A sunset scene over a body of water, likely a river or lake. The sun is low on the horizon, creating a bright orange glow and reflecting on the water. Silhouettes of palm trees and other vegetation are visible along the shoreline. A small boat with a person is visible in the distance on the water.

**The 8th Meeting of the GEOSS Asian Water
Cycle Initiative International Coordination
Group (AWCI ICG) and the 1st AWCI
Climate Change Assessment and
Adaptation (CCAA) study Workshop
Seoul, South Korea, 6 – 8 October, 2011**

**Prepared by : Ministry of Water Resources and
Meteorology team and University of Tokyo team**

Content

I. Current Activities related to AWCI

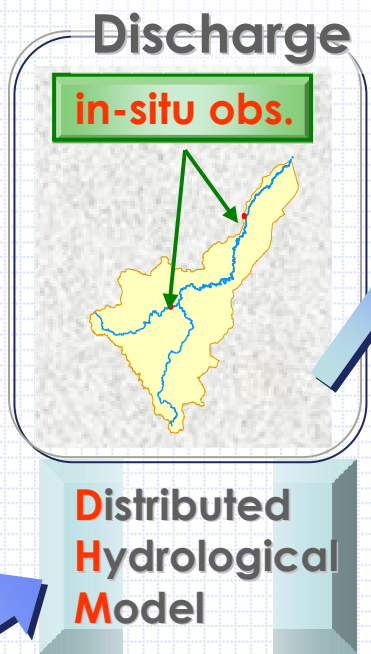
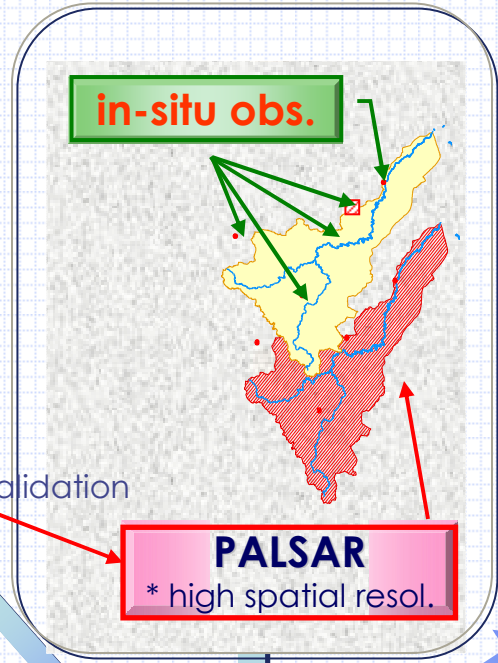
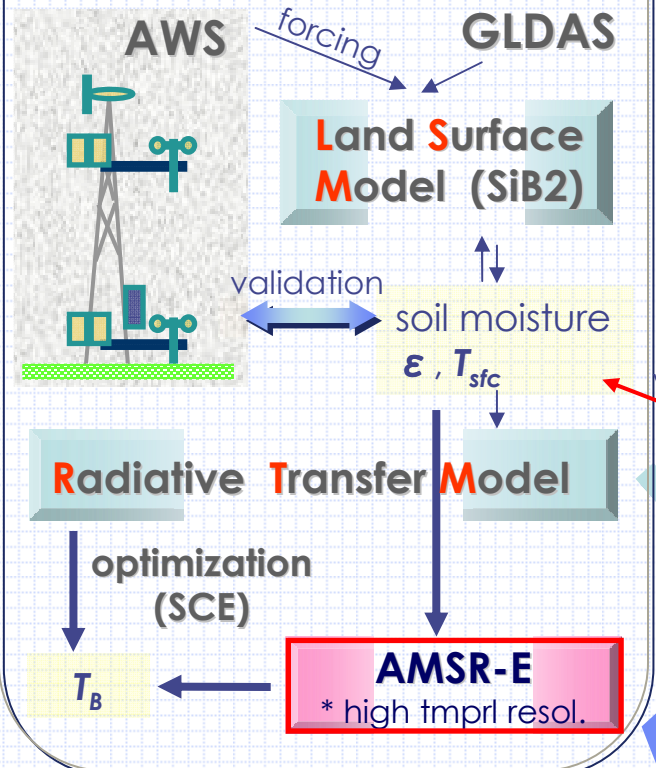
1. Demonstration Project
2. Climate Change Assessment and Adaptation Study

II. Ideas and views of possible country involvement in and contribution to the next stage of AWCI that is envisioned in line with the GEOSS Water Cycle Integrator

1. The Current Availability and Use of Data in Decision Making in the Basin
2. Pilot projects where WCI framework, principles and resources benefit

