



# CAP in the Philippines

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Philippine Atmospheric Geophysical and Astronomical Services  
Administration (PAGASA),  
Department of Science and Technology

Lester Kim M. Lagrimas  
Rome, Italy | September 19-21, 2017



# PAGASA

Philippine Atmospheric Geophysical and Astronomical Services Administration

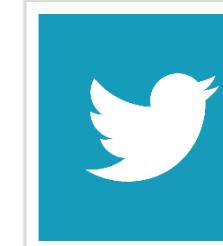
PAGASA as the National Meteorological and Hydrological Services (NMHS) of the Philippines shall be the **“authoritative”** voice in providing warnings to the public.

Mandated to provide protection against natural calamities and utilize scientific knowledge as an effective instrument.



facebook

[facebook.com/PAGASA.DOST.GOV.PH](https://www.facebook.com/PAGASA.DOST.GOV.PH)



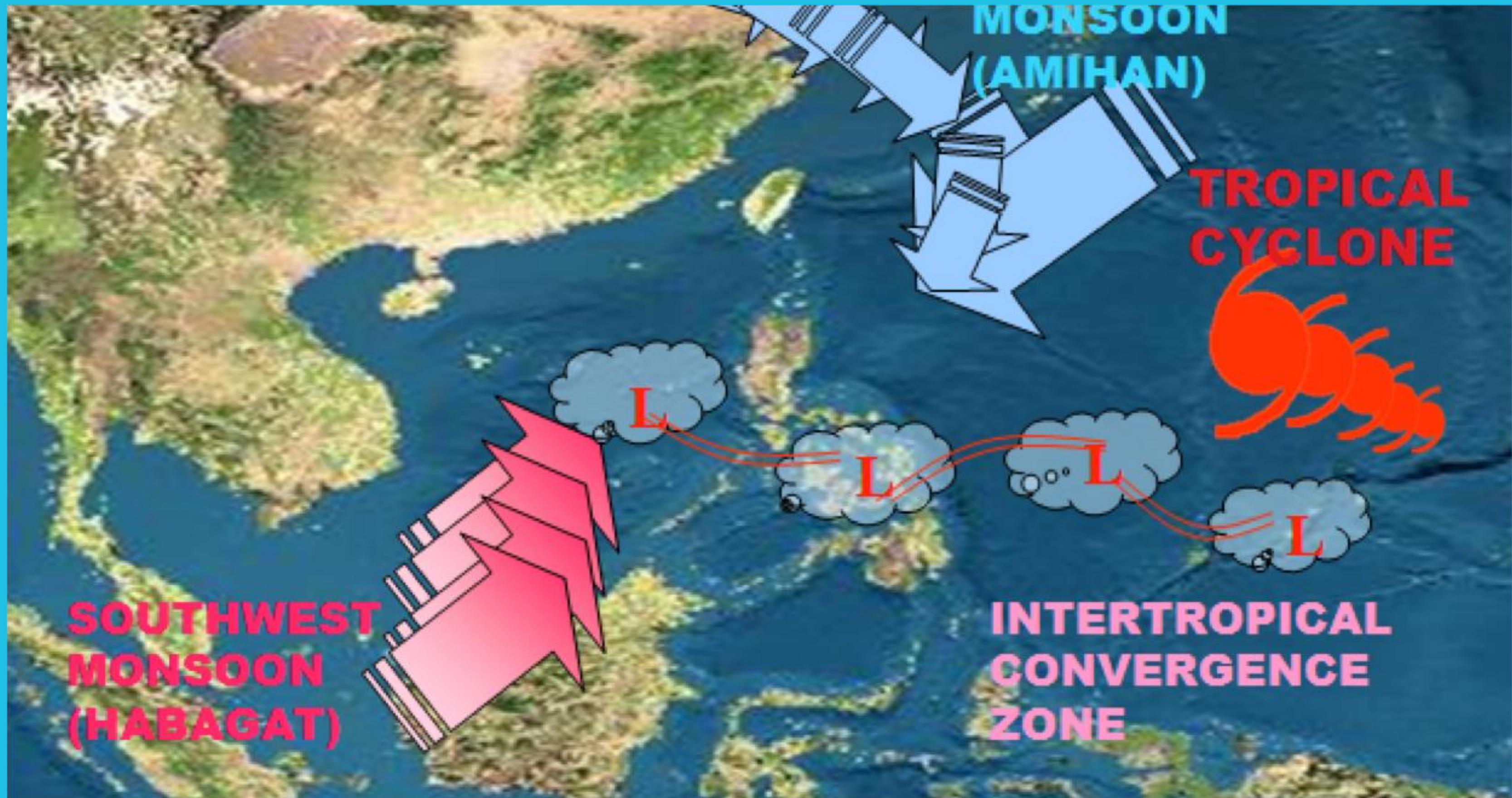
twitter

[twitter.com/dost\\_pagasa](https://twitter.com/dost_pagasa)

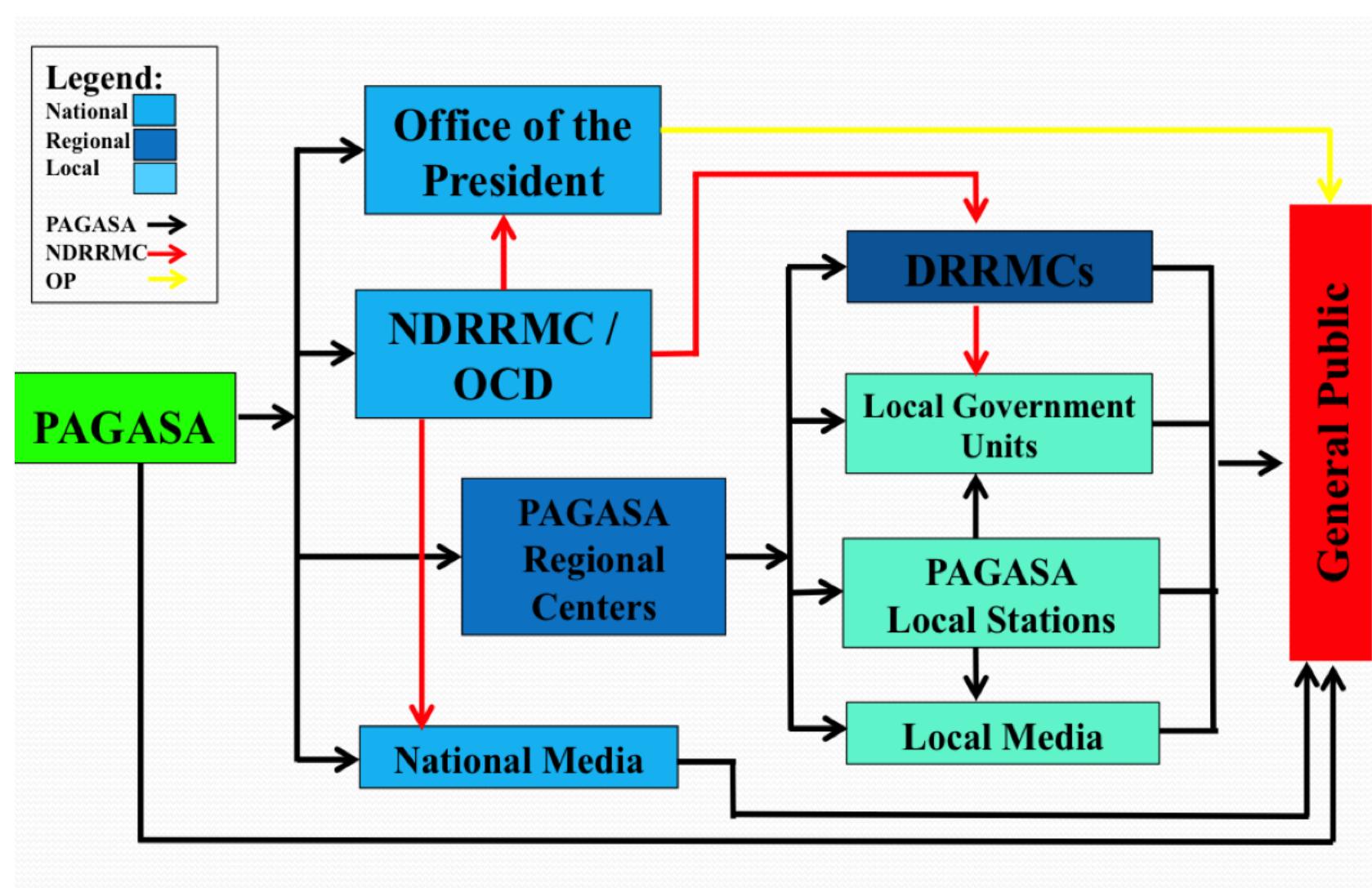


website

[www.pagasa.dost.gov.ph](https://www.pagasa.dost.gov.ph)



# Information Dissemination



**01** **Office of the President**  
General Public

**02** **NDRRMC/OCD**  
DRRMC, National Media Office of the President

**03** **PAGASA Regional Centers**  
PAGASA Local stations, LGU

**04** **National Media**  
General Public.



# CAP development and implementation

# PAGASA on WMO Alert Hub

**WMO Register of Alerting Authorities [ home ]**

OID: 2.49.0.0.608.0 WMO Member: Philippines ISO 3166: PH PHL 608

Issuing Organization: Philippine Atmospheric Geophysical and Astronomical Services Administration

Hazard Categories: Met

Authorization Basis: As a matter of policy, the agency provides typhoon alerts and warnings which is provided to Disaster Risk Redi Offices and the public through media and web portals and related warning institution.

