



Examples of lessons learned from the past international mechanisms for cooperation of JAXA

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A/AC.105/L.297 (11 May, 2015)

“The Legal Subcommittee, in 2016, should identify proposals to mark the fiftieth anniversary of the Outer Space Treaty in 2017, as well as the outcome of the Subcommittee’s Working Group on the Review of International Mechanisms for Cooperation in the Peaceful Exploration and Use of Outer Space, in particular in view of the “UNISPACE+50” theme;”

 Lessons Learned of international cooperation in relation with UNISPACE+50 theme should be taken into consideration.

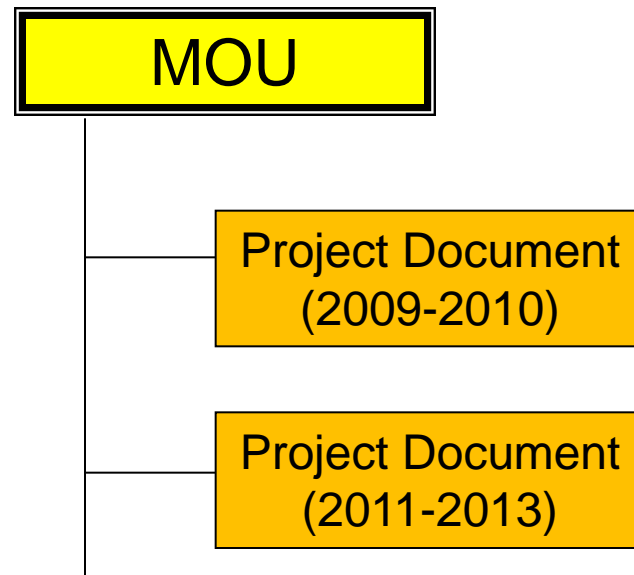
Among UNISPACE+50 cross-cutting areas, we focused on international cooperation for **sustainable development using space-based technology**.

- ✓ JAXA's cooperation with **UN entities**
 - United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
 - United Nations Educational, Scientific and Cultural Organization (UNESCO)
- ✓ JAXA's cooperation with **Multilateral Development Bank**
 - Asian Development Bank (ADB)

