

An Economic Analysis of Fish Farming in Haryana

Suraj Choudhary¹, Neeraj Pawar², V. P. Luhach², Dalip Kumar Bishnoi², Jitender Bhatia² and Sumit³

1. Ex. M.Sc. Student, Department of Agricultural Economics, CCS HAU, Hisar

2. Faculty member of Department of Agricultural Economics, CCS HAU, Hisar

3. Ph.D. Student, Department of Agricultural Economics, CCS HAU, Hisar

E-mail: npawar70@gmail.com

Abstract

The present study was carried out with objectives to work out economics of fish farming in Haryana. As per Department of Fisheries, Haryana is divided into four divisions i.e. Guru gram (Gurgaon), Rohtak, Ambala and Hisar. From each division one district was selected on the basis of highest area and fish production. District Karnal, Kaithal, Hisar and Nuh (Mewat) were selected from each division. From each selected district, ten fish farmers were selected randomly. Thus total forty respondents were interviewed for the study. The study revealed that costs of production per hectare as well as per quintal were observed as Rs. 131869 and Rs. 2289, respectively. The gross returns were estimated to Rs. 411179 per hectare and Rs. 7106 per quintal. The overall net returns per hectare as well as per quintal were Rs. 279310 and Rs. 4825, respectively. The overall B: C ratio of fish farming was maximum (3.35) in Karnal. Thus it was concluded from the study that fish farming may be economically viable enterprises for farmers of Haryana state.

Key words: Economic Development, Cost of Production, Returns, Productivity and B:C Ratio.

Introduction

In India, at present 38 per cent of population is seriously suffering from malnutrition and protein deficiency. Therefore, fish farming has to play an important role to meet out the nutritional requirements of Indian population, because it is a rich source of vitamin A, D and E. Fish oil has also more unsaturated fatty acids than animal fat. Since polyunsaturated fatty acids are beneficial in keeping down cholesterol level of blood, fish and fish oil are considered useful in this regard also. Besides, fish is fairly a good source of calcium, phosphorus, iodine and other elements. Keeping in view the importance fish farming for the state, study on fish farming in Haryana has been undertaken^[1].

Material and Methods

The present study was conducted in Haryana state. As per Department of Fisheries, Haryana is divided into four divisions i.e. Guru gram (Gurgaon), Rohtak, Ambala and Hisar. From each division one district were selected on the basis of highest area and fish production. From each selected district, ten fish farmers were selected randomly. The primary data were collected from the farmers in the selected districts. For primary data collection, a sample of 40 fish producers, 10 farmers from each district i.e. Karnal, Kaithal, Hisar and Nuh (Mewat) were selected. Primary data were collected by conventional survey method on a well structured and pre-tested schedule through personal interview. Data regarding cost of production as well as returns from the fish farming were collected and analysed statistically.

Results and Discussion

Cost of production and returns from fish farming

The results revealed that, on an average, per hectare as well as per quintal cost of production, came out to be Rs. 125092, 144905, 130204 and 127275 and Rs. 2092, 2222, 2434 and 2411, respectively. The major constituent costs per hectare for leasing pond costs Rs. 45520, 59682, 49527 and 47621, followed by labour costs (including watch and ward) were Rs. 16540, 18250, 16800 and 14691 and costs on pond preparation were Rs. 13248, 16280, 11782 and 11585 in Karnal, Kaithal, Hisar and Nuh (Mewat) districts, respectively. Other major costs of fertilizer and manure were Rs. 12470, 9560, 8451 and 13640/ha. supplementary fish

feed costs were Rs. 10320, 10439, 10240 and 10930/ha and catching of fish were Rs. 9578, 10200, 10200 and 9375/ha in Karnal, Kaithal, Hisar and Nuh (Mewat) districts, respectively.

The average per hectare fish production in Karnal, Kaithal, Hisar and Nuh (Mewat) districts were observed 59.8, 65.2, 53.5 and 52.8 respectively and the average gross income received of Rs. 419796, 472374, 374500 and 378048 respectively by the fish production. The net returns received by the farmers in Karnal, Kaithal, Hisar and Nuh (Mewat) districts were observed Rs. 294703, 327469, 244296 and 250773 per hectare, respectively. The benefit cost ratio in Karnal, Kaithal, Hisar and Nuh (Mewat) was 3.35, 3.26, 2.88 and 2.97 from fish enterprise, respectively (Table 1).

