



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

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“In the 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 theme, today's focus is international cooperation for **sustainable development using space-based technology**, such as:

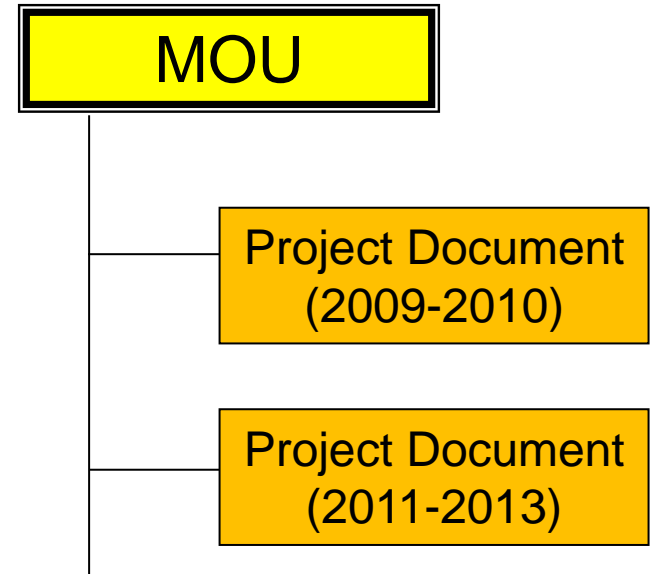
- ✓ JAXA's cooperation with **UN entities**
 - United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
 - United Nations Educational, Scientific and Cultural Organization (UNESCO)
 - United Nations Office for Outer Space Affairs (UNOOSA)

- ✓ JAXA's cooperation with **Multilateral Development Bank**
 - Asian Development Bank (ADB)

