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This form will include the following details:

1. Report Title and Type (*Thesis/Research Study/Special Study/etc*):  
*An Assessment of Drought Risk Area Using Geographic Information System: A Case of Savannakhet Province*
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8. Abstract of the Work:

Drought is recurring climatic events, which often hits Southeast Asia, bringing significant water shortages, economic losses, and adverse social consequences. Like Lao PDR, drought was considered to be a national disaster that re-occurs two and half years, its severity was addressed as a main barrier for local and national food security program. However, its systematic assessment has not been conducted; hence knowledge of the drought risk area of their occurrence and their course is an essential aspect for planning, and because of the vast impact of drought, it is firstly essential to be assessed its intensity of risks spatially. Geographic Information System is widely accepted as a tool for the establishment of integrated information. The ultimate objectives of this study are, to map the drought risk area with a set of themes using GIS technique, and to prioritize them in manageable purpose.

Savannakhet province of Lao PDR was selected as a study area encompassing about 21,377 km<sup>2</sup>. The underlining concept of the study was that drought risk area, by nature, is a result of interrelated parameters concerned; the severity of drought can be considered as being a function of rainfall, hydrology, and physical

aspect of landscape. In terms of the water deficiency, these mainly include meteorological drought, hydrological drought and physical drought. Each theme of the drought consists of a set of logically related geographic features and attributes was used as data input for analysis. Meteorological drought was performed using mean annual rainfall data of minimum 5-15 years record of 17 inside stations and 4 outside stations as interpolation coverage reference. Hydrological drought was analyzed by overlay process of set of surface water, reservoir, irrigated area, and density of stream within sub-watershed. Physical drought was formulated from a combination of spatial information of soil drainage condition, land use, and landform layers. The matrix overlay operation of the three drought risk layers were orderly performed the resultant polygonal layer. Then its severity was classified into ranks of drought risk: high, moderate, low, and very low risk respectively. From result of this study concluded that Savannakhet province was vulnerable to drought which significant province's territory was delineated by the ranks of moderate and high risk.

9. Keywords (*minimum 5; maximum 10*): *Drought, Meteorological Drought, Hydrological Drought, Physical Drought, Geographic Information System.*

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