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Part Two

MARCH 1990

NATIONAL SYMPOSIUM ON RESEARCH AND DEVELOPMENT IN MARINE FISHERIES

MANDAPAM CAMP
16-18 September 1987

Papers Presented
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(Indian Council of Agricultural Research)
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AN ECONOMIC ANALYSIS OF PRAWN CULTURE IN ANDHRA PRADESH-SOME PRELIMINARY FINDINGS

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ABSTRACT

Inadequate supply of quality seed is one of the chief constraints that impedes the quick development of prawn culture. Estuaries still remain the largest source of prawn seed supply. They are likely to remain so atleast for sometime in offing before the hatchery production of seeds is undertaken commercially and massively. The Marine Products Export development Authority assists the prawn farmers in setting up prawn seed banks by providing technical assistence on prawn culture, undertaking site selection and farm surveys, preparing project reports for submitting to the banks to get financial assistance, releasing subsidy to the tune of 15% on the capital cost of the project and providing continued technical assistance throughout the culture period. Already some prawn farmers have started establishing such prawn seed banks and supplying prawn seed commercially. This paper presents and discusses results of case studies on the economic feasibility of setting up prawn seed banks by fish farmers/prawn farmers.

INTRODUCTION

The export of Indian Marine Products earned Rs. 4,607 million during 1986-87. It registered more than elevenfold increase over Rs. 400 million earned during 1971. Frozen Prawns continued to be the main item of the export accounting for a share of 57.32 per cent (49203 tonnes) in terms of quantity and 82.03 per cent (Rs. 3,779.3 million) in terms of value. India is no longer the largest producer of prawns and production from marine capture fisheries is claimed to have levelled off possibly due to economic over fishing, if not biological over fishing. Obviously, increased production of prawn is possible through aquaculture only. However, traditional forms of prawn culture occupy about 43000 ha and produce 15000 to 17000 MT of prawns annually. Major production areas are Kerala and West Bengal and Andhra-Pradesh is coming up fast to join the line. Timely availability of adequate credit is one of the crucial needs for development and adoption of prawn culture. But commercial banks are wary of releasing loans for farming operations for want of information on the economic viability of the project. Since prawns command high unit value realisation, and prawn culture operations are generally promising, availability of information on its economics would go a long way in motivating individuals and big firms to take up prawn culture on a large scale. Hence the present study was undertaken to investigate the economics of prawn culture in a 1 ha pond in Andhra Pradesh.

The Status of Prawn Culture in Andhra Pradesh

Prawn culture operations in the state commenced in late seventies. The initial tempo receded in early eighties due to poor returns since most of the farms suffered from technical and physical defects. The adoption of prawn culture operations showed rapid development in the last couple of years. However, only improved extensive culture technique is widely followed. Since the results are encouraging, this tempo is likely to gain momentum, further, which may lead to adoption of semi-intensive culture technique in due course. Such a change is expected to ensure higher returns and desirable also.

Table - 1. *Abstract Estimate* (W.S.A.=0.75 ha)

Sl. No.	Description	Quantity	Rate	Per	Amount
1.	Earthwork excavation in pond and formation of bunds with excavated earth with one extra lead over initial lead and lift including consolidation, formation of berms, sectioning of bunds, including supply of all labour, tools, materials etc., complete.	2350 M^3	7-50	M^3	17,625
2.	Construction of 60 cm wide open type brick masonry inlet cum outlet sluice over concrete foundation, three pairs of grooves on head walls for fixing wooden and screen shutters, plastering of all exposed surfaces with CM 1:3 etc., including supply of all materials tools, labour, etc. complete.	1 no	8000	1	8,000
3.	Temporary Shed.	1 no	L.S		500
4.	Supply of nets, buckets, screen etc.		L.S		500
					26,625
				or say	27,000

Table - 2 (a) *Salient Features of a Prawn Farming Project in Andhra Pardesh*

1.	Name and place of the project/farmer	:	K. Ramudu Tallapalem Village Machilipatnam Taluk Krishna District.
2.	Total land area	:	1.0 ha
3.	Total water spread area	:	0.75 ha
4.	No. of grow-out ponds	:	one
5.	Total Cost of the project	:	Rs. 33,060

