



# Sentinel Asia - Trend of Emergency Observation Request -

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*The 28th Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-28)  
“Expand Space Innovation through Diverse Partnerships”*

*15 November, 2022*

*Vietnam Academy of Science and Technology (VAST) Campus, Hanoi*

# What is “Sentinel Asia” ?

## *- Sentinel Asia and its Contributions -*

- Sentinel Asia is a voluntary initiative between **space agencies** and **disaster management agencies** to apply **Remote Sensing** and **Web-GIS** technologies to assist disaster management in the Asia-Pacific region.
- Sentinel Asia aims to:
  - ✓ Improve safety in society by ICT and space technology
  - ✓ Improve speed and accuracy of disaster preparedness and early warning
  - ✓ Minimize the number of victims and social/economic losses.

# What is “Sentinel Asia” ?

## - *Members of Sentinel Asia* -

- Sentinel Asia organizes Joint Project Team (JPT), and JPT consists of 112 organizations including 95 agencies from 29 countries/region and 17 international organizations. (as of November 2022)
- JAXA is the secretariat of JPT.
- Sentinel Asia cooperates with **ADRC** and **their members** closely, and they are also member of Sentinel Asia as well.

**JPT**  
**m e m b e r s**

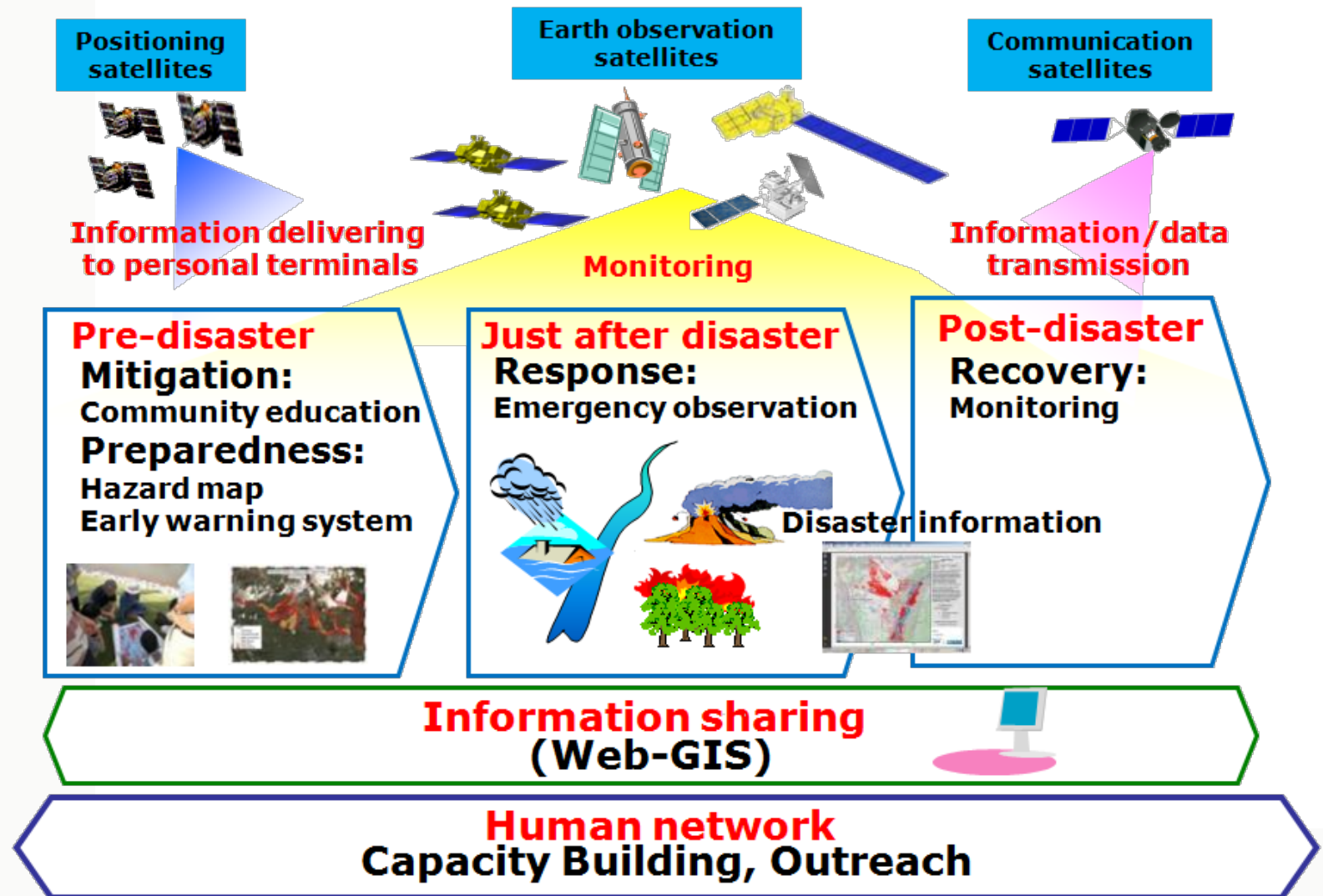
111 organizations from 28 countries/region

## ADRC members



# What is “Sentinel Asia” ?

## - Concept of Sentinel Asia Step 3 -



# What is “Sentinel Asia” ?

## - *Emergency Observation Request (EOR)* -


JPT members and ADRC member organizations are entitled to make emergency observation requests (EORs) to Sentinel Asia. DPN, DAN, and **the Secretariat team** support to provide a data-sets.

