

PENGARUH PERUBAHAN ALIH FUNGSI LAHAN TERHADAP VOLUME LIMPASAN LANGSUNG DI KALI BAGONG KABUPATEN TRENGGALEK

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ABSTRACT

The population which increases every year causes the needs of structure and infrastructure increase as well. The catchments area of Bagong River with its natural condition which is fertile makes many people inhabit and live there. Since there is pressure of development which is continuously from year to year, therefore the need of land increases consequently. This causes the changes of land use such as the changes from farming lands into housings, forests into farming lands, and things like that. These changes are based on the needs. This causes hydrologic aspect of catchments area changes towards its direct runoff volume. The aim of this study is to investigate how good the impact caused by the changes of land use is, at catchments area of Bagong River towards rainfall volume which comes down and becomes the direct runoff at Bagong River at control point (AWLR) in Temon.

The data of rainfall used is automatic rainfall data which is recorded in each station around the catchments area of Bagong River. While the data of runoff hydrograph measured is taken from control point in Temon, which is the response of the catchments area of Bagong River. The calculated runoff hydrograph as the selected rainfall is taken in rainy season, calculated by using Modified Rational Method. Runoff coefficient (c), determined by Runoff Curve Number method, which calculates the changes of land use. The calculated direct runoff volume is the area below the curve resulted by super position. The result of calculated direct runoff volume is converted into the runoff measured, then it gives correction factor.

The result of this study shows that the changes of land use from 62,12 % forests, 33,61 % paddy field and farming lands, 4,27 % housings and bushes in 1992 into 47,41 % forests, 39,72 % paddy field and farming lands, 12,87 % housings and bushes in 2001 cause the changes of the direct runoff volume at Bagong River at control point in Temon. The increase of ratio value of direct runoff volume with rainfall volume follows the equation $Y = 0,21 - 0,0019 x_1 - 0,0012 x_2 + 0,0015 x_3$, where Y variable is the ratio between runoff and rainfall volume.

Key words : Land use, direct runoff volume.