

Workshop of Regional Association II Working Group on Hydrological Services

Guoqing Wang

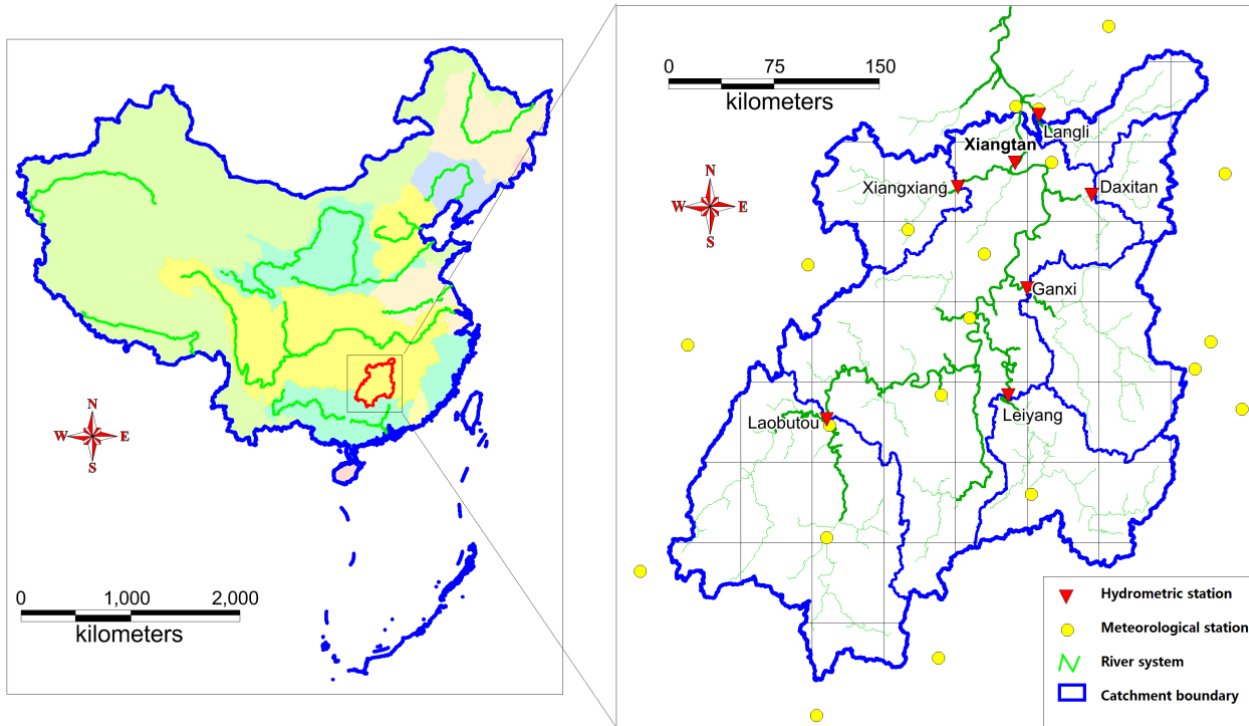
Nanjing Hydraulic Research Institute

14-16 April, 2015, Korea

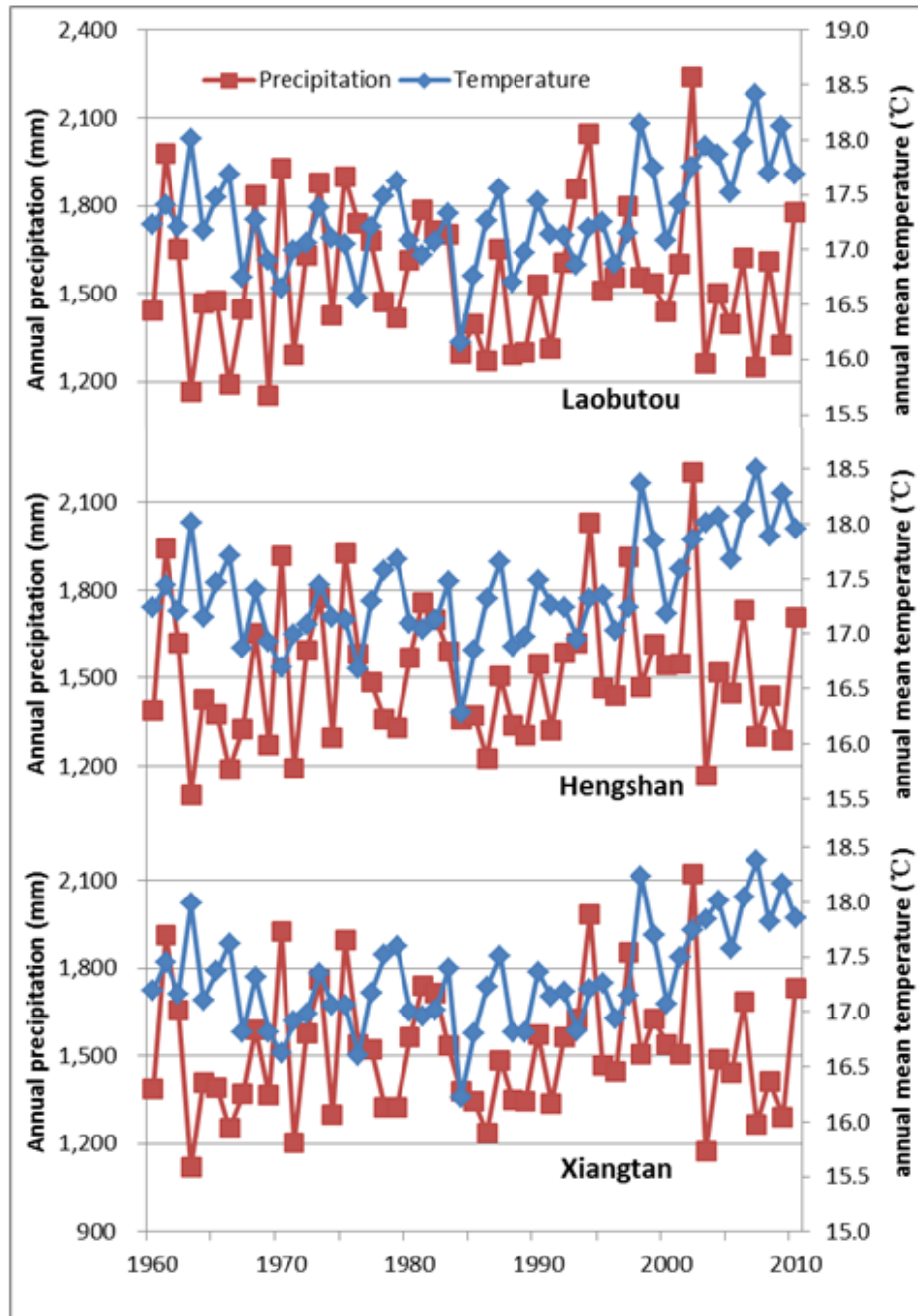
6.6 Hydrological Responses to Climate Variability and Change and Promotion of the Use of Climate Information by Water Managers

Actions	Outputs	Resources	Milestones	Linkages
<p>1) Assessment of changes in climate extremes</p> <ul style="list-style-type: none"> - Data and method of climate extreme study: Data inventory, Climate index, Method – (Priority A) - Trend of some climate extremes: Temperature Extreme, Rainfall extreme, other extremes – (Priority A) - Changes in atmospheric circulation affecting climate extreme: Monsoon, typhoon and tropical depression, El Nino and Southern Oscillation – (Priority C) - Change in climate extreme affecting natural physical environment: Heat wave, cold wave, drought, extreme rainfall, flood, hoarfrost, extreme sea water level – (Priority C) 	<p>Assessment report on climate extremes for participating countries</p>	<ul style="list-style-type: none"> • WGHs • WMO Secretariat • NHRI, China • CMA, China • IMHEN, Vietnam • Other countries 	<ul style="list-style-type: none"> • Report to be submitted (May 2015) • Reports to: AWG-II • Documents as required • Workshop if needed 	<p>WGHs RA2 WMO Secretariat CHY</p>
<p>2) Conduct climate projections – (Priority A)</p> <ul style="list-style-type: none"> - Statistical downscaling - Dynamic downscaling 	<p>Climate change scenarios for participating countries</p>		<p>Report to be submitted (May 2015)</p>	

