

MILKFISH (*Chanos chanos*) HATCHERY BUSINESS AT NUSA SAGARA MARINE FARM, BULELENG, BALI

BRAYDON YOUNG



**TECHNOLOGY AND MANAGEMENT OF APPLIED
AQUACULTURE STUDY PROGRAM
COLLEGE OF VOCATIONAL STUDIES
IPB UNIVERSITY
BOGOR
2025**

@Hak cipta milik IPB University

IPB University



IPB University
— Bogor Indonesia —

- Hak Cipta Dilindungi Undang-undang
1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber :
 - a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah
 - b. Pengutipan tidak merugikan kepentingan yang wajar IPB University.
 2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB University.

Perpustakaan IPB University

STATEMENT REGARDING FINAL REPORT AND SOURCES OF INFORMATION AND COPYRIGHT TRANSFER

This Final Assignment Report entitled “Milkfish (*Chanos chanos*) Hatchery Business at Nusa Sagara Marine Farm, Buleleng, Bali” was prepared based on permission from all supervisors. This report has never been submitted or is being submitted to any university simultaneously. Information that is the result of the work of other authors, both published and unpublished, is fully acknowledged in the manuscript and complete references to the sources are included in the Bibliography at the end of this final report. IPB University is the place where I submit the copyright for my written work.

Bogor, July 2025

Braydon Young
J0308211063

ABSTRACT

BRAYDON YOUNG. Milkfish (*Chanos Chanos*) Hatchery Business at Nusa Sagara Marine Farm, Buleleng, Bali. Supervised by ANDRI ISKANDAR and DIAN EKA RAMADHANI.

Milkfish is a highly favored commodity in Indonesia. It is a fishery product that is easy to cultivate and contains a high protein content of up to 24.18%. Nusa Sagara Marine Farm is one of the milkfish hatchery units committed to producing high-quality fries to meet the increasing market demand, both locally and globally. The company targets both local and global markets, with a positioning focused on high-quality milkfish larvae hatchery. Business success is measured by the survival rate and the profits generated. The higher the survival rate (SR) of the milkfish larvae, the greater the profit earned by the company. The survival rate obtained ranges from 46–87%, with total profits generated by the company amounting to IDR 68,467,230 per year.

Keywords: hatchery, milkfish, profit, survival rate

ABSTRAK

BRAYDON YOUNG. Usaha Pembenihan Ikan Bandeng (*Chanos chanos*) di Nusa Sagara Marine Farm, Buleleng, Bali. Dibimbing oleh ANDRI ISKANDAR dan DIAN EKA RAMADHANI.

Ikan bandeng merupakan komoditas yang diminati di Indonesia. Ikan ini menjadi komoditas perikanan yang mudah dibudidayakan dengan kandungan protein tinggi mencapai 24,18%. Nusa Sagara Marine Farm merupakan salah satu unit pembenihan (*hatchery*) ikan bandeng yang berkomitmen menghasilkan benih unggul untuk memenuhi permintaan pasar yang terus meningkat, baik secara lokal maupun global. *Targeting* yang dilakukan perusahaan mencakup pasar lokal dan global dengan *positioning* yaitu larva ikan bandeng dengan budidaya yang terjaga kualitasnya. Tingkat keberhasilan bisnis dilihat dari nilai sintasan dan keuntungan yang diperoleh usaha. Semakin tinggi sintasan (SR) larva ikan bandeng maka akan semakin tinggi keuntungan perusahaan yang diperoleh. Nilai sintasan yang diperoleh berkisar 46–87% dengan nilai keuntungan perusahaan yang diperoleh adalah senilai Rp68.467.230 per tahun.

Kata kunci: pembenihan, bandeng, keuntungan, sintasan



Hak Cipta Dilindungi Undang-undang

1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber :
 - a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah
 - b. Pengutipan tidak merugikan kepentingan yang wajar IPB University.
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB University.

© Copyright owned by IPB University, 2025
Copyright protected by law

It is prohibited to quote part or all this paper without including or mentioning the source. Quotation is only for educational purposes, research, writing scientific papers, compiling reports, writing criticisms, or reviewing a problem and the quotation does not harm the interests of IPB.

It is prohibited to announce and reproduce part or all this paper in any form without permission from IPB. The transfer of copyright for papers from collaborative research with parties outside IPB must be based on the related cooperation agreement.

