

## KAJIAN KERUSAKAN LINGKUNGAN PERAIRAN SUNGAI WAE TOMU AKIBAT PEMBUANGAN LIMBAH DOMESTIK DI KOTA AMBON

Oleh

Silvi Grandis Notanubun<sup>1</sup>, Totok Gunawan<sup>2</sup>, Agus Joko Pitoyo<sup>3</sup>

### INTISARI

Sungai Wae Tomu merupakan salah satu sungai besar yang melintasi Kota Ambon, dengan tingkat pertumbuhan penduduk dan pertumbuhan permukiman yang sangat pesat di sepanjang aliran sungai. Berbagai aktivitas masyarakat di sekitar Sungai Wae Tomu mengindikasikan terjadi perubahan kualitas air sungai, yang menyebabkan kerusakan dan pencemaran lingkungan perairan sungai. Tujuan penelitian ini adalah: (1) mengkaji jenis kerusakan lingkungan perairan Sungai Wae Tomu ditinjau dari komponen abiotik, biotik, dan kultural; (2) menentukan tingkat kerusakan lingkungan perairan Sungai Wae Tomu ditinjau dari komponen abiotik, biotik, dan kultural; dan (3) merumuskan strategi dan kebijakan pengelolaan lingkungan perairan Sungai Wae Tomu dalam rangka pelestarian lingkungan.

Metode penelitian ini menggunakan metode *survey* sebagai alat pengumpulan data, yang menekankan teknik *purposive sampling*. Sampel air diambil dari hulu sampai hilir sungai, dalam 6 titik sampel. Data kualitas air diukur dengan parameter fisik, kimia, bakteriologi dan plankton. Data sosial diperoleh berdasarkan dari hasil wawancara dengan menggunakan *indepth interview*.

Hasil penelitian menunjukkan bahwa sumber kerusakan lingkungan perairan Sungai Wae Tomu berasal dari limbah rumah tangga, kebiasaan masyarakat dalam membuang limbah cair langsung ke sungai, dan kebiasaan membuang sampah ke sungai. Hasil uji sampel air sungai menunjukkan beberapa parameter air Sungai Wae Tomu telah melebihi baku mutu kualitas air sungai, seperti Nitrit, BOD, COD, dan total *coliform*. Konsentrasi pencemaran oleh nitrit adalah 0,141 mg/L, BOD adalah 18,46 mg/L, COD adalah 42,405. Konsentrasi pencemar oleh total *coliform* tinggi pada semua titik sampel. Titik sampel 1 (920.00 MPN/100ml), titik sampel 2 (350.000 MPN/100ml), titik sampel 3 (920.000 MPN/100ml), titik sampel 4 (1.100.000 MPN/100ml), titik sampel 5 (64.000.000 MPN/100ml), dan titik sampel 6 (35.000.000 MON/100ml). Berdasarkan hasil Analisis Indeks Pencemaran, dapat disimpulkan bahwa Sungai Wae Tomu berada pada status tercemar berat. Strategi pengelolaan lingkungan difokuskan pada pengoptimalan tempat sampah, pengolahan limbah cair dengan membuat IPAL komunal, pemberdayaan masyarakat melalui sosialisasi, dan pendekatan institusi dengan melibatkan semua stakeholder.

**Kata Kunci** : Kerusakan lingkungan, kualitas air, aktivitas masyarakat, limbah domestik

<sup>1</sup> Mahasiswa Magister Pengelolaan Lingkungan, Program Studi Ilmu Lingkungan, Sekolah Pascasarjana Universitas Gajah Mada, Yogyakarta

<sup>2,3</sup> Staf Pengajar Magister Pengelolaan Lingkungan, Program Studi Ilmu Lingkungan, Sekolah Pascasarjana Universitas Gajah Mada, Yogyakarta

## STUDY OF ENVIRONMENTAL POLLUTION OF WAE TOMU RIVER WATER DUE TO DOMESTIC WASTE DISPOSAL IN AMBON CITY

By

Silvi Grandis Notanubun<sup>1</sup>, Totok Gunawan<sup>2</sup>, Agus Joko Pitoyo<sup>3</sup>

### ABSTRACT

Wae Tomu River is one of the major rivers that cross the city of Ambon, with a very rapid rate of population growth and settlement growth along the river flow. Various community activities around the Wae Tomu River indicate changes in river water quality, which cause damage and pollution of river waters. The purpose of this research are: (1) to study the type of environmental damage of the Wae Tomu River waters in terms of abiotic, biotic, and cultural components; (2) determine the level of environmental damage to the waters of the Wae Tomu River in terms of abiotic, biotic and cultural components; and (3) formulating strategies and policies for environmental management of Wae Tomu River waters in the framework of environmental conservation.

This research uses survey method as a data gathering tool, which emphasizes purposive sampling technique. Water samples were taken from upstream to downstream of the river, in 6 sample points. Water quality data was measured by physical, chemical, bacteriological and plankton parameters. Social data was obtained based on the results of interviews using indepth interviews.

The results showed that the source of environmental damage to the Wae Tomu River waters came from household waste, the habits of the community in throwing liquid waste directly into the river, and the habit of throwing garbage into the river. Test results of river water samples show that some of the Wae Tomu water parameters have exceeded river water quality standards, such as Nitrite, BOD, COD, and total coliform. The concentration of pollution by nitrite is 0.141 mg / L, BOD is 18.46 mg / L, COD is 42.405. The concentration of pollutants by total *coliform* was high at all sample point. Sample point 1 was (920.00 MPN/100ml), sample point 2 (350.000 MPN/100ml), sample point 3 was (920.000 MPN/100ml), sample point 4 was (1.100.000 MPN/100ml), sample point 5 was (64.000.000 MPN/100ml), and sample point 6 was (35.000.000 MON/100ml). Based on the result by analysis of pollution index, it can be concluded that Selor river waters was categorized as heavily polluted. Environmental management strategy focused on optimizing trash cans, processing waste water by making communal IPAL, community empowerment through socialization, and institutional approaches involving all stakeholders.

**Keywords:** *Environmental pollution, water quality, community activity, domestic waste*

<sup>1</sup> Student of Environmental Management, Environmental Science Program, Postgraduate School, Gajah Mada University, Yogyakarta

<sup>2,3</sup> Lecture of Environmental Management, Environmental Science Program, Postgraduate School, Gajah Mada University, Yogyakarta