















Lessons from Sentinel Asia Operations: towards more effective human resource development

















































































UN International Conference on Space-based Technologies for Disaster Risk Reduction – "Understanding Disaster Risk", The 6th Annual UN-SPIDER Conference in Beijing, 19-22 September 2016

> Kazuhito UEDA Asian Disaster Reduction Center (ADRC)

Sentinel Asia and its Contributions





- Sentinel Asia is a voluntary initiative between <u>space</u> <u>agencies</u> and <u>disaster management agencies</u> to apply <u>Remote Sensing</u> and <u>Web-GIS</u> 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.

2016 Kumamoto Earthquake



(3)

- Occurrence: 16 April
- Request(EOR):16 April
- SA Implemention:16 April
- Archive uploaded:19 April
- Post disaster uploaded: 17 April
- Product uploaded:17 April



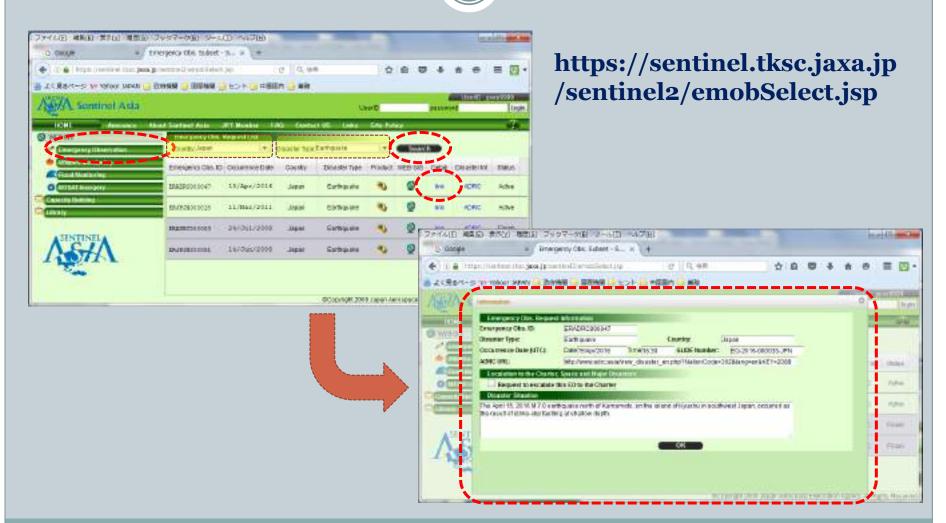


URL https://gbank.gsj.jp/geonavi/

Emergency Observation of Kumamoto



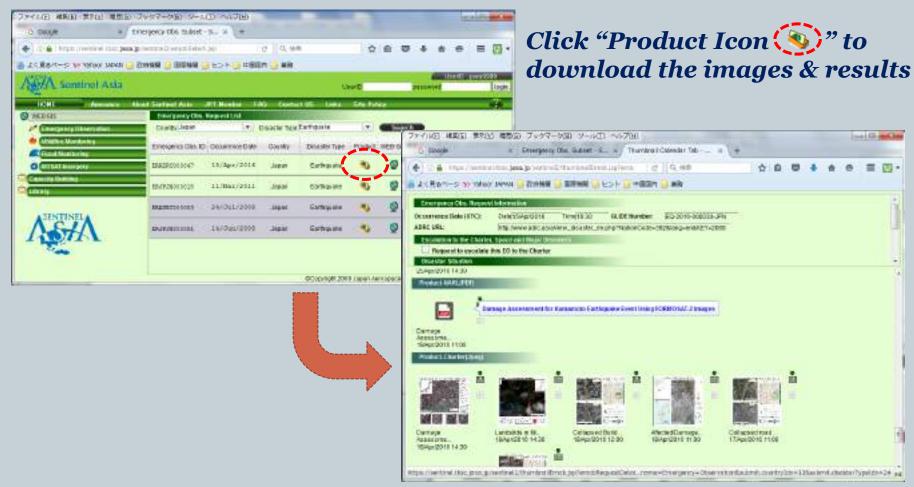
4



Satellite Image and Analysis Report of Kumamoto







Analysis Report by NARL















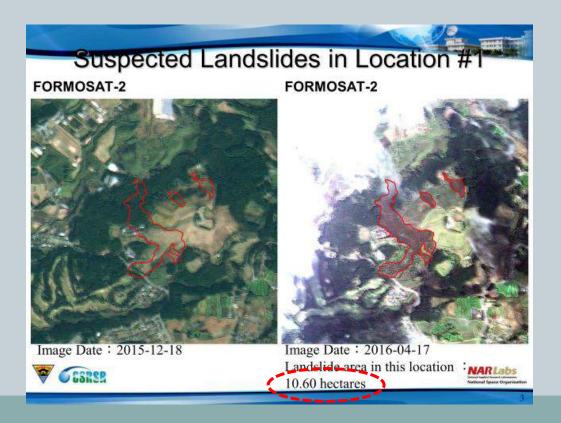


Quick and Exact EOR

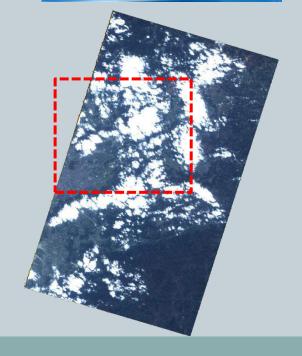


7

Quick and Exact EOR makes Appropriate and Available Product.





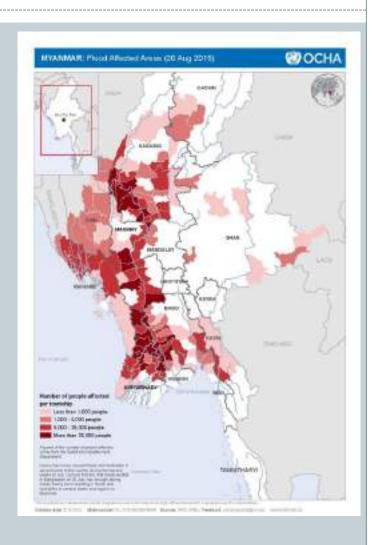


2015 Myanmar Flood



8)

