

JAXA's Present Capacity Building Activities for the Asia-Pacific Region

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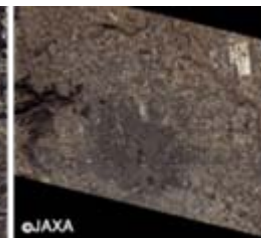
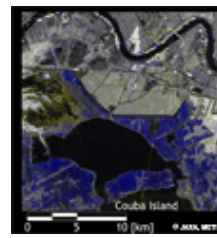
Japan Aerospace Exploration Agency (JAXA)
Space Application and Promotion Center (SAPC)

Asian Institute of Technology (AIT)

APRSAF-17, November 2010

Objectives of JAXA's Capacity Building Activities

1. To provide necessary technical know-how to **RS & GIS users in the Asia-Pacific region** as a contribution by the Government of Japan to the capacity building activities recognized by **UNWSSD, UNWCDR, EO Summit, GEOSS and CEOS**;
2. To use the Japanese satellite data archived for last 30 years for **sustainable development, planning and monitoring purposes in the region**;

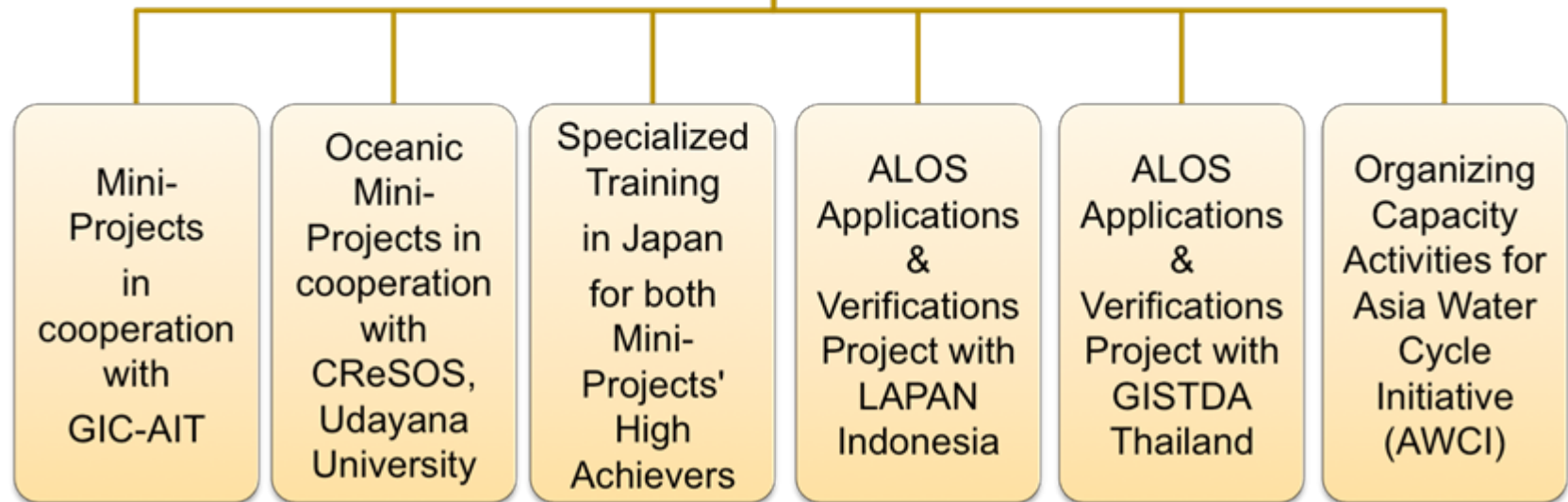


3. To develop in-house capacities of prospective users in the region **by working on project-based training programs**;
 4. To identify future space technology needs in the region **for better services of the forthcoming Japanese satellite programs**.
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Structure of JAXA's Present Capacity Building Activities

JAXA-initiated projects, such as Sentinel Asia, SAFE (Space Applications for Space Environment), etc.