Table 1 Cost of production and return from fish farming in study area during year 2015-16

Sr. No.	Particulars	Cost of production in Karnal		Cost of production in Kaithal		Cost of production in Hisar		Cost of production in Nuh	
		(Rs./ha)	(Rs./q)	(Rs./ha)	(Rs./q)	(Rs./ha)	(Rs./q)	(Rs./ha)	(Rs./q)
1.	Leasing pond cost	45520	761	59682	915	49527	926	47621	902
2.	Water or electricity	7885	132	10420	160	12751	238	9685	183
3.	Pond preparation	13248	222	16280	250	11782	220	11585	219
4.	Fertilizer and manure	12470	209	9561	147	8451	158	13641	258
	a) Chemical fertilizer	2494	42	3824	59	3176	59	2592	49
	b) Dung	9976	167	5736	88	5275	99	11049	209
5.	Fish seed	6500	109	6870	105	7250	136	6785	129
6.	Supplementary feed	10320	173	10439	160	10241	191	10931	207
	Mustard/ G. nut cake	6708	112	7934	122	8192	153	7105	135
	Rice bran	2580	43	1462	22	1431	27	2405	46
	Others (Misc.)	1032	17	1044	16	618	12	1421	27
7.	Medicine	1607	27	1951	30	1671	31	1595	30
8.	Labour (incl. watch and ward)	16540	277	18250	280	16800	314	14691	278
9.	Equipment	1420	24	1251	19	1530	29	1365	26
10.	Catching	9578	160	10201	156	10201	191	9375	178
	Total cost	125092	2092	144905	2222	130204	2434	127275	2411
	Total production (q)	59.80		65.20		53.50		52.80	
	Rate (Rs/q)	7020		7245		7000		7160	
	Gross returns	419796	7020	472374	7245	374500	7000	378048	7160
	Net returns	294703	4928	327469	5023	244296	4566	250773	4749
	B : C ratio	3.35		3.26		2.88		2.97	

Overall cost of production and returns in Haryana

The per hectare as well as per quintal basis cost of fish production in Haryana state are presented in Table 2. The results revealed that the overall average cost of fish production per hectare as well as per quintal came out to be Rs. 131869 and Rs. 2289 respectively. The major constituent cost per hectare for leasing pond was Rs. 50587, labour cost (incl. watch and ward) was Rs. 16570 and cost of pond preparation was

Rs. 13224. Other major cost for fertilizer and manure was Rs. 11030; supplementary fish feed was Rs. 10482 and catching of fish was Rs. 9838.

The overall average production of fish was 57.83 q/ha of pond size and the average gross income received was Rs. 411179/ha. The net returns received by the farmers were Rs. 279310/ha. The benefit cost ratio was 3.12 from fish enterprise. Similar results were also observed earlier^[2,3].

Table 2: Cost of production and returns from fish farming in Haryana during 2015-16

Sr. No.	Particulars	Cost of production		Percentage
		(Rs./ha)	(Rs./q)	
1.	Leasing pond cost	50587	876	38.36
2.	Water or electricity	10185	178	7.72
3.	Pond preparation	13224	227	10.03
4.	Fertilizer and manure	11030	192	8.36
	a) Chemical fertilizer	3021	52	2.29
	b) Dung	8009	140	6.07
5.	Fish seed	6851	119	5.20
6.	Supplementary feed	10482	182	7.93
	Mustard/ G. nut cake	7484	130	5.68
	Rice bran	1969	34	1.49
	Others (Misc.)	1028	17	0.78
7.	Medicine	1706	29	1.29
8.	Labour (incl. watch and ward)	16570	224	12.56
9.	Equipment	1391	24	1.06
10.	Catching	9838	171	7.46
	Total cost	131869	2289	100.00
	Total production (q)	57.83		
	Rate (Rs/q)	7106		
	Gross returns	411179	7106	
	Net returns	279310	4825	
	B : C ratio	3.12		

