

Country report - Vietnam

*Presentation at 8th AWCI Coordination Group (AWCI ICG) and the 1st AWCI Climate Change Assessment and Adaptation (CCAA) study Workshop
Seoul, South Korea, 6 – 8 October, 2011*



National Centre for Hydro-Meteorological
Forecasting (NCHMF), HMS of Vietnam

Seoul, 6 Oct 2011
Dr.Dang Ngoc Tinh

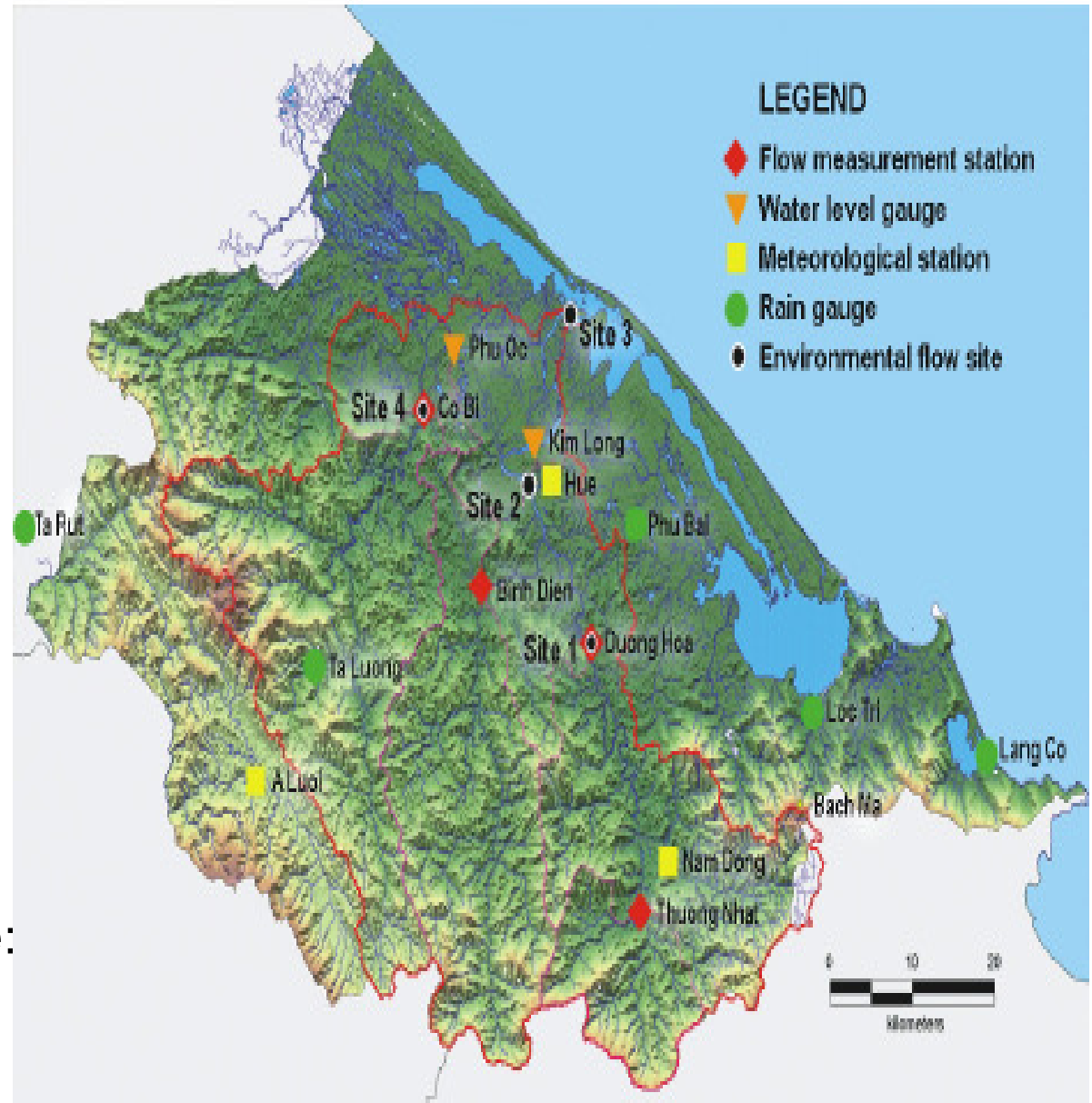
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1. Current Country Activities related to AWCI
2. Ideas and views of possible country involvement in and contribution to the next stage of AWCI that is envisioned in line with the GEOSS Water Cycle Integrator (WCI)

