Overview of JAXA's Capacity Building Activities and Mini-Project

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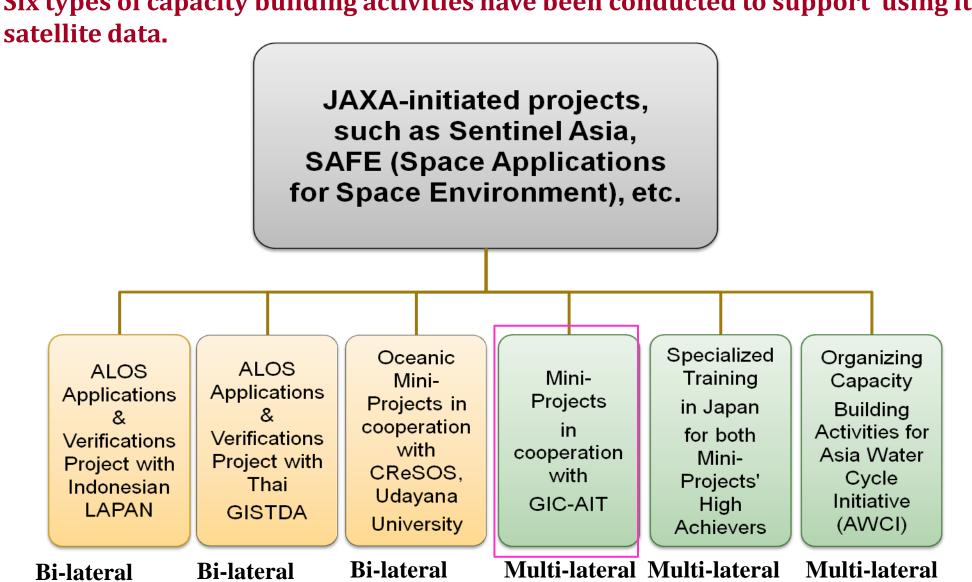


Objectives of JAXA's Capacity Building Activities

- 1. To develop in-country capacities in use of RS and GIS data
- 2. To make use the Japanese satellite data for disasters and environmental issues

Structure Chart of JAXA's RS Capacity Building Activities

Six types of capacity building activities have been conducted to support using its



Mini-Projects Types

- 1. Sentinel Asia
- 2. Space Applications for Environment (SAFE)



Mini-Projects in 2013-14

A) Sentinel Asia

- 1. Flood hazard and exposure mapping (Bangladesh Water Development Board)
- 2. Flood Hazard and exposure mapping Myanmar (Department of Meteorology and Hydrology)

- Bangladesh

- 3. Volcanic Hazard and exposure mapping Philippines (PHIVOLCS & NAMRIA)
- 4. Flood Hazard and exposure mapping Philippines (PAGASA & NAMRIA)
- 5. Flood Hazard and exposure mapping Sri Lanka (DMC & Survey Department)

B) <u>SAFE</u>

- 1. Rice Monitoring and Mapping Bangladesh (Bangladesh Agri. Research Institute & BAU)
- 2. Rice Crop Monitoring and Yield Estimation Cambodia (Department of Planning and Statistics)

Mini-Projects in 2014-15

A) Sentinel Asia

- 1. Flood Hazard and exposure mapping (LAPAN and BIG)
- 2. Flood Hazard and exposure mapping (STI and DMC)

B) <u>SAFE</u>

- 1. Rice Monitoring and Yield Estimation (Department of Agriculture, Planning and Statistics Division)
- 2. Forest Resources Mapping with Satellite Data (Forest Department)

- Indonesia
- Vietnam

- Cambodia
- Myanmar

Implementation Plan for 2014-15

Phase-I: Workshop and Stakeholder Consultation ~ Oct.- Nov. 2014

Phase-II: Capacity Building Workshop and Training at AIT ~ Nov. – Dec. 2014

Phase-III: Workshop for Dissemination of Results ~ Jan.- Feb. 2015

Phase-I: Workshop and Stakeholder Consultation

Workshop

- Introduction to Mini-Project
- Overview of Applications of Remote Sensing and GIS

