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## FISHING AS LIVELIHOOD IN WEST BENGAL

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### Abstract:

*Fishing is one of the oldest means of livelihood of mankind and fisheries sectors play an important role in the national economy and in the socio-economic development of India. West Bengal is one of the leading fish producing states in the country and the largest producer of fish seeds in the country. Fishery-related livelihoods are complex, dynamic and adaptive. A livelihood comprises the assets (natural, physical, human, financial and social capital), the activities and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or households. This paper is an attempt to focus on fisheries livelihoods in West Bengal. This study is based on secondary sources of data. The results show that fisheries livelihoods are more popular in southern districts in the state and it is less popular in the northern part of the states.*

### KEY WORDS:

fisheries, livelihood, assets.

### INTRODUCTION

Fish is the main animal protein source for over one billion people and it provides livelihood for over 200 million people worldwide and 90 percent of these people are from developing countries. The world's marine catch has increased more than four times in the past 40 years, from 18.5 million t in 1950 to 141.6 million t in 2008 (FAO, 2009). An improved analytical framework and typology of fishers are provided to improve understanding of the diverse livelihood functions of inland fishing in development policy making. Inland fisheries make an important but often neglected contribution to rural livelihoods in developing countries (Smith 2004). Fishing is one of the oldest means of livelihood of mankind has developed into multifarious industry viz, fisheries while the development in the fisheries of several countries by rapid introduction of technological innovation have been exciting, fisheries of the countries like India are characterized by the coexisting of traditional, modern and ultramodern sectors. Fisheries development has been assigned a very important place in the economic development plans of many nations. Around 38 million people worldwide are employed in fisheries and aquaculture, 95% of them in developing countries. The majority are involved in small-scale fisheries.

Fisheries sectors play an important role in the national economy and in the socio-economic development of the country (Ministry of Agriculture, 2009-2010). Fisheries sector contributes significantly to the national economy while providing livelihood to approximately 14.49 million people in the country. It has been recognized as a powerful income and employment generator as it stimulates growth of a number of subsidiary industries and is a source of cheap and nutritious food besides being a source of foreign exchange earner. Most importantly, it is the source of livelihood for a large section of economically backward population of the country (Govt of India, 2009-2010)

In 2008 India was the sixth largest producer of marine and freshwater capture fisheries, and the

second largest aquaculture farmed fish producer in the world. India is a major supplier of fish in the world. Fishing in India is a major industry in its coastal states. Fishing in Indian villages is considered one of the major occupations for the villagers. People in the villages of the South Indian states like Kerala, Karnataka, Andhra Pradesh, etc. are mostly dependent on fishing to earn their livelihoods, as most of the villages are located along the coastal line. Fish production in India has increased more than tenfold since its independence in 1947. According to the Food and Agriculture Organization (FAO) of the United Nations, fish output in India doubled between 1990 and 2010. India has 8,118 kilometers of marine coastline, 3,827 fishing villages, and 1,914 traditional fish landing centers. India's fresh water resources consist of 195,210 kilometers of rivers and canals, 2.9 million hectares of minor and major reservoirs, 2.4 million hectares of ponds and lakes, and about 0.8 million hectares of flood plain wetlands and water bodies. As of 2010, the marine and freshwater resources offered a combined sustainable catch fishing potential of over 4 million metric tons of fish.

Table 1

Leading fish producing states in India, 2007–2008		
State	Total production (metric tonnes)	Rank
West Bengal	1,447,260	1
Andhra Pradesh	1,010,830	2
Gujarat	721,910	3
Kerala	667,330	4
Tamil Nadu	559,360	5
Maharashtra	556,450	6
Orissa	349,480	7
Uttar Pradesh	325,950	8
Bihar	319,100	9
Karnataka	297,690	10

From the table is found that West Bengal occupied the first rank for producing fish among the leading states in India. The water body which is essential for fish farming is available in West Bengal. Southern part of Bengal is coastal area surrounding the Bay of Bengal.

