Kruawan Rungsipanich 2012: Analysis of Forest Canopy Density Using Remotely Sensed Data: A Case Study of Chiang Mai Province. Master of Science (Forest Resource and Environmental Administration), Major Field: Forest Resource and Environmental Administration, Faculty of Forestry. Thesis Advisor: Mr. Damrong Sripraram, D.Agr. 71 pages.

Forest canopy density is important information indicating healthy forest and biomass. This study aimed : 1) to use satellite images from LANDSAT-5 TM to analyze forest canopy density; 2) to compare forest canopy density derived from satellite images and field survey data using fish-eye lens; and 3) to delineate forest canopy density in Chiang Mai province. FCD Mapper was employed calculate 4 indices, including vegetation index, bare soil index, thermal index and shadow index, and to estimate forest canopy density. In addition, linear regression equation was applied to determine the relation between forest canopy density derived from satellite images and fish-eye lens. The result revealed that satellite images are effective to analyze forest canopy density. Forest canopy density derived from 2 methods were not significantly different at the significant level of 95% and its co-relative coefficient was 0.81. Forest canopy density was divided into 10 classes, including 0-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100. Each class covers 18.35, 5.86, 9.96, 13.31, 15.06, 14.08, 11.39, 7.71, 3.82 and 0.46% of the Chiang Mai province, respectively.

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