CAP Feed URL: <http://publicalert.pagasa.dost.gov.ph/feeds/>

Forecasts URL: <http://www.worldweather.org/021/m021.htm>

Alerting Area (NWSE): 19 117 5 127

**Map view of the typical area for this alerting authority.**  
125.19336, 17.90405

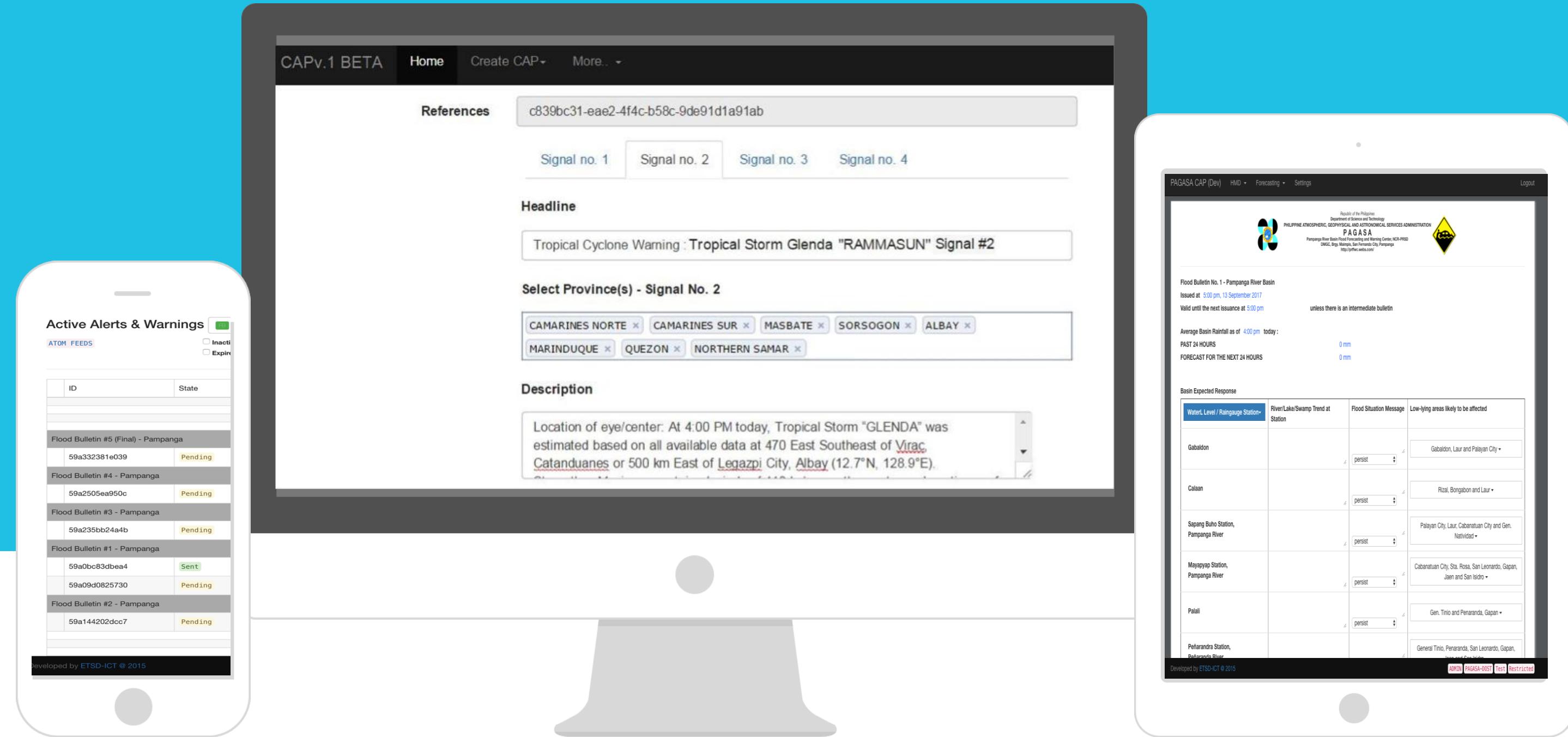
**Hazard Categories**

- Geo:** Geophysical (earthquakes, volcanoes, tsunami, etc., includes landslide)
- Met:** Meteorological (weather, storms, etc. includes flood)
- Safety:** General emergency and public safety
- Security:** Law enforcement, military, homeland and local/private security
- Rescue:** Rescue and recovery
- Fire:** Fire suppression and rescue
- Health:** Medical and public health
- Env:** Pollution and other environmental
- Transport:** Public and private transportation
- Infra:** Utility, telecommunication, other non-transport infrastructure
- CBRNE:** Chemical, Biological, Radiological, Nuclear or High-Yield Explosive threat or attack
- Other:** Other events

## About 3 years ago...

PAGASA registered its first CAP Feed URL containing Tropical Cyclone Alert and Tropical Cyclone Warning initiated by Google Partnership

RSS Feed URL: <http://publicalert.pagasa.dost.gov.ph/feeds/>



## In-House development

ICT developed a web application to generate CAP alerts using the ff. software libraries, validator and documentation.



google.org Common Alerting Protocol Validator



# CAP Tool Objective

PAGASA CAP   HMD   Forecasting   Settings



Republic of the Philippines  
 Department of Science and Technology  
 PHILIPPINE ATMOSPHERIC, GEOPHYSICAL AND  
 ASTRONOMICAL SERVICES ADMINISTRATION (PAGASA)  
 PAGASA Science Garden, Agham Road, Diliman, Quezon City 1100

General Flood Advisory	1	Issuance Number
For	NCR (National Capital Region)	
Issued at	6:00 pm, 24 September, 2015	
Valid until the next issuance at	6:00 pm tomorrow	

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**PRESENT WEATHER :**

**FORECAST 24 - HR RAINFALL :**

**WATERCOURSES LIKELY TO BE AFFECTED :**

**METRO MANILA** [remove](#)

All rivers and streams in Metro Manila.

- Select Province -

**PUBLIC WARNINGS :**

People living near the mountain slopes and in the low lying areas of the above mentioned river systems and the Local Disaster Risk Reduction and Management Councils concerned

are advised to take necessary precautionary measures.

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Prepared by :

Initials

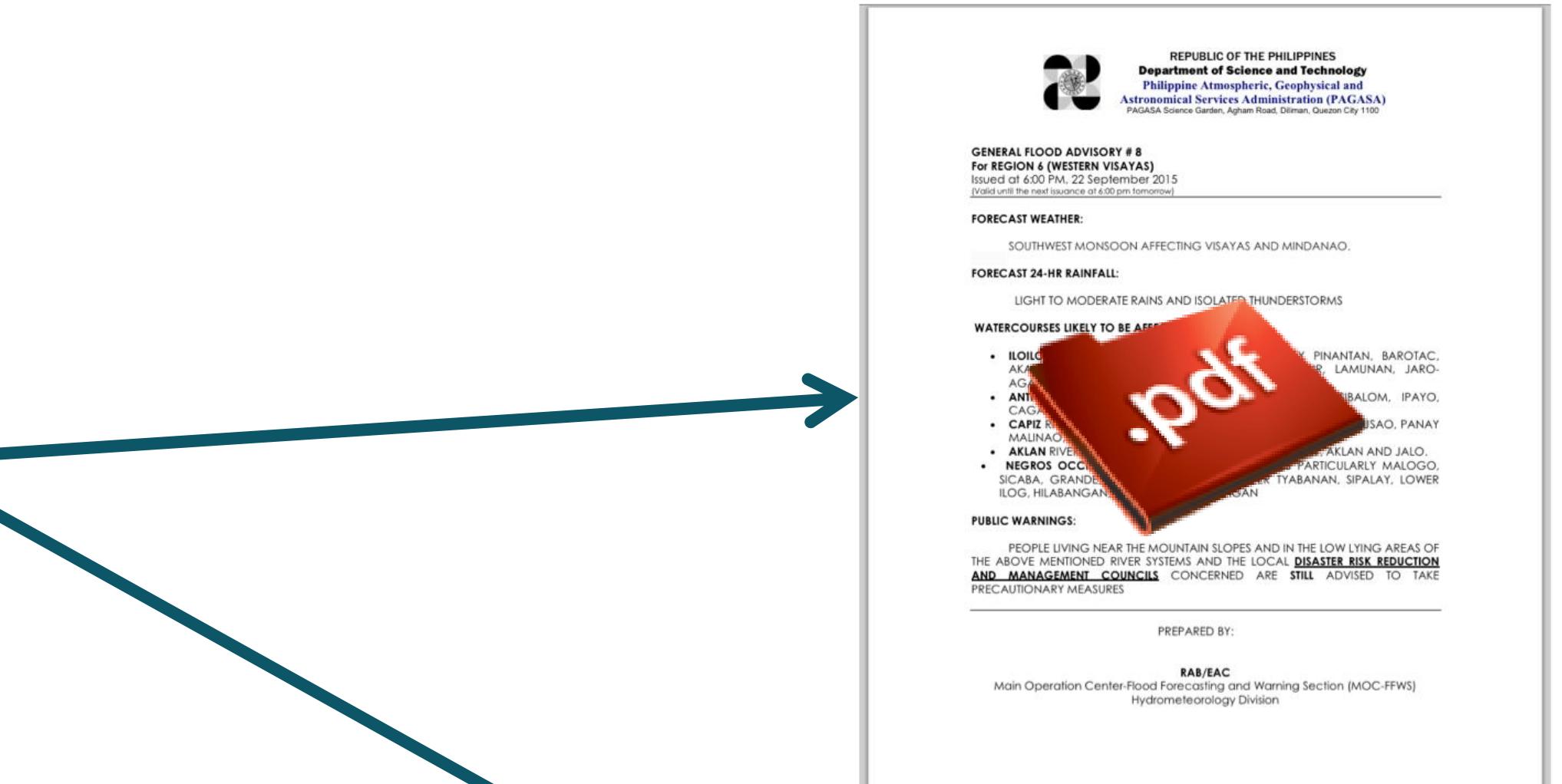
Duty Hydrologists

[HMDGFA](#)

[PAGASA-DOST](#)

