

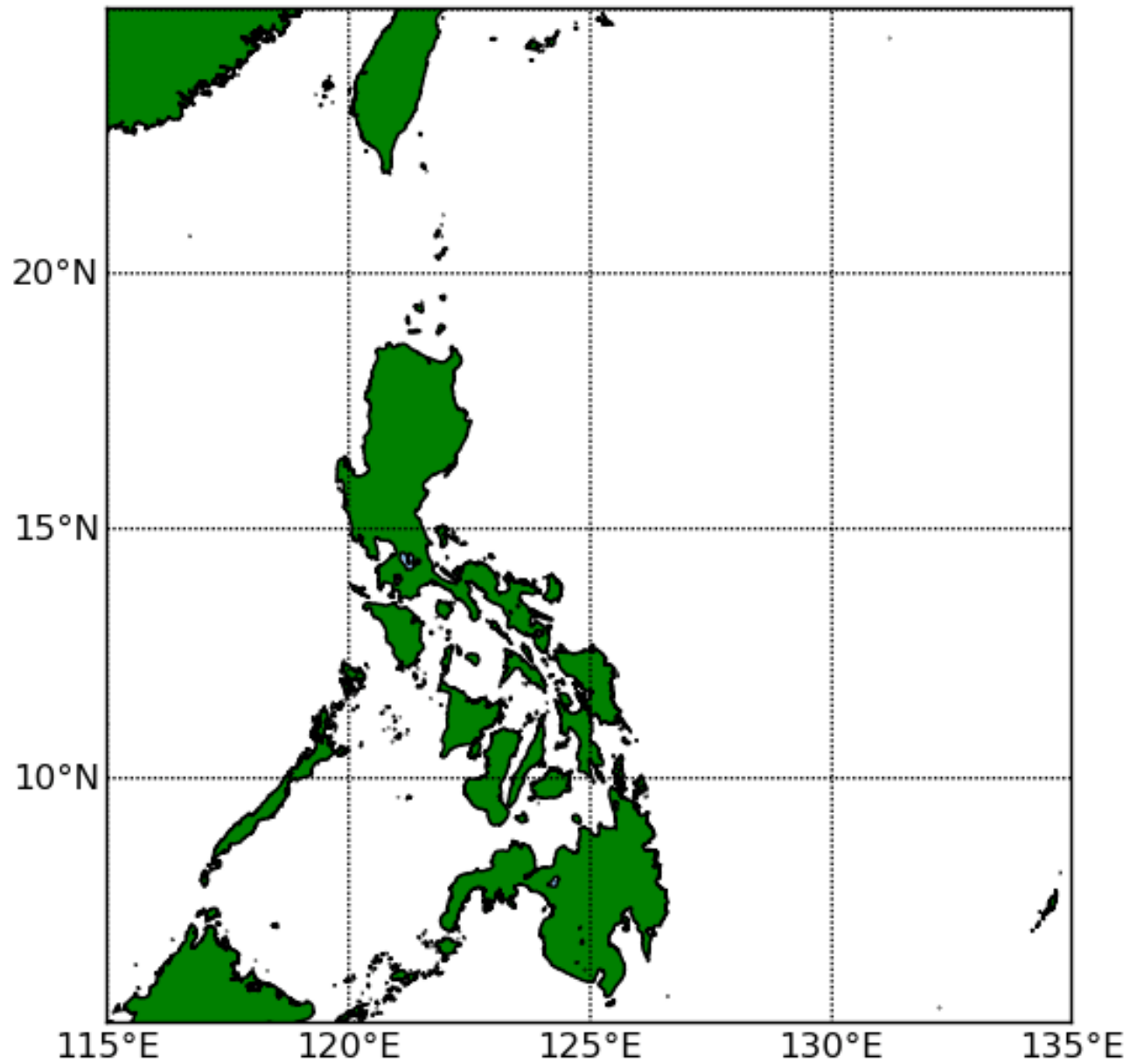
DOST-Project NOAH's Initiatives in Disaster Risk Reduction and Management

**International Workshop on Disaster Risk Reduction
under the e-ASIA Joint Research Program**
*Eastwood Richmond Hotel
15 April 2015*

Ken Adrian B. Aracan
*Chief Science Research Specialist
Disaster Management Using WebGIS*



1951



What is Project NOAH?

As per President Aquino's directive to put in place a responsive program for disaster prevention & mitigation, the Department of Science & Technology launched Project NOAH last July 2012 in Marikina City.



Nartea, 2012

Specifically, Project NOAH aims to provide:

- flood mitigation system, specifically targeting a 6 hour flood early warning system for communities along 18 major river systems;
- enhancement of geohazard maps and;
- enhancement of storm surge vulnerability maps

How do we do this?

- ✓ advanced disaster science research
- ✓ multidisciplinary assessment of hazards
- ✓ develop accessible tools that enable prevention & mitigation of disasters

(LGUs, planners, policy makers, communities, individuals, families)





