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## RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

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**Title:** An Examination of Productivity Potential of Aquaculture Farms in Alleviating Household Poverty: Estimation and Policy Implications from Nigeria

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**Abstract:** This study examines income generation potential and resource-use efficiency of aquaculture farms in Nigeria. A total of 120 aquaculture farms were sampled. Using gross margin (GM) analysis, the result shows that, all the sampled farms were able to cover their total operating expenses with an average GM > 200,000 naira per annum. The assessed parameters of resource use-efficiency of the farms with stochastic frontier models (SFM) revealed that, elasticities of inputs, such as: pond size, feeds, fingerlings, and other costs were significantly different from zero. While returns to scale of 1.16 obtained from the analysis suggests that, an average farm from the study, exhibits increasing returns to scale. The estimated efficiency score revealed a significant level of inefficiency with an average technical efficiency of about 81%. This suggests that about 19% potential yield are forgone due to inefficiency from the study. The result of sources of technical efficiency shows that; extension, education, stocking density, and credit significantly influenced efficiency of the farms. Similarly, the result of the simulated marginal effects of the inefficiency variables shows that, extension has the highest marginal effects on the efficiency score follows by credit, education, and stocking density. The implications of these findings, therefore, suggest that, aquaculture will provide potential channel of income generation for households in the country considering the size of the profit obtained from the analysis. However, as matter of policy concern, extension with the highest simulated marginal effects on the efficiency score is expected to generate a large increase in the overall performance of the sector if strengthen for sustainable fish production in Nigeria.

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