

Inventory of site qualities for a forest concession in East-Kalimantan

Between 1997 and 2002 ISRIC established soils and terrain information systems at the forest concession level (1:100,000) and at the regional (district) level (1:250,000) for the multi-disciplinary Berau Forest Management Project.

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Overall project description

This project was funded by the EU with the overall aim to achieve sustainable forest management and conservation in the forests of Indonesia. BFMP has worked with local forest concessionaire PT. INHUTANI I to develop, test and promote a replicable example of sustainable forest management at an operational level. The aim was to ensure that the forests continue to fulfil their socio-economic and environmental functions as well as provide raw materials and other products.

Forest concession inventory of soils and terrain

The operational area of BFMP was in the Labanan forest concession (100,000 ha.) in Berau, East Kalimantan. ISRIC's contribution was to perform a soils and terrain survey of Labanan as part of a baseline inventory. A 100,000 scale geo-referenced SOTER database was compiled and linked to a map. The SOTER was combined with other data, such as climate, vegetation and hydrology, and linked with a set of models to produce basic forest planning information. This set of maps and databases, which is used to make environmentally informed decisions on forest and land management, is called an 'environmental framework'. Examples of derived maps themes from the environmental framework are: priority areas for biodiversity conservation, potential suitable habitat for Proboscis monkey, soil erosion risk, ecosystem stability, land suitability for food and tree crops, forest zonation (where selective felling can be practised safely), priority areas for nature conservation. The environmental framework also provides a baseline for monitoring environmental impacts, a stratification for inventory and consequently for tree growth and yield prediction.



Photo: S. Mantel

Illegal logging is a threat to the survival of Kalimantan forests.

Mapping soil and terrain conditions of Berau district for land use planning

Berau Model Forest

In the course of implementation of the Berau Forest Management Project, it was realized that the sustainability of a forest does not depend on concession management alone. A forest area is part of a mosaic of regional land uses that impact on each other. The political decentralization process and the increased recognition of local land use rights, has brought about an increase in land use dynamics. BFMP has promoted the 'model forest' concept to enhance regional integrated land use planning, through facilitating trainings, workshops, and excursions. A model forest is a platform that facilitates communication between groups about land and land use (forest), with (forest) sustainability as a guiding principle. Major land use stakeholders in the Berau regency have agreed to implement the model forest concept.

When people make an effort to agree on the use of the common resources –as in a model forest process – discussions must be supported by representative and spatial data on the land. ISRIC compiled a regional database for support of forest management zonation and land use planning.

SOTER for district planning and land use negotiation

A regional inventory of soil and land conditions (1:250,000) of the Berau regency and adjoining areas was made. The mapped and surveyed area includes the whole Berau district (about 2.1 million hectares) with extension into south Bulungan and north Kutai districts. The total area mapped amounts to 4.4 million ha. The survey area was stratified on the basis of the 1:250,000 land system map of East-Kalimantan (RePPPProT, 1987). This map was revised on the basis of field information, detailed topographic maps and LANDSAT-TM images. Additional field observations were selectively done in areas outside Labanan that have contrasting land conditions. Special effort was put into surveying relative large mapping areas, such as an environmentally fragile area in northeast Berau with gaint Podzols and an area with potential for agricultural expansion in southeast Berau, with soils overlying limestone (Vertic and Eutric Cambisols). The Berau SOTER was linked with other environmental data and with models for analysis and decision support on land use and management, and district spatial planning. Training in database use was given to staff from: 1) an environmental NGO, 2) a forest concession company, and 3) the spatial planning office of the Berau district government.



Photo: M. Steenis



The spectacular karst landscape of the Sangkulirang-Mangkahilat peninsula

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