2020-10-30  
**Turkey Earthquake on 30 October, 2020**

Emergency Obs. Request Information

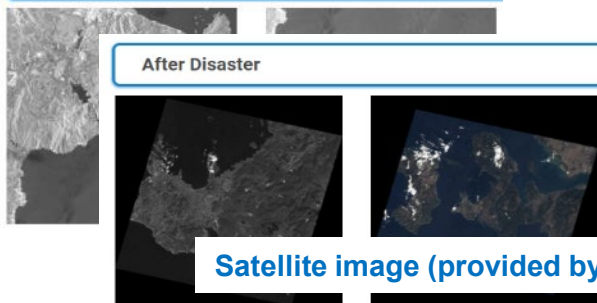
Turkey Earthquake on 30 October, 2020

Disaster Type: Earthquake, Tsunami  
Country: Turkey  
Occurrence Date (UTC): 30 October, 2020  
SA activation Date (UTC): 30 October, 2020  
Requester: Disaster and Emergency Management Presidency (AFAD)  
Escalation to the International Charter: No  
G: IDF Number:



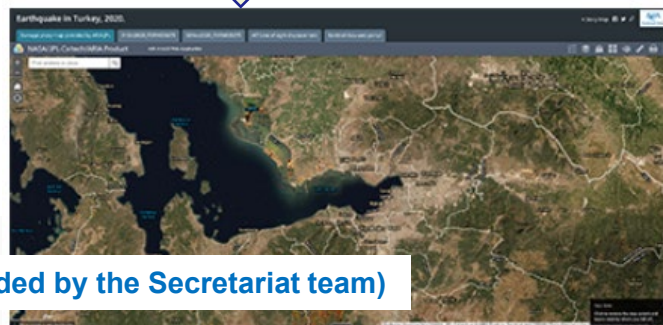
Before Disaster

After Disaster



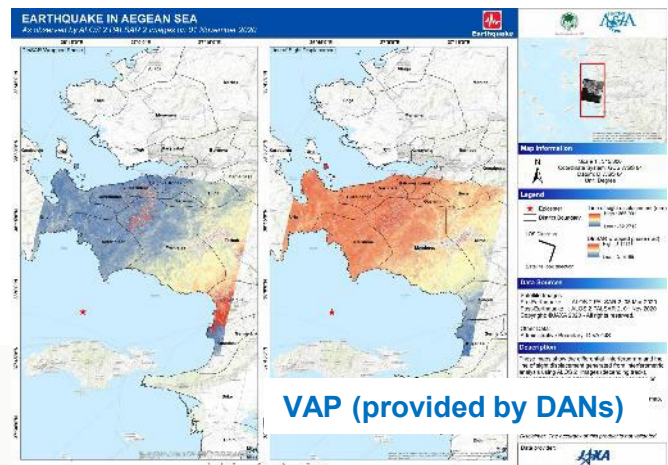
Satellite image (provided by DPNs)

Earthquake in Turkey, 2020



WEB-GIS (provided by the Secretariat team)

EARTHQUAKE IN AEGEAN SEA

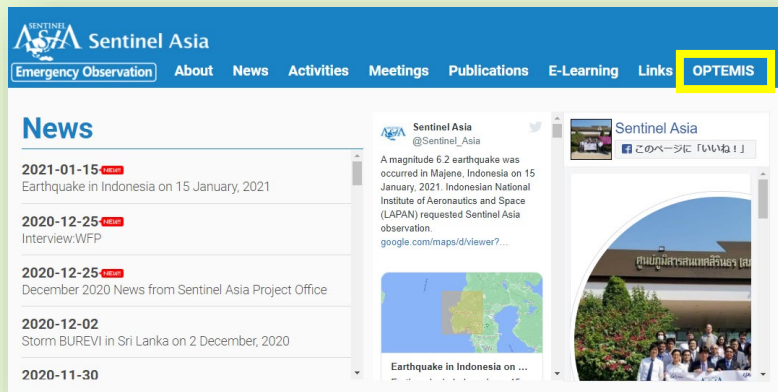


VAP (provided by DANs)

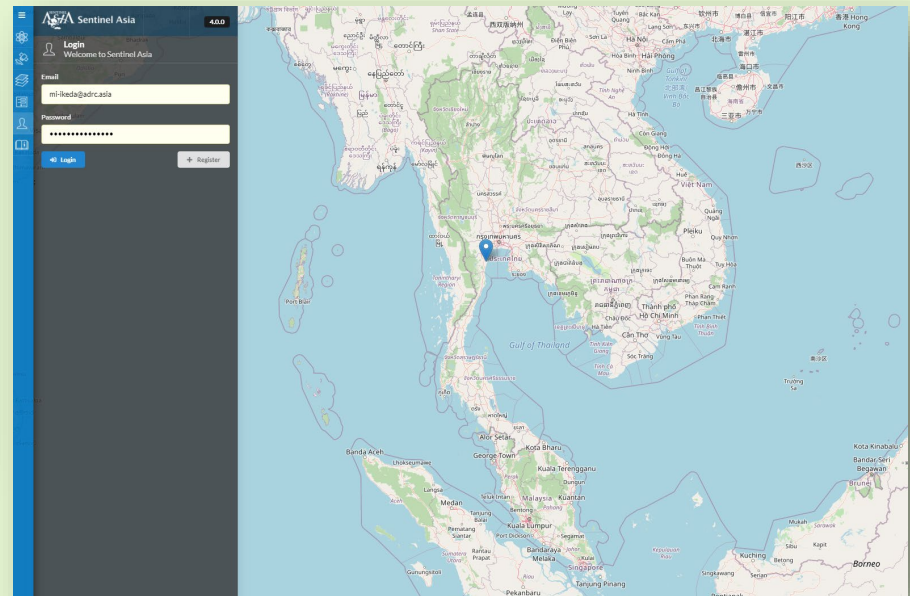
# What is “OPTEMIS” for making EOR

The new system for EOR, named “OPTEMIS”, was developed by the collaboration of JAXA, GISTDA, and NARL started its operation on 28 October 2019. “OPTEMIS” enable easy-registration for making EOR.