#### FISHING IN WEST BENGAL

West Bengal is one of the leading fish producing states in the country and the largest producer of fish seeds in the country. In the inland fishery sector, West Bengal accounts for 30% of the all India fish production. Its share of the all India fish seed production is 62%. Total fish production in the State has increased from 14.71 lakh tonne in 2007-08 to 14.84 lakh tonnes in the year 2008-2009. Fish seed production has increased from 13,475 million in 2007-08 to 14,000 million in the year 2008-09. There is significant increase in the export earnings from the sector as it grew from Rs. 50 crore in 1987-88 to Rs. 725 crore in 2008-09. The major commodity in export is shrimp. The state has already emerged as the fourth largest State in the country's total exports despite having a small coastline of 150 km. As regards marine fisheries, though West Bengal is not the top producer, but it produces 6.15% of the total marine fish production of the country, which was around 189290 million tons in 2008-09. The micro-finance programme under fisheries in the State has also made rapid strides in recent years. Since the year 2003-04, a total of 8125 SHGs have been formed with total members of 85,240. As against 8125 groups, 4250 groups have been credit linked and 3885 groups have taken up economic activities through project lending in fisheries sector.

A vital part of the economy of the state, West Bengal Fisheries definitely represents such a sector, which has enormous growth possibilities. Fishery-related livelihoods are complex, dynamic and adaptive (DFID). Next to rice, fish is the staple diet of Bengal's population and therefore, fish production is one of the

key areas, where the state government puts a substantial part of its resources to maintain as well as enhance its productivity. West Bengal currently produces 30.18% of the total fish through inland fisheries in India - highest amongst all the states. The significant growth of the fishery sector in the State over the last two and a half decades has been possible primarily because of the development strategy followed by the State Government. The basic strategy has been to bring under scientific pisciculture existing fisheries and also new water bodies. The financial returns from pisciculture have increased. This has encouraged farmers in increasing numbers to take up pisciculture.

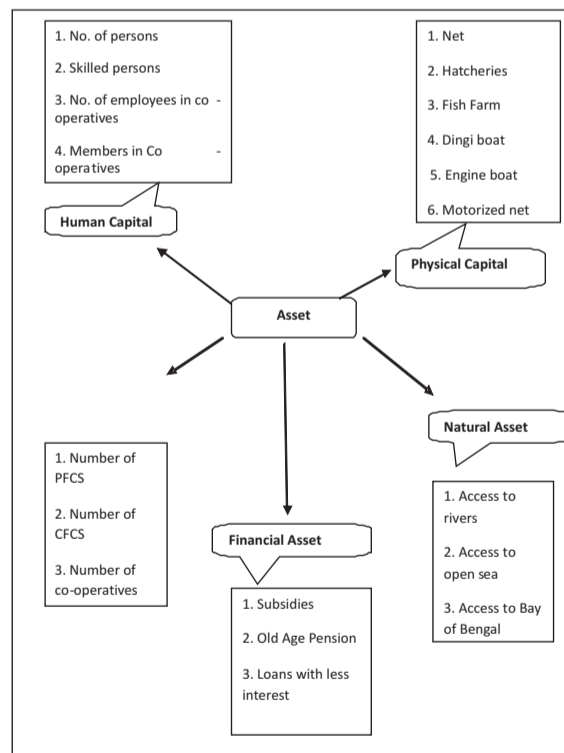
This paper is an attempt to focus on distribution of fishing related livelihoods in West Bengal.

**DATASOURCES**

The study is totally based on the secondary data (Population Census of India, 2001) Census data provided useful information at the village level and more generally economic activities of people in the area. In this study mainly district level data of West Bengal has been used. Some additional background information about the districts was derived from various statistical bulletins and governmental publications, as they provided historical perspective. Various kinds of techniques are used for processing the data i.e. Cross tabulations Simple percentage method, Z-Score.