The following capacity building activities are supporting the above projects using satellite data



JAXA's Present Capacity Building Activities for the Asia-Pacific Region

(1) Mini-Projects in cooperation with GIC-AIT

16-Year History of JAXA's Capacity Building Activities in cooperation with GIC-AIT

1. For last 16 years starting from April 1995, JAXA has been entrusting a responsibility to the Geo-Informatics Center, Asian Institute of Technology (GIC-AIT) in Bangkok, to carry out various training programs mainly focusing on RS and GIS for the Asia-Pacific nations.
2. The contents of the training programs were sometimes changed by the needs of the times. For last several years, JAXA and GIC-AIT concentrate on the Mini-Projects, a problem-solving type of training program.



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Outline of JAXA's Capacity Building Activities in cooperation with GIC-AIT



1. Number of Trainees (JFY1995 ~ 2010):

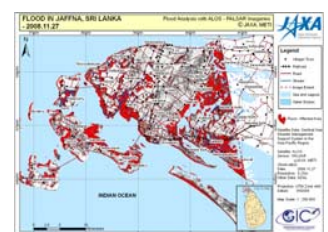
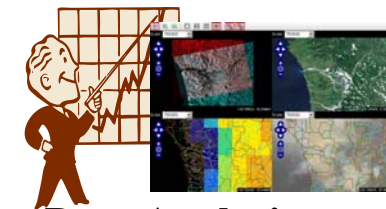
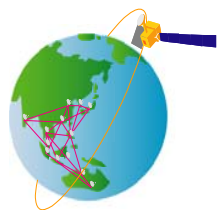
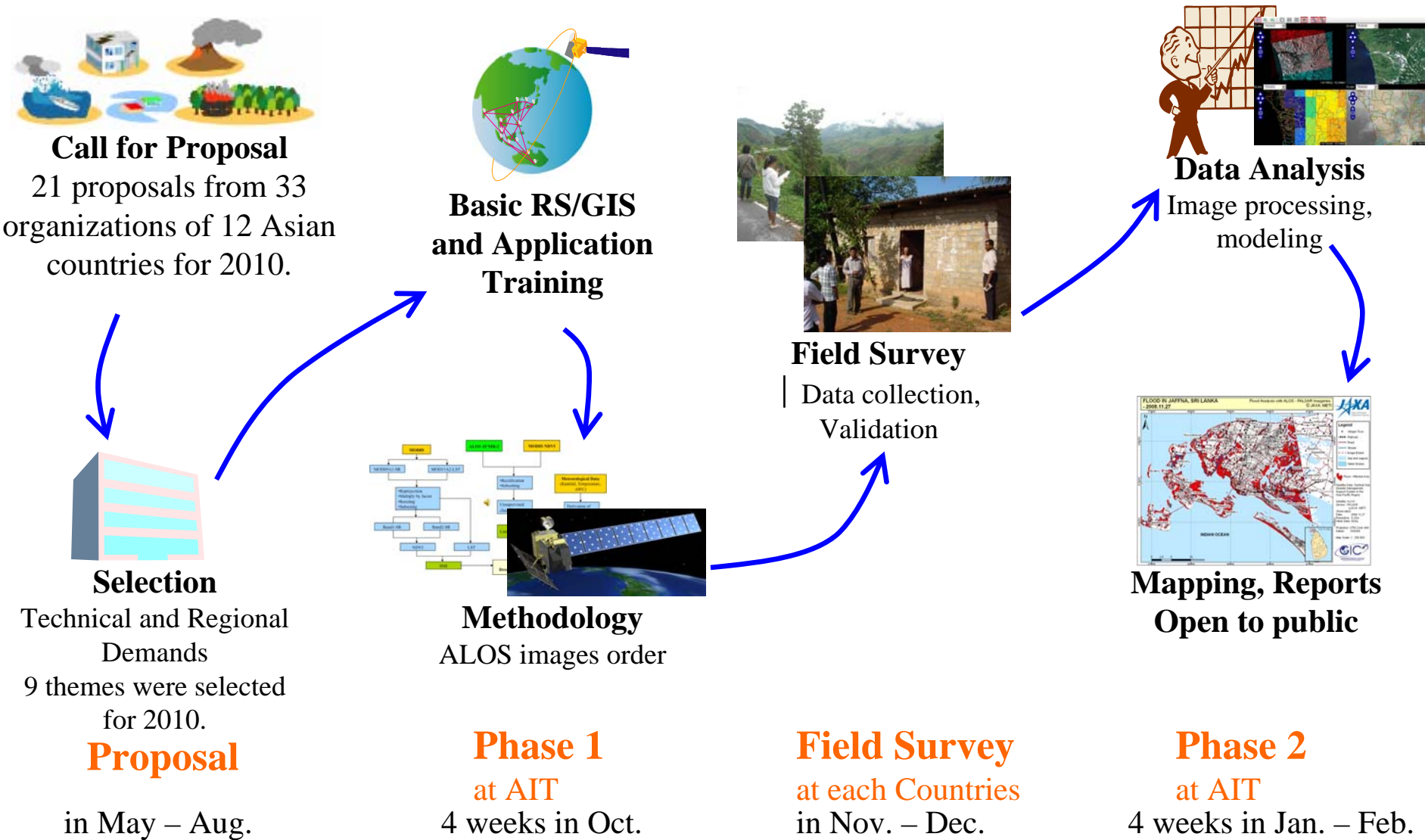
About 1,300 from 27 countries of the Asia-Pacific region