## [How to access]



SA Website (<https://sentinel-asia.org/index.html>)



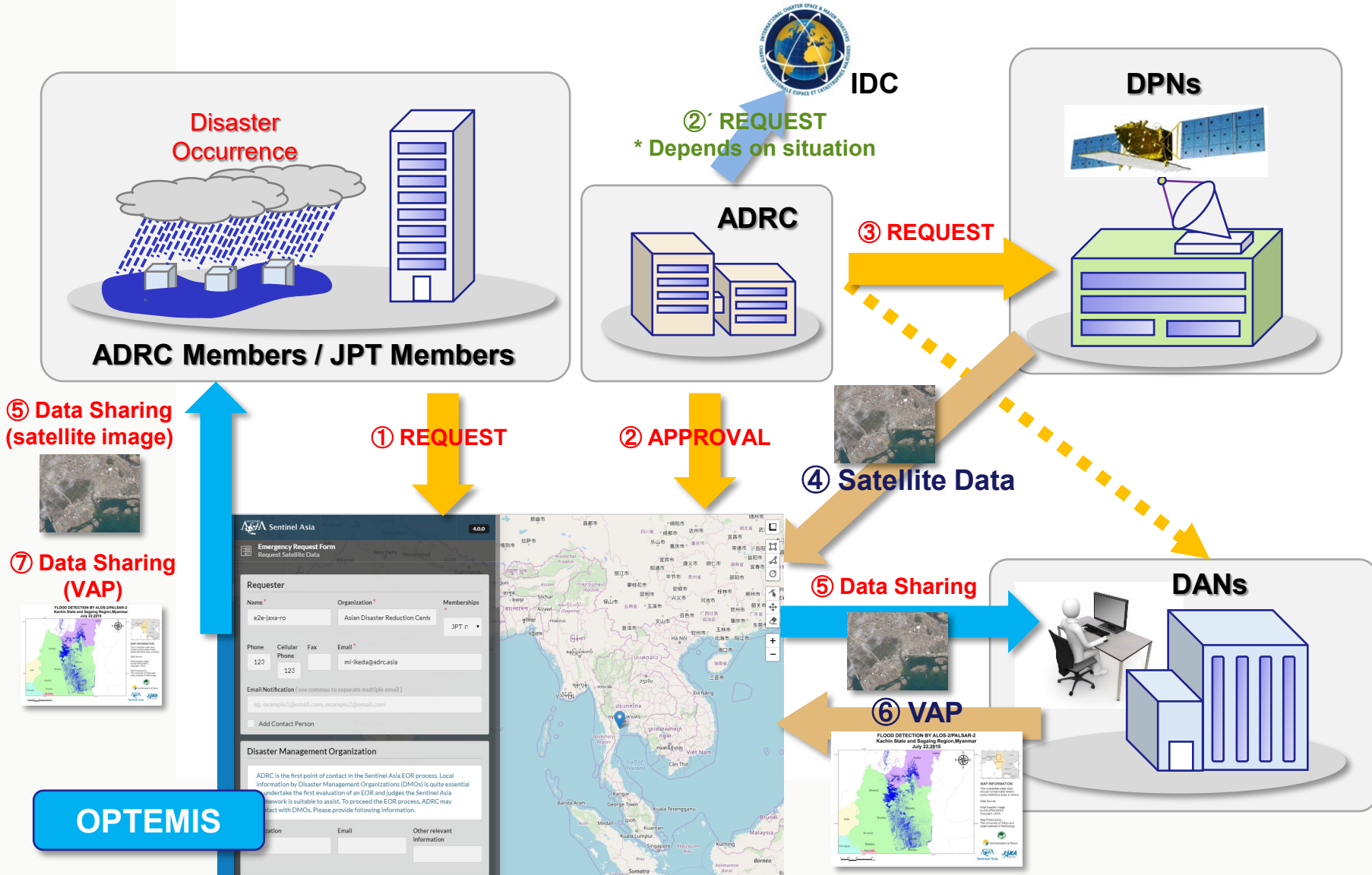
OPTEMIS (<https://optemis.sentinel-asia.org/>)

*You can create a OPTEMIS account as POC of each JPT member.*



# How to Request?

## Procedure of Emergency Observation Request (EOR)



# How to make an EOR - “OPTEMIS” -

**Requester**

Name \*  
Maloto Irieda

Organization \*  
Adnan Disaster Reduction Center (ADRC)

Memberships \*  
JPT member

Phone  
123456

Cellular Phone  
123456

Fax

Email \*  
mi-Rieda@adrc.asia

Email Notification (Use commas to separate multiple email)  
eg: example1@gmail.com, example2@gmail.com

Add Contact Person

**Disaster Management Organization**

ADRC is the first point of contact in the Sentinel Asia system. It is the organization responsible for providing information to assist in the EOR process.

Organization

**Time limit for information to be uploaded on the SA WEB-portal**

Based on the expected time limit, there might be cases where the delivery of information will be difficult to meet or the product to be delivered is assessed to be not enough at a given time. In such cases, we may not trigger Sentinel Asia.

Less than 24 hours  Not exceed 4 days  Not exceed 10 days  Others

**Occurrence**

Date & Time (UTC) \*  
Date Time Country \*  
Select Country

Details, News Source

**Planned end-user of the observed info**

Please provide us information, to the best of your organization, if needed.

The information/image shall be used only for

**Purpose of the Request** (How does your organization use the information?)

Emergency Response  Situation Confirmation

Damage and Loss Assessment (DaLA) Post Disaster

Recovery Planning

Detection of an advance warning of hazardous conditions

Other

**Type of Disaster**

Flood  Landslide  Storm  Forest Fire

Earthquake  Ice Hazard  Tsunami

**Request Area**

Area Type  Input Circle  Input Rectangle

**Escalation for IDC**

The requesting organization (RO) may further ask whether to elevate this Emergency Observation Request (EOR) to International Charter for Space and Major Disasters (ICD) when secretariat confirms its appropriateness. If RO wished to elevate to IDC, please check the box on the bottom.