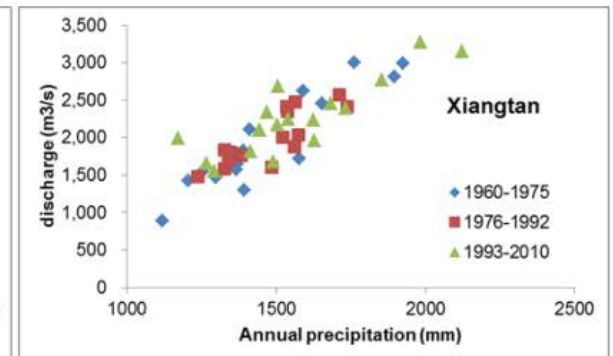
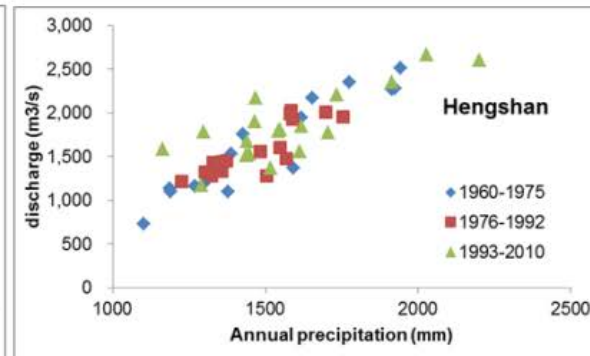
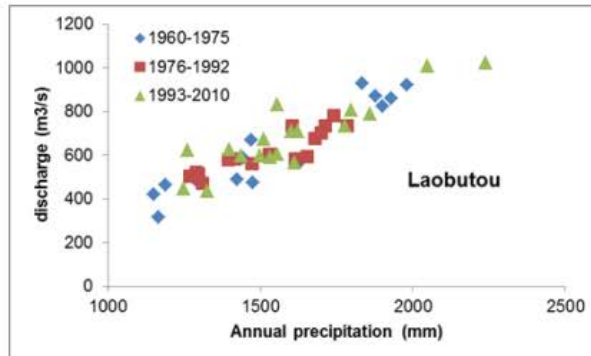
Study river basin: Xiang River



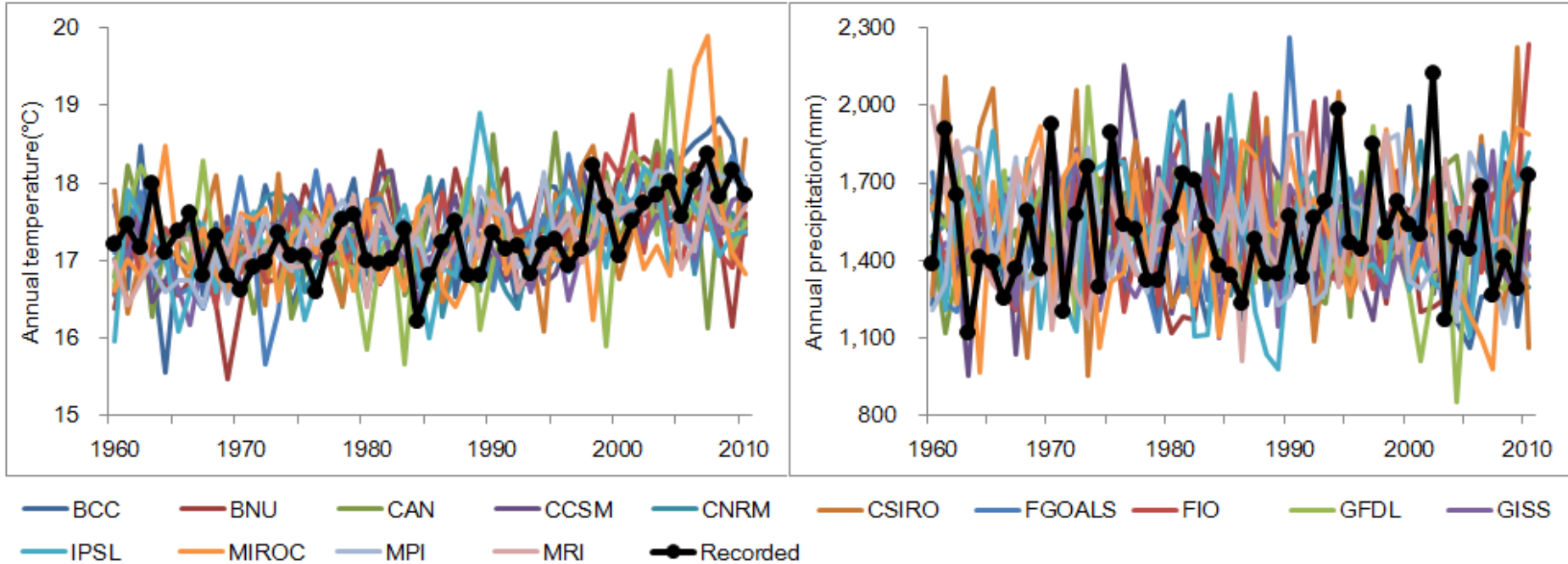
- Historical changes in climatic variables