Hydromet Sensors Development

Doppler System Development

Weather Info Integration for System Enhancement

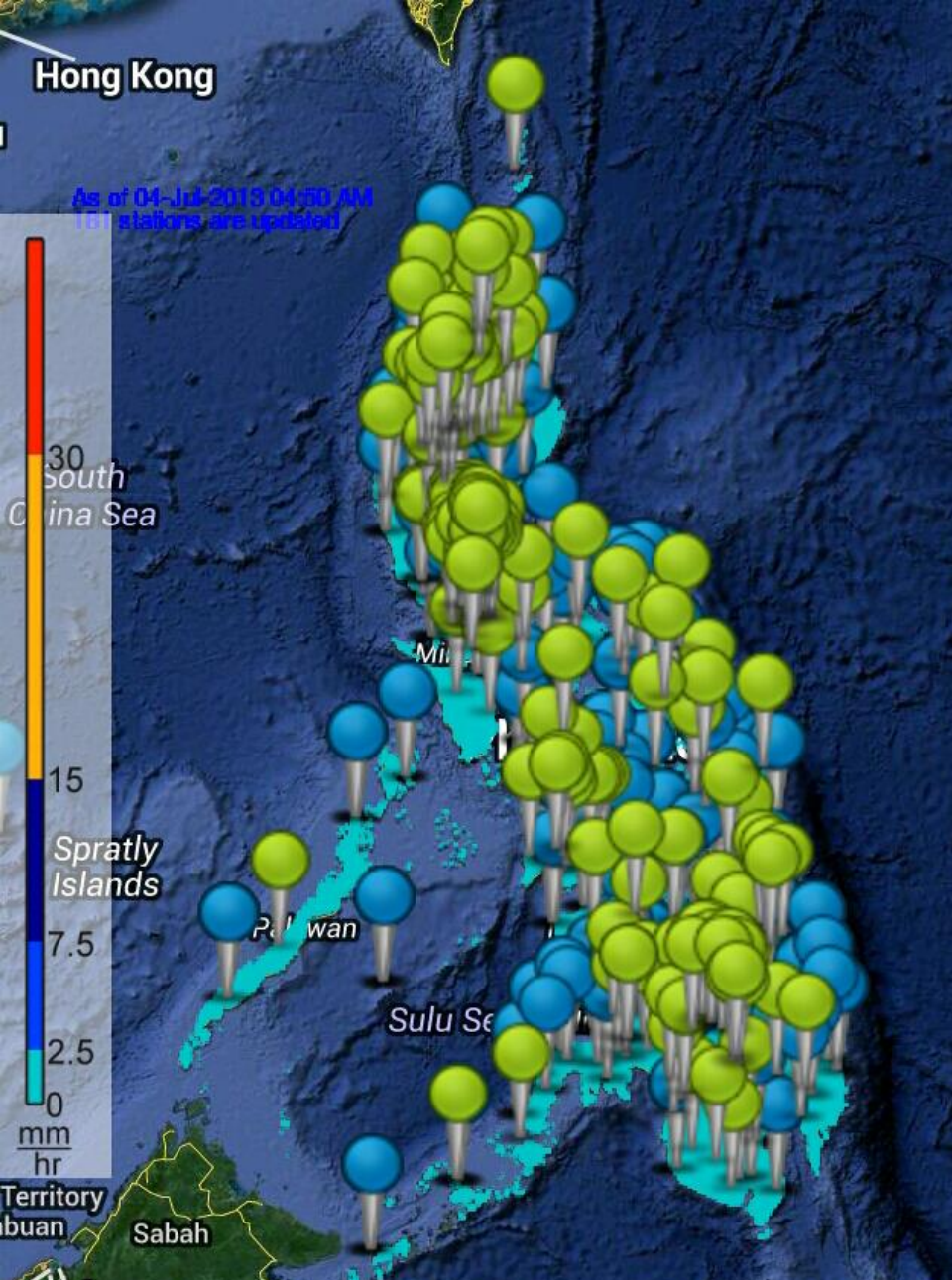
DREAM-LiDAR

FloodNET

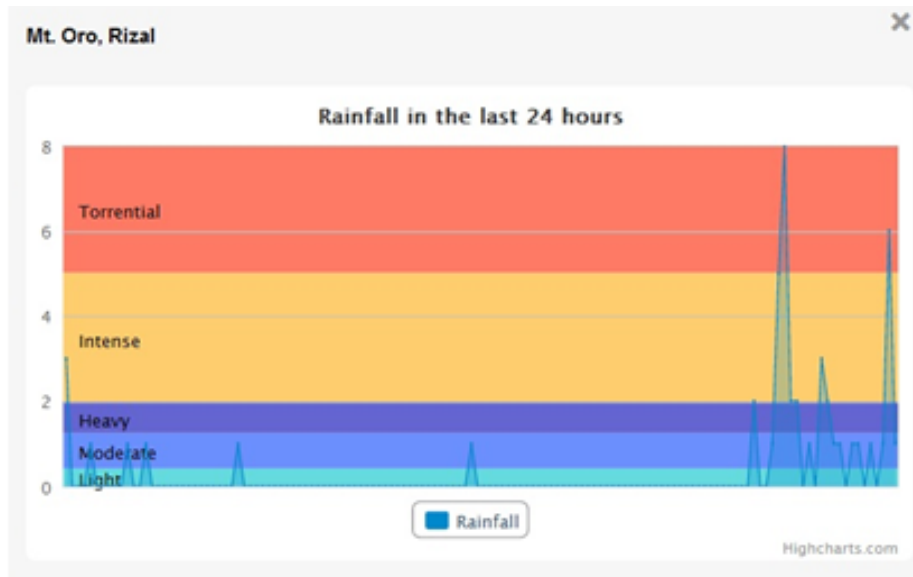
Landslide & Geohazards Mapping

Storm Surge Inundation Mapping

Disaster Management Using WebGIS

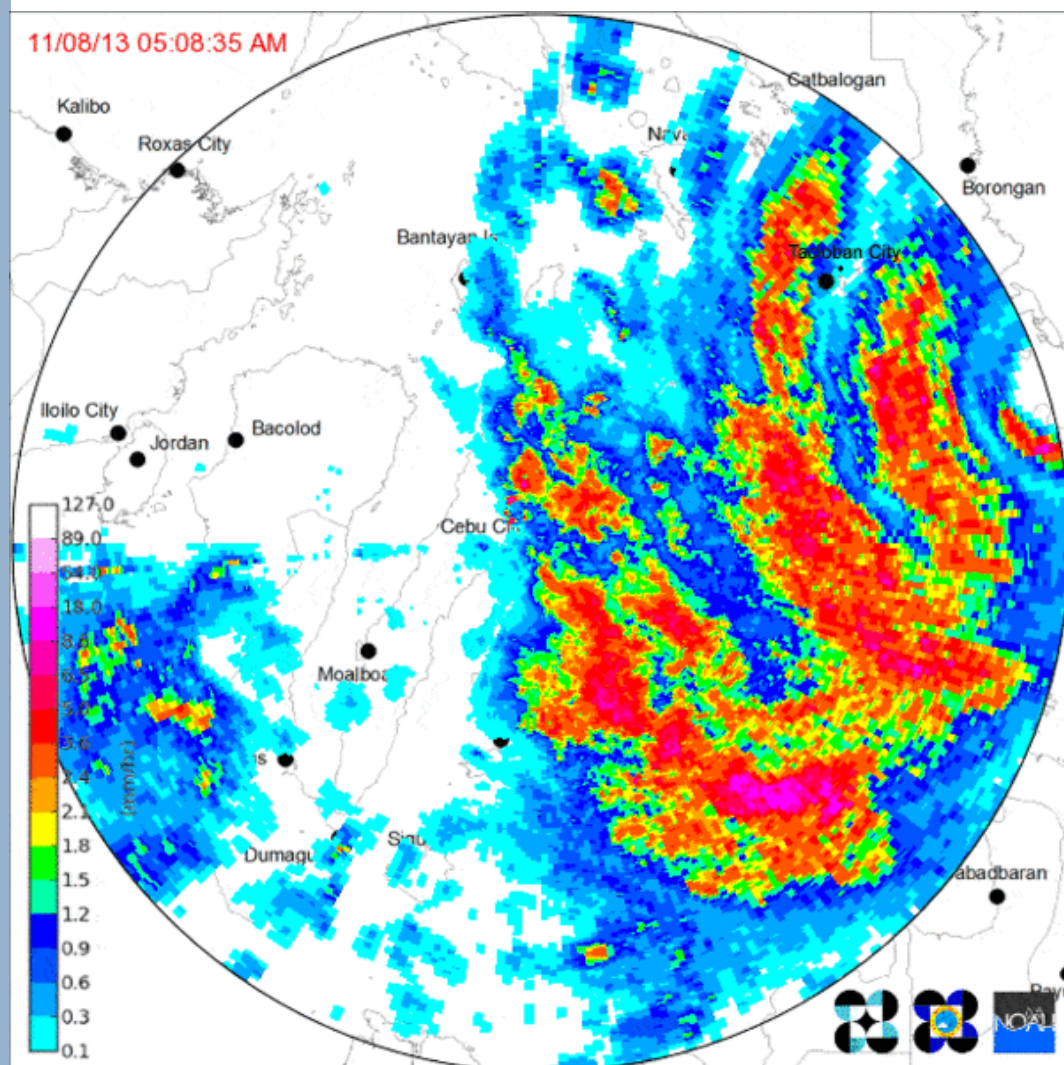
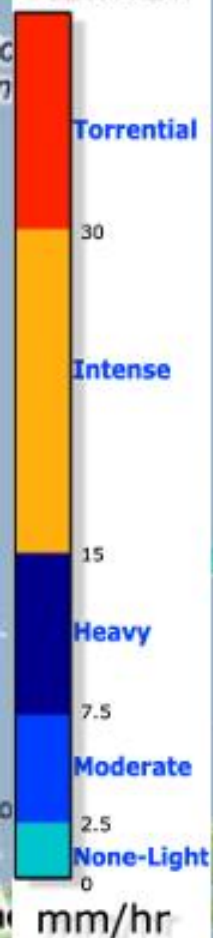


More than 1000
Automated Weather
Stations,
Rain Gauges and
Water Level Sensors



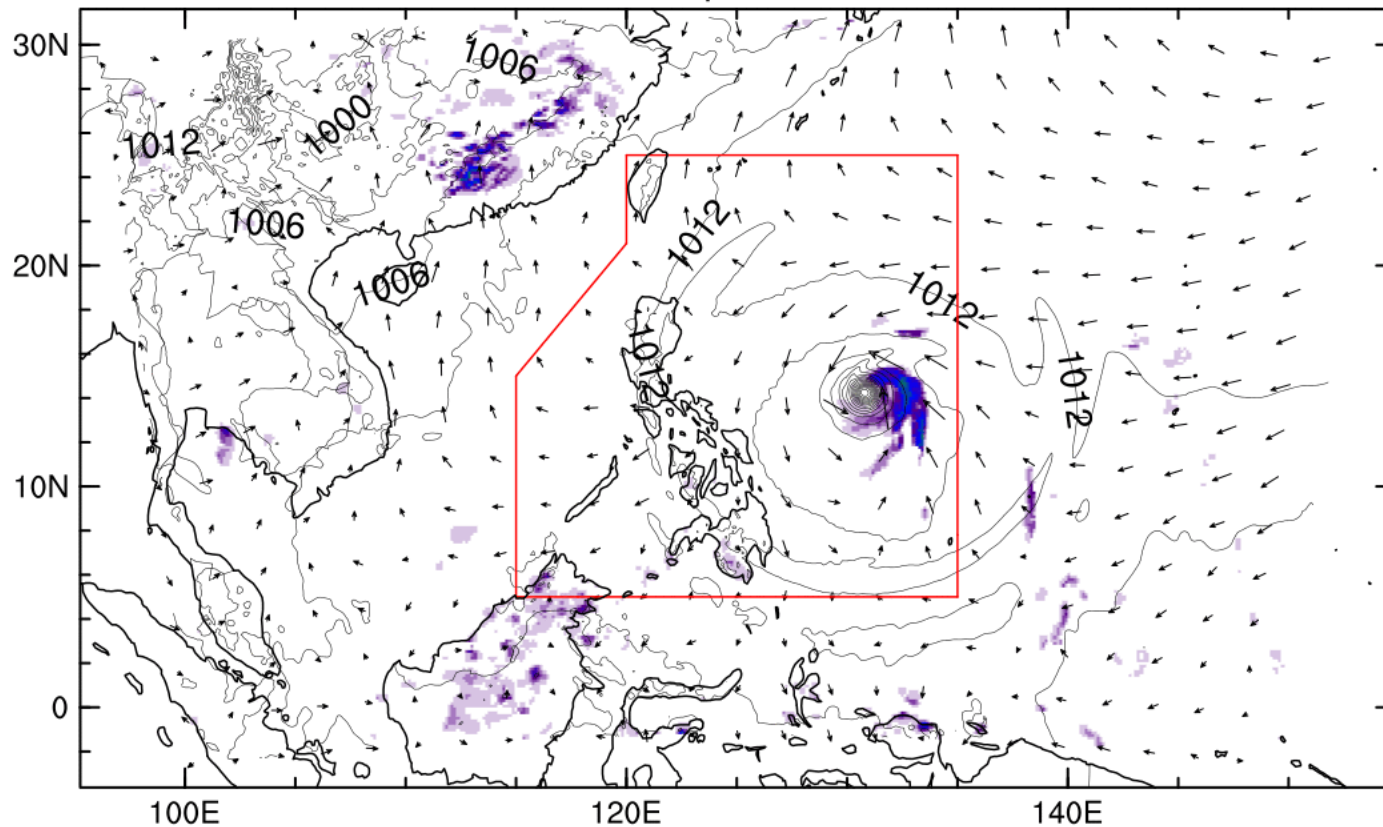
As of 30-Jun-2013 04:50 AM
176 stations are updated

Rainfall



Apr 03 2015, 09 AM (WRF)

Initialized on Apr 03 2015, 08 AM



Rainfall rate (mm/hr)

