



# Water Quality Management in Aquaculture Farms of Zambian Lakes: Microbiological Insights and Best Practices

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## Abstract

Aquaculture in Zambian lakes faces challenges related to water quality management, which can impact fish health and productivity. A qualitative study involving interviews with farmers and analysis of water samples to assess microbial populations and environmental conditions. Microbial communities varied significantly among different farms, with some showing excessive levels of pathogens that could threaten fish health. Farms operating under improved hygiene protocols had lower pathogen counts. The study highlights the importance of implementing rigorous sanitation measures in aquaculture to maintain water quality and protect aquatic ecosystems. Farmers should adopt regular monitoring programmes, use effective disinfection techniques, and integrate biosecurity practices into their farming systems.

**Keywords:** *Zambian, Geographic, Aquaculture, Microbiome, Qualitative, Ecosystem, Sustainability*

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