Relationships between runoff and precipitation

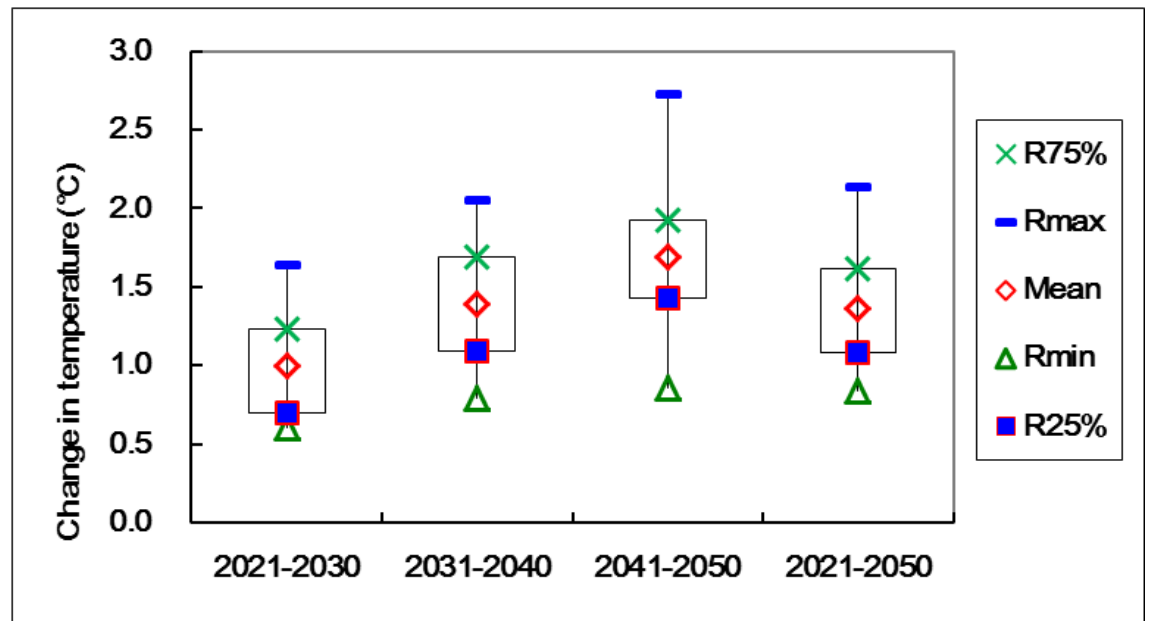
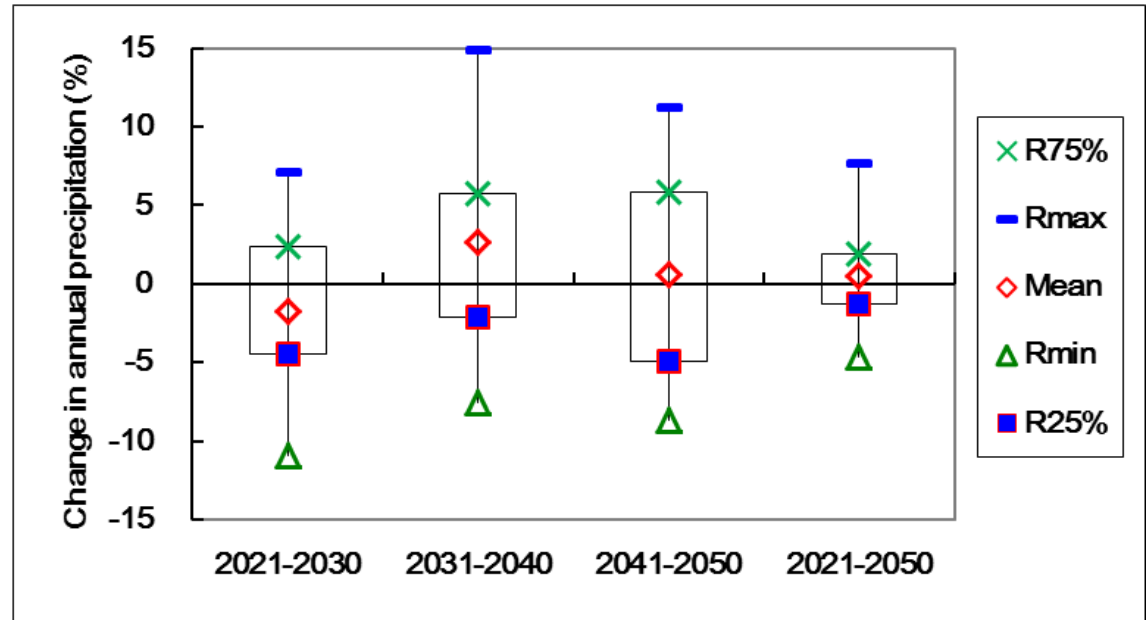