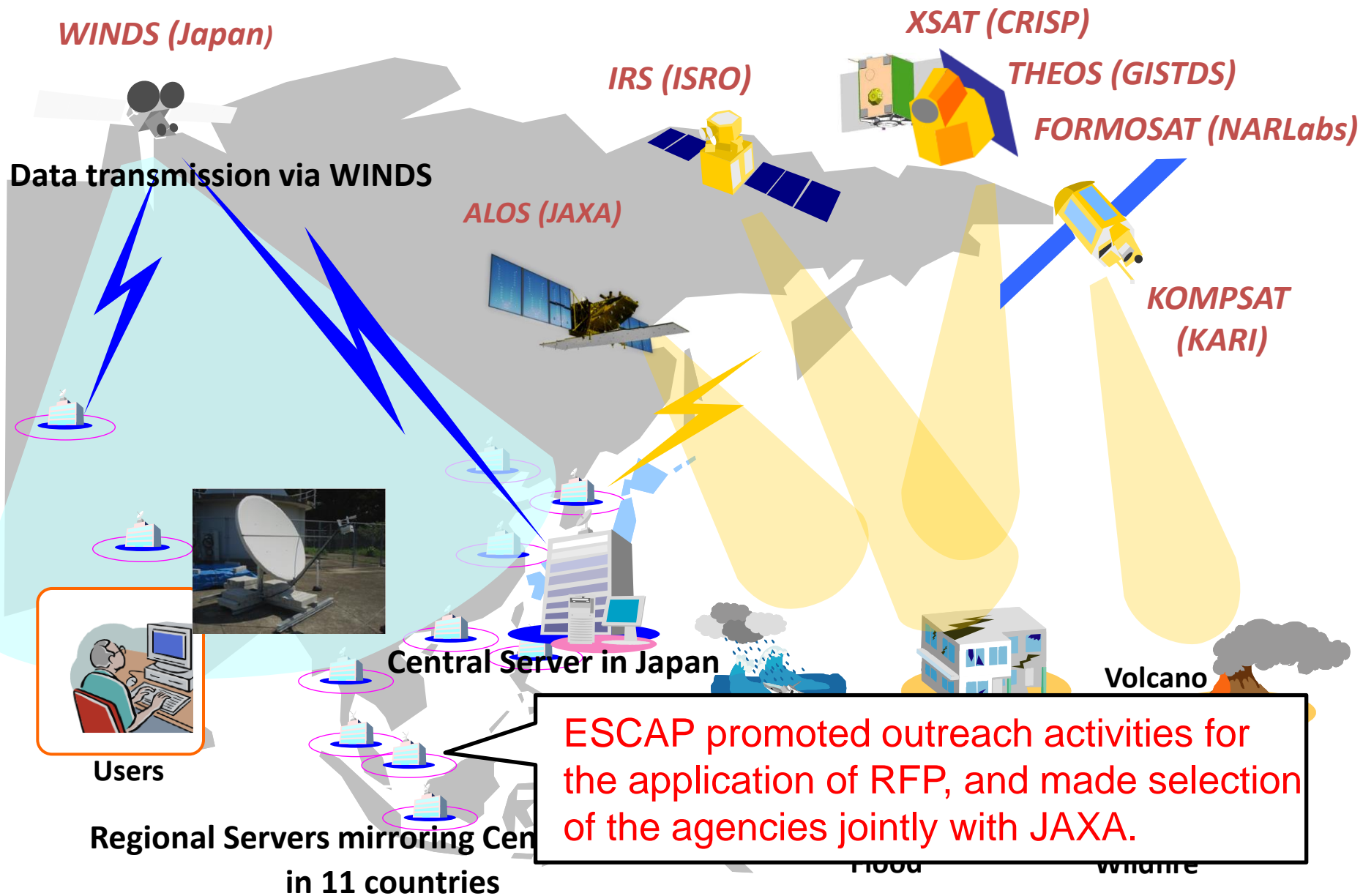
1. JAXA's cooperation with ESCAP

Overview of mechanism

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



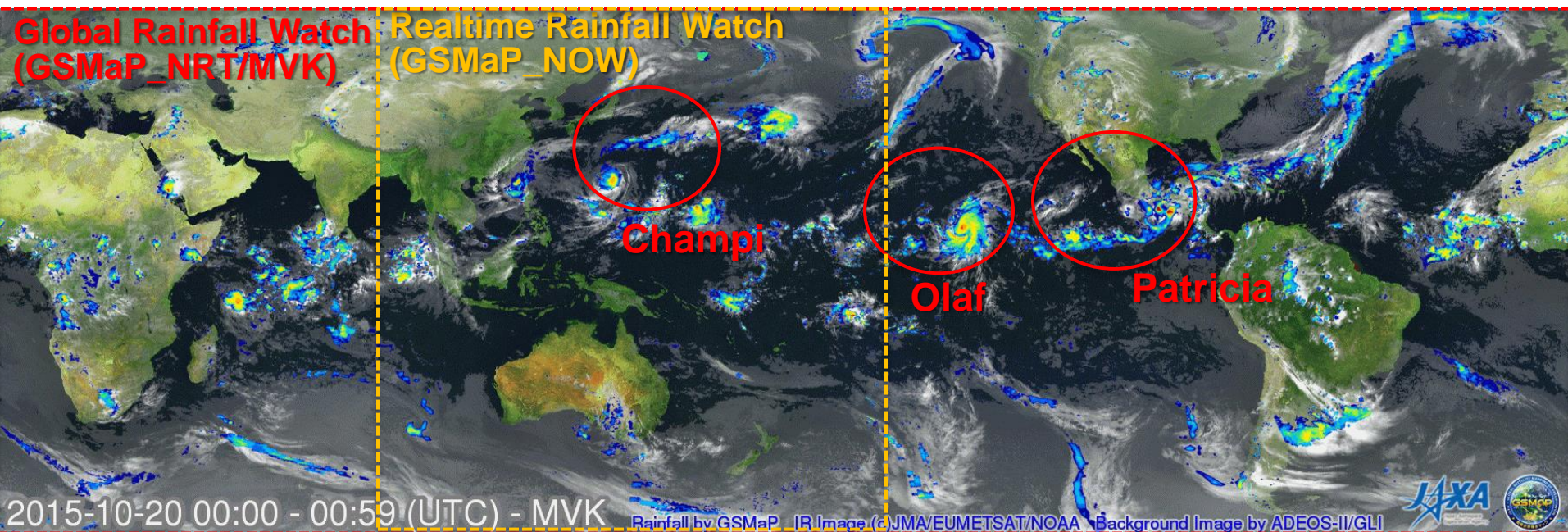
Overview of cooperation (1) Sentinel Asia Step-2