Table 2 (b) *Economics of the 0.75 ha WSA of prawn culture pond at Tallapalem Village*

A. *Fixed Cost*

			Rs.
1.	Excavation of ponds, construction of bunds and surface dressing (abstract estimate)	:	17,625
2.	Cost of closed type outlet	:	8,000
3.	Temporary shed	:	500
4.	Other capital items (nets, buckets, velon screen etc)	:	500
5.	Depreciation of pipe outlet @ 10% on Rs. 8,000/-	:	800
6.	Depreciation on shed and other items @ 30% on Rs. 1,000/-	:	300
7.	Annual Interest @ 12.5% per annum on Rs. 26,056/-	:	3,257
8.	Preparation of pond @ Rs. 100/ha	:	75
9.	Maintenance of ponds, canals etc @ Rs. 200/ha	:	150
		Rs.	31,207

B. *Variable Cost*

		Rs.
1.	Cost of Fertilizers & lime @ Rs. 800/ha	600
2.	Cost of seed @ Rs. 70/1000 Nos for 20000/ha	1,050
3.	Cost of feed @ Rs. 2500/ha	1,875
4.	Pump hire charges Rs. 1000/ha	1,300
5.	Harvesting and Marketing charges @ Rs. 200/ha	150
6.	Labour cost - seasonal employment	500
7.	Other contigencies @ Rs. 100/ha	75
		Rs. 5,550

C. *Total Cost*

Fixed Cost	Rs. 31,207
Variable Cost	5,550
	36,757

D. *Returns*

Net Returns were worked out on the variable cost basis.

I Year income as sale proceeds of prawns @ 300/kg/ha/ crop of 50 count @ Rs. 50/kg for two crops	Rs. 30,000
Less	
Variable Cost (5500 x 2)	11,000
Repayment of 1st instalment with Interest	7,312
Items 5,6,8 & 9 of the Fixed Cost	1,325
Total (30,000-19,637)	Rs. 10,363

Table–3

Year	Income	Expenditure/Repayments				Balance
		Variable Cost	Relevant items of Fixed Cost @	Bank Instalment	Interest	
1.	30,000	11,000	1325	4055	3257	10,363
2.	30,000	11,000	1325	4400	2750	10,525
3.	30,000	11,000	1325	4400	2200	11,075
4.	30,000	11,000	1325	4400	1650	11,625
5.	30,000	11,000	1325	4400	1100	12,175
6.	30,000	11,000	1325	4400	550	12,725

@ includes annual recurring expenditures noted as item numbers: 5,6,8 & 9 in the Fixed Cost category.

The economics of prawn culture in a 1.0 ha pond having a waterspred area of 0.75 ha is presented in Tables 1 to 3.

With a moderate production of 300 kg/ha/crop, the farmer was able to meet all his loans and earn a net income of Rs. 10,363 in the first year and from second year onwards his income increased gradually. He is expected to repay all his loan to the bank in the sixth year, after which he would get a steady income of Rs. 17,675 every year. Even though the economics of prawn culture was estimated on the basis of variable cost inclusive of certain chosen items of fixed cost, a high income of Rs. 17,675 annually and the scope for stepping up the production with added experience would take care of the cost included under fixed costs, in a few years. It should also be noted that the MPEDA's subsidy on feeds was not included (50% of the feed cost).

SUMMARY AND CONCLUSION

The present economic investigation conclusively showed that a farmer can obtain promising revenue by undertaking prawn culture. The minimum subsidy of 15% made available by the MPEDA for prawn culture was considered whereas the BFDA extends high subsidy to the tune of 25%. With passage of years, production can be increased remarkably. It seems that a break through in producing pond-raised prawns is possible since every governmental and non-governmental agency besides the private sector, is competing with each other in developing prawn culture. What is required is a well-knit, co-ordinated approach in ensuring timely and adequate availability of inputs like quality seed, feed equipments, credit, chemicals for tackling diseases, that would result in massive adoption of the technology. Then it could be followed-up with increasing the unit production, keeping the cost of production low and ensuring a balance in the environment.