Research Article

COMPARATIVE STUDIES ON THE ECONOMICS, NET RETURN AND INPUT-OUTPUT RATIO OF FISH PRODUCTION BY FISHERY COOPERATIVES, SHGS AND FISHERMEN GROUPS

THAKUR ANKIT[1]* AND GAUR SANDHYA R.[2]

[1]College of Horticulture and Research Station, Kumharawand, 494001, Indira Gandhi Krishi Vishwavidyalaya, Raipur, 492012, Chhattisgarh
[2]Department of Fisheries, College of Agriculture, Indira Gandhi Krishi Vishwavidyalaya, Raipur, 492012, Chhattisgarh
*Corresponding Author: Email - ankit999.at@gmail.com, dstigkv@gmail.com

Abstract- The present study was carried in Chhattisgarh state to know the economics of fish production by fishery cooperatives Societies, SHGs and Fishermen groups. In this Study, it was concluded that the per hectare production cost was almost similar in fishery cooperative societies and SHGs (Rs 38883.31 and 39152.67, respectively) however, it was much more in case of fishermen groups (Rs 56125.48) indicating the better economics of the earlier. Productively, Fish was found 32.50 quintals, 42.22 quintals and 38.16 quintals of fish for fishery cooperative societies, SHGs and Fishery groups respectively. Net return per hectare of fish was found Rs 286127.70, Rs 467457.33 and Rs 401738.12 for fishery cooperative Societies, SHGs and Fishermen groups, respectively. Maximum gross and net returns were obtained by SHGs, which indicates that overall management is better in SHGs as compared to Fishery Cooperative Societies and Fishermen groups. As for as input-output ratio was concerned it was found 1:8.4, 1:12.9 and 1:8.2 for fishery cooperative Societies, SHGs and Fishermen groups, respectively.

Keywords- Fishery Cooperative Societies, SHGs, Fishermen groups, fish production, Production cast, Gross and net return input-output ratio.

Introduction

Fishery Sector occupies a very important place in the socio-economic development of the country, as it contributes to economic growth and human welfare. Fisheries Sector has been recognized as the powerful income and emolument generator for the poor people of rural area. However, Finance plays a crucial role in accelerating any business activity/economic development and fisheries sector is no exception. The economic activities of the fishing village mainly depend upon the availability of credit at reasonable cast to enhance production and income. Hence, useful studies have been done on various aspects of fish production technology and economics in different past of the country. However, very meager work was done for analyzing the importance and involvement of fishery cooperative Societies, SHGs and fishermen group, hence specially in Chhattisgarh state [2]. Input- output rates and net return Bastar district was Selected Purposively for the present study because it is mainly dominated by thy tribal, poor and backward class people where fisheries and its related activities play an important role in earning their livelihood. In view of this the above-mentioned facts the study was undertaken to work on the comparative economics of fish production by fishery cooperatives Societies, SHGs and fishermen groups [3].

Material and Method

The Study will be confined to Bastar district of Chhattisgarh during the year 2014-15. In accordance with the Fisheries Statistics reported in the annual report of the Directorate of fisheries Chhattisgarh for the year 2009-10, [2], Bastar district remarks 3rd as per the water area utilized for fish culture practices in Villages as compared to other districts of Chhattisgarh state. The Bastar district is mainly dominated by the tribal's, poor and backward class people, where fisheries and its

related activities livelihood. Therefore, Bastar district is being selected purposively for this study. The Bastar district comprises of seven blocks. Out of which six blocks week selected for the purpose of this study on the basis of lightest dominated tribal, poor and backward class people where fisheries and its related activities play an important role in earning their livelihood in the district, namely, Jagdalpur, Bastar, Lohandiguda, Tokapal, Bakawand and Darbha. Bastar district has 20 fishery cooperative societies, 41 SHGs and 86 fisherman groups working in the fisheries sector. Taking these numbers into consideration, 50 per cent will be taken purposively for the study waking the numbers 10' 21 and 43 members from the fishery cooperative societies, SHGs and fishermen groups, respectively. With over all respondents being 74 [2]. In This study, both primary and secondary data will be collected. Primary data will be collected through personal interview method by pre- tested questionnaires from fish farmers. Secondary data were collected from various sources loch as department of fisheries district- Bastar and Directorate of fisheries, Government of Chhattisgarh. Collected data were tabulated and processed by using appropriate statistical methods [4].