Elevate

Submit

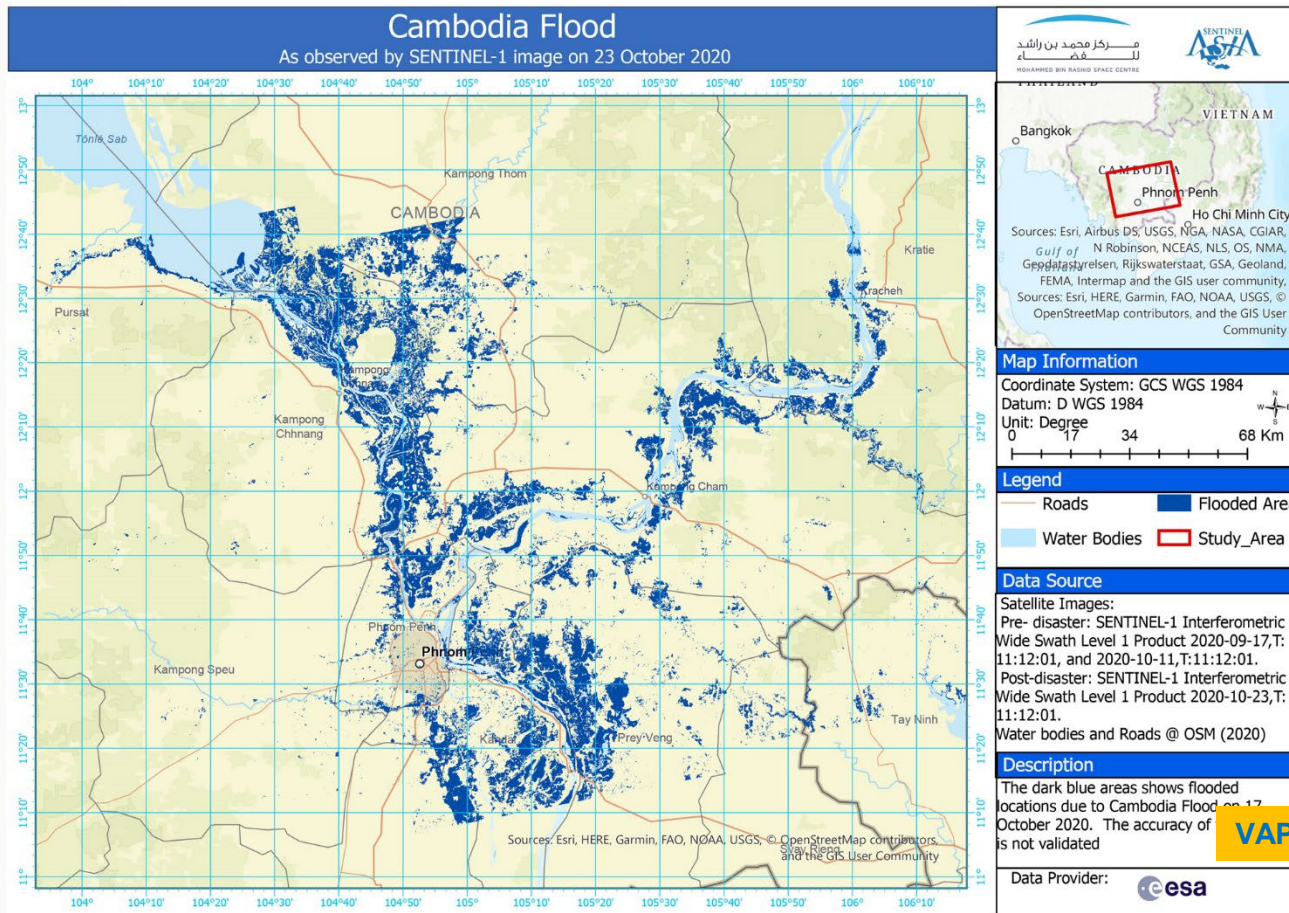
- Requestor
- Disaster Management Organization
- Planned end-user of the observed information
- Purpose of the Request
- Type of Disaster
- Analysis requirement for damages
- Request for Data Analysis Node
- Time limit for information to be uploaded on the SA WEB-portal
- Occurrence
- Necessity for Additional Observation
- Request Area (Place of Name)
- Request Area (Extent)
- Escalation for IDC



# EOR: Good Practice 1

## Flood in Cambodia (October 2020)

[EOR Requestor] ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre)

