

Sakonwan Mokatip 2014: Application of Elevation, Soil Order, Irrigation and Soil Moisture Regime in Land Resource Planning for Sustainable Development of the Lower Northeast, Thailand.

Master of Science (Environmental Science), Major Field: Environmental Science, Department of Environmental Science. Thesis Advisor: Associate Professor Paiboon Prabuddham, Ph.D. 177 pages.

In order to prove possibility of sustainable development in Lower Northeast, Thailand (LNET), GIS computer program was introduced to evaluate Agricultural Potential Land Class (APLC) into APLC 1 - 6 to be very good, good, moderate, poor and very poor for the APLC 1 - 5 but for forest only in the APLC 6. Quality grades of each of the land factors: Elevation, Soil order, Irrigation and Soil Moisture Regime, having different importance of respective 5, 4, 3 and 2 units or weights were overlaid. Suitability of the present landusages for paddy (P), other agriculture (OA), urban (U), forest (F) water body (W) and miscellaneous area (M) in each APLC of the LNET were also evaluated as well as correct landuse for each APLC such that each family could obtain clean occupations in his own home was also suggested.

These are the summaries: (1) This LNET has no APLC 1&2; but having 1.54, 12.36, 27.66, 11.16 million rais or 2.92, 23.45, 52.47 and 21.16 percent for the APLC 3 - 6 respectively; (2) The present landuse for P, OA, U, F, W and M were 25.60, 10.06, 2.85, 10.31, 1.42 and 2.48 million rais or 48.57, 19.08, 5.40, 19.56, 2.69 and 4.70 percent respectively; (3) Miscellaneous landusages in all available APLC that are 5.19, 8.49, 37.05 and 38.89 percent of all APLC 3 - 6 respectively were observed; (4) If all land laws concerned has been reformed and implemented strictly, this LNET should be able to support 1,227,000 families (of 6 members) or about 7,362,000 persons of farmers in their own farms and 3,030,000 families (of also 6 persons) or about 18,180,000 heads of urban population in their own homes dealing with service occupations; and this LNET could also have forest land up to 20.06 million rais or about 43.74 percent of this subregion and (5) Possibility of social ethic improvement was also high. Sustainable development of this LENT is therefore undoubtedly possible.

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Thesis Advisor's signature