

MODEL PROJECT REPORT

ON

INTEGRATED FARMING

(1 ACRE PISCICULTURE + 10 CB COWS)

PISCICULTURE

Fish as Protein is an essential ingredient of human food. It is also particularly essential for growing children both for their physical and mental growth. Protein deficiency leads to several diseases in human beings particularly children. Among sources of protein, fish is the cheapest and most easily digestible animal protein and was obtained from natural sources from time immemorial for consumption by human beings. Fish grows naturally in rivers and ponds but can also be produced under artificial conditions. However, due to over exploitation and pollution, the availability of fish in natural waters have declined considerably forcing scientists to adopt various methods to increase its production. Fish farming in controlled or under artificial conditions has become the easier way of increasing the fish production and its availability for consumption. Small entrepreneurs/farmers can easily take up fish culture in village ponds, tanks or any new water body and can improve their financial position substantially. It also creates gainful employment for skilled and unskilled youths.

The area under tanks and ponds available for warm fresh water aquaculture is estimated to be 2.41 million ha. This shows the tremendous scope for fish culture in the country. Only 15 % of the potential area of tanks and ponds available is developed so far, showing immense possibilities for fish culture. Odisha also has a tremendous potential for development of fisheries activities including expansion of water area and commercial fish production due to its conducive climate and water availability.

Composite Pisciculture is adopted for getting maximum fish production from a pond or a tank through utilization of available food organisms supplemented by artificial feeding. Normally, the major species selected for composite fish culture are Catla, Rohu, Mrigal, other exotic varieties including minor carps and freshwater prawn.

DAIRY FARMING

INTRODUCTION

Dairy farming from being a traditional family run business, today has grown hugely to an organized dairy industry with technological specializations in every part of the process. There has been tremendous growth in dairy farming sector in terms of technological advancement that help the modern dairy farms to manage thousands of dairy cows and buffaloes. This huge boost in the industry has created a lot of farming jobs for the people. But many of the dairy farms still manage and run organic dairy farms mostly in villages and supply the milk to get processed by large companies and finally sell to the retail outlets. The best approach is to create and run a sustainable dairy farm that gives maximum profits to the farm and also takes care of the effects of dairy farms on environments and animals for a longer period. Though a profitable business venture dairy farming in India requires hard work, proper planning and an active and very alert managers and supervisors. In today's technological world there have been many advances in modern dairy farming. Everything from feed for dairy cows to milk processing equipment have added tremendous scope to the dairy farming industry. Milk plays an important essential food for human life, since babyhood to end of elderly life. Milk is a complex food that contains vital nutrients for the bodies of young mammals. Milk is the only food of the mammal during the first period of its life and the substances in milk provide energy and

antibodies that help protect against infection. For humans, milk and dairy products make a significant contribution to meeting our bodies' needs for calcium, magnesium, selenium, riboflavin, vitamin B12 and pantothenic acid (vitamin B5) and therefore play a key role for health and happiness in our development.

ECONOMICS OF THE PROJECT

Integrated farming gives good returns for the amount invested, time and energy spent and labour involved. Small & marginal farmers, agricultural labourers, start-up entrepreneurs etc. can opt for Integrated farming in a small & medium scale to earn a good amount of income from this source.

A model economics for integrated farming with 1 Acre Pisciculture & 10 Cross bred cows is given below. This is indicative and applicable input and output costs and the parameters observed at the field level may be incorporated. An entrepreneur willing to establish a dairy farm of 10 numbers of cross bred cows & 1 Acre Pisciculture can refer this project report and customize the same as per the local condition, since the Techno-Economic parameters may differ on a case by case basis.