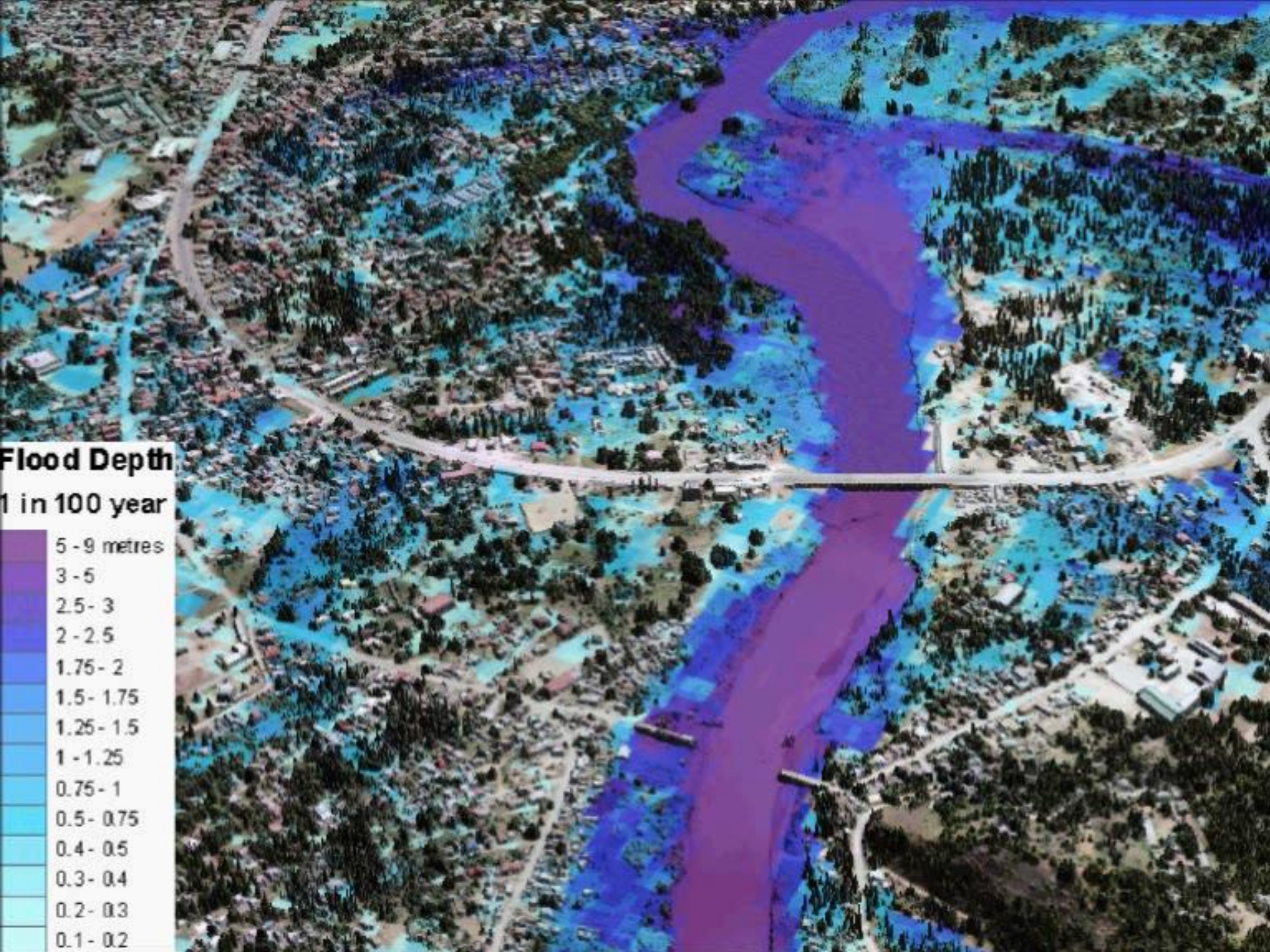


50 m/s





LiDAR Mapping



SEARCH

Enter a location

OVERVIEW

Select layer

WEATHER OUTLOOK

Select layer

DOPPLER

Select layer

WEATHER STATIONS

Select layer

FL

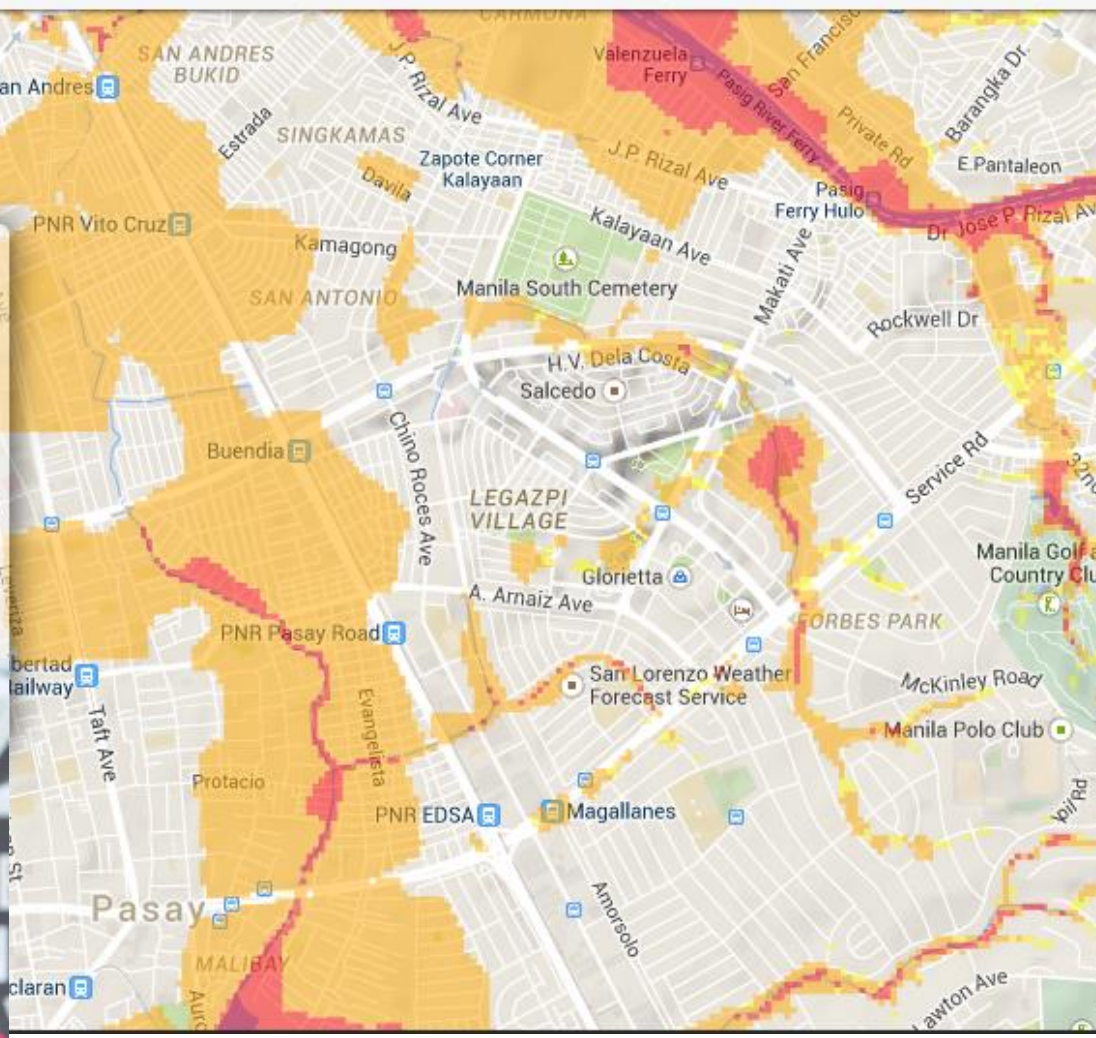
M

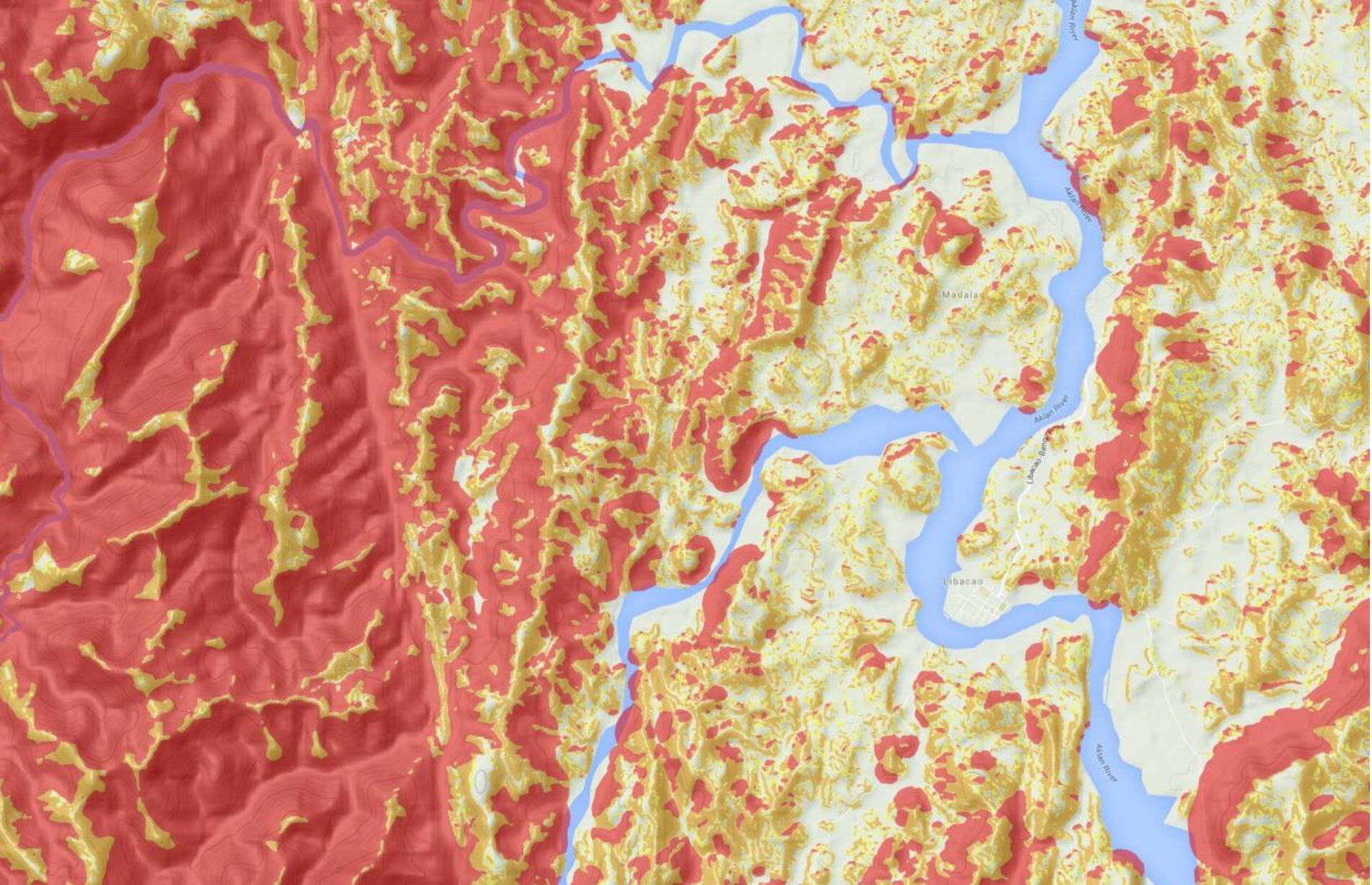


Map Legend

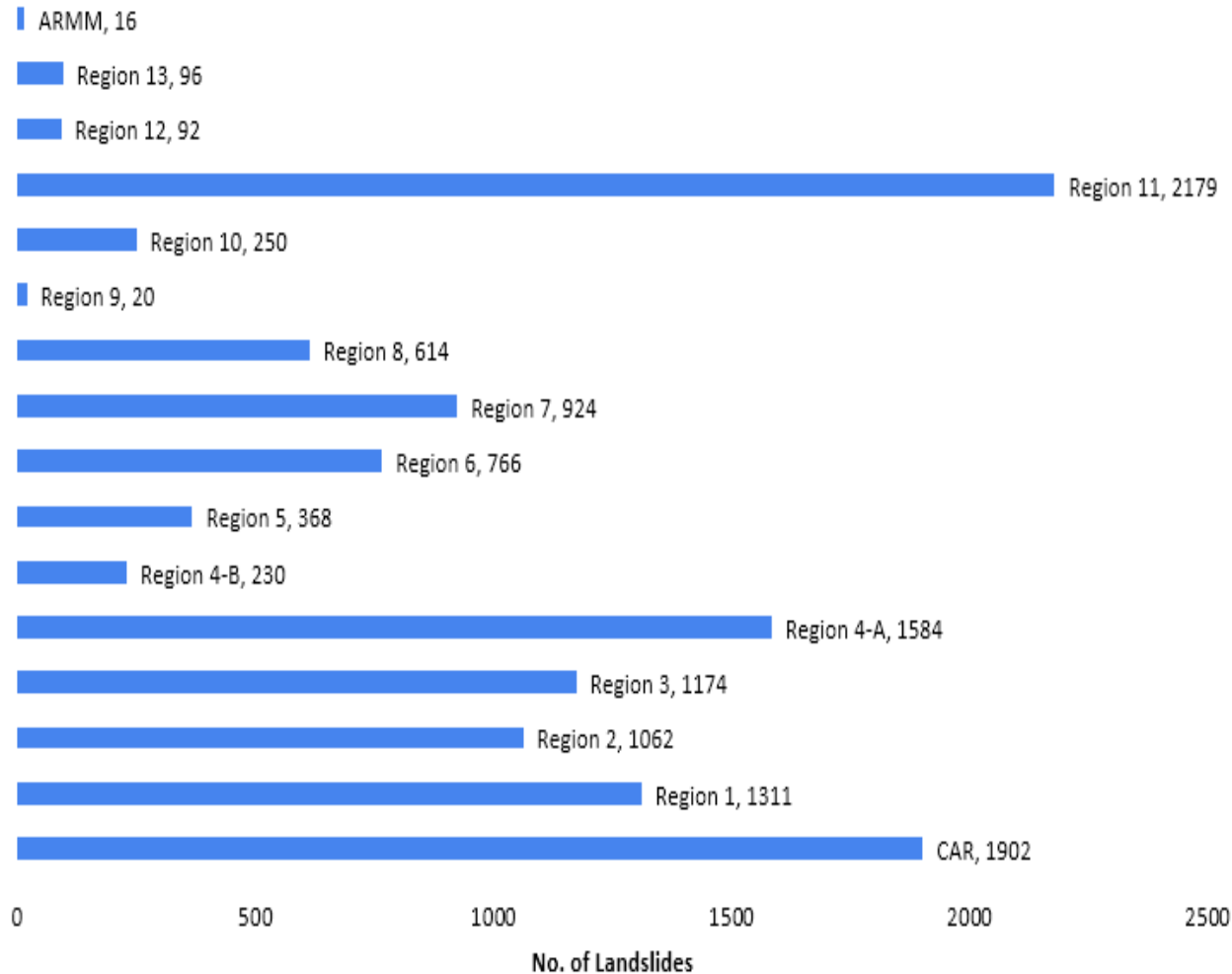
Flood Hazard

Flood Hazard Level	Water Depth