Verification of GCMs simulations



- RCP4.5
- 14 GCMs
- Downscaled by statistical approach and dynamic approach
- Data sources: CMA

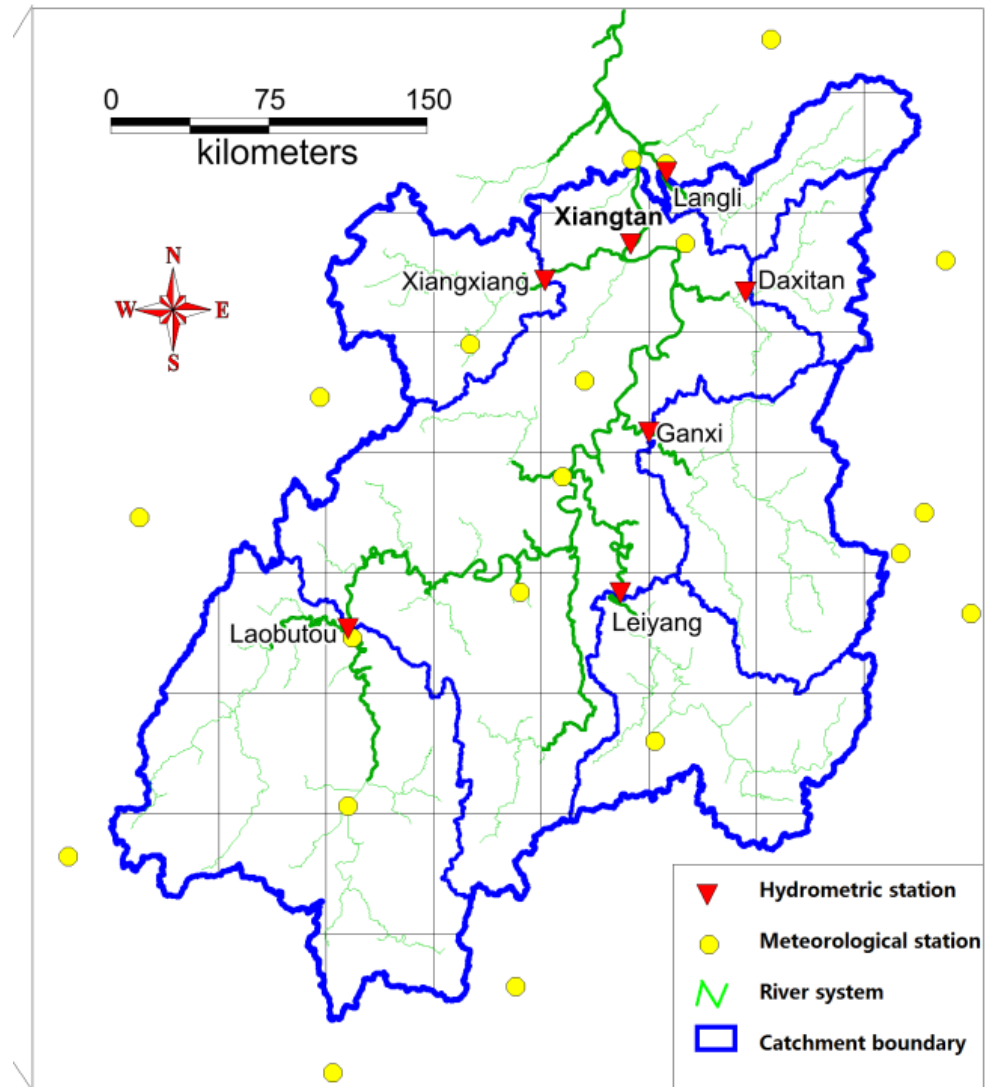
- Projections for future
- 2021-2050
- Base period: 1961-2010



