

THE STUDY OF WATER BALANCE AND WATER INFILTRATION IN OPAK HULU SUB RIVER BASIN

ABSTRACT

Water is a natural resource which can be found in everywhere and can be regenerated. The water availability is a crucial requirement for human, animal, and plant, although the availability of water is limited by geographical condition and seasons. The increasing of water demand and population made changes in so many aspects such as, hydrology cycle, uneven water distribution and declining water quality level. Opak River Basin is an area that experiencing so many problems especially water resource, which effected by poor land management. The space that supposed to be water catchment area has converted to different function, and the water that supposed to fall into the ground couldn't be absorbed well, so the run off happened. The purpose of this research was to examine the water balance and water infiltration in Opak Hulu Sub River Basin. The study was held in Opak Hulu Sub River Basin, Sleman. The infiltration range in this area start from 206,41 mm/month to -257,54 mm/month. The infiltration result showed surplus and deficit in water balance analysis. Surplus condition occurred in November until January, also in April. Meanwhile, the deficit condition occurred in February, March, May and October. The capacity of constant infiltration in paddy field was 6 cm/hour, the capacity of constant infiltration in resident area was 3 cm/hour, the capacity of constant infiltration in plantation area was 6 cm/hour, and the capacity of constant infiltration in bushes was 9 cm/hour. The result of this study showed that the potential area for water catchment are bushes, plantation, and paddy field areas.

Keyword : *Water Balance, Infiltration, and Catchment Area*