Economic analysis of tiger grouper *Epinephelus fuscoguttatus* and humpback grouper *Cromileptes altivelis* commercial cage culture in Indonesia

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Farok Afero [1], Sha Miao[1] & Arlenie A. Perez[1]

Abstract

This study presents an economic analysis of tiger and humpback grouper at different production scales in Indonesia. The results highlight the non-viability of small-scale tiger grouper farming, with a 5-year projected negative cumulative cash flow of −IDR 18,102,650.00 and a negative net present value (NPV) of −IDR 22,059,576.28. An increased production scale of tiger grouper highlights a marginal viability for medium-scale farms (with a 5-year projected cumulative cash flow of IDR 198,320,673.00, a positive NPV of IDR 105,578,440.42; a benefit cost ratio of 1.25; an internal rate of return (IRR) of 88% and a payback period of 0.99 years), and an economically viable large-scale cage culture (with a 5-year projected cumulative cash of IDR 707,746,923.00; a NPV of IDR 406,801,749.07; a

benefit cost ratio of 1.33; an internal rate of return of 157%; and a payback period of 0.57 years). The economic analysis of humpback grouper at different production scales highlighted a positive cumulative cash and NPV, a benefit cost ratio over 2, an internal rate of return over 300% and a payback period <1 year. A sensitivity analysis revealed that increased survival rate up to 80% would increase cumulative cash and NPV of small-scale tiger grouper cage culture. Additionally, improved profitability performance was associated with decreasing major production costs, increasing production and price of the product.

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Author information

Authors and Affiliations

Department of Aquaculture, National Taiwan Ocean University, Keelung, Taiwan, R.O.C

Farok Afero, Sha Miao & Arlenie A. Perez

Corresponding author

Correspondence to Farok Afero.

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