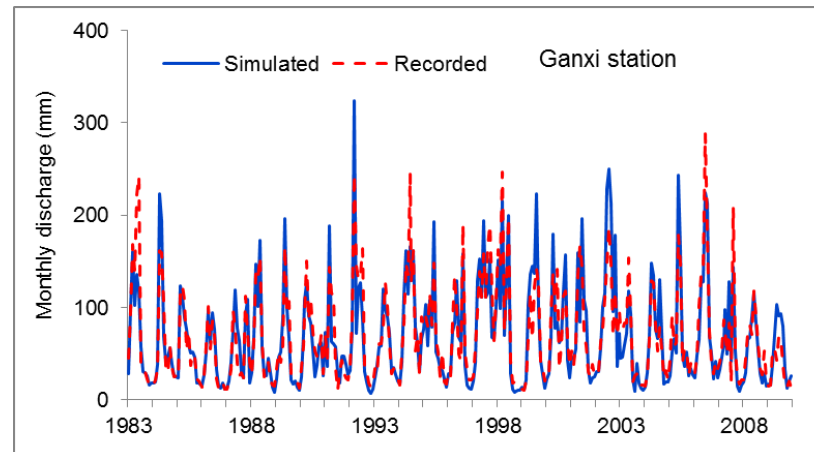
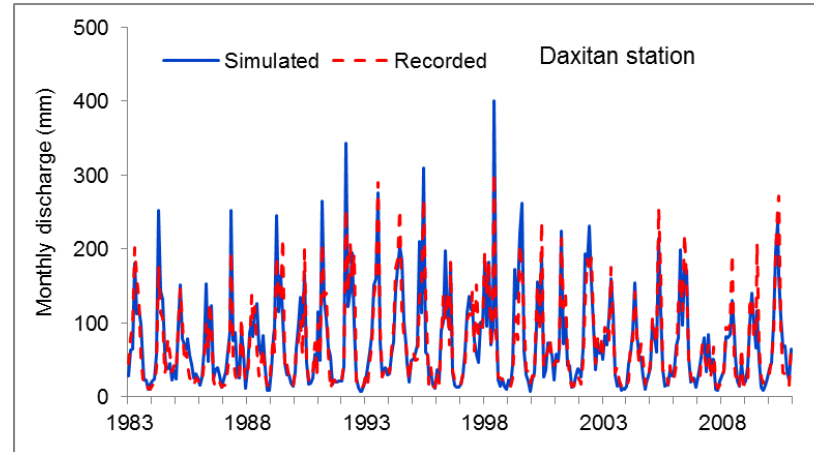
Hydrological model development

- VIC model
- SWBM model
- XAJ model

- Calibrated with 8 catchments



Hydrological modelling



Future activities

3) Assessment of potential impacts of climate extremes and climate change on selected river basin water resources – (Priority A)

- Temperature
- Rainfall
- Evapotranspiration
- Flood and inundation
- Drought
- Water Resources

Report on the impacts of climate extremes and climate change to water resources

Report to be submitted (Dec 2015)