Overview of cooperation (2) GSMaP

Global Satellite Mapping of Precipitation (GSMaP)

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



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

JAXA promoted **utilization and training of GSMaP** with **Typhoon Committee (14 countries)**, by taking advantages of its **diverse and close ties with disaster risk management entities in Asia-Pacific region.**

2. JAXA's cooperation with UNESCO

Overview of mechanism

- ✓ In June 2011, **Gov. of Japan and UNESCO** exchanged letters on “Strategic Strengthening of Flood Warning and Management Capacity (Phase 1)”, to improve flood warning capacity of the Gov. of Pakistan.
- ✓ Under the exchange of letters, on March 2012, **JAXA and UNESCO** signed **Implementation Partners Agreement** for Phase 1 Project.
- ✓ JAXA provided technical assistances, GSMaP data, as well as developed elevation information of land surface, land surface images and map of flooded area by ALOS data.

Gov. of Japan – UNESCO

Exchange of letters

JAXA – UNESCO

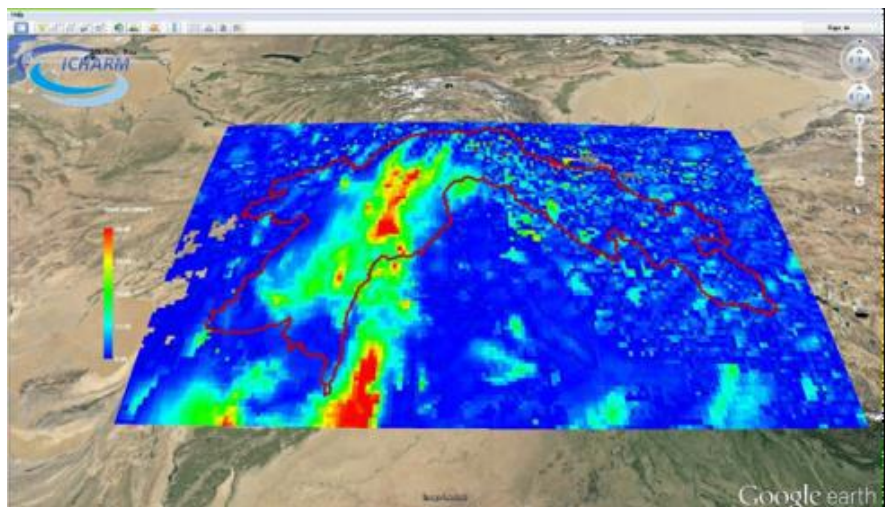
Implementation
Partners Agreement
for Phase 1 project
(2012-2014)

Implementation
Partners Agreement
for Phase 2 project
(2016-)