**FISHERIES AND LIVELIHOOD ANALYSIS**

Livelihood according to Oxford English Dictionary refers to a 'manner of life' but also to 'the various means of maintenance'; it suggests that it is a method to acquire food, income, property or inherent resources. The definitions of livelihood have been extensively discussed among academics and development practitioners. There is a consensus that livelihood is about the ways and means of making a living. Livelihoods are the ways in which people are people satisfy their needs or gain a living (Chamber and Conway, 1992). A livelihood comprises the assets (natural, physical, human, financial and social capital), the activities and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or households (Frank Ellis, 2000). An anthropologist, Wallman (1984) in his research approached livelihood as always more than just a matter of finding or making shelter, transacting money, and preparing food to put on the table or exchange in the market place. This study considers livelihood as all the activities forming the means of generating a living, especially occupational characteristics are studied here.



## DICUSSION

The state of West Bengal is situated between latitudes 21°05' N and 24°05' N and longitudes 86°0' E and 89°0' E. West Bengal has a short coastline - only about 64 km, spread along the southern edge of its two maritime districts, 24 Parganas and Midnapore. The marine resource base comprises 780 km<sup>2</sup> of inshore area (upto 20 m depth), 1815 km<sup>2</sup> (between 20 m and 80 m depth) and a continental shelf of 17,049 km<sup>2</sup> (upto 200 m depth). Brackishwater areas in the deltaic region encompass a territory of 200,000 ha. With a very large body of inland water for capture and culture fisheries, West Bengal is better known for its considerable inland water fish production. There is a strong consumer preference for fresh-water fish, marine fish being mainly preferred in the coastal and tribal hill areas. But the gap between supply and demand of freshwater fish, coupled with high prices, has resulted in a steadily growing demand for marine fish in other parts of the state.

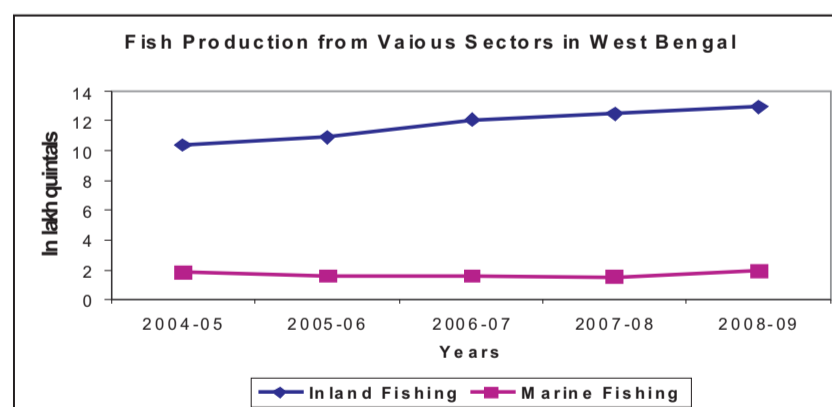
Fishing in inland water is an ancient human occupation (Welcomme). "Urgent steps should be taken for protection of inland water fisheries as millions of people are dependent on them" Times of India. The inland fisheries are practiced in rivers, canals, irrigated channels, ponds, beels and dinghies etc in West Bengal. The table no 2 reveals that out of the total water bodies 50.64 per cent belong to tanks and ponds. This is because of in West Bengal ponds are very common in households. Having number of ponds is considered as higher social status in the West Bengal. Most of the economically well of households have the desire of having pond/ponds. They are also produced fish. After personal use excess portion of production has been disposed to local market or local traders.

**Table 2**

Type of Water Bodies	Area (in lakh ha.)
Total water bodies	5.45
Brackish Water	2.1
Flood plains, lakes and derelict water wet land	0.42
Tanks and ponds	2.76
Reservoirs	0.17

Source : Bureau of Applied Economics and Statics, Government of West Bengal.

After tanks and ponds; brakish water (table 2 ) take the position of waterbodies where the fishing activities done. It is mainly popular in South 24 Parganas and North 24 Parganas and West Medinipur and East Medinipur. These districts are located at the coast of Bay of Bengal. During 2002 and 2003, both the districts of West Bengal; 24 Parganas and Midnapur contributed equally to the state fishery. From 2004 onwards, due to increased mechanization in 24 Parganas district, the landings crossed 80% of the total landings of the state and in Midnapur district it is less than 20% (Jayasankar , J et al).



