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Sustainable Aquaculture for a Secure Future

Title: Farm-level efficiency and resource use: Application of stochastic frontier analysis to aquaculture farms in Southwest Nigeria

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Abstract: In Nigeria, fish provide the cheapest source of animal protein, especially in the rural and urban communities. Presently, the domestic fish supply in the country stands at about 400,000 t/yr. Eighty percent of the supply comes from the artisanal capture fisheries. The domestic fish supply is far below the demand because of the progressive increase in the country's population (Ojo et al. 2006). This has necessitated the importation of frozen fish to offset the gap in the domestic demand.

The annual trade statistic from the Central Bank of Nigeria shows that Nigeria expended over US\$200 million annually on the importation of frozen fish to offset the production in the country (CBN 2006). Continued importation of frozen fish had been identified as one of the major sources of drain on the country's foreign reserves.

With the decrease in artisanal fish supply from ocean fisheries as a result of overfishing and pollution, many concerns are raised among the policymakers about the possibility of capture fisheries bridging the gap between supply and demand in the country. Aquaculture, in light of this development, had been suggested, over the years, as a more environmentally friendly source of fish protein for the country.

Aquaculture is predominantly an extensive land-based system, practiced at subsistence levels (Fagbenro 2002). Its current yield is put at 14,388 t/yr, so there is considerable potential for

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commercial aquaculture development (Fagbenro and Adebayo 2005). Recent published annual agricultural production statistics by the Central Bank of Nigeria, show that the contribution of aquaculture to total fisheries production in Nigeria increased from about 11 percent in 2003 to 21 percent in 2005 (CBN 2006). This is an indication that aquaculture activity in the country is taking a giant step toward repositioning. Continued expansion of aquaculture production across the country however, is expected to play an important role in ensuring sustainable fish production among other benefits in the country in the future.

Therefore, examining resource use and technical efficiencies of aquaculture farms in the country will provide the decision makers a control mechanism with which to examine the performance of these farms. This study intends to provide such an examination by comparing aquaculture farms across Southwest Nigeria. [Note: The text above is the article's introduction.]

This introduction was excerpted from the original paper, which was in *World Aquaculture Magazine* (2010), 41(2): 17-19, 69-70.

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