MILKFISH (*Chanos chanos*) HATCHERY BUSINESS AT NUSA SAGARA MARINE FARM, BULELENG, BALI

BRAYDON YOUNG

Final Project Report
As one of the graduation requirements in the Technology and Management of
Applied Aquaculture Study Program

**TECHNOLOGY AND MANAGEMENT OF APPLIED
AQUACULTURE STUDY PROGRAM
COLLEGE OF VOCATIONAL STUDIES
IPB UNIVERSITY
BOGOR
2025**



@Hak cipta milik IPB University

IPB University

Examiner for the Final Report exam: Ima Kusumanti, S.Pi., M.Sc.



IPB University
— Bogor Indonesia —

Hak Cipta Dilindungi Undang-undang

1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber :
 - a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penyusunan laporan, penulisan kritik atau tinjauan suatu masalah
 - b. Pengutipan tidak merugikan kepentingan yang wajar IPB University.
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin IPB University.

Perpustakaan IPB University



Judul Laporan : Milkfish (*Chanos chanos*) Hatchery Business at Nusa
Sagara Marine Farm, Buleleng, Bali
Name : Braydon Young
Student ID Number : J0308211065

Approved by

Supervisor 1:
Dr. Andri Iskandar, S.Pi., M.Si., M.Sc.

Supervisor 2:
Dian Eka Ramadhani, S.Pi., M.Si.

Known by

Head of Study Program:
Dr. Wiyoto, S.Pi., M.Sc.
Employee ID 201807197702011001

Dean:
Dr. Ir. Aceng Hidayat, M.T.
Employee ID 196607171992031003

Examination Date: 17th June 2025

Graduation Date:

PREFACE

I would like to begin by expressing my sincere gratitude to God Almighty for His continued grace and blessings, which enabled me to complete this final project report. This report, titled “*Milkfish (Chanos chanos) Hatchery at Nusa Sagara Marine Farm, Buleleng, Bali,*” was prepared as a requirement to fulfill my undergraduate studies in the Technology and Management of Applied Sciences in Aquaculture Study Program in IPB University. The project, conducted from 1st December 2024 to 1st March 2025, was designed to cultivate an entrepreneurial mindset through hands-on experience in fish farming.

I am deeply thankful to my parents for their constant support and encouragement throughout my academic journey. I would also like to express my appreciation to Dr. Andri Iskandar and Ms. Dian Eka Ramadhani for their valuable guidance, feedback, and patience during the preparation of this report. Special thanks are extended to Dr. Wiyoto, as the Head of the Study Program, and to everyone who contributed to the successful completion of this project. I hope this report will serve not only as a reflection of my experience, but also as a useful reference for readers with an interest in aquaculture.

Bogor, July 2025

Braydon Young

TABLE OF CONTENTS

PREFACE	v
TABLE OF CONTENTS	v
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF APPENDICES	viii
I INTRODUCTION	1
1.1 Background Information	1
1.2 Problem Statement	1
1.3 Objectives	2
1.4 Benefits	2
II BUSINESS DESCRIPTION	3
2.1 Production Site	3
2.2 Production Capacity	3
2.3 Sales Location Planning	5
2.4 Strategic Planning Analysis	5
2.4.1 SWOT	5
2.4.2 QSPM	5
III IMPLEMENTATION METHOD	6
3.1 Milkfish Commodity	6
3.1.1 Production Design	7
3.1.2 Tank Preparation	7
3.1.3 Egg Handling	7
3.1.4 Larval Rearing	8
3.1.5 Harvesting, Packaging, and Transportation of Larvae	8
3.1.6 Live Feed Culture	9
3.1.7 Biosecurity	9
3.2 Flow of Production	10
3.3 Sales Strategy	10
3.3.1 STP (Segmentation, Targeting, Positioning)	10
3.3.2 Marketing Mix 4P (Product, Price, Place, Promotion)	11
3.4 Financial Plan	12
3.4.1 Business Capital	12
3.4.2 Investment Cost	12
3.4.3 Fixed Costs	20
3.4.4 Variable Costs	20
3.4.5 Business Feasibility Analysis	22
3.5 Evaluation Method	23
3.5.1 Production Evaluation	23
3.5.2 Management Evaluation	24
3.5.3 Financial Evaluation	25
3.6 Activity Schedule	26