Overview of cooperation

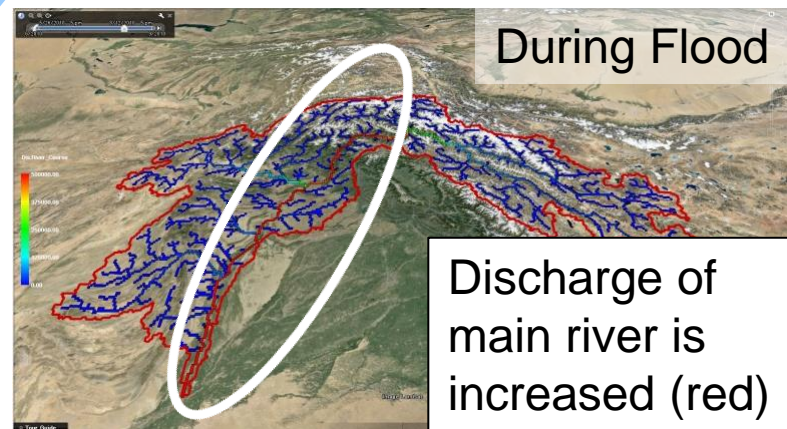
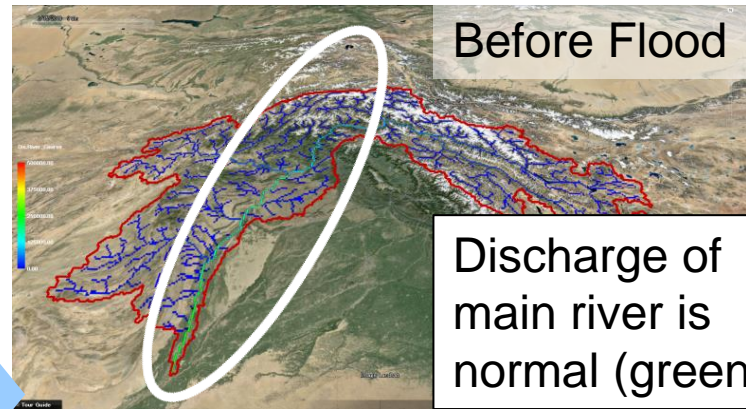
- ✓ JAXA, ICHARM(*) and Pakistan Meteorological Department (PMD) developed operational flood analysis system in Indus river basin.
- ✓ Calibrated GSMaP product with ground-based stations in Pakistan is used in the Indus Integrated Flood Analysis System (Indus-IFAS) developed by ICHARM, now in operation in 2015 by PMD.

Rainfall of GSMaP



(Area within red line is Indus river basin)

River discharge output using GSMaP



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

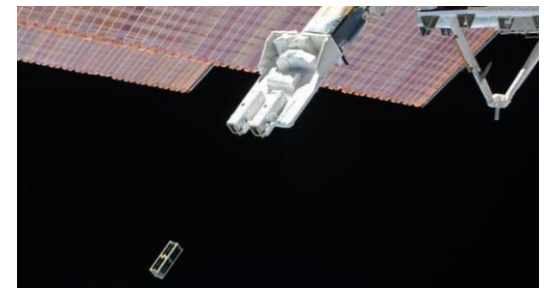
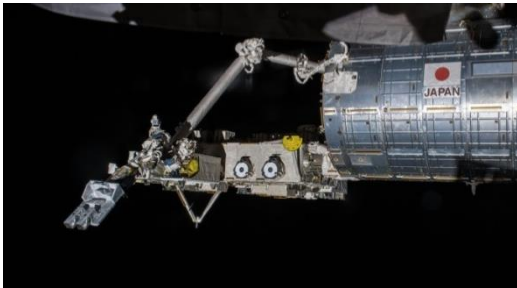
3. JAXA's cooperation with UNOOSA

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)



UNITED NATIONS
Office for Outer Space Affairs



4. JAXA's cooperation with ADB

Overview of mechanism

- ✓ In March 2010, **JAXA and ADB concluded Letter of Intent (LOI).**
- ✓ Objective:
By using space-based technologies, collaborate in the areas of
 - disaster management
 - climate change mitigation & adaptation
 - forest monitoring
 - water resource management
- ✓ LOI defines JAXA's technical assistance, capacity development, secondment of JAXA personnel, holding workshops, etc.
- ✓ Under the LOI, **JAXA and ADB signed the Partnership Agreements for each technical assistance projects.**

Letter of Intent (LOI)

