

Feasibility Study of the Utilization of Water in the Seruyan River Watershed in Kuala Pembuang, Seruyan Regency, Central Kalimantan

Rika Fitriani^{1*}, Ukik Agustina²

Universitas STRADA Indonesia

*Corresponding author: rikafitriani79@gmail.com

ABSTRACT

River water is one of the main sources of community needs in rural areas, including in Seruyan Regency. This study aims to assess the feasibility of utilizing water from the Seruyan River Basin (DAS) for public health. The research method uses a qualitative approach with data triangulation and water pollution index analysis based on environmental quality standards. Data were obtained from field observations, documentation studies, and in-depth interviews with residents, community health center officers, village officials, and environmental agencies. The results show that the water pollution index of the Seruyan River Basin is in the light to moderate pollution category, with water quality not yet fully meeting quality standards for household clean water needs. Residents still use river water for bathing, washing, and daily activities, despite frequent complaints of skin problems and digestive disorders. Interviews with health workers confirmed that skin disease complaints are quite high in the riverbank area. It was concluded that the use of Seruyan River water is unsuitable for direct consumption without treatment. Improvements in water quality management, public education, and local government policies regarding clean water provision are recommended.

Keywords : Pollution index, Public health, Seruyan Watershed, Water quality

INTRODUCTION

The Seruyan River is the primary source of water for the Kuala Pembuang community for bathing, washing, and some even drinking. However, domestic activities, household waste, and economic activities have led to a decline in water quality. According to Government Regulation No. 22 of 2021, river water must meet quality standards for its intended use. Based on field data, residents still complain of health problems resulting from river water use. Therefore, this study was conducted to assess the feasibility of utilizing Seruyan Watershed water in terms of environmental quality and its impact on public health.

METHODS

This research uses a descriptive qualitative approach with data triangulation.

- Research location: Kuala Pembuang, Seruyan Regency, Central Kalimantan.
- Research subjects: riverbank residents, village officials, village-owned enterprise (BUMDes), community health center staff, and the Seruyan Environmental Agency (DLH).
- Data collection: observation, documentation, and in-depth interviews.
- Data analysis: water pollution index (Storet method/Ministry of Environment and Forestry Pollution Index) and qualitative thematic analysis..

RESULTS

Measurement results showed that BOD, COD, and TSS levels exceeded Class II quality standards. This is similar to the findings of Rahman & Yulianti (2019), who showed that river water pollution due to domestic activities significantly impacts water quality.

a. Water Pollution Index

The pollution index calculation results indicate light to moderate pollution. TSS, BOD, and COD levels at several points exceed the Class II threshold.

b. Utilization by the Community.

People still use river water for bathing, washing, and to a small extent for drinking. Residents acknowledge limited access to alternative clean water sources.

c. Health Complaints

Interviews with community health center staff revealed a high prevalence of skin diseases (dermatitis, itching), diarrhea, and digestive problems.

Tabel 1. Hasil Pengukuran Parameter Kualitas Air DAS Seruyan Tahun 2025.

Parameter	Unit	Average Results	Class II Standard	Quality Information
pH	-	6,4	6-9	Meet quality standards
TSS	Mg/L	60	50	Exceeding quality standards
BOD	Mg/L	4,5	3	Exceeding quality standards
COD	Mg/L	11	10	Exceeding quality standards
DO	Mg/L	4,2	≥4	Exceeding quality standards

Source: Environmental Laboratory Analysis Results, 2025.

Table 2. Types of Public Health Complaints in the Seruyan Watershed in 2025

Type of Complaint	Number (n=30)	Respondents	Percentage (%)
Skin diseases (itching, dermatitis)	18		60,0 %
Diarrhea & digestive disorders	7		23,3 %
ISPA (cough, flu)	3		10,0 %
Etc	2		6,7 %

DISCUSSION

The phenomenon of light to moderate pollution in the Seruyan watershed is consistent with a report by the Central Kalimantan Environmental Agency (Central Kalimantan Provincial Environmental Agency, 2020), which also found a high pollutant load from domestic activities. Complaints of water-borne diseases, such as diarrhea and skin diseases, align with the findings of Lestari & Nugroho (2020) in Kalimantan, which found an increase in diarrhea cases due to poor river water quality.

