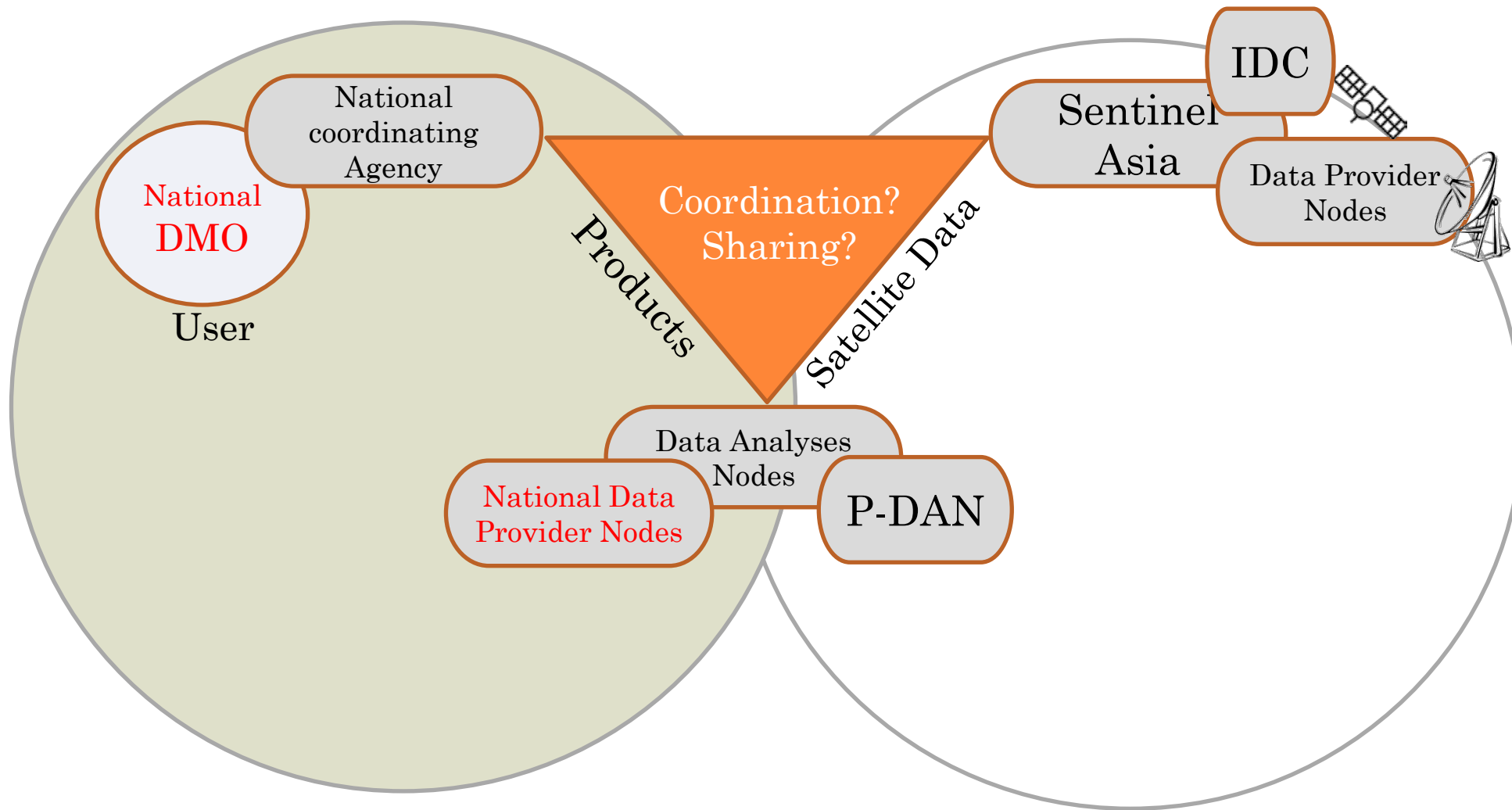


# A System to Enhance DAN's DRR Activities

Geoinformatics Center  
Asian Institute of Technology



# Needs of a System for Sentinel Asia Coordination and Info Sharing



# P-DAN System

<http://www.geoinfo.ait.ac.th/pdan/>

- Disaster information sharing
  - World disaster feeds
  - SA activations
  - SA-related activities
  - Archive of SA related document (SOP, training material, etc.)
  - Disaster reporting
- Communication
  - Email notification
  - Event-based online forum
- Product sharing
  - Standards VAPs (maps)
  - Geotiff or Shapefile
  - **Interactive map**

