The ground Truth Survey of Erosion Parameters in Muangpea Sub-district, Banpai district, Khonkaen Province

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Abstract

Soil erosion in Thailand was assessed employing Universal Soil Loss Equation (USLE). Land development department (LDD) has carried out USLE (A = RKLSCP) since 1962 to present and has reproduce soil erosion map. Unit now, LDD has revised soil erosion map at three editions namely Manual, Erosview and CONSPlan. The first soil erosion map in north east of Thailand at the scale 1:100,000 were published in 1998. The second system namely Erosview reproduce in 2000. The third one namely CONSPlan reproduce in 2001. Erosviw and CONSPlan is digital soil erosion map which are belong to LDD at 1;50,000 scale. Both of them can evaluate soil loss equation. Especially, CONSPlan will include soil water conservation measurement and budgeting inside the program. This project studies to compare three types of soil erosion map in different systems. The target area is Tung Mung Phea, Ban Phai district, KhonKaen province. The objective of this study is comparing the suitable and method for USLE.

The result showed that each system of soil erosion map has a limitation for example the first system is a difficult to edit and reproduce the map. Erosview is a slope length limitation that is 150 meters long. CONDPlan is Rainfall erosivity (R) limitation that is only used one number for representing a quantity of rainfall around the whole area. Consequently, Soil and Water Conservation Division should has been modify and recommend the advantage of some variable in both Erosview and CONSPlan application program. Especially, the mix-model has been recommended as a hybrid technique by generate DEM to Rainfall erosivity and used a slope length from slope and aspect. Ultimately, Thai USLE format has revised R from CONSPlan as a raster format and has evaluated soil loss in multi-dimension such as provincial, watershed, regional and country.

Keywords: Soil Erosion, USLE, CONSPlan