Stakeholder Consultations

- Objectives of the project
- Data requirements
- Outputs
- Applications
- Selection of study area(s)
- Discussions and feedbacks

Mini-Projects Workshop in Myanmar - 7 Nov. 2014

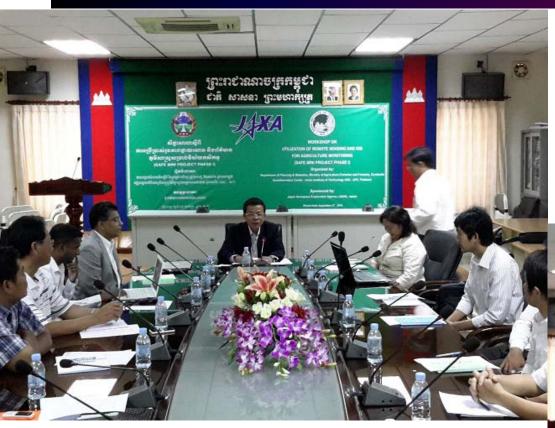


Mini-Projects Workshop in Vietnam - 8 Oct. 2014





Mini-Projects Workshop in Cambodia- 17 Sep. 2014





Mini-Projects Workshop in Indonesia- 8 Sep. 2014





Phase-II: Capacity Building Workshop and Training at AIT

- Processing of Satellite data
- Integration of satellite data with of models
- Validation of data products (outputs) against available secondary information
- Preparation of reports

Phase-III: Field Verifications and Workshop for Dissemination of Results

Field Verifications:

- Field visit of study area(s)
- Fine-tune and update the data products

Workshop for Dissemination of Results:

- Presentation of findings
- Share the value-added data products to the stakeholders
- Seeking suggestions from all stakeholders
- Lessons learned
- Future plans

Past Mini-Project in Myanmar with DMH

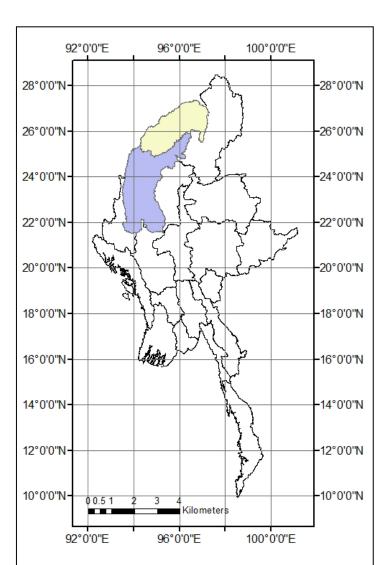
Study Area:

Homalin City in the Chindwin River Basin

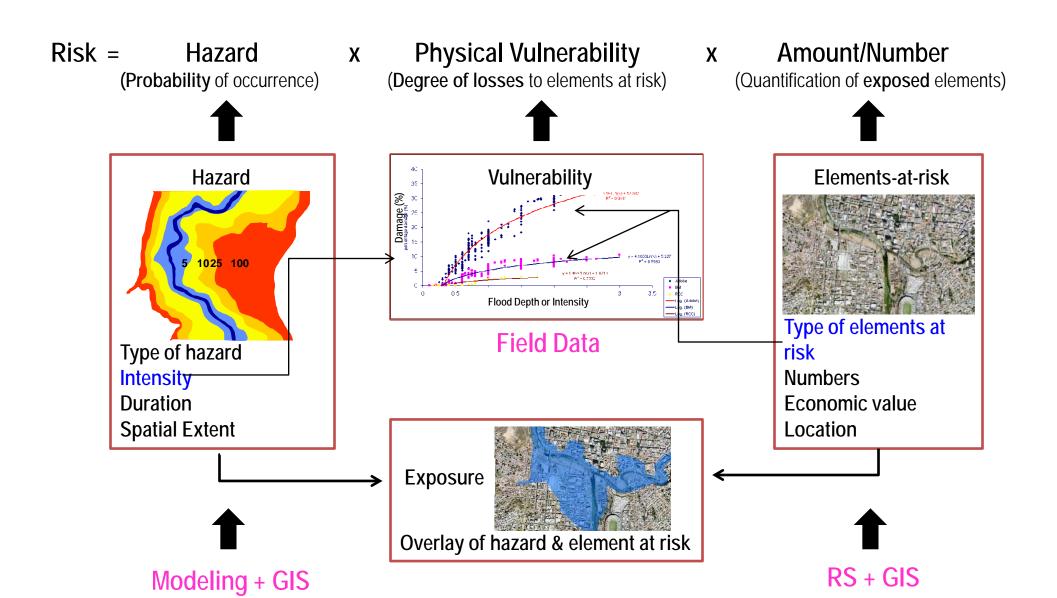
Objectives:

- Flood hazard and vulnerability assessment in Homalin area
- To use ALOS/PALSAR images in flood area delineation



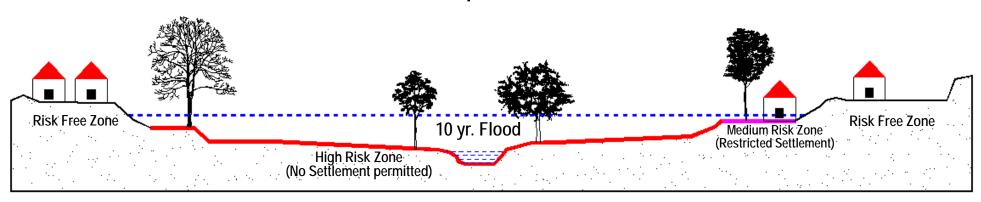


Flood Hazard, Vulnerability and Risk



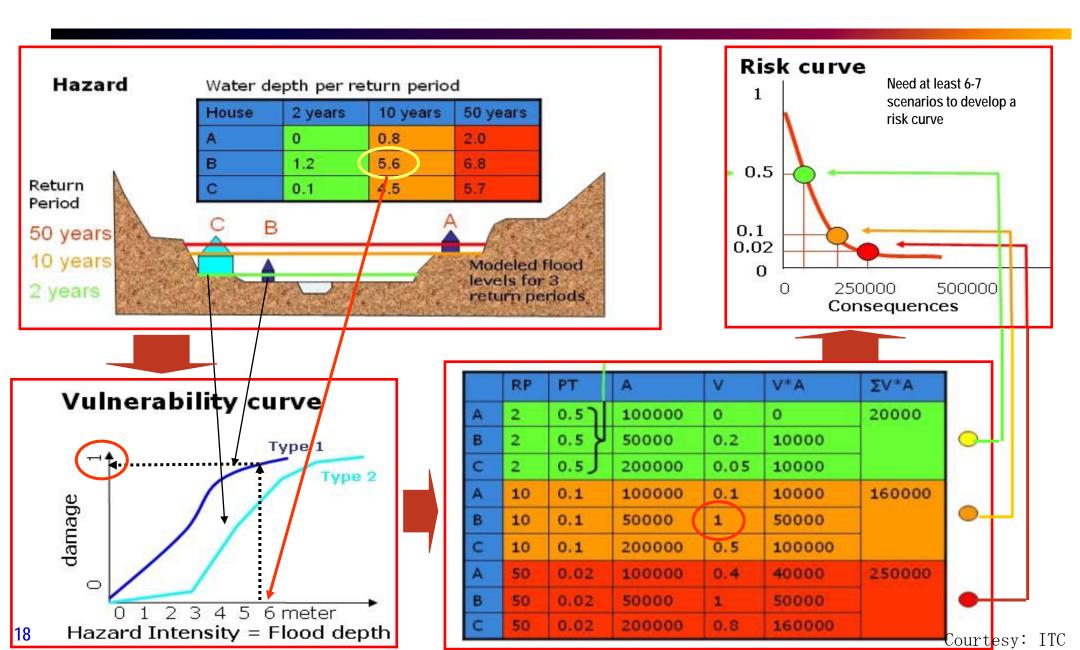
Importance of Hazard, Vulnerability and Risk Assessment

What is the cost for risk zoning and relocation?
What is the insurance premium in different risk zones?