HIGH	1.3 m
MEDIUM	0.5 m
LOW	0.5 m

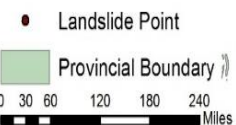


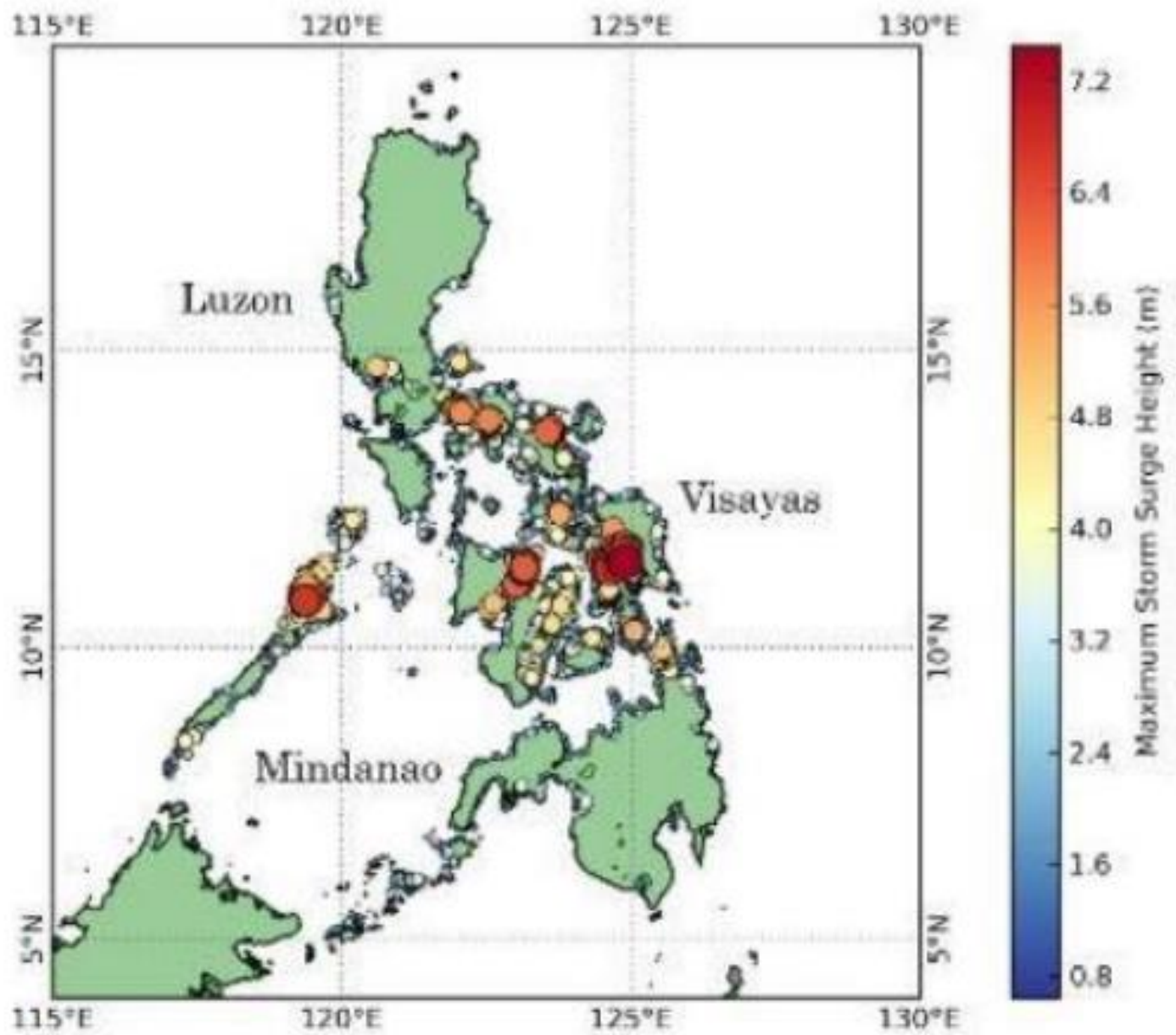


Landslide per region (as of October 1 2014)

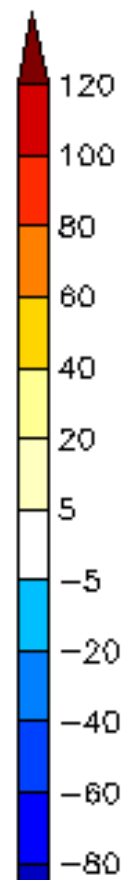
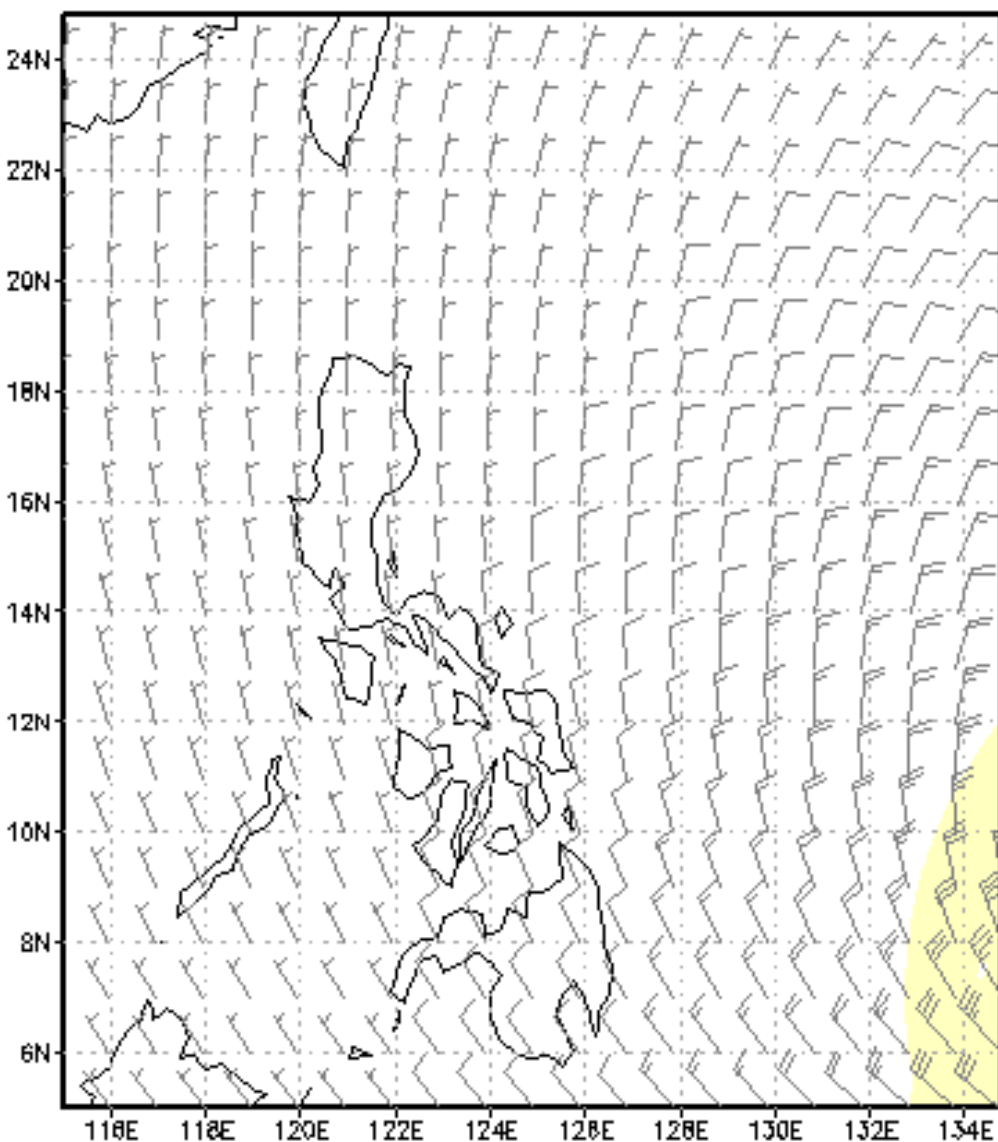


Legend





00Z06NOV2013

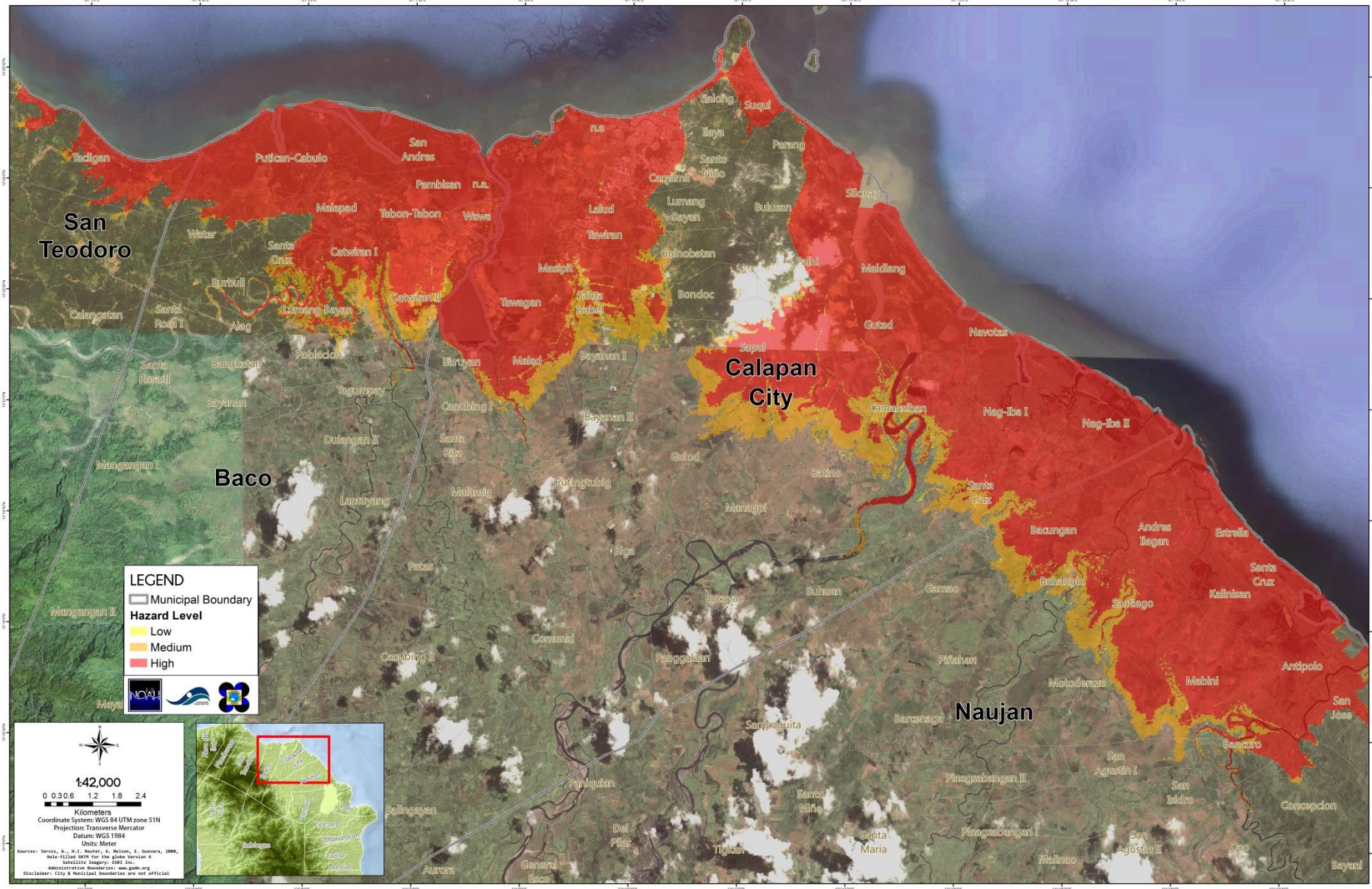


Matarinao Bay	5.3
Poro Island, Biliran Strait	4.7
Tacloban, San Juanico Strait	4.5

