Surassawadee Phoompanich 2007: GIS Application for Spatial Economic Valuation of Natural Resources around Lam Phra Phloeng 1 Reservoir, Wang Nam Khieo District, Nakhon Ratchasima Province. Master of Science (Land Use and Natural Resources Management), Major Field: Land Use and Natural Resources Management, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Payattipol Narangajavana, D.Agr.Sc. 89 pages.

The economic valuation of natural resources around Lam Phra Phloeng 1 reservoir have been conducted by using the benefit transfer approach. The direct use of economic values has considered in three aspects; agriculture, non-timber forest products (NTFPs) and recreational values which related to the diversity of land utilization in this study area. With the robustness of GIS and Remote Sensing (RS) technology, the spatial database incorporated with socio-economic data has been formulated to quantify the spatially economic values. Land use classification from RS data was evaluated its economic value in raster-based system. The strength of environment asset in each categories of land use type have to concerned for ranking the quality of that environment in term of pixel size (25 m x 25 m) prior to the economic values mapping.

The results indicated that the economic value of agriculture, NTFPs and recreation have a range from 107.62 - 2,081.41 , 0.14 - 2.14 and 6.38 baht per pixel, respectively. The total economic value calculated from all of economic aspects have range from 0.14 - 2,081.41 baht per pixel. The area of total economic values following with the four levels; less than 250, 250 – 500, 500 – 1,000 and more than 1,000 baht per pixel was 21,072.27 (61.63%) 7,115.23 (20.81%) 410.55 (1.20%) and 339.84 (0.99%) rai, respectively. The economic value in agricultural area was 8,994,063.60 baht and the value in forest area was 216,352.16 baht. Since, the people mostly are agriculturist, the income from agricultural land use is important for their living. However, this area which adjacented to Khao Yai national park have a conservation plan to reserve natural resources. There are also an income from the recreational and eco-tourism. The economic value maps show the powerful technology of GIS for analyzing the benefit value of natural resources. Nevertheless, if the strength of environment asset and economic values have been temporally changed, the spatial economic value map could be mapped on time. This technology is indispensable for the local governments to initiate the action plan for sustainable land use and natural resources management.

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