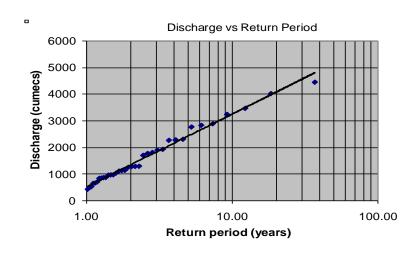
Risk = Hazard & Exposure	x Vulnerability	x Amount (Asset)	
$Risk_{11} = (0.1 \times 1.0)$	x 0.5	x 100,000	= 5,000 US\$
$Risk_{Mid}^{-} = (0.1 \times 1.2)$	x 1.0	x 100,000	= 12,000 US\$
$Risk_{Rt} = (0.1 \times 0.8)$	x 0.2	x 100,000	= 1,600 US\$
Risk _{Total}			= 18,600 US\$

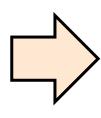
Probabilistic Risk Assessment

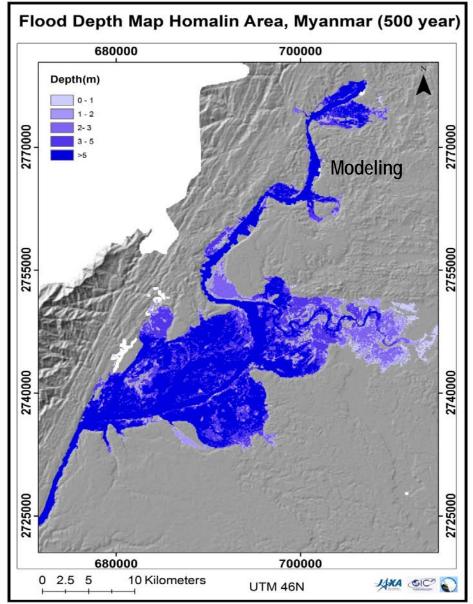


Flood Hazard Assessment in Homalin Area

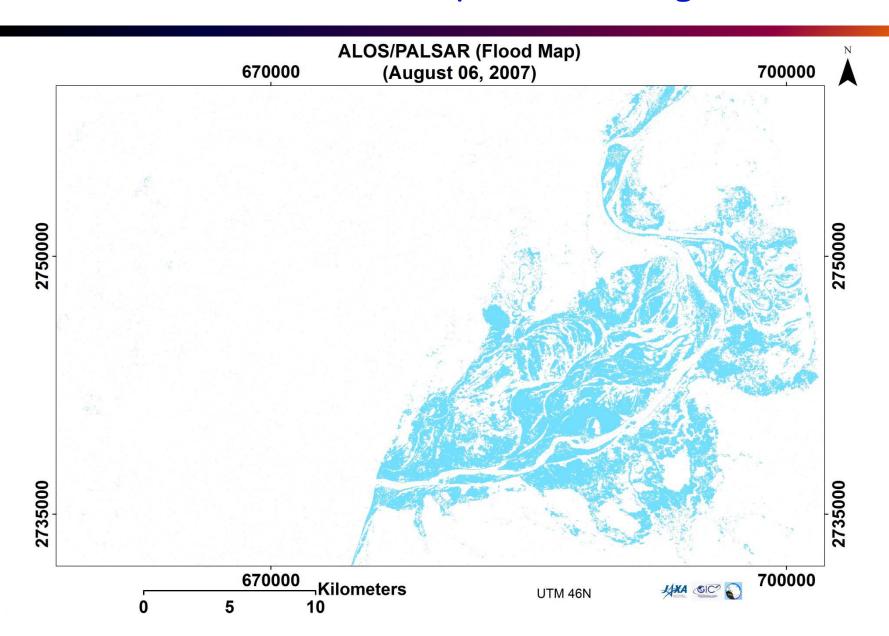
Historical river discharge record was analyzed to find the <u>frequency-magnitude</u> relationship for flood