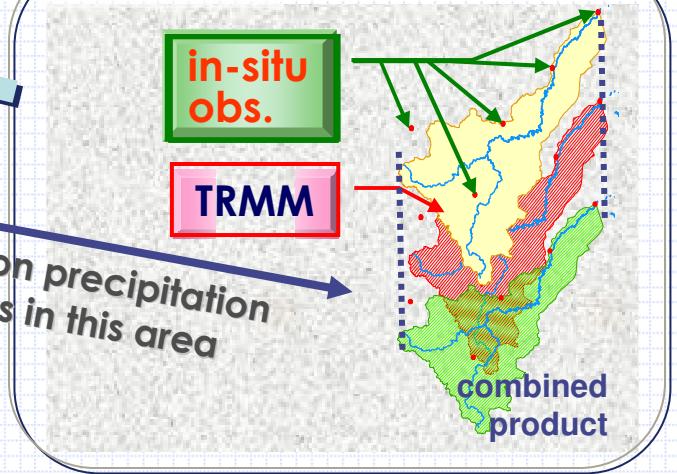
Water Resources Management

Land Data Assimilation System

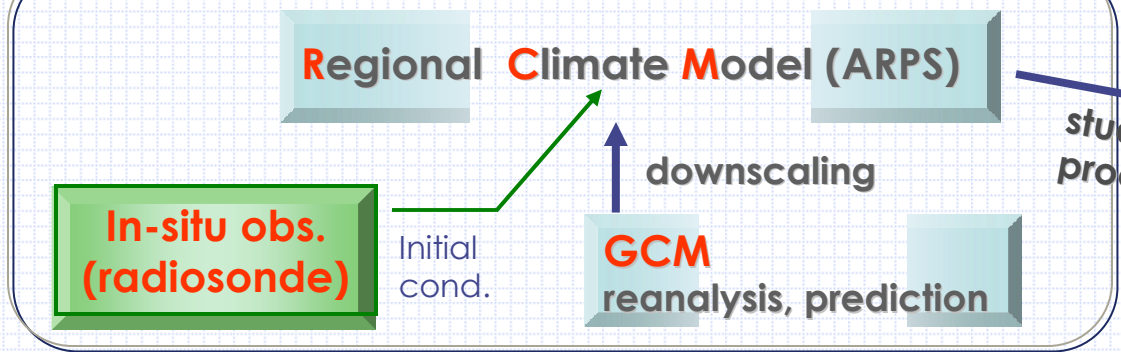


Soil Moisture

Rainfall

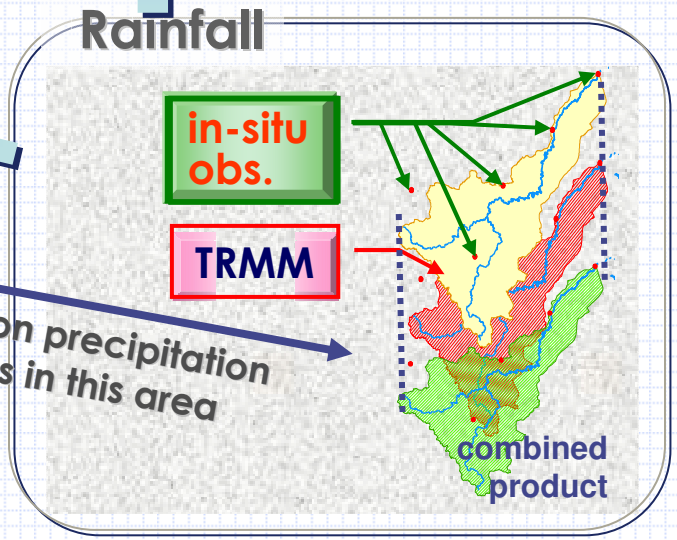
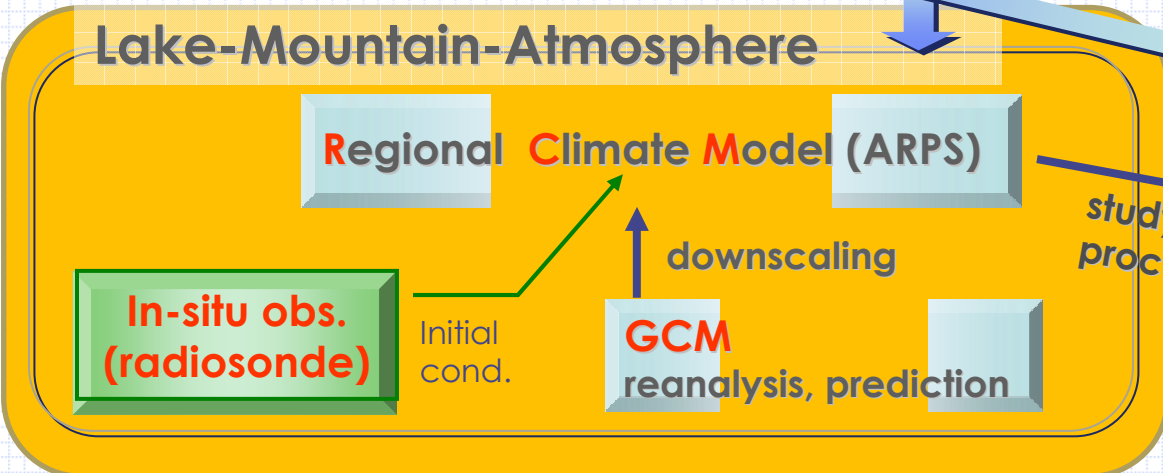
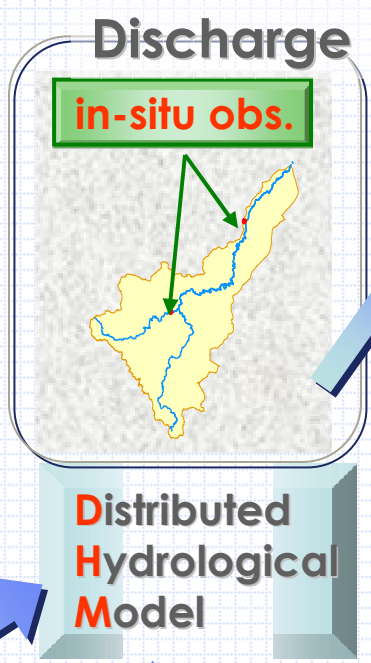
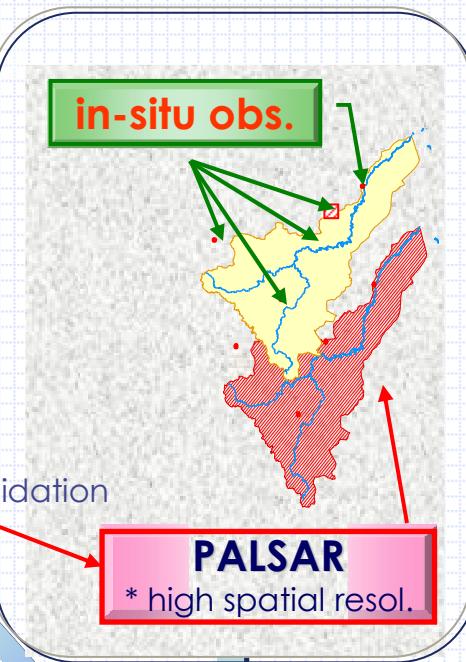
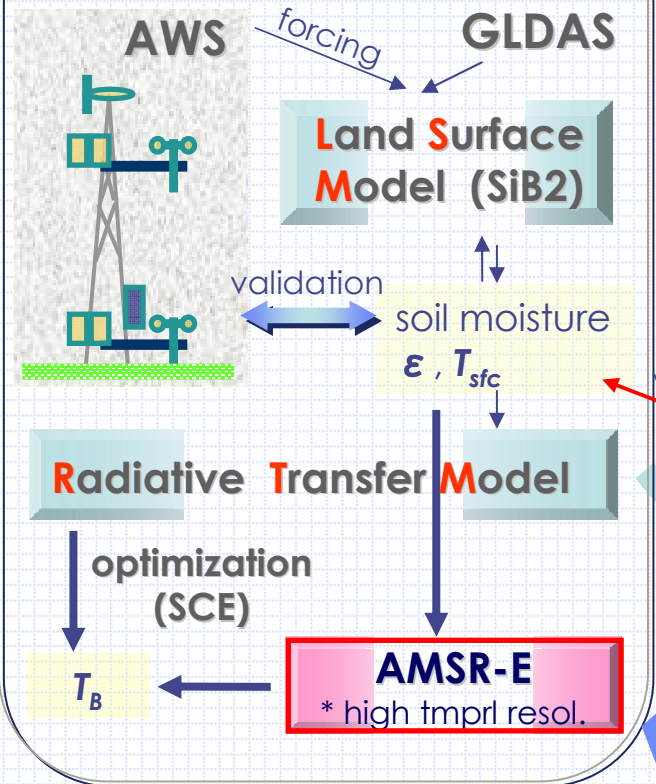


