**Poster Sessions**
**10:30 AM and 2:50 PM**

# START Activities and Networks in the Mekong River Basin (MRB) and Greater Mekong Subregion (GMS)

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## Abstract/Poster

*Water and Carbon in the Mekong System*
In 1997 SEA START RC initiated the Southeast Asia Integrated Regional Model: River Basins Inputs to the Coastal Zone (SEA/BASINS) as a regional program under SARCS Integrated Study Science Plan on Catchment Cascades: Integrating Biogeochemical Fluxes from Uplands through Coast to Continental Seas. With a long-term partnership with the University of Washington, the program was able to develop basin-wide hydrological modeling tools, such as CASA and VIC, which have been fundamental for calculating water and carbon budget in the MRB in subsequent projects. Later in 2000-2004, capacity building and networking activities on water and carbon cycles in the 4 lower Mekong countries were also carried out.

*Integrated Assessment of the Mekong*
Between 1999-2004 SEA START RC conducted an integrated assessment of the MRB and the results were published as the Assessment Report No. 55 of the UNEP Global International Waters Assessment.

*Climate Change Vulnerability and Adaptation of Systems and Sectors in the Mekong*
Beginning in 2003, we carried out the Southeast Asia Regional Vulnerability to Changing Water Resources and Extreme Hydrological due to Climate Change as the Regional Study AS07 of the START-TWAS-UNEP-GEF Assessment of Impact and Adaptation to Climate Change in Multiple Sectors and Multiple Regions (AIACC). The project initiated a long lasting network of natural and social scientists in Mekong countries on vulnerabilities and adaptation of water resources, urbanization and food production sectors to future climate change and climate variabilties. High resolution climate projections based on CSIRO CCAM were developed and applied to hydrologic and crop models to estimate future changes in water availability and extreme regimes as well as impacts on major food crops in the region. Field research at the community level was carried out in Lao PDR, Thailand and Vietnam to assess current and future coping capacity for changes.

Since 2004 our collaboration with UK Met Office's Hadley Center has applied the PRECIS model to the Mekong and GMS. High resolution projections under SRES A2,

B2 and A1B scenarios up to 2100 are available for non-commercial uses and have been applied to many applications. Our experience with PRECIS and other regional climate models would also enable SEA START RC to assist Vietnam Institute of Meteorology, Hydrology and Environment to set up systems to create national climate scenarios under the National Target Program on Climate Change.

In following from AIACC, subsequent capacity building and a climate change vulnerability network in the Mekong are being implemented. At the moment there are nearly 100 scientists, government officials and NGO staff in all Mekong countries who have engaged in our network. Climate and food production were also addressed under our partnership with Chiang Mai Universities to customize DSSAT model for the MRB with major support from APN. Recently we have expanded our modeling domain to cover additional sites in GMS countries outside of the MRB to support a new initiate under support from ADB with our new partner, Murdoch University.

Since 2008 SEA START RC is assisting the Mekong River Commission (MRC) to formulate its Climate Change Initiative (CCI), which will cover a basin-wide integrated assessment of water related systems and sectors under combinations of changing climate and socioeconomic development scenarios. Capacity building and pilot sites in riparian countries will be supported through this initiative.

Concerning the social vulnerability and adaptation, SEA START RC has collaborated with Can Tho University, Helsinki Technical Universities and WWF Greater Mekong to communicate regional climate projection and hydrodynamic modeling outputs for the Mekong delta (including the Tonle Sap) to stakeholders from different levels from national to local communes. Two stakeholder workshops were organized in Phnom Penh and Can Tho in 2009.