

PENGARUH PERUBAHAN TATA GUNA LAHAN TERHADAP KARAKTERISTIK HIDROGRAF BANJIR DI SUNGAI BADUNG KABUPATEN BADUNG PROPINSI BALI

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Telah dipertahankan di depan Dewan Penguji
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ABSTRACT

Most of Badung Catchment's area in Bali Province is urban area. There is land use changes tendency from agriculture area (rice field, plantation and non irrigated dry field) to non agriculture area. The land use changes cause impact to the hydrology characteristics as run off coefficient, discharge and flood hydrograph. The flood countermeasure just on river stream only, and does not comprises a comprehensive and integrated catchment's area management. The evaluation of land use changes influence to characteristics of flood hydrograph in Badung catchment's area is conducted by comparing the actual land use in year 1992, year 1997, year 2001 and the general planning of land arrangement (RUTR) year 2004.

The analysis is performed constructively by HEC-HMS software. Main evaluation of research is the effect of rainfall with 25 year, 50 year and 100 year return period as comparator, to flood hydrograph characteristics such as maximum flood discharge and flood volume. Then, the land use simulation is made to get the ideal land use and the maximum development to land use change tolerance. The results indicate that the land use change from agriculture to residential in DAS Badung cause the rising of peak discharge and flood volume. From year 1992 to year 2001, land use change cause the rising of curve number (CN Composite) equal to 4.01%, rising of peak discharge equal to 13,46% and rising of flood volume equal to 11.90%.

The land use changes from year 2001 becoming RUTR 2004 shows the rising of CN Composite, rising of peak discharge equal to 15,01% and rising of flood volume equal to 13,75%. The ideal land use is by changes the non irrigated dry field and plantation become the people forest. It can decrease the peak discharge until 4,5%. While land use changes tolerance is by development of an area as residential at middle Badung catchment area. It can increase the peak discharge until 5,75% and still in save condition to flood.

Keyword: *land use, simulation, flood hydrograph.*