Lake-Mountain-Atmosphere

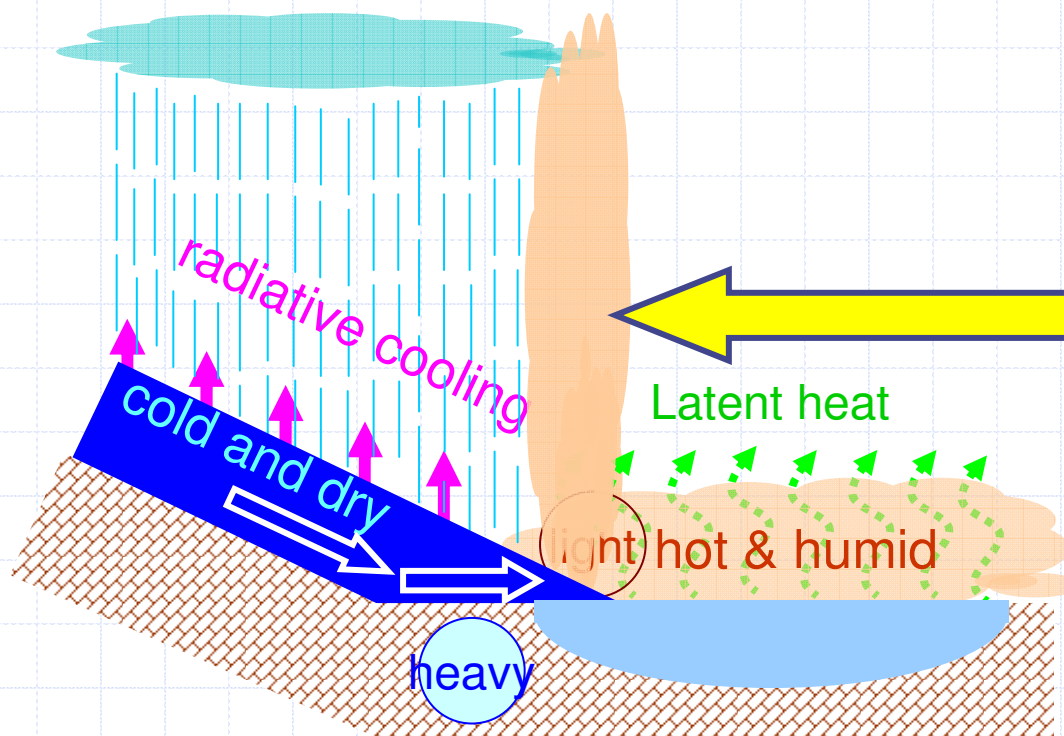


study on precipitation process in this area

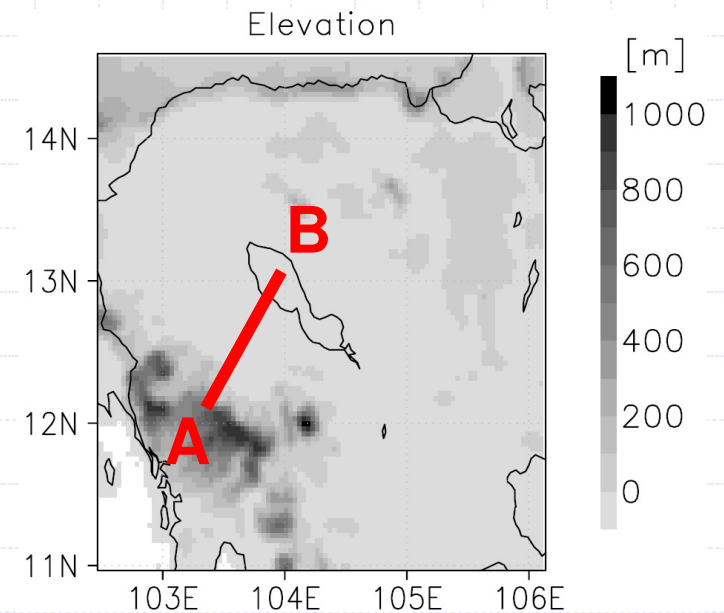
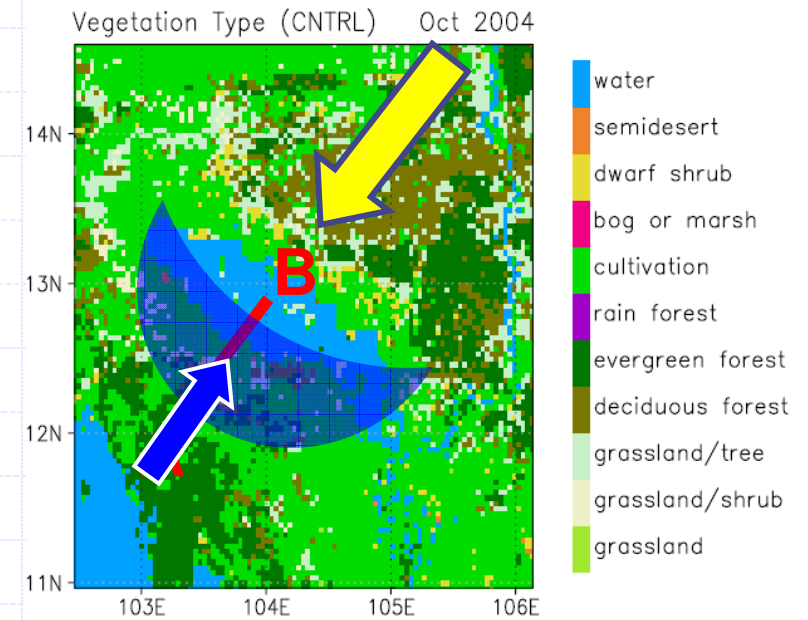
Land Data Assimilation System



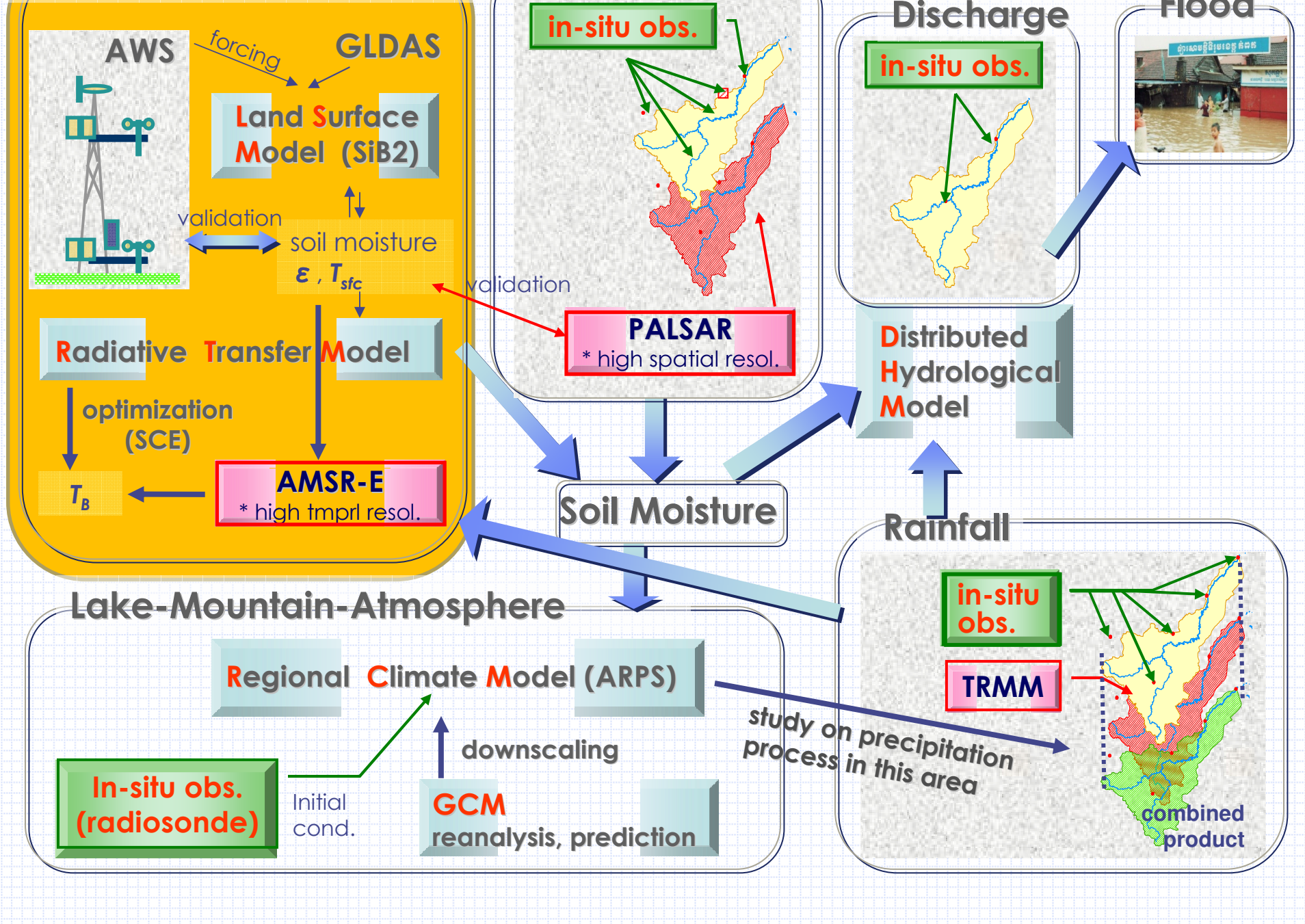
Mechanism of rainfall from numerical simulation