Source: NABARD, Government of West Bengal

**FISHING AS RURAL LIVELIHOOD**

These sectors also play a significant role in supplementing family incomes and generating gainful employment in the rural sector, particularly among the landless labourers, small and marginal farmers (Ministry of Agriculture, Govt. of India, 2010). Fishing has often been exclusive right of specific groups but in many areas of world it attracts the poorer and the landless elements of the community (Welcomme). In West Bengal 90 per cent workers who are associated with fisheries activities belong to rural areas.

The table 3 shows that excluding Darjeeling and Hugli, in all districts more than 75 per cent workers, associated with fisheries activities are rural. This strengthens the fact that fishing livelihood is basically for rural people in the state West Bengal.

**Table 3**

Name of Districts	Rural	Urban	Total	Rural (%)	Urban (%)
Darjiling	170	72	242	70.25	29.75
Jalpaiguri	2685	198	2883	93.13	6.87
Kochbihar	6255	280	6535	95.72	4.28
Uttar Dinajpur	2815	162	2977	94.56	5.44
Dakshin Dinajpur	4030	778	4808	83.82	16.18
Maldah 06	9560	540	10100	94.65	5.35
Murshidabad	11350	1936	13286	85.43	14.57
Birbhum	3825	140	3965	96.47	3.53
Barddhaman	7380	1564	8944	82.51	17.49
Nadia	10815	1280	12095	89.42	10.58
North 24 Parganas	30450	4852	35302	86.26	13.74
Hugli	7525	3344	10869	69.23	30.77
Bankura	5020	488	5508	91.14	8.86
Puruliya	3430	732	4162	82.41	17.59
Midnapore	26095	1328	27423	95.16	4.84
Haora	5385	1382	6767	79.58	20.42
Kolkata	0	1628	1628	0.00	100.00
South 24 Parganas	61680	632	62312	98.99	1.01
Total	198470	21336	219806	90.29	9.71

Source: Census of India, 2001

**PEOPLES PARTICIPATION IN FISHING LIVELIHOOD**

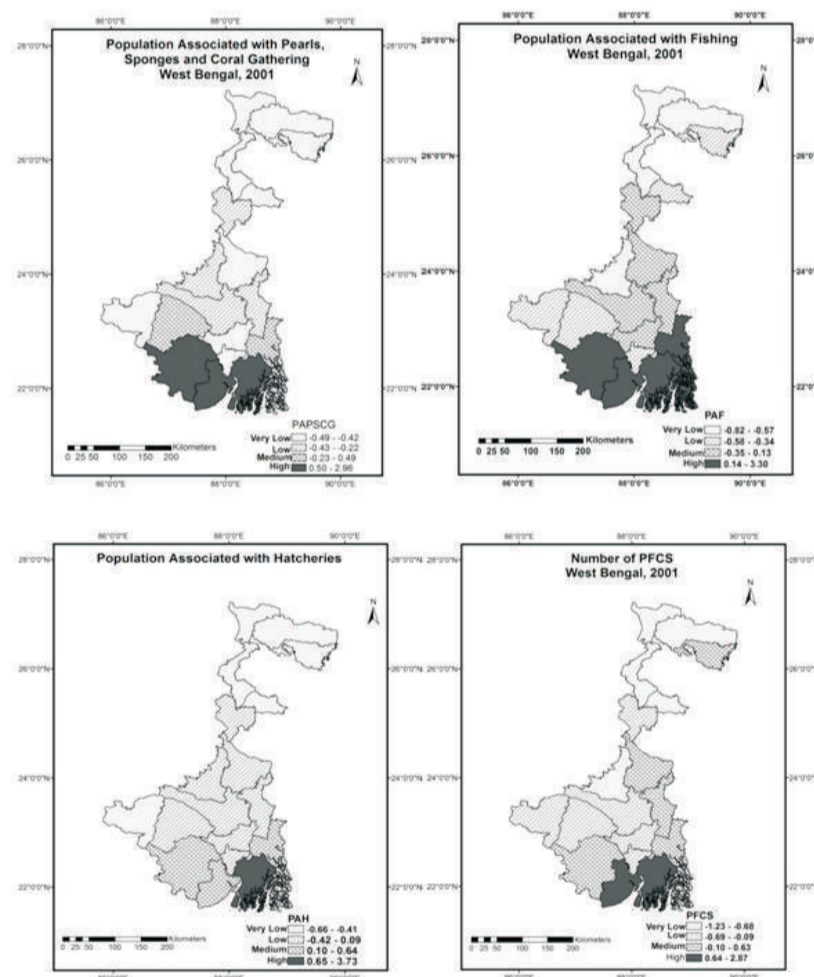
Population associated with fishing (Figure 3) is high in West Medinipur, East Medinipur, South 24 Parganas and North 24 Parganas. The index shows that Hugli, Barddhaman, Murshidabad, Malda falls under medium. Other four district namely Bankura, Puruliya, Dakshin Dinajpur and Koch Bihar reported in low category. Rest four districts like Birbhum, Uttar Dinajpur, Darjeeling and Jalpaiguri reported very low. The figure 4 shows that the index indicate that South 24 Parganas and North 24 Parganas have reported highest number of people engaged in hatcheries. Apart from it West Medinipur and East Medinipur fall under medium size of population engaged in hatcheries. Population associated with pearl, corals and sponges gathering (figure 2) is higher in South 24 Parganas, East Medinipur and West Medinipur. This type of activity is more popular in these districts because of they are situated at the coastal areas and pearls, corals and sponges are mainly associated with sea coast.