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

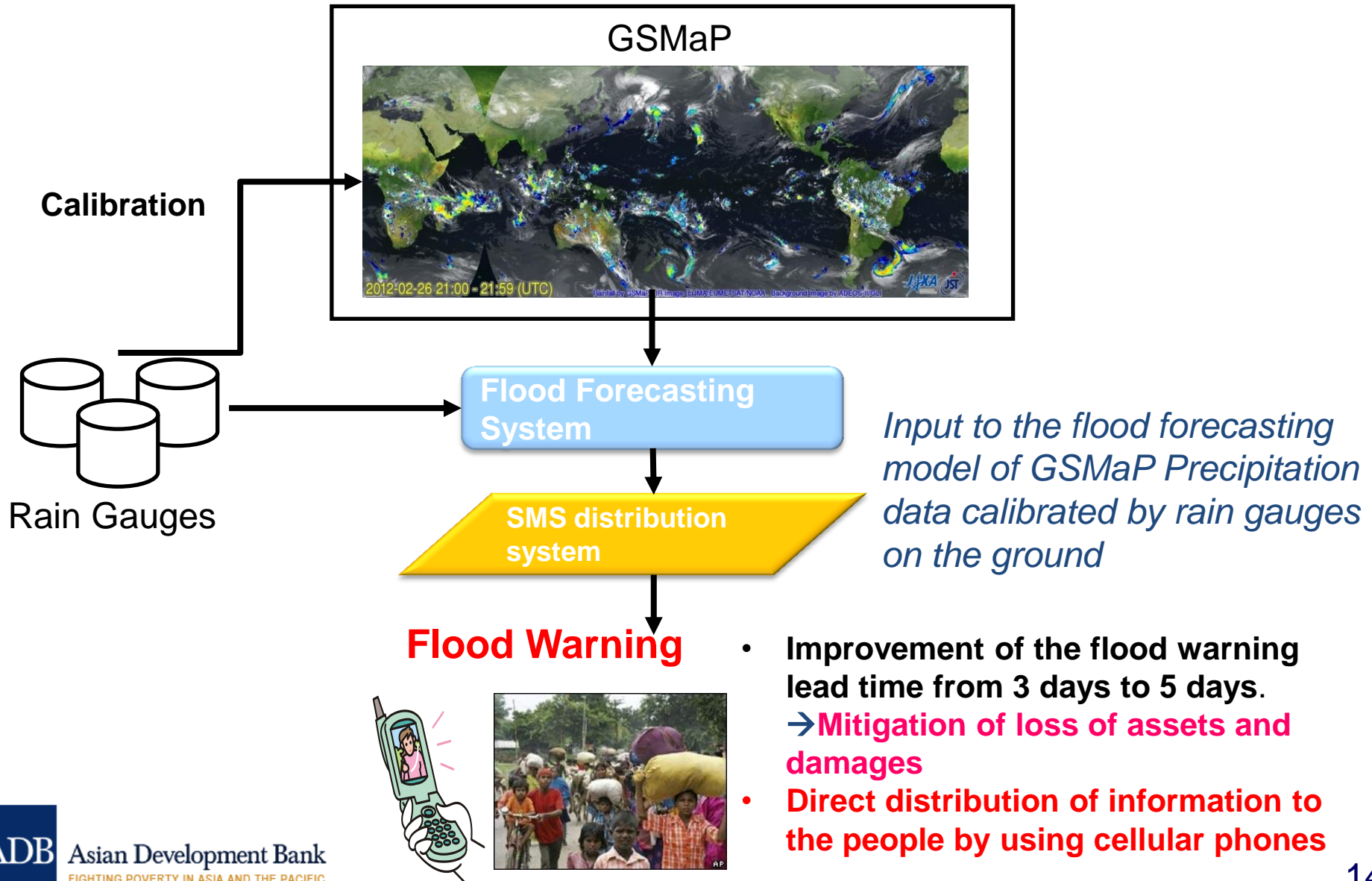
Partnership Agreement
“Accelerating the Implementation of the Core Agriculture Support Program” (May 2013)

