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Socio-economic aspects of fish farmers in Odisha

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Abstract
The study was conducted on the fish farmers of four districts of Odisha. These are Khordha, Dhenkanal, Sambalpur and Bhadrak. Two blocks from each district were selected on the basis of the production of inland fish farming. Through the proportionate sampling method total 240 respondents were selected from above blocks. Majority of the fish farmers were middle aged farmers, belongs to general caste (40%) and mostly having high school education. Most the fish farmers lived in joint family (74.16%) and having 10 to 20 years' experience (57.08%) in fish farming. The farmer having medium income and had better exposure to television (mean=1.74) which ranked as one, followed by mobile phone (mean= 1.64) which ranked second and newspaper (mean=1.61) which was the third preference of the fish farmer in mass media use and most of them were small and marginal farmers having less than one-acre lands.

Keywords: Fish farming, socio-economic attributes and development

Introduction

Fisheries is one of the fastest growing food sectors playing a pertinent role in economic development front on account of its contribution to food, nutritional security, national income, employment opportunities and generating livelihood option. Fish farming is considered as a profitable business because of high demand and consumption of the fish. The nutritional value of the fish is very high due to omega fatty acid content and also having vitamins like vitamin D, vit-B_2 also known as riboflavin, minerals like iron, calcium potassium, magnesium etc. Fish is a boon for eradication of malnutrition and also helpful for improvement of food security. Fish farming can be done in the backyard, small ponds and also in large scale and commercial basis.

Odisha is one the important states in India having enough scope for fisheries development. Odisha data was reported at 990.000 Ton h in 2022. This records an increase from the previous number of 873.000 Ton h for 2021(DoF, 2022). Odisha is also awarded as the best marine state in India in the world fishery day 2020. The state has also achieved much in inland fish farming due to having potential water resources like ponds, rivers, channels and reservoirs. The composite fish farming is mostly adopted by the farmers. A variety of fishes cultivated in different districts of Odisha such as rohu, mrigal, catla tilopia and many more. Odisha rank fourth in fish production after Andhra Pradesh, West-bengal and Bihar. Different development programmes, policies and steps taken by the state Government for promoting improved varieties, adoption of new and profitable technologies like bio floc cultivation, cage cultivation practices etc.

Material and Methods

This research was conducted on the fish farmers of four districts of Odisha. These are Khordha, Dhenkanal, Sambalpur and Bhadrak. Two blocks from each district were selected on the basis of the production of inland fish farming. Through the proportionate sampling method total 240 respondents were selected from above blocks. For primary data collection personal interview and focus group discussion methods were adopted. The fish farmers eagerly participated in the survey and gave all information regarding the fish farming practices. The collected data were tabulated and analysed through the application of different statistical tools.

Results and Discussion

Age: With ageing the fish farmers gained more support and higher responsibility from the family and the social cohesiveness among the fish farming community. Whereas the young fish farmers are energetic and curious about the new technology adoption.

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Table 1: Age of the fish farmers

Sl. No.	Age	F	%
1	Young age (up to 35 years)	66	27.50
2	Middle age (36-55 years)	128	53.34
3	Old age (>55 years)	46	19.16

It was observed from the above table that majority of the respondents (53.34%) were belonged to the age group middle age fish farmer i. e. 36 to 55 years followed by young age fish farmers 27.50 percent and only 19.16 percent belongs to the old age group. The old age fish farmers are not able to do the physical work in comparison to the other two age groups. The young age fish farmers are active and enthusiastic about the new methods and technology of fish farming. The middle-aged farmers are having good farming experience with vigorous interest towards the adoption of the new technology to remain in the streamlines. Same findings were also reported by Rathore (2014) [9].

Caste: In ancient India the fish farming was considered as a caste occupation and the fishermen community was known as dheevara. The caste name kauta, kaibarta are prevailed in past in Odisha.