2. Staff of GIC-AIT:

There are usually 12 to 15 Asian personnel including lecturers and administrative staff

Flow Mini-Project

(Real-world problem solving project)



Call for Proposal
21 proposals from 33 organizations of 12 Asian countries for 2010.

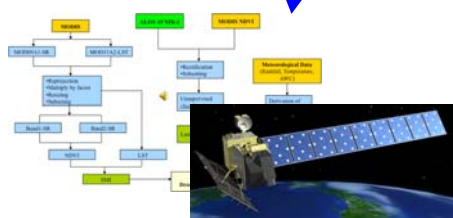
Basic RS/GIS and Application Training

Field Survey
| Data collection, Validation

Data Analysis
Image processing, modeling

Mapping, Reports Open to public

Selection
Technical and Regional Demands
9 themes were selected for 2010.



Methodology
ALOS images order

Phase 1
at AIT
4 weeks in Oct.

Field Survey
at each Countries
in Nov. – Dec.

Phase 2
at AIT
4 weeks in Jan. – Feb.

Proposal

in May – Aug.

9 Mini-Projects Selected for 2010 (Theme No.1-5) (16 Participants of 16 Organizations from 9 Countries)

1. Bhutan: Landslide (1 participant)

- (1) Department of Geology and Mines,
Ministry of Economic Affairs



2. Indonesia: Flood (2 participants)

- (1) Indonesian Agroclimate and Hydrology Research Institute
- (2) Tirta II Public Corporation (PJT II)



3. Kyrgystan: Landslide (1 participant)

- (1) Central Asian Institute for Applied Geosciences



4. LaoPDR : Drought (2 participant)

- (1) Water Resources and Environment Research Institute (WERI),
Water Resources and Environment Administration (WREA)
- (2) National Agriculture and Forestry Research Institute



5. Nepal: Japanese Encephalitis (2 participants)

- (1) Bhim Hospital
- (2) Climate Change Adaptation and Mapping Group



9 Mini-Projects Selected for 2010 (Theme No.6-9) (16 Participants of 16 Organizations from 9 Countries)

6. Pakistan: Habitat Evaluation of Western Horned Tragopan (2 participants)



- (1) WWF-Pakistan
- (2) Ministry of Environment (MoE)

7. Sri Lanka: Flood and Landslide (2 participants)



- (1) Irrigation Department of Sri Lanka
- (2) Survey Department of Sri Lanka

8. Thailand: Assessing Impact of Urbanization (2 participants)



- (1) Department of Geography, Faculty of Social Sciences,
Chiang Mai University
- (2) Royal Irrigation Department, Regional Office 1