1. Current Country Activities related to AWCI

❖ Demonstration Project (DP)

- The Huong river basin in the Central Vietnam, geographic coordinates: 107 to 108E – 16 to 17N, with area 2830 km²; over 80% is mountainous area; annual rainfall average: 2870mm; Land cover and forest almost empty
- Main goal of the DP: To improve accuracy of flood forecast; to get efficient flood warning system
- Data to the DIAS database: 6-hourly water level and rainfall at 8 stations from 2004 to 2010



1. Current Country Activities related to AWCI

❖ Demonstration Project (DP)

- **Accomplished activities:**
 - + Established and calibrated flood forecasting system using satellite data and numerical rainfall forecast.
 - + Trained 2 persons using distributed hydrological models.
 - + Inter-Disciplinary Collaborative Research in the Huong River, in cooperation with the water quality, health science groups under the frameworks of the GEOSS/AWCI and The Global Center of Excellence (GCOE).

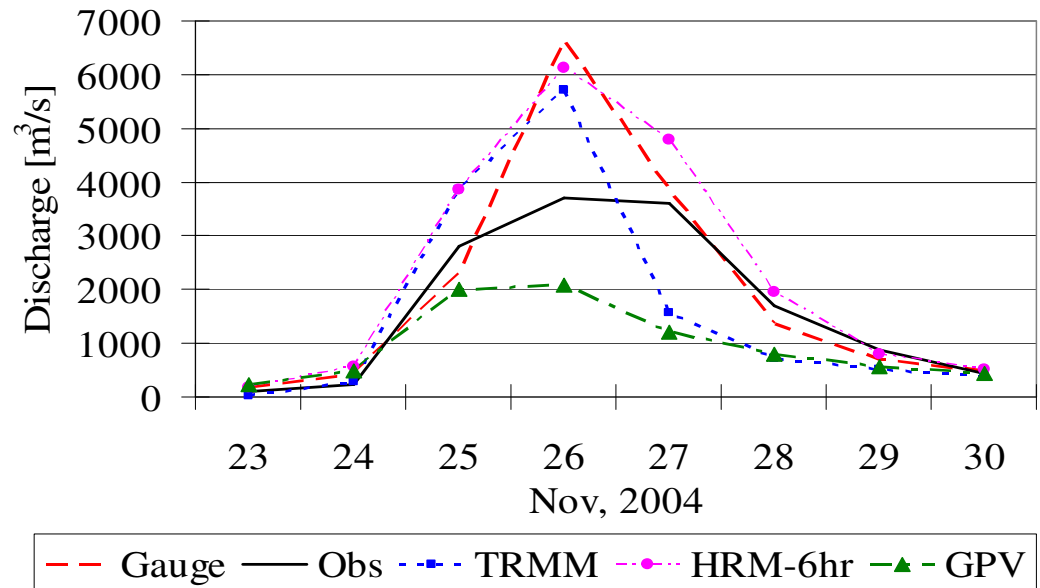


Fig 6. Zoning of Huong river water quality

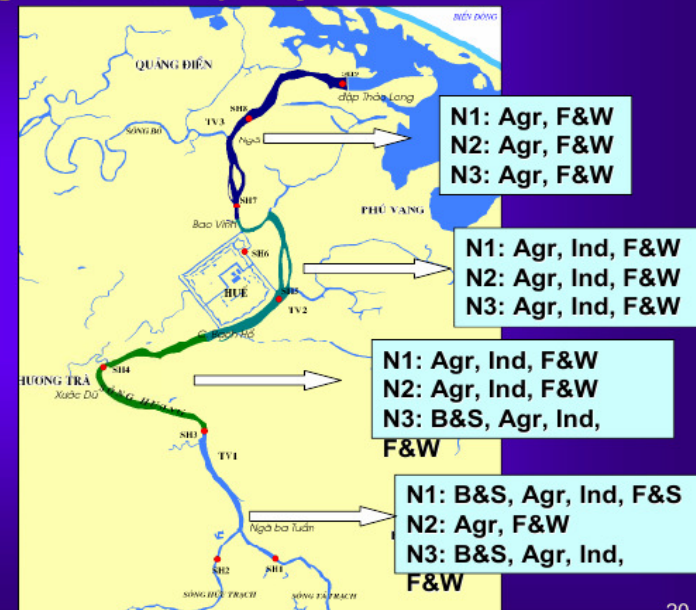
B&S: Bathing, swimming

PWS: Public water supplies

Agr : Agriculture

Ind : Industry

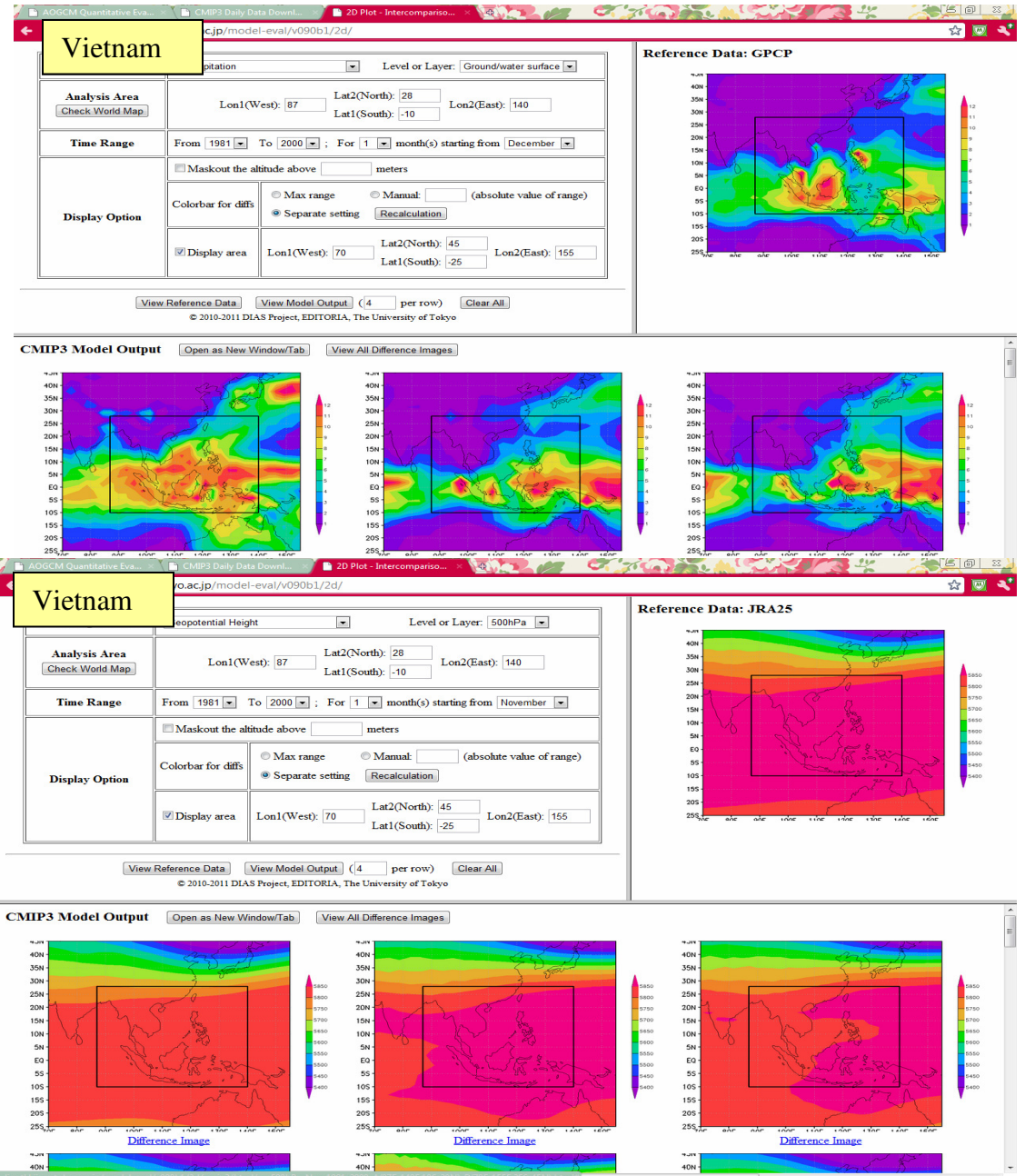
F&W : Fish culture, wildlife, boating & non-contact recreation



