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### Full Length Research Paper

## Analysis of technical, allocative and economic efficiency of different pond systems in Ogun state, Nigeria

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### Abstract

The study was carried out in Ogun State. The study investigated the costs and returns analysis of the respondents and the stochastic frontiers production analysis was applied to estimate the technical, allocative efficiency and economic efficiency among the fish farmers using concrete and earthen pond systems in the State. The results of the returns to Naira invested shows that earthen pond system yielded N8.1 while concrete pond system yielded N6.5. The results of economic efficiency also revealed an average of 76% in concrete pond system while earthen pond system made as high as 84% economic efficiency level. The results of the analysis of the mean technical efficiency for both systems revealed that concrete pond system with 88% while earthen pond system was 89%. Similarly, the allocative efficiency result revealed that concrete pond system was 79 percent while earthen pond had 85%. Stochastic frontier production function models revealed that pond area, quantity of lime used, and number of labour used were found to be the significant factors that contributed to the technical efficiency of concrete pond system while pond, quantity of feed and labour are the significant factors in earthen pond system. The results therefore concluded that only years of experience is the significant factor in concrete pond system in the inefficiency sources model. On the basis of the findings, the study suggested that government of Nigeria should provide a conducive environment for the establishment of both concrete and earthen pond system;

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encourages more citizenry, mostly youth to set up both pond systems in a bid to alleviate poverty status and un-employment rate in the State and the country at large.

**Key words:** Fish farming, technical efficiency, allocative and economic efficiency.

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