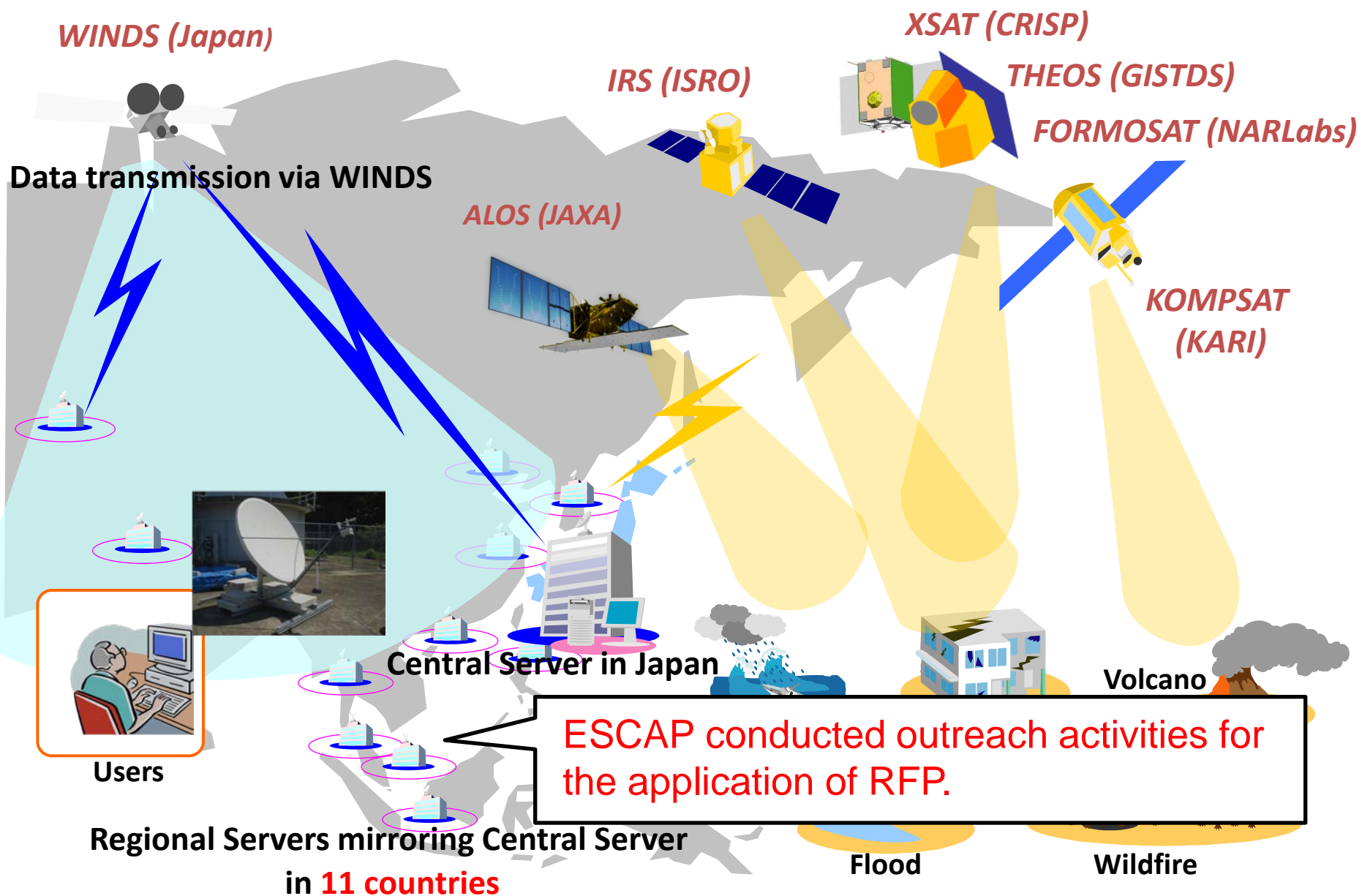
1. JAXA's cooperation with ESCAP

Overview of mechanism

- ✓ In Dec 2008, **JAXA and ESCAP concluded MOU.**
- ✓ Objective:
Applications of space technology for
 - disaster management
 - bridging digital divide
 - water resource management, etc.
