PROJECT REPORT ON
BIOFLOC FISHERY FARMING
(7 Tanks)

Subbmited By:

Promoter Name
Xxxxxxxxxxxxxxxxxx

Project Location
xxxxxxxxxxxxxxxxxxxx

Prepared by:
Download Project Report.com
1187/67, Ground Floor, Gruhalaxmi,
J.M. Road, near Balgandharva Chowk,
Pune, Maharashtra 411005.

C O N T E N T S

I. PROMOTER DETAILS

1. Promoter Name : xxxxxxxxxxx
2. Address :xxxxxxxxxxxx
3. Date of Birth :xxxxxxxxxxxx
4. Mob. No :xxxxxxxxxxxx
5. Educational Qualification :xxxxxxxxxxxx
6. Project Location :xxxxxxxxxxxx
7. Constitution :xxxxxxxxxxxx
8. Experience :xxxxxxxxxxxx

II. PROJECT DESCRIPTION

1. Introduction/Background

The global population is expected to grow by another 2 billion to reach 9.6 billion people by 2050, and the demand for animal protein is increasing and it is a challenge of feeding our planet by safeguarding its natural resources for future generations. In this context, aquaculture plays a key role in promoting health by providing animal protein as well as generating jobs and economic opportunities. According to FAO, the world food fish aquaculture production expanded at an average annual rate of 6.2% in the period 2000–2012 from 32.4 MMT to 66.6 MMT.

BFT is considered the new "blue revolution" since nutrients can be continuously recycled and reused in the culture medium, benefited by the minimum or zero-water exchange. Bio-floc technology (BFT) is as an environmentally friendly aquaculture technique based on in situ microorganism production. Bio-floc is the suspended growth in ponds which consist of aggregates of living and dead particulate organic matter, phytoplankton, bacteria and grazers of the bacteria. It is the utilization of microbial processes within the tank/pond itself to provide food resources for culture organism while at the same time acts as a water treatment tank. Thus, this system is also called as active suspension ponds or heterotrophic ponds or even green soup ponds.

IMPORTANCE OF BIO-FLOC SYSTEM

Bio-floc system is a wastewater treatment which has gained vital importance as an approach in aquaculture.The higher C: N is maintained through the addition of carbohydrate source (molasses) and the water quality is improved through the production of high quality single cell microbial protein. In such condition, dense microorganisms develop and function both as bioreactor controlling water quality and protein food source. Immobilization of toxic nitrogen species occurs more rapidly in bio-flocs because the growth rate and microbial production per unit substrate of heterotrophs are ten-times greater than that of the autotrophic nitrifying bacteria. This technology is based on the principle of flocculation within the system.

COMPOSITION AND NUTRITIONAL VALUE OF BIO-FLOC

Bio-floc is a heterogeneous aggregate of suspended particles and variety of microorganisms associated with extracellular polymeric substances. It is composed

of microorganisms such as bacteria, algae, fungi, invertebrates and detritus, etc. It is a protein-rich live feed formed as a result of conversion of unused feed and excreta into a natural food in a culture system on exposure to sunlight. Each floc is held together in a loose matrix of mucus that is secreted by bacteria and bound by filamentous microorganisms or electrostatic attraction. Large flocs can be seen with the naked eye, but most of them are microscopic. Floc size range from 50 – 200 microns.

A good nutritional value is found in bio-floc. The dry weight protein ranges from 25 – 50 percent, fat ranges 0.5 – 15 percent. It is a good source of vitamins and minerals, particularly phosphorous. It also has an effect similar to probiotics. The dried bio-floc is proposed as an ingredient to replace the fishmeal or soybean in the feed.

1. BENEFITS OF BIO-FLOC CULTURE SYSTEM

- Eco-friendly culture system.
- It reduces environmental impact.
- Improves land and water use efficiency
- Limited or zero water exchange
- Higher productivity (It enhances survival rate, growth performance, feed conversionin the culture systems of fish).
- Higher biosecurity.
- Reduces water pollution and the risk of introduction and spread of pathogens
- Cost-effective feed production.
- It reduces utilization of protein rich feed and cost of standard feed.
- It reduces the pressure on capture fisheries ie., use of cheaper food fish and trash fishfor fish feed formulation.

