

Yupa Limsawad 2012: Study on Land Suitability and Zoning of Rambutan Potential Production Area Using Geo-informatics. Doctor of Philosophy (Tropical Agriculture), Major Field: Tropical Agriculture, Faculty of Agriculture. Thesis Advisor: Associate Professor Chalongchai Babprasert, B.S. 755 pages.

This study is to analyse physical suitability for rambutan planting and to define agro-economic zone of rambutan in Thailand at scale of 1:50,000 using new technology, so called Geo-informatics, as a tool for land suitability. This technology including Geographic Information System-GIS, Remote Sensing-RS, and Global Positioning System-GPS has been proven and effective tool for spatial production planning. The objective of the study is to adjust rambutan production suitable for area potential as well as to increase efficiency of production system, processing and marketing to be in high stability, and to increase competitiveness in the world market.

The rambutan planted area suitability be derived from the overlay of soil and thirty nine years average rainfall and irrigated boundary and maps of present land use and forest boundary are then analysed with area suitability level for 3 levels of suitability, namely, highly suitable, moderately suitable, and unsuitable, in the whole country areas of Thailand. This map will delineate out of forest conservation areas, built-up areas and others. All these will overlay with administrative boundaries such as provincial boundaries, district and sub-district boundaries, along with main road networks.

The results will obtain suitability maps for rambutan planted area in Thailand along with, namely, high suitability, moderate suitability, and unsuitability, existing forest area, deforestation area, water and built-up areas. The analysis for potential level of rambutan production zoning is undertaken by integrating the map of area suitability for rambutan production with important economic factors effecting to production system. The factors are :commodity demand and supply, production target, production source, production cost, farmgate price, production capability, and plant location for processing factory at district level. Percentage of weighting and other conditions are different for each factor. The result obtained is map illustrating potential level for rambutan production zoning. The potential is divided into 2 levels including production potential on area level 1 and production potential area level 2.

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Thesis Advisor's signature