

Development of Local Social Sustainability Index for Local Sustainability Assessment Using GIS and Factor Analysis

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Abstract: The objective of this study is to establish the index for evaluating the quality of life in social sustainability aspect at the local scale through existing spatial data. Phra Nakhon Si Ayutthaya Province was selected to be the study area because there was the multiplicity of economic activities in both agriculture and industries sectors. The Local Social Sustainability Index (LSSI) was developed based on indicators related to existing land use which reflects economic activities and social structure in the area. In this study, 11 economic indicators within 5 groups namely, education, family and housing, security, recreation, and health, of 149 sub-districts in the province were selected and extracted from NRD and BMN data in 2007 and used as input for factor analysis to achieve LSSI of each sub-district. Then, GIS technique was used to explain the spatial pattern of the LSSI. The LSSI establishment of the province resulted in 3 classes as poor, fair, and good. The geographic pattern of LSSI demonstrated that most areas with good LSSI appeared in 36 sub-districts concentrated in the central part and scattered to the southeast and the northeast of the province where more industries have been active. The fair ones appeared in 95 sub-districts dispersed in all parts of the study area. The poor ones covering 18 sub-districts are most scattered in the periphery of the province due to the influences of insecurity factors which are the negative effects of the urban and industrial expansion.

Keyword : Local Social Sustainability Index, Local sustainability assessment, Factor analysis, GIS