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Sayed Sultan Ali
Guru Ghasidas University,
Chhattisgarh, India

A critical analysis on fisheries of Moyna block of Purba Medinipur

Sayed Sultan Ali

Abstract

Paddy alternate fish culture is a combination of agriculture and business. It is suggested that fish culture in rice fields was introduced into South-East Asia about 1500 years ago especially in India. The most common indigenous fishes found in South-East Asia especially in India are white fish (Rui fish, Katla, Mrigel, Silver Carp and so on). Instead of white fish cultivation there has some other fish culture like - Venami prawn, Lobster, etc. along the bank of river.

Our study area is Moyna Community Development Block under Purba Medinipur district of West Bengal, India. Our principle objective is to examine a critical analysis on the fish farming of this area. We collect both primary and secondary data. Primary data has collected by both door to door random sampling survey and the computer assisted telephonic interviews (CATI). We have collected sample from 100 fishermen. In this study we found that total expenditure was Rs. 12,000/katha for white fish farming and selling price was Rs. 15,000, i.e. the actually profit was Rs. 3,000/-. And we also tried to find out the correlation between the expenditure and selling price of white fish cultivation where we discover that there has a strong relationship between the expenditure and selling price. And we also found that there has a huge profit to Venami prawn cultivation and farming i.e. 43.5%.

Keywords: Paddy alternate fish culture, indigenous, white fish, cati, fisher-man, correlation

Introduction

Fishing is one of the most important economic activities of the world from the stand point of income and employment generation. From the very ancient times our India became one of the major inland fish producing countries of the world. At present India (7.56%) stands World No. 2 in global fish production. Further India stands World No.2 in the sector of Inland capture and aquaculture. Almost every state in India produces inland fish to a certain extent. Andhra Pradesh state is the largest producer of fish in India (27.4%) followed by West Bengal (13.8%). Our research area Moyna Community Development Block under Purba Medinipur district, which is one of the backward blocks of West Bengal, where the inhabitants are mixed casts, especially SC, ST and minorities are also found in this community development block

Fresh water fish, because of its very low price, represents a vital source of animal protein for lower income groups (FAO-2001). In West Bengal where about 94% of farmers belong to poor (Economist 2004). It is estimated that 12 million people are directly engaged in fishing and about 60 million are exclusively depending on it for livelihood in India (Sekhar, Raju. Manasi, Laha Lenin - 2006).

Study Area

Our study is is Moyna Community Development Block located under Purba Medinipur district, West Bengal, India. Its latitude 22°22'54"N and longitude 87 73 30 E. It is comparatively under lower area from surroundings, shaped like saucer, the rain water making logged the area throughout the maximum portion of the year.

Objective of the study

The specific objectives of the study are

1. To explore a critical analysis of the white fish (Cotton fish, Katla fish, Deadly fish) Farming
2. To find out a correlation between expenditure and selling price of white fish of last ten years.

Correspondence
Sayed Sultan Ali
Guru Ghasidas University,
Chhattisgarh, India

3. To discover the economical estimation of Venami prawn farming
4. Effect of fish farming on this area.

Research Methodology

We have collected both primary and secondary data. The primary data has collected on the basis of the field survey. The field survey has done through both door to door random sampling survey and the computer-assisted telephonic interview (CATI) method. The primary data has collected with the objectives in mind with a well-structured questionnaire has followed to collect the information.

And the secondary data has collected from various locale fisheries, reports, magazines, journals, research papers, newspapers, etc.

Consequences and Discussion

In this research paper we found some interesting facts about fish culture of Moyna Community Development Block of Purba Medinipur Professionally fish culture was started in this block in 1995. Since then Moyna Block is one of the major fish producing blocks of West Bengal.

Table 1: Total Expenditure (1 Katha / 2.5 Decimal)

Sl. No	Criteria	Total Expenditure (in Rs.)
1.	Lease Rate	3500
2.	Digging the Lake	500
3.	Water Filling	200
4.	Water and Soil Purification	200
5.	Seedling Fish	1500
6.	Fish Food	4000
7.	Labour Cost	2500
8.	Medicine and Chemical Fertilizer	200
Total Expenditure		Rs. 12000

Source: Based On Household Survey

Last 15 years a lease holder takes lease of the land for 5 years, from various land holders. Lease holders initially started their work over the land. Here an estimation of white fish (Rui Fish, Katala, Silver Carp, mrigel etc.). At the very first stage they started to dig the water body which is used to fish culture is locally known as Veri or Jhil or Fishery. Initially to dig the Jhil they spend around Rs. 3000 and then every year it take Rs. 500 to clean the Jhil. After

they fill the lake with water in which they spend Rs. 200. Around Rs. 200 needed for purifying the water and soil of Veri. Then about Rs. 1500 are needed to release the seedlings in this lake. The most expensive criteria is fish food, which is about Rs. 4000. Labour cost is also very lavishing. i.e. Rs. 2500 Medicines and chemical fertilizers will cost Rs. 250 per katha (2.5 decimals).