A SW **B** NE



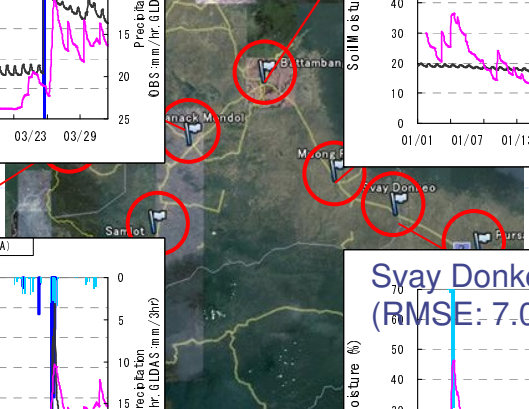
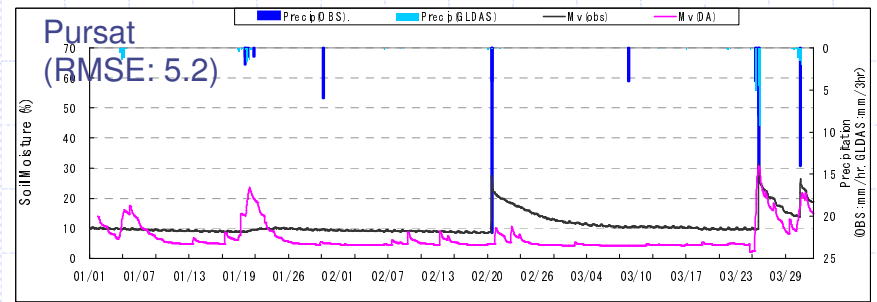
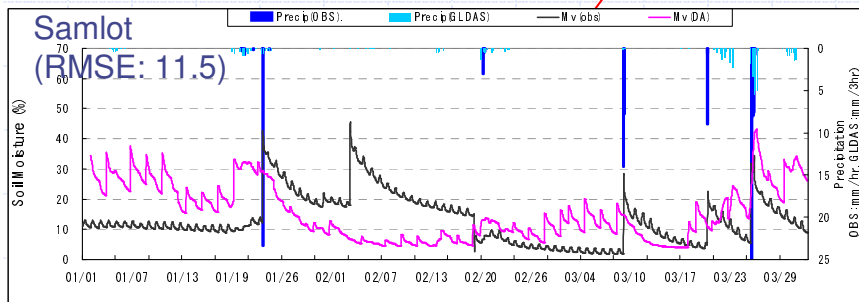
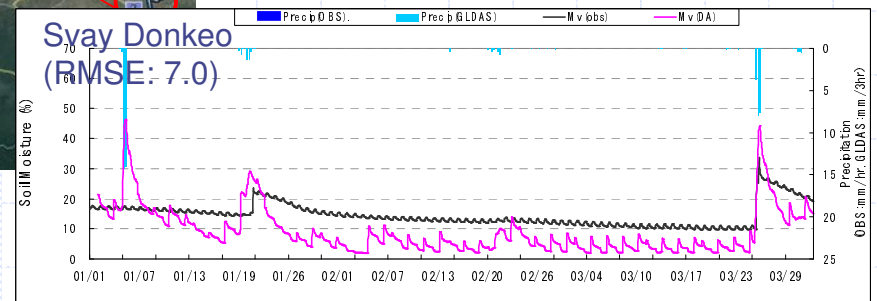
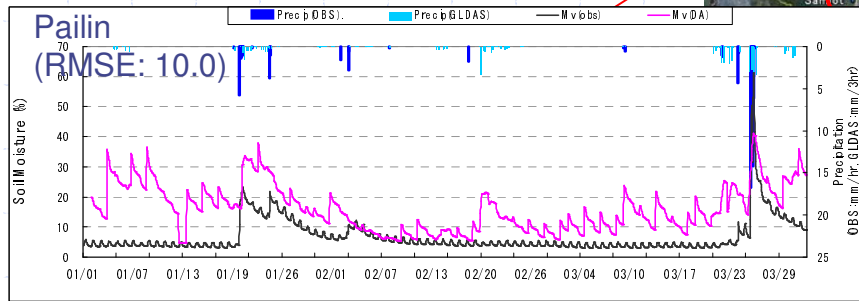
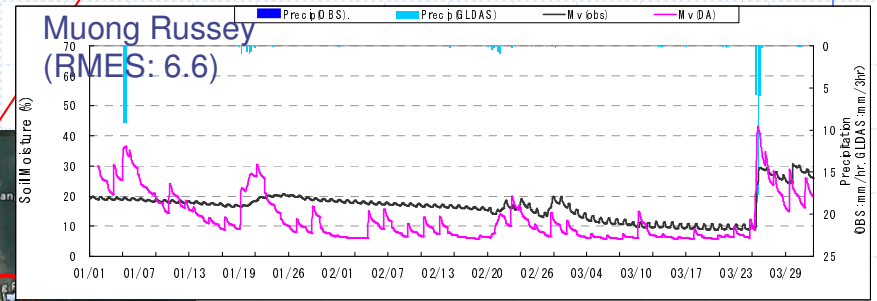
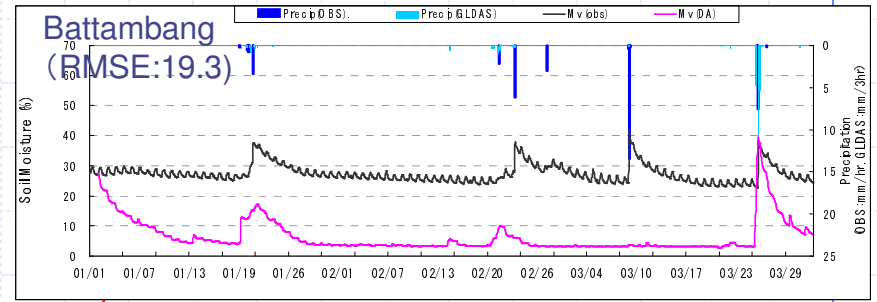
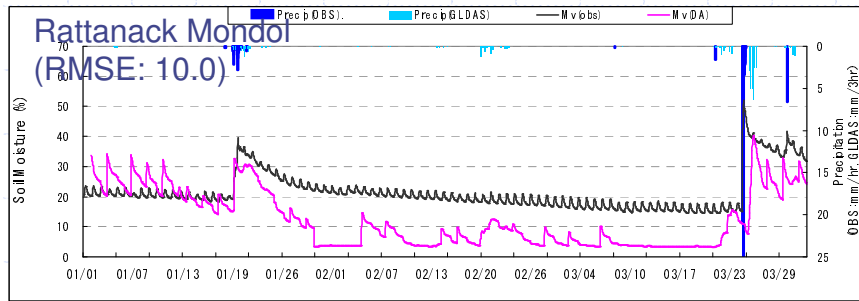
Land Data Assimilation System