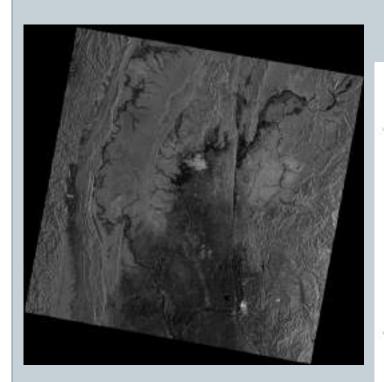
- Occurrence: 19 July
- Request(EOR):22 July
- SA Implemention:22 July
- Archive uploaded:24 July
- Post disaster uploaded: 24 July
- Product uploaded: 24 July
- The high-resolution image for rescue operations and Landslide is offered in August
- Request (EOR for Landslide): 7 Sept



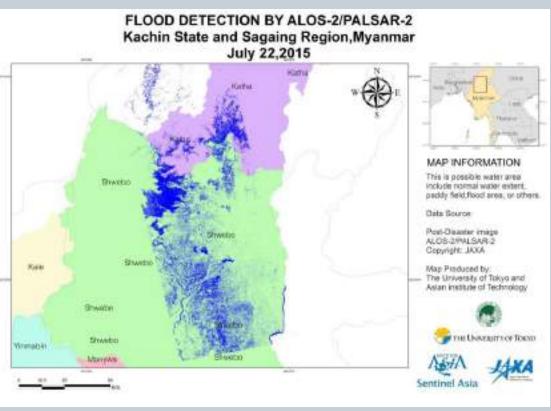
Provision of Satellite Image and Product







ALOS-2 PALSOR2 Post Disaster



Product(The inundation area is blue)

Toward Reduction to Secondary Disaster







Landslide interpretation

- 3 Landslide dams were founded in interpreted area.
- Hakhley village was swept in mudflow since one of landslide dam has collapsed on 28 August.
- Additional observation was carried out.



Appreciation Letter from Myanmar







Government of the Republic of the Union of Myanmar Ministry of Social Welfare , Relief and Resettlement Relief and Resettlement Department

Letter No: CR / EOR/ 001

Date : 29 July, 2015

To

Asian Disaster Reduction Centre (ADRC)

Japan Aerospace Exploration Agency (JAXA)

Asian Institute of Technology (AIT)

The University of Tokyo

Subject --: Emergency Observation Request for Myanmar Flood (July 2015)

Dear Sirs/Madams,

As a consequence of heavy rain starting from 16th July 2015, Myanmar is now facing severe floods in some states and regions. Myanmar government is currently coping with our own capacity to response these floods.

