

## **Socio-Economic & Technological Appraisal Of Fishermen: A case study in Narmada River Basin (M.P.) INDIA**

\***Shailendra Sharma**, \*\***Babita Malakar**, \*\***Rekha Sharma**, \*\*\***Anjali Chavhan**

\*Department of Zoology, Shri Umiya Girls College, Mandleshwar -451221 (M.P.) INDIA.

\*\*Department of Zoology, Holkar Science College, Indore (M.P.) INDIA.

\*\*\*Institute of Applied Research, Bhopal (M.P.) INDIA.

**ABSTRACT:** Rivers, reservoirs and aquaculture are the main sources of inland fisheries. Physical characteristics, the socio-economic-cultural environment and the institutional arrangements for managing fish production and associated activities are the most important factors in determining the productivity. The present low level of fish production can be attributed to poor management, as the propensities of production are very high on Narmada belt. Proper management system can enhance the productivity. Given the biophysical constraints, the socio-economic - cultural environment like consumption behavior, traditional knowledge of fishing techniques, historical presence of fishing communities all add to productivity. Therefore, it is important to understand the institutional characteristics of reservoir fisheries to evaluate factors responsible for productivity of the river fisheries and consequent formation of collectives to manage the resource. The following aspects play an important role in the evolution of collective action in fisheries development. (1) Technological extension services and innovation in technology to enhance production. (2) Prevention catch of certain kinds and size of fish to sustain the reproductive capacity. (3) Adequate storage, transportation, and marketing facilities for efficient disposition of fish and enhancing revenue. (4) Mechanism to distribute revenues equitably. A system, which delivers or ensures the above –mentioned services, becomes a reliable response to the institutional requirement in Narmada river resource to achieve the goal of reducing poverty by generating employment and income, promoting sustainable development by sustaining the river resource base ,enhancing the welfare of fisher community with equitable distribution of income, and creating efficiency in production through proper technical and institutional services which can ensure that output caters to increasing demand in Narmada region. [Researcher. 2010;2(6):17-22]. (ISSN: 1553-9865).

**KEY WORDS:** Fishermen, Socio-economic, Community features, living standard

### **1. Introduction:**

The Narmada is a river in central India and the fifth largest river in the Indian subcontinent. It is one of only three major rivers in peninsular India that runs from East to West (largest West flowing river) along the Tapti River and Mahi River. It is the only river in India that flows in a rift valley flowing West between the Satpura and Vindhya ranges. It forms the traditional boundary between North India and flows West wards over a length of 1312 kms. Before draining through the Gulf of Combey (Khambat) into the Arabian Sea, 30 m (0.0 mi) west of Bharuch City of Gujarat. Narmada River it is the only non snow feel Perennial River in India.

River Narmada is one of the most important natural sources of water and important ecological diversity in the state of Madhya Pradesh. Rich biodiversity of fishes present in Narmada River, therefore fishing commonly practiced in the river is responsible for the livelihood for a large number of fishermen families living in the vicinity of the river. Riverside capture of fisheries in The Narmada region is a very important source of household welfare for many of rural poor, particularly for providing nutrition (specially the much need protein), income and employment. A large number of people depend on

fishing in the river and other related activities like fish marketing and trading, craft and gear maintenance etc. for their livelihood. Hundreds of riparian fishermen earn a living by fishing in the river throughout the year.

Deficiency of proper equipments or instruments, which are necessary for fish cultures, hinders the socio-economic growth of fishermen. Fishermen and the fish traders socioeconomic condition is still in an early stage of growth. Some workers like Khan (1962) and Westerguard (1975, 1976) have focused on fishermen's occupation in the description of socioeconomic and socio-culture aspects. Ahmed (1957) described some variables like education demonstration and economic uplift programs under the head economics of fishing industry. At present fishermen do not get their actual price due to lack of transportation and malpractice in the marketing system. But the study on this aspect is very scanty and fragmentary. A few workers such as Ahmed (1990) and Hussain (1994) worked on the transportation and marketing system of Bangladesh. In many cases these are formed of illiterates/semi literate, indigent fishermen who lack the knowledge of latest fishery technology and proper attitude to fishery development (Chakraborty et al. 2005).

In the absence of proper techniques and skills they cannot lead towards their development. The Kahar caste, a lower class Hindu sector, is one of the traditional fishing communities of India. A group of fishermen belong to the caste live in the vicinity of Narmada river. They earn their subsistence by catching fish. The fishermen of this community are socially, economically and educationally disadvantaged and lack their own financial resources. The gradually declining riverine fish production in recent years has added to their adversities.

The present study has been undertaken to evaluate the socio-economic conditions of the aforesaid traditional fishing community, because socio-economic improvement of fishermen is considered to be the primary objective of revering fisheries development.

## 2. Materials and methods:-

**2.1. Study Area:** - The survey was conducted in the 5-study area (station) of Narmada River. For the present investigation station was selected starting from Omkareshwar to Barwani covering a 185 kms stretch. The Latitude and longitude of first station Omkareshwar was 22°15'1" N and 76°8'48" E and that of last station Barwani was 22°1'60" N and 74°54'0" E. Survey was conducted at five selection

station in the river Omkareshwar, Mortakka, Mandleshwar, Maheshwar and Barwani. These parts of the Narmada region were famous for their rich capture fisheries resources.