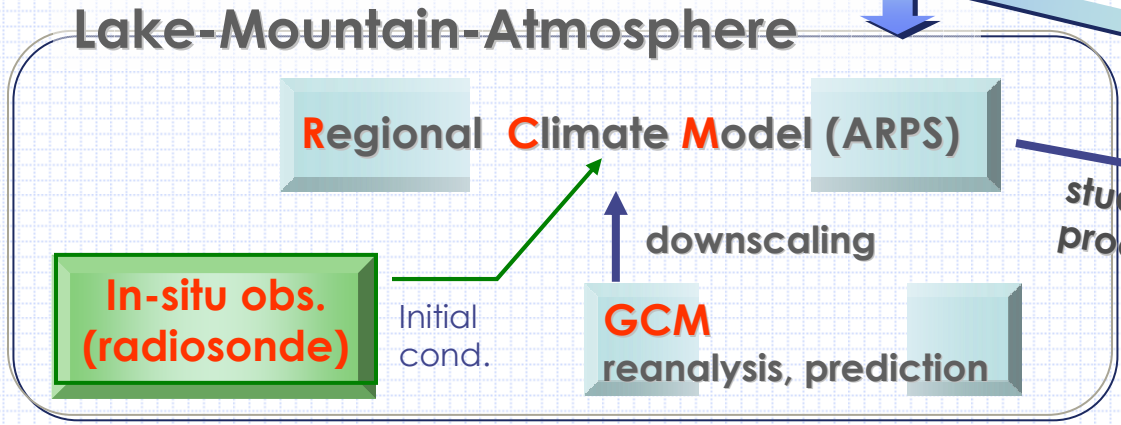
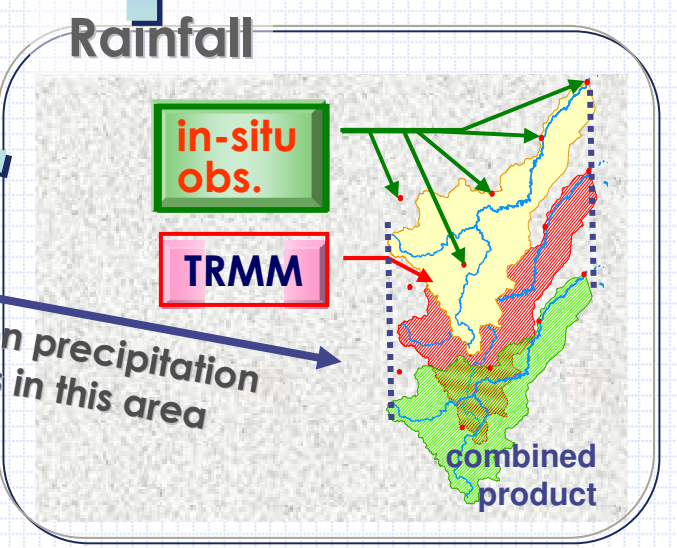
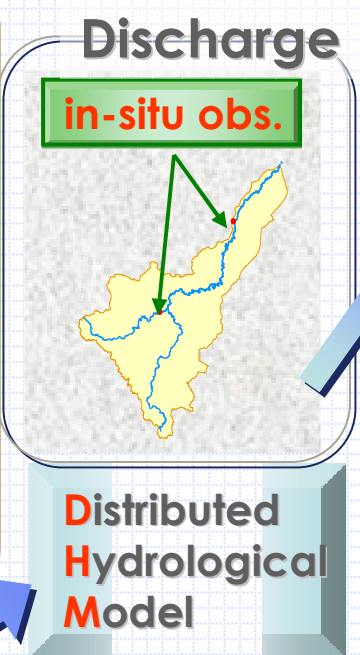
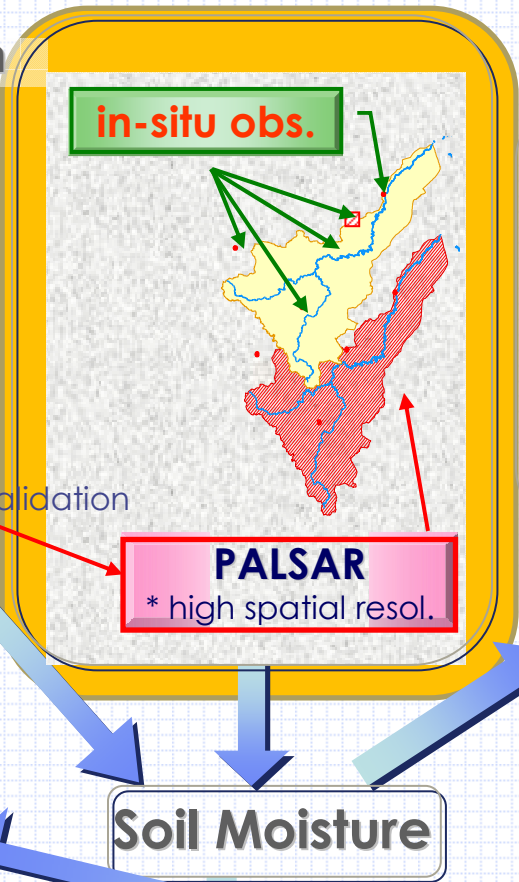
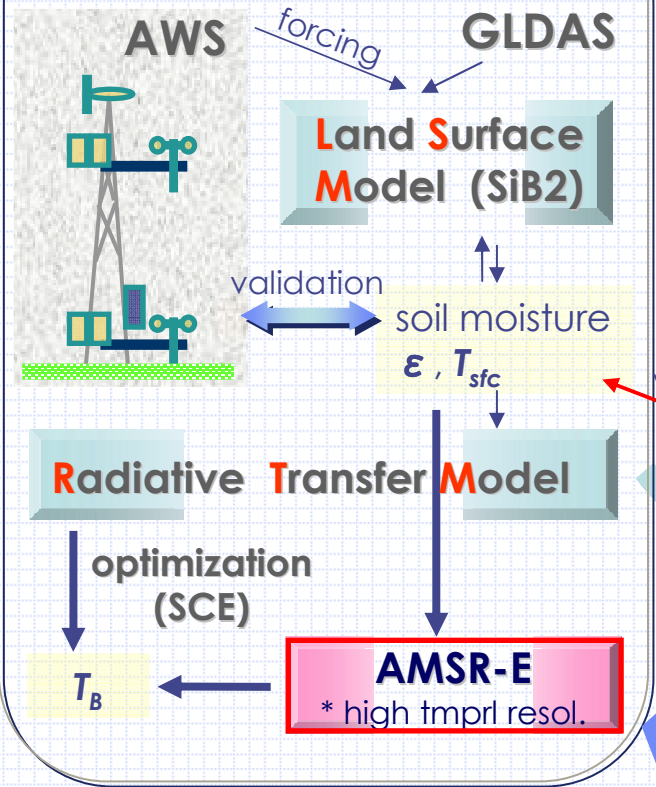
Estimation Result by using LDASUT

(2010/01/01 – 2010/03/31) [Dry period]

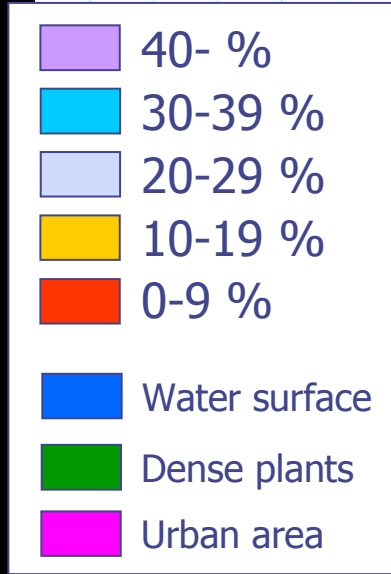
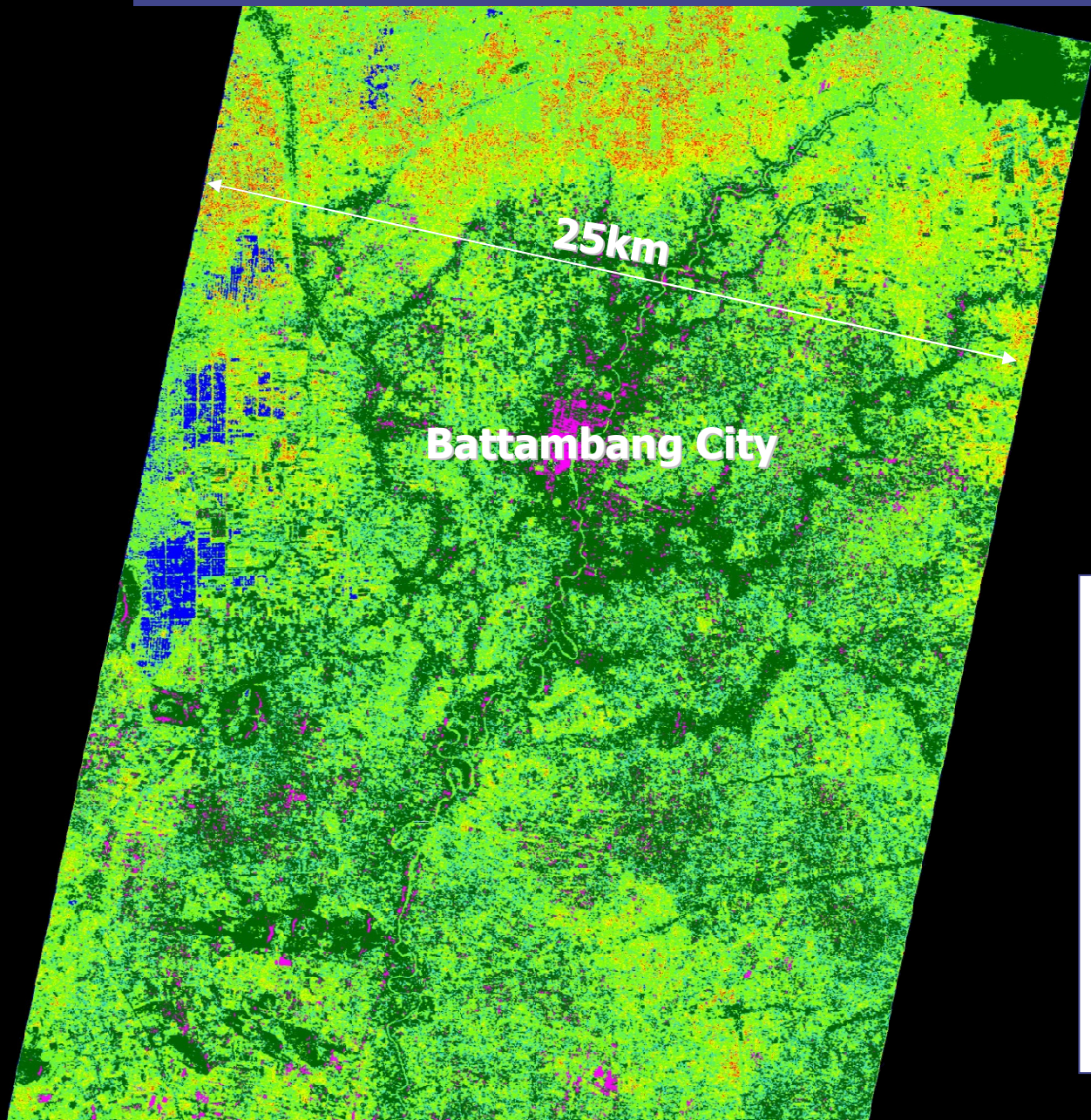
Soil Moisture (%)