9. Vietnam: Coastal Erosion Management (2 participants)



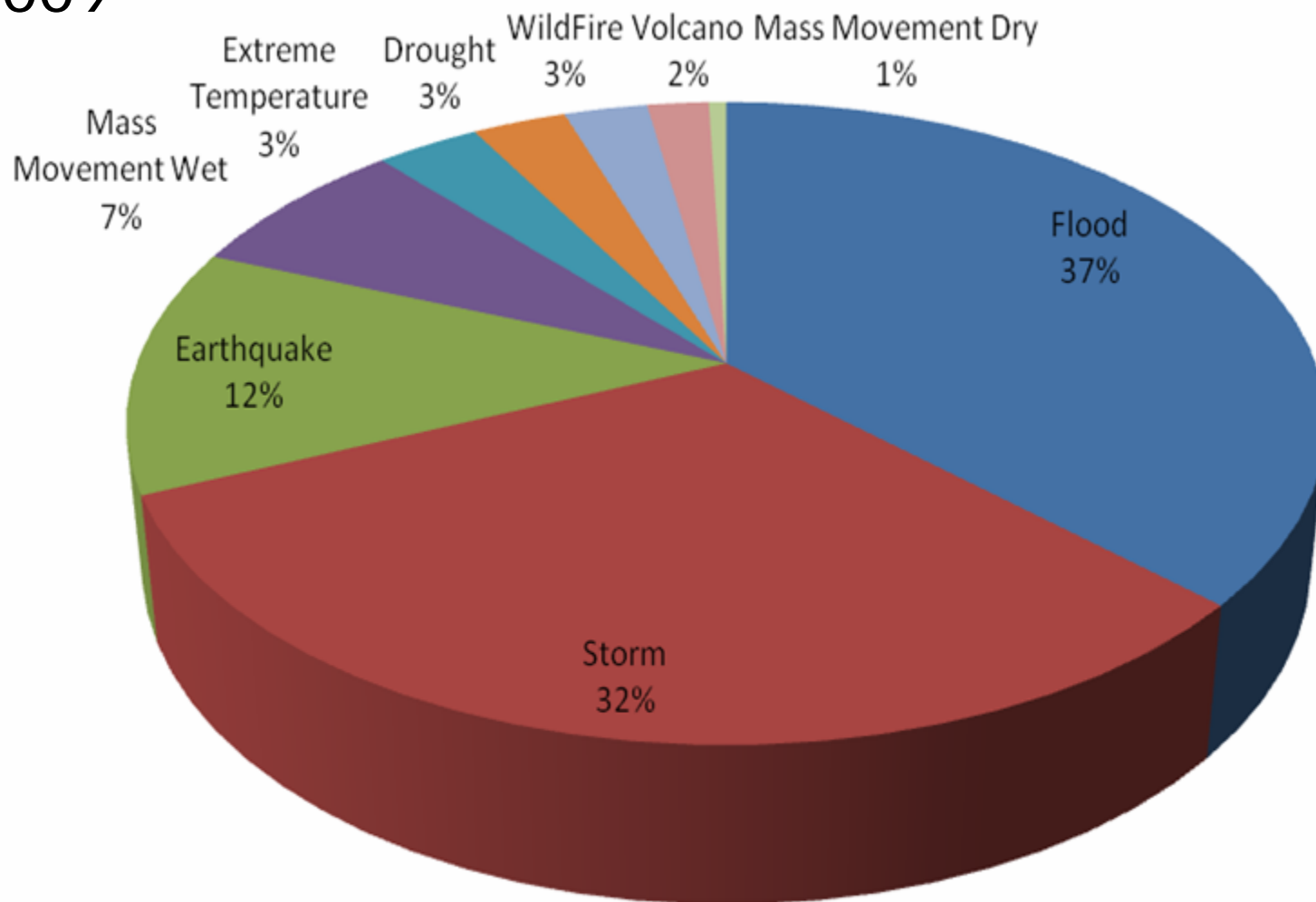
- (1) Space Technology Institute (STI),
Vietnam Academy of Science and Technology (VAST)
 - (2) Institute of Marine Geology and Geophysics (IMGG),
Vietnam Academy of Science and Technology (VAST)
-