2. OBJECTIVES:

- To promote high yielding intensive fish farming in small area using BFT
- To encourage farmers and unemployed youth into income earning through small scalethrough BFT

3. STEPS TO SET UP

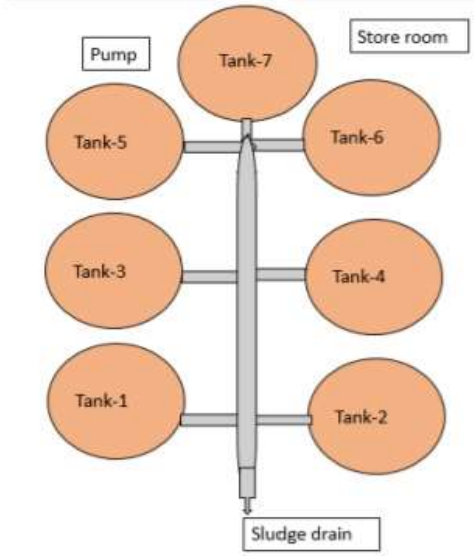
- Identification of suitable site and setting up of tanks
- Development of inoculum (Pond soil- 20gm/L, Ammonium Sulphate -10mg/L, Carbon Source-200mg/L). Development may take 10-30 days to attain 20-25mg/l imhoff reading
- Procure fish fingerlings and Stocking
- Feeding and management
- Periodical addition of carbon supplements (maintained at C:N ratio of 15:1)
- Periodical removal of bottom sludge and refill

5. MILESTONES AND TIMELINES (month-wise)

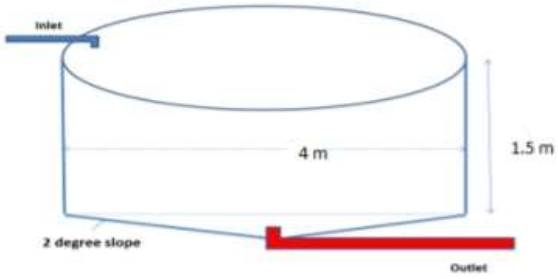
Milestone	**Activity in Month**											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Identification of suitable site												
Setting up of tanks												
Development of inoculum												
Procure fish fingerlings												
Stocking of seed												
Culture, feeding and management												
Harvest & Marketing												

6. LAYOUT AND DESIGNS

Layout and Design



Cross section of one tank



15

CHAPTER- III
ECONOMICS OF THE PROJECT

Rs. In Lacs

A. PROJECT PROFILE

Sr. No.	PARAMETERS	VALUE
1	Unit Size	7 Tanks
2	Product	Chilapi Fishes
3	Cost of the project	7.50
4	Term loan from Bank (75%)	5.63
5	Beneficiary contribution (25%)	1.88
6	Subsidy entitlement @ 60%	4.50
7	Financial Indicators	
	BC R	1.30 :1
	N P W 15% (Rs.)	6.89
	I R R %	57.54
8	Average DSCR	2.2
9	Interest Rate (% per annum)	12.00
10	Repayment	5 years

B. TOTAL COST OF PROJECT *Rs. In Lacs*

Sr. No.	Component	Nos	Cost (Rs)	Total
	I. Capital Cost			
1	Setup of Tarpaulin/Fibre Inlet & Outlet material, Aeration System , Testing Kits, Water	7 Tanks		4.70
			Total	**4.70**
	II. Input cost for one crop			
1	Seed cost(including transport cost)	5/- each fingerling	20000 @800 per	1.00
2	Feed (including transport cost)	2500 kg	40	1.00
3	Probiotics, molasis and raw salt etc	LS	3000/per tank	0.21
4	Test kits (water quality and bio-floc quantity)	LS	20,000	0.20
5	Power charges	LS		0.39
			Total cost per one crop	**2.80**
			Grand Total	**7.50**