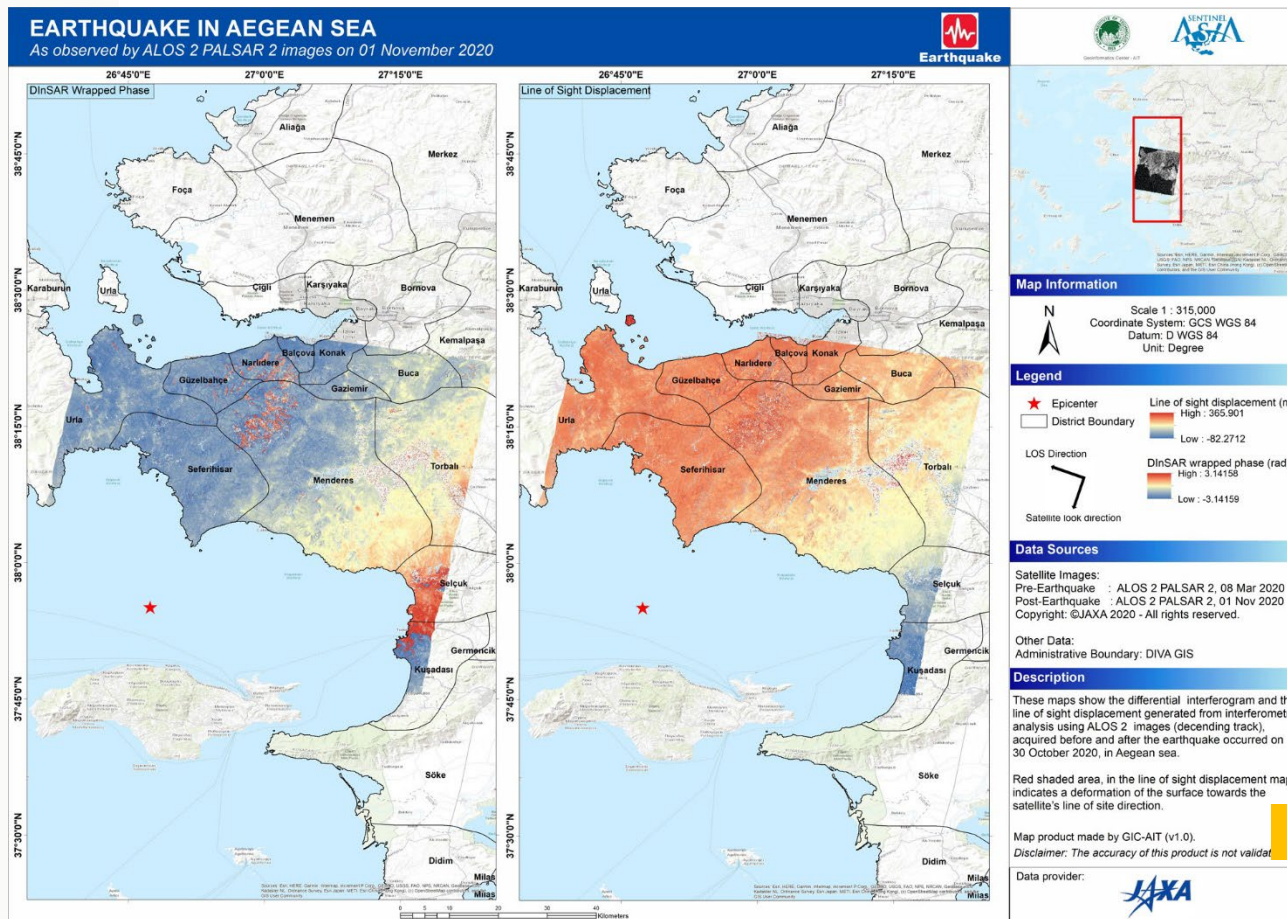


VAPs (provided by MBRSC)

# EOR: Good Practice 2

## Earthquake and Tsunami in Turkey (October 2020)

[EOR Requestor] Disaster & Emergency Management Authority in Turkey (AFAD)