Regarding this, we would like to express our deep appreciation to Asian Disaster Reduction Centre (ADRC) which conveys our emergency observation request (EOR) to Japan Aerospace Exploration Agency (JAXA) in very quick manner through Sentinel Asia 3ystem. We also thank to JAXA for providing necessary satellite images such as real time images as well as the previous ones. Relief and Resettlement Department appreciates so much Emergency Data Analysis Team of Asian Institute of Technology and the University of Tokyo for your energetic efforts on data analysis task.

The satellite images, data analysis and maps offered by all of you are very useful for our GIS Ad hoc Team and for Relief and Resettlement Department. We can generate the List of flooded villages and potential flooded villages in Sagaing region. We will also generate Sagaing's Flood Area-1 (22-7-2015) which can be hopefully produced by 29th July 2015.

2

We shared the List of flooded villages and potential flood affected villages in Sagaing region to the regional branch office of Relief and Resettlement Department. After completion of generating flood maps, we will also disseminate these maps and data to the local authorities of flood-affected regions for their response actions, as well as relevant line departments such as Department of Meteorology and Hydrology and Department of Irrigation, and humanitarian actors in the country.

We do believe that we can make further request of the Satellite Images for the potential affected areas in Myanmar due to the current heavy rainfall and flooding.

Finally, let me say thank you again for all of your kind cooperation with Relief and Resettlement Department and our Ad hoc GIS Team.

Sincerely yours,

Soe Auna

(Director General)

Members of Sentinel Asia





- Sentinel Asia organizes Joint Project Team (JPT), and JPT consists of <u>102</u>
 <u>organizations</u> including <u>87 agencies from 26 countries/region</u> and <u>15</u>
 <u>international organizations</u>. (as of July 2016)
- JAXA is the secretariat of JPT.
- Also, Sentinel Asia cooperates with
 ADRC and their members closely,
 and they are also member of Sentinel Asia as well.





Framework of Sentinel Asia





Space Community

APRSAF

Satellite Image

Promotion of Utilization

Capacity Building

SENTINEL ASIA

87 organizations from 26

countries & regions and 15 international organizations

In total: 102 organizations

Disaster Reduction Community

ADRC
Member Countries
(30 member countries)

Disaster Information

Utilization (User)

Joint Project Team (JPT)

International Community

UNESCAP, UNOOSA ASEAN, AIT and

International Disaster Charter etc.

International Cooperation

Data Provider Node (DPN)





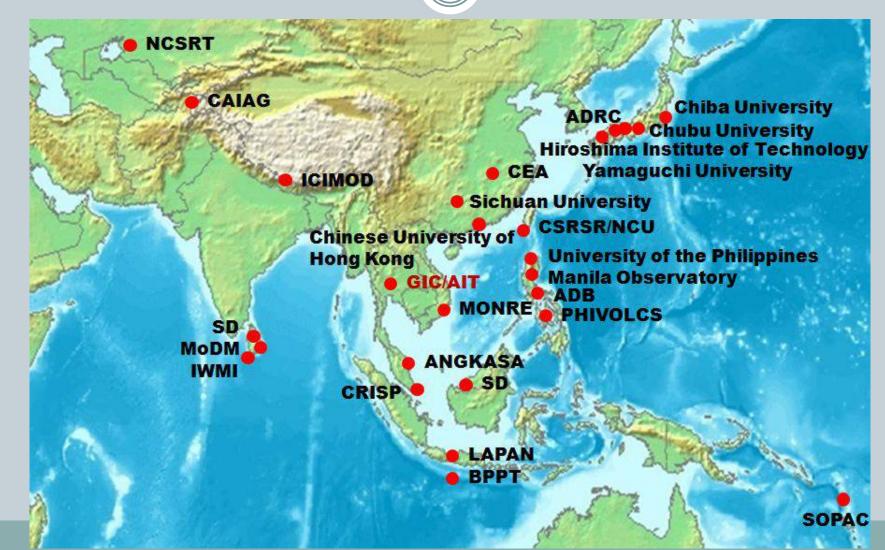
Sentinel Asia Constellation contributing to Emergency Observation



Data Analysis Node (DAN)