- ✓ MOU defines to convene periodic consultations, etc.
- ✓ Under the MOU, **JAXA and ESCAP concluded Project Documents.**
- ✓ JAXA effectively raised awareness and promoted outreach activities of “Sentinel Asia”, “GSMaP” etc.



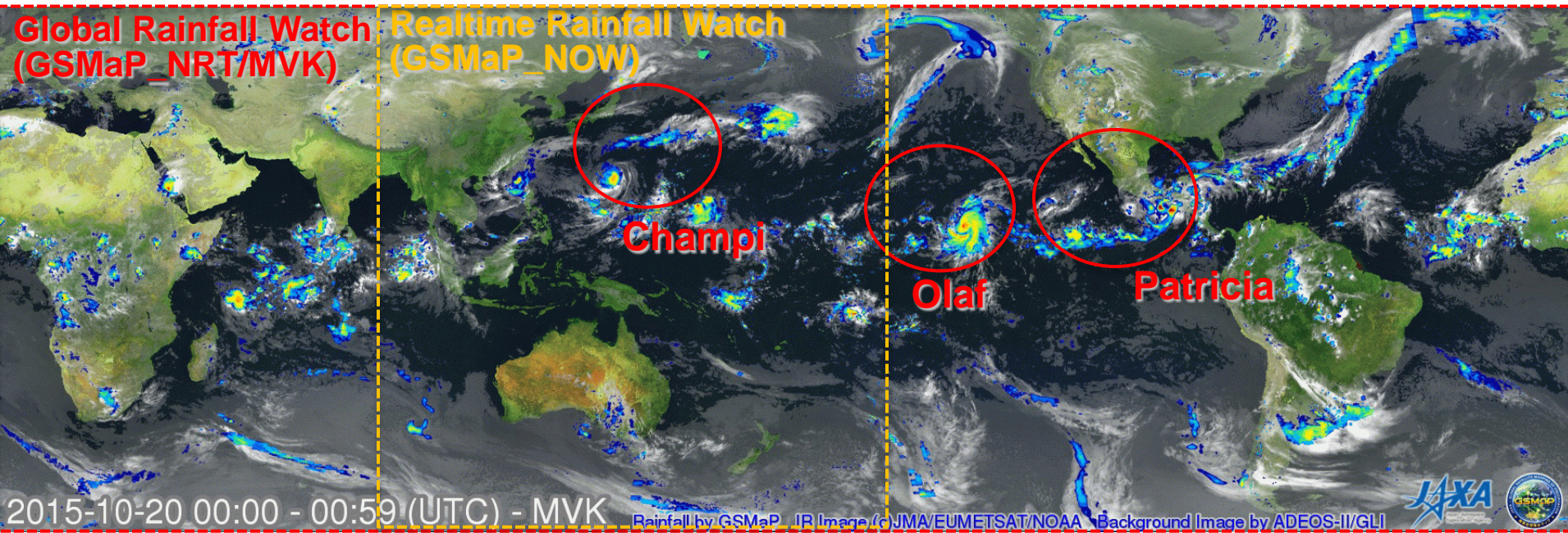
Overview of cooperation (1) Sentinel Asia Step-2