**PDAN Disaster Support System**  
Principle Data Analyses Node of Sentinel Asia

HOME | EVENTS & MAPS | EMERGENCY REQUEST | MEMBERS | ABOUT US | CONTACT US | LOGIN

### Sentinel Asia Activations

- Flood | Indonesia**  
2017-02-14 00:00:00+07  
Heavy rainfall intensity in Jakarta, Indonesia on 14 February until tonight. 20...
- Earthquake | Philippines**  
2017-02-10 00:00:00+07  
At 10:03 PM on 10 February 2017, Friday, a strong earthquake of magnitude 6.7 shook the island of Mindanao...
- Landslide | Indonesia**  
2017-02-09 00:00:00+07  
Twelve people including young children were killed in landslides on the tourist...

World Disasters

### World Disasters

- M 4.4 - 144km ENE of Enarotali, Indonesia**  
Time: 2017-03-08 22:49:50 UTC  
Location: 3.3111°S 137.506°E  
Depth: 65.75 km (40.86 mi)
- M 1.6 - 28km WSW of Hawthorne, Nevada**  
Time: 2017-03-08 23:03:20 UTC  
Location: 38.383°N 118.897°W  
Depth: 21.30 km (13.24 mi)
- M 1.2 - 9km NE of Aguanga, CA**  
Time: 2017-03-08 22:46:38 UTC

### SA Activations

- Flood in Indonesia**  
Heavy rainfall intensity in Jakarta, Indonesia, on 14 February until tonight 20 February 2017, affected to some area such...
- Earthquake in Philippines**  
At 10:03 PM on 10 February 2017, Friday, a strong earthquake of magnitude 6.7 shook the island of Mindanao...
- Landslide in Indonesia**  
Twelve people including young children were killed in landslides on the tourist island of Bali that wiped out several...
- Flood in Philippines**  
PAGASA has 4 ADI as follow  
1) 8d 26m 29.09 s N 125d 49m 35.99 s E Radius 30...
- Flood in Vietnam**  
Serious flooding occurred in the districts of Huang Son, Huang Khe and Vu Quang, Cam Xuyen, Duc Tho (Ha...

### Activities

- Joint Project Team Meeting of Sentinel Asia, Hanoi**  
Date: 2017-01-16  
Description: The Sentinel Asia Joint Project Team Meeting (PTM) to be held on January in Hanoi, Vietnam to report the...
- Steering Committee Meeting of Sentinel Asia, Manila**  
Date: 2016-11-14  
The Second Steering Committee meeting of Sentinel Asia (SA) to be held on November 2016 in Manila, The Philippines to report...
- Joint Project Team Meeting of Sentinel Asia, Colombo**  
Date: 2016-01-19  
Joint Project Team (JPT) meeting will be held in Colombo from 19-21 2006. To promote Sentinel Asia, JPT was organized...
- The First Steering Committee Meeting of the Sentinel Asia, Bangkok**  
Date: 2015-10-13  
The 1st Steering Committee (FSC) Meeting of the Sentinel Asia Step3 is just around the corner. The Venue: Ball Room III on...

Our Partners: GIC Geoinformatics Center, Sentinel Asia

More SA Activations | More PDAN Activities

### FIND US

Sentinel Asia  
International Disaster Charter  
Asian Disaster Reduction Centre  
Pacific Disaster Centre  
Flood List  
National Geographic

### USEFUL LINKS

### OFFICE ADDRESS

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Web: www.gic.ait.ac.th

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Home / Events & Maps

### Flood in Indonesia

Indonesia - / 2017-02-14 00:00:00+07

Heavy rainfall intensity in Jakarta, Indonesia, on 14 February until tonight 20 February 2017, affected to some area such as Kali Sunter in Cipinang Melayu, East Jakarta. The water level increase and flooded neighborhood whose position adjacent to Kali Sunter. As of 21 Feb, flood area hit not only Jakarta but also adjacent to surrounding such as Bekasi, Tangerang and Karawang.