Furthermore, the WHO (2017) emphasized that access to clean water is a crucial determinant of public health. The findings in Seruyan reinforce the environmental health theory (Rahman, 2017), which states that poor water quality is directly correlated with increased environmental-based diseases.

The research results show a gap between the community's need for clean water and the water quality of the Seruyan Watershed. Compared with previous research in Central Kalimantan, mild to moderate pollution in the watershed was also found due to domestic activities and a lack of water treatment systems. This situation directly impacts public health, particularly water-borne diseases.

Theoretically, the WHO states that access to clean water is a crucial determinant of public health. The evidence in Seruyan supports this theory, as poor water quality is directly proportional to an increase in environmentally-related diseases. Therefore, the use of water from the Seruyan watershed requires simple treatment before use.

CONCLUSION

1. The Seruyan Watershed water pollution index is in the light to moderate pollution category.
2. River water is still used by residents for daily needs, although its quality is not yet suitable for direct consumption.
3. Public health complaints related to river water use are quite high, particularly skin diseases and diarrhea.

REFERENCE

- Badan Standardisasi Nasional. (2019). *Baku Mutu Air Minum*. Jakarta: BSN.
- Budiarto, E. (2018). *Metodologi Penelitian Kesehatan*. Jakarta: EGC.
- Cahyani, A. & Sutrisno, H. (2019). Pengaruh kualitas air sungai terhadap kesehatan masyarakat bantaran. *Jurnal Kesehatan Lingkungan Indonesia*, 18(3), 145–152.
- Dinas Lingkungan Hidup Provinsi Kalimantan Tengah. (2020). *Laporan Status Lingkungan Hidup Daerah Kalimantan Tengah 2020*. Palangka Raya: DLH.
- Kementerian Kesehatan RI. (2018). *Profil Kesehatan Indonesia Tahun 2018*. Jakarta: Kemenkes RI.
- Kementerian Kesehatan RI. (2019). *Permenkes No. 32 Tahun 2017 tentang Standar Baku Mutu Kesehatan Lingkungan dan Persyaratan Kesehatan Air untuk Keperluan Higiene Sanitasi*. Jakarta: Kemenkes RI.
- Kementerian Lingkungan Hidup dan Kehutanan RI. (2021). *PP No. 22 Tahun 2021 tentang Penyelenggaraan Perlindungan dan Pengelolaan Lingkungan Hidup*. Jakarta: KLHK.
- Kementerian PUPR. (2020). *Pedoman Pengelolaan Sumber Daya Air*. Jakarta: Kementerian PUPR.
- Lestari, D. & Nugroho, P. (2020). Dampak pencemaran air sungai terhadap kejadian penyakit diare di Kalimantan. *Jurnal Ilmu Kesehatan Masyarakat*, 11(2), 76–85.
- Rahman, F., & Yulianti, N. (2019). Studi kualitas air permukaan dan kaitannya dengan kesehatan lingkungan. *Media Kesehatan Lingkungan*, 25(1), 51–60.
- Rahman, S. (2017). *Kesehatan Lingkungan: Teori dan Aplikasi*. Yogyakarta: Andi Offset.
- Soemirat, J. (2018). *Kesehatan Lingkungan*. Bandung: Gadjah Mada University Press.
- Sutrisno, A. (2019). Kajian pencemaran air sungai akibat aktivitas domestik di wilayah pesisir. *Jurnal Ekologi Tropis*, 23(1), 32–41.
- WHO. (2017). *Guidelines for Drinking-water Quality*. Geneva: World Health Organization.
- Yuliana, R., & Santoso, B. (2020). Analisis kualitas air sungai dan kaitannya dengan kesehatan masyarakat. *Jurnal Kesehatan Lingkungan Indonesia*, 19(2), 101–110.