### 2.2. Data Collection Method:-

The data were collected from different fishermen and fish traders like businessmen, whole sellers, retailers and other associates. Data were collected using by questionnaires and Focus Group Discussion (FGO) with the fishermen and the women in the study area. The survey was conducted over a period of 1 year from 2008 to 2009.

The information was collected on sources of fish (wild or cultured), problem of fishing or trading, daily retail price and is there any fishermen co-operative society, and number of family members, sex composition, age structure, income patten, educational status and earner's dependents.

### 3. Demographic details of the study area: –

The entire stretch are divided into two parts i.e. the left bank and the right bank of river Narmada. There are 3 station on the left bank and 2 stations on the right bank. In the left bank Omkareshwar situated in Khandwa distt, Mortakaa situated in Khandwa district, Barwani situated in Barwani district. And on the right bank Mandleshwar and Maheshwar situated in Khargone distt.

**Table -1: Location of station in the study area.**

S. No.	Station	Latitude	Longitude	Dist.	River Bank
I	Omkareshwar	22°15' 60" N	76°8' 48" E	Khandwa	Left
II	Mortakka	22°13' 60" N	76°2' 60" E	Khandwa	Left
II	Mandleshwar	22°10' 60" N	75°40' 0" E	Khargone	Right
IV	Maheshwar	22°10' 60" N	75°34' 60" E	Khargone	Right
V	Barwani	22°10' 60" N	74°54' 0" E	Barwani	Left

### 3.1. Age Structure:-

According to the survey age structure of the fishermen of study area people lying the age group between 0 – 15, 16 – 35 and 36 – 45 year age group. In this study we found that 16 – 35 year of age group are more in number and their role in fishing is more active. The next groups are 35 – 45 year age group are also engaged but comparison to former low. Below 15 year age group may be regarded as occasional working age group.

**Table 2:- Distribution of age group of samples of fishermen of the study are of Narmada river.**

S.No.	Station	Total Population	Age Group		
			0 – 15	16 – 35	36 – 55
I	Omkareshwar	185	22	118	45
II	Mortakka	75	15	30	30
III	Mandleshwar	110	24	40	46
IV	Maheshwar	97	20	42	38
V	Barwani	80	18	32	20

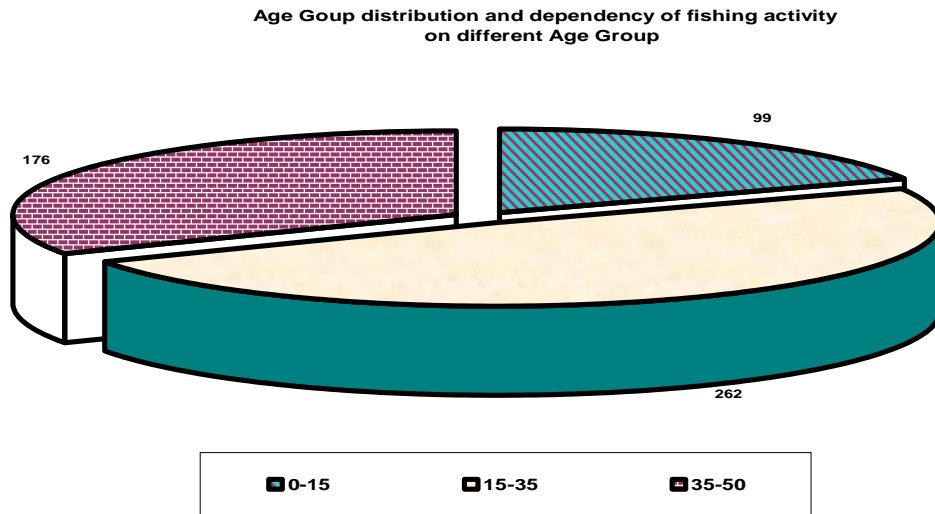


Fig 1. Age Group Distribution of Sample Fishing Community

**3.2. Sex composition and sex ratio:-**

The study has been made over 80 families with population of 547 people. In the sample the average sex ratio of the family members of fishermen of left bank with total 340 population 125 female per 215 male and on right bank out of total population of 207 , 93 female per 109 male. This study show that in left bank female dominate on the male and in right bank male and female number are about equal.

**Table 3:- Distribution of sex ratio of total population of smale of the fisherman of Narmada River**

S.No.	Station	Total family	Total population	Male population	Female population
I	Omkareshwar	20	185	120	65
II	Mortakka	13	75	45	30
III	Mandleshwar	17	110	55	50
IV	Maheshwar	15	97	54	43
V	Barwani	15	80	50	30

**3.3. Community features or religion:-**

In the social organization of fishermen were found to belong to Kahar and Kewat caste following Hindu religion. The former is found in higher percentage than that of latter. These communities used to catch fish from natural water of river and that the fishermen came from a low cast of Hindu society.