Result and Discussion
Comparative economics of fish production by fishery cooperative societies, SHGs and fishermen groups
Comparative economics of fish production

Economics of cost of fish production worked out separately for fishery cooperative societies, SHGs and fishermen groups is presented [Table-1]. For fishery cooperative societies, per hectare cost of fish production was found to be Rs. 38883.31. Perusal of this table reveals that fish production requires labour in varying magnitude. Though, group labour is the major part of total human labour

requirements, some hired human labour is also required as many of the operations are to be finished in stipulated time. The average human labour cost for fish production was found to be Rs.800. The major cost items in fish production were netting cost of Rs. 21068.83, followed by watchman cost of Rs. 9162.50, fingerling cost of Rs. 3661.61, chemical removal of weeds from ponds of Rs. 1255.81, initial liming and fertilization of Rs. 1028.06, manuring of pond of Rs. 913.21, treatment expenses of Rs. 498.56 and Rs. 494.54 for miscellaneous items for fish production. Many misconceptions and unanswered questions related to small scale fisherman and fishing communities in the Philippines were studied by [5]. For SHGs, per hectare cost of fish production was found to be Rs. 39152.67. Perusals of this table reveals that fish production require labour in varying magnitude. Though, group labour is the major part of total human labour requirements but some hired human labour is also required as many of the operations are to be finished in stipulated time. The average human labour cost for fish production is Rs.600. The major cost items in fish production were netting cost of Rs. 20284.86, followed by watchman cost of Rs. 9476.19, fingerling cost of

Rs. 4256.33, manuring of pond of Rs. 1720.00, chemical removal of weeds from ponds of Rs. 1184.76, treatment expenses of Rs. 956.71 and Rs. 673.81 for initial liming and fertilization. For fishermen groups, per hectare cost of fish production was found to be Rs. 56125.48. Perusals of reveals that fish production require labour in varying magnitude [Table-1]. The average human labour cost for fish production was Rs.2362.47 out of which group labour shares about Rs. 816.14 while hired labour shares Rs. 1546.33. The major cost items in fish production were netting cost of Rs. 23584.82, followed by watchman cost of Rs. 9104.65, fingerling cost of Rs. 7634.66, removal of predatory fishes from ponds of Rs. 4981.59, manuring of pond of Rs. 4061.30, initial liming and fertilization of Rs. 1831.50, treatment expenses of Rs. 1297.64 and Rs. 1266.84 for chemical removal of weeds from ponds, these results were in agreement with the results of [1]. Per hectare production cost was almost similar in fishery cooperative societies and SHGs (Rs. 38883.31 & Rs. 39152.67 respectively) however it was much more in case of fishermen groups (Rs.56125.48) indicating the better economics of the earlier.

Table-1 *Comparative Economics of Fish production (Rs. /ha) by Fishery Cooperative Societies, Self Help Groups and Fishermen Groups*

S. No.	Particulars	Fishery Cooperative Societies	Self Help Groups	Fishermen Groups
1	Labour cost			
a.	Group Labour	800.00 (2.06)*	600.00 (1.53)	816.14 (1.45)
b.	Hired Labour	0.00 (0.00)	0.00 (0.00)	1546.33 (2.76)
c.	Total	800.00 (2.06)	600.00 (1.53)	2362.47 (4.21)
2	Weed Removal			
a.	Chemical	1255.81 (3.23)	1184.76 (3.03)	1266.84 (2.26)
3	Removal of Predatory	0.00 (0.00)	0.00 (0.00)	4981.59 (8.88)
4	Manuring	913.21 (2.35)	1720.00 (4.39)	4061.30 (7.24)
5	Seed/Fingerlings	3661.61 (9.42)	4256.33 (10.87)	7634.66 (13.60)
6	Initial Liming and Fertilization	1028.06 (2.64)	673.81 (1.72)	1831.50 (3.26)
7	Treatment Expenses	498.76 (1.28)	956.71 (2.44)	1297.64 (2.31)
8	Watchman Cost (Rs/year)	9162.50 (23.56)	9476.19 (24.20)	9104.65 (16.22)
9	Netting	21068.83 (54.18)	20284.86 (51.81)	23584.82 (42.02)
10	Miscellaneous (Rs/ha)	494.54 (1.27)	0.00 (0.00)	0.00 (0.00)
	Total Cost	38883.31 (100)	39152.67 (100)	56125.48 (100)

