Day 2; November 13: Training Workshop

1 Introduction (Background and Purposes)
ADPC (Ms. Dewi), JAXA(Mr. Miyoshi), Dr. Lal Samarakoon (co-chair of the SC)

Dr. Samarakoon explained history of training done by Sentinel Asia, such as "Mini Projects" and overview of the training this time. Mr. Miyoshi explained the purpose and the background of the training.

2 Overview
Sentinel Asia's Emergency Observation Mechanism and effective EOR (AOI planning) : ADRC (Mr. Ikeda)

Dr. Ikeda explained the flow to request emergency observation and new operation system "OPTEMIS". Summarized about the members, activations since 2007, distribution of activations, and a summary of response time. As of 2018, the response time for a request was about 2 days, and response time for VAP is about 3 days.

3 New Sentinel Asia web and Activation Training

- System Overview – JAXA (Ms. Yamamoto)

Ms. Yamamoto introduced the new JAXA system: Web Portal, OPTIMIS and WEB-GIS: Detail explanation of OPTEMIS was given with its function, usage and linkages. Future target will be an automated system at the time of the request to satellite data delivery

- OPTEMIS operation- GISTDA (Mr. Wasanchai)

Mr. Wasanchai introduced various information/documents to operate with OPTEMIS through step-by-step explanations. The system was quite easy to operate with all aspects including regulatory functions. He also showed possible future development plan including language support, background information overlay etc.

- DAN and DPN operation (Data upload/download from/to OPTEMIS and SFTP) – NARL (Mr. Chou)

Mr. Chou explained about data upload/download functions of OPTEMIS.

- WEBGIS operation- JAXA (Ms. Takakura)

Ms. Takakura introduced functions of "Web-GIS" used for SA. Account information for Web-GIS will be distributed to member organization after this JPTM. The operation of Web-GIS is done by manual procedure for the moment. The current system is a trail version until March 2020.

- Administrative information (Accounts, Procedures and Focal points, etc) –JAXA (Ms. Yamamoto)

Ms. Yamamoto notified necessary information on demonstration in the next session.

4. Simulation training on Sentinel Asia Emergency Observation via New Sentinel Asia web/OPTEMIS:

- GISTDA, ADRC and JAXA (Dr. Ikeda, Mr. Wasanchai, Ms. Yamamoto)

Ms. Yamamoto and Dr. Ikeda demonstrated OPTEMIS operation. The participants experienced simulated emergency request.

<question on identifying DAN for particular activation was raised. >

Emergency Observation Request Form

5. Knowledge-sharing toward good practices

- How to establish Standard Operating Procedure (SOP) : ADRC (Dr. Ikeda)

Dr. Ikeda mentioned that current SOP of SA should be updated to suite local needs. Workshops were held in 2018 to develop updated SOP in Thailand, Myanmar, and Vietnam. SOPs were developed in these countries. Each member countries are encouraged to develop its own SOP based on these three updated SOPs.

- Use cases based on Sentinel Asia's SOP in Vietnam to be shared with other members: Hanoi University (Mr. Nguyen Quoc Phi)

Mr. Nguyen reported about their SOP developed in 2018. He also introduced an analysis on cases of storms in 2018 and 2019.

-   Emergency Response and Relief Support in the Spirit of One ASEAN One Response : AHA Centre (Ms. Shahasrakiranna)

Ms. Shahasrakiranna mentioned about the relation of the disaster risk and economics in ASEAN countries and the framework of AHA center and mandate. Also the "One ASEAN One Response" scheme. 2018 earthquake and tsunami in Indonesia was also reported.

6 Capacity-building on data analysis and VAP generation
- How to better understand SAR images, interpret SAR products, and realize the limitations: Yamaguchi University (Prof. Nagai / Ms. Tamkuan)

Ms. Tamkuan showed various SAR images to explain about the relationship of observation parameters and how these can effect information content. While presenting cases on flood and earthquake interpretation, she discussed the limitation of SAR, variation of processing on the type of disasters, and other characters of SAR.

- How to process satellite data (optical and SAR) to produce VAP with particular foci on flood and water-related disasters: AIT (Dr. Dan and Mr. Chathumal)

Mr. Chathual worked with participants on a hands-on exercise to make a flood map using before and after ALOS PALSAR data using QGIS software package. The interpretation was based on threshold values. Dr. Dan worked with Sentinel 2 optical data and the demonstrated was carried out to make a flood map. Use of open source packages with simple techniques were the highlight.

- How to produce different type of products, their strengths and limitations: Earth Observatory Singapore (Ms. Emma Hill) in collaboration with JPL ARIA Project (Mr. San-Ho Yun)

Dr. San-Ho demonstrated the difficulty in identifying an appropriate threshold to classify flood proxy areas using SAR data. The importance of ground observation was highlighted and requested to consider developing a scheme to collect and share with DAN members to ease their work. Introduced a tool iseeflood.com to collect and share ground information

<Observation was made regarding the privacy of personal data currently shared though the above data colleting system>

- Applications of Google Earth Engine for disaster risk management: University of Tokyo (Dr. Miyazaki)

Dr. Miyazaki demonstrated the use of night-time light data for "damage assessment" using an earthquake in Hokkaido occurred in 2018 where large scale blackout occurred. Also, showed the changes of nightlight after the dam eruption in Lao PDR in 2018, and flood in Kerala, India in 2018. The demonstration was done using Google Earth Engine with simple scripts to make easy observations and comparisons.

- Approaches in emergency response mapping using multisource satellite data: IWMI (Dr. Amarnath and Mr. Alahacoon)

Mr. Alahacoon introduced the use of a flood map (VAP) for analyze risks a step towards SA Step-3. Demonstration was done using flood map, a DEM and vulnerability information. Dr. Amarnath stressed the use of multiple source information for risk assessment that need to address preparedness, the target of Step-3. Software based on GEE

Flood mapping and damage assessment using SNAP/ GEE: ICIMOD (Dr. Kabir Uddin)

Dr. Uddin demonstrated flood mapping with some exercises using Google Earth Engine and example of flood maps. He discussed about simple techniques that can produce many good output with little effort and time as a quick flood map to do quick assessment.

Topological/Terrain modeling, Hydrological Modelling / ISRO (Mr. Abhinav Shukla)

Drought Monitoring / Symbosis University (Mr. Singh)

Summary:

1. Participants appreciated the training workshop as well as the idea of SA Café; an interaction opportunity with DAN and DPN partners.
2. SOP for SA activation was established in 3 countries and rest of the countries can follow with modifications.
3. Need to create Meta Data for VAP was recommended.
4. Need of ground data to improve the quality/accuracy of VAP was emphasized and suggested to make discussions to realize.
5. Value of of open source tools like QGIS, GEE was demonstrated. Suggested to consider sharing the material presented (via JAXA Web Portal).
6. All the participants agreed the necessity of capacity development; awareness raising and knowledge sharing.
   a. *User training for end-user application*
   b. *Technical discussion of DAN members*
   c. *DPN meetings on data sharing policies and technicalities*