Overview of cooperation (2) GSMP

Global Satellite Mapping of Precipitation (GSMP)

using GCOM-W, GPM, and others (European and US satellites)



GSMP (Global) observed Hurricane Patricia and Olaf, and Typhoon Champi: 20-24 Oct. 2015, hourly animation

ESCAP promoted **utilization of GSMP** collaborating with **ESCAP/WMO Typhoon Committee (14 countries)**.

2. JAXA's cooperation with UNESCO

Overview of mechanism

- ✓ In June 2011, **Gov. of Japan and UNESCO** exchanged letters to improve flood warning capacity of Pakistan.
- ✓ Under the exchange of letters, on March 2012, **JAXA and UNESCO** signed **IPA** for Phase 1 Project.
- ✓ JAXA provided technical assistances and GSMP data, and also developed elevation information of land surface by ALOS data, etc.
- ✓ UNESCO undertook overall management.

Gov. of Japan – UNESCO

Exchange of letters

JAXA – UNESCO

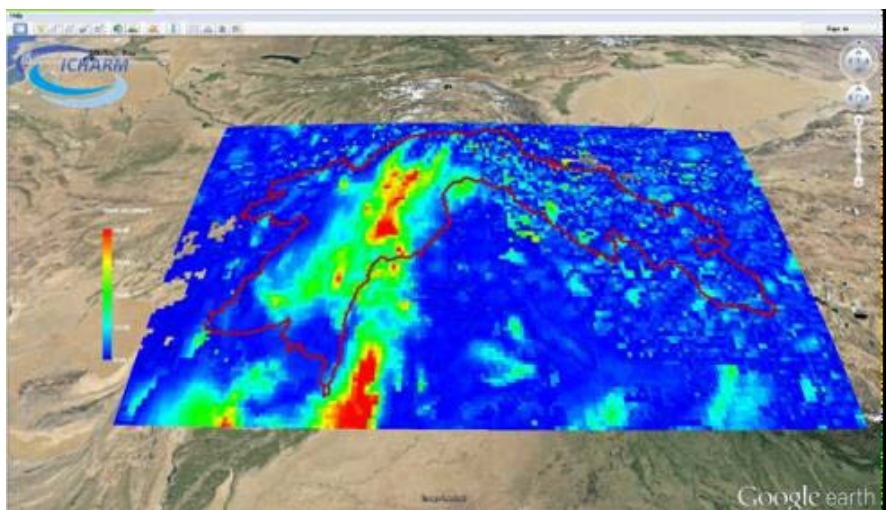
Implementation
Partners Agreement
for Phase 1 project
(2012-2014)

Implementation
Partners Agreement
for Phase 2 project
(2016-)

Overview of cooperation

- ✓ JAXA provides GSMaP data in Indus river basin.
- ✓ Consultants calibrate GSMaP data, using ground-based rain gauges data.
- ✓ The calibrated GSMaP product is used in the the Indus Integrated Flood Analysis System (Indus-IFAS), developed by ICHARM(*), and improved the accuracy.
- ✓ Pakistan authorities are expected to operate the system.