Comparative cost of production and returns in different districts of Haryana

The comparative cost of production and returns from fish farming in different districts of Haryana are presented in Table 3. The results

shows that the per hectare total cost, gross returns as well as net returns were found to be highest in Kaithal district. These were Rs.144905, 472374 and 327468 per hectare, respectively. Highest cost in the district was observed due to comparatively higher leasing in cost of pond and production was also observed highest in Kaithal district as compared to other districts. Besides this, rates realized per quintal of fish produce and B: C Ratio were highest in Kaithal and Karnal districts, respectively. The B

: C ratio of Karnal district was highest (3.35) because cost of production was lower in this district so the B : C ratio showed that demand as well as fish farming was more prominent in this district.. B : C Ratio of Hisar district was observed lower due to lower gross returns as well as net returns which showed that district Hisar was far away from the main fish market i.e. Delhi market and also less local demand as well less developed market facilities in the area.

Table 3: The comparative cost of production and returns in different districts of Haryana

Particulars	Karnal	Kaithal	Hisar	Nuh (Mewat)	Haryana
Per hectare					
Total cost	125092	144905	130203	127275	131869
Total production (q)	59.8	65.2	53.5	52.8	57.83
Rate (Rs/q)	7020	7245	7000	7160	7106
Gross returns	419796	472374	374500	378048	411179
Net returns	294703	327468	244296	250772	279310
B : C ratio	3.35	3.26	2.88	2.97	3.12
Per quintal					
Total cost (Rs./q)	2091	2222	2433	2410	2280
Total production (q)					
Rate (Rs./q)					
Gross return (Rs./q)	7020	7245	7000	7160	7106
Net return	4928	5022	4566	4749	4825

Conclusion

The present study was conducted in Haryana state. As per Department of Fisheries, Haryana is divided into four divisions i.e. Gurgaon (Gurgaon), Rohtak, Ambala and Hisar. From each division one district were selected on the basis of highest area and fish production. From each selected district, ten fish farmers were selected randomly. The primary data were collected from the farmers in the selected districts. For primary data collection, a sample of 40 fish producers, 10 farmers from each district i.e. Karnal, Kaithal, Hisar and Nuh (Mewat) were selected. Primary data were collected by conventional survey method on a

well structured and pre-tested schedule through personal interview. Data regarding cost of production as well as returns from the fish farming were collected. Appropriate statistical tools were used to draw the inference of the study. The study revealed that, per hectare as well as per quintal, costs of production were observed Rs. 131869 and Rs. 2289, respectively. The gross returns were estimated to Rs. 411179 per hectare. The overall net returns per hectare as well as per quintal were Rs. 279310 and Rs. 4825 respectively. The overall B: C ratio of fish farming was 1: 3.12. Thus it was concluded from the study that fish farming may be

economically viable enterprises for farmers of the state.

References

1. Radheyshyam, G. S., Safui, L., Eknath, A. E., Adhikari, S., De, H. K., Barik, N. K. and Chandra, S. (2013). Status and economy of community fish farming in rural Odisha. *Indian Journal of Fish*, 60 (4) : 59-67.
2. Rathore, Sachin, Raghuwanshi, Sheela, Bisht, Kamini Singh, S.P. (2016). Knowledge level of farmers on fish production technology in Tikamgarh district of Madhya Pradesh. *Journal of Progressive Agriculture*, 7(01): 50-53.
3. Sateesh, Rashmi, Ambulkar, Arpila, Ghosh, Amitava, Kureel, Shivta and Keshave, Jitesh Vilas (2015). Wholesale fish market of Nagpur, Maharashtra : A case study. *Journal of Progressive Agriculture*, 5(01): 14-16.
4. Shivakumar, M., Bala, S. C., Rajanna, and Naveenkumar, B. T. (2014). Economics of seed rearing and farming of carps. *International Journal of Fisheries and Aquatic Studies*, 2 (1) : 42-45.
5. Tunde, A. B., Kuton, M. P., Oladipo, A. A., and Olanunmi, L. H. (2015). Economic analysis of costs and return of fish farming in Saki-East Local Government Area of Oyo State, Nigeria. *Journal of Aquaculture Research Development*, 6 (2) : 1-5.