

**PENGARUH PENANAMAN KAKAO TERHADAP  
KARAKTERISTIK HIDROGRAF BANJIR DI SUB DAS GOBEH  
DAS KEDUANG KECAMATAN NGADIROJO  
KABUPATEN WONOGIRI PROPINSI JAWA TENGAH**

**Prayoto**  
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Telah dipertahankan di depan Dewan Penguji  
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**ABSTRACT**

Based on the 2006 land use map, Gobeh Sub Basin consisted of 32 Ha rice field, 84 Ha non irrigated dry field and 45 Ha housing area, which is not fulfilled the minimum conditions 30% total basin area in forest area referring to the forestry regulation in Law Number 41 of 1999 year. Starting from idea that forest function for providing water balance can be replaced by cropping area, this study conducted to figure out the effect of Cacao crop plantation on non irrigated dry field to flood hydrograph characteristics.

Floods hydrograph simulation conducted by means of HEC-HMS software using 10, 25 and 50 year return period rainfall input with basin parameter condition related to cacao plantation periods, that is before plantation (1988), 5 years old cacao (1994) and after plantation (1995). Regarding to basin management aspect, 4 scenarios are conducted for non irrigated dry field, first no area change is made, second 57 Ha of 84 Ha total area is change to forest, third the whole area is change to cacao plantation, and fourth whole area is changed to forest.

By comparing the existing condition of year 1988 to year 1994, it is found that CN value decreases from 82.45 to 79.66. Decreasing of CN values create peak flow to decreases 18.21% and flood volume 22.77%. Simulation results of scenario's conditions show that the minimum condition 30% forest area in Gobeh Sub basin can be fulfilled by altering non irrigated dry field to Cacao plantation due to the resulted peak flow decrease.

**Keywords :** *peak flow, flood volume, land use and simulation.*