

# Fish culture of selected ponds in South part of Asansol city, India

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## ABSTRACT

Asansol is a major city of West Bengal, moderately potential for fish culture. The study is based on data, collected by sampling process from the farmer. It has been found that the fish farming method was traditional type and middle age grouped farmers, has least knowledge at Asansol city. Although they contribute a protein sources to the local people. High price of fish seed and finger fish, low quality of water, poor knowledge and involvement of uneducated men, poor marketing value are the major problems at Asansol city for fish farming.

## 1. Introduction

Fish is most important aquatic animals in the world. In taxonomy, near about 25000 species of fish have been described. Among the vertebrates, 45-50% are fish. Fishes are known as a gill breather aquatic animal. In all vertebrate specie, fish dominant life form in almost all water bodies and many diverse adaptation to life, a very interesting group for biologists. They were used as a sources of food, and valuable resources for studying knowledge of management and harvest strategies.

Now a day's it has been seen that fish is very important food sources, by means of catching wild fish but in China, has been practiced for fish culture, since about 3500 BCE. The two terms, fishery and fishing are associated with the aquatic culture. Fishery is a organized effort to culture the fish and fishing is a method of catching the fish. In global scenario, fisheries help income for million ton of fish for people although it has a recreation value, people are used them in art, poem, and displayed in aquarium in homes, office, or other public

places. Fish have a symbolic significance in many religion of the world. In Hindu purana, fish have been described as "Matsy Rup", this is the avater of lord Vishnu. . The word "Matsy" derived from Sanskrit, which means that fish, which is appeared first time in Rigveda. Fish are abundant in most water bodies in Asansol, India. Most of the farmers are associated with fish farming for better investment. In January 1994 Eira Carballo, Assiah Van Eer, Ton Van Schie, Aldin Hilbrands described the small scale fish farming, and in January 2013 S.N.Goswami, N.G.Palit, A. Chaturvedi and T.N.Hajare introduced fish farming in a tribal district of India, an economic perspective and also Central Institute of Fisheries Education ( Bombay ), proposed an operational research project on aquaculture and integrated fish farming in Sultanpur and Raibareli district of Uttar Pradesh, India.

## 2. Material and Methods

### 2.1 Study Cite:

This work was carried out in south part of Asansol city, India. The places, ward no, population density are given below.

Serial No	Ward no	Ward name	Population Density As per Voter register	No of pond
1.	9	Jamuria	6543	12
2.	31	Railpar	6562	10
3.	46	Hutton Road	7120	6
4.	47	Master Para	7401	4
5.	48	Budha	7932	7
6.	49	Chelidanga	7640	3
7.	50	Chelidanga Hil view Park	7644	3
8.	51	Sree Pally	7451	8
9.	52	Court Morh	5938	4
10.	53	Burnpur road Morh	6568	11
11.	54	Sarada Pally Road	5449	13
12.	55	Gopalpur New Colony	7437	7
13.	56	Rabindranagar	8301	8
14.	57	Narsamuda	9171	12

15.	58	Dhemo Main Colliery	7361	18
16.	83	Mohisila Colony 1	7586	10
17.	84	Ismile	8330	13
18.	85	Mohisila Colony 2	9420	7
19.	86	Talkuri	8024	5
20.	87	Damra	7241	9

**2.2 Meteorology**

The climatic condition at Asansol mainly shows three distinct seasons: a short summer (March to May), a typical monsoon (June to September) and a rather chilly winter (October to February), General weather patterns prevailing in the study sites are more or less same. The maximum temperature and minimum temperature ranges from 35.1° C to 35.8° C during April - May and 7.2°C to 7.8°C during December - January respectively. The extreme high and low temperature ranges from 39.4° C to 40° C and 2.2° C to 5° C respectively. Monthly total rainfall varies from 2.7 mm, to 9.2 mm. (minimum) in the months of December to January and 710 mm, to 776 mm, in the months of June to July (maximum). The humidity ranges from 43 % to 69 % in April and 81 % to 88 % in August. The general weather condition is hot and humid in the summer time and moderately cold and dry in the winter time.

**2.3 Study period**

Observations were conducted from January 2017 to December 2018, Except short breaks of 2-3 days every month for library consultation, consultation with the supervisor at the Department and collection of various records from different public and private offices the author mostly engaged himself in the study over the whole period of study,

**3. Daily observation schedule**

For convenience of study daily observations and face to face interview with the owner, were divided into two shifts i. e, in the morning ( 6,00 a.m. to 9.00 a. m. ) and in the afternoon ( 12,00 p.m. to 2,00 p.m. ).In some cases observations were taken from 6, 00 a.m. to 12, 00 p, m and from 2, 00p.m, to 6, 00 p, m. In actual cases, however, the hours as scheduled above could not be followed exactly. But the deviations from the schedule observation hours were never more than 30 minutes. Thus observations were made throughout the day encompassing all the two shifts. Besides, observations were also made at different hour of the day whenever possible.