**Firman Hadi**  
Event Manager  
firmanhadi@ait.asia

Contact Event Manager  
Special Data Download

### Earthquake in Philippines

Philippines - / 2017-02-10 00:00:00+07

At 10:03 PM on 10 February 2017, Friday, a strong earthquake of magnitude 6.7 shook the island of Mindanao. The epicenter is located 16 km offshore northwest of Surigao City, Surigao Strait at a depth of 10 km. The earthquake was generated by the movement of Surigao segment of the Philippine fault. Small magnitude earthquakes followed afterwards, and as of 4:00 PM of 11 February 2017, 101 aftershocks have been recorded by the PHIVOLCS seismic monitoring network.




**Firman Hadi**  
Event Manager  
firmanhadi@ait.asia

Contact Event Manager  
Special Data Download

### Landslide in Indonesia

Indonesia - / 2017-02-09 00:00:00+07

Twelve people including young children were killed in landslides on the tourist island of Bali that wiped out several homes.



**Firman Hadi**  
Event Manager  
firmanhadi@ait.asia

Contact Event Manager  
Special Data Download


### Flood in Philippines

Philippines - / 2017-01-16 00:00:00+07

PAGASA has 4 AOI as follow

- 1) 8d 26m 29.09 s N 125d 49m 35.99 s E Radius 30 km
- 2) 7d 18m 23.87 s N 125d 40m 51.29 s E Radius 30 km
- 3) 7d 12m 50.66 s N 124d 14m 57.28 s E Radius 30 km
- 4) 8d 27m 53.15 s N 124d 36m 47.70 s E Radius 30 km

Please go to this link to see our product in interactive map  
[http://www.geoinfo.ait.ac.th/pdan/map.php?id=229&ext\\_map=PossiblefloodextentinRosario](http://www.geoinfo.ait.ac.th/pdan/map.php?id=229&ext_map=PossiblefloodextentinRosario)



**Firman Hadi**  
Event Manager  
firmanhadi@ait.asia

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Special Data Download

Flood in Agusan Del Norte Province in the Philippines  
Flooding in Agusan Del Norte and Agusan Del Bur Provinces in the Philippines  
Flooding in Davao Del Norte Province in the Philippines

List of SA activations

Home / SA Activities


### Flood in Philippines

Philippines - / 2017-01-16 00:00:00+07

PAGASA has 4 AOI as follow

- 1) 8d 26m 29.09 s N 125d 49m 35.99 s E Radius 30 km
- 2) 7d 18m 23.87 s N 125d 40m 51.29 s E Radius 30 km
- 3) 7d 12m 50.66 s N 124d 14m 57.28 s E Radius 30 km
- 4) 8d 27m 53.15 s N 124d 36m 47.70 s E Radius 30 km

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**Firman Hadi**  
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Flood in Agusan Del Norte Province in the Philippines  
Flooding in Agusan Del Norte and Agusan Del Bur Provinces in the Philippines  
Flooding in Davao Del Norte Province in the Philippines

## Product sharing

PDAN Disaster Support System  
Principle Data Analyses Node of Sentinel Asia

Home / Emergency Request

Member Reporting Public Reporting

### How To Request

You are welcome to provide information on emergency situations related to natural disasters such as flood, landslide, earthquake, tsunami, typhoon, hurricane, storm surge, drought and volcanic eruption etc. Providing disaster related information is helpful for us to initiate an emergency request to Sentinel Asia disaster support system. On this request, satellite observations will be activated to monitor disaster sites, eventually beneficial to the affected country in many ways.

Filling out this online form and hitting the submit key with less than 2 minutes, will make a huge impact on the disaster management activities of the affected country. We are here to support by providing information based on satellite observations. Information such as disaster-affected area is needed for damage assessments, preparedness and mitigation measures.

Date of Occurrence: 2017/03/08  
Type of Event: - Select -  
Time of Occurrence: 7:00 AM

Search Area: Enter your address  
City: \_\_\_\_\_ State: \_\_\_\_\_  
Country: \_\_\_\_\_

People Affected	Dead	Missing	Injured	Displaced	Total

Name of Reporter: \_\_\_\_\_  
Valid Email: \_\_\_\_\_  
Submit

Disaster reporting

Forum Disaster Flood in Philippines (2017/01/16 00:00)

