

## ABSTRACT

### **APPLICATION OF PANCHROMATIC (BLACK AND WHITE) AERIAL PHOTOGRAPHS TO CALCULATE POSSIBILITY INDEX OF EROSION OF BAGIAN HUTAN GUNUNG SLAMET, KPH BANYUMAS TIMUR**

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The panchromatic (black and white) aerial photograph is one of remote sensing imagery which has many surplus, that are object tone impression is similar with eye impression that look at the real object because film sensitivity is same with human eye sensitivity, has soft spatial resolution so that it enable to recognize small object, high dimensional stability, and had been used in a long time in map production for application in all kinds of fields. One is as main information source to calculate possibility index of erosion of forest zone.

This experiment were aimed to study panchromatic (black and white) aerial photographs ability to supply informations about slope, topography, land use, and dissection which are influence possibility index of erosion; to calculate measured possibility index of erosion of forest zone; and to determine rehabilitation priority of land unit of forest zone based on the possibility index of erosion. The experiment was taken place in Bagian Hutan Gunung Slamet, KPH Banyumas Timur.

Visual interpretation was done to aerial photographs to get informations about slope, topography, land use, and dissection factors. These informations are used to make thematic maps. The calculation was begun from calculation for possibility index of erosion of land unit, weight of land unit, and measured possibility index of erosion of land unit. The measured possibility index of erosion of forest zone is addition from measured possibility index of erosion of land units. Rehabilitation priority of land units was begun from land unit which has the highest possibility index of erosion etc.

The results of the experiment showed that level of accuracy for application of panchromatic (black and white) aerial photographs of 1:20.000 scales in supply informations to calculate possibility index of erosion Bagian Hutan Gunung Slamet are 92.86 % for slope factor; 94.12 % for topography factor; 93.33 % for land use factor; and 100 % for dissection factor. Overlay from topography map and land use map was produced 28 land units which have possibility index of erosion revolve between 0.38 - 12. Measured possibility index of erosion for Bagian Hutan Gunung Slamet was 3.0736 that mean Bagian Hutan Gunung Slamet for the whole have light class of possibility index of erosion. Squence of land rehabilitation priority of Bagian Hutan Gunung Slamet was begun from land unit in the form of settlement at undulating topography and the last at land unit in the form of dense forest at wave topography.