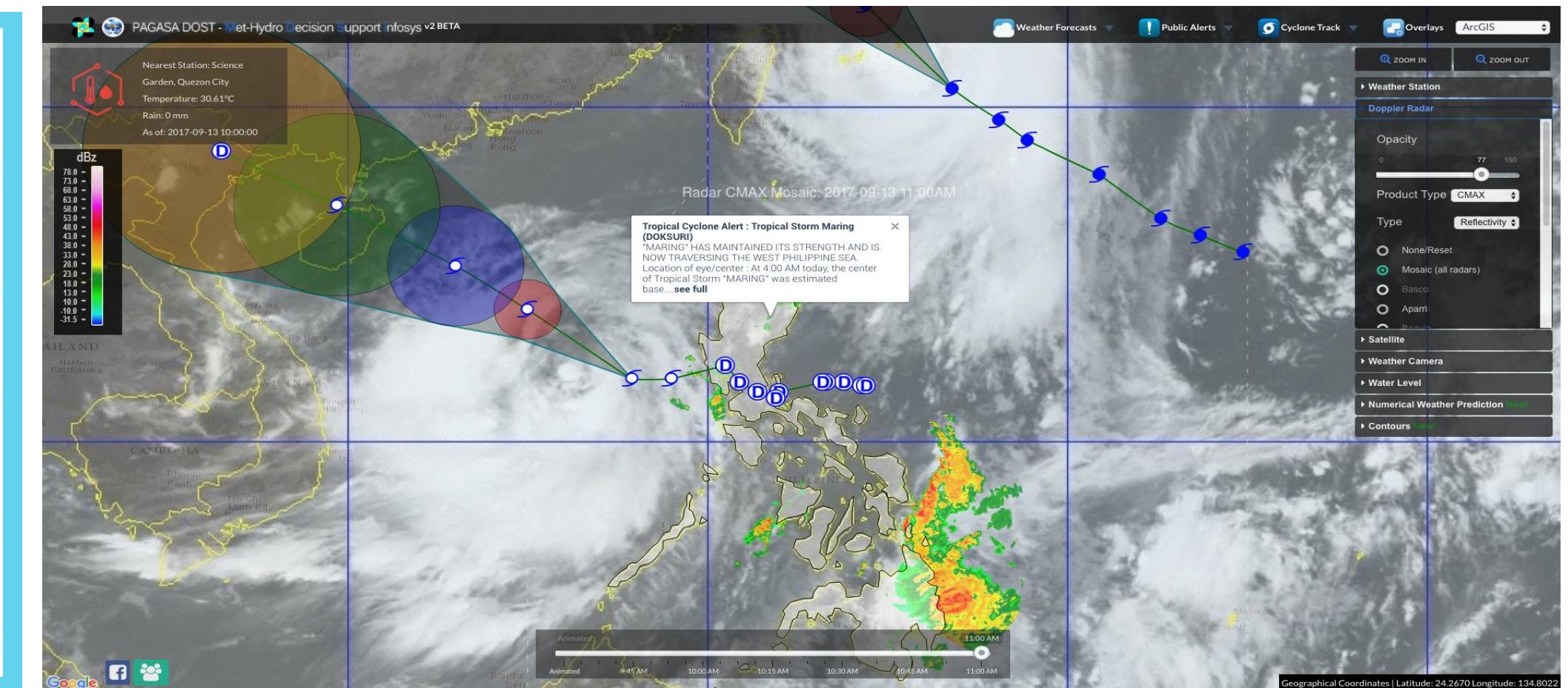
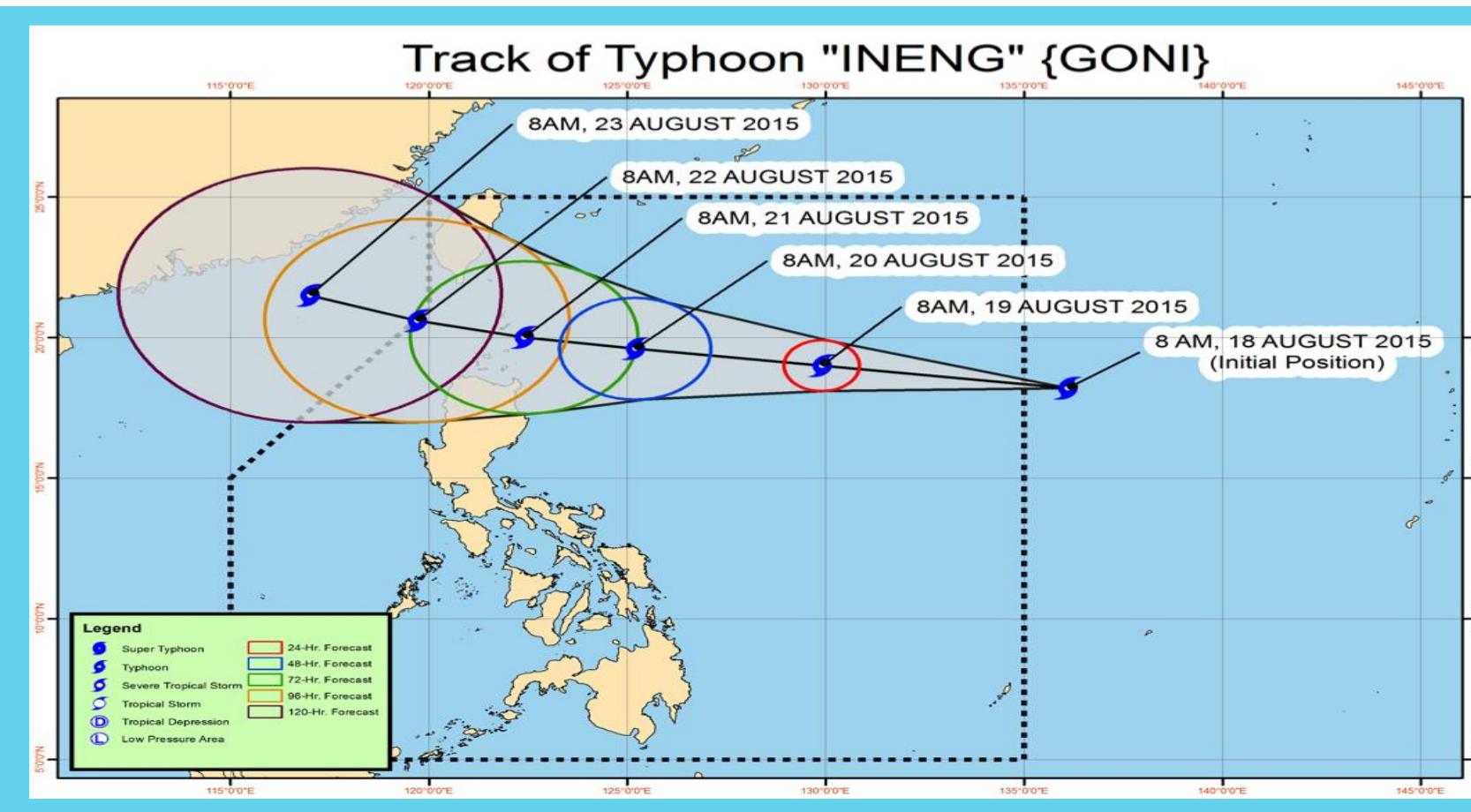
[Actual](#)

[Public](#)



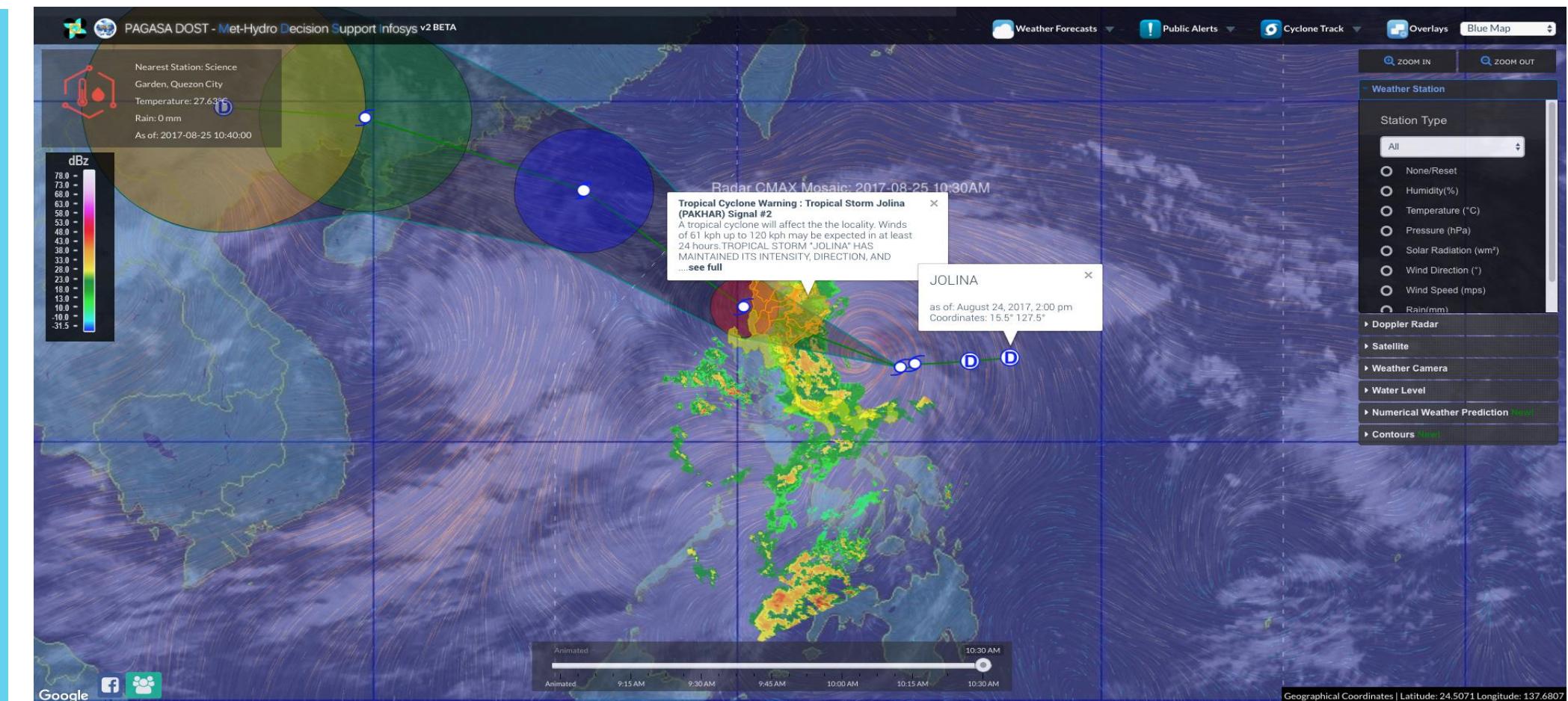
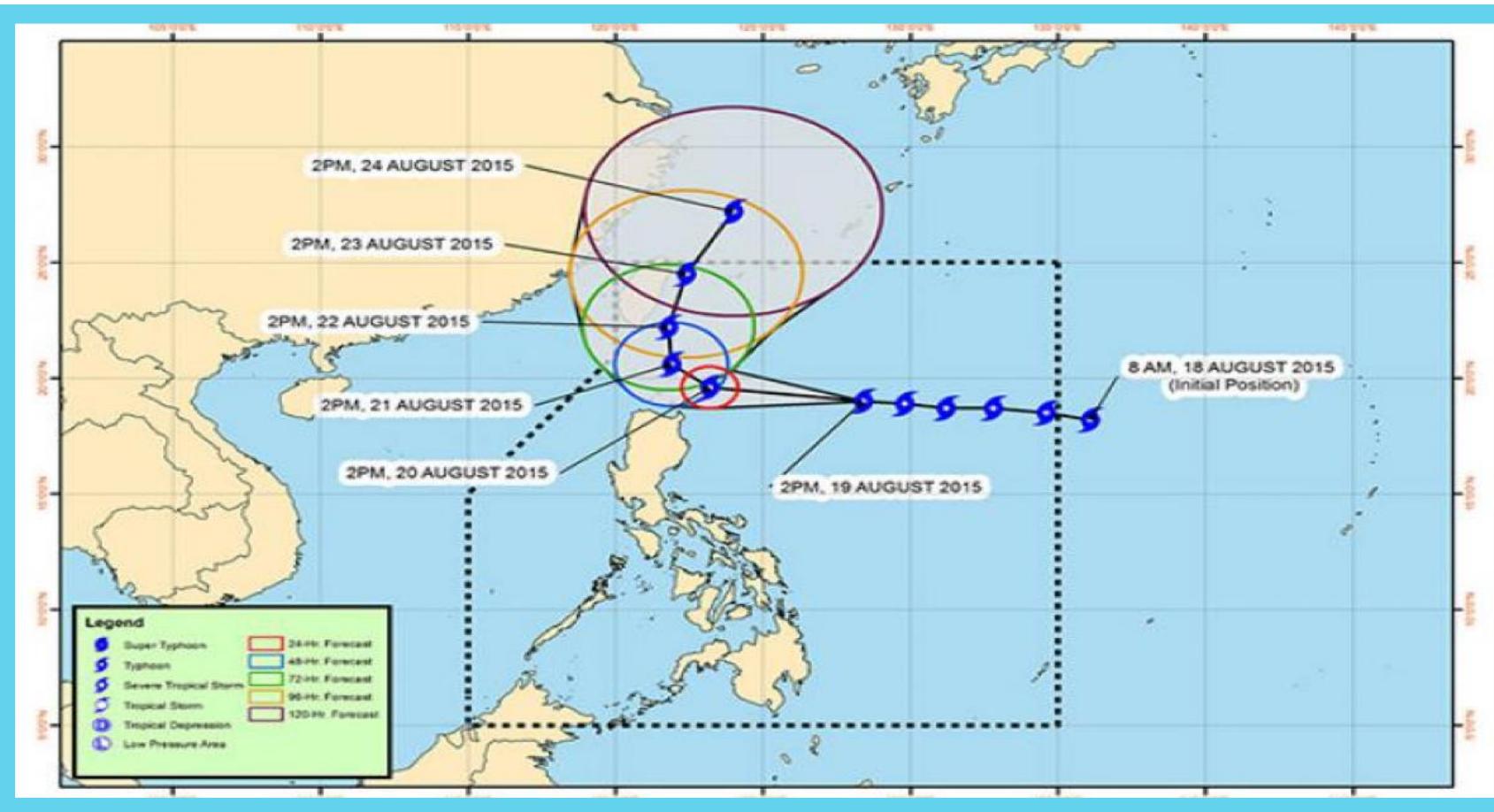
The main objective of our CAP system is to address our existing process and new CAP alerts with one application at the same time.

