

**PENILAIAN KESEHATAN TANAH UNTUK PENENTUAN PRIORITAS
KONSERVASI TANAH DI DAS BENDO, KOMPLEKS GUNUNGAPI IJEN,
KABUPATEN BANYUWANGI, PROVINSI JAWA TIMUR**

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INTISARI

Penelitian ini dimaksudkan untuk menciptakan kelestarian lingkungan melalui pendekatan keilmuan kesehatan tanah. Penelitian bertujuan untuk (1) menentukan jenis indikator kinerja tanah untuk penilaian kesehatan tanah di DAS Bendo (2) mengukur indikator kinerja tanah yang disusun menjadi *Minimum Data Set* (MDS) untuk penilaian kesehatan tanah di DAS Bendo, (3) melakukan klasifikasi kesehatan tanah di DAS Bendo, dan (4) menyusun prioritas konservasi tanah berdasarkan kondisi kesehatan tanah di DAS Bendo.

Penelitian dilakukan berdasarkan pendekatan bentanglahan dengan menggunakan kombinasi antara satuan bentuklahan dan bentuk penggunaan lahan sebagai satuan analisis. Ada sebanyak 22 titik sampel pengamatan lapangan di seluruh DAS Bendo yang kemudian dilengkapi dengan uji laboratorium. Penilaian kesehatan tanah menggunakan 14 variabel utama, yang selanjutnya disebut indikator kinerja tanah. Indikator-indikator kinerja tanah untuk kemudian dianalisis secara numerik berbasis metode skoring. Total skor pada seluruh indikator kinerja tanah dijumlahkan dan dikelompokkan menjadi 5 klas kesehatan tanah. Prioritas konservasi tanah disusun menggunakan analisis spasial dengan mendahulukan tindakan konservasi pada tanah dengan klas kesehatan paling rendah. Fungsi produksi, fungsi ekologis, dan faktor pembatas juga menjadi pertimbangan tambahan dalam penentuan prioritas konservasi tanah.

Hasil yang didapatkan dari 14 indikator yang dinilai ada 13 indikator yang masuk dalam MDS yang terdiri atas warna tanah, kadar air, lereng, tekstur tanah, struktur tanah, bahan organik, pH (H₂O), populasi cacing tanah, tanaman penutup tanah (LCC), erosi tanah, padatan tanah, nilai penetrasi tanah, dan kinerja tanaman. Klasifikasi kesehatan tanah yang dilakukan di DAS Bendo menghasilkan dua kelas yaitu tanah cukup sehat dan tanah sehat. Prioritas konservasi tanah di DAS Bendo dibagi menjadi 3 zonasi yaitu Prioritas I, II, dan III yang disusun berdasarkan tingkat kesehatan tanah, fungsi produksi, fungsi ekologis, dan faktor pembatas yang ada pada setiap satuan lahan.

Kata Kunci: Kesehatan Tanah, Indikator Kinerja Tanah, MDS, Prioritas Konservasi

***SOIL HEALTH ASSESSMENT TO DETERMINE SOIL CONSERVATION
PRIORITY IN BENDO WATERSHED, IJEN VOLCANO COMPLEX,
BANYUWANGI REGENCY, EAST JAVA PROVINCE***

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ABSTRACT

The purpose of this research was to create a sustainable environment through scientific soil health approach. This research aims to (1) determine soil function indicators to assess soil health in Bendo Watershed, (2) measure soil function indicators and use them to arrange a Minimum Data Set (MDS) for soil health assessment in Bendo Watershed, (3) classify soil health condition in Bendo Watershed, and (4) determine soil conservation priority in Bendo Watershed based on its soil health condition.

The research was conducted based on landscape approach by combining landform and landuse as its analysis units. There were 22 sample points taken from Bendo Watershed which assessed both directly in the field and laboratory. The soil health assessment was using 14 main variable as soil function indicators. Those soil function indicators were analyzed using a numeric based scoring method. The total score of each soil function indicators were grouped into 5 class of soil health classification. The soil conservation priority was arranged using spatial analysis method by prioritize the act of conservation to the soil with the lowest soil health class. Land limited factor, production and ecological function were also took into consideration as an additional justification.

The results showed that there were a total of 13 out of 14 soil function indicators that selected into a MDS which consists of soil color, soil moisture, slope, soil texture, soil structure, organic matter, soil pH (H₂O), earthworm population, land cover crop (LCC), soil erosion, soil compaction, field penetration, and crop performance. The soil health level in Bendo Watershed were moderately healthy and healthy. Soil conservation priority in Bendo Watershed was divided into 3 zones: Priority I, II, and III which arranged by combining soil health level, the production and ecological function, and the existence of limited factor on each land system.

Keywords: Soil Health, Soil Function Indicator, MDS, Soil Conservation Priority