

***Kesejahteraan in Southeast Asia:
Strengthening Capacity to Manage Ecosystem Sustainability for Human
Well Being In the Southeast Asian Region***

**A Candidate for a Sub Global Millennium Ecosystem Assessment
from
Southeast Asia Regional Research and Information Network
(SEARRIN)**

Introduction

This document provides an initial overview of an ecosystem assessment in the Southeast Asian region proposed as a contribution to the MEA. The focus of this assessment will be on tropical forest ecosystems and land use change processes; the assessment will provide an evaluation of the drivers of ecosystem change, including recent and future projected trends as scenarios, and how these trends will influence current and future ability to sustain ecosystem services. The scenarios will include both biophysical aspects, such as climate and extreme climate events, and social aspects, including economic and demographic forecasts.

The assessment will include a broad range of both science and policy participants from several cooperating institutions in all countries of the ASEAN region. The assessment will also deliver to specified stakeholders information necessary for decision making and policy formulation, so long term sustainable well being of the people in the region can be maintained. We will explicitly tie together issues of environment and development, and make information available openly through development of an integrated information system using web-based tools, such as web-based geographic information systems and earth observations.

Participation

This assessment will be developed by the SEARRIN network. This network includes scientists, university scholars, government personnel and decision makers from the region. Participants in the SEARRIN network have been working on problems of the SE Asian environment related to land use and cover change for more than 8 years, and have established a well coordinated network of personnel and institutions which represent a cross section of institutions on both the research and end-user/application sides. This network also has significant capacity in facilities and analytical capacities, particularly with on-going GIS, computer modeling and remote sensing laboratories.

The SEARRIN network has an on-going governance mechanism, meeting regularly to address management and coordination issues. They have an active data and information system in place, using distributed network of web-based nodes. Their datasets include considerable amount of geospatial information, and all data are readily and freely available to the user community. The network has also engaged in capacity building

through an on-going training program. The network is supported by external funding agencies, including the Asia Pacific Network for Global Change, and has interacted considerably with international programs including IGBP, IHDP, START, GTOS-GOFC and other related programs. They have an active connection to regional programs including close working relations with ASEAN and SEAMEO.

Although the core effort of this specific assessment will be focused on the activities and participants of the SEARRIN network, we will actively engage and coordinate with other related projects in the region.

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Resources

SEARRIN currently contributes significant human and financial in-kind resources to its projects and will continue to do so with the assessment. In addition SEARRIN has a number of external funding sources and has utilized in-kind resources and services from contributing agencies. For instance SEARRIN has one of the largest satellite remote sensing archives in the region through contributions from NASA. SEARRIN will be a major player in the access and use of the Landsat 2000 dataset which is being made available to the region as part of its participation in MA and GOFC. In addition each of the member institutions has provides substantial support in the development of laboratories and web servers.

In addition to the expected contributions from SEARRIN to the assessment, the project will depend heavily on new funds. We expect the MA program to be instrumental in providing the necessary additional new funds to do this work.

Regional Boundary

This project will assess the current and near term future of forest ecosystems in the following countries: Malaysia, Indonesia, Philippines, Thailand, Laos PDR, Cambodia, Vietnam. We will also engage Myanmar although as yet Myanmar is not a participant in SEARRIN.

The region includes a wide array of some of the worlds most important forested ecosystems, which provide local, regional and global services including control of climate, watershed and water quality protection, carbon sequestration, habitat for rich biodiversity and other services. To conduct this assessment, we will focus on the region as a whole, performing detailed measurement of current extent and future extent and condition of forest, including forest density and forest health at very fine spatial resolution for the entire region.

We will also nest several sub-regional assessments to make national assessments for each country, and several specific local case studies. The regional perspective will provide in one analysis a consistent ASEAN-wide evaluation of the forest environment. National assessment will focus on targeted national needs for country-level policy and planning. The case studies will look at specific issues, including but not limited to, forest reserves, biological parks and protected areas; cross-boundary issues; effects of rapid urbanization; effects of rapid agriculture intensification; and effects of migration and settlement policy and the like.

The regional, national and case studies will look across a hierarchy of scales at specific focal issues including deforestation, logging, fragmentation, fire, and degradation. We will look at these impacts both spatially and temporally, through the use of detailed geospatial diagnostic and prognostic models. These models will be used to evaluate the efficacy of policy measures for reducing impact of economic and demographic growth for sustainable management of the natural resource base.

Type of Ecosystem

This assessment is focused on tropical forests in the region. These forests provide important ecosystem services as natural resources for economic development, and environmental services as habitat, watershed protection, soil erosion control and a host of other public service functions from nature. We recognize the range and types of forests in the region is broad, but we also believe without a comprehensive assessment of all forests, it will be impossible to provide the end-user with information they need.

We adopt the FAO definition of forests and will work closely with national ministries of forest using local definitions of forests. We will also work with the UN agencies as well as several of the CGIAR system (e.g. the ASB program, CIFOR etc.) to consider forests of interest to these programs.

Focal Issues Addressed

The main thrust of the assessment will be to evaluate the impact of rapidly changing land use in the region on the forest environment. We will consider land use change from growing urban centers, as well as expansion of logging and agricultural conversion in rural and extra-urban areas. We will evaluate the drivers of land use change, and look at the impact land use change has on forest environments through:

- Forest fragmentation
- Loss of biodiversity
- Greenhouse gas emissions (or sequestration)
- Loss of ecological services, including
 - Land degradation and soil erosion
 - Effects on the hydrological cycles and water quality
 - Effects from extreme climate events such as drought and floods

Institutions of Team Leaders

The assessment will be conducted through an organization based on country teams. Each country has a lead team and a team leader and these are listed below. We will engage other institutions as well. It should be well noted that we already have engaged, and are actively partnering with, other lead intuitions, many of which are end user agencies. These are not list here is order to save space.

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Primary Intended End User of the Findings

This assessment will focus on three groups of end users, as follows:

- Regional organizations through support to the information needs of the ASEAN Science and Technology and Environment divisions.
- National needs through support to the information needs of the forest ministries in each country
- Research and education users through several outlets including national universities, SEAMEO Biotrop, and other regional research programs of the CGIAR and UN systems

Meeting MA Criteria

We will adopt the methodology promoted by the MA, as specified in criteria 1.2 and 1.3