STORM SURGE ADVISORY NO. 3

HAZARD MAP

ORIENTAL MINDORO



Project NOAH Website

noah.dost.gov.ph

noah.dost.gov.ph



DOST - Project NOAH

YOLANDA STORM TIDE FORECAST

TOOLS

LEGEND

BLOG

ABOUT

HELP

REPORT A FLOOD

SEARCH

Enter a location

OVERVIEW

MTSAT

WEATHER OUTLOOK

PAGASA Cyclone Update

DOPPLER

Select layer

WEATHER STATIONS

Select layer

FLOOD MAP

Select layer



Project NOAH Website

beta.noah.dost.gov.ph

The screenshot displays the Project NOAH Website interface. At the top, the header includes the DOST and NOAH logos, the title "DOST - Nationwide Operational Assessment of Hazards Beta", and navigation links: "Like", "Share", "Home", "How to Cite", "About", "Blog", and "Sign In". Below the header is a search bar labeled "Find a place..." and a "Google Maps Roadmap" button. The main content area features a map of the Philippines with various locations labeled, including Luzon, Manila, Cebu, and Mindanao. On the left side, there is a vertical menu bar with icons for different hazard types. On the right side, there is a "Latest Tweets" section displaying several tweets related to weather and hazards. At the bottom, a rainfall data section shows the current rainfall rate for Zamboanga City, Baluno - Lima Elementary School as 8.2 mm/hour.

1: Header area containing logos and navigation links.

2: Latest Tweets section on the right side of the map.

3: Menu bar on the left side of the map.

4: Tool bar on the left side of the map.

5: Search bar at the top of the map.

6: Base Map area.

7: Zoom Options on the right side of the map.

8: Rainfall Data section at the bottom of the map.

Rainfall Data as of 01/22/15 05:40 PM: Zamboanga City, Baluno - Lima Elementary School : 8.2 mm/hour

1- Homepage; 2- Twitter Feed; 3- Menu Bar; 4- Tool Bar; 5- Search Bar; 6- Base Map; 7- Zoom Options; 8- Rainfall Data



Storm Surge Advisory

Region **WV**

Leyte **▼**

Tacloban City (Capit...

Yolanda **▼**

STORM SURGE HAZARD



NOTE: Administrative boundaries are not authoritative.



Rainfall Data as of 01/27/15 05:05 PM: Leyte, Leyte-Leyte Municipal Grounds: 4.2 mm/hour

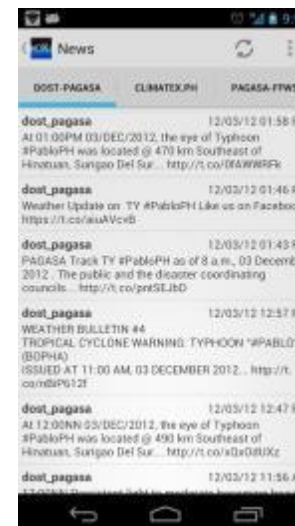
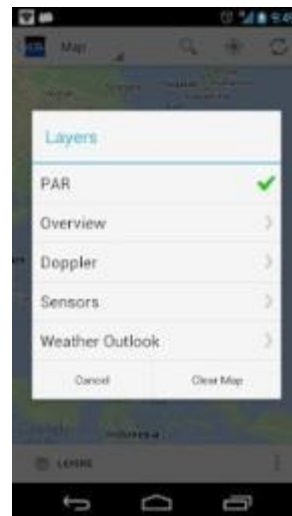
Imagery ©2015, CNES / Airbus, DigitalGlobe, Landsat | Terms of Use

HER FORECAST Issued at: 5:00 PM 27 January 20

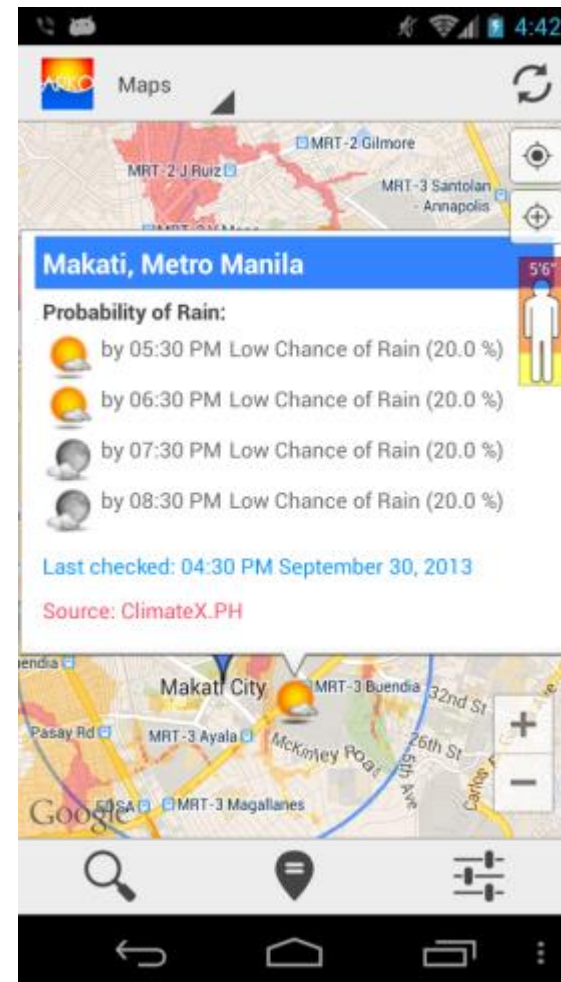
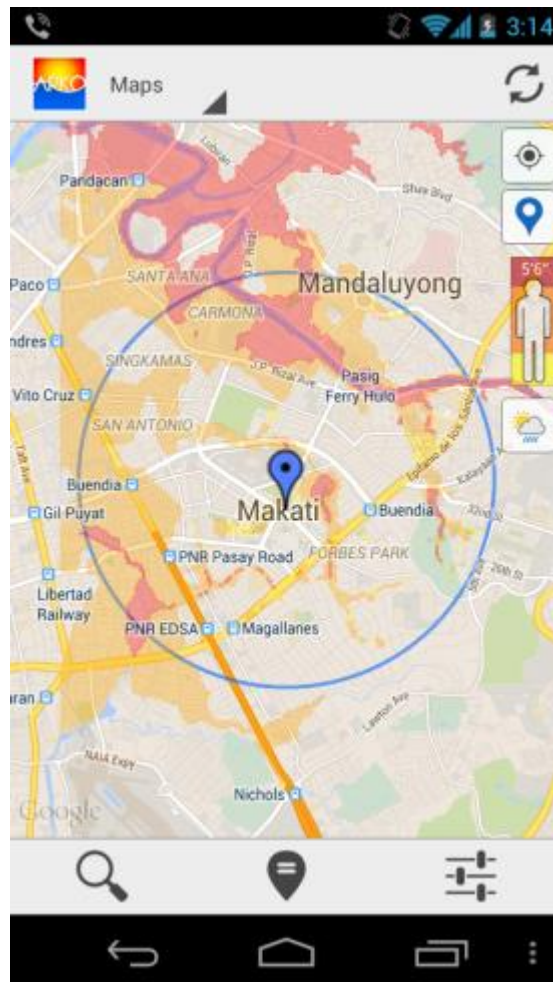
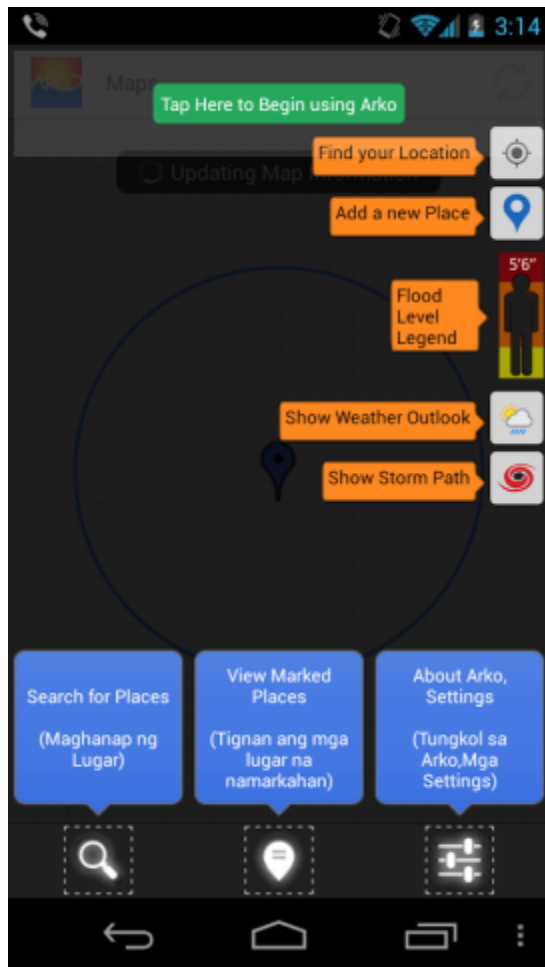
NOAH Mobile Applications