This project report is prepared as per the following assumptions:-

PROJECT AT A GLANCE

SI No	PARTICULARS	UNIT	PARAMETERS
1	Category of the Project		ARD
2	Type of the Project		INTEGRATED FARMING
3	Unit Size	No	1 Acre Pisciculture & 10 CB Cows
4	Product		Milk & Fish
5	Total Cost of the Project	Rs.	1,412,665
6	Bank Loan	Rs.	1,059,499
7	Promoter's contribution	Rs.	353,166
8	Financial Indicators		
	BCR at 15% DF	Ratio	1.28
	NPW 15% DF (Rs)	Rs.	1,139,402
	IRR (%)	%	21%
9	Interest Rate	%	11%

A. ECONOMICS OF INTEGRATED PROJECT

PISCICULTURE(1 ACRE)

Detailed estimate for Excavation/Renovation of Tank											
	Area of the Tank	1.00	Acre		Size of the Tank	1	acre		1.2		
1	CAPITAL COST										
		Details with specification									Total Cost (Rs.)
	Details with specification										
	Earth work										
	In ordinary soil	80.00	Mt	X	50.00	Mt	x	0.30	Mt	1,200.00	CuM
		78.80	Mt	X	48.80	Mt	x	0.30	Mt	1,153.63	CuM
		77.60	Mt	X	47.60	Mt	x	0.30	Mt	1,108.13	CuM
									Total	3,461.76	CuM
		or Say	3,462	Cum @ Rs.	40	per CuM					138,470
	In hard soil	76.40	Mt	X	46.40	Mt	x	0.30	Mt	1,063.49	CuM
		75.20	Mt	X	45.20	Mt	x	0.30	Mt	1,019.71	CuM
		74.00	Mt	X	44.00	Mt	x	0.30	Mt	976.80	CuM
									Total	3,060.00	CuM
		or Say	3,060	Cum @ Rs.	40	per CuM					122,400
	Provision for inlet / outlet					LS					5,000
	Farm equipments and miscellaneous					LS					10,000
	Land development / Grass turfing					LS					5,000
	TOTAL										280,870

2	RECURRING COST (CAPITALIZED FOR ONE YEAR)												
	Articles		Unit	Specific ations			Unit Cost (Rs. / Unit)		Total Cost (Rs.)				
	Fertilizers												
	Lime		Kgs	400			6		2,400				
	Single super phosphate		Kgs	125			8		1,000				
	Urea		Kgs	90			8		720				
	Litter/ Raw Cow dungs (RCD)		Tone s	4			1000		4,000				
	Seed												
	Fingerlings (80 mm above)		nos	2200			5		11,000				
	Hatchery FW prawn seed		nos	2000			1		2,000				
	Minor / exotic carp intercropping		nos	1000			1		1,000				
	Feed												
	Pellet feed		kgs	3000			22		66,000				
	Prawn feed		kgs	225			30		6,750				
	Miscellaneous												
	Medicines & Chemicals		Ha	0.4			5000		2,000				
	Harvesting expenses		Ha	0.4			5000		2,000				
	Miscellaneous expenses		Ha	0.4			5000		2,000				
	TOTAL								100,870				
3	HORTICULTURE (PAPAYA, BANANA, DRUMSTICK AND OTHER CASH CROPS)							LS		20,000			
	GRAND TOTAL								401,740				

PROFITABILITY STATEMENT

Articles	Specification				1	2	3	4	5	6	7
Sale of Fish @ 2000 kg per acre	2000	kg	110	1	-	220,000	220,000	220,000	220,000	220,000	220,000
Sale of Minor/Exotic carps 400 Kg./acre	400	kg	120	1	-	48,000	48,000	48,000	48,000	48,000	48,000
Sale of Prawn @ 100 Kg./acre	100	kg	200	1	-	20,000	20,000	20,000	20,000	20,000	20,000
Receipts from Horticulture in Embankments		LS			30,000	30,000	30,000	30,000	30,000	30,000	30,000
TOTAL					30,000	318,000	318,000	318,000	318,000	318,000	318,000
EXPENDITURE											
Annual expenses for pisciculture					-	100,870	100,870	100,870	100,870	100,870	100,870
Annual costs of horticultural crop on embankment					20,000	20,000	20,000	20,000	20,000	20,000	20,000
TOTAL					20,000	120,870	120,870	120,870	120,870	120,870	120,870

DAIRY(10 CB COWS)