1. Current Country Activities related to AWCI

❖ Climate Change Assessment and Adaptation Study

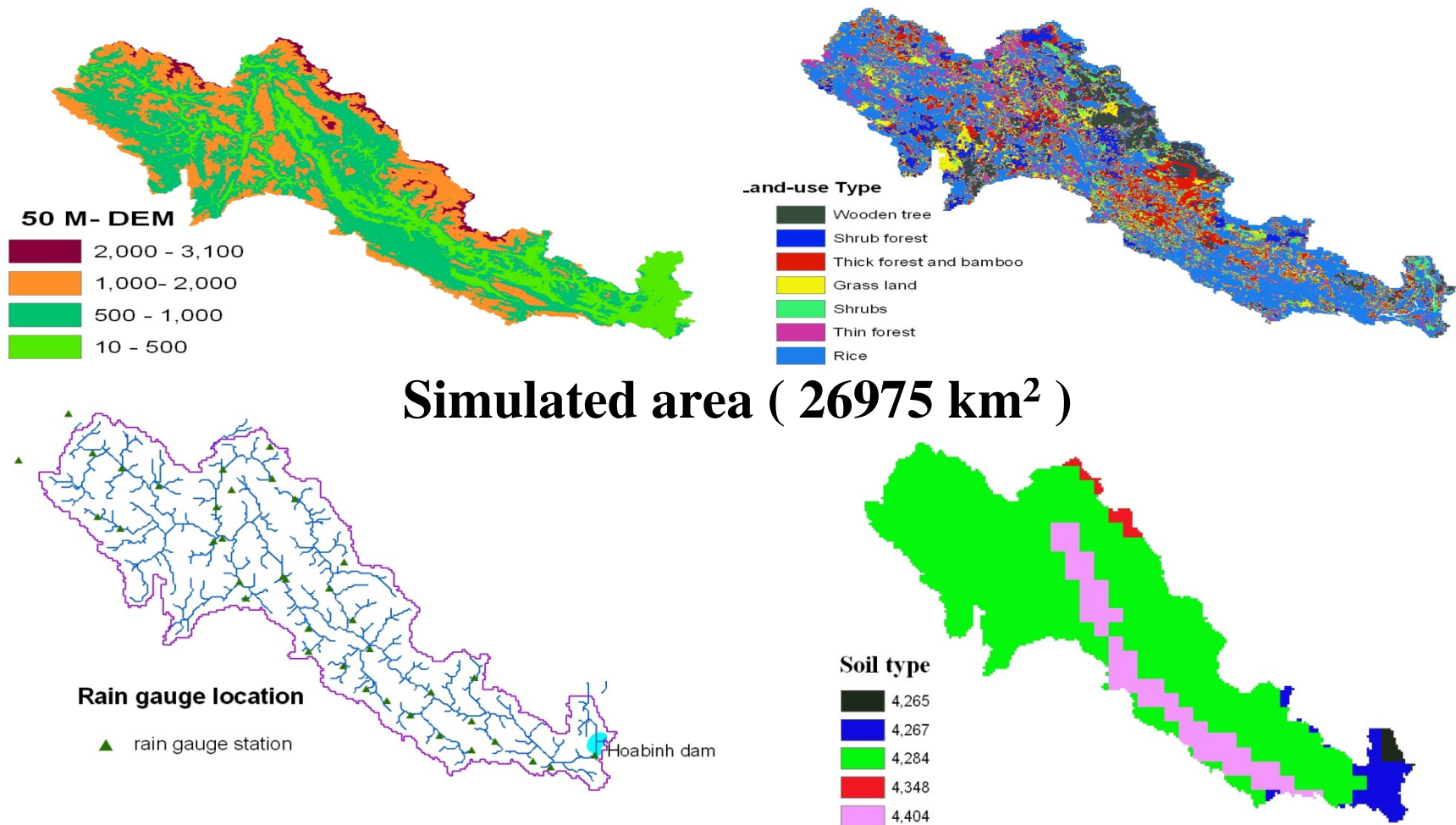
- *The Huong River basin daily hydro-meteorological data from 1977 to 2009*
- *Plans and current status of the study: further climate change assessment and adaptation study for the basin based on trained models and intensive research work ; Testing some modeling in water quality management and Improvement flood forecasting system in line with climate change.*



1. Current Country Activities related to AWCI

❖ Other related activities

- Collaborative research in the Red River under the framework of APRSAF/SAFE and JAXA.