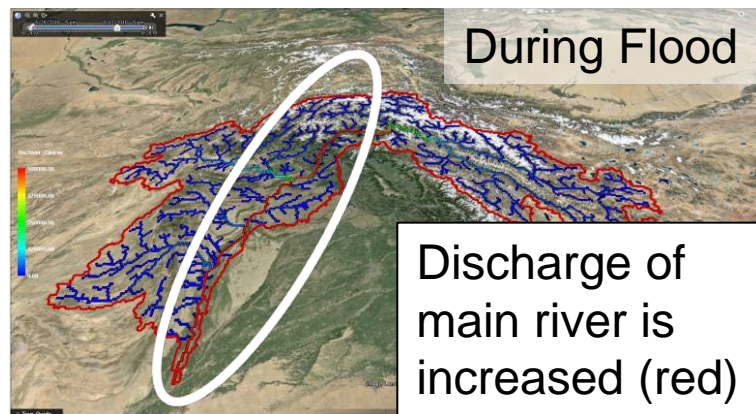
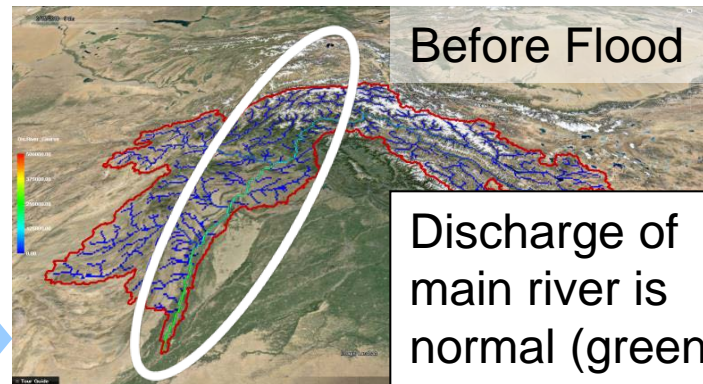
Rainfall of GSMaP



(Area within red line is Indus river basin)

INPUT

River discharge output using GSMaP



* ICHARM: Global Centre of Excellence for Water Hazard and Risk management

3. JAXA's cooperation with ADB

Overview of mechanism

- ✓ In March 2010, **JAXA and ADB concluded LOI (Letter of Intent).**
- ✓ Objective:
Applications of space technology for
 - disaster management
 - climate change mitigation & adaptation
 - forest monitoring
 - water resource management
- ✓ LOI defines JAXA's technical assistance, capacity development, secondment of JAXA personnel, workshops, etc.
- ✓ Under the LOI, **JAXA and ADB signed PA for each TA projects.**

LOI

Partnership Agreement
“Applying Remote Sensing Technology in River Basin Management” (July 2012)

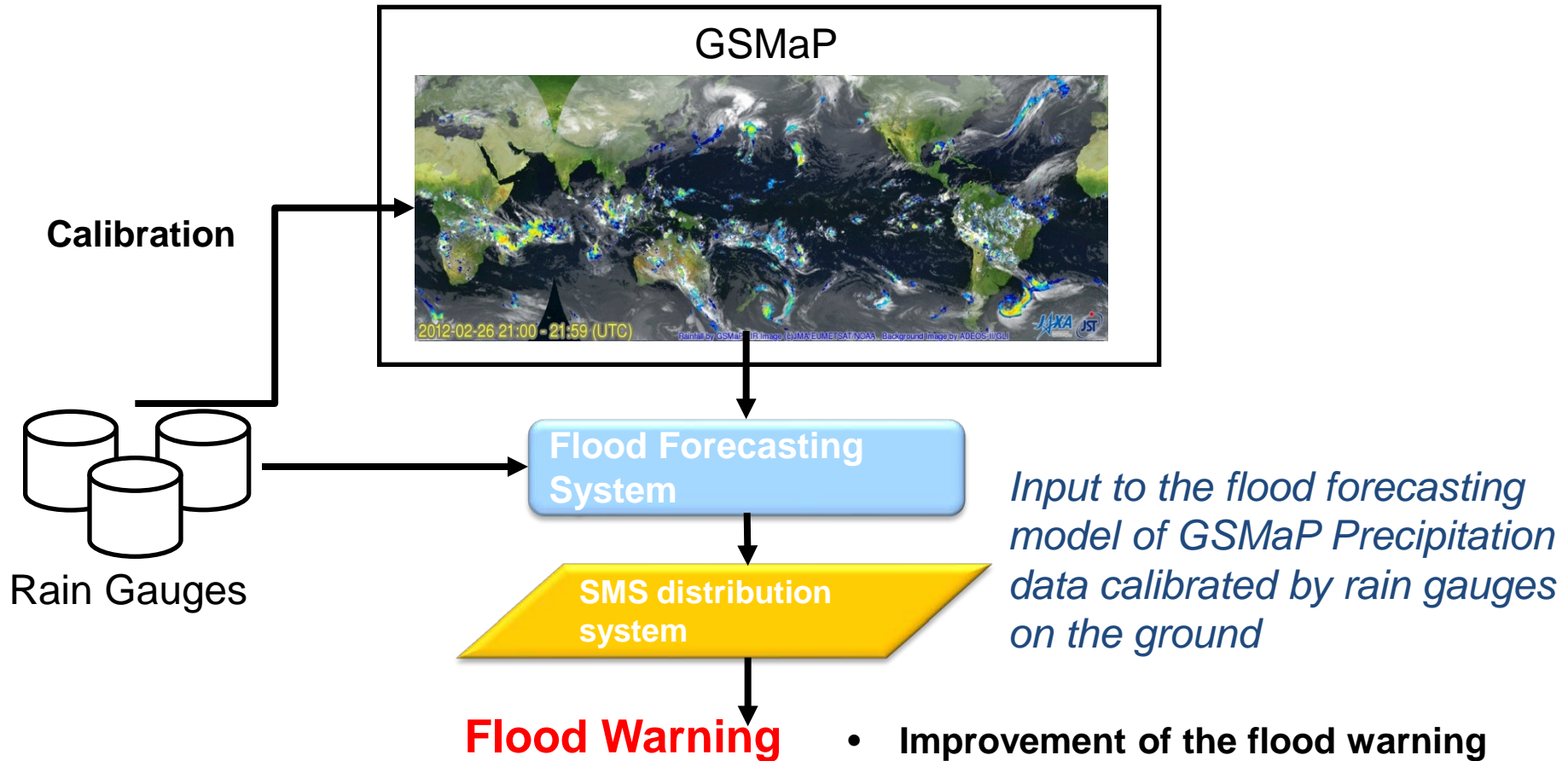
Partnership Agreement
“Accelerating the Implementation of the Core Agriculture Support Program” (May 2013)