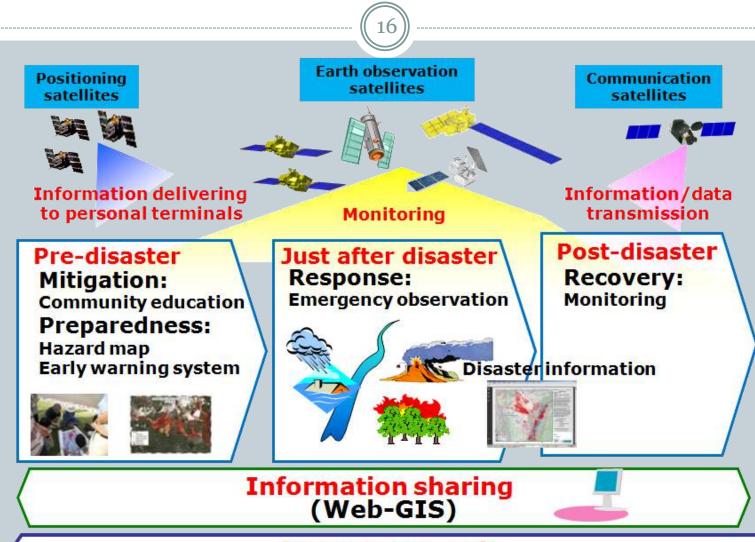


(15)

