

# Erosion Control in Safe and Sustainable Plantation Development Efforts at Watershed Area, Riau Province, in Indonesia

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## Abstract

The rapid development of agriculture and settlements has led to several land conversion, and one of such affected locations is upstream of the Siak watershed in Riau Province, Indonesia. Land degradation occurs due to soil erosion, which may cause flooding and drought. Therefore, this study aims to analyze the factors causing erosion and determine how to control it. The survey method of observing and measuring soil samples, vegetation, and soil conservation techniques applied in each land unit was used. Rainfall data, soil characteristics, slopes, crop management, and soil conservation techniques were collected and analyzed using USLE. The results showed that the erosion in the Siak watershed is relatively high (339 tons/ ha/year). Furthermore, the plant management and soil conservation techniques did not follow the required principles, and the erosion control was determined by improving crop management and soil conservation techniques in an integrated manner at each unit of land. This step was expected to reduce erosion in the Siak watershed

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