A	TECHNO ECONOMIC PARAMETERS		
Sl. No.	Parameters	UoM	Value
CB Cows/ Graded Buffalos			
1	CAPITAL INVESTMENT		
I	Land	Acre	
a	Cost of land development / acre	Rs.	10000
b	Cost of fencing / acre	Rs.	15000
II	Civil Construction		
a	Cost of shed construction / sq.ft.	Rs.	230
b	Cost of store room construction / sq.ft.	Rs.	250
III	Water Supply system		
a	Borewell / Tubewell	Rs.	90000
b	Pump & Pipe line	Rs.	20000
c	Sump / Over head Tank	Rs.	10000
IV	Animal Cost		
a	Cost of animal/ Cow (Rs.)		40000
b	Cost of culled animals/ Culled animal		10000
V	Electrification		
a	Cost of electrification (as % of civil cost)	percentage	2.5%
VI	Plant & Machinery		
a	Cost of equipment / Animal	Rs.	1000
b	Cost of chaff cutter(power operated)		50000
2	RECURRING EXPENDITURE/BATCH		
a	Cost of feed / kg	Rs.	25
b	Cost of medicine/ animal/ Year	Rs.	100
c	Veterinary aid/animal/year		1000
d	Quantity of conc Feed/Bag in Kg		50
f	Cost of dry fodder/kg		2
g	Cost of green fodder/kg		1
h	No of labourers		1
i	Salary of labourer/month		6000
j	Cost of fodder cultivation/ Acre		5000
k	Cost of electricity /animal/year		600

2	No of animals		10
3	No of animals/batch		5
4	Tranportation cost/animal		1500
5	Quantity of conc Feed/Bag in Kg		50
7	Average milk yeld(ltr/day)		10
8	Floor space(sq.ft/adult animal)		50
9	Floor space(sq.ft/calf)		20
10	Store room(sq.ft)		100
11	Insurance premium/annum (%)		5%
12	Selling price of milk/liter(Rs.)		32
13	Sale price of gunny Bag(Rs.)		20
14	Sale price of Manure/Tonne		Used in fodder cultivation and pond
15	Lactation days(nos)		270
16	Dry days(nos)		150

LACTATION CHART/ANIMAL				
Year	1st Batch		2nd Batch	
	Lactation Days	Dry Days	Lactation Days	Dry Days
1st Year	240	30	90	0
2nd Year	240	120	210	150
3rd Year	210	150	240	120
4th Year	210	150	270	90
5th Year	210	150	270	90
6th Year	210	150	270	90
7th Year	210	150	270	90

FEEDING SCHEDULE					
		Lactation		Dry	
Type of Feed	Rate/Kg (Rs.)	Quantity	Cost/day	Quantity	Cost/day
Conc. feed/animal/day	25	5	125	2	50
Green fodder/animal/day	1	30	Own grown	20	Own grown
Dry fodder/animal/day	2	4	8	5	10
Total			133		60

TOTAL CONCENTRATE FEED CONSUMED(Kgs)				
Year	Lactation	Dry	Total	No of gunny bags
1st Year	8250	300	8550	171
2nd Year	11250	2700	13950	279
3rd Year	11250	2700	13950	279
4th Year	12000	2400	14400	288
5th Year	12000	2400	14400	288
6th Year	12000	2400	14400	288
7th Year	12000	2400	14400	288

PROJECT COST of 10 CB COWS		
A	CAPITAL INVESTMENT	
	Particulars	Total cost (Rs)
1	Land	
a	Land Development(LS)	10,000
b	Fencing (LS)	15,000
		25,000
2	Civil Construction	
a	animal Shed	230,000
b	Calf Shed	46,000
c	Store room	25,000
		301,000
3	Water Supply system	
a	Borewell / Tubewell(LS)	90,000
b	Pump & Pipe line	20,000
c	Sump / Over head Tank(LS)	10,000
		120,000
4	Electrification	
a	Installation & Fitting (LS)	7,525
		7,525
5	Plant & Machinery	
a	Equipment	10,000
b	Other required equipments (Chaff cutter)	50,000
		60,000
6	Animal & Plant cost	
	Dairy (Including Transportation cost)	415,000
		415,000
7	Miscellaneous	
	Insurance Premium of Assets :---	
	i. Livestocks	20000
	Perennial Fodder Cultivation(LS)	5000
		25000
	Total Capital Cost	953,525
B	Recurring Expenditure upto trial Production (not Eligible for CIS)	
a	Cost of feed for 1 month for 1st batch	39900
b	Cost of Medicine for 1 Year	1000
c	Veterinary & vaccination for 10 cows for 1 Year	10000
d	Labour charges for 1 month	6000
e	Electric & Misc. expenses for 1 month	500
	Total Recurring expenditure to be capitalized	57400
C	TOTAL PROJECT COST	1,010,925