Classification of Mini-Projects by Themes (6 Years from 2005-2010)



No.	Type of Themes (15)	Japanese Fiscal Year (JFY)						Total by Themes
		2010	2009	2008	2007	2006	2005	
1	Flood & Cyclone	2	4	4	5	5	4	24
2	Landslide	2	1	1		3	2	9
3	Drought / Land Degradation	1	1	2		1		5
4	Coastal Zone Management/ Sea Level Rise	1	1	1			1	4
5	Mapping			1	1		1	3
6	Land Use & Land Cover Change		2					2
7	Forest Fire			1	1			2
8	GIS Data-base / Web-GIS			1	1			2
9	Earthquake		1				1	2
10	Wild Life Conservation	1	1					2
11	Tsunami				1			1
12	Volcano				1			1
13	Soil Erosion		1					1
14	Medicine	1						1
15	Urbanization	1						1
Total by Year		9	12	11	10	9	9	60

Share of Disasters in the Asia-Pacific: 1980-2009



JAXA's Present Capacity Building Activities for the Asia-Pacific Region

(2) Oceanic Mini-Projects
in cooperation with
CReSOS, Udayana University

Oceanic Mini-Projects Newly Started at Indonesian Udayana University from JFY2009

JAXA newly started to entrust a responsibility to carry out the two(2) Oceanic Mini-Projects to the Center for Remote Sensing & Ocean Sciences (CReSOS) - Udayana University located on the Indonesian island of Bali from the JFY2009. The following two organizations are participating in both of the 2009 Oceanic Mini-Projects as below:

Participating Agencies:

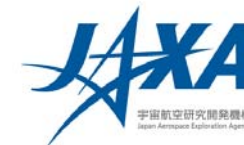
- (1) Indonesian National Institute of Aeronautics and Space (LAPAN)
- (2) Ministry for Marine Affairs and Fisheries (DKP) Mini-Project

Themes:

- (1) Study of Coral Reef and Mangrove Distribution from Satellite Data
- (2) Study of Climate Change Monitoring using Satellite Data and Data Archive System in Indonesia



11 Themes of 2010 Oceanic Mini-Projects at Udayana University



Organizations	Themes
1. Climatology Meteorology and Geophysics Agency (No.1)	Prediction of Monthly Rainfall based on the TRMM Precipitation Radar Satellite Data Over Region of Indonesia
2. Ministry of Marine Affairs and Fishers (No.1)	Environmental Preferences of Big-Eye Tuna from Oceanographic Satellite in Indian Ocean Southern Java, Bali
3. Ministry of Marine Affairs and Fishers (No.2)	Study of Marine Diversity using High Resolution Satellite Data
4. Ministry of Marine Affairs and Fishers (No.3)	Study of Marine Diversity using High Resolution Satellite Data
5. Diponegoro University (No.1)	Costal Monitoring using Satellite Data in Indonesia
6. Bogor Agricultural University (No.1)	Study of Fishery Resources in Indonesia
7. Udayana University (No.1)	Using Medium Spatial Resolution Satellite Imagery to Estimated Gross Primary Production in Urban Area
8. Udayana University (No.2)	Study of Upwelling Process in South East Java using Satellite Data and Numerical Model
9. Ministry of Environment Agency, Bali (No.1)	Detecting Oil Spill in South Timor Sea using Satellite Data
10. NGO ABDI BUMI (Environment Field) (No.1)	Application of ALOS Pan-Sharpen Data to identify Coral Reef Distribution in Lembongan Coastal Area
11. Fishery Senior High School Majen, Ministry of National Education (No.1)	Study of Fish Production from Satellite in Timur Sea

JAXA's Present Capacity Building Activities for the Asia-Pacific Region

(3) Specialized Training in Japan
for Mini-Projects' & Oceanic
Mini-Projects' High Achievers

2010 Specialized Training in Japan for both Mini-Projects' High Achievers



From the JFY2008, JAXA started to invite once a year some of the high achievers of the Mini-Projects to Japan in order to let them have another training opportunity in their respective fields in cooperation with some institutes and universities in Japan.

