

## Land use planning using a soil and terrain database in the Berau regency, Indonesia

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The Berau regency is located in the northwestern part of East Kalimantan province and covers about 24,000 km<sup>2</sup>. It is one of the largest and least populated regencies of Indonesia, with a population of around 100,000. In the past three years a dramatic increase in deforestation has been observed as compared to the past three decades, with a current deforestation rate of 42.500 ha y<sup>-1</sup>. The recent transfer of power from the central government to the district governments, the increased recognition of local land rights, and the influx of migrants from other islands brings about an increased dynamic in land use changes and requires planning.

A district soil and terrain database (1:250,000) was compiled in cooperation with the spatial planning unit of the Berau regency government. The database was linked to a set of models for a land management zoning. With this zoning land use options are balanced to support the annual spatial (land use) planning at the district level.

A high variation in terrain and soil conditions was found, mainly related to topography and parent material. Much of the land in Berau, with dominantly aluminium saturated Acrisols, is unsuitable for subsistence and low-input cultivation of food crops as evidenced by low yields. The undulating part of the terrain overlying limestone (7% of the total area) is covered with high potential soils (Vertisols and Vertic Cambisols) for agriculture. The land management zoning includes a range of analyses such as potential erosion risk, environmental stability, land suitability, definition of forest production zones and priority areas for biodiversity conservation. The zoning of defined areas with forest use potential (natural forest production, plantation forestry, and areas with priority for protection or biodiversity conservation), potential for perennial and annual crops and associated management requirements. The high vulnerability to erosion is a major constraint to the use of most soils in Berau. Potential for eco-tourism development was indicated for selected areas in Berau, such as the karst area (scenic value), part of the primary forest area (biodiversity) and the marine islands (diving).

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