**4. Result and discussion**

Obtained data on fish culture in the two season, from January 2017 to December 2018 are given below

Ward name	Total land area ( katha )	Production (kg)
Jamuria	70	720

Railpar	85	150
Hutton Road	50	78
Master Para	20	60
Budha	90	820
Chelidanga	156	45
Chelidanga Hil view Park	30	48
Sree Pally	20	160
Court Morh	19	240
Burnpur road Morh	27	550
Sarada Pally Road	33	44
Gopalpur New Colony	30	455
Rabindranagar	54	420
Narsamuda	90	540
Dhemo Main Colliery	70	810
Mohisila Colony 1	80	450
Ismile	91	390
Mohisila Colony 2	85	315
Talkuri	100	250
Damra	140	450

Fig : wards name and production of fish

It has been found that majority of fresh water fish were raised in local pond area. Water taken from river, well and other natural sources. Water passes easily through the pond. The size of the pond from a few katha to several hectares. The shape of the ponds is triangle, rectangular, square, and some oval shaped. It is important that water is available to fill the ponds. Most of the pond is natural but some are artificially created. Nutrients levels and water quality can be controlled through natural process .in main city area ponds are connected with sewage system. To prevent fish theft, they used bamboo poles, or branches in the water. Some pond owners are watching for 24 hours. The average depth of the ponds is 0.5 m to 1.5 m. Pond owner parches different size of fish fry directly from local people for avoiding mortality rate. Different types of fish are found to culture in to the ponds and some are grown automatically. These are Labeo rohita Hamilton , 1822 , Catla catla Hamilton , 1822, Cyprinas catla Hamilton , 1822 ,Cirrhinus mrigala Hamilton, 1822, Barbus stigma Valenciennes,1844, Barbus ticto Hamilton, 1822, Heteropneustes fossilis Bloch , 1794.

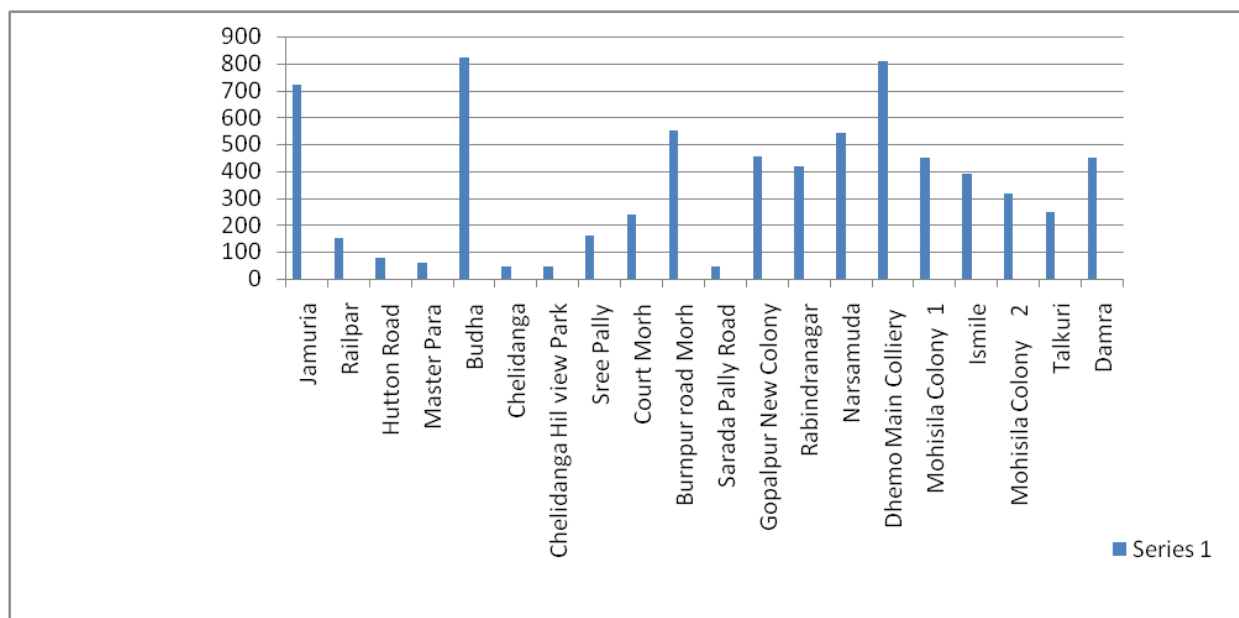


Fig: Graphical representation of fish production rate in various wards at Asansol

## 5. Conclusion

As in other part of the world, fresh water local fish culture is the important ways to save the human requirements. It contributes to increase higher fish production, increasing the supplies of protein, and generation of small scale employment and definitely improving firm income of local owner. In has been recognized that fresh water fish farming at Asansol city, can make a significant contribution to the supply of fishery product at Asansol as well as West Bengal.

## 6. Recommendation of Policies for fish culture

1. Toxic pollutants and heavy metals need to be minimized
2. Water use conflict between crops and fish farming should be minimized.
3. Fertilizers, agro chemicals and other insecticides should be minimized

4. The flow of good production credit from industrial sources need to be increased for the poor fish farmer
5. fish farmer , have to gather proper knowledge from the West Bengal government.
6. Regulations prohibiting culture of exotic fish.
7. Infrastructures, including space in fish markets, have to be provided more.
8. Research oriented work should be done.
9. In order to improve poor people's access to fish consumption, development studies of fast growing and diseases resistant species should also be continued.

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