# Tropical Cyclone Alert



TCA is generated when a typhoon is already inside the Philippine Area of Responsibility (PAR) but no signal yet was given on any city or region.

# Tropical Cyclone Warning



TCW is generated when a typhoon is already affecting land part of the Philippines and an active signal or warning level is in effect. Currently, Philippines have 5 categories of typhoon signals.

# General Flood Advisory

**Public Alerts**

**General Flood Advisory**

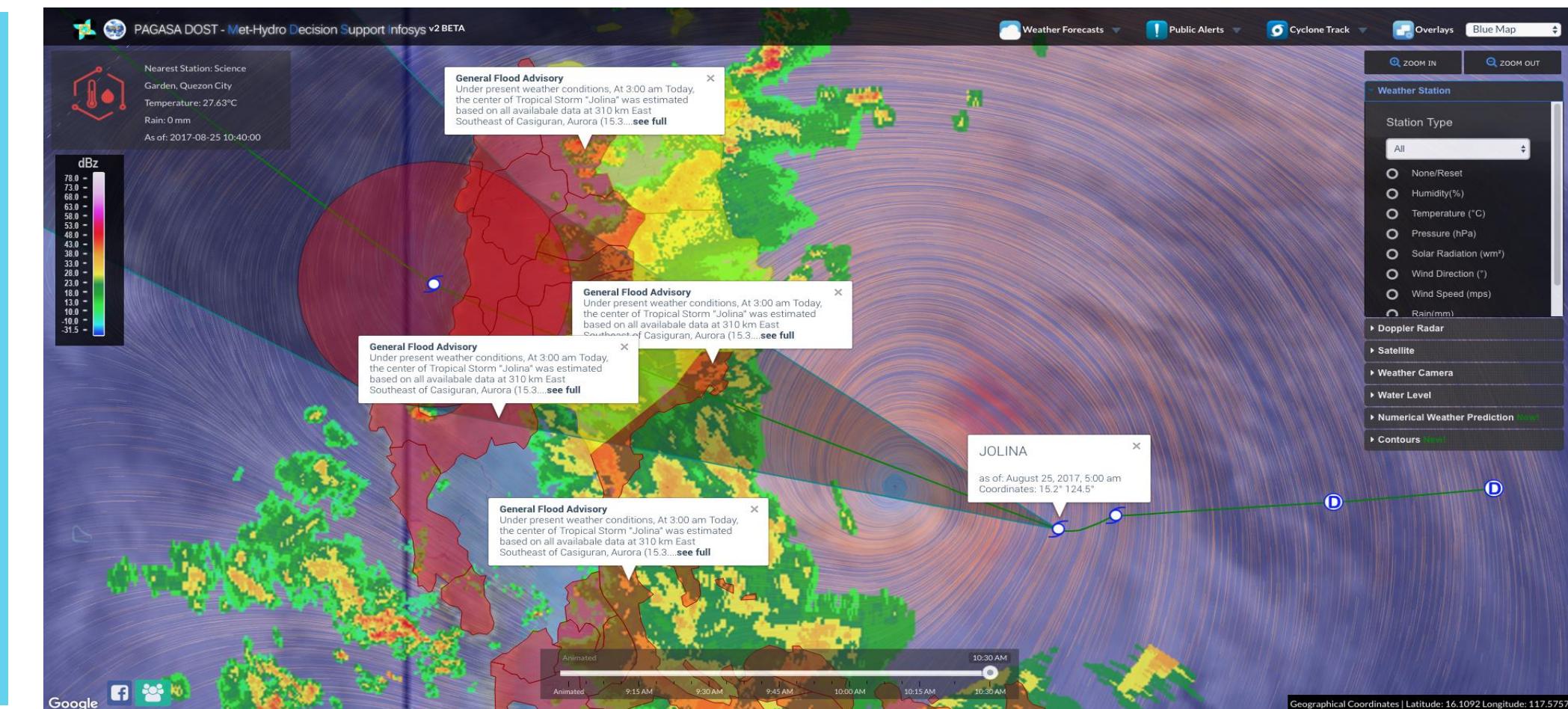
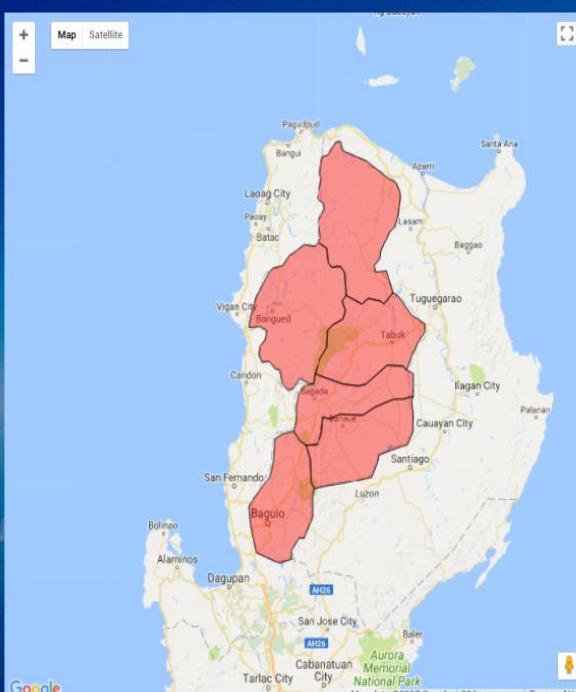
Under present weather conditions, At 3:00 am Today, the center of Tropical Storm "Jolina" was estimated based on all available data at 310 km East Southeast of Casiguran, Aurora (15.3°N, 124.8°E) with maximum sustained winds of 65 km/h near the center and gustiness of up to 80 km/h. It is forecast to move west northwest at 19 km/h. The 24 hour rainfall forecast is light to moderate rains and thunderstorms. Water courses likely to be affected :

- + Apayao - Rivers and its tributaries particularly Upper Abulug.
- + Abra - Rivers and its tributaries particularly Upper Abra, Tineg and Ikrmin.
- + Benguet - Rivers and its tributaries particularly Upper Bauang.
- + Kalina - Rivers and its tributaries
- + Ifugao - Rivers and its tributaries
- + Mountain Province - Rivers and its tributaries

**Instruction**

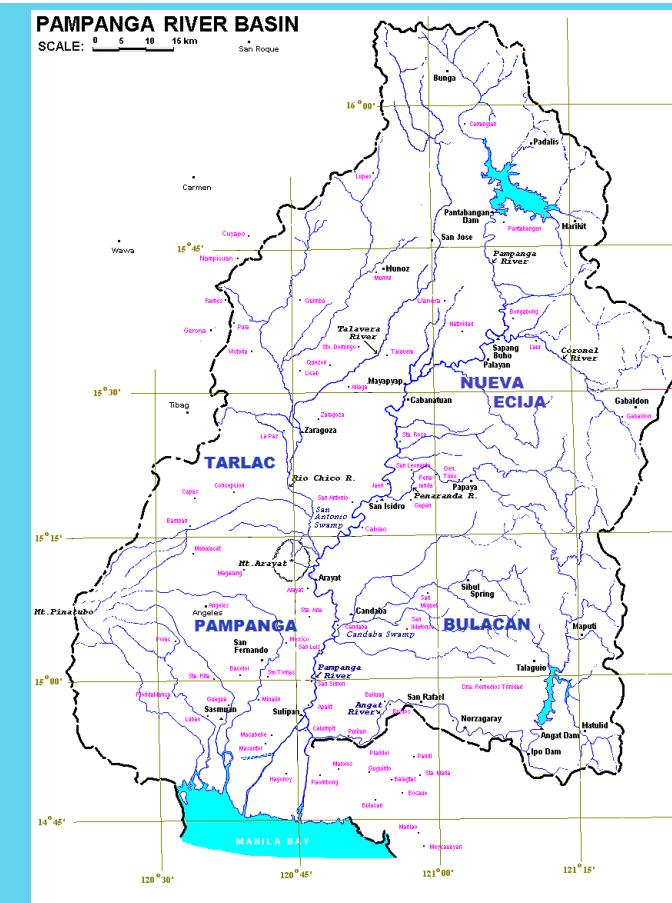
People living near the mountain slopes and in the low lying areas of the above mentioned river systems and the Local Disaster Risk Reduction and Management Councils concerned are advised to take necessary precautionary measures.