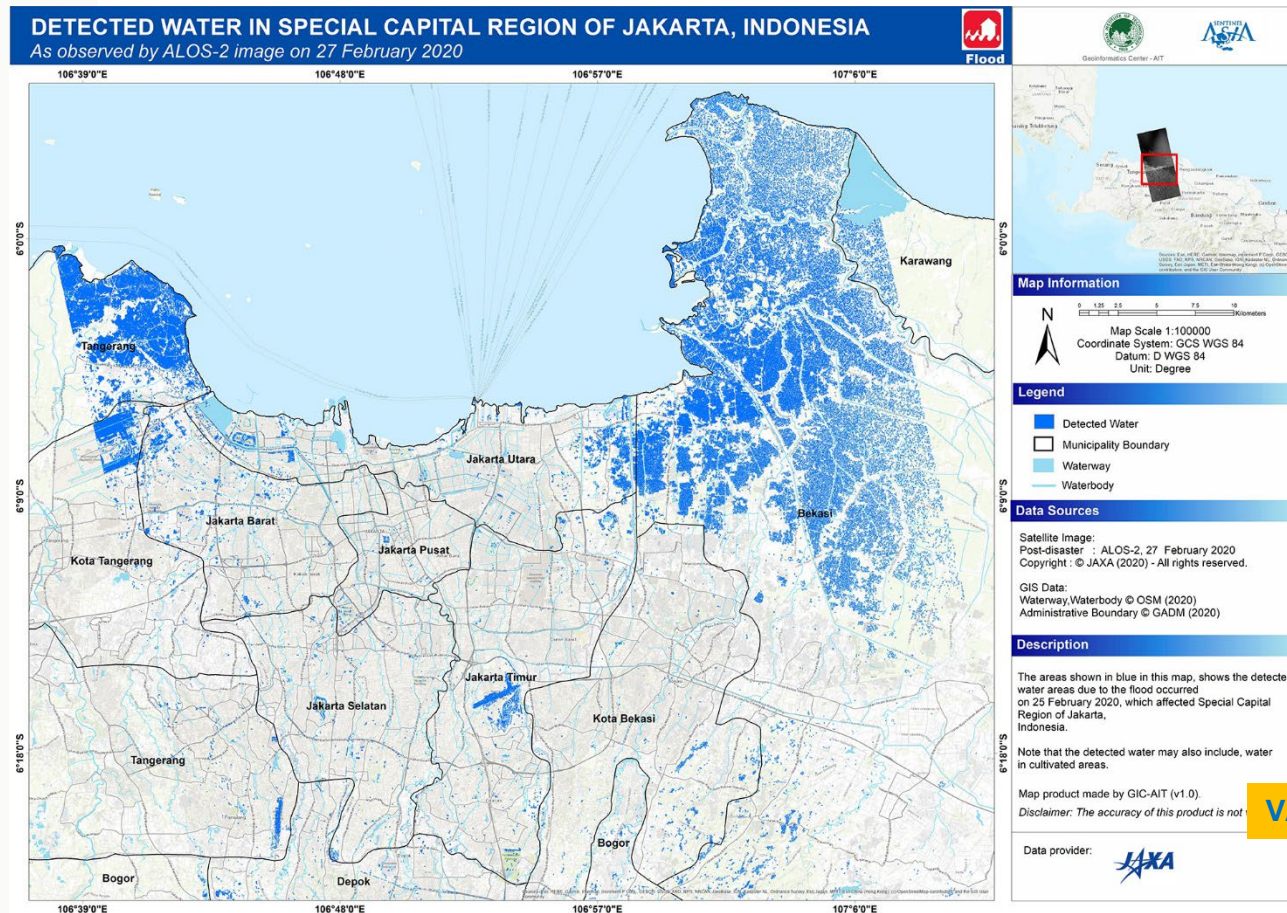




# EOR: Good Practice 3

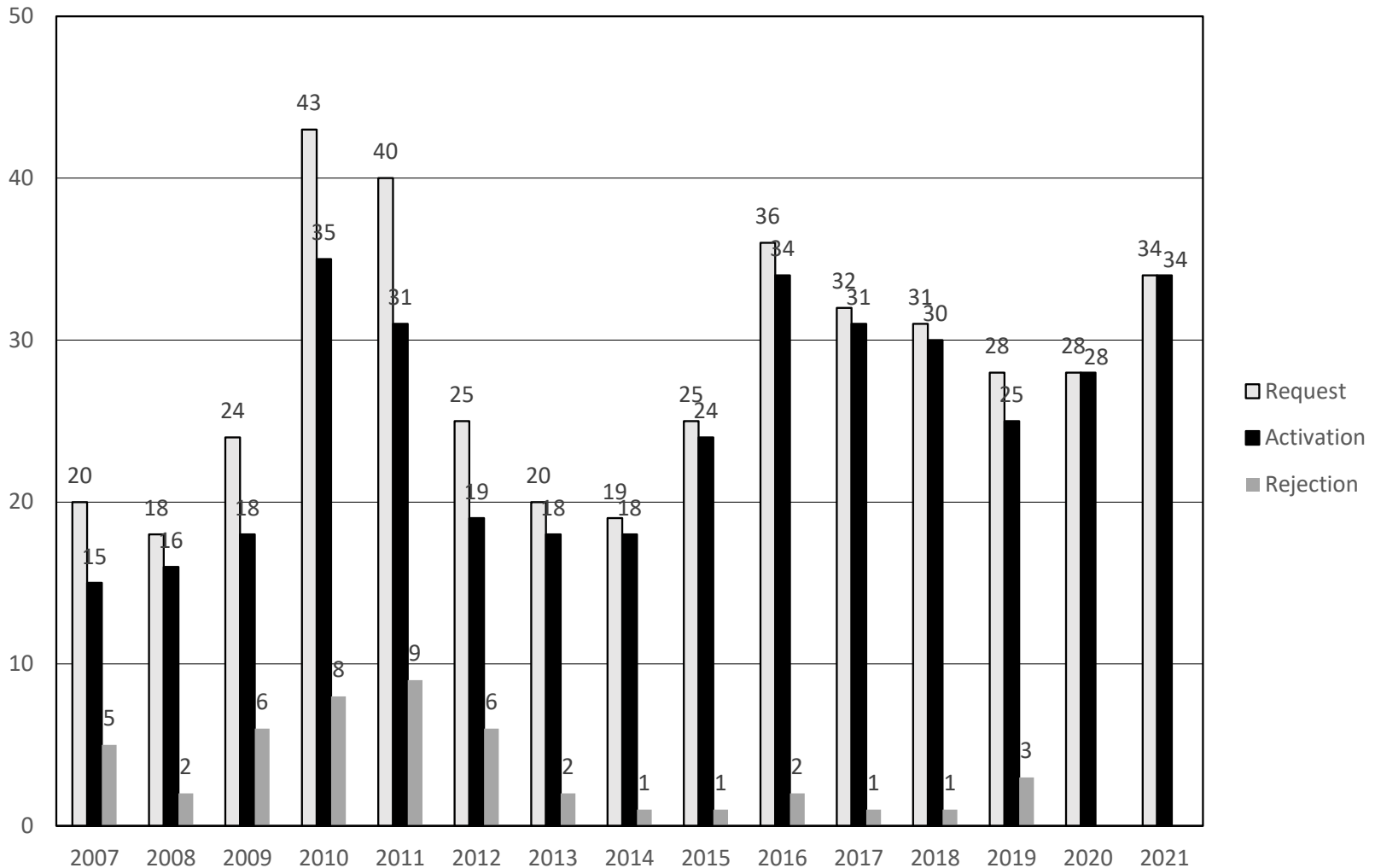
## Flood in Indonesia (February 2020)

[EOR Requestor] Japan International Cooperation Agency (JICA)