In the West Bengal, South 24 Parganas has highest number of population taking fisheries as livelihood. This is because of it has the facilities of both the coastal and inland fisheries. Beside this also receives higher quantity of rainfall during monsoon period. During 2002 and 2003, both the districts of West Bengal –24 Parganas and Midnapur contributed equally to the state fishery. From 2004 onwards, due to increased mechanization in 24 Parganas district, the landings crossed 80% of the total landings of the

state and in Midnapurdistrict it is less than 20% .As comparison to South 24 Parganas lesser population is engaged in North 24 Parganas, West and East Medinipur and Puruliya. The northern districts namely Darjeeling, Jalpaiguri, Kochbihar, Uttar Dinajpur and Dakshin Dinajpur reported very low. This is because of hilly region and not suitable for fishing. While the northern districts are not suitable for the fishing cultivation, southern districts especially along the Bay of Bengal are most suitable in context of natural resources for fishing livelihood.

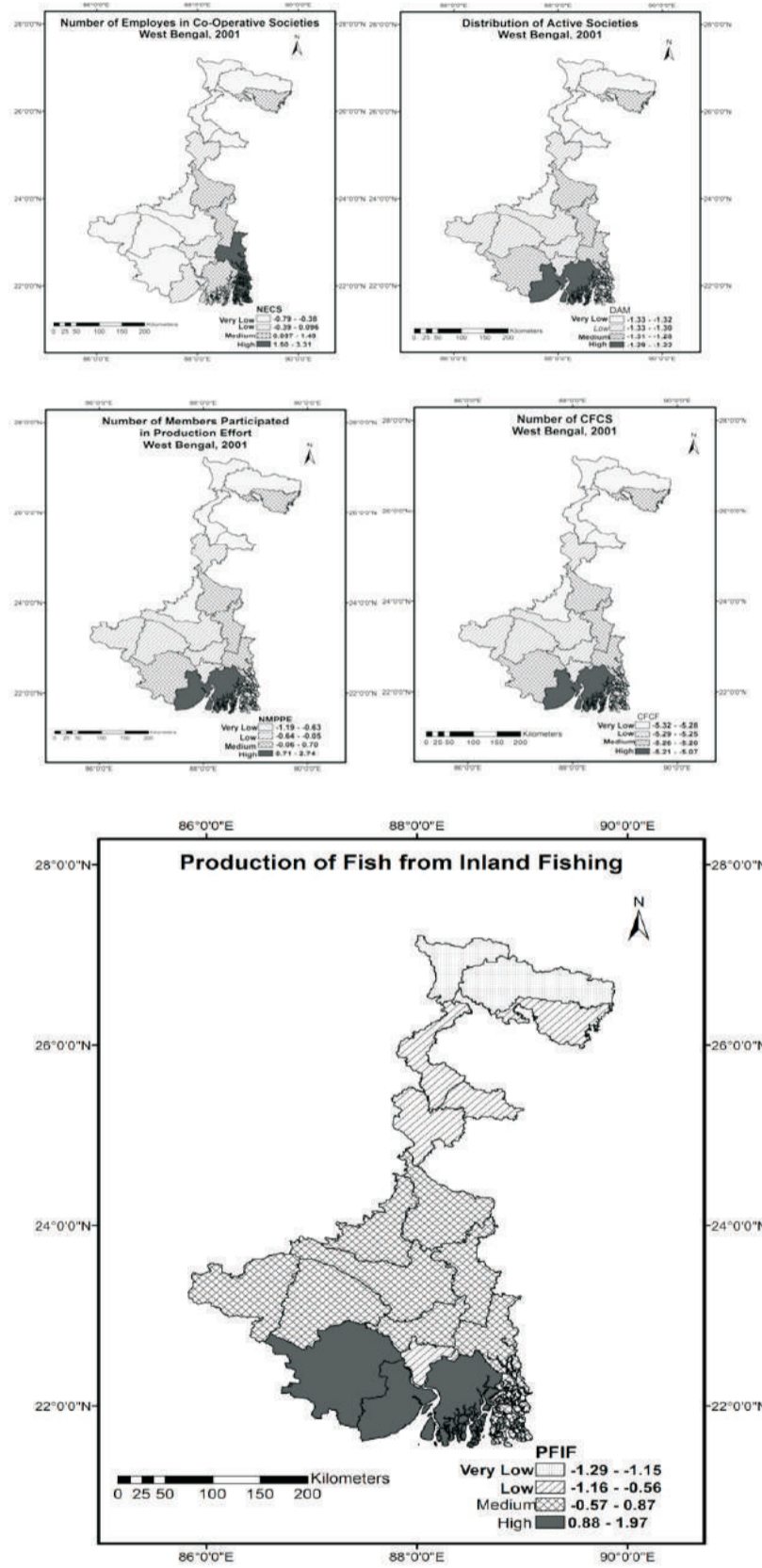
Number of PFCS (figure 5) is higher in South 24 Parganas and East medinipur. In terms of number of PFCS are medium the districts namely North 24 Parganas, West Medinipur, Murshidabad, Nadia and Kochbihar. The figure (9) of CFCS shows similar pattern of the figure of PFCS. The distribution of active societies (figure 7) is higher in East Medinipur and South 24 Parganas and in northern region of the states; there are very low number of active societies excluding Kochbihar. Number of employees in co-operative (figure 6) is higher in North 24 Parganas. This