Specialized Training in Japan for both Mini-Projects' High Achievers

Seven Cooperation Organizations for 17 Invitees (2008-2010) in Total are as below:

(1) University of Tokyo (UT)



京都大学大学院
地球環境学



(2) Kyoto University

(3) Keio University



北海道大学
大学院情報科学研究科



(4) Hokkaido University

(5) United Nations University



(6) Yamaguchi University

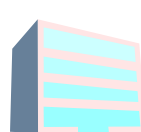


(7) International Centre for Water Hazard and Risk Management (ICHARM) under the auspices of UNESCO operated by an independent administrative institution so-called Public Works Research Institute (PWRI) of Japan

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Summary

Contributions to APRSAF Initiatives (Example of JAXA-AIT Mini-Project)



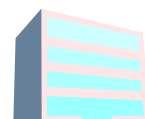
Indonesia - LAPAN (2008-09)
Climate Variation and Vegetation
Greenness on Forest Fire Occurrence



Vietnam - VAST (2007-08)
Forest Fire Risk Zone Mapping



Kirgiz – CAIAG (2009-10)
Earthquake deformation



Sri Lanka - SD (2008-09)
Sea Level Rise in the South-west
Coast of Sri Lanka



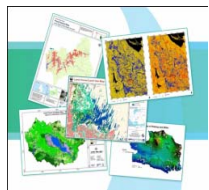
- Functioning as Data Analysis Node (DAN) of SA.
 - Volcano, Indonesia (Sep, 2010)
 - Flood, Cambodia (Nov, 2010)
- Use case for effective flow of capacity building.

- Functioning as Pre-Prototype Study of SAFE.
- These Mini-Projects (High Achievers) have been taken up by the SAFE Projects.

