Toward an Integrated Regional Model of River Basin Inputs to the Coastal Zones of Southeast Asia

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Executive Summary

Initial Orientation Workshop
Integrated Regional Model of River Basin Inputs to the Coastal Zone of Southeast Asia

Toh Sang Khongjiam Hotel, Ubon Ratchathani, Thailand
14-17 July 1998

Background and Objectives of the Project:

The Integrated Regional Model of River Basin Inputs to the Coastal Zones of Southeast Asia Project (also known as *NAGA* Model), has aimed to implement a multi-scale (time, space) integrated regional synthesis of changes in water resources of Southeast Asia as a function of changing land use, land cover and regional climate. The project is planned for 2 years, starting from July 1998. Expected outcomes of this project will include:

- A systematic synthesis of multidisciplinary information needed to understand the combined effects of human and climate changes in river basins of the region
- A set of systematic tools for prediction, scenario generation and socio-economic evaluation
- A visualized processing tool for proactive interaction among interdisciplinary scientists, water resource managers and policy makers, to be a basis for the "decision supporting system" for river basin development and management
- Interactive and sustainable framework and network for model implementation at different levels of users

The Results of the Initial Orentation Workshop, 14-17 July 1998

Report of *NAGA* Version 1

The Version 1 of the *NAGA* Model was developed by the University of Washington team at 1 degree (~100 km) resolution due the limited quality of available datasets. Preliminary testing the results of this course resolution model with the observed water discharge and certain water chemistries of some rivers in Southeast Asia indicated that the model was more satisfactory in large watersheds than in small watersheds. Discrepancy between observed and predicted was clearly due to resolution of the model.

The outline for *NAGA* Version 2

In the Version 2 more realistic and higher resolution data will be used. The model will take into consideration the local specific issues and the human dimension of the problem. This will require a regional network and cooperation among partners at different levels to

develop, verify and implement the model. A step toward this achievement will be a workshop in November 1998 among regional experts on river basins and the model developing team.

The Program Elements

An information link between University of Washington in Seattle, USA and Southeast Asia START facilities at Chulalongkorn University in Bangkok, Thailand, will be the backbone of the program. This core will be further expanded into a network of partners inside and outside of the region. Funding from APN and START will be used to initiate and facilitate communication and data/information transfer via this network. APEC Internet Collaboration Center of the University of Washington will provide an additional platform and resource for communication among all parties involved in this program through a support from USAID. The technical development of the model will be done in Seattle under a contract between the University of Washington and the US National Science Foundation.

Potential Regional Partner

Government agencies, academic institutes, research institutes, consultant firms, non-government non-profit organizations, mass media, national and provincial policy planners and resource managers, international/regional organizations, local/state governments and legislatures that deal with water resource, water supply, living resources and fisheries, forestry, pollution and environments, environmental data and information, agriculture, and urban and land-use planning.

NAGA Modelling Workshop

The workshop is planned for November 17-19, 1998 in Chiang Rai, Northern Thailand, where the NAGA Version 2 will be tested and verified by regional experts from various basins in Southeast Asia, such as the Mekong, Chao Phraya, Irrawadi, Red, Pearl, Cagayan, Magat, Citarum as well as other smaller rivers and streams. Prior to this workshop, it is essential that the UW team will upgrade the spatial resolution as well as add dynamic components and human dimension to the model while SARCS and SEA START RC will compile and digitize more regional data required to run the model.

Institutional and Human Networking

The sustainability of the of the river basin modelling after funding from donor agencies is terminated will rely on regional experts and their interactions with resource managers and policy makers at different levels. The project, during the model development and verification steps, will strongly emphasize on capacity building and create a regional framework for model implementation. In addition, the project will also embed valuable information from LUCC and SARCS-WOTRO-LOICZ case study sites in the region into a regional scale water resource model for management and planning.

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Workshop Objectives

(This workshop is an initial scoping workshop to be led by Jeffrey Richey, School of Oceanography, University of Washington, USA.)

1. To introduce the high resolution model (~1 km), requirement of data sets and other technical aspects related to model validation.
2. To define the data and information system and collaboration framework, key persons, project organization and dissemination of the output and outcomes of the project.
3. To do the reconnaissance survey of Mekong watershed for data sampling.