PENGELOLAAN BANJIR SUNGAI SADAR DI KABUPATEN MOJOKERTO BERBASIS KONSERVASI

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Telah dipertahankan di depan Dewan Penguji
Pada tanggal 24 Maret 2011

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ABSTRACT

Sadar River is one of rivers passing through the Regency of Mojokerto. Between 2006 - 2010, average flood occurrence in this river was twice a year. The flood mainly caused inundation in Desa Gebangmalang and Desa Tinggarbuntut (the Agency of Public Works of the Province of Jawa Timur, 2010). A flood that occurred on January 7-8, 2010, showed rainfall at that time was equal to 2 years of period and the height was 1 meter inundating 800 houses and damaged 1200 Ha agricultural fields (the Agency of Irrigation-Public Works of the Regency of Mojokerto 2010).

Flood management based on conservation can be carried out by the Regional Government of Mojokerto together with the people, such as applying land-use changing, to be in accordance to Masterplan (RTRW) of the Regency of Mojokerto for 2010-2029 (Alternative 1), utilizing the recharge system on 60% of settlement area (Alternative 2), and combining the Alternative 1 and Alternative 2 (Alternative 3), as well as combining the additional retention ponds and recharge system (Alternative 4). Hydrology and hydraulics analysis methods were used to analyze the changes of inundation height resulted from each alternative.

Analysis results on Alternative 1,2,3 and 4 with 2 years of rainfall period showed that the inundation heights in Desa Gebangmalang and Desa Tinggarbuntut were 0.3 m, 0.7 m, 0.05 m and 0.47 m, respectively. The best alternative for short-term solution to be applied by the Regional Government of Mojokerto together with the people based on the process easiness and implementation time flexibility was the Alternative 4. Flood management based on conservation using the Alternative 4, which was adding 2 retention ponds in Desa Gebangmalang and Desa Tinggarbuntut, with each volume of 4.105 m^3 and 3,5.105 m^3, together with recharge system utilization on 11.5% of the catchments. Alternative 1 is suitable for long term solution, which is by land-use changing based on the Masterplans of the Regency of Mojokerto 2010-2029, in which the green area is 30% of the catchment width.

Keywords: land use, recharge system, retention ponds