Table 2: Caste of the fish farmers:

Sl. No.	Caste	F	%
1	Schedule Tribe	25	10.42
2	Schedule Caste	71	29.58
3	Other Backward Caste	48	20.00
4	General Caste	96	40.00

It was concluded from the above table that 40 percent the fish farmers were belonged to general caste followed by schedule caste 29.58 percent and 20 percent were other backward classes. The lowest percentage i. e. 10.42 percent were belonged to schedule tribe caste system. The tribal caste people are engaged in collecting and selling of the forest product and also interested in animal rearing and poultry activities so there is a least concerned about fish farming. Fish farming is popularised in schedule caste and general caste farmers because of the amount of profit from the fish farming is more than the other cultivation practices.

Education: The education system provides enormous knowledge. The educated fish farmers are facilitated with more knowledge and skill for increase of the production and productivity with adoption of new technology.

Table 3: education of the fish farmers

Sl. No.	Education	F	%
1	Illiterate	14	05.84
2	Can read only	30	12.50
3	Can read and right	17	07.08
4	Primary School	42	17.50
5	Middle School	53	22.08
6	High School	66	27.50
7	Graduate	18	07.50

From above table it can be inferred that the majority of fish farmers (27.50%) were having high school level of education followed by middle school (22.08%), primary school level (17.50%). Further, 30 percent of the fish farmers were on category of can read only and 7.08 percent came under can

read and right category whereas 5.84 percent were total illiterate fish farmers. There were very fewer graduate fish farmers i. e. 7.50 percent. The highly educated youth and villagers are typically service oriented and not interested in fish farming. But the farmers having schooling education and below that are predominantly engaged in fish farming due to their slighter chance in quality service and also get a pleasant amount of profit from it.

Size of Land holding: Anticipating the declining land holding with the increasing population demand, the farmers are converting their fragmented agricultural low land in to high potential fish ponds for increase their income and profit. As the rice cultivation system in Odisha is static now and not giving much returns, the small and marginal farmers are interested in inland fish farming.

Table 4: Size of the land holdings of the respondents

Sl. No.	Farm Area	F	%
1	Landless	39	11.67
2	Less than 1 acres	109	45.42
3	1-5 acres	62	26.25
4	6-10 acres	20	13.75
5	11-15 acres	7	02.91
6	16-20 acres	3	01.25

It indicated that an overwhelming majority of the fish farmers (45.42%) were having less than 1 acres of land followed by (26.25%) fish farmers having 1 to 5 acres of land, (11.67%) fish farmers were having no land for farming. A very fewer number of fish farmers were having 11-15 acres of land and 16-20 acres of land i. e. 2.91 percent and 1.25 percent respectively. In the study areas more than half of the fish farmers are small and marginal farmers due to land fragmentation.

Experience in farming: The farming experience has major contribution in socio- economic attributes of the fish farmers as it improves the decision-making ability of the farmers.

Table 5: Experience of fish farmers

Sl. No.	Experience	F	%
1	Poor (Less than 10 years)	59	24.58
2	Medium (10-20 years)	137	57.08
3	High (More than 20 years)	44	18.34

From the above table it was concluded that more than half of the fish farmers (57.08%) were having a medium range i. e. 10 to 20 years, followed by poor experienced fish farmers (24.58%) and highly experienced fish farmers were 18.34 percent. Most of the respondent fish farmers are middle aged having 10 to 20 years of experience whereas the involvement of the experienced old farmers is quite less due to their physical inability. The young fish farmers are under experienced but actively involved in farming. Same findings were reported by Kumar (2015) [6] depicted that the experiences of farmers in aquaculture have positive influence on fish production.

Family size: The family size of a fish farmers provides the expenditure and economic dependency patterns. The big sized farm family are having more dependent family members whereas the small farm family is lack of family labours.

