

Report of Flood WG (Water-related Disaster WG)

The third JPTM for Sentinel Asia STEP3
at Mt. Lavinia Hotel, Colombo, Sri Lanka
January 19-21, 2016

Objective of Flood WG in Sentinel Asia for **STEP3** (2013 ~)

- To contribute to the mitigation of flood disasters in Asia through:
 - Developing necessary scientific & engineering information for understanding flood hazards / risks **with full utilization of satellite, GIS and information** network technologies, combined with in-situ data
 - Enhancing the provision and usage of such innovative information for sound decision-making **in all the stages of “flood risk management cycle”**
 - Sharing such experiences and achievements in Asia on the basis of Sentinel Asia network system

Concept of Flood Monitoring in Sentinel Asia

1) Rainfall Monitoring & Flood Forecasting

Observation

Rainfall Measurement from Satellites

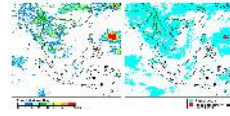


TRMM, GPM, AMSR-E...

• Rainfall Data

Processing

Areal Rainfall Estimation
Runoff and Inundation Analysis



GSMaP*1, GFAS*2, IFAS*3, RRI*4

• Precipitation Map
• Heavy Rainfall Estimation

• Flood Forecasting and Warning
• Probable Rainfall Map

Integration

Coupling with Global / In-situ Data

- Social Economic Data
- Land-use/cover Data



- Heavy Rainfall Alert
- Real-time Flood Inundation Monitoring
- Precipitation and Flood Inundation on Web GIS
- Flood Alert for Specific River Basins
- Flood Risk Map
- Flood disaster damage map
- Evacuation map

2) Flood Detection & Situation Analysis

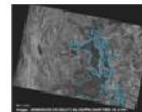
Land Observation from Satellites



ALOS, MODIS, AMSR-E...

• Land Image

Fine DEM Generation
Flooding Area Detection



JAXA, ICHARM, Dartmouth University...

• Identification of Flood-prone Area and Flooding Frequency

• Flood Hazard Map

Creating and Sharing Information for Flood Management In all Stages of Flood Disaster

