3,006	3,249	3,453
10-Nov-19	2,826	3,253	3,448
20-Nov-19	2,602	3,135	3,195
20-Nov-19	2,589	3,121	3,190
10-Dec-19	2,302	2,762	3,237
20-Dec-19	1,832	2,361	2,873

National Agricultural Drought Monitor

WATCH LIST:

Areas monitored to be experiencing water stress for more than 40% of its rice areas during 2 September - 11 September 2021

Choose Date:

2021-09-11

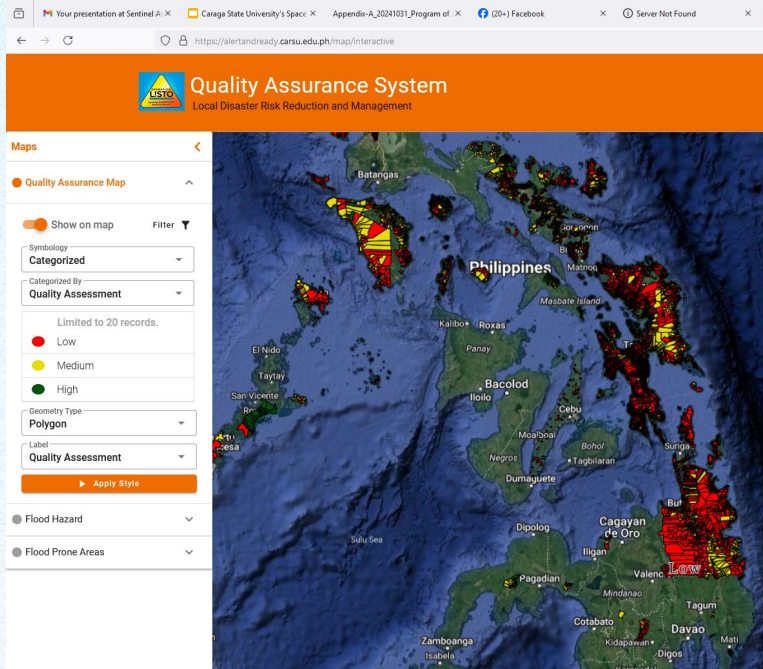
Season 1 September 1 - 20, 2021

REGION	PROVINCE	MUNICIPALITY
REGION II	CAGAYAN	ALCALA, ENRILE, SOLANA
REGION II	ISABELA	CORDON, DELFIN ALBANO (MAGSAYSAY)
REGION II	QUIRINO	CABARROGUS (Capital), DIFFUN
REGION IV A	CAVITE	TANZA
REGION IV A	QUEZON	LUCENA CITY (Capital)
REGION V	ALBAY	LEGAZPI CITY (Capital), TIWI
REGION VI	ILOILO	ESTANCIA
BANGSAMORO AUTONOMOUS REGION IN MUSLIM MINDANAO	MAGUINDANAO	TALITAY
REGION XIII	SURIGAO DEL SUR	HENATUAN

NOTES:

- Municipalities in bold have been in the watchlist for at least 1 month.
- If bold municipalities are at the start of the planting period or end of the harvest period, they can be monitored as experiencing water stress. Please check planting/harvesting records.

BDRRM Assessment Tool



- Mapping of the BDRRM Plan Assessment Rating
- Overlaid with Hazard Maps
- Mapping Platform can be utilized for CRA, Vicinity Mapping



Caraga State University's Commitment to DRRM

- Provide Spatial data for localized and contextual information for Planning and DRRM
- Access to spatial data will help improve our products and services
- Partnership and collaboration for DRRM projects



THANK YOU

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