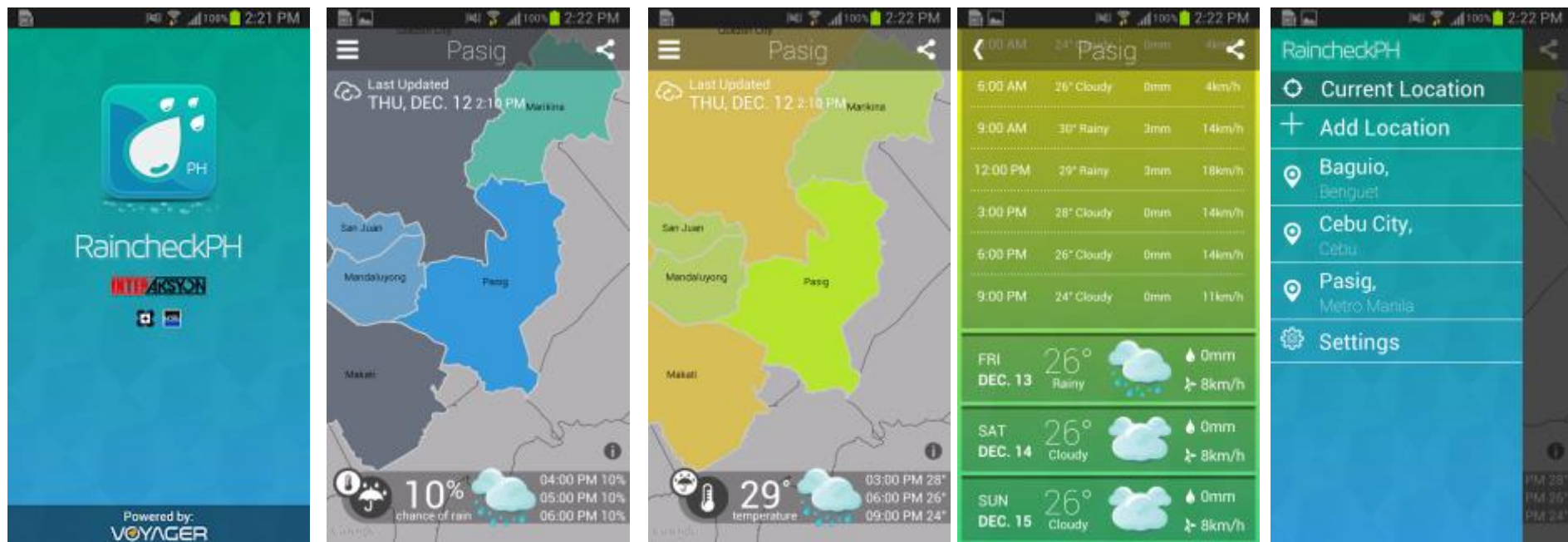
NOAH (for Android)



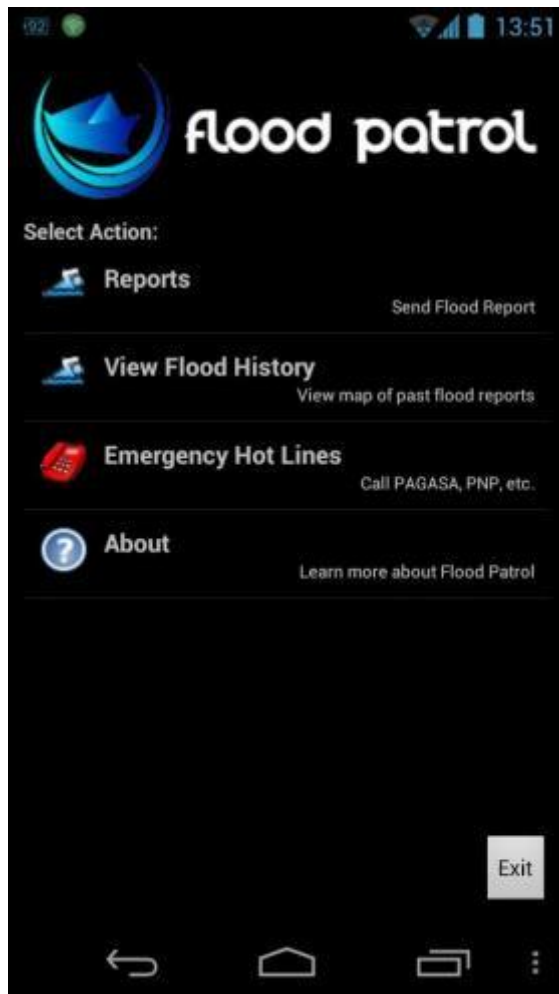
ARKO

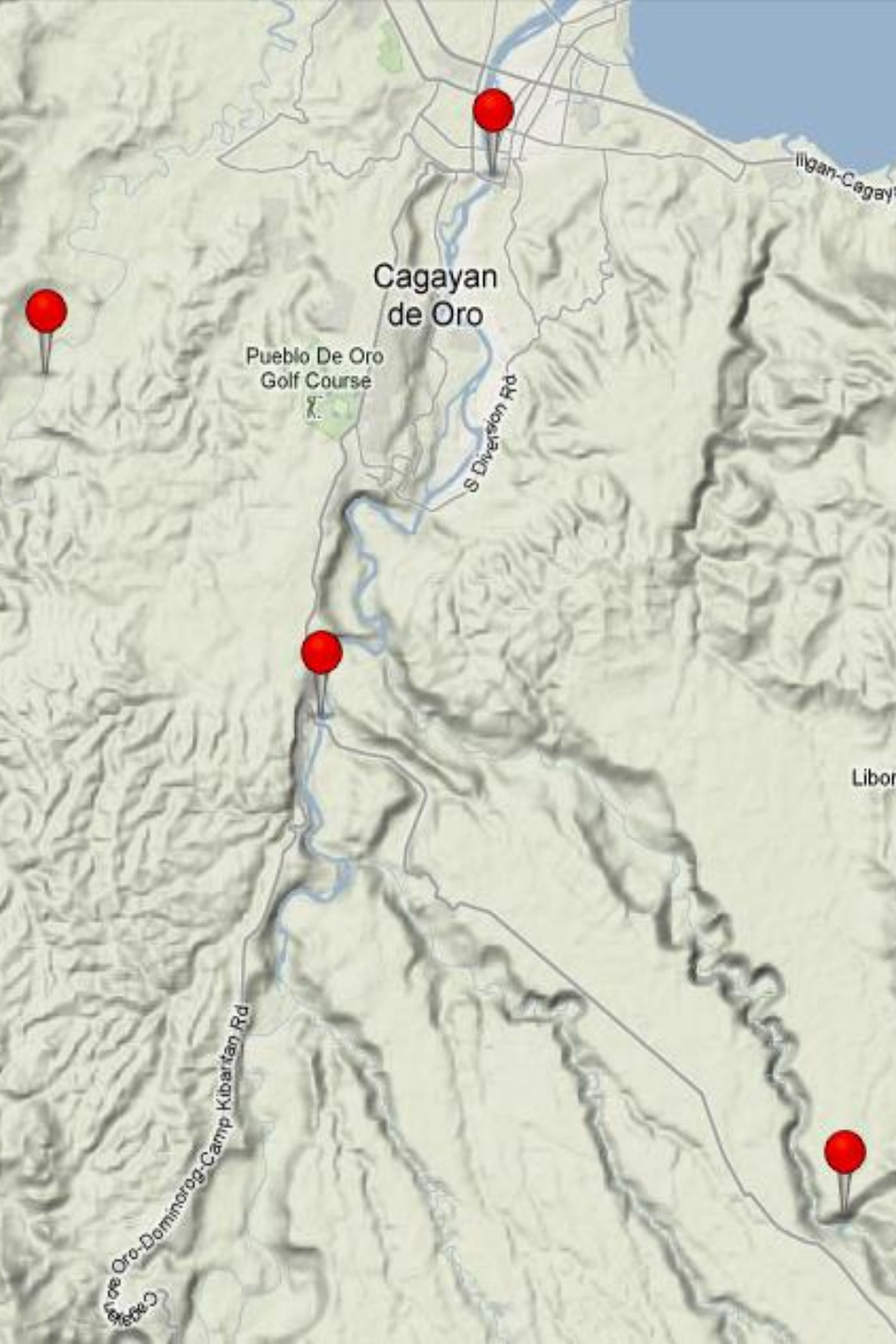


RaincheckPH

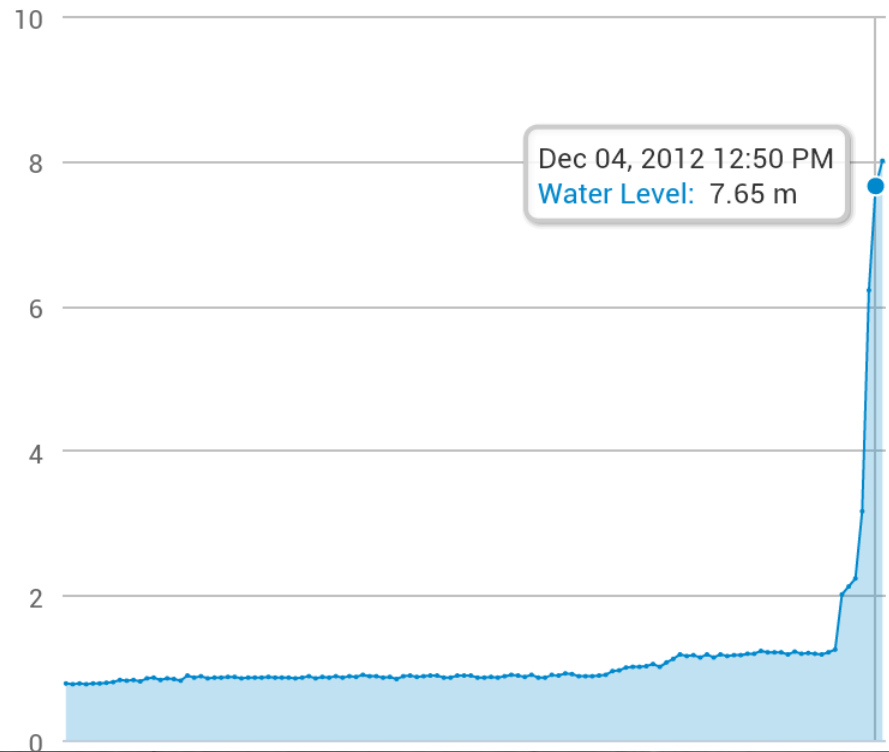


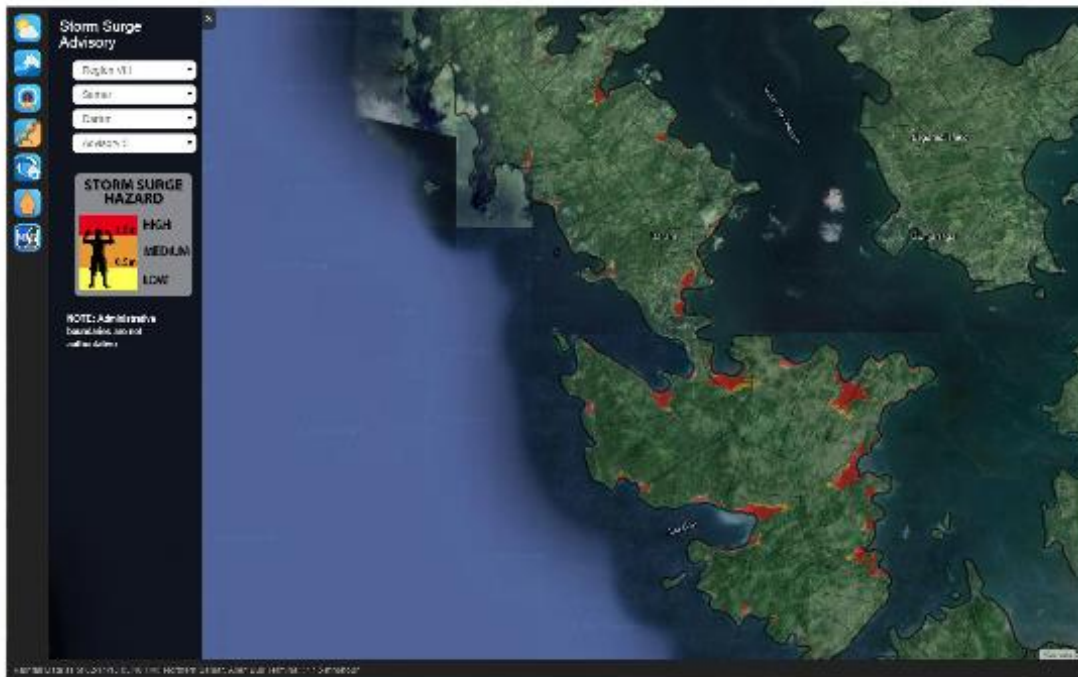
Flood Patrol





Water Level in the last 24 hours





SSA 3

Daram, Western Samar

STATISTICS

Totally damaged houses - 1,664
 Partially damaged houses - 5,773
 Damaged motorized boats - 453
 Damaged non-motorized boats - 328
 Damage infrastructure - P 34 M
 Damage in agriculture and fisheries - P62.5 M
 Social services - P 32.5 M
 Environment, tourism, arts, culture - P 11.2 M

