

Analysis of Erosion Quantity on Application of Conservation Techniques in Ci Liwung Hulu Watershed

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Abstract : The level of erosion that occurs in the upstream watershed will lead to limited infiltration, land degradation and river trivialisation and estuaries in the body. One of the watershed that has been degraded caused by using land is the DA Ci Liwung Upstream. The high degradation that occurs in the DA Ci Liwung upstream is indicated by the higher rate of erosion on the region, especially in the area of agriculture. In this case, agriculture cultivation intent to the agricultural land that has been applied conservation techniques. This study is applied to determine the quantity of erosion by reviewing Hydrologic Response Unit (HRU) in agricultural cultivation land which is contained in DA Ci Liwung upstream by using the Soil and Water Assessment Tool (SWAT). Conservation techniques applied are terracing, agroforestry and gulud terrace. It was concluded that agroforestry conservation techniques show the best value of erosion (lowest) compared with other conservation techniques with the contribution of erosion of 25.22 tonnes/ha/year. The results of the calibration between the discharge flow models with the observation that $R^2=0.9014$ and $NS=0.79$ indicates that this model is acceptable and feasible applied to the Ci Liwung Hulu watershed.

Keywords : conservation, erosion, SWAT analysis, watershed

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