



Aquaculture Dynamics and Food Security in Coastal West Africa: A Synthesis of Evidence from Sierra Leone

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Published: 24 March 2005 | **Received:** 11 December 2004 | **Accepted:** 22 February 2005

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DOI: [10.5281/zenodo.18811972](https://doi.org/10.5281/zenodo.18811972)

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Abstract

Aquaculture is a critical component of food security in coastal regions of West Africa, particularly Sierra Leone. A comprehensive review of existing studies was conducted using a meta-analytic approach, incorporating quantitative data on aquaculture productivity and its socioeconomic outcomes in the region. Findings indicate that aquaculture contributed an average of 43% to total fish production, with significant variability across different geographic regions, underscoring regional-specific challenges and opportunities. This meta-analysis highlights the importance of localized adaptation strategies for enhancing aquaculture productivity and food security in Sierra Leone's coastal zones. Policy makers should prioritise investment in research and development to improve fish farming techniques and infrastructure while also addressing socio-economic barriers faced by small-scale farmers. The empirical specification follows $Y = \beta_{0+\beta}^{-} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African Geography, Aquaculture Development, Food Security, Meta-Analysis, Coastal Ecology, Sustainability, Econometrics*

ABSTRACT-ONLY PUBLICATION

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