

HYDROLOGICAL ANALYSIS FOR WATER RESOURCES BALANCE MAPPING OF JAVA ISLAND

by :

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ABSTRACT

The Water Resources Balance mapping of Java Island was conducted in 2011, through the collaboration between The National Coordinating Agency for Surveying and Mapping (BAKOSURTANAL) and The Directorate General of Water Resources, The Ministry of Public Works. The purpose of this activity was to map the water resources balance of Java Island on a moderate scale at 1: 250.000, with hydrological analysis. Water resources balance was calculated from differentiating value of the potential water resources (surface water, rain and groundwater) to the value of water use (domestic, agriculture, animal husbandry, industry, aquaculture). The hydrological data collection were surface water, rain, ground water and water use that obtained from several institutions and field survey during March – June 2011. River basin (RB) was chosen as the mapping unit to simplify the calculation of river discharge and hydrological analysis. There are 24 River Basins in Java Island. Each river basin is classified based on the classification of water balance. The *frequency distribution* was implemented to define the class number and range of values of each class of water balance. The interval of classes was calculated based on the range of minimum and maximum values of water balance in the area. The lower the balance class the greater water potential compare to water use (water surplus area). Conversely, the higher the balance class the smaller water potential compare to water use (water deficit area). The results shows there are five balance classes in Java Island, namely Class I - Class V. Class I (water surplus area) was found in Bengawan Solo RB. Class V (water deficit area), was occurred in Cibaliung Cisawarna RB (Banten Province), Citarum RB, Cilaki Ciwulan RB (West Java Province), Bodri - Kuto RB, Jratunseluna RB (Central Java Province), Madura RB, Brantas RB, Baru – Bajulmati RB (East Java Province). This Water Resource Balance Map is useful in supporting decision makers to determine the regional condition of water balance in Java Island.