FORUM MEMB

### Flood in Philippines (2017/01/16 00:00)

Displaying 1-7 of 7 re

**Cron**

**Flood in Philippines (2017/01/16 00:00)**  
+ Cron +, 0 12:00:00 AM + 0

PAGASA has 4 "AOI" as follow

- 1) 8d 26m 29.09 s N 125d 49m 35.99 s E Radius=30 km
- 2) 7d 18m 23.87 s N 125d 40m 51.29 s E Radius=30 km
- 3) 7d 12m 50.66 s N 124d 14m 57.28 s E Radius=30 km
- 4) 8d 27m 53.15 s N 124d 36m 47.70 s E Radius=30 km

Please go to this link to see our product with interactive map  
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Posts: 48  
Joined: /00

Share Tweet LinkedIn

**Firman Hadi**

**Flood in Philippines (2017/01/16 00:00)**  
+ Firman Hadi +, 0 12:00:00 AM + 0

You can access the link to Google Earth Engine to produce flood extent in Mindanao, Philippine in the link <https://code.earthengine.google.com/60150ed08a6e3ef2af12e32e111817>

Posts: 7  
Joined: /00

Share Tweet data-count="none" + Tweet LinkedIn

**Firman Hadi**

**Flood in Philippines (2017/01/16 00:00)**  
+ Firman Hadi +, 0 12:00:00 AM + 0

We used Google Earth Engine to produce the map. Our intention was to quickly assess the possible flood extent using available dataset quickly.

The interactive map that we have created and published in the link [http://www.geoinfo.ait.ac.th/pdan/map.php?id=229&ext\\_map=PossiblefloodextentinRosario](http://www.geoinfo.ait.ac.th/pdan/map.php?id=229&ext_map=PossiblefloodextentinRosario) used the result from Google Earth Engine.

We used Geonode to publish our downloaded result from Google Earth Engine and embedded in our PDAN system.


Share Tweet used the result from Google Earth Engine We used Geonode to publish our downloaded result from Google Earth Engine embedded in our PDAN system. data-count="none" + Tweet LinkedIn

**Firman Hadi**

**Flood in Philippines (2017/01/16 00:00)**  
+ Firman Hadi +, 0 12:00:00 AM + 0

We have also processed ALOS-2 image to estimate the flood extent.

### FLOODING IN AGUSAN DEL NORTE PROVINCE IN THE PHILIPPINES



Posts: 7  
Joined: /00

Online forum







# Interactive map

<https://gicait.maps.arcgis.com/apps/MapSeries/index.html?appid=8361d04de30b475a9547d2617d722a9f>

The screenshot displays an interactive map interface for 'Nepal Flash Flood 2016'. The map is presented in a 3D perspective view, showing a rugged mountainous terrain with brown and tan hues, interspersed with white snow patches. Dark, winding lines represent flood paths or channels across the landscape. The interface includes a top navigation bar with the title 'Nepal Flash Flood 2016', social media icons, and a 'Sentinel Asia' logo. Below the title, there are two tabs: 'Change Detection' and '3D Visualisation', with the latter being active. The map area is surrounded by a dark grey toolbar containing various navigation and interaction icons. At the bottom left, a status bar shows coordinates: '83.623 29.048 Degrees' and elevation data: 'elev 5,831.65 Meters eye alt 20.55 Kilometers'. The bottom right corner features the text 'Powered by Esri'.

<https://gicait.maps.arcgis.com/apps/MapSeries/index.html?appid=c773dcc79211400497f40c84e10da29c>

## Philippines Flood in 2017

A story map    

### 1 Flood in Agusan del Norte Province

### 2 Flood in Agusan del Norte & Agusan del Sur Province


### 3 Flood in Davao del Norte Province

This map shows the detected flood water areas which affected several municipalities in Davao del Norte Province in the Philippines, including Kapalong, Asuncion, New Corella, Santo Tomas, Carmen, Braulio E. Dujali and City of Tagum. Flooding has been detected by ALOS-2 observation on 24 January 2017, and the image has been processed using thresholding technique. Note that the detected flood water may also include water in paddy area.

### 4 Flood in Municipality of Bunawan, Agusan del Sur Province

### Detected Flood Water in Davao City

Sentinel Asia



125.676 7.489 Degrees

#### Layer List

Operational Layers

- Buildings
- Barangay
- Detected Flood Water (ALOS-2)

# Distribute Value Added Products

- Notify the users via email regarding new VAP
- Provide the download VAP link (SA website/P-DAN website)
- All in one app to generate local VAP by combining the VAPs with local data using **QGIS Plugin**.