Source: Daram MDRMO



Typhoon Ruby aftermath in Bigay, Bagacay, Daram, Samar 47 of 64

Options | Share | Send | Like



Typhoon Ruby aftermath in Bigay, Bagacay, Daram, Samar 27 of 64

Options | Share | Send | Like

WebSAFE



The image shows a screenshot of the WebSAFE web application interface. On the left side, there is a vertical column of seven icons: a sun and cloud, a wave, a volcano, a house with a fire, a person, a house with a lightning bolt, and a NOAA logo. The main content area has a dark blue background with white text. At the top, it says 'WebSAFE'. Below that, the word 'Question' is written in blue. There are three dropdown menus: 'In the event of:' with 'Quezon City' selected, 'How Many:' with 'Quezon City' selected, and 'Will:' with 'Need Evacuation' selected. Below these are two buttons: a blue 'Show Report' button and a red 'Reset' button. At the bottom, there is a paragraph of text: 'WebSAFE, an impact assessment tool based on InaSAFE, is a joint effort of Project NOAH and The World Bank.'

WebSAFE

Question

In the event of:

Quezon City

How Many:

Quezon City

Will:

Need Evacuation

Show Report

Reset

WebSAFE, an impact assessment tool based on InaSAFE, is a joint effort of Project NOAH and The World Bank.

WebSAFE allows users to calculate the number of population exposed to a particular risk such as flood hazard in question format.

For example: In the event of a 100-year flood in Quezon City, how many people (population) will need evacuation?

WebSAFE

In the event of a 100-year flooding in Quezon City, Metromanila how many people might need evacuation



Needs Evacuation:



606,000

Total Population Affected

226,000

Population in High hazard areas

197,000

Population in Medium hazard areas

184,000

Population in Low hazard areas

1,925,000

Total Population

☒ Action Checklist

- ☐ How will warnings be disseminated?
- ☐ How will we reach stranded people?
- ☐ Do we have enough relief items?
- ☐ If yes, where are they located and how will we distribute them?
- ☐ If no, where can we obtain additional relief items from and how will we transport them to here?

Needs per Week:



1,696,800

Rice [kg]



10,605,000

Drinking Water [l]



40,602,000

Clean Water [l]