Sent: August 25, 2017, 7:37 am  
Expires: August 25, 2017, 7:37 pm  
For more info: <http://www.pagasa.dost.gov.ph/index.php/26-hydromet/1582-flood-forecast-terms-and-symbols>



GFA is a non-metered advisory issued by the Hydrologist.

# Flood Bulletin



Active Alerts & Warnings					<a href="#">FB</a>	Flood Bulletin
					<input type="checkbox"/> Inactive Events	<input type="checkbox"/> Expired Events
ID	State	Date Created				Action
Flood Bulletin #5 (Final) - Pampanga						
59a332381e039	Pending	2017-08-28 18:56:47				<a href="#">View</a>
Flood Bulletin #4 - Pampanga						
59a2505ea950c	Pending	2017-08-27 16:28:59				<a href="#">View</a>
Flood Bulletin #3 - Pampanga						
59a235bb24a4b	Pending	2017-08-27 11:01:23				<a href="#">View</a>
Flood Bulletin #1 - Pampanga						
59a0bc83dbea4	Sent	2017-08-26 19:01:04		2017-08-31 13:17:37		<a href="#">View</a>
59a09d0825730	Pending	2017-08-26 06:11:18				<a href="#">View</a>
Flood Bulletin #2 - Pampanga						
59a144202dcc7	Pending	2017-08-26 19:00:51				<a href="#">View</a>

FB is metered alert and issued by the local river basin center of PAGASA.