## Why QGIS

- QGIS is Free
- QGIS is Cross Platform & easy to install
- The Use of Open Source GIS is Growing
- Plenty of QGIS Support and Tutorials
- Build Our Own App under QGIS Plugin

# Development of a SA-Plugin for the National Information System

## ● Data Integration

- Value Added Products (VAP) from PDAN/DAN
- Local/National GIS Data and Thematic Maps
- Crisis Mapping/Damage Mapping Data (Sourcing from [geobingan.info](http://geobingan.info))
- Population Data (WorldPop)
- Digital Elevation Model (DEM)
- GMap rainfall

## ● Import Local Data

- Shapefile, tiff, geojson and KML

## ● Overlay and Analysis

- Spatial Data overlaying and Analysis

## ● Generate Map

- Quick production of maps using standard templates

## ● Export

- PDF, PNG and JPEG

## ● Share

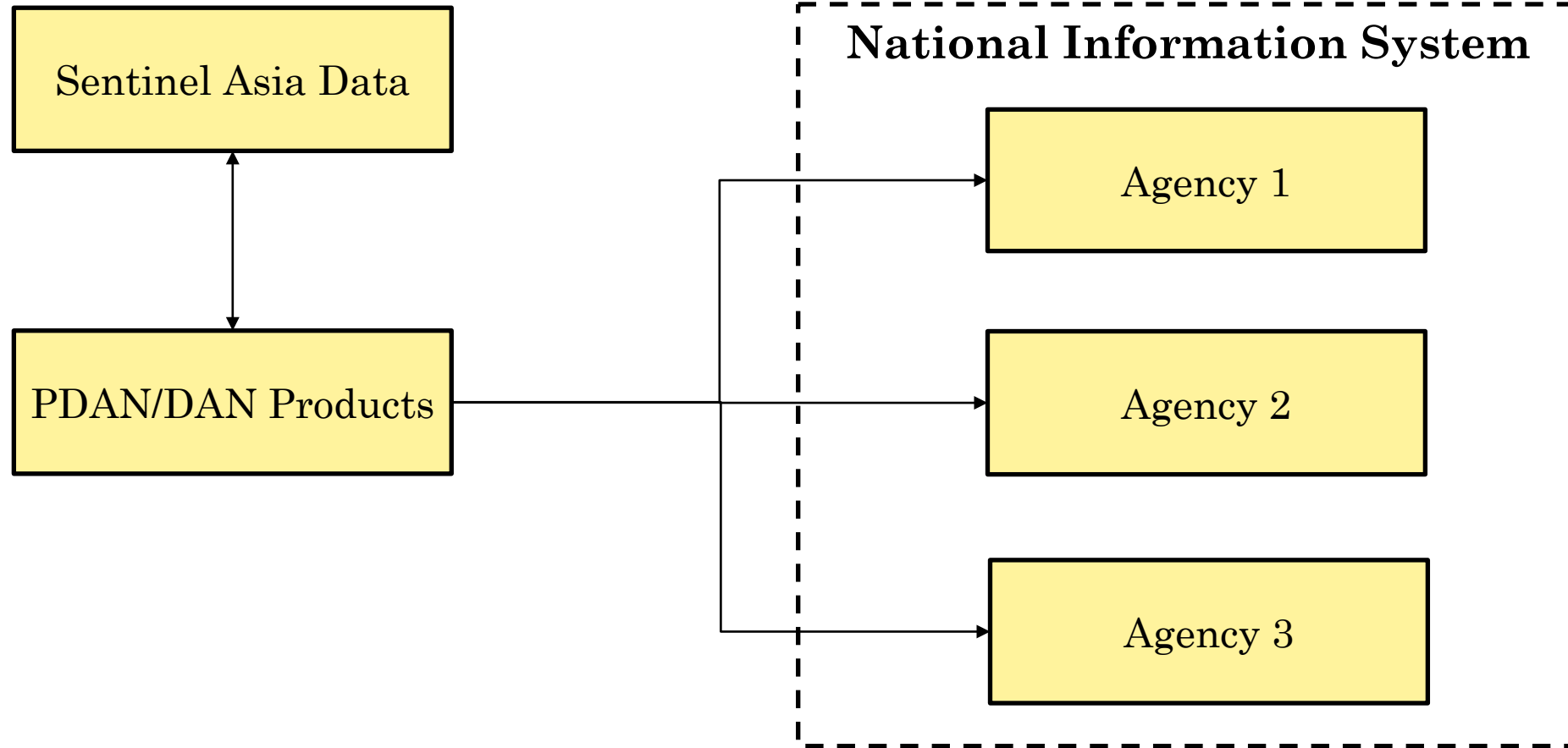
- Product sharing facilities with DAN/PDAN ad vice versa