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

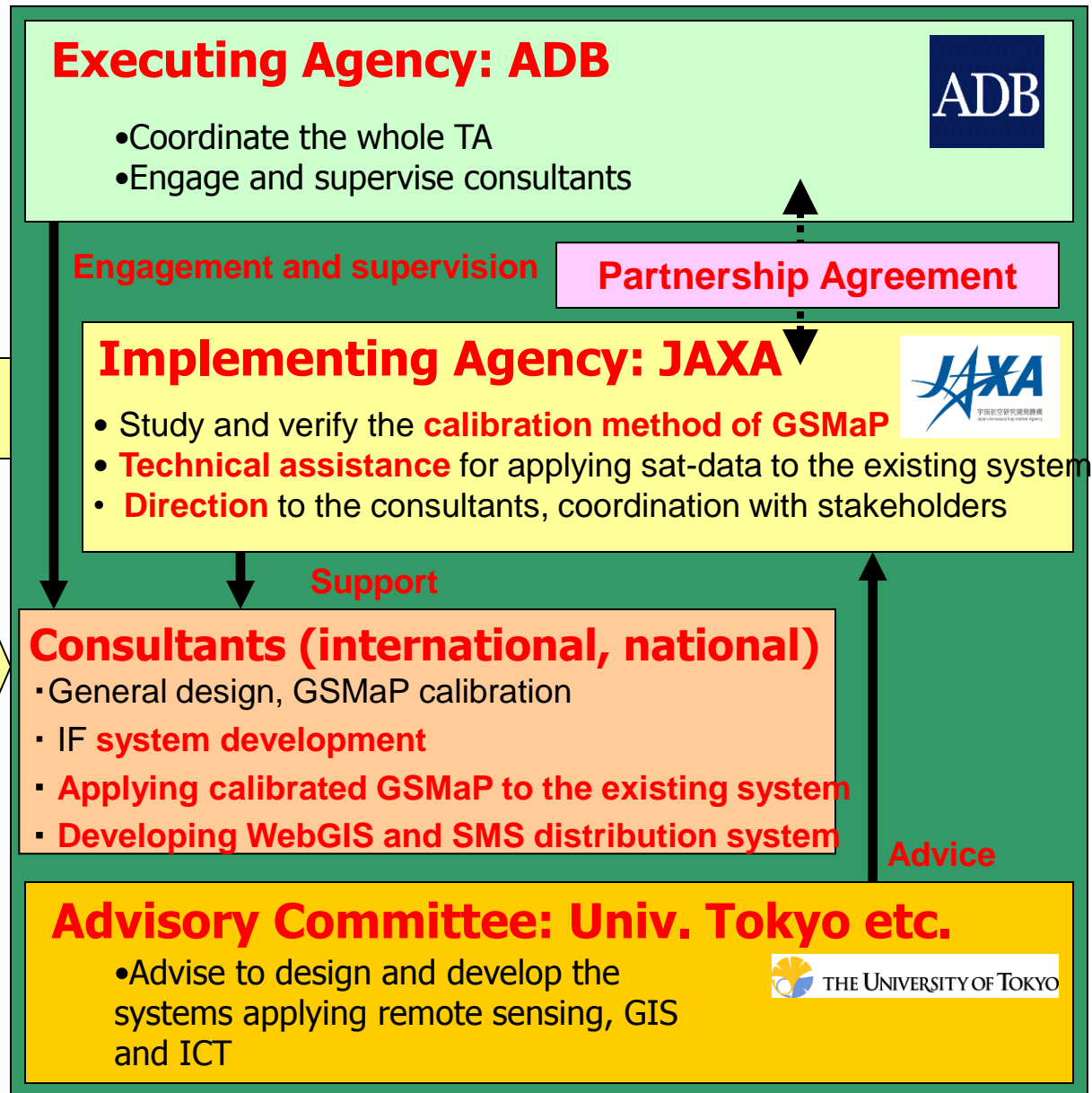


Overview of cooperation: Flood Risk Management (2)

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



5. Lessons Learned

Lessons Learned (1)

Continuity of assistance and consultations in the long-term

- ✓ Duration of technical projects: typically 2-5 years
- ✓ After the period, donated countries operate the system, including maintenance of the system.
- ✓ 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 the donor countries in the long-term is important.
- ✓ In this regard, an agreement to define cooperative framework, including periodic 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
 - algorithm development, etc.

- ✓ However, space agency does not have the expertise of:
 - design and development of the operational system,
 - calibration using the local data on the ground basis,
 - knowledge, experience and networks with communities on social development issues in the donated countries



- ✓ Combination of different expertise of participating entities of UN entities / Multilateral Development Bank, consultants, universities, local entities is indispensable.
- ✓ These different roles and responsibilities should be taken into consideration in the mechanism.



*Thank you
for
your attention.*