Table 2: Correlation between Total Expenditure and Selling Price of last ten years

Year	Total Expenditure (In Rs. '00) (X)	Total Selling Price (In Rs. '00) (Y)	XY (In Rs. '0000)	X^2 (In Rs. '0000)	Y^2 (In Rs. '0000)
2006	73	100	7300	5329	10000
2007	77	106	8162	5929	11236
2008	83	110	9130	6889	12100
2009	85	114	9690	7225	12996
2010	92	121	11132	8464	14641
2011	98	129	12642	9604	16641
2012	103	134	13802	10609	17956
2013	110	141	15510	12100	19881
2014	120	147	17640	14400	21609
2015	126	150	18900	15876	22500
Total	967	1252	123908	96425	159560

Source: Based On Household Survey

From the Table

$\Sigma XY = 123908$. $N = 10$

$\bar{X} = 967/10 = 96.7$

$\bar{Y} = 1252/10 = 125.2$

$\delta X = \sqrt{96425/10 - (96.7)^2} = 17.07$

$\delta Y = \sqrt{159560/10 - (125.2)^2} = 16.76$

Therefore $r = \frac{\{(125123908/10) - (96.7)(125.2)\}}{(17.07)(16.76)} = +0.9925$

Discussion

Above mentioned Table No. 2 showed the correlation between the Total Expenditure (X) and the Total Selling Price (Y) of white fish of Moyna Community Development Block of Purba Medinipur

The value of product moment correlation coefficient is + 0.9925, i.e. strongly positive correlation. That means the relation between expenditure and selling price is strongly correlated positively, whether expenditure increases the selling price also increases and vice-versa. That means their relation is highly positive.

Table 3: An Economical Estimation of Venami Prawn Production on 25 Decimal (10 Khatha) Area.

Criteria	Total Expenditure
Lease Rate	15000
Digging the Lake	5000
Water Filling	2000
Water and Soil Purification	7000
Seeding Fish	30000
Eclectic Bill	10000
Fish Food	180000
Labour Cost	60000
Medicine and Chemical Fertilizer	30000
Total Expenditure	3,39,300

Table No. 3 shows an economical estimation of Venami prawn production at Moyna Community Development Block of Purba Medinipur, where we find out that the Total Expenditure is Rs. 3,39,000/- and Total Output is (1200 Kg X Rs. 500) = Rs. 6,00,000/- that means the profit is (Rs. 6,00,000 - Rs. 3,39,000) = Rs 2,61,000/- In this estimation we discover that fish food is mostly lavishing. i.e. Rs. 1,80,000/- followed by labor cost of Rs. 60,000/- then seedling fish and medicine and chemical fertilizers are both equally expensive, i.e. Rs 30,000/-, followed by lease rate Rs. 15,000/-, electric bill Rs. 10,000/-, water and soil purification Rs 7,000/-, digging the lake Rs. 5,000/- and finally water filling Rs. 2,000/- Contd 6.

Environmental Effect of Fishing

Fish cultivation and fish farming in Moyna Community Development Block is major source of income of this area. Although the people of this block achieve a huge economical development but there has some advantages and disadvantages of this fisheries as follows:

Advantages

1. Inland fisheries provide protein supply to the financially backward people.
2. Fish culture takes comparatively less space than other farmed animals.
3. Fish don't contribute as much greenhouse gases emission to the planet.
4. Fish culture of this area makes a huge economical transformation since few years.
5. With the economical development the area entertain socially, culturally, transportation and communicational development.

Disadvantages

1. Fish cultivation decreases the value of pH, ie. The cause of soil acidity.
2. Excessive use of pesticide, insecticide, herbicide, and chemical fertilizers make soil pollution.
3. Due to the use of pesticide, insecticide, herbicide and chemical fertilizers the water getting polluted.
4. There have an adverse impact on eco-system because in fishing, fisherman cultivates mainly few species of fish, others are killed by them.
5. Excessive use of insecticide, pesticide, herbicide and chemical fertilizers cause various diseases.
6. Fishing of this community development block is the cause of discrimination between rich and poor person. Rich person become richer whereas poor people become poorer.
7. Fishing is the cause of loss of biodiversity.

Conclusion

Before 1995 the people of this Moyna Community Development Block can't even meet their basic needs. But after the beginning of fish cultivation their economic development rapidly increased. But increase of financial state of the fisher-man of this block is not a very smooth process. Sometimes they have to face heavy losses due to diseases, insect attacks, hail storm etc. Sometimes this extreme loss has forced them to flee from their homes, even forced to commit suicide. This fishery has created an economic disparity within the area.

Although the cultivation of white fish is more common in this area, there are varieties of prawn cultivation found in the saline waters along the river banks, especially, Venami prawn, which is more profitable than white fish cultivation. But the government should provide more facilities for the fisherman, who sometimes faces various difficulties, i.e. huge losses, that they can face the situation without fleeing away

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