Siripon Kamontum. 2000. ***Spatial and Temporal Analysis of Rainfall Patterns in Northeastern Thailand : Application of Geographic Information System.*** Master of Science Thesis in Remote Sensing and Geographic Information System, Graduate School, Khon Kaen University. [ISBN 974-678-369-6]

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Abstract

Mean annual rainfall in northeastern Thailand is relatively high. Eventhough the region is still faced the drought as results of its distribution, severe run-off and low water holding capacity of soils. An analysis of rainfall patterns in terms of spatial and temporal should be benefit for water resource management in this region. The objectives of this study were to create a spatial pattern of average annual and monthly rainfall, to create the spatial pattern of Dry Spell duration in rainy season and to create a database from rainfall analysis results.

Analysis of rainfall was performed using several years of continuous daily rainfall data collected from 264 stations located throughout the region and vicinity provinces. The Moving Average in combination with Linear Decrease Weighting method was applied for spatial interpolation of median rainfall data in each study periods. The Dry Spell patterns were analyzed using the equation of 3-Parameter Lognormal distribution.

The pattern of increasing average annual rainfall from southwest to northeast is evident the lowest in Nakhon Ratchasima, the highest in Nakhon Phanom and Nongkhai. The maximum monthly rainfall in the southwestern of the region is in September but in August for the northeastern. Unevenly distributed rainfall over the rainy season is found extensively and extends longer period in the southwest and the central part of the region. This phenomena are frequently occurred in the middle of June and of September for the provinces in southwest and northeast respectively. By combining the spatial and temporal patterns of rainfall it should be possible to develop suitable cropping periods and to formulate the plan for water use in the region.