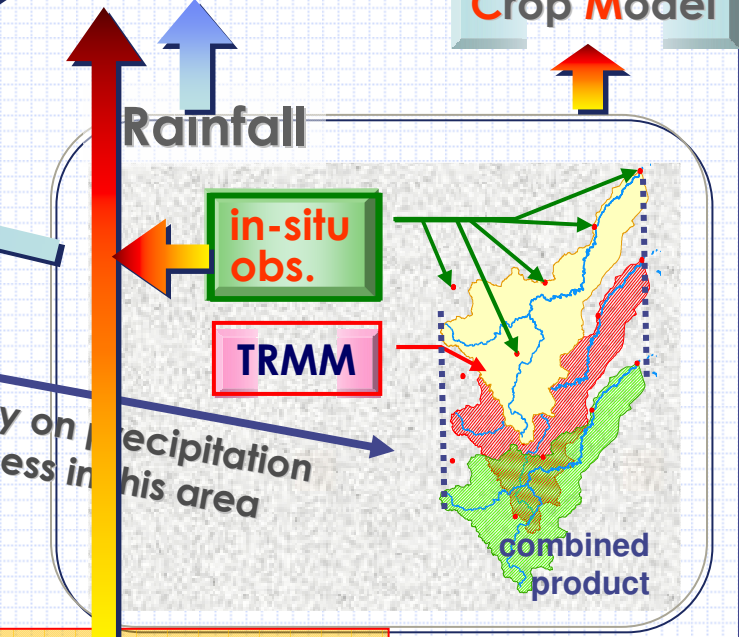
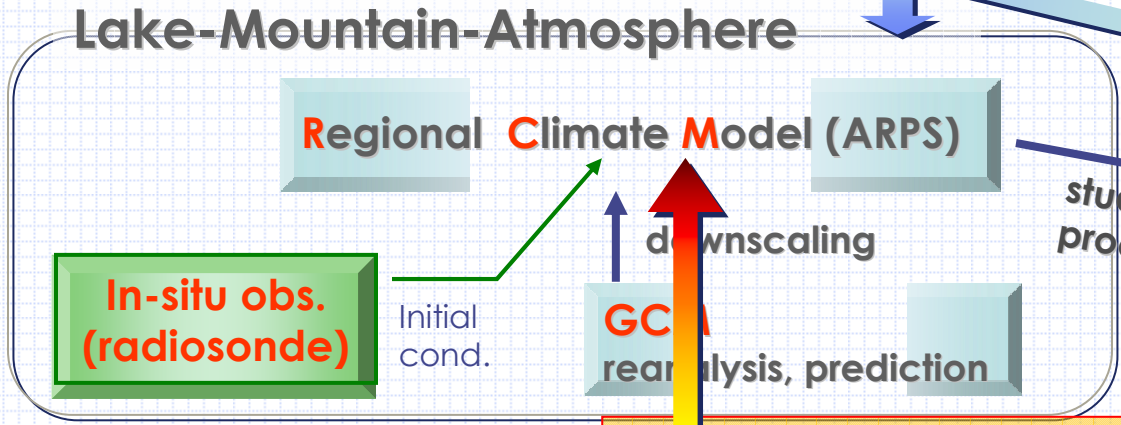
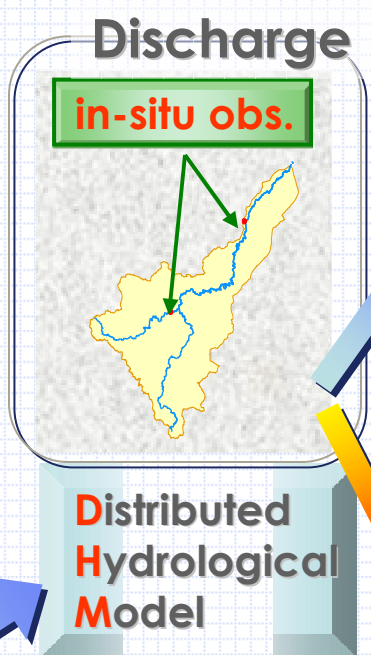
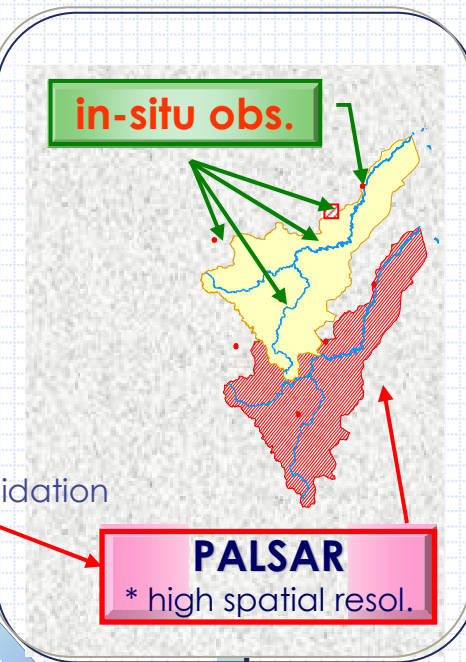
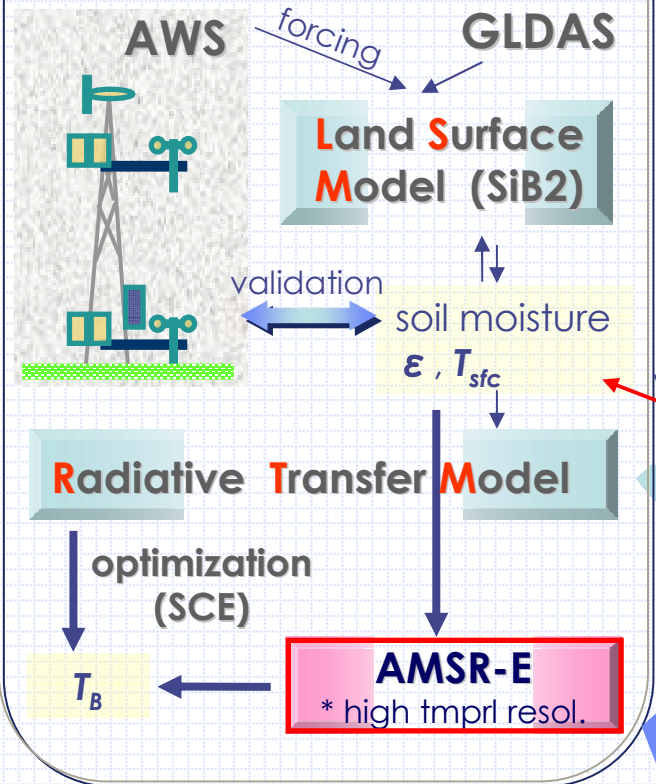
Land Data Assimilation System