PROFITABILITY STATEMENT	Years						
	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year
Sale of Milk	528000	720000	720000	768000	768000	768000	768000
Sale of Gunny Bags	3420	5580	5580	5760	5760	5760	5760
TOTAL BENEFIT	531420	725580	725580	773760	773760	1448640	1448640
Cost of feeding during lactation	219450	299250	299250	319200	319200	319200	319200
Cost of feeding during dry period	9000	81000	81000	72000	72000	72000	72000
Cost of Medicine	1000	1000	1000	1000	1000	1000	1000
Veterinary & breeding charges	10000	10000	10000	10000	10000	10000	10000
Labour charges	72000	72000	72000	72000	72000	72000	72000
Electric & Misc. expenses	6000	6000	6000	6000	6000	6000	6000
Insurance charges	20,000	20,000	20,000	20,000	20,000	20,000	20,000
TOTAL RECURRING COST	337450	489250	489250	500200	500200	500200	500200

TOTAL PROJECT COST OF ALL ENTERPRISES				
A	CAPITAL INVESTMENT			
	Particulars/sector	Dairy	Pisciculture	Total
1	Land			
a	Land Development	10,000	5,000	15,000
b	Fencing	15,000	0	15,000
		25,000	5,000	30,000
2	Civil Construction			
a	Shed	276,000		276,000
b	Store Room	25,000		25,000
		301,000	-	301,000
3	Water Supply system			
a	Borewell / Tubewell	90,000		90,000
b	Pump & Pipe line	20,000		20,000
c	Tank / Over head Tank	10,000	260,870	270,870
		120,000	260,870	380,870
4	Electrification			
a	Installation & Fitting	7,525		7,525
		7,525	-	7,525
5	Plant & Machinery			
a	Equipment & machinery	10,000	15,000	25,000
b	Other required equipments	50,000	0	50,000
		60,000	15,000	75,000
6	Animal & Plant cost			
	Dairy	415,000		
		415,000	-	415,000
7	Miscellaneous			
	i. Livestocks	20000		20000
	Perennial Fodder Cultivation	5000		5000
		25000		25000
	Total Capital Cost	953,525	280,870	1,234,395

B	Recurring Expenditure upto trial Production (not Eligible for CIS)			
a	Raw Material (Food, Seeds, Medicines, Fertilizers, Chemicals, etc)	50,900	120,870	171,770
b	Salary / labour	6,000	0	6,000
c	others	500	0	500
	Total Recurring Expenditure	57,400	120,870	178,270
C	TOTAL PROJECT COST	1,010,925	401,740	1,412,665

B. MEANS OF FINANCE

Projects	Project Cost	Debt	Owner's Contribution
	Amount	75%	25%
Pisciculture			
Capital Cost	280870		
Recurring Cost	120870		
TOTAL	401740	301305	100435
Dairy			
Capital Cost	953525		
Recurring Cost	57400		
TOTAL	1010925	758194	252731
GRAND TOTAL	1412665	1059499	353166

C. PROJECTED PROFITABILITY STATEMENT							
	YR-1	YR-2	YR-3	YR-4	YR-5	YR-6	YR-7
A. Revenue							
Pisciculture	30000	318000	318000	318000	318000	318000	318000
Dairy	531420	725580	725580	773760	773760	1448640	1448640
Total	561420	1043580	1043580	1091760	1091760	1766640	1766640
B. Operating costs							
Pisciculture	20000	120870	120870	120870	120870	120870	120870
Dairy	337450	489250	489250	500200	500200	500200	500200
Total	357450	610120	610120	621070	621070	621070	621070
C. Operating profit/PBDIT							
Pisciculture	10000	197130	197130	197130	197130	197130	197130
Dairy	193970	236330	236330	273560	273560	948440	948440
Total	203970	433460	433460	470690	470690	1145570	1145570
D. Interest	87409	104405	84981	65557	46132	26708	7284
E. Depreciation	34,303	31,625	29,177	26,939	24,890	23,014	21,295
Net Benefit	82259	297430	319302	378195	399668	1095848	1116991