Table 6: Family size of fish farmers

Sl. No.	Family Size	F	%
1	Less than 5 members	42	25.84
2	5-10 members	148	61.66
3	More than 10 members	30	12.50

The table no. 6 indicated that the enormous majority of the fish farmers (61.66%) were having 5 to 10 members in their family followed by the family of less than 5 member (25.84%) and family member of more than 10 were 12.50 percent. The fish farmers having 5-10 members of family have the balanced family structure in which the fish farmer gets the family support in decision making and farm labour and also less economic dependency of members which is correspondents with the findings of Nzevu (2018) [8] found that the majority (62.9%) of fish farmers had small family sizes of less than four members. This could be attributed to the fact that small sized families have low family expenses and could allocate their extra income to investment in other ventures such as fish farming.

Family Type: There are two types of family types considered by the Government of India in general for deciding the family types in diverse Indian society.

Table 7: Family type of the respondents

Sl. No.	Family Type	F	%
1	Nuclear family	62	25.84
2	Joint family	178	74.16

It was found from the above table that 74.16 percent of fish farmers were living in joint families and 25.84 percent were living in nuclear families. In traditional rural society most of the fish farmers are living in joint family which helps them to get family support for their farming practices also viewed by Bhutti *et al.* (2022) [3] found that the family was classified into two types: (i) separated family or nuclear family, married couples with children and (ii) joint family, group of people related by blood and or law. The study revealed that 67% fish farmers lived in joint families and 33% lived with separated families.

Housing Pattern: The housing pattern of the farmer shows his social and economic status in the society.

Table 8: Housing pattern of respondents

Sl. No.	Housing Pattern	F	%
1	Hut	31	12.91
2	Kutcha house	68	28.34
3	Mixed house	85	35.41
4	Pucca house	56	23.34

Table 8 indicated that 35.41 percent of the fish farmers were lived in mixed house that means half of their houses are kutcha and half pucca. Whereas, the 28.34 percent of fish famers lived in kutcha house, followed by 23.34 percent in pucca house and 12.91 percent in huts. Bhendarkar *et al.* (2017) [2], Asif and Habib (2017) [1], Nayak and Mishra (2008) [7] also found the same results. The fish farmer who is well established can afford a suitable, big and comfortable house for his family. The development in housing pattern may also improve his prestige and reputation in the society.

Extension contact: The better the fish farmer has contact with extension service provider the capacious is the knowledge and skill of the farmer.
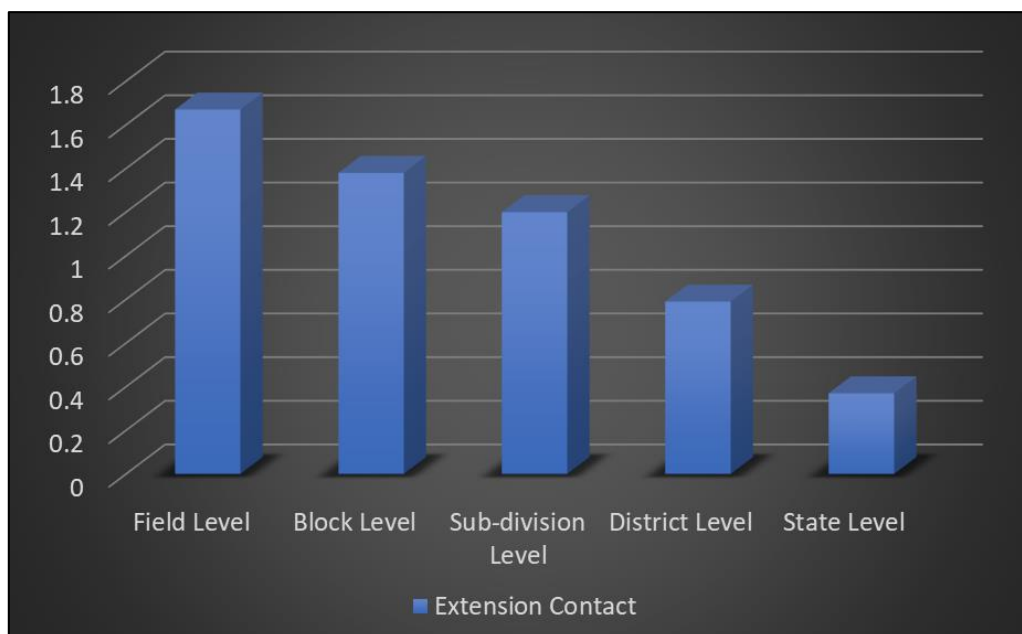