Soil moisture estimation on 08-Apr-2011 by using PALSAR
(PLR mode, Resolution: 12.5m)

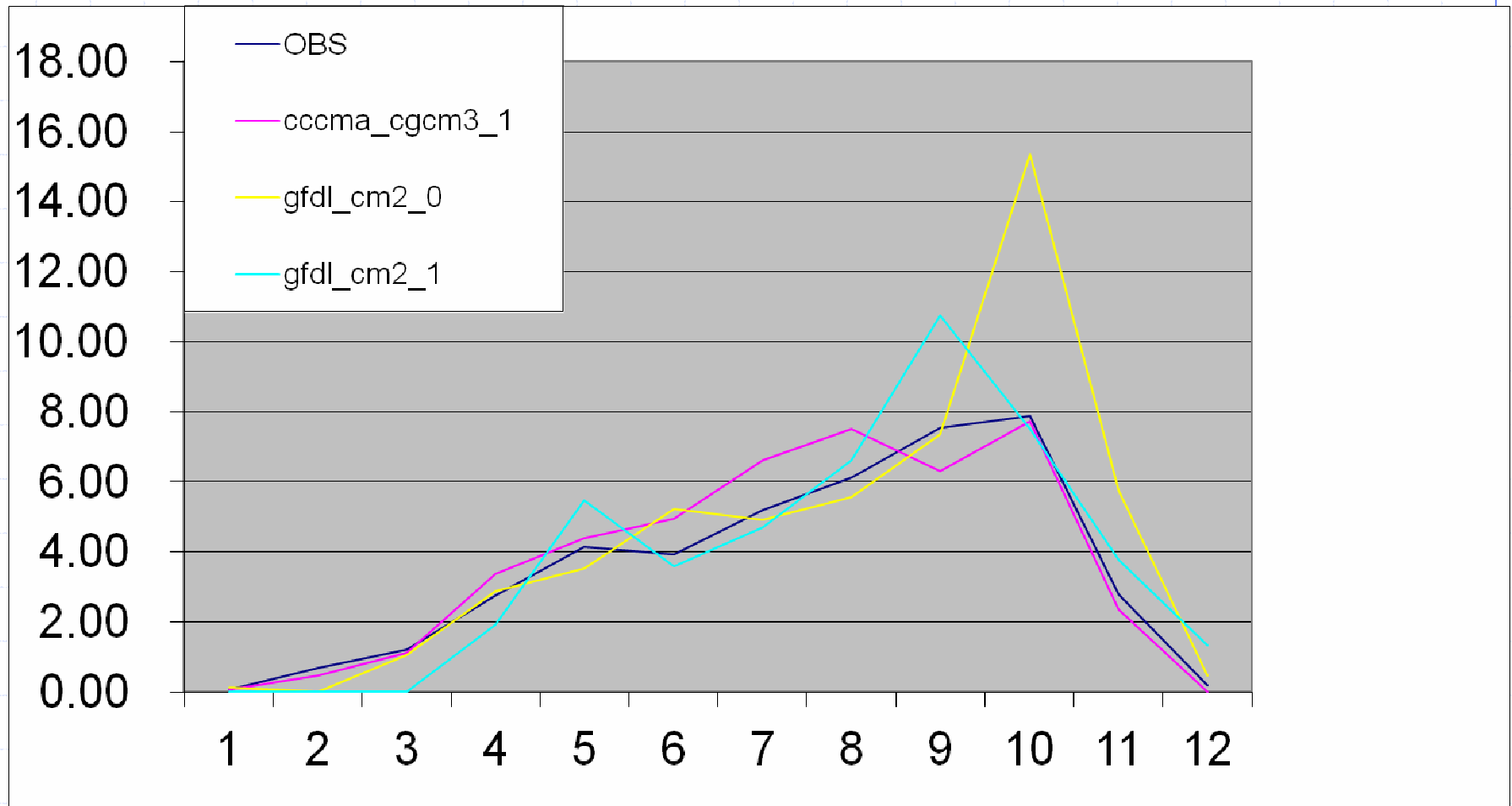


Land Data Assimilation System

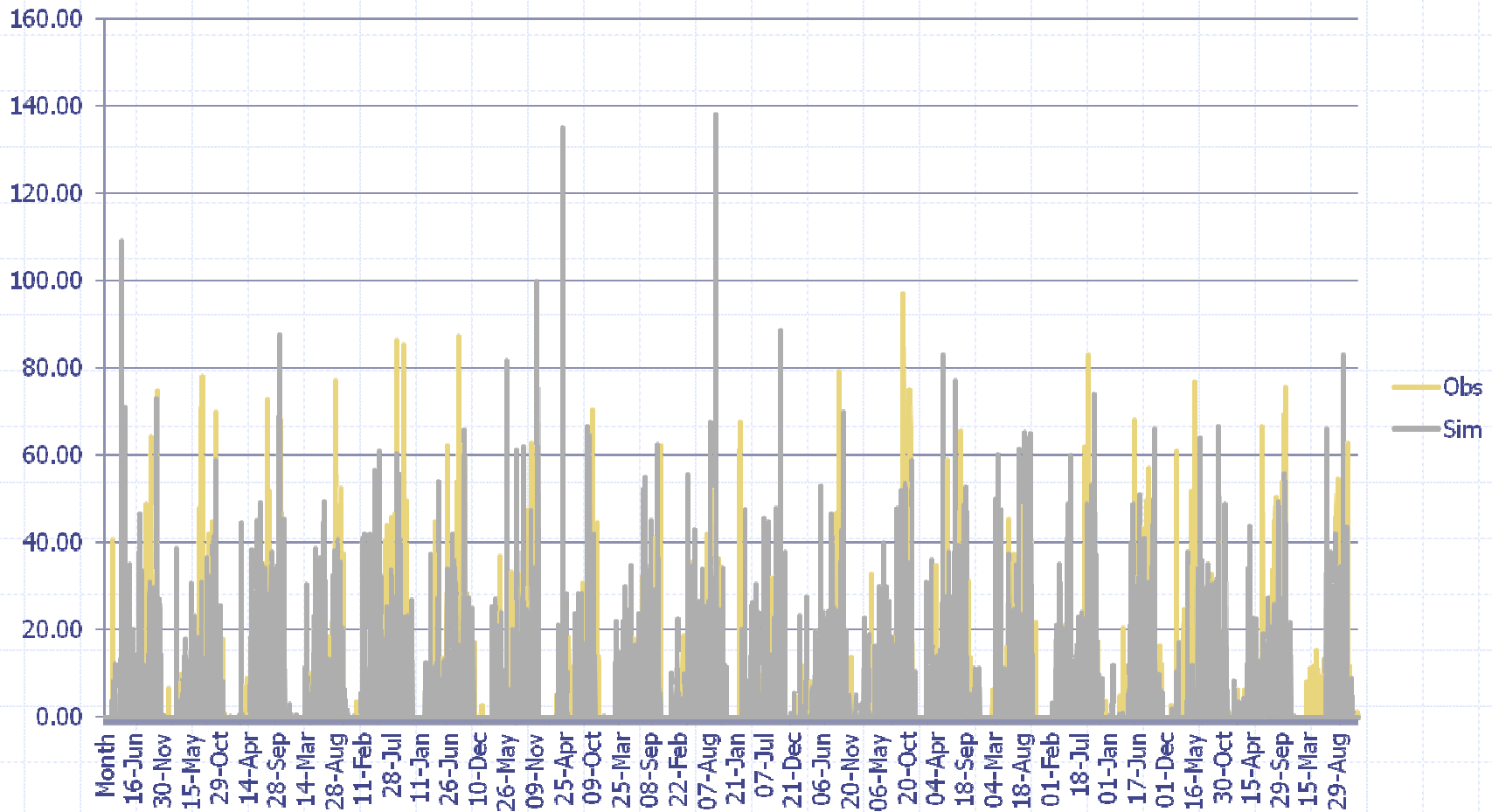


Climate Projection Model

Monthly Comparison with Obs. and Simulation



Daily Comparison with Obs. and Simulation



II- Ideas and view of possible country involvement in and contribution to the next stage of AWCI that is envisioned in line with the GEOSS WCI

The current availability and use of data in decision making in the basin

Q. What are the different water-related decisions made on an annual basis in the basin, and who makes the decisions?

A. - Provincial Water Resources

Department made decision for small scale use and Propose to Central for approval.

- MOWRAM will take action to made decision and approval for all activities follow by guideline and water law.

The current availability and use of data in decision making in the basin

Q. What data and models are used in making these decisions?

A. Temperature, humidity, wind speed, solar radiation, rainfall, water level, land use, soil type, DEM

“HydMet”: Data Download Operation System

“SWAT”: hydrological model

“ISIS”: hydrodynamic model

The current availability and use of data in decision making in the basin

Q. Are any gaps/difficulties encountered in using these data and models?

A. - DEM (ASTER G-DEM)

- how to download from website?
 - quality around flat area is not good
 - DEM has no data in some part and model doesn't run
- Land-Use (ALOS/AVNIR)
 - Flood Area (ALOS/PALSAR) → need to simplify the data to show our boss, we can see the image, but we cannot analyze the data by ourselves, we want to convert data into shape file to edit in the ArcView, ArcMap
 - AWS data: we need more data (we have 3 stations)
 - long-term data for the CCAA study is limited.
 - Crop Model: to assess the impact of climate change on the crop production

The current availability and use of data in decision making in the basin

Q. How does your basin cope with data needs and services for extreme events such as floods and droughts?