*Figures in parentheses indicate percent to total

Net return and input-output ratio of Fish production
Net return, input-output ratio and productivity of fish were presented [Table-2]. For fishery cooperative societies, net return per hectare of fish was calculated at Rs. 286127.70. As far as input-output ratio was concerned it was found to be 1:8.4 whereas productivity of fish was found to be 32.50 quintals. For SHGs, net return per hectare of fish was calculated at Rs. 467457.33. As far as input-output ratio was concerned it was found 1:12.9 whereas productivity of fish was found to be

42.22 quintals. These findings were also reported by [1,6]. Similarly, for fishermen groups, net return per hectare of fish was calculated at Rs. 401738.12. As far as input-output ratio was concerned it was found 1:8.2 whereas productivity of fish was found to be 38.16 quintals. Maximum gross and net return was obtained by SHGs, which indicates that overall management is better in SHGs as compared to fishery cooperative societies and fishermen groups [7].

Table-2 *Gross return, net return and input-output ratio of by Fishery Cooperative Societies, Shelf Groups and Fishermen Groups*

S. No.	Particulars	Fishery Cooperative Societies	Self Help Groups	Fishermen Groups
1	Total area under fishery (ha)	45.25	21.36	16.48
2	Total Fish production (Kg/ha)	3250.11	4221.75	3815.53
3	Average Selling Price (Rs./Kg)	100.00	120.00	120.00
4	Total Variable Cost (Rs/ha)	38883.31	39152.67	56125.48
5	Gross Return (Rs/ha)	325011.00	506610.00	457863.60
6	Net Return (Rs/ha)	286127.70	467457.33	401738.12
7	Cost of Production(Rs/kg)	11.96	9.27	14.71
8	Input-Output Ratio	1:8.40	1:12.90	1:8.20

Application of research: The research work indicates that the Self-Help Groups are more efficient to obtained higher return in terms of income than Fishery cooperatives and Fisherman groups. Hence, to enhance the livelihood of the villagers in tribal area through fish production, it is needed to form Self Help Groups for fish production in ponds.

Research Category: Fishery cooperatives
Abbreviations:
SHGs: Self Help Groups

Author Contributions: All author equally contributed

Author statement: All authors read, reviewed, agree and approved the final manuscript

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.

References

[1] Angela S.A.D. (2012) *Indian Res. J. Ext.Edu.*, 12(3), 128-131.

[2] Anonymous (2014) *Handbook of Fisheries, ICAR, Govt. of India, New Delhi*, 5.

[3] Marorthia D.K. (1995) *Village ponds and aquaculture development: Is conflict inevitable. Paper presented in National workshop on poultry, Fisheries and food proceeding for Hon'ble members of parliament, organized by National Academy of Agricultural Research Management, Hyderabad, July,* 4-7,17(5), 1-10.

[4] Panse V.G. and Sukhatme P.V. (1985) *Statistical Methods for Agricultural Workers. Indian Council of Agricultural Research Publication, 2nd ed.* 87-89.

[5] *Pomeroy R.S. (1989) Economic Studies of Tropical Small-Scale Fisheries: A Discussion of Methodologies, Proceedings of the Thirty Ninth Annual Gulf and Caribbean Fisheries Institute, Hamilton, Bermuda*, 23(6), 113-119.

[6] Puhazhendhi V. (2000) *Evaluation study of Self Help Groups in Tamil Naidu, Mumbai, NABARD*.

[7] Singh R.K.P. (2001) *Final Report of ICAR Adhoc Research Project on An Economic Analysis of Fish Production and Marketing in North Bihar in Rajendra Agriculture University, Pusa, India*, 24(9), 122.