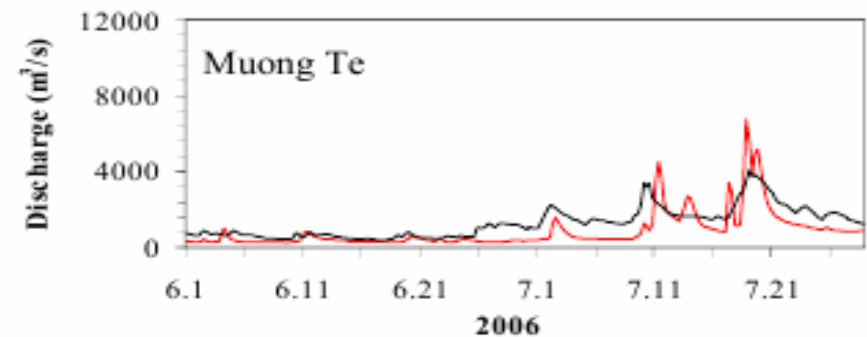
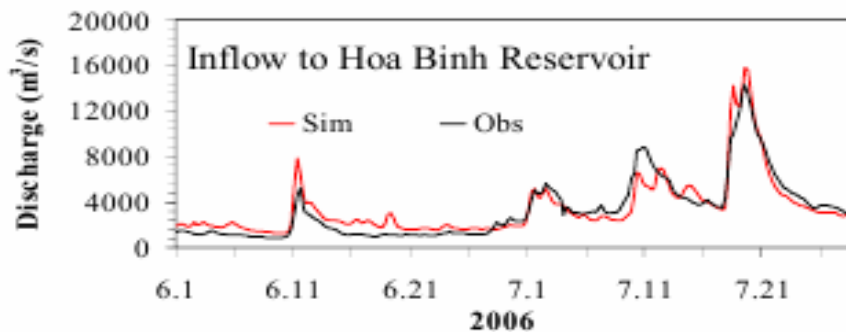
Application of Satellite Data for the Vietnamese River Systems

The Red River (Sour: University of Tokyo)

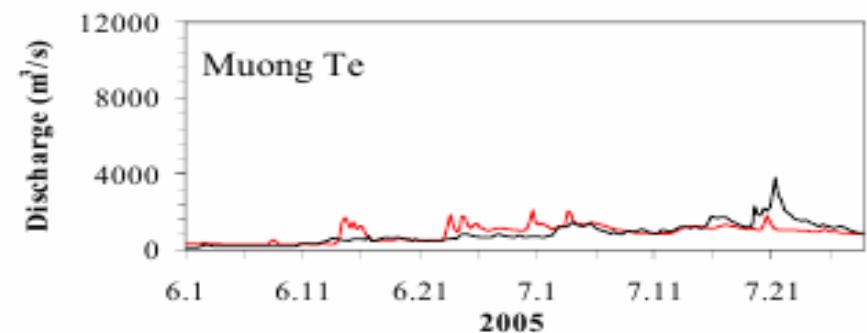
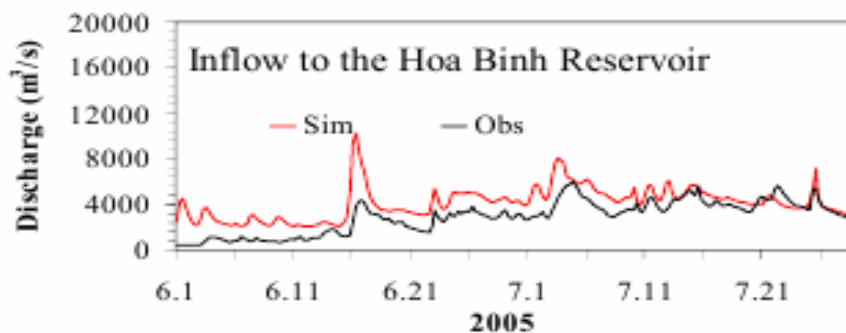
Model evaluation with the streamflows at the Da sub-basin