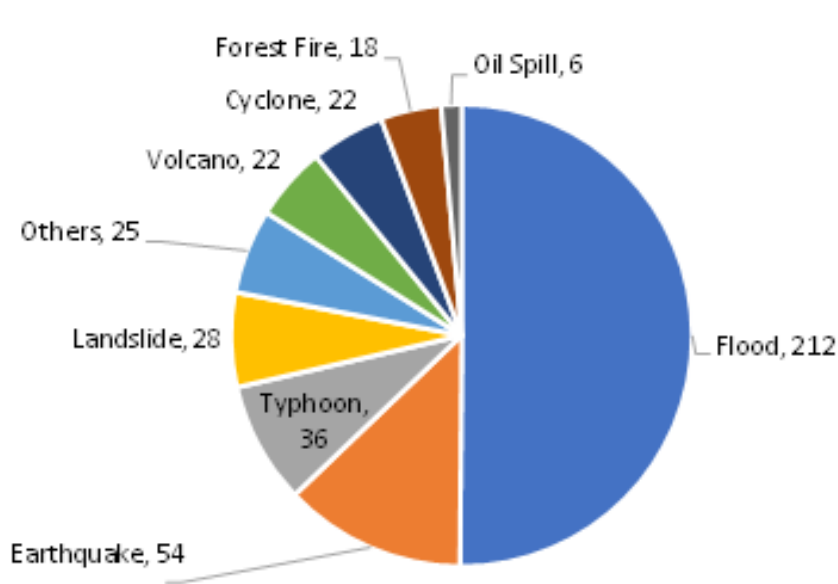


# Number of past EOR (2007-2021) \*as of December 2020

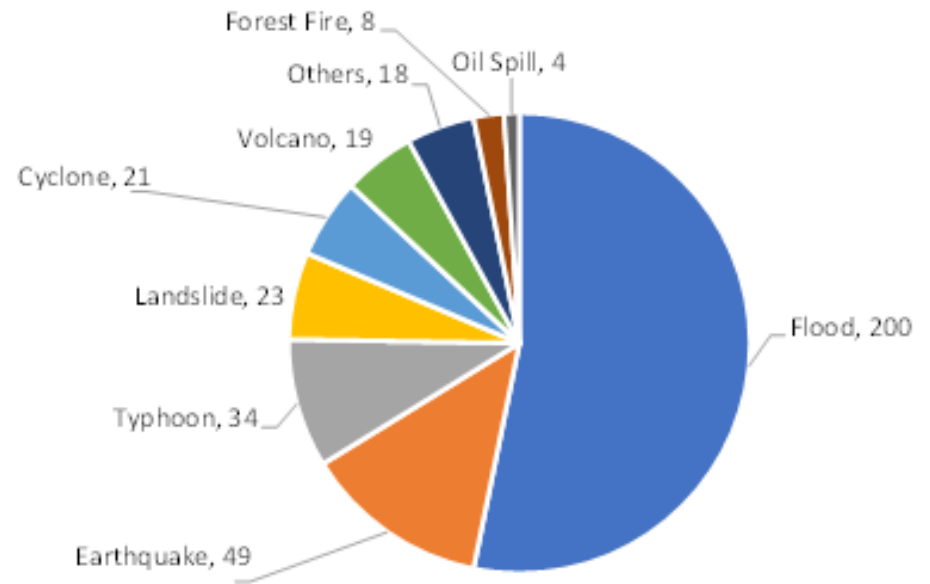
*Sentinel Asia accepted 423 requests, 376 were activated.*