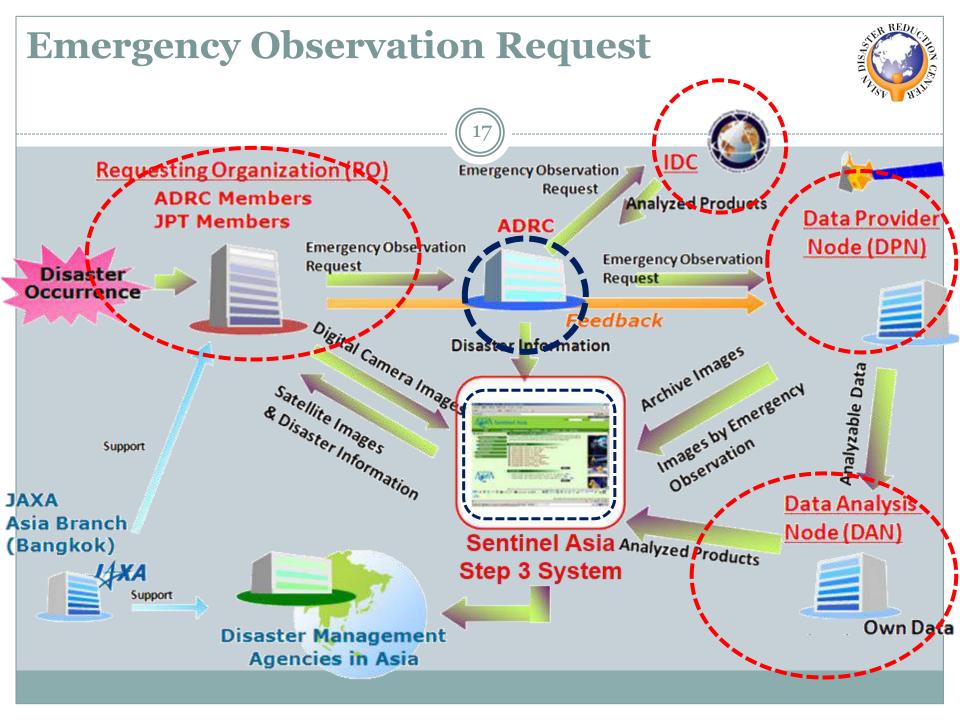


Concept of Sentinel Asia Step 3



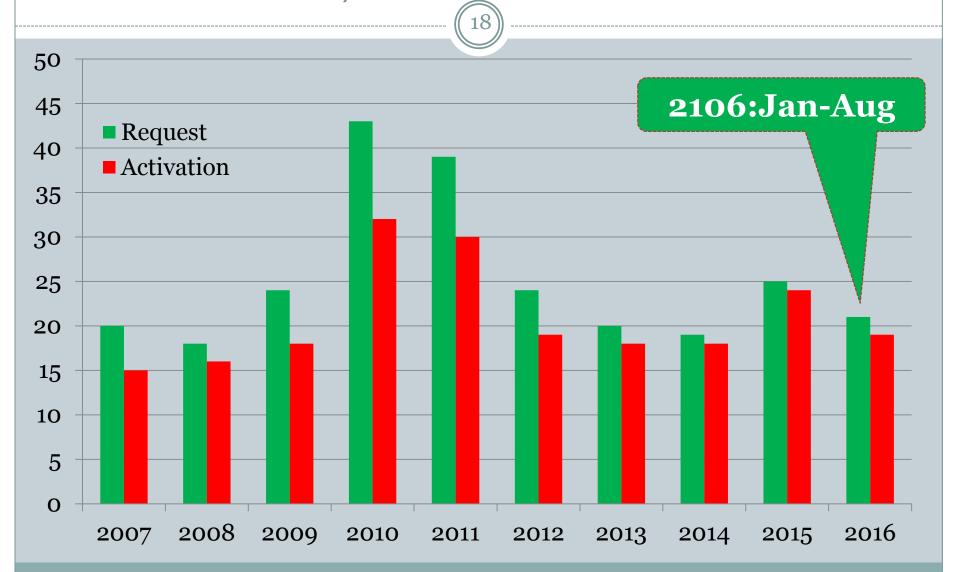


Human network Capacity Building, Outreach



Changes in the number of emergency observation 2007-2016

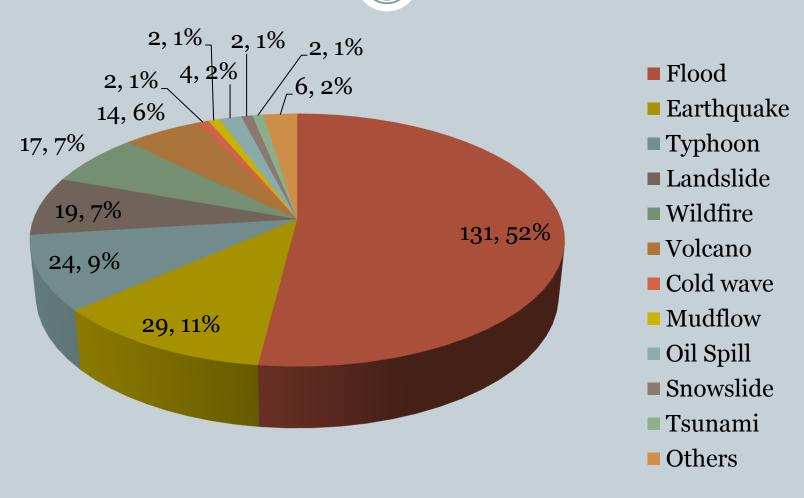




Breakdown type of disaster 2007-2016

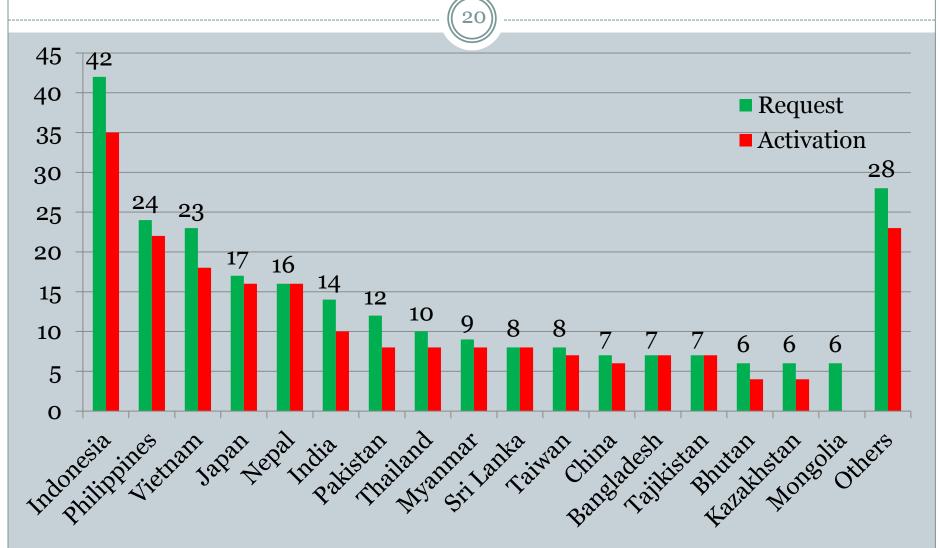






The implementation status of emergency observation for each country 2007-2016





Issues & Lessons



(21)

Active Participation





Public Relations of Success Case

Construction of Synergistic Cooperation





Intensification of Analysis Capacity