## ● Help

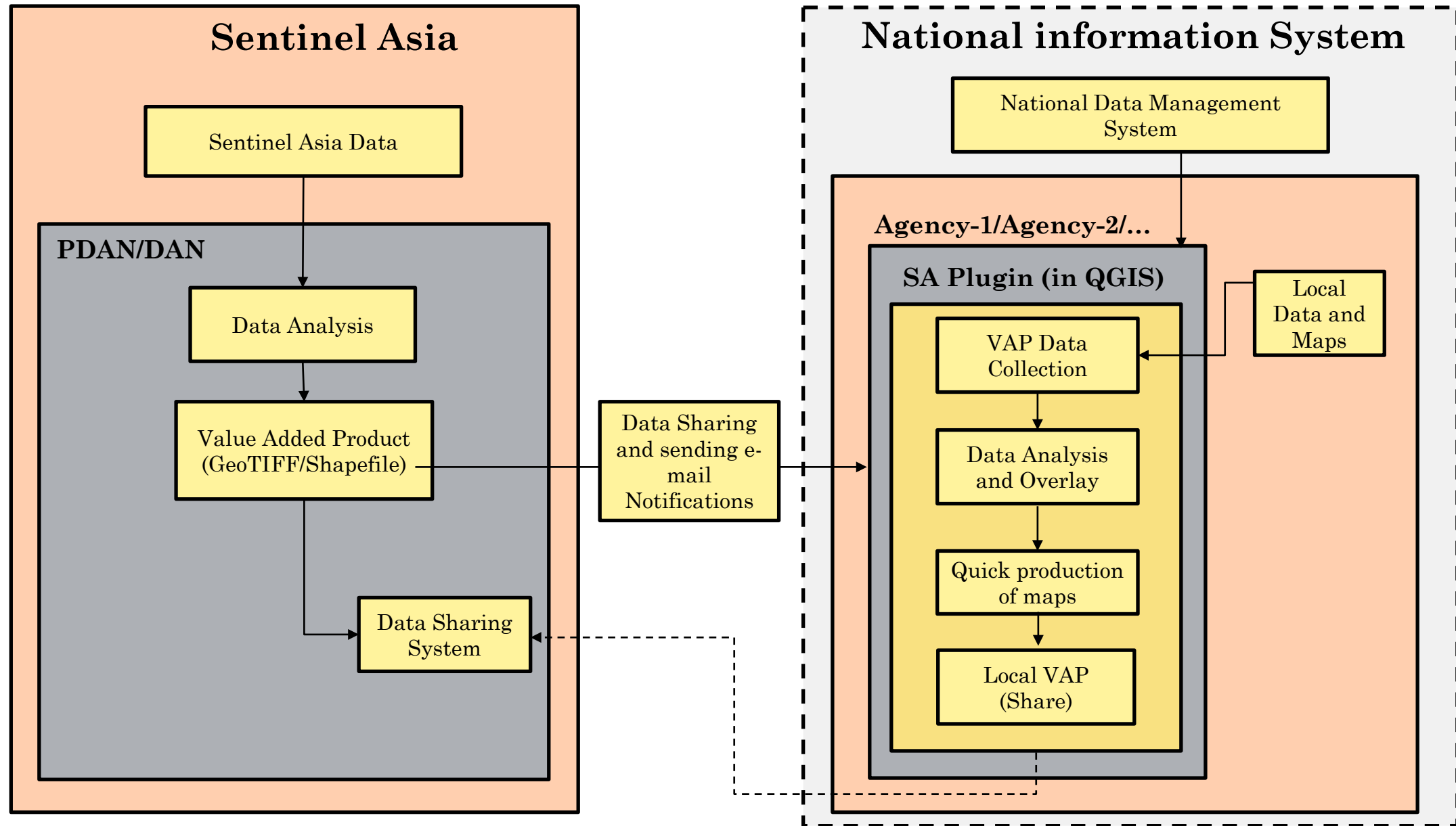
- User manuals