# Type of Disaster (2007-2021) \*as of December 2021



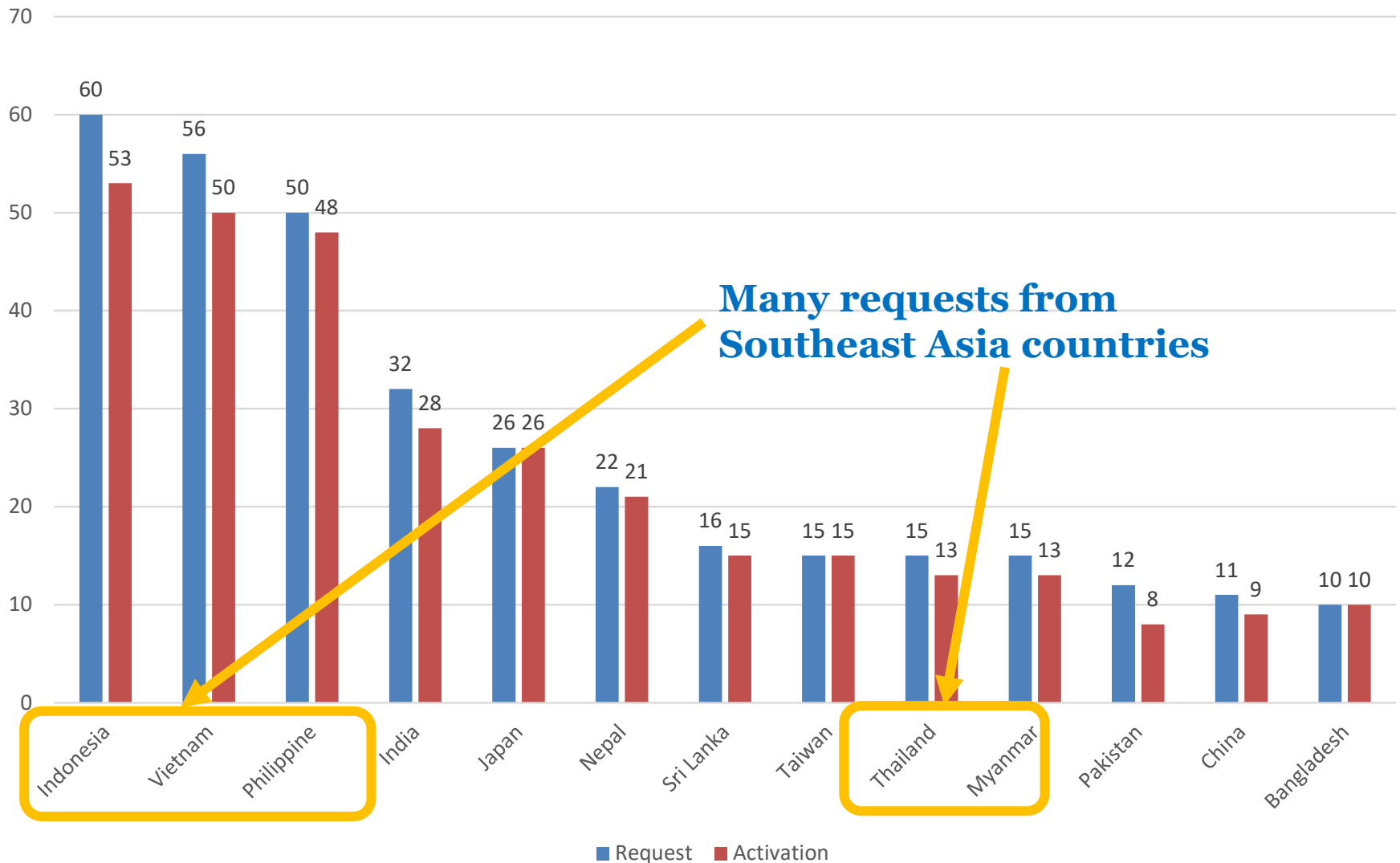
**Request**  
**(N=423)**



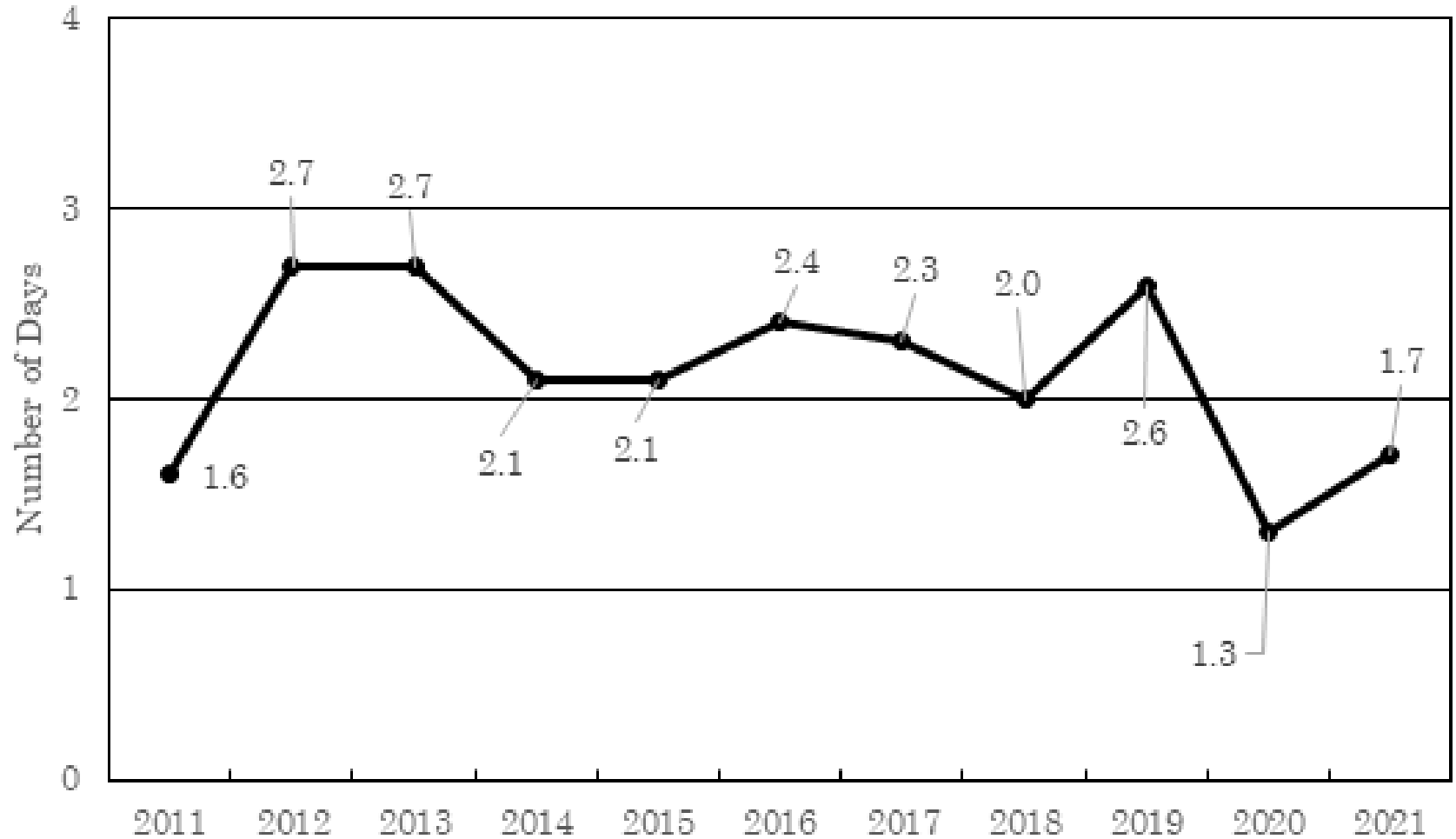
**Activate**  
**(N=376)**



# Number of activations by country/region (2007-2021 \*more than 10 requests)



# Number of Days Required from Disaster Occurrence to Request



# Escalation to International Disaster Charter (IDC)

In case of major disaster, you can consider to escalate to IDC. The benefit of escalation is as;

- (i) Sentinel Asia Escalation enables requestors to benefit from both Sentinel Asia and the International Disaster Charter (as the satellite sources of Sentinel Asia and the International Disaster Charter are different)
- (ii) Sentinel Asia community will fully support by assuming the roles of **Project Manager** and Value-Adder (s) as requested by the International Disaster Charter.

## OPTEMIS

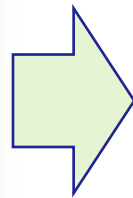
Request Area

Area Type  Input Circle  Input Rectangle

Escalation for IDC

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Elevate



## International Disaster Charter (IDC)

Home About Activations News Library English Login

### Charter activations

12 NOVEMBER 2021

#### Flooding in Sri Lanka

Browse activations on map ▶

Location of Event:	Sri Lanka
Date of Charter Activation:	2021-11-12
Time of Charter Activation:	12:55
Time zone of Charter Activation:	UTC+01:00
Charter Requestor:	ADRC on behalf of Disaster Management Center (Sri Lanka)
Activation ID:	737
Project Management:	JAXA

At least 16 people have died in floods and mudslides in Sri Lanka following more than a week of heavy rain, officials have communicated.

The disaster management center said more than 5,000 people have been displaced from their homes and have taken shelter in relatives' homes or in government-run relief centers.

The months of October and November are usually monsoon season in the northeastern part of Sri Lanka. However, higher-than-usual rainfall has been reported in most parts of the country this year.

#### Products

	Detected flood in North Western Province, Sri Lanka		Detected flood in North Western Province, Sri Lanka
Source: RCM	Acquired: 14/11/2021	Source: RCM	Acquired: 14/11/2021
Category: Delineation Monitoring Maps		Category: Delineation Monitoring Maps	

# Escalation to International Disaster Charter (IDC)

Activation Number	Country	Disaster Type	Activation Date	Requester	Project Manager
390	Indonesia	Earthquake	15-Jan-21	LAPAN, BNPB	LAPAN
391	Philippines	Tropical Depression	22-Feb-21	MO	-
392	Indonesia	Flood, Landslide	6-Apr-21	LAPAN, BNPB	LAPAN
393	East Timor	Flood, Landslide	8-Apr-21	JICA, Secretary of State for Civil protection	UNITAR/UNOSAT
399	Sri Lanka	Oil spill	4-Jun-21	DMC	DMC
400	Sri Lanka	Flood	5-Jun-21	DMC	CGIAR
409	Japan	Flood and Landslide	14-Aug-21	ADRC, MLIT	Yamaguchi University
420	Sri Lanka	Flood, Landslide	12-Nov-21	DMC	JAXA
421	Philippines	Floating pumice stones & volcanic debris	24-Nov-21	PHIVOLCS	PHIVOLCS
422	Indonesia	Volcanic Eruption	7-Dec-21	JICA, PUPR, AHA Center	AIT

*10 requests out of 34 EORs were escalated to IDC in 2021*