Fig 1: Extension contact of the fish farmers

The table revealed that the fish farmers of the study area had poor contact with the state level (mean=0.37) followed by district level (mean=0.79) and Sub-division level (mean=1.20). The fish farmers had better contact with two categories of extension officials i.e., field level (mean=1.67) and block level (mean=1.38). The state and district level officials have to made adequate efforts to create awareness among the respondents about the benefits of regular contacts and dissemination of the new technologies. Whereas the village level extension personnels have good contact with the fish farmers.

Use of Mass Media by the fish farmers: The mass media now a days become a very powerful weapon to influence any persons thinking ability and also the rate of adoption.

Table 8: Use of mass media by the fish farmers

Sl. No.	Use of Mass Media	Mean	Rank
1	Newspaper	1.61	III
2	Television	1.74	I
3	Radio	1.30	VI
4	Mobile phone	1.64	II
5	Internet	1.37	IV
6	Personal contact	1.02	VIII
7	Progressive farmers	1.21	VII
8	Friends and neighbourhoods	1.36	V

The data in the table revealed that the respondents had better exposure to television (mean=1.74) which ranked as one, followed by mobile phone (mean= 1.64) which ranked second and newspaper (mean=1.61) which was the third preference of the fish farmer in mass media use. The fish farmers had received poor information from radio (mean=1.30) followed by progressive farmers (mean= 1.21) and personal contact (mean=1.02). This was similar with finds of Gosh *et al.* (2016) [5] reported that as far as exposure in mass media was concerned, 97.33 percent respondents said that they have mobile phones followed by 77.67 percent had television and 39.67% possessed radio. The television, mobile phones are the new sources of information from which the fish farmers can get easy, essential and timely information regarding the cultivation practices**.**

Income: The income of the fish farmers indicated the financial development of the farmers due to adoption of improved fish farming.
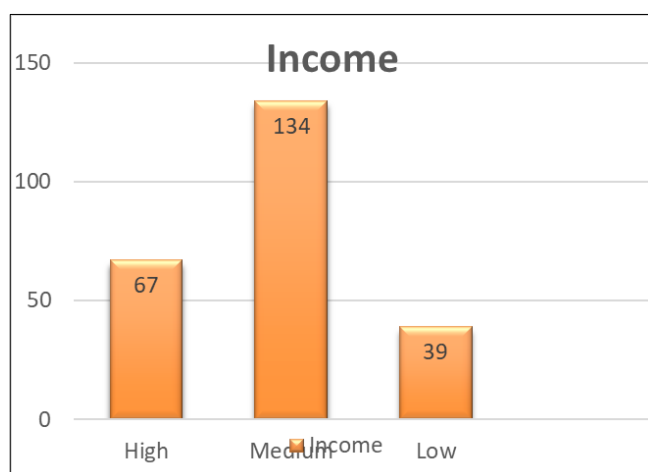

Fig 2: Income of the fish farmers

From the above fig it can be concluded that maximum number i. e 134 farmers were getting a medium amount of income from the fish farming followed by 67 farmers get high income from fish farming. Which is similar with Gautam *et al.* (2020) [4]. The fish farmer must adopt new sustainable and developed technology for the farming system which ultimately generate more income.

Conclusion
The fish farmers should get good training facilities from the extension officials for their betterment of the profit and

development in fish farming. The fish farmers were experienced and hard working but without getting any support from the extension department they are not getting much return from the fish farming. The farmers are dependent on television and mobile phone for their source of information. More information should be provided through constructing what's app groups or through SMS etc. Besides that, extension literature material like leaflet, pamphlets, poster are also used in the training programmes. The government officials should provide need based and location specific training programmes, demonstrations, field days for the better exposer of the fish farmers.

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