Partnership Agreement
“Innovative Data Collection Methods for Agricultural and Rural Statistics” (June 2014)

Partnership Agreement
“Pilot Project on Weather Index-Based Crop Insurance in Bangladesh” (Jan 2015)

Overview of cooperation: Flood Risk Management (1)

Participating countries: Bangladesh, the Philippines, and Viet Nam



Flood Warning

- Improvement of the flood warning lead time from 3 days to 5 days.
→ Mitigation of loss of assets and damages
- Direct distribution of information to the people by using cellular phones

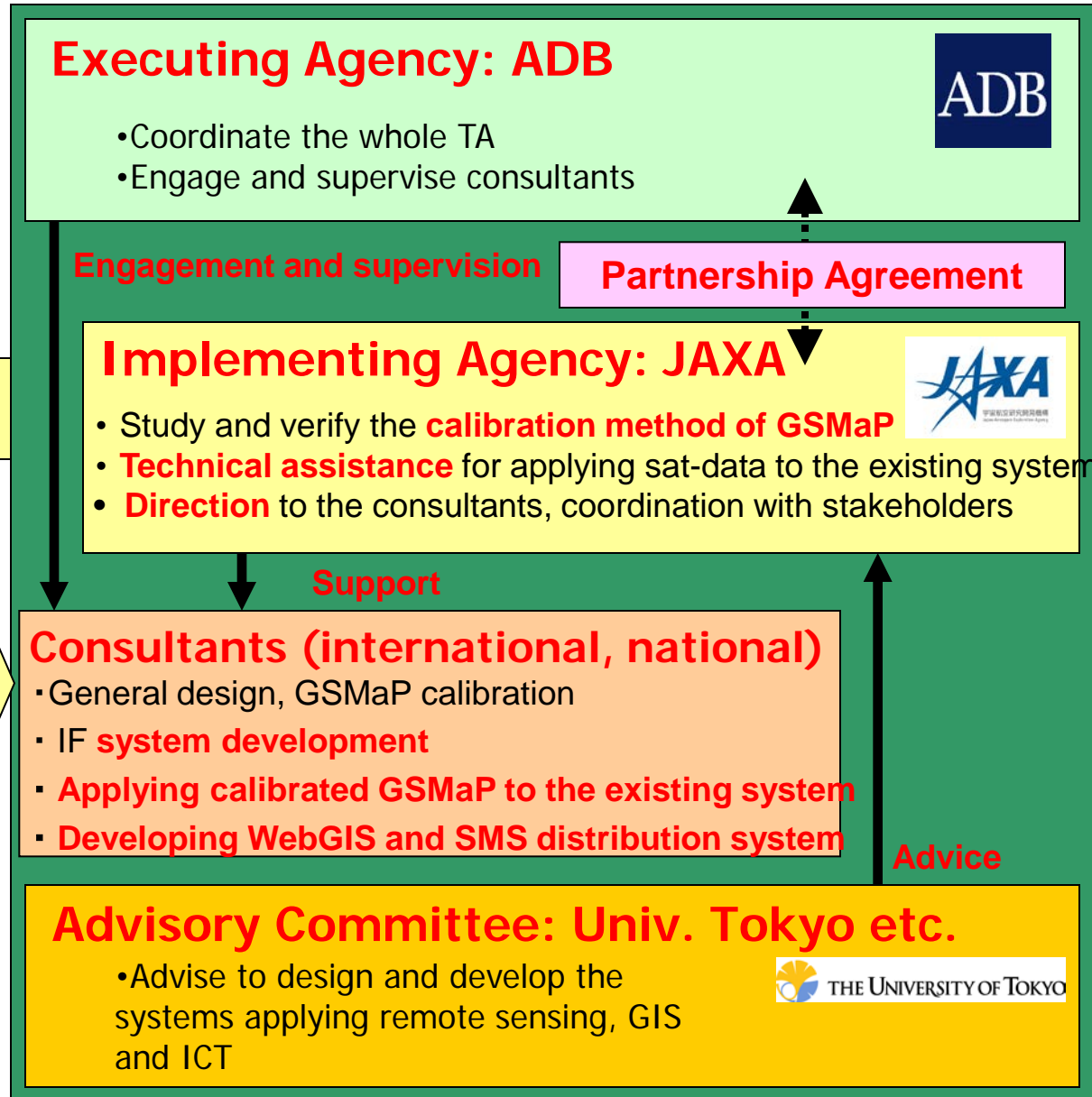


Overview of cooperation: Flood Risk Management (2)

Counterpart Agency

Philippines
Bangladesh
Viet Nam

- Coordinate with related organizations and communities for pilot projects
- Assign TA project director to supervise and coordinate TA activities
- Participate in workshops, trainings, dialogues
- Apply TA outputs and evaluate the usefulness



4. Lessons Learned

Lessons Learned (1)

Continuity of assistance and consultations in the long-term

- ✓ Duration of technical projects: typically 2-5 years.
- ✓ After the projects, donated countries have to operate the system, including maintenance.
- ✓ However, officials or experts who learned the operational methods usually move to another sections or entities.



- ✓ A mechanism to assure continuity of assistance and consultations from donor countries is important.
- ✓ An agreement to define cooperative framework, including consultations and capacity development, is beneficial.
- ✓ Especially, capacity building efforts are useful.

Lessons Learned (2)

Taking advantage of different expertise of participating entities

- ✓ Space agency usually has the technical expertise of:
 - satellite operation and data application
 - calibration method of satellite data, etc
- ✓ However, space agency does not have the expertise of:
 - design and development of the operational system,
 - calibration using the local ground-based data,
 - knowledge, experience and networks with communities on social development issues in the donated countries



- ✓ **Combination of different expertise of participating entities is indispensable.**
- ✓ **Different roles and responsibilities should be taken into consideration in the mechanism.**



*Thank you
for
your attention.*



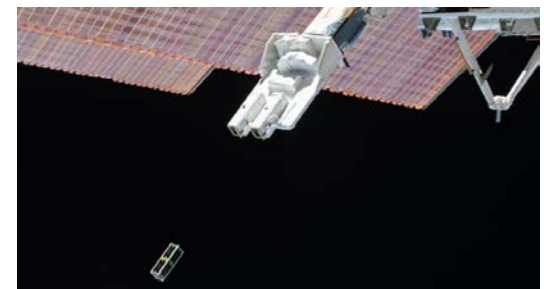
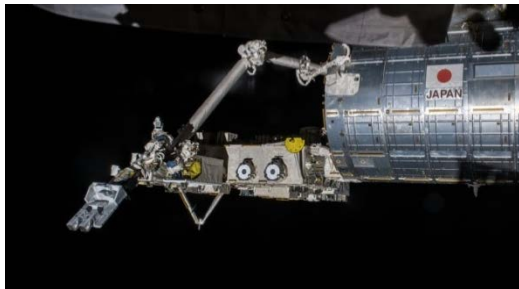
Backup Chart

JAXA – UNOOSA Cooperation

KiboCUBE – Small Satellite Deployment from Kibo

KiboCUBE

On September 2015, JAXA and UNOOSA announced launch opportunities from Kibo for small satellites built by developing nations, to improve their capacity of space technologies. (CubeSat (1U)/ once a year from 2017-2019)



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