ABSTRACT

GEOSPATIAL ANALYSIS OF LAND USE AND LAND COVER CHANGE FOR DISCHARGE AT WAY KUALAGARUNTANG WATERSHED IN BANDAR LAMPUNG

BY

FIENI YUNIARTI

Land use and land cover change in a watershed might drive some impacts, such as high amounts of discharge fluctuations. Way Kuala Garuntang Watersheed is one of watershed in Bandar Lampung that has changed significantly. This study analyzed land use and land cover change to determine how much its influence on discharce fluctuations based on Geographics Information System. The method used in this study comprised of hidrology, spatial and sensitivity analysis. Hidrology analysis based on daily rainfall data. Spatial data analysis aims to present geospatial data related effects of land use and land cover change on the value of discharge. Sensitivity analysis is done by creating a land use and land cover simulation scenarios and sees its effect on the peak discharge events.

The results of hidrology analysis in this study showed that the rainfall data obtained from the rainfall stations around the watershed were inconsistent and it needs to be repaired. It was found that the pattern of rainfall distribution in Bandar Lampung for 4 hours consists of 40%, 40%, 15% and 5% pattern. The results of spatial analysis in this study showed that there are 11 types of land cover on the existing condition and only has a protected area covering 4.72% of the total watershed. From the results of the sensitivity analysis showed that land use scenario with availability less than 30% of the area of green open space watershed may cause an increase in the value of the peak discharge. Instead, the scenario to maintain a 30% green open spaces of wide watershed did not make a significant change in peak discharge. This action is necessary to provide enough space for the infiltration of rain water on a particular area for the purpose of supplying the needs of ground water and flood control.

Keywords : land use and land cover change, discharge, Way Kuala Garuntang