ABSTRACT

Land cover can be monitored through remote sensing image processing. This image processing can be used to classify land cover areas that can be used to facilitate mapping of land layout in an area. Currently, the lack of land monitoring is a major problem, resulting in large tracts of land being abandoned and the land is not being used properly. In fact, this land can be used to improve the quality of an area in the fields of tourism, plantations, settlements, etc.

In this study, the author uses a satellite image of Landsat thematic mapper around the Situ Cisanti area. The data was obtained from the Center for Technology and Remote Sensing Data (PUSTEKDATA) of the National Aeronautics and Space Agency (LAPAN). Classified the land cover area using the Gradients (HOG) method and the K-Nearest Neighbor (K-NN) classification to classify 3 types of land cover classes, namely forests, rice fields, and settlements.

In the study of land cover identification and classification systems produce the best performance value with an accuracy of 73.33% and 0.0057 s computational time using images measuring 16x16 pixels. In the HOG feature extraction process using 8x8 cell size, 2x2 block size, numbins 9 and in the K-NN classification process use $k = 9$ with the type of distance calculation using city block.

Keywords: Land cover, Satellite Imagery, Landsat Satellite Thematic Map, Gradient Oriented Histogram, K-Nearest Neighbor, Matlab.