

Chatwaroon Angkaew 2012: Analysis of Land Use Patterns Surrounding Khao Khitchakut National Park, Chanthaburi Province. Master of Science (Social Forestry), Major Field: Social Forestry, Faculty of Forestry. Thesis Advisor: Assistant Professor Pasuta Sunthornhao, Ph.D. 155 pages.

The objectives of this study were to determine the plant community characteristics (PCC), soil properties (SP), financial return (FR) and their relationship of 4 land use patterns namely fruit orchard (FO), Para rubber plantation (PRP), agroforestry (AF) and dry evergreen forest (DEF). The study method employed Line transect method with consisted 114 temporary sample plots to determine plant characteristic, soil properties through interview land owner about financial return.

Results of study found plant community characteristics namely number of tree species, density, basal area from lowest to highest value were DEF, AF, FO and PRP within each above land use pattern indicated species diversity of Shannon-Wiener's index of 3.631, 2.883, 1.346 and 0.501 respectively. While physical soil properties namely bulk density and particle density indicated non different level. About soil moisture indicated from the highest to lowest level of AF, FO, PRP and DEF respectively. The chemical soil properties namely pH indicated DEF was strongly acid but in the FO, PRP and AF were very strongly acid. The electrical conductivity (EC) indicated very low in every land use pattern and the organic matter (OM) and total Nitrogen presented similar level, while available Phosphorus and exchangeable Potassium were variety from low to high level. The financial return at 7% of discount rate indicated FO and AF were highest value of return in year number 40 and 30 with their presented Benefits – Cost Ratio (B/C) of 1.08 and 1.02, Net Present Value (NPV) of 8,703 and 568 Baht/rai, and Internal Rate of Return (IRR) of 9 and 7% respectively. The relation between PCC, SP, and FR indicated positive correlation among pH, OM and total Nitrogen, but presented negative correlation among bulk density, B/C and Annual Net Present Value (ANPV).

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