# CAP Integrations



**Red Cross**



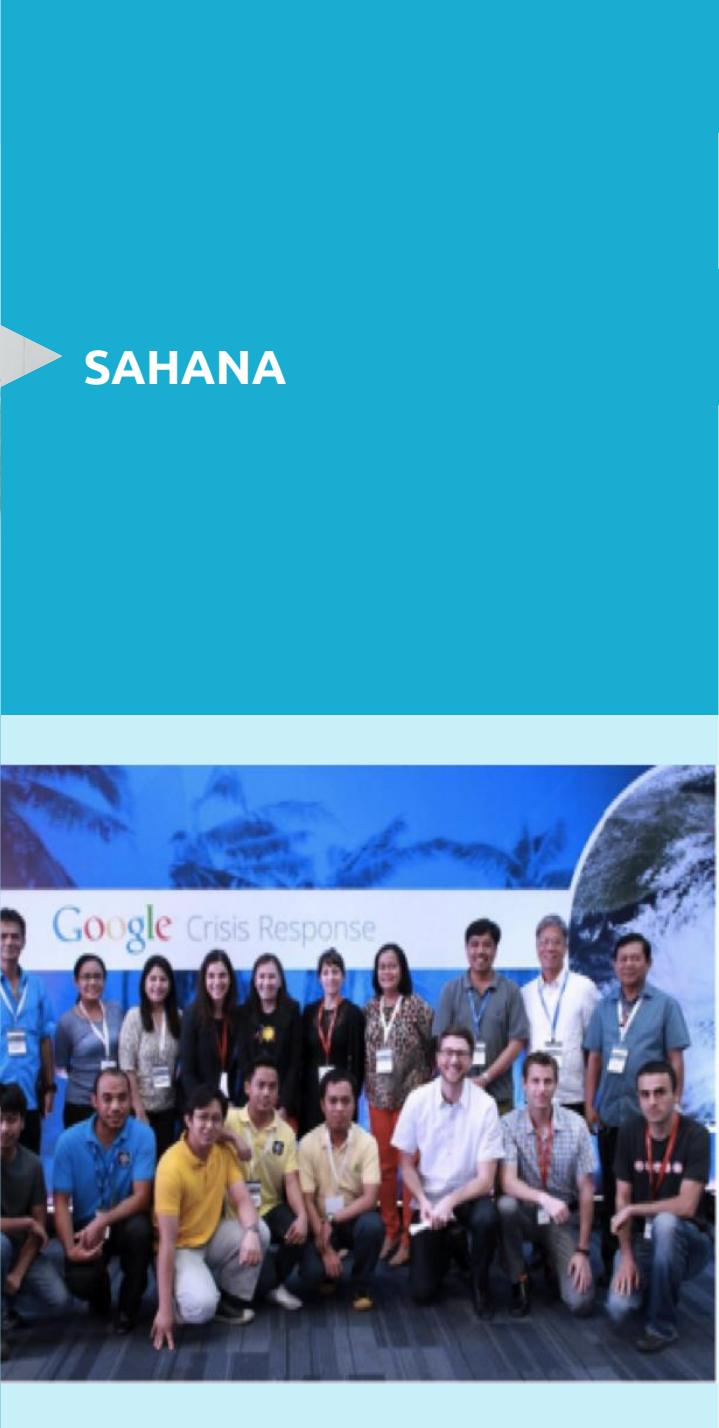
**Google Public Alerts**



**SAHANA**

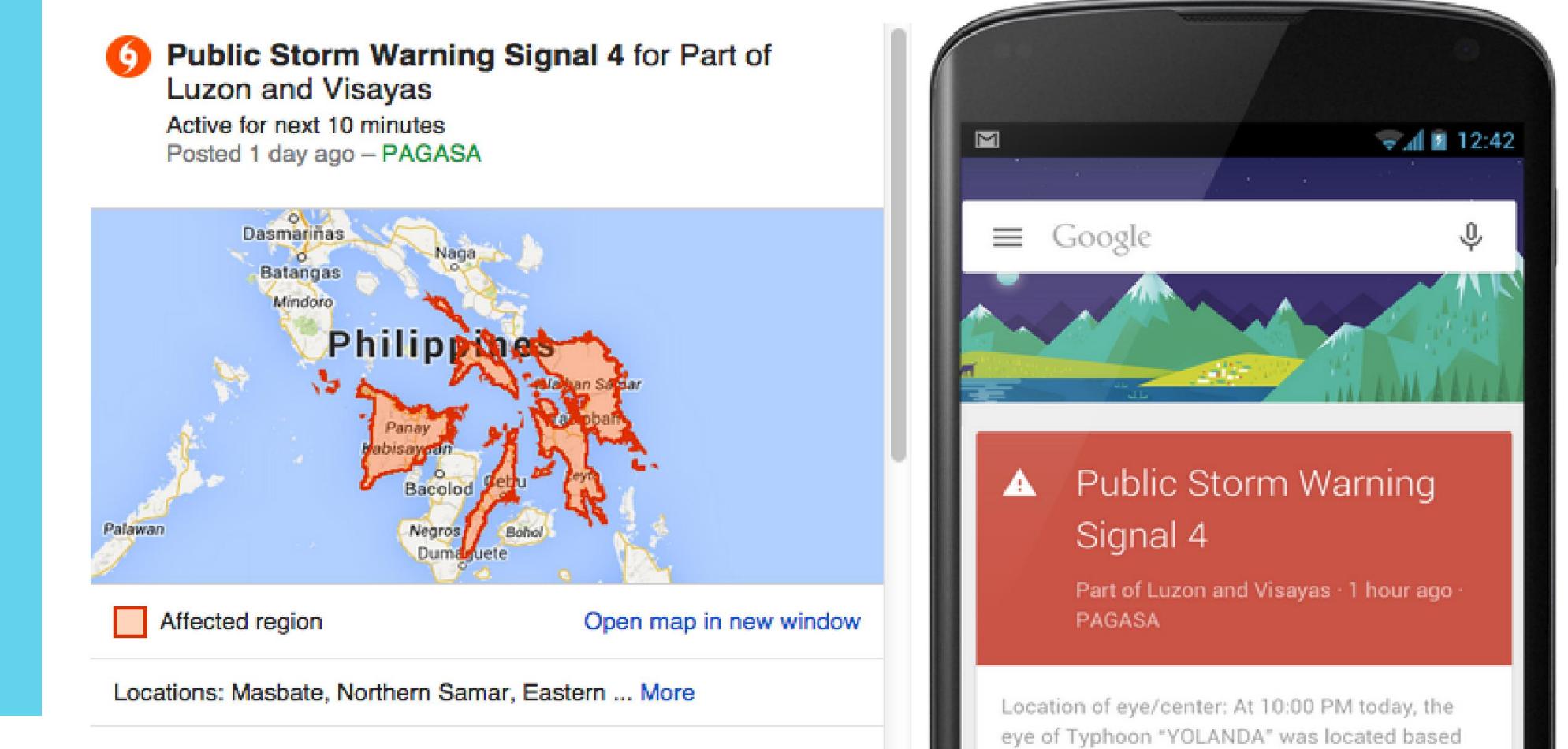


**PAGASA MDSI**



# CAP Integrations

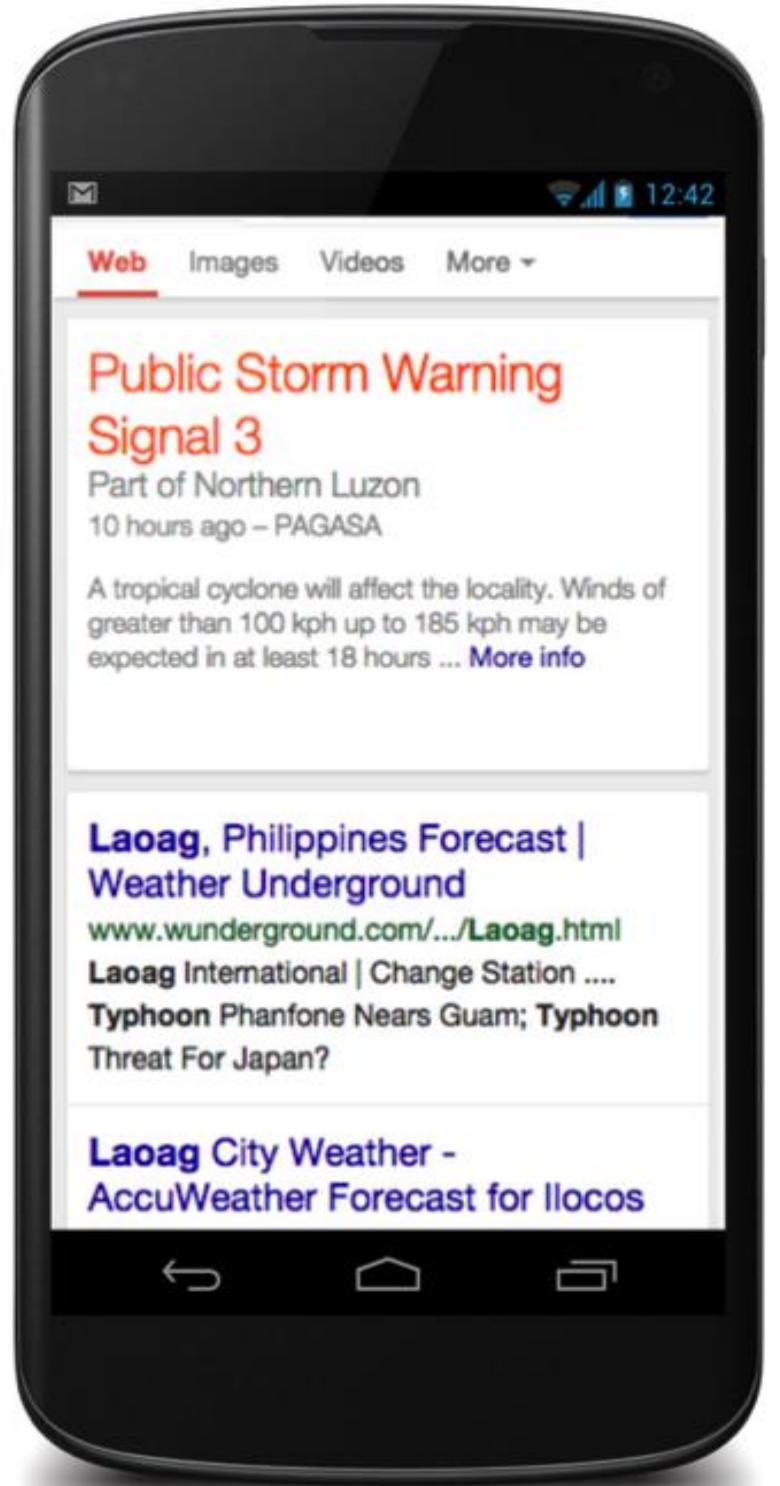
## Google Public Alerts



PAGASA and Google partnership started May 2014, and since then PAGASA created a team for Common Alerting Protocol.

# Typhoon Alert on Google Search

## PAGASA Attribution

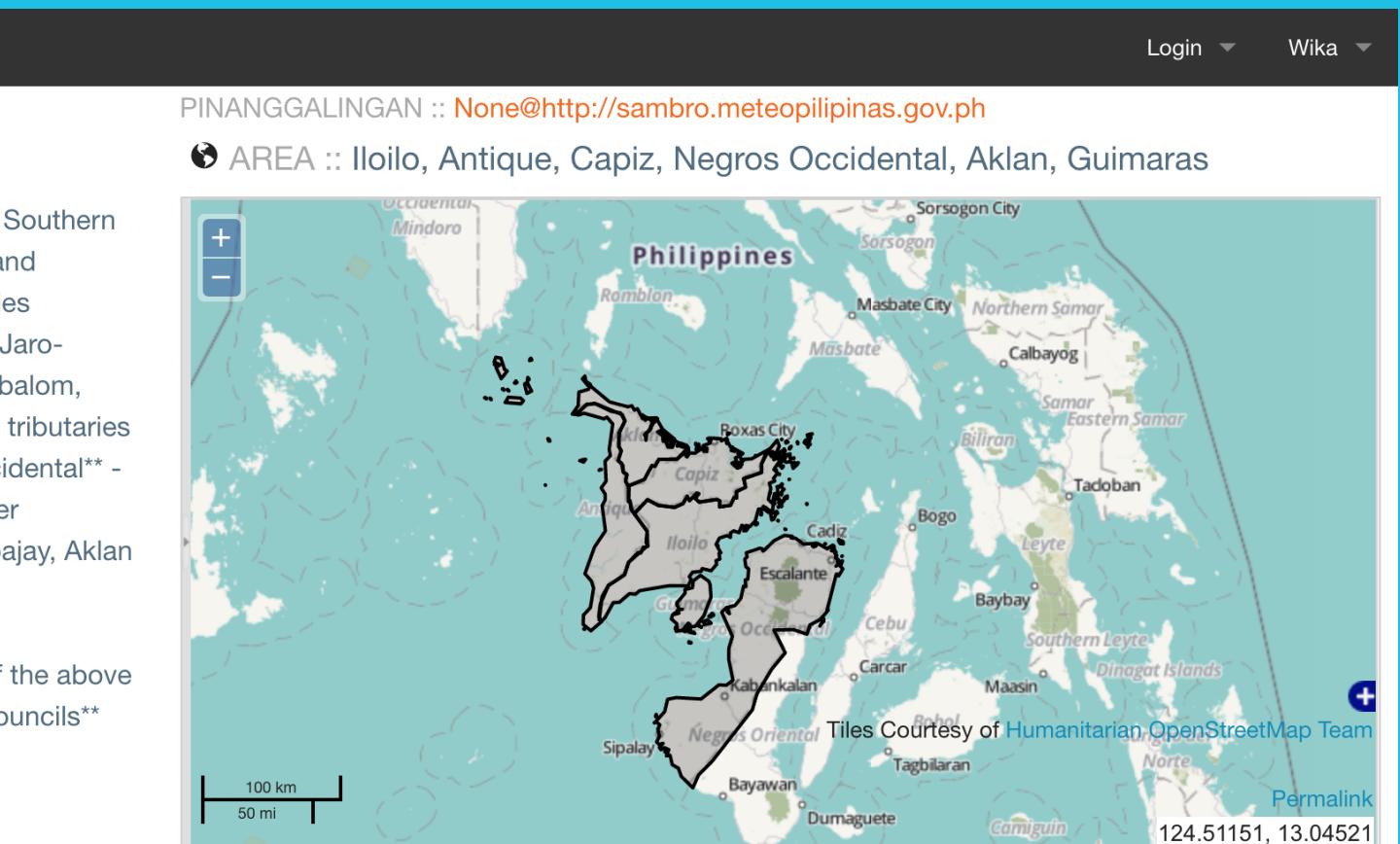
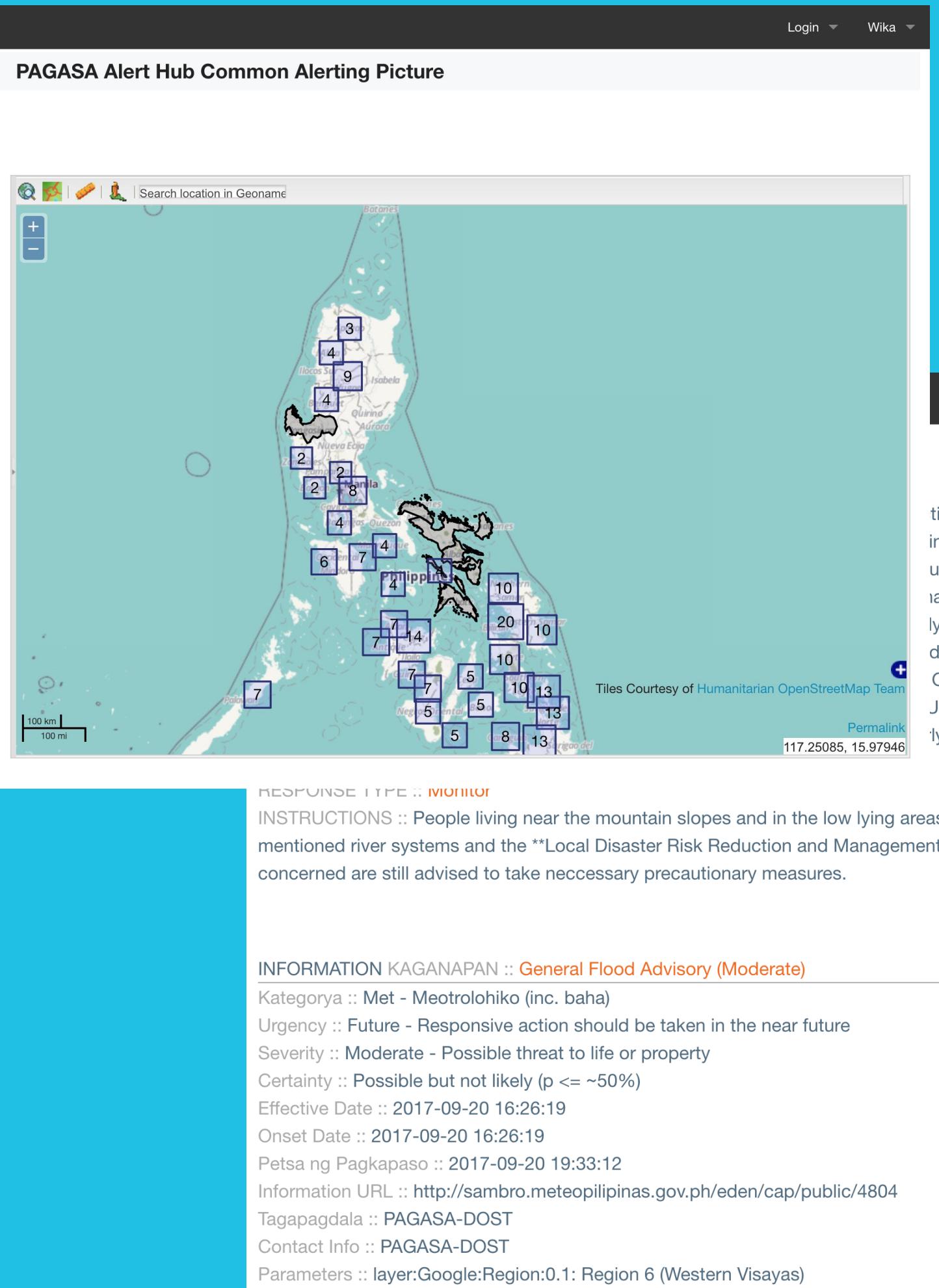


# CAP Integrations

## SAMBRO (CAP on a Map Project)



“CAP on Map” project starts a workshop in Philippines May 2015 under Sahana Software Foundation, AIT and United Nations ESCAP, and held a training in Thailand for Implementers training. PAGASA’s SAMBRO is now accessible in <http://sambro.meteopilipinas.gov.ph>



