

# LAND USE CHANGES WITH A PARTICULAR REFERENCE TO SPATIAL PLANNING REGULATIONS AT MAMMINASATA REGION: AN ANALYSIS USING GEOSPATIAL INFORMATION TECHNOLOGY<sup>1</sup>

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## Abstract

The main purpose of this study is to assess land use change in Mamminasata region, and to examine spatial matching between present land uses and their changes and spatial planning regulations for Mamminasata region, one of the strategic regions in Indonesia. This study employs integrated techniques of ground surveys, remote sensing, and geographic information systems (GIS) technology. Spatial information used in this research includes SPOT XS images (resolution 20 meters), ALOS Prism (panchromatic) images (resolution 2.5 meters), and a set of vector data bases developed by local government. Time series land use/land cover layers were originated from the above images (year 2009 and 2012), where visual interpretation and image analysis were performed to classify land use/land cover for the two dates. The results show that some areas that should be protected according to the Mamminasata land use scheme, in fact, were converted to, or already been practiced for long as, the management functions, like dryland agriculture, paddyfield, and residential. At the same time, land use/land cover change analysis also indicates that residential area has increased substantially within the last three years, followed by a substantially decrease in agriculture land. Such land use change information set may give insights into the future anticipation of land use development on the region on a spatial basis, and thus useful for devising the future land resource management control.

Keywords: Mamminasata, land use change, GIS, remote sensing, spatial planning regulations

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