Calibration in 2006



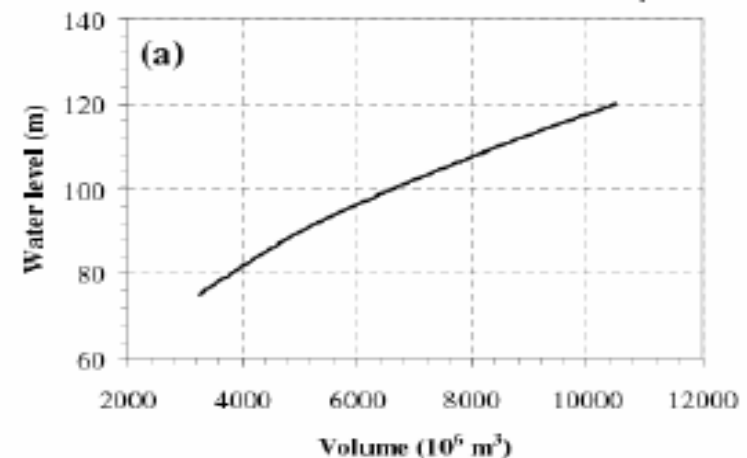
Validation in 2005



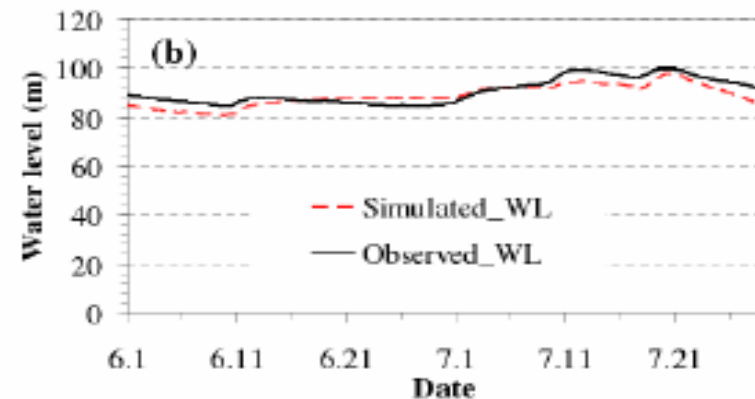
Evaluation of reservoir routing at the Hoa Binh reservoir (2006)