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**ALERT QUALIFIERS**

Sender ID :: PAGASA-DOST

Sent Date/Time :: 2017-09-20 07:33:12

Message Status :: Actual - actionable by all targeted recipients

Uri ng Mensahe :: Update

Saklaw :: Public

# CAP Integrations

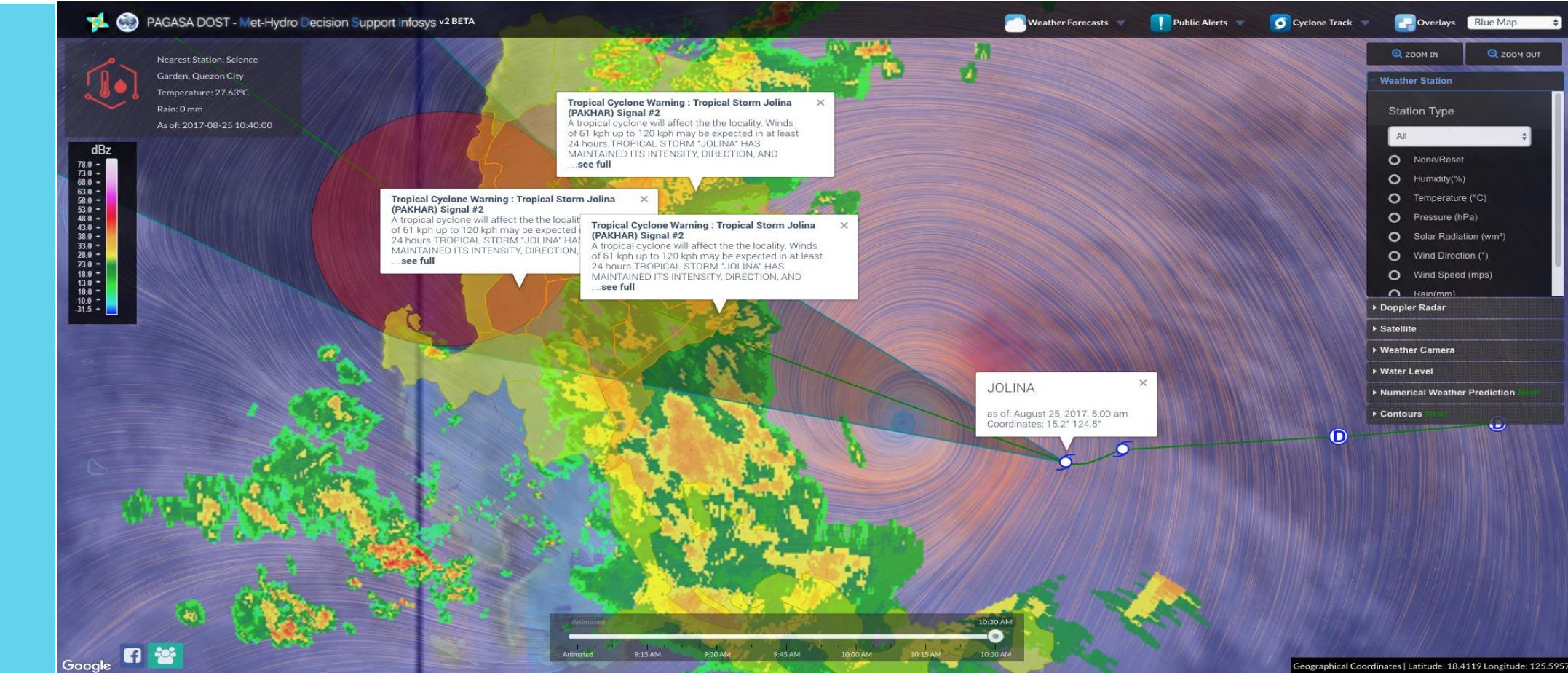
Red Cross (Hazard App)



PAGASA acts as a information partner of Philippine Red Cross for disaster preparedness.

# CAP Integrations

## PAGASA Met-Hydro Decision Support Infosys (MDSI)



MDSI is a interactive web application developed by PAGASA for weather visualization from radar, satellite, numerical model, observed data, weather camera and CAP alerts.

MDSI is accessible to [www.meteopilipinas.gov.ph](http://www.meteopilipinas.gov.ph)

# What's coming?

- Restructured CAP alert with polygon, geocode and area description per area element
- Implementation of CAP-enabled Flood Bulletin to River Basins in Philippines
- New CAP product for Rainfall Warning and Inter-agency collaboration

# CAP with geocode and polygons

```
▼<area>
  ▼<areaDesc>
    Iloilo, Antique, Capiz, Negros Occidental, Aklan, Guimaras
  </areaDesc>
  ▼<geocode>
    <valueName>SAME</valueName>
    <value>063000000</value>
  </geocode>
  ▼<geocode>
    <valueName>SAME</valueName>
    <value>060600000</value>
  </geocode>
  ▼<geocode>
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    <value>061900000</value>
  </geocode>
  ▼<geocode>
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    <value>064500000</value>
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  ▼<geocode>
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    <value>060400000</value>
  </geocode>
  ▼<geocode>
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    <value>067900000</value>
  </geocode>
</area>
```



```
<area>
  <areaDesc>Iloilo</areaDesc>
  <polygon>
    13.570244001313,121.86623744119 13.461210113732,122.124282663
    13.213517460881,122.04181300569 13.284474451431,121.8670487052
    13.461336977395,121.81351637037 13.570244001313,121.86623744119
  </polygon>
  <geocode>
    <valueName>SAME</valueName>
    <value>174000000</value>
  </geocode>
</area>
<area>
  <areaDesc>Antique</areaDesc>
  <polygon>
    13.49,120.88 13.254,120.77 13.043,121.24 12.201,121.24 12.237,121.13
    12.725,120.79 13.0,120.76 13.191,120.64 13.294,120.48 13.526,120.41
    13.467,120.75 13.49,120.88
  </polygon>
  <geocode>
    <valueName>SAME</valueName>
    <value>175100000</value>
  </geocode>
</area>
<area>
  <areaDesc>Capiz</areaDesc>
  <polygon>
    11.856,121.32 11.856,121.31 11.857,121.3111 11.859,121.31 11.852,121.31
    11.858,121.31 11.854,121.31 11.854,121.31 11.851,121.31 11.856,121.31
    11.85,121.3111 11.856,121.3211 11.855,121.32 11.856,121.32
  </polygon>
  <geocode>
    <valueName>SAME</valueName>
    <value>175200000</value>
  </geocode>
</area>
```

# CAP with geocode and polygons

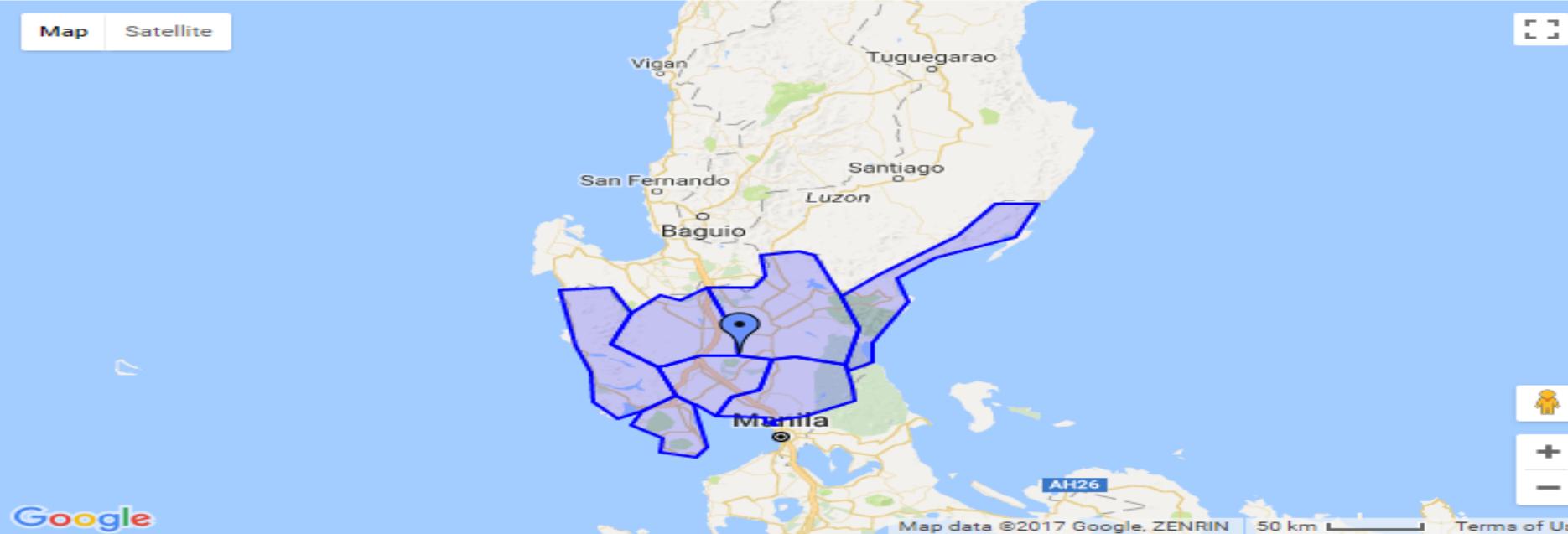
← → ⌂ ⓘ <https://cap-validator.appspot.com/validate#r>

Flood Reporting & M Gmail hydrograph - SMDgr General Flood Adviso Entry Page EARTH :: ENVIRONME CAP

**Result**

Valid!