A. - Hourly, Daily, monthly data, near real-time data collection, extended telemetry system, installation Hydro-meteorological equipment in mountainous area.

- Annual Maximum flood and drought forecasting, seasonal forecasting, farmer forecasting.

The current availability and use of data in decision making in the basin

Q. What is the single greatest impediment to successful management of the basin?

A. - human resources,
- funding,
- cooperation/coordination among water resources, meteorology, and agricultural sectors (irrigation and rice production)

Pilot projects where WCI framework, principles & resources could benefit your country

Q. Provide examples of how WCI framework and principles could improve water sector decision making in your basin

A. **Land data assimilation system, Lake-mountain Atmosphere study, mechanism of Rainfall in Tonle Sap Lake. Can support to Hydrological Model, Crop Model.**

Pilot projects where WCI framework, principles & resources could benefit your country

Q. What central coordinating mechanisms could help to coordinate a study in your area?

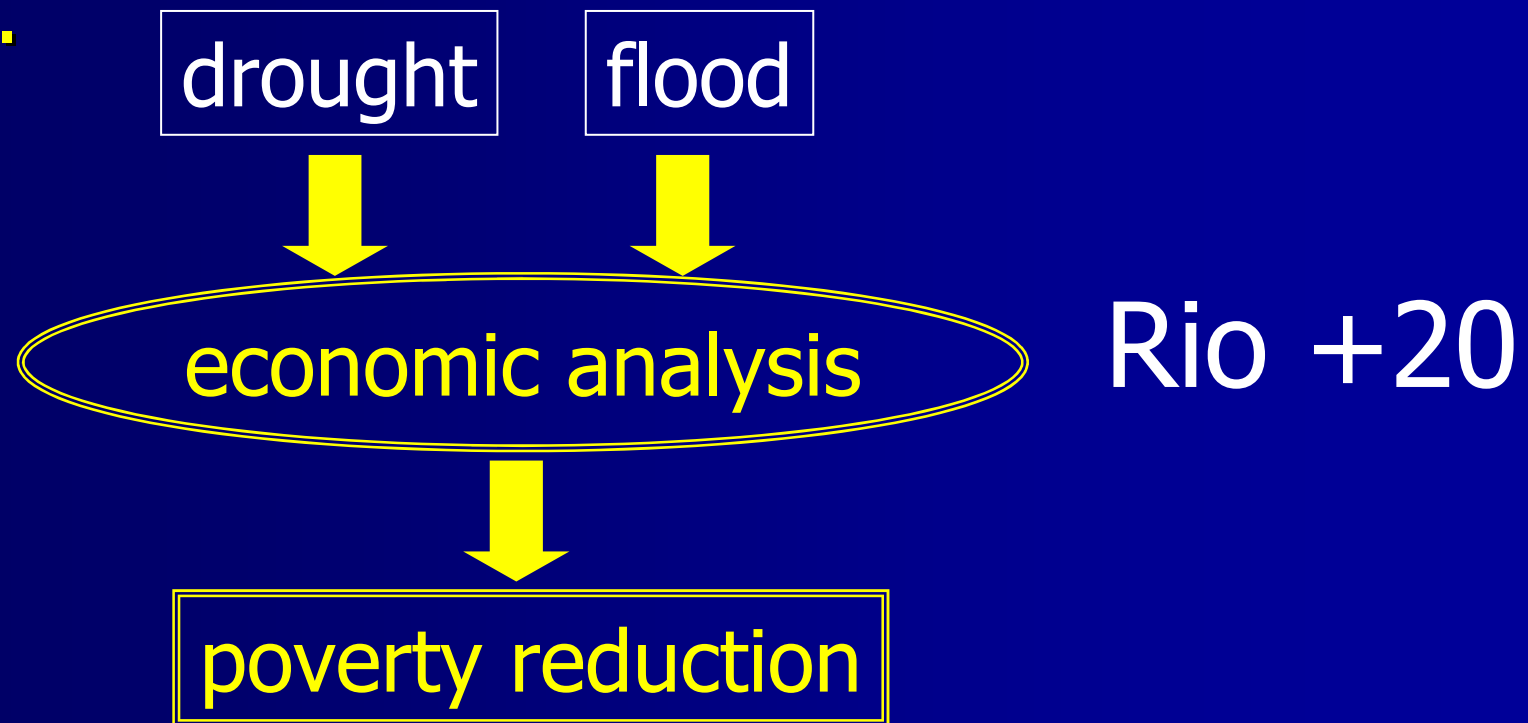
A. Tonle Sap Authority

Ministry of Water Resources and Meteorology,
Ministry of Agriculture, Forestry and Fishery,
Ministry of Environment,
DG-level Coordination Board
farmer water use,
institutional framework,
NGOs

Pilot projects where WCI framework, principles & resources could benefit your country

Q. What other factors need to be considered in working in your basin?

A.



Pilot projects where WCI framework, principles & resources could benefit your country

Q. What projects would you recommend for this basin to ensure long term benefits?

A. Tools to run the model, capacity building, coordination/networking with observations, model developers and stake holders.

Pilot projects where WCI framework, principles & resources could benefit your country

Q. Why should this basin be chosen for the GEOSS/WCI/AWCI projects?

A. Because this basin is important for agricultural production (rice and other crops) and for economic growth as well.

THANK YOU

