

**LANDUSE CHANGE DURING A DECADE AS DETERMINED BY LANDSAT TM  
IMAGERY OF A RICE PRODUCTION REGION AND ITS IMPLICATION TO  
REGIONAL RICE SELF SUFFICIENCY:  
CASE STUDY OF KARAWANG REGENCY, WEST JAVA, INDONESIA**

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**ABSTRACT**

Karawang Regency, West Java, is one of the region that contribute to the national food supply, due to its high soil fertility and its high extent of paddy field. Dynamics of land use change in this region are high because of its proximity to the capital. This dynamics has led to changes in rice production capacity. This study was conducted to study the changes in land use in a decade during the period of 2000 – 2011 and its relation to rice production. Land use changes were identified using Landsat TM imagery of 2000, 2003, 2006, 2009 and 2011. Production and productivity of rice were obtained from statistical data of Karawang Regency, year 2000-2011. The results showed that in the period between 2000 and 2011, paddy fields area identified in the image decreased from 120 865 hectares in 2000 to an area of 110 725 hectares in the year 2011. The most extensive change occurred from paddy fields to dry land farming and mixed dry land farming. Dry land farming area increased from 3 656 hectares to 14 242 hectares in the periode of 2000 to 2011, while mixed dry land agriculture increased from 5 159 hectares to 14 998 hectares in the periode of 2000 to 2011. Meanwhile, based on statistical data, there are an increase in rice production, from 1 077 866 tons in 2000, amounted to 1 459 554 tons in the year 2011. Many aspects determine the production of rice, among others, an increase in cropping index and increase in productivity for the case of Karawang Regency. Data from satellites imagery is usefull to estimate potential land expansion to increase the production. With the actual production, food self sufficiency of the region remains maintained.

***Key-words: Paddy fields, rice production, land productivity***