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Soil is the essential and fundamental natural resource for agricultural production. Agricultural activities such as clearing land and plowing cause soil erosion. Level of soil erosion varies with elevation. Effective agriculture land use planning at macro level requires elevation data of the entire nation together with other agriculture factors or map of agricultural land use suitability. Such study never exists in Thailand, therefore, this study conducted agriculture land use suitability assessment using geographic information system to map Thailand elevation and soil order. Weighting linear total and overlay technique were utilized to classify agriculture land use suitability of Thailand into 5 classes. The study result shows that approximately 2.95 percent and 30.08 percent of the total area belongs to class 1 and 5 which are suitable and unsuitable agriculture land use respectively. Approximately 40 percent of the area belongs to class 2 and 3 that are suitable for integrated agriculture practice. The analysis of the concurrence of the current agricultural land use to the resulting agriculture land use suitability map points out that approximately 20.03 percent of the total land has currently been utilized on unsuitable agriculture land that includes 16.41 percent in class 4 and 3.62 percent in class 5.

Duangchai Wongrak
Student's signature

P. Nilag
Thesis Advisor's signature

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