SIMULATION OF SPATIAL FIRE SPREAD FROM MODIS HOTSPOTS

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ABSTRACT: Simulation of the spatial fire spread was analyzed by three factors; amount of fuel, climate, and topography. The amount of fuel was analyzed from normalized difference vegetation index (NDVI) MODIS data. The climate factor used was from a number of precipitation days. The topography factor was analyzed from DEM, slope and aspect.

The results showed that the NDVI was decreased continuously from January to April. This mean that vegetation cover fall led to accumulation of biomass on the ground. The amount of biomass from January to April was 926 kg per hectare. Climate factor and topography factor were made in the form of coefficient of dry fuel, slope and aspect. The fire spread simulation time was set hourly. The output of fire spread model was calculated as the damaged area and the amount of PM10. Information obtained from this study can be used to evaluate the situation and make a warning of fire and smoke.