Network Development with Capacity Building



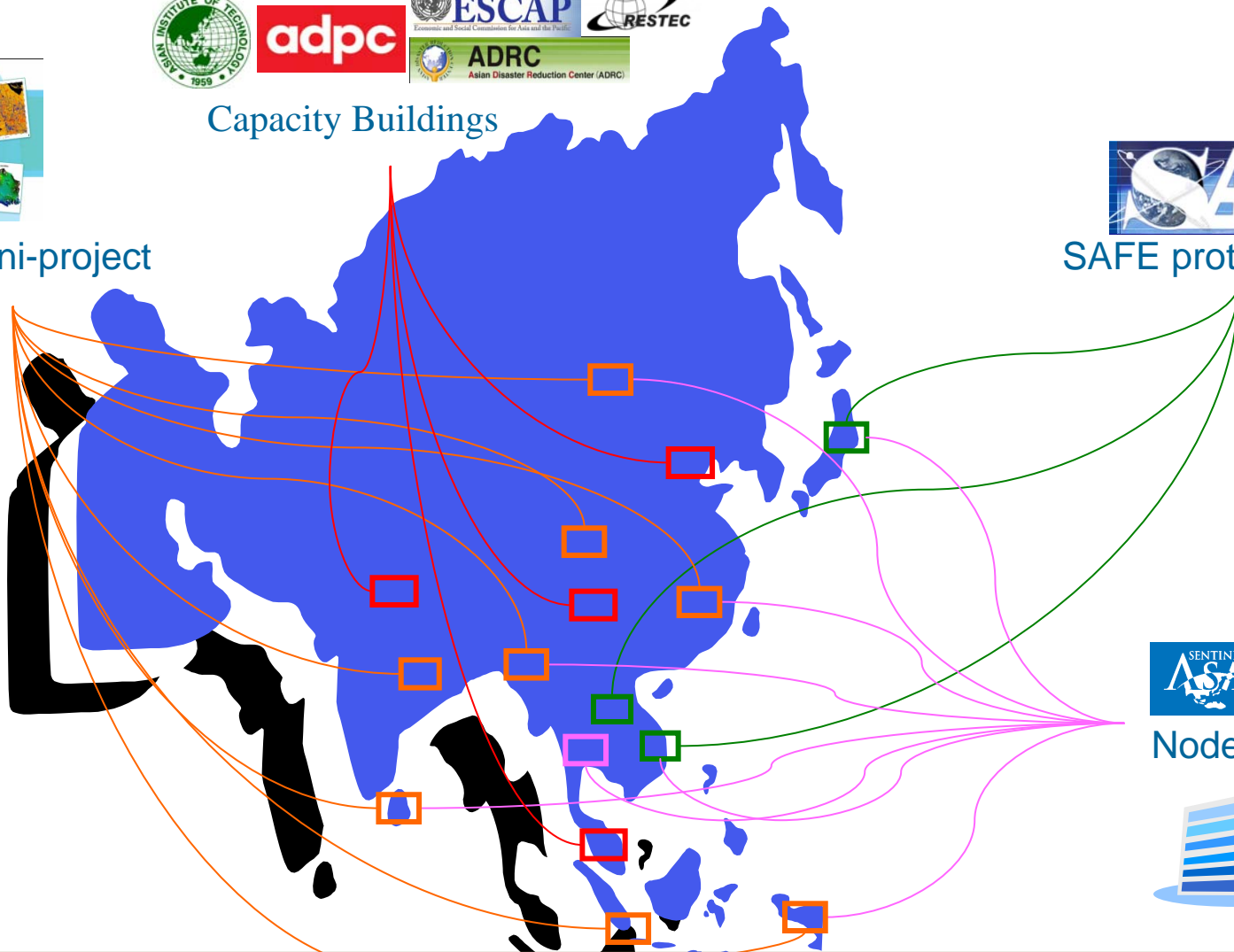
Capacity Buildings



JAXA mini-project

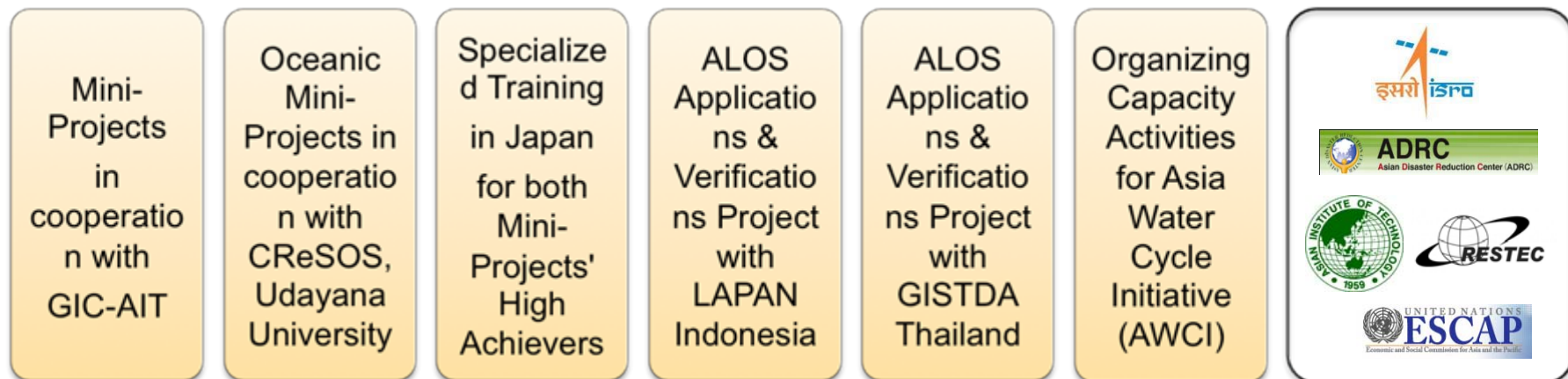


SAFE prototype Activity



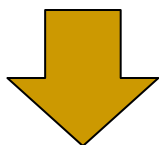
Not one time training, but sustainable technical supporter in the region!

Capacity Building Portal Site



Capacity Building Portal Site

- List of Capacity Building and course outline
- List of lectures and cost



- Appropriate participants for appropriate courses
- More and equal opportunities
- Avoid duplication of Capacity Building activities