

From Local Rivers to Global Lessons: Water Quality Assessment of the CPI Makassar Area

Ratna Musa¹, Nur Azizah^{2*}, Muh. Ilham Anggamulia²

¹*Department of Civil Engineering, Faculty of Engineering, Universitas Muslim Indonesia, Makassar, 90231, Indonesia*

²*Department of Environmental Engineering, Faculty of Engineering, Universitas Muslim Indonesia, Makassar, 90231, Indonesia*

**Presenter's Email Address : nurazisah911@gmail.com*

Abstract. The Center Point of Indonesia (CPI) in Makassar represents a rapidly developing coastal zone where urban growth and human activities exert increasing pressure on local water resources. This study evaluates the water quality of a small river adjacent to CPI, which flows directly into Makassar Bay and serves as a critical interface between urban settlements and marine ecosystems. Samples were collected and analyzed for physical, chemical, and microbiological parameters, including turbidity, dissolved oxygen, nitrate, ammonia, fluoride, copper, and coliform bacteria. Results indicate moderate turbidity (6.1 NTU) and dissolved oxygen (5.24 mg/L), alongside elevated ammonia (2.33 mg/L) and high microbial contamination, with total coliform reaching 4,700 counts/100 mL and fecal coliform at 4,000 counts/100 mL. These findings highlight the significant impact of domestic wastewater, surface runoff, and urban activities on local water quality, posing potential ecological and public health risks. Beyond reporting local challenges, this research emphasizes the importance of adopting a collaborative global mindset to address water management in urbanizing coastal regions. By linking local monitoring with global knowledge-sharing, the study offers lessons on how student-led environmental research can empower communities, raise awareness, and contribute to sustainable solutions for both local and international contexts.

Keywords: Water Quality Assessment, Urban Coastal Pollution, Domestic Wastewater Impact, Community Empowerment, Collaborative Environmental Solutions