Users

Residents in Flood-prone Area

• Planning
• Warning

• Evacuation
• Rescue
• Remediation

Disaster Management Organizations

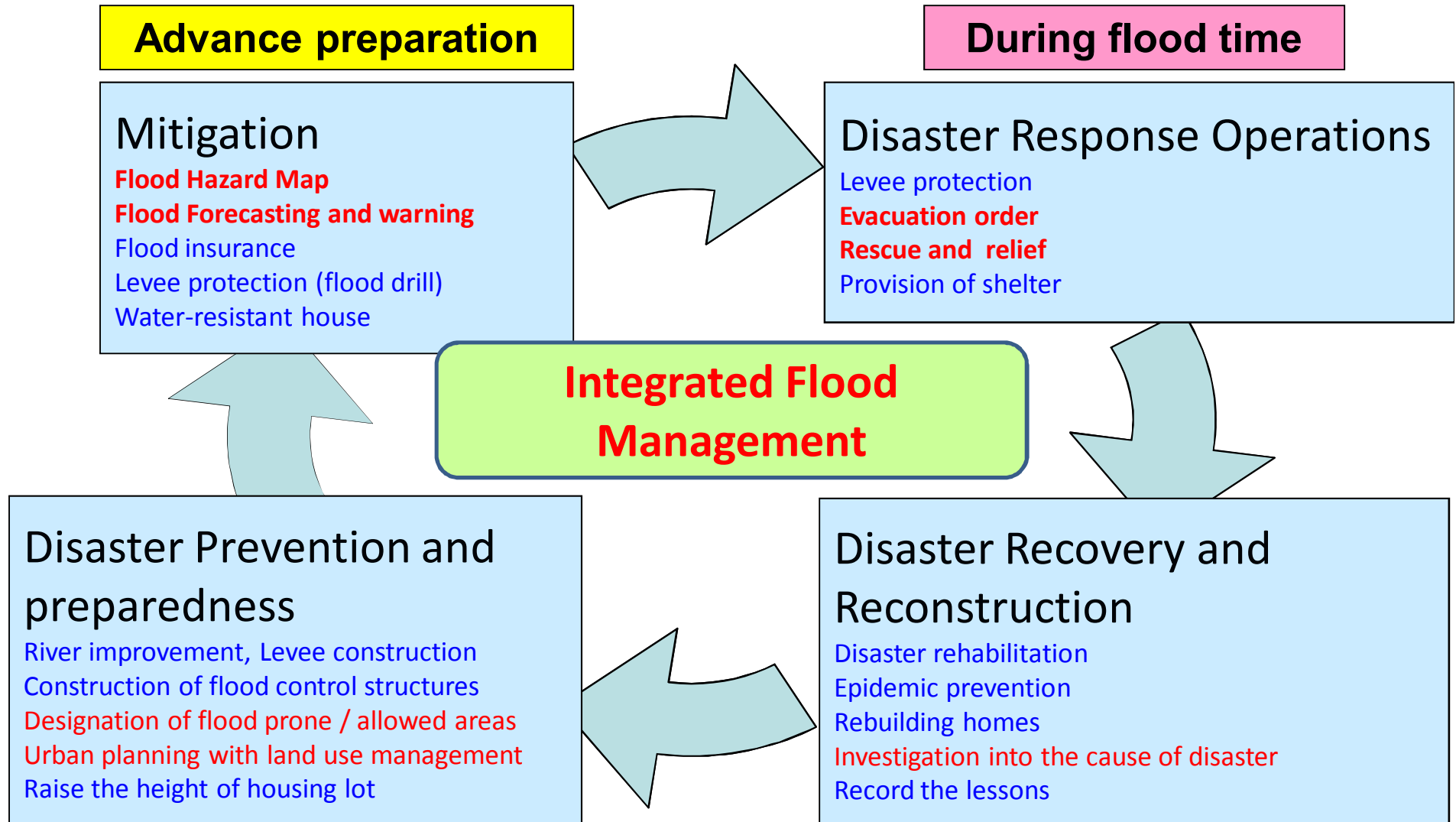
*1 GSMaP = GSMaP_nRT
= Near Real-time Global Satellite-based Map of Precipitation (by JAXA)

*2 GFAS = GFAS-Rainfall
= Global Flood Alert System – Heavy Rainfall Alert (by IFNet)

*3 IFAS = Integrated Flood Analysis System
for the implementation of the concept of GFAS-Streamflow (by ICHARM)

*4 RRI = Rainfall-Runoff-Inundation model (by ICHARM)

The Combined Use of Remote Sensing / GIS
with Hydrologic / Hydraulic Simulation Technology
contributes to **All the Stages of Flood Risk Management Cycle**



Kick off meeting of “Water related Disaster WG” in the morning on January 19, 2016

- SA step3 has started from 2013, we are now at the stage of **full utilization of satellite, GIS and information network technologies** and focusing on more integrated approach for all the stages of “**flood risk management cycle**”.
- The first **SC of SA** was held last Oct. and discussed about **strategy for the Implementation of Sentinel Asia Step3** including “Evolution and reconfiguration and strengthening of the Working Groups (WGs) “ and the secretary of SA proposed a new concept of “Flood Meteorological Disaster WG” .
- Based on an explanation of the strategy by the secretariat and sharing our recent activities/plan by four presenters, we discussed the new configuration of a new Flood WG and suggested “**Water-related Disaster WG**” and the secretary of SA will distribute a draft of configuration of the new WG **to the member countries for comments and further contribution ideas.**

Water-related Disaster WG (draft)

Function of the WG:

Voluntary based Research and Development activities and exchanging ideas with regard to water related disasters reduction by using aero-space technology together with ground survey and GIS/Mapping technology especially in the field of flood, land slide, flash flood, drought, storm surge and so on caused by heavy rain, typhoon, tropical cyclone, monsoon and climate change.

Expected WG members:

1. Co-chairs

- Experts of water related disaster research and disaster management

2. Members

- Expert on meteorological observation and forecasting
- Expert on flood and water hazard
- Expert on satellite monitoring and GIS
- Others

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