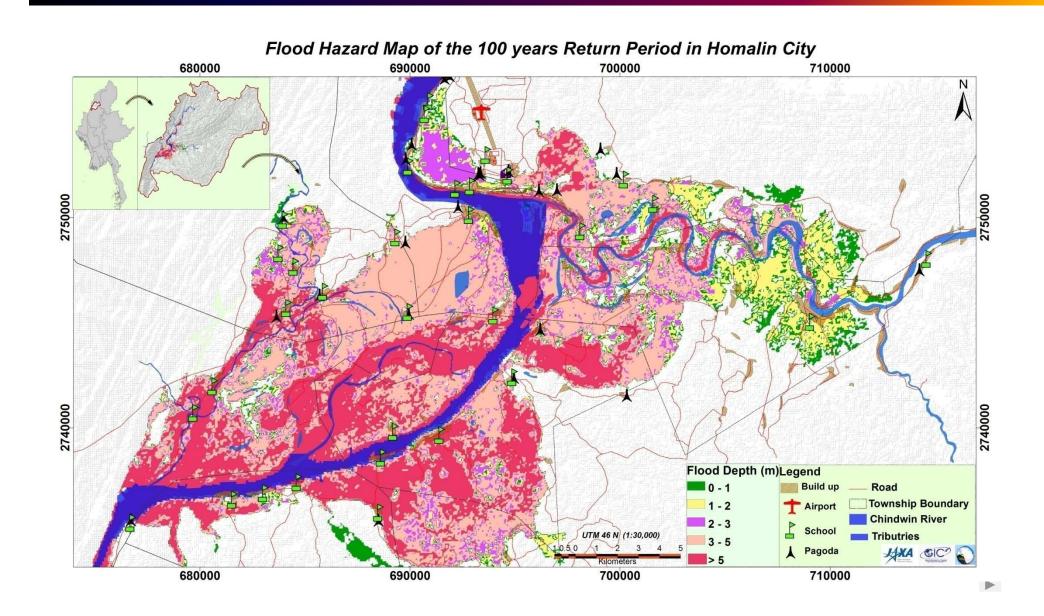




ALOS/PALSAR Data Acquired During Flood in 2007



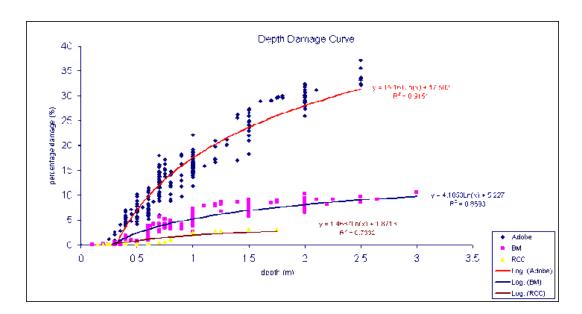
Landuse Map and 100 years Flood Map of Homalin City



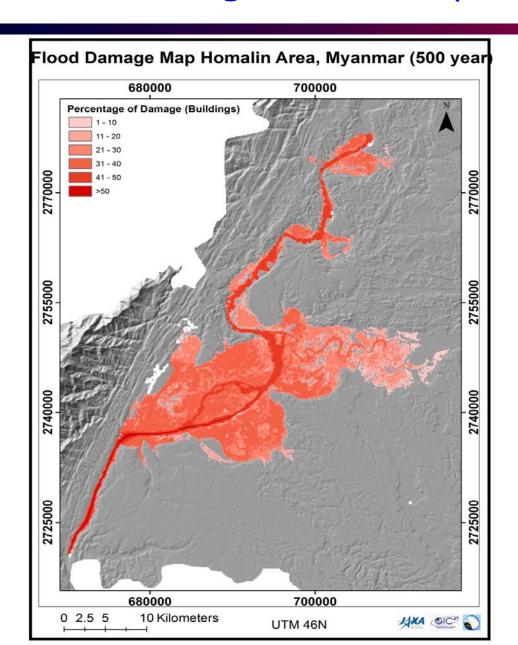
Field Data Collection for Exposure and Vulnerability Assessment







Expected Flood Damage (Risk) Map



Conclusions

- In-country capacities are being built through capacity building initiatives of JAXA and AIT.
- Countries are showing their interests in applications of satellite data.
- Many of these countries are contributing in preparing value-added products for Sentinel Asia.

Thank you for your kind attention