KAJIAN TATAGUNA LAHAN DAERAH ALIRAN SUNGAI (DAS) BABON KOTA SEMARANG DAN IMPLIKASINYA

TERHADAP KETERSEDIAAN AIR

TESIS

Disusun Dalam Rangka Memenuhi Persyaratan
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Abstract

The increasing number of population and the population density as the impact of urbanization of Babon watershed is supposed to influence on the land use change.that brings the impact on the hydrology system, especially related to the water availability.

This research sets out to study the land use change and its implication on the water availability of Babon watershed through the identification of water availability indicators, such as (1) stream flow; (2) run off coefficient (C); (3) stream regime coefficient; (4) ratio of streamflow maximum- minimum; (5) ground water surface and (6) Total dissolved solid.

The method of analysis used is qualitative method with the descriptive explorative analysis to describe the watershed biophysics are topography, climate, morphology, land use and water availability on the past and on the present as well as the coming problems. The quantitative method with a correlation analysis is utilized to analyze the correlation the land use change with the water availability.

The descriptive explorative analysis shows that Babon have a function of domestic service that indicated with build up area growth. The study shows that the settlement area growth has reached 730 ha (34%) for 15 years (1986 until 2001). Conversely, there has been a reduction of the agriculture land to 28% and 5 % for embankment land. The land use change has implicated to increase of (1) run off coefficient; (2) stream regime coefficient; (3) ratio of the streamflow maximum and minimum; (4) ratio of streamflow in the rainy and dry season; and (5) Total Dissolved Solid concentration..

The correlation analysis shows that there is a significant correlation between the land use change and the monthly of streamflow; the land use change and the steam flow in the rainy season; the land use change and run off coefficient as well as the land use change and Total Dissolved Solid concentration. It can be seen that the correlation coefficient (r = 0,711 – 0,973) is higher than the critical value of r (> 0,5). However, there is no a significant correlation between the land use change and the stream flow in the dry season (r < 0.5).

Finally, it can be concluded that the land use change caused negative impact to the water availability, therefore it is important to establish the policy of spatial planning and to limit the development of settlement area as well as to establish definitive land use (zoning) based on the function, land and water conservation