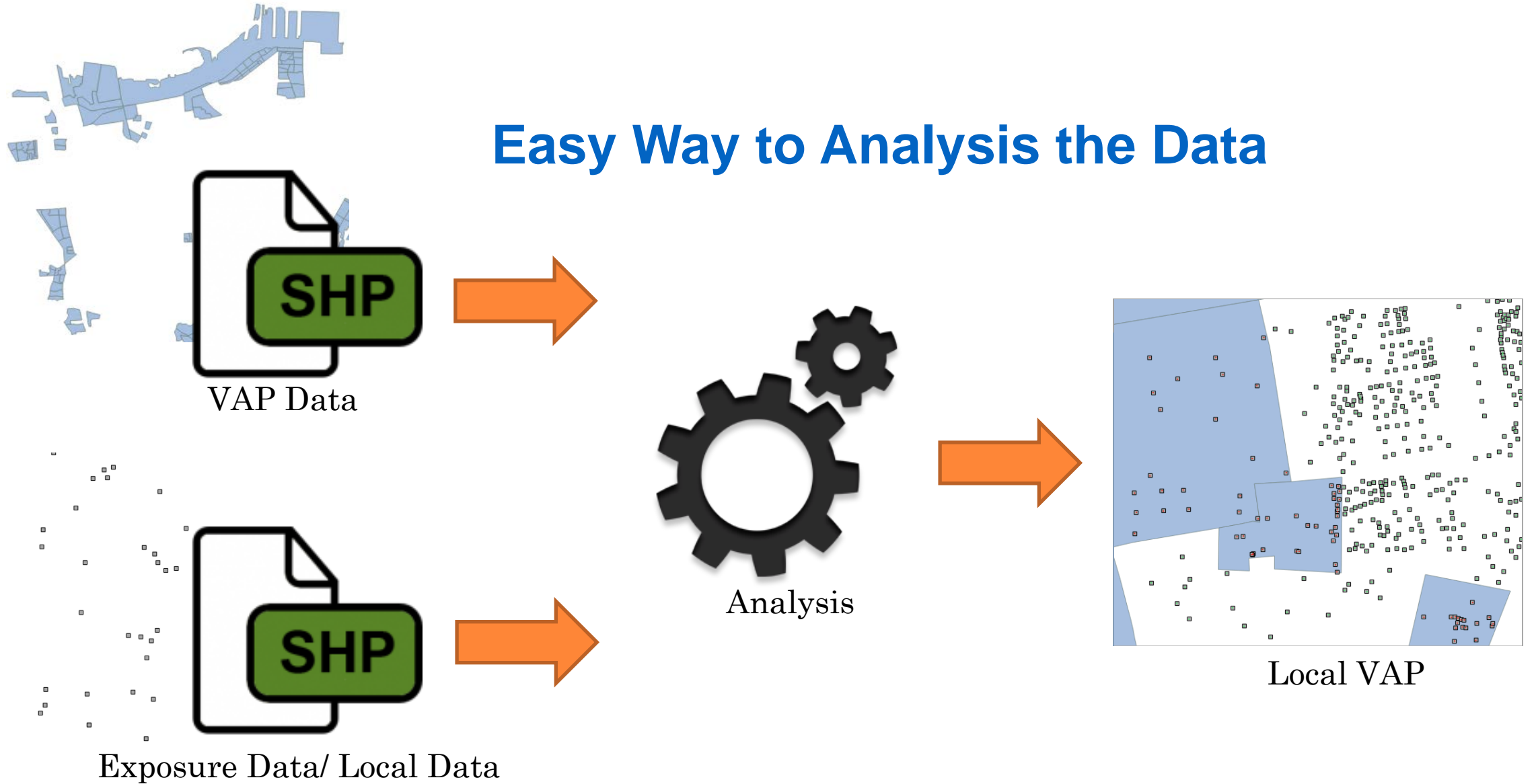
# Linkage/Workflow – Regional and National System