Rs. In Lacs

C. MEANS OF FINANCE

Sr. No.	Particular	Amount in Rs.
1	Term loan from Bank (75%)	5.63
2	Beneficiary contribution (25%)	1.88
	TOTAL	**7.50**
3	Total project cost considered for subsidy under Pradhan Mantri Matsya Sampada Yojana (PMMSY)	7.50
	Subsidy entitlement @ 60%	4.50

Rs. In Lacs

D. PROJECTION OF PERFORMANCE & PROFITABILITY

I. INCOME

Sr. No.	Particular	I year	II year	III year	IV year	V year
1	Income from one crop (within 6 months)					
	Number of Fishes @ 800 per tank * 7 tanks	5,600	5,600	5,600	5,600	5,600
	Mortality 10%	560	560	560	560	560
	Fishes available for sell (Nos.)	5,040	5,040	5,040	5,040	5,040
	Fish Production (KG.) @ 750 gram weight per fish	3,780	3,780	3,780	3,780	3,780
	Income from Fishes @ Rs. 100 per KG.	3.78	3.78	3.78	3.78	3.78
2	Income from Two crops (per annum)	7.56	7.56	7.56	7.56	7.56
3	Subsidy	0	0	0	0	4.50
4	Intest on Subsidy @ 6%	0.27	0.27	0.27	0.27	0.00
	TOTAL (A)	**7.83**	**7.83**	**7.83**	**7.83**	**12.06**

II. EXPENDITURE

Sr. No.	Particular	Unit	Unit cost	I year	II year	III year	IV year	V year
1	For one crop							
a	Seed cost(including transport cost)	5/- each fingerling	20000 @800per tank	1.00	1.00	1.00	1.00	1.00
b	Feed (including transport cost)	2500 kg	40	1.00	1.00	1.00	1.00	1.00
c	Probiotics, molasis and raw salt etc	LS	3000/per tank	0.21	0.21	0.21	0.21	0.21
d	Test kits (water quality and bio-floc quantity)	LS	20,000	0.20	0.20	0.20	0.20	0.20
e	Power charges	LS	-	0.39	0.39	0.39	0.39	0.39
	Total expenditure for one crop			2.80	2.80	2.80	2.80	2.80
2	For two crop			5.60	5.60	5.60	5.60	5.60
	TOTAL(B)			**5.60**	**5.60**	**5.60**	**5.60**	**5.60**
III.	**NET INCOME**	**TOTAL (A-B)**		**2.23**	**2.23**	**2.23**	**2.23**	**6.46**

Rs. in Lacs

E. Financial Analysis

Particulars		I year	II year	III year	IV year	V year
Capital Costs		4.70				
Recurring cost		5.60	5.60	5.60	5.60	5.60
Total Cost		**10.30**	**5.60**	**5.60**	**5.60**	**5.60**
Benefit		7.83	7.83	7.83	7.83	12.06
Depreciated value of buildings @ 10%						2.75
Depreciated value of machinery & equipments @ 15%						0.00
Total Benefit		**7.83**	**7.83**	**7.83**	**7.83**	**14.81**
Net Benefit		**-2.47**	**2.23**	**2.23**	**2.23**	**9.21**
Discounting Factor@ 15%		0.87	0.76	0.66	0.57	0.50
NPV cost at 15% DF		8.96	4.26	3.70	3.19	2.80
NPV benefits at 15% DF		6.81	5.95	5.17	4.46	7.41
NPW at 15% DF	**6.89**					
BCR at 15% DF	**1.30 :1**					
IRR %	**57.54**					

F. Term Loan Repayment

Rate of interst - % per annum **:** 12.00

Opening balance of term loan **:** 5.63 *Rs. In Lacs*

Year	Loan Outstanding	Net Income	Principal	Interest	Total Repayment	Net Surplus	DSCR
1	5.63	2.23	1.13	0.68	1.80	0.43	1.2
2	4.50	2.23	1.13	0.54	1.67	0.57	1.3
3	3.38	2.23	1.13	0.41	1.53	0.70	1.5
4	2.25	2.23	1.13	0.27	1.40	0.84	1.6
5	1.13	6.46	1.13	0.14	1.26	5.20	5.1
						Avg. DSCR	**2.2**