

**ANALISIS ALTERNATIF PENGGUNAAN LAHAN UNTUK MENJAMIN KETERSEDIAAN AIR DI DAS KONAWEHA
PROVINSI SULAWESI TENGGARA¹⁾**
*(The Analysis of Land Use Alternatives to Ensure Water Supply at Konaweha Watershed Southeast Sulawesi
Province)*

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ABSTRACT

Fenomena of decreasing water supply and increasing water demand occurred at Konaweha watershed. Konaweha watershed is a priority watershed in Southeast Sulawesi Province due to its crucial function. Land use changes was suspected to be the cause of decreasing water supply. One effect of this condition was maximum discharge increase and minimum discharge decrease of Konaweha river resulted in water deficit. Research objectives were (1) to evaluate the effect of land use changes on hydrologic condition of Konaweha watershed; (2) to evaluate the water supply and water demand as well as supply and demand water balance at Konaweha watershed, and (3) to formulate land use alternatives and management policy of Konaweha watershed. This research had been conducted at Konaweha watershed for 10 months e.g. from June 2009 to March 2010. The average declining of forest width during 1991-1999 was 1.25 percent/year, 2001-2005 was 0.52 percent/year and 2006-2011 was 0.90 percent/year. In the same time the availability of minimum discharge as a water supply was decrease. There was no deficit on annual water supply until 2050 but monthly distribution of hydrograph caused water deficit in September started from 2016. Proportion of maintenance cost for watershed function at Kendari Municipality was 35 percent while at the District of Konawe, South Konawe and Kolaka were 28 percent, 15 percent, and 22 percent respectively from total economic value of water at Konaweha watershed. Forest economic value including flora and fauna, carbon absorption, option value, bequest value and existence value was Rp 14,974,716/hectare. Five alternative of land use at Konaweha watershed were: (1) Scenario 1: 30 percent forest, 45 percent plantation, 6 percent mix garden and 1 percent bush; (2) Scenario 2: 35 percent forest, 45 percent plantation, 5 percent mix garden and 1 percent bush; (3) Scenario 3: 44 percent forest, 35 percent plantation, 5 percent mix garden and 1 percent bush; (4) Scenario 4: 34 percent forest, 45 percent plantation, 7 percent mix garden and 1 percent bush; and (5) Scenario 5: 40 percent forest, 35 percent plantation, 5 percent mix garden and 2 percent bush. Scenario 4 were not appropriate while scenario 1, 2, 3 and 5 were appropriate to applied in upper Konaweha watershed. Scenario 3 with a minimal of 44 percent of forest was the best land use alternative.

Key Words: watershed, land use change, water supply, water demand