is medium in South 24 Parganas, Nadia, Murshidabad and Kochbihar. It is surprising that number of employees in co-operatives is low in East Medinimpu and very low in West Medinipur. Number of members participated in production efforts (figure 8) is higher in South 24 Parganas and East Medinipur. The districts, West Medinipur, Murshidabad, Nadia, North 24 Parganas and Kochhihar fall under medium category. The northern states excluding Kochbihar; Darjeeling, Jalpaiguri, West Dinajpur and East Dinajpur in all the aspects reported very low.

From the asset analysis, in all the distributional map it is very clear to us that all type of asset whether it is natural, human or capital asset are highly accessible in southern region and moderate in central part and very low in northern region of the state. Because of accessibility of all kind of asset in southern region, this part is also leading producer of inland fish (Figure 10) and because of lack of assets in northern region, it produce very less quantity of fish.





FISHING AS LIVELIHOOD IN WEST BENGAL



### POLICIES AND PLANNING FOR FISHERIES DEVELOPMENT

As Agriculture, including Fisheries, is a State subject, the emphasis of the Department has been on supplementing efforts of the State Governments in the development of these sectors. The Department has been providing assistance to the State Governments for the control scientific management and up gradation of genetic resources, increasing availability of nutritious feed and sustainable development of processing and marketing facilities and enhancement of production and profitability of fisheries enterprises (Govt. of India, Ministry of Agriculture, ).