121,200

Family Kits



30,300

Toilets

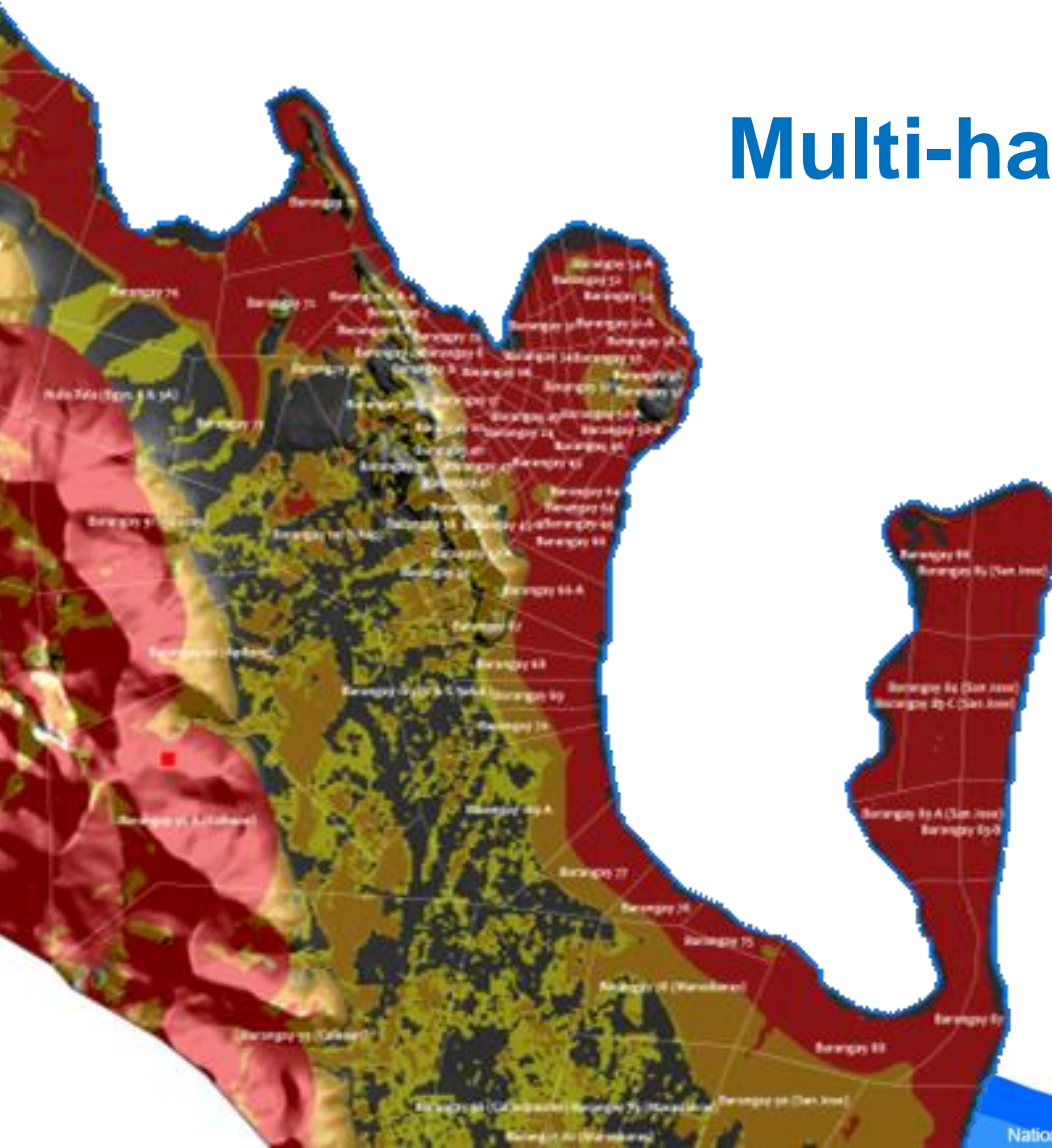
1.6

Poverty Incidence

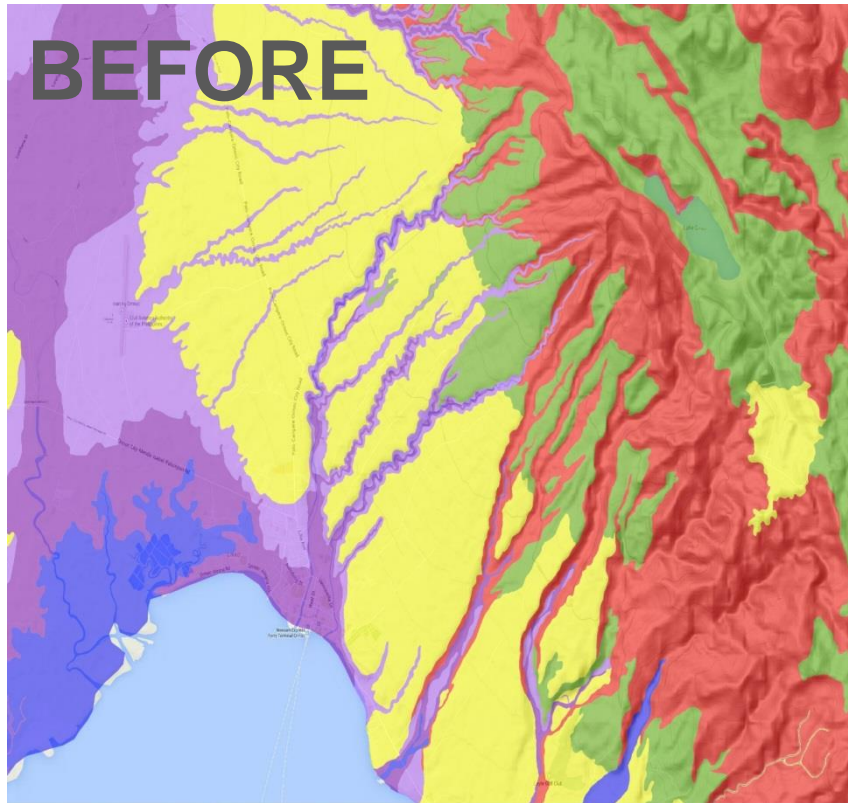
View Pdf

Close

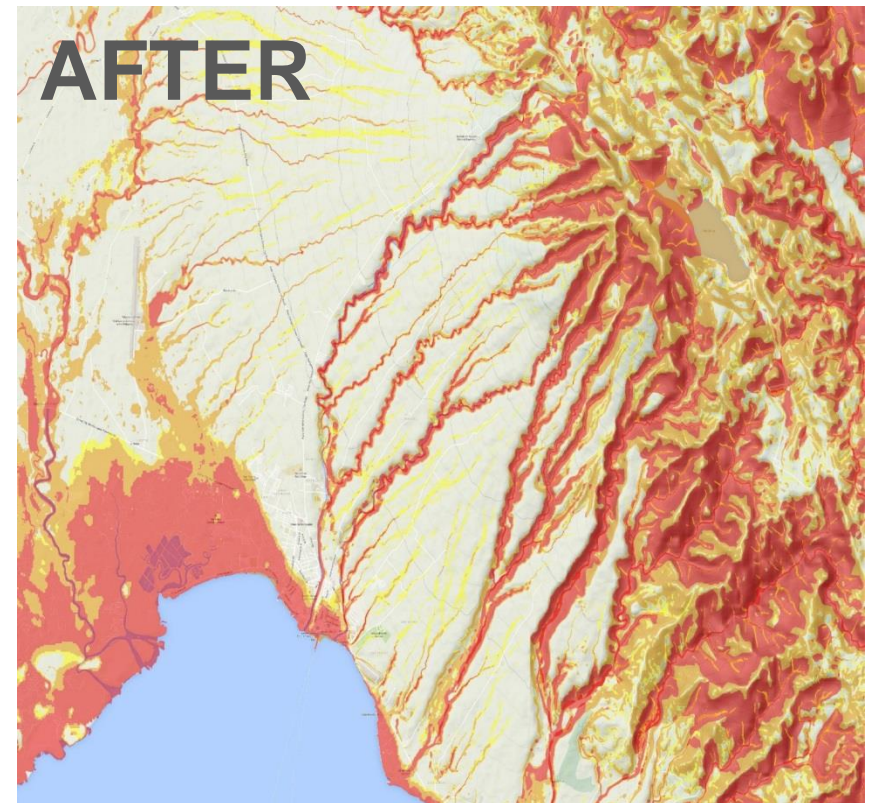
Multi-hazard Maps



Multi-hazard Maps Enhancement

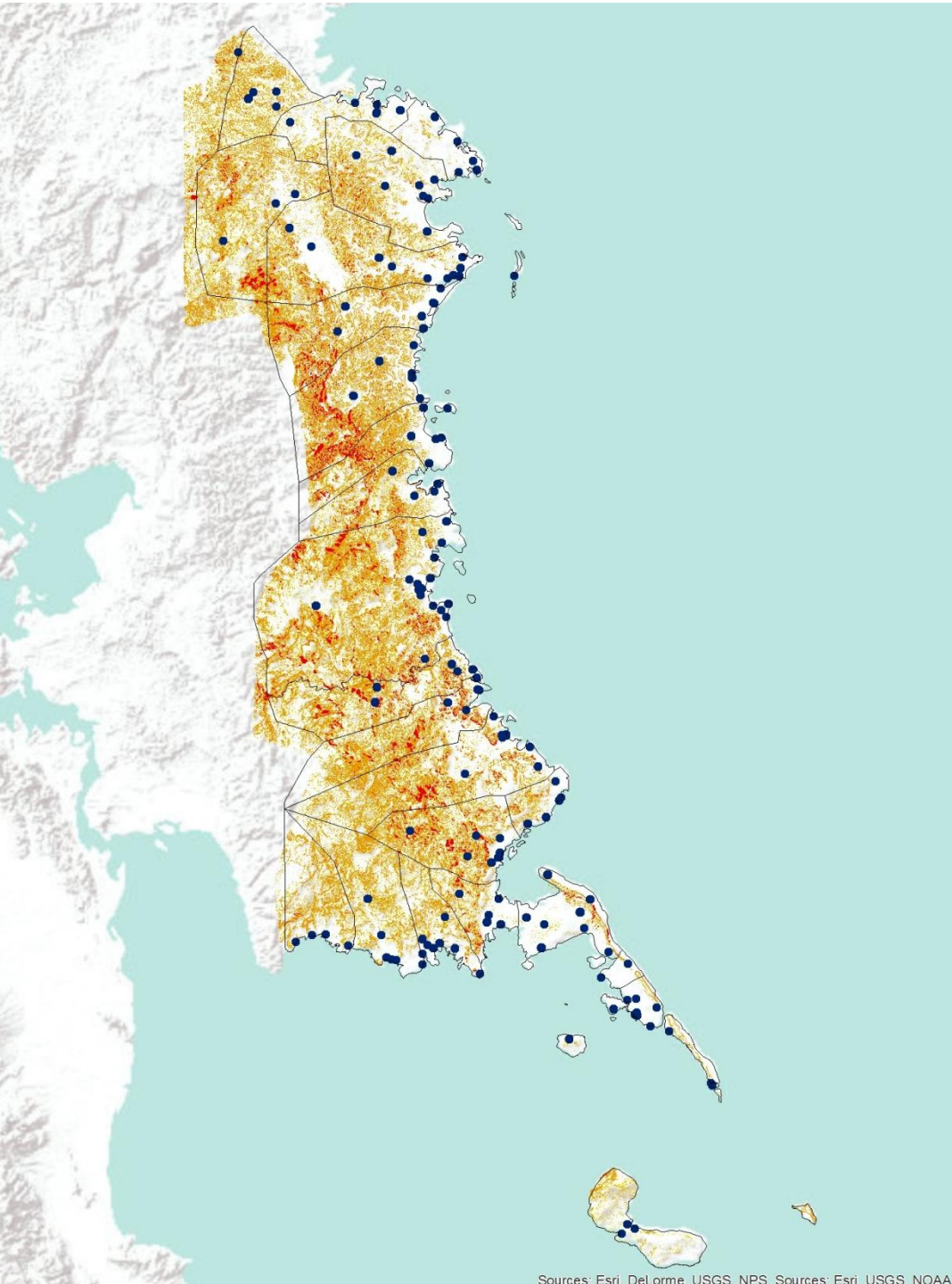


Safe Areas: 0.01%
*Based on Flood and Landslide
Hazard Maps only*



Safe Areas: 36.87%
*Based on Flood, Landslide and
Storm Surge Hazard Maps*

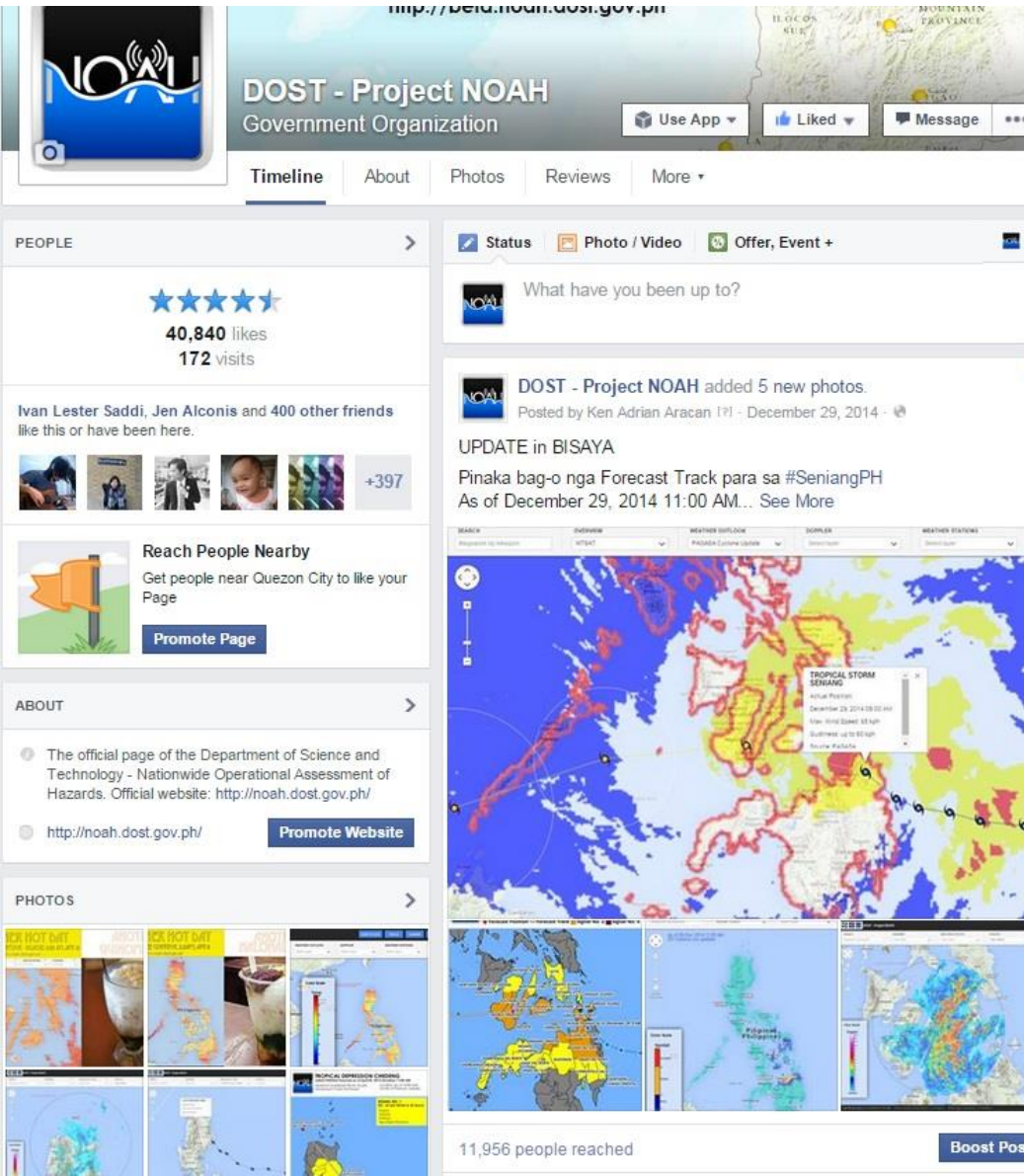
Hazard Assessment of Critical Facilities



LANDSLIDE HAZARD ASSESSMENT	NUMBER OF HEALTH FACILITIES
HIGH	2
MODERATE	15
LOW	8
SAFE	141
NO DATA	1

Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

Improving Risk Communication



DOST - Project NOAH
Government Organization

Timeline About Photos Reviews More

40,840 likes
172 visits

Ivan Lester Saddi, Jen Alconis and 400 other friends like this or have been here.

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Get people near Quezon City to like your Page
[Promote Page](#)

ABOUT

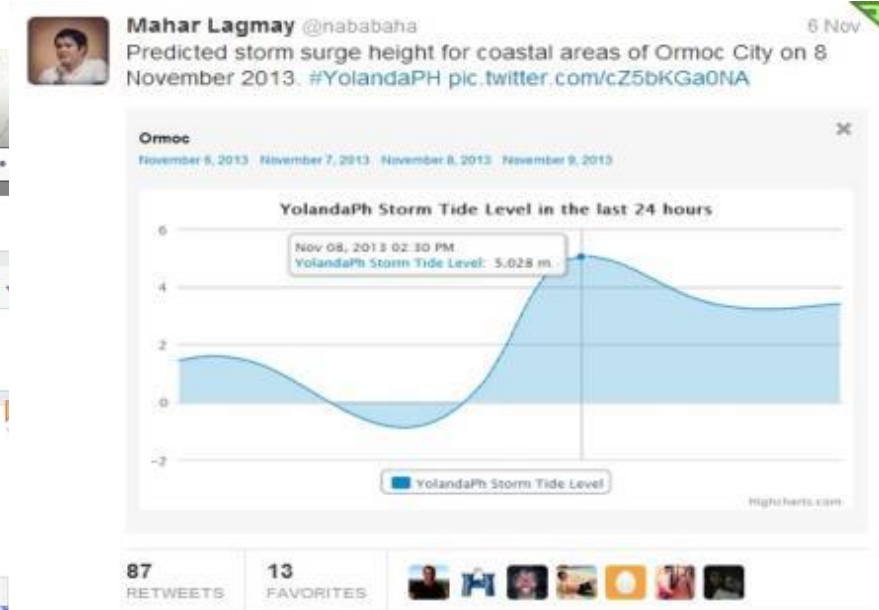
The official page of the Department of Science and Technology - Nationwide Operational Assessment of Hazards. Official website: <http://noah.dost.gov.ph/>

<http://noah.dost.gov.ph/> [Promote Website](#)

PHOTOS

11,956 people reached

[Boost Post](#)



Maraming Salamat po!

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