

An analysis of profitability of freshwater ornamental fish growing in cement tanks and mud ponds

H.D. Wimalasena*, M.M.A.S. Maheepala and K.H.M.L. Amaralal

National Aquatic Resources Research and Development Agency (NARA), Crow Island, Colombo- 15, Sri Lanka

Abstract

This paper reviews the profitability of fresh water ornamental fish out growing in the Kalutara district. Data were collected using structured questionnaire from 45 out growers in 2012. The analysis was conducted by calculating operational cost, revenue, gross profit, financial profit and rate of return on the investment (ROI). In terms of unit investment cost and variable cost, cement tanks are costly compared to mud ponds. In addition, revenue and gross profit per surface feet² of a mud pond show better off situation. Moreover, economic indicators such as rate of return on the investment (ROI) and payback period (PBP) were more favourable for mud ponds. Though economic indicators for cement tanks were far below compared to that of mud ponds which were above average compared to the returns in the financial market prevailed. Hence, cement tanks method is more suitable for small scale growers while mud ponds method for medium and large scale entrepreneurs. The high variable cost is the prime factor which affects the long term sustainability of the industry in which feed cost incurs about 66 %. Therefore, innovations in local feed alternatives are vital for the increased economic viability of the industry.

Keywords: Ornamental fish, profitability, return on investment

* *Corresponding author: wimalhearth@yahoo.com*

Introduction

Ornamental fish' is often used as a generic term to describe aquatic animals kept in aquarium hobby, including fishes, invertebrates such as corals, crustaceans, mollusks and also liverock (Livengood and Chapman,2009). The development of breeder/out grower system of freshwater ornamental fish in mid 80's was directed by exporters towards fish bred in captivity resulted in generation of self employment to unemployed rural youth (Weerakoon and Senarathne, 2005). This breeder/out grower system enables exporters to provide continuous supply to their importers abroad and maintain reliable business relations with them.

The value of ornamental fish exported by Sri Lanka in 2012 was US\$ 7.5 million with a market share of 2.7% of the world market. The share of freshwater varieties in the ornamental fish exports was about 67% of which constitute captive bred as well as wild caught varieties.

Kalutara and Polonnaruwa districts are among the fast growing ornamental fish producing centres of the country. This paper examines the profitability of ornamental fishing grown in cement tanks and mud ponds with special reference to Kalutara district.

Materials and methods

The sample frame of the survey was all registered ornamental fish producers in the Kalutara district. Out of 183 registered growers 45 were selected using one-step stratified sampling method. Data collection carried out using structured questionnaire. The data analysis was done using SPSS statistical package.

Results and discussion

Investment cost/Capital investment

The mean investment needed for the cement made tank per feet² was LKR 389 and the same for the mud pond was LKR 182. The mean surface area of cement tanks and mud ponds owned by ornamental fish producers were 28 and 1044 square feet per cement tank user and mud pond user respectively. The initial investment of existing ornamental fish producers in the Kalutara district who use cement tank and mud ponds were LKR 20,892 and 190,008 respectively.

Variable/operational cost

About 66% of the operational cost consisted of the feed cost. The mean operational cost/ feet²/month for pond based grow out and tank based grow out was LKR 5 and 19 respectively. It shows that the unit operational cost for ponds was remarkably lower compared to cement tanks.

Revenue and gross profit

The mean revenue per/ feet²/month was LKR 20 and 44 for mud ponds and cement tank grow outs. The gross profit/ month / feet² of mud ponds and cement tank were LKR 17 and 15 respectively. The range of values approximately was LKR 48 and 60 for mud ponds and cement tanks.

Economic viability

The rate of return on investment for mud ponds and cement tanks were 1.02 and 0.36, while pay back periods respectively 0.97 and 2.8 years. This implies that the mud ponds would be able to recover its investment sooner than the cement tanks. On the other hand borrowed capital for investment can be pay back sooner in mud ponds than in cement tanks.

Conclusion

Both cement tanks and mud ponds methods were profitable. But on the scale of investment the cement tanks are more preferable for small scale growers and mud pond are more suitable for medium and large scale investments. The innovations in local feed manufacture are essential for increased profitability.

References

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