Government of India provides financial assistance to the states for different schemes that are initiated through state fisheries department, fisheries cooperatives and development corporations. Apart from these, the Government of India has been promoting export development through various agencies like Fish Farmers Development Agency (FFDA), The National Cooperative Development Corporation (NCDC) etc. our observations during the study indicated that efforts to develop fisheries are not integrated with activities within and other sectors (Manasi et al., 2009) The Department of Fisheries of the Government of West Bengal aims to promote both marine and inland fish production along with proper utilization of resources. The policies and developmental schemes of the government are implemented through the Department of Fisheries. Proper financial support of Government of West Bengal has encouraged the Fisheries Department of the state to apply various developmental schemes. As per a recent statistical data, a major share of Fish production comes from the state of West Bengal.

In order to improve and exceed the upper limit of Fish production, the West Bengal Government in the last few years has brought several significant plans. Due to the successful implementation of these projects Shankarpur, Freserganj and Barge Jetty in the suburbs of the state have become some of the most prosperous Fishing corners.

While advancement of pisciculture in the state has helped in generation of revenue, initiatives regarding more Fish cultivation ponds have widened the employment scope

**Issue of Identity Cards to Fishermen:** Issue of identity cards to fishermen is a pioneering step taken by the department in order to ensure profits for deserving fishermen.

**Saving cum Relief Scheme:** This scheme requires fishermen to deposit a token amount per month during the fishing season which helps them during the loan season.

**Tribal Sub Plan:** The government has taken up various schemes for upliftment of scheduled caste and tribe fishermen. Assistance is provided to tribal beneficiaries by providing them with fishing nets, hundies, fish seeds etc and also getting them trained in various aspects of fish culture.

**Housing Programme:** Under the Basic Minimum Services Programme, the first housing scheme was taken by the fisheries department in 1985-86. Development of model village for fishermen was undertaken with the help of the National Welfare Fund.

**Social Fishery and River Ranching:** "Social Fishery" scheme was introduced in 1987-88 under which water bodies owned by the government departments, institutions etc. are stocked and management is transferred to a group selected by local panchayats, from among those living below poverty line.

**Old Age Pension:** With a view to helping and infirm fishermen/ women who do not have any viable means of livelihood, an amount of Rs 300 per month is being paid as pension from 1997-1998.

**Hatcheries:** The Department of Fisheries has taken up programmes to set up more number of hatcheries in the districts by introducing subsidy oriented schemes to attract the unemployed youths in the State to accept fisheries as one of the sustainable means of livelihood.

**Susidies:** For State Governments/State Government undertakings, a subsidy to the extent of 50% of the capital cost, subject to a maximum of Rs 500,000 per hatchery; for a joint venture project wherein the State Government has an equity participation of more than 50%, the maximum subsidy shall be Rs 250,000 per hatchery. (ii) For private entrepreneurs, the subsidy is 15% of the capital cost, subject to a maximum of Rs 150,000. (Bay of Bengal Programme for Fisheries Development, 1990)

## CONCLUSION

In West Bengal, South 24 Parganas' people are largely engaged in fishing livelihood. Apart from this district, in North 24 Parganas, West Medinipur and East Medinipur fishing activities are popular. This is because only these districts also enjoy the accessibilities of asset (human, capital, financial, physical and natural). The natural setting is also blessing these districts and they are situated along the coast of Bay of Bengal and enjoy the access to open sea. Even they enjoy motorized boats, mechanized nets which are not suitable for other districts. Other districts fisheries is dependent only rivers, ponds, tanks but not to sea. Social assets are also more available in these four districts especially in South 24 Parganas and East Medinipur where all the societies, co-operatives encourage the fishermen engaging in this activity.

Fishing livelihood is basically for the rural people in the state, West Bengal. Although it's rural status, the Department of Fisheries of the Government of West Bengal also took the possible policies and plans to promote both marine and inland fish production along with proper utilization of resources. The policies and developmental schemes of the government are implemented through the Department of Fisheries. The governing body has tried to implement the policies in the state and as per a recent statistical data, a major share of Fish production comes from the state of West Bengal. But still there are some problems which are associated with fishing livelihood.

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