WATER UTILISATION PROGRAM – MODELLING OF THE FLOW REGIME AND WATER QUALITY OF THE TONLE SAP

Modelling the Great Lake Tonle Sap for environmental impact assessment and management support

Project Description

The Tonle Sap floodplains in the heart of Cambodia contain the largest continuous areas of natural wetlands remaining in the Mekong system, the largest permanent freshwater body in Southeast Asia. Tonle Sap is a crucially important source for food and living in Cambodia; more than one million people live in the immediate surroundings of the Tonle Sap lake and wetlands, being the poorest ones in Cambodia, and highly dependent on agriculture and fisheries. The project results shall help the Mekong River Commission and local authorities to assess and evaluate the impacts of physical and environmental changes in the Lake Tonle Sap on the whole Mekong River basin, as well as more locally in Cambodia. The objective of the study is to develop a set of analytical tools to assist in the maintenance of desirable conditions of the Great Lake, that is, to ensure the sustainable use of natural resources of Tonle Sap

Activities

- Collection and assessment of existing relevant data and information on hydrometeorology, water use and water quality
- Additional collection of new data
- Develop, calibrate and verify a set of model components developed for the Lake and the catchment
- Scenario applications and evaluation
- Develop guidelines for water quality and pollution control strategy for the Tonle Sap Lake
- Training and Workshops

Services provided by SYKE

- Comprehensive review of existing data for the Lake;
- Setting up of a monitoring programme for hydrology, hydrodynamics, sediments, water quality and biological parameters;
- Use of remote sensing data for inundation and land use characteristics;
- Setting up a state of the art catchment model for hydrological and water quality parameters; Setting up a 3-dimensional hydrodynamic, water quality and ecological model for the Mekong, the Tonle Sap River and Lake and the surrounding flood plains;
- Assessment of likely development scenarios;
- Impact assessment of altered pollutant and nutrient loadings on the ecology of the system;
- Impact assessment of potential changes in flow characteristics of the Mekong River on the natural range of Great Lake flood inundation;
- Drafting and development of water resources, wastewater management and environmental management guidelines;
- Capacity building by training and tutoring of local experts and managers through training courses and on-the-job-training.

The technical assistance services input of SYKE includes 45 person months.

Project Facts

Location: Cambodia
Duration: 6/2001 – 12/2003
Client: Mekong River Commission
Financier: Mekong River Commission / Ministry for Foreign Affairs of Finland
Project Budget:
1,8 Meuro (0,9 Meuro for Technical Assistance)
Associate Company:
Environmental Impact Assessment Ltd, Finland
Helsinki University of Technology, Finland

SYKE

FINNISH ENVIRONMENT INSTITUTE
International Consulting Services
P.O. Box 140 (Mechelininkatu 34 a, FIN-00251 Helsinki, Finland
Tel. +358-9-403 000
Fax. +358-9-4030 0699
international_consulting@environment.fi