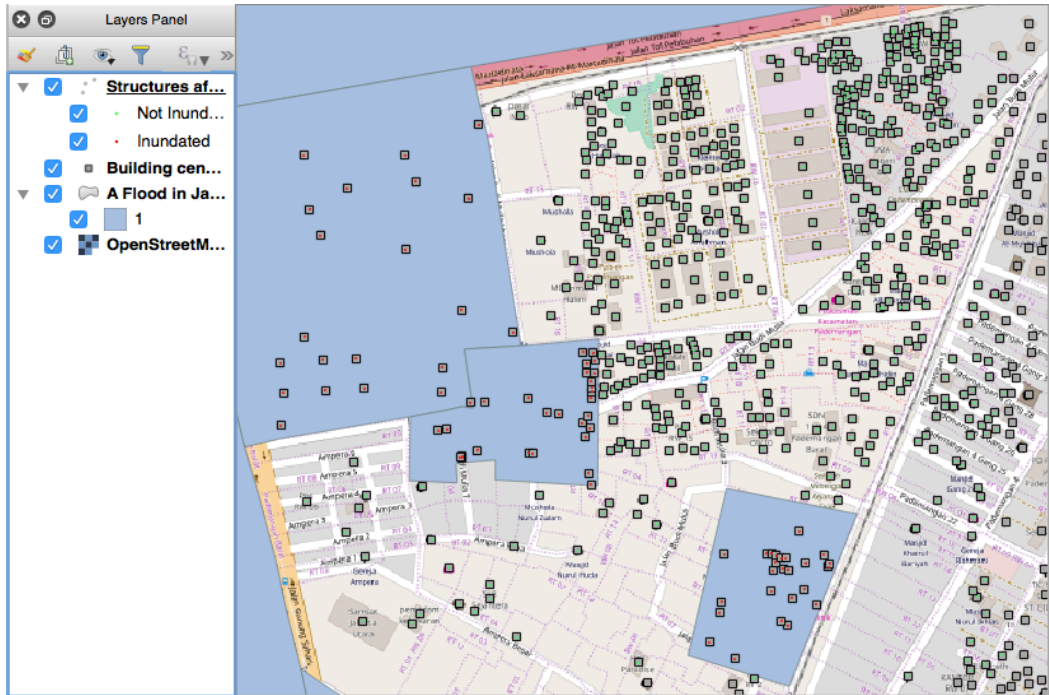


# Details of the Linkage/Workflow – Regional and National System

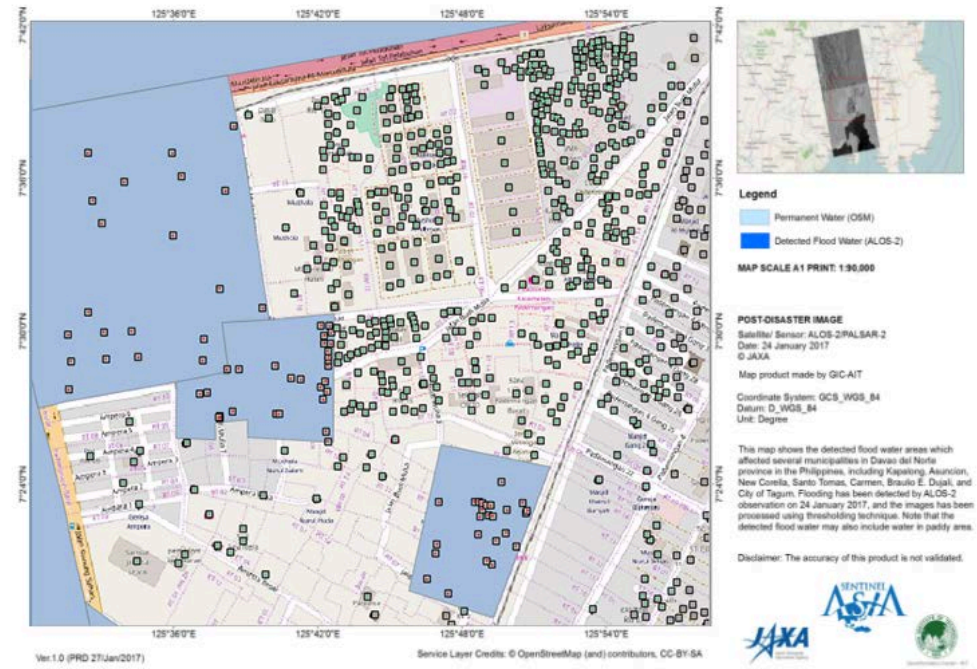


# Easy Way to Analysis the Data





### SAMPLE DATA of FLOODING



# Easy Way to Generate the Map

## Remarks

- A National Information System for
  - Effectively distribute VAPs to users
  - Create local VAPs by integrating local data from user agency
  - Workflow integrates to P-DAN system
- Capacity building to empower the users agency is necessary