

Pavin Wichittrakarn 2014: Application of Elevation, Soil Order, Irrigation and Soil Moisture Regime for Sustainable Land Use Planning of Upper North, Thailand
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Paiboon Prabuddham, Ph.D. 181 pages.

In order to evaluate possibility of sustainable development in The Upper North, Thailand (UNT), using GIS computer program for Agricultural Potential Land Class (APLC) into APLC 1 - 6 to be very good, good, moderate, poor and very poor for the APLC 1 - 5 respectively, but for forest only in the APLC 6 was performed. Quality grades of each of the 4 factors: elevation, soil order, irrigated area and soil moisture regime, having different importance of respective 5, 4, 3 and 2 units or weight were overlaid. Suitability of the present landuse for paddy (P), other agricultural (OA), urban (U), forest (F), water body (W) and miscellaneous (M) in each APLC of this UNT were also evaluated as well as the correct landuse for each APLC such that each family could obtain clean occupation in his own home were also suggested. There summaries can be made: (1) this UNT has no APLC 1 & 2 but having 0.71, 1.90, 6.72 and 45.78 million rais or 1.29, 3.45, 12.19 and 83.07 % for the APLC 3-6 respectively; (2) the present landuse for P, OA, U, F, W and M were 4.29, 9.45, 1.66, 38.08, 0.50 and 1.13 million rais or 7.78, 17.15, 3.01, 69.10, 0.91 and 2.05 % respectively; (3) uncorrected landuse in all available APLC at 8.45, 28.42, 32.29 and 21.21 % of the APLC 3 - 6 respectively were also observed; (4) if the land laws concerned have been reformed and implemented strictly, this UNT should be able to absorb 157,500 farmer families (6 persons each) or about 945,000 farmers in his 20 rais own family farm and 1,240,000 families, of 6 persons each, or about 7,440,000 of urban population, in his 1/4 rai family home, dealing with service occupations and this UNT could also have forest land up to 49.13 million rais or 89.15 %; and (5) Possibility of the social ethic improvement was also high. Sustainable development in this UNT should be possible undoubtedly.

Student's signature

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