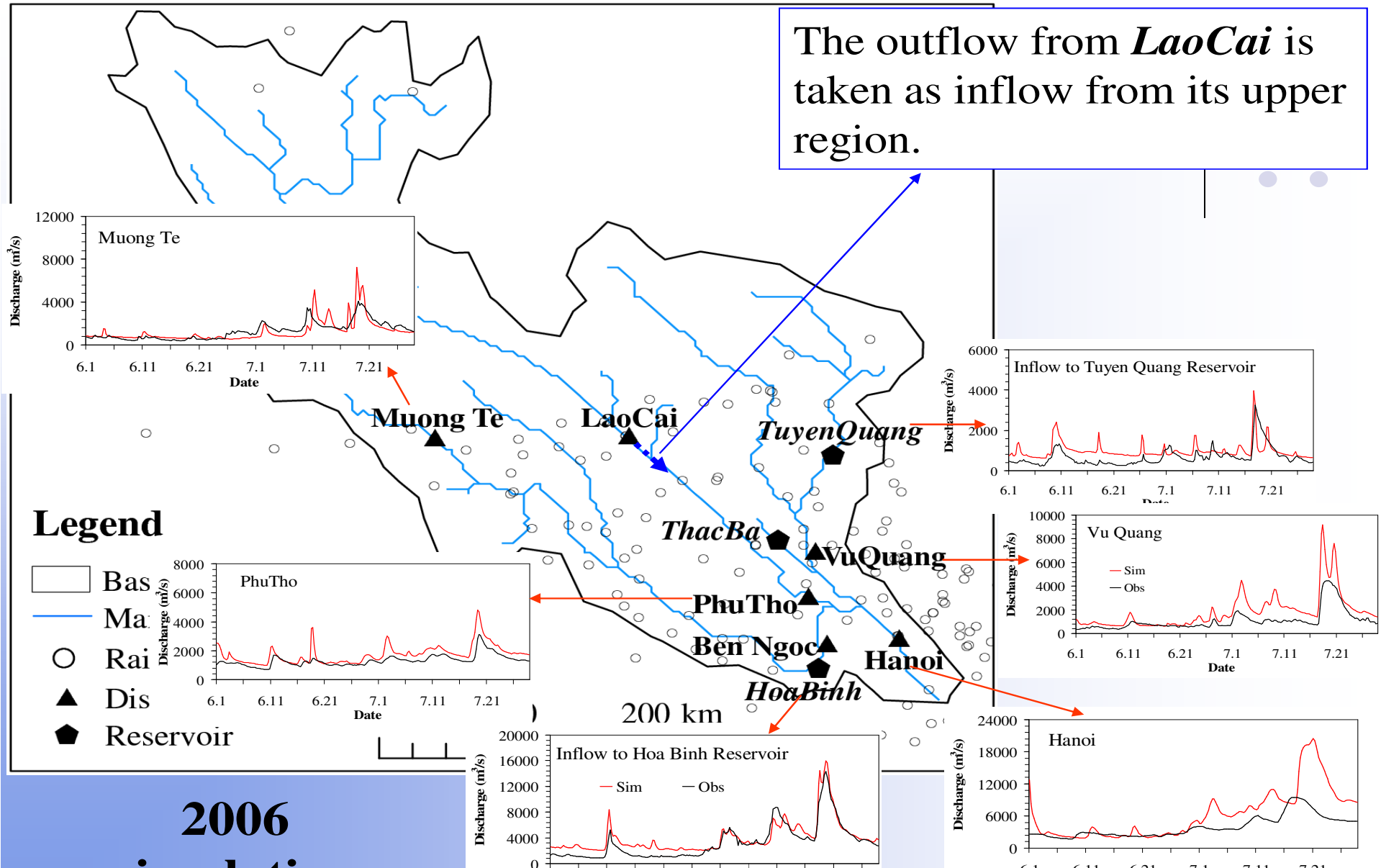
(a) The volume and water level (V-H) relation curve of the Hoa Binh reservoir.



(b) Simulated water level of the reservoir with the observed release.



Proposed Regional Capacity Development Technical Assistance (R-CDTA) for Applying Remote Sensing Technology in River Basin Management for Philippines, Bangladesh, Viet Nam with ADB and JAXA




2. Ideas and views of possible country involvement in and contribution to the next stage of AWCI

❖ *The Current Availability and Use of Data in Decision Making in the Basin*

- *Integrated basin water management at central and local levels: flood, drought and environmental control within the Huong basin*
- *Surface hydro-meteorological, environmental data, satellite data, hydrologic and hydraulic models are used in decision making*
- *Gaps in calibration, correction between surface data, satellite data, radar data and simulated data by models; human intervention to water resources such as reservoir building and operation, other water control and unexpected water using in the basin.*
- *Data on drought and water quality are limited*
- *The greatest impediment to successful management of the Huong basin is real time hydro-meteorological, water quality data collection, transmission, and reservoir operation , other water control constructions causing negative impact to water regime of the river.*
- *Pilot projects where WCI framework, principles and resources could benefit the country*

2. Ideas and views of possible country involvement in and contribution to the next stage of AWCI

- ❖ ***Pilot projects where WCI framework, principles and resources could benefit the country***
 - *Consolidating and upgrading observation network to meet requirement of storm and flood forecasting and warning activities; Improvement of meteorological, hydrological, environment data collection, process, archives and service system; hydrologic and hydraulic models for Huong River basin providing scenario, support to decision making in water resource management and climate change adaptation measures.*
 - *Integrated water management project should apply for this basin for long term benefits*
 - *This basin was chosen for continuous study and using previous achievement, result.*
 - *Other factors need to be considered: impact of climate change and man-made impact to water resources of the river.*



**Thank
you for
your
kind
attention**