

Uten Thongtip 2014: Application of Vegetation Index for Exploring Land Use and Its Relationship with Household Livelihood in Khuan Sai Village, Lam Thap Subdistrict, Lam Thap District, Krabi Province. Doctor of Philosophy (Sustainable Land Use and Natural Resource Management), Major Field: Sustainable Land Use and Natural Resource Management, Interdisciplinary Graduated Program. Thesis Advisor: Professor Emeritus Piya Duangpatra, Ph.D. 240 pages.

The vegetation index was applied for exploring land use and its relationship with household livelihood in Khuan Sai village, Lam Thap subdistrict, Lam Thap district, Krabi province. Aims of this study were (1) to classify land use by using vegetation index, (2) to survey household livelihood in Khuan Sai village in term of economics, society and environment, and (3) to analyze the relationship between the land use as categorized by vegetation index and communal livelihood in Khuan Sai village.

Research methodologies were separated into three parts. Part one was the classification of land use by using six vegetation indices from THEOS satellite data i.e. RVI, NRVI, NDVI, AVI, SAVI, and TVI. Part two was to study the communal livelihood in term of economics, society and environment. The participatory research approach was used as the tool to analyze the household livelihood based on usage of five assets i.e. human asset, social, cultural and political asset, physical asset, financial asset, and natural asset. Part three was to analyze effects of land use on communal livelihood by using radar chart method. The data obtained was then analyze and interpreted based on the five assets by presenting the data in pentagon graph, to advocating the trend of land use.

Results from the supervised minimum distance of vegetation index NDVI showed that there were 2,741 rai of rubber planting area, 1,130.78 rai of oil palm planting area, 8.98 rai of coffee planting area, 187.09 rai of mix crop planting area, 173.14 rai of forest area, 29.47 rai of water area, and 363.46 of open space. The farmers' household livelihood of the rubber crop, oil palm crop, and rubber-oil palm crops showed the highest to lowest relationship with natural asset, social cultural and political asset, physical asset, financial asset, and human asset, respectively. For this studied area, The advocated trend of land use was classified for rubber and oil palm crops accompanied with the developing strategies towards sustainable agro-industry area based on people's life quality.

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Thesis Advisor's signature