Map Satellite



Map Satellite

50 km

Terms of Use

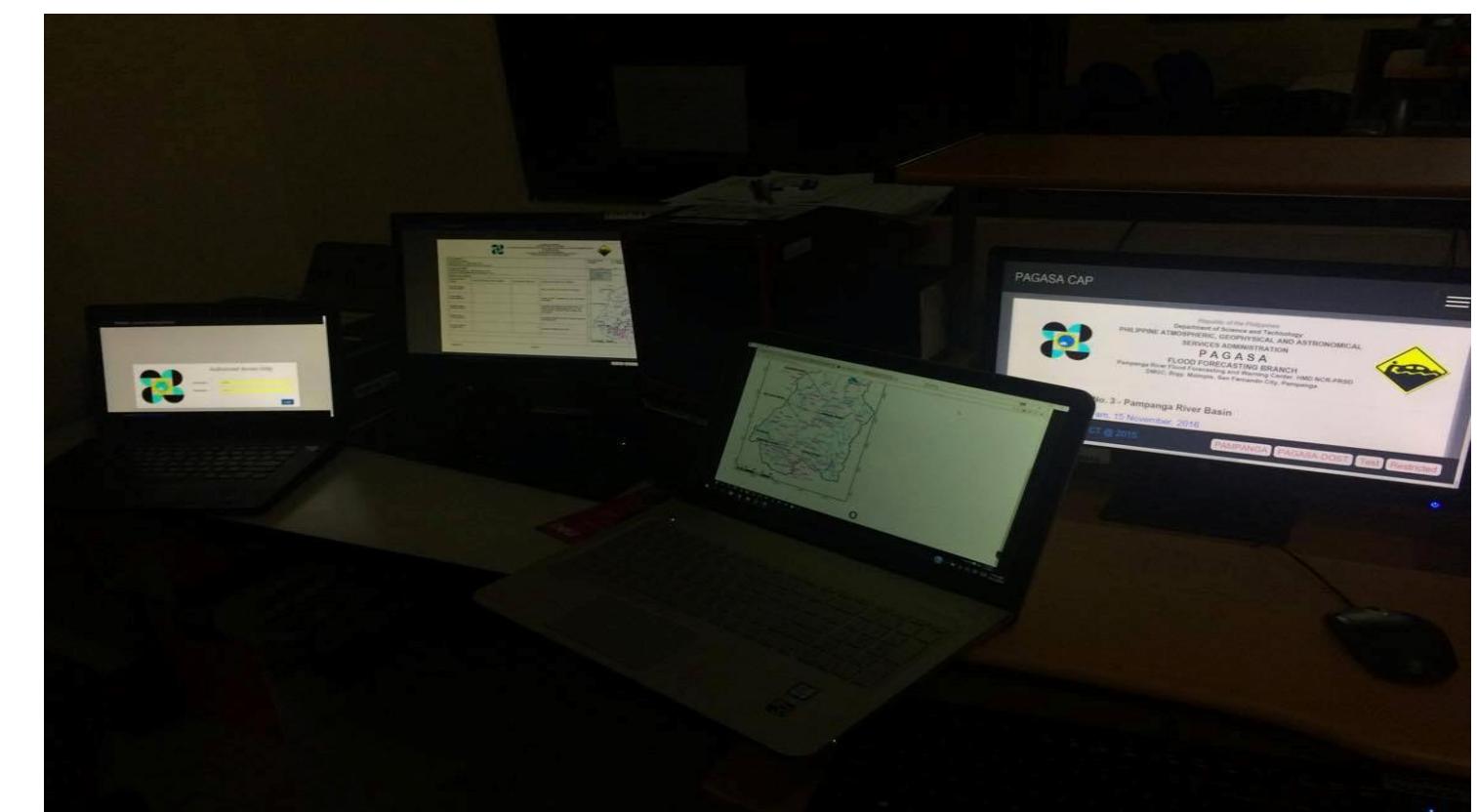
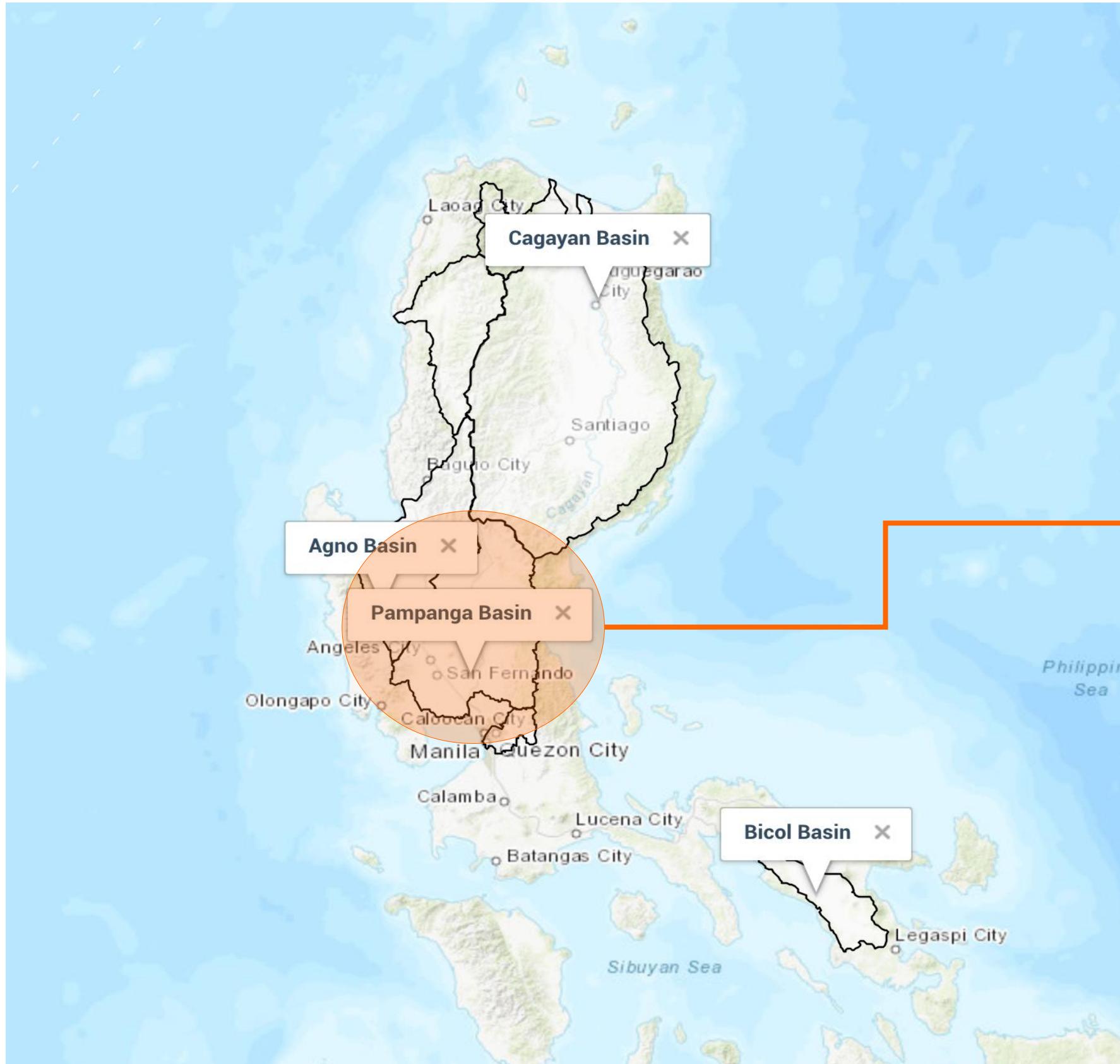
**File**

```
1 <alert xmlns="urn:oasis:names:tc:emergency:cap:1.2">
2 <identifier>17633d47-f54e-4897-887c-6eebbdd4b16e</identifier>
3 <sender>PAGASA-DOST</sender>
4 <sent>2017-09-02T12:21:12+08:00</sent>
5 <status>Test</status>
6 <msgType>Alert</msgType>
7 <scope>Restricted</scope>
8 <info>
9 <category>Met</category>
10 <event>General Flood Advisory (Moderate)</event>
11 <responseType>Monitor</responseType>
12 <urgency>Future</urgency>
13 <severity>Moderate</severity>
14 <certainty>Possible</certainty>
15 <expires>2017-09-03T00:21:12+08:00</expires>
16 <senderName>PAGASA-DOST</senderName>
```

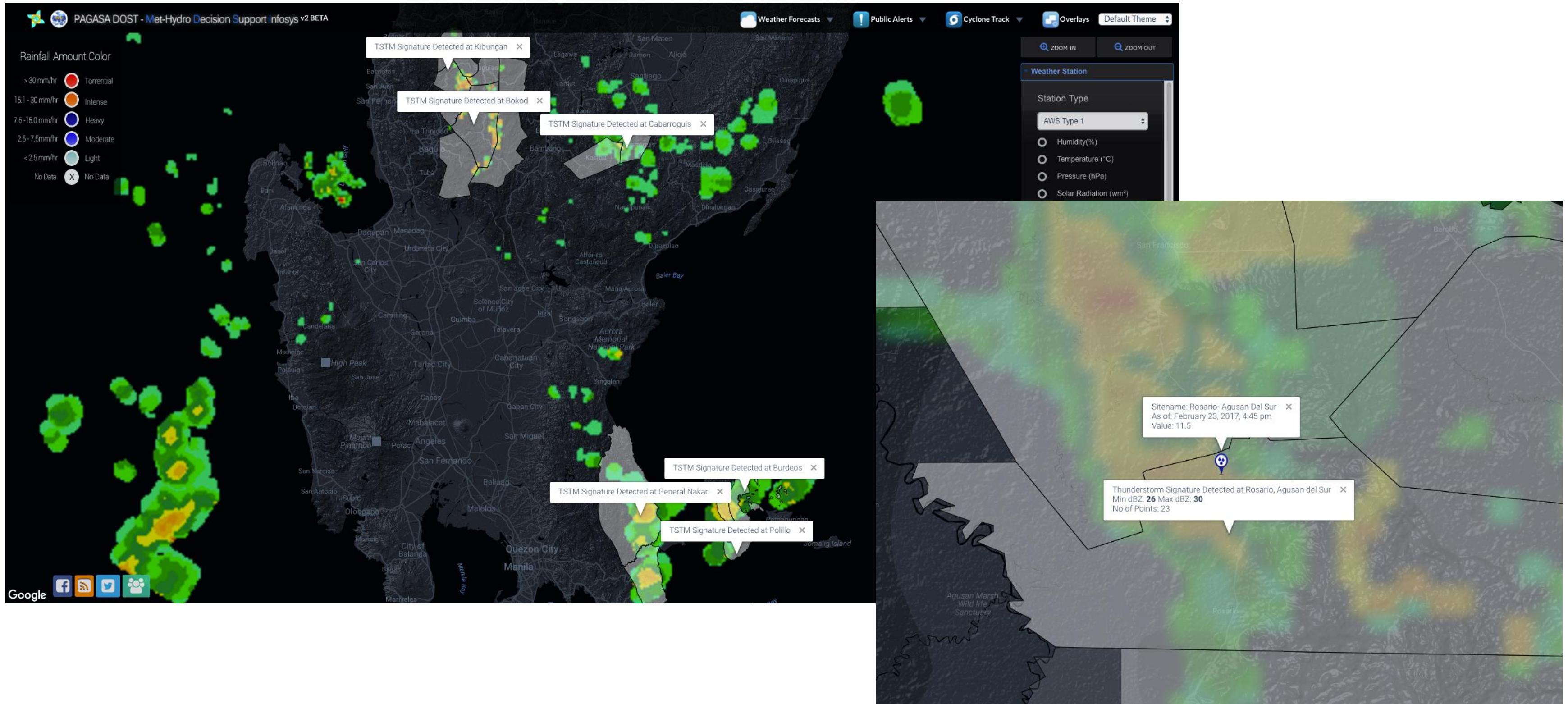
Search Windows

File Explorer Microsoft Edge Microsoft Word Microsoft Outlook Microsoft Excel Microsoft PowerPoint Microsoft OneDrive Microsoft OneNote Microsoft Paint

# Flood Bulletin Implementation



# Research: Automatic CAP from Radar



# Inter-agency collaboration





## Get in touch!



Science Garden, Diliman, Quezon city, Philippines

- Lester Kim M. Lagrimas | Weather Facilities Specialist
- [lester.lagrimas@pagasa.dost.gov.ph](mailto:lester.lagrimas@pagasa.dost.gov.ph)
- [kim.lagrimas@meteopilipinas.gov.ph](mailto:kim.lagrimas@meteopilipinas.gov.ph)

# Thank you!

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Any questions?

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