



KAJIAN STATUS MUTU AIR TELAGA BEMBEM DAN TELAGA MOTOINDRO DI KAWASAN KARST GUNUNGSEWU

INTISARI

Kawasan Karst Gunungsewu sub-sistem hidrogeologi Panggang merupakan kawasan yang rawan kekeringan karena karst yang belum berkembang, sehingga telaga menjadi sumber air utama bagi penduduk. Telaga Bembem terletak di Desa Giriasih, Purwosari, sedangkan Telaga Motoindro terletak di Desa Temuireng I, Panggang, keduanya terletak di Kabupaten Gunungkidul. Kedua telaga dimanfaatkan secara intensif oleh penduduk, sehingga dapat menyebabkan terjadinya degradasi kualitas air. Adapun tujuan dalam penelitian ini adalah: (1) mengetahui karakteristik Telaga Bembem dan Motoindro; (2) mendeskripsikan kualitas air di Telaga Bembem dan Motoindro; (3) menilai status mutu air Telaga Bembem dan Motoindro.

Data karakteristik telaga yaitu morfometri telaga diperoleh dengan *sounding*, data penggunaan lahan di DTA telaga diperoleh dengan interpretasi foto udara dan observasi lapangan, data pola pemanfaatan telaga diperoleh dengan wawancara secara *random sampling* terhadap warga yang beraktivitas di telaga. Data kualitas air diperoleh dengan survei lapangan yaitu pengambilan sampel secara *purposive sampling* secara *time series* (November 2018 – Februari 2019), terdapat 5 sampel di Telaga Bembem dan 2 sampel di Telaga Motoindro. Data kualitas air yang dianalisis adalah parameter fisik (suhu, DHL, TDS), kimia (pH, nitrat, fosfat, deterjen, BOD), dan biologi (*Total coliform*). Penilaian status mutu air dilakukan menggunakan indeks kualitas air CCME. Hasil penelitian dianalisis dengan metode deskriptif kuantitatif dan komparatif.

Hasil penelitian menunjukkan bahwa volume Telaga Bembem dan Telaga Motoindro dipengaruhi musim, kondisi air cenderung homogen, penggunaan lahan di DTA kedua telaga didominasi oleh kebun campuran dan tegalan, pola pemanfaatan kedua telaga untuk kegiatan mandi, mencuci pakaian, memancing, dan minum ternak. Kegiatan mandi dan mencuci pakaian di Telaga Bembem dilakukan langsung di badan air, sedangkan di Telaga Motoindro terpisah dari badan air. Kualitas air kedua telaga dipengaruhi oleh konstruksi telaga, penggunaan lahan di DTA telaga, dan pola serta intensitas pemanfaatan telaga. Sebaran spasial polutan terkonsentrasi di lokasi pemanfaatan dan saluran air yang masuk telaga. Konsentrasi zat pencemar menurun akibat pengenceran. Status mutu air berdasarkan indeks CCME menunjukkan variasi temporal bulanan yang fluktuatif dan cenderung membaik pada bulan Februari, parameter yang menurunkan status mutu adalah pH, fosfat, deterjen, BOD, dan *total coliform* di Telaga Bembem, sedangkan di Telaga Motoindro pH sesuai baku mutu. Rerata status mutu air di kedua telaga adalah buruk berdasarkan baku mutu air kelas II menurut Pergub DIY Nomor 20 Tahun 2008 untuk rekreasi, perikanan, peternakan, mengairi pertanian dan sebagainya.

Kata kunci: Karst Gunungsewu, telaga, karakteristik telaga, kualitas air, status mutu air



WATER QUALITY ASSESSMENT OF BEMBEM AND MOTOINDRO DOLINE POND IN GUNUNGSEWU KARST AREA

ABSTRACT

Dry seasons often lead to drought in Panggang hydrogeologic sub-system, part of the undeveloped Gunungsewu Karst that has minimal water resources, so that local people have relied on doline pond as the primary water source. Bembem Doline Pond is located in Giriasih Village, Purwosari District, and Motoindro Doline Pond is located in Girisuko Village, Panggang District, both are in Gunungkidul Regency. Intensive use for many activities lead to water quality degradation. This research intended to identify (1) the characteristics; (2) the water quality; and (3) water quality index of Bembem and Motoindro Doline Pond.

Characteristics of doline pond namely morphometry was obtained by sounding, landuse in watershed obtained by aerial photograph and field survey, the pattern of water use was obtained by interview with random sampling. Water quality was obtained by field survey, samples were taken by purposive sampling that took place from November 2018 – February 2019. The test included three types of water parameters, namely physical (temperature, EC, and TDS), chemical (pH, nitrate, phosphate, detergent, and BOD), and biological (total coliform). CCME water quality index is used to assess water quality of doline pond. The results were analyzed by the descriptive method of quantitative and comparative.

Water volume of Bembem and Motoindro Doline Pond are influenced by rainfall, water bodies have homogenous conditions, landuse on both watershed are dominated use for plantation and dry farmland, the pattern of water use on both doline ponds are for bathing, cloth washing, fishing, and to provide drinking for livestock. Activities in Bembem Doline Pond are direct in water body, while in Motoindro Doline Pond are separate from water body. The water quality of the doline ponds were depend on the pond construction, landuse on watershed, and human activities on the doline pond considerably. The pollutants distribution were found at human activities site and near inlet. The pollutant level decreases due to dillution. Water quality index based on CCME was showed monthly temporal variation and tends to increase in February, pH, phosphate, detergent, BOD, and total coliform decrease water quality in Bembem Doline Pond, but in Motoindro Doline Pond pH is suitable with water quality standards. The average of water quality status is marginal for Class II water standards according to Regulation of the Governor of the Special Region of Yogyakarta No. 20 of 2008 for recreation, fisheries, livestock, irrigation, etc.

Keywords: *Gunungsewu Karst, doline pond, doline pond characteristics, water quality, water quality index*