IV RESULTS AND DISCUSSION	27
4.1 Production Performance	27
4.1.1 Egg Handling	27
4.1.2 Larval Rearing	27
4.1.3 Larvae Harvesting, Packaging, and Transport	28
4.1.4 Water Quality Management	29
4.1.5 Density of Natural Feed	30
4.2 Management Performance	32
4.2.1 Human Resource Management (HRM)	32
4.2.2 Production and Operational Management	33
4.2.3 Facility and Infrastructure Management	34
4.2.4 Risk Management	35
4.3 Financial Performance	39
4.3.1 Actual Income Statement (Profit and Loss Report) for the Period of 1 November 2024 – 31 March 2025	39
4.3.2 Projected Income Statement for a 3-Year Period	41
4.3.3 Actual Balance Sheet Report 1 November 2024 – 31 March 2025	42
4.3.4 Quantitative Business Feasibility Report	43
4.3.5 Cash Flow Statement	46
V CONCLUSION AND SUGGESTIONS	48
5.1 Conclusion	48
5.2 Suggestions	48
REFERENCES	49

LIST OF TABLES

1	Production Capacity Based on Hatchery Facility Area at the Milkfish Farming Site in Nusa Sagara Marine Farm	4
2	Production Capacity by Facility Availability at Nusa Sagara Marine Farm	5
3	Investment Costs for Milkfish Farming Business at Nusa Sagara Marine Farm	13
4	Fixed Costs on Milkfish Farming Business in Nusa Sagara Marine Farm	20
5	Variable Costs in Milkfish Farming Business in Nusa Sagara Marine Farm	21
6	Activity Schedule of Milkfish Aquaculture Operations at Nusa Sagara Marine Farm	26
7	Fertilization Rate of Milkfish Eggs from Several Cycles at Nusa Sagara Farm	27
8	Hatching Rate of Milkfish Larvae from Several Cycles at Nusa Sagara Farm	28
9	Survival Rate of Milkfish Larvae Reared for 30 Days Across Multiple Cycles at Nusa Sagara Marine Farm	28
10	Water Quality in Milkfish Larval Rearing Tanks at Nusa Sagara Marine Farm	29
11	Water Quality in <i>Nannochloropsis</i> sp. Culture Tanks at Nusa Sagara Marine Farm	29
12	Water Quality of Zooplankton Culture Tanks (<i>Rotifera</i> sp.) at Nusa Sagara Marine Farm	30
13	Density of <i>Nannochloropsis</i> sp. in Three Main Units at Nusa Sagara Marine Farm	31
14	Density of <i>Rotifera</i> sp. in Two Main Units: The <i>Rotifera</i> sp. Culture Tank and the Larval Rearing Tank at Nusa Sagara Marine Farm	31
15	SWOT Analysis of Milkfish Larvae Hatchery Business at Nusa Sagara Marine Farm	37
16	Analysis of Strategic Planning of the QSPM Method of Milkfish Products in Nusa Sagara Marine Farm	38
17	Income Statement (Profit and Loss Report) on Milkfish Larvae Hatchery Business November 2024–March 2025 in Nusa Sagara Marine Farm	40
18	Projected Income Statement of Milkfish Hatchery Operations at Nusa Sagara Marine Farm for the Period April 2025 – December 2027	42
19	Projected Actual Balance Sheet Report for Milkfish Farming Business for the Period November 2024-March 2025 in Nusa Sagara Marine Farm	43
20	Quantitative Feasibility Report of Milkfish Larvae Business in Nusa Sagara Marine Farm	44
21	Cash Flow Report on Milkfish Hatchery Business for 1 Operating Year at Nusa Sagara Marine Farm	46
22	Projected Profitability Report (Business Analysis) of the Milkfish Fry Hatchery Business at Nusa Sagara Marine Farm	47



LIST OF FIGURES

1	Location Map of the Milkfish Farming Site at Nusa Sagara Marine Farm, Buleleng, Bali	3
2	Milkfish Egg Hatching Tanks at the Nusa Sagara Marine Farm Hatchery	4
3	Milkfish (<i>Chanos chanos</i>)	6
4	Filter Bag in the Hatching and Larval Rearing Tank for Milkfish at the Nusa Sagara Marine Farm Hatchery	7
5	Production Flow at the Milkfish Farming Site in Nusa Sagara Marine Farm	10

LIST OF APPENDICES

1	SWOT Analysis on Milkfish Larvae Hatchery Business in Nusa Sagara Marine Farm	58
2	Assessment of the Weight of Internal Strategic Factors of Milkfish Larvae Hatchery Business in Nusa Sagara Marine Farm	61
3	IFE Matrix Milkfish Larvae Hatchery Business in Nusa Sagara Marine Farm	61
4	Assessment to the Weight of External Strategic Factors of Milkfish Larvae Hatchery Business in Nusa Sagara Marine Farm	65
5	EFE Matrix of Milkfish Larvae Hatchery Business in Nusa Sagara Marine Farm	65