**Table 3:- Distribution of community features of fishermen population**

S.No.	Station	Total Family	Cast Category		
			0 – 15	16 – 35	36 – 55
I	Omkareshwar	20	20	-	-
II	Mortakka	13	9	3	1
III	Mandleshwar	17	14	2	1
IV	Maheshwar	15	15	-	-
V	Barwani	15	12	3	-

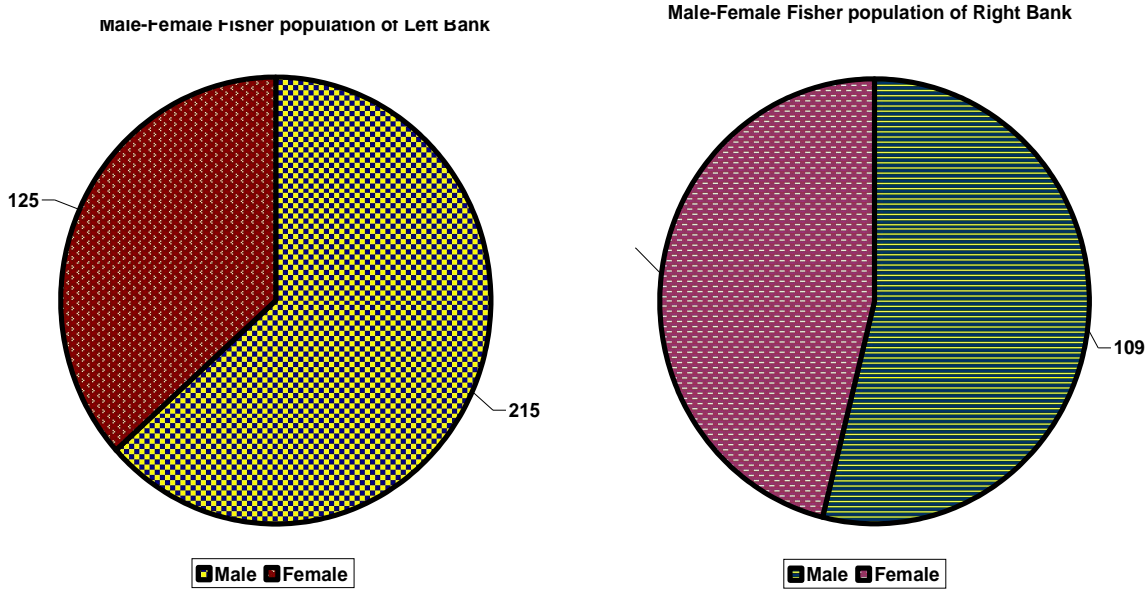


Fig 2. Male female fisher population of left bank 215 male/125 female. Male and Female fisher population of left and right bank on Narmada River

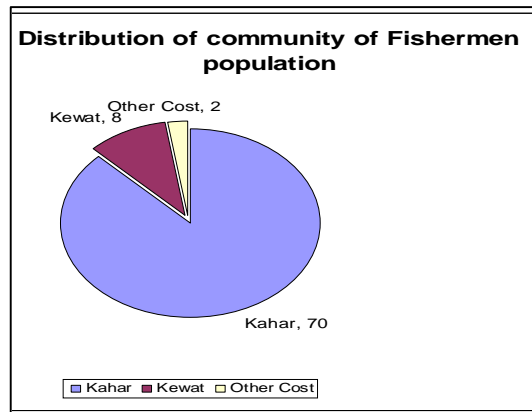


Fig 3. Distribution of Community of Fishermen Population

**3.4. Income and living standard:-**

Although fishing is the major and in some cases, the only source of income of traditional fisherman, the fisher folk occasionally undertake a variety of fishery related and non-fishery related activities, which constitute a substantial part of their annual income. Table (IV) this income augmenting opportunities however, are very limited. There are very limited options for non-fishery related activities such as wage labor in the other sectors like agriculture, construction, live stock and poultry raising, etc.

From the interviews, fishermen mentioned that their daily fishing income fluctuated between Rs. 70/- to 100/-.

Estimation of annual income-by-income level, as done here. Allows differentiation of livelihood dependency of fisher communities of the area. Overall it can be stated that the majority of people living here are dependent on fish resources. The income of marginal fishermen has decreased over the years due to reduced availability of fish. These reduction or production in fish reduce because of environmental degradation like late rain, heavy river siltation, agricultural, dam formation and industrial pollution, etc. further intensify the problem.

**Table 4: Income level of fishermen families inhabiting the study are.**

S.No.	Station	Total Family	Total 12 Month income	12 month income per family	12 month income by fishing (Rs.)	Per family 12 month income by fishing (Rs.)
I	Omkareshwar	20	7,20,000	86,000	5,76,000	28,000
II	Mortakka	13	4,21,000	32,400	3,27,000	27,000
III	Mandleshwar	17	4,89,600	28,800	4,59,000	27,000
IV	Maheshwar	15	3,78,000	28,200	3,24,000	21,600
V	Barwani	15	5,40,000	26,000	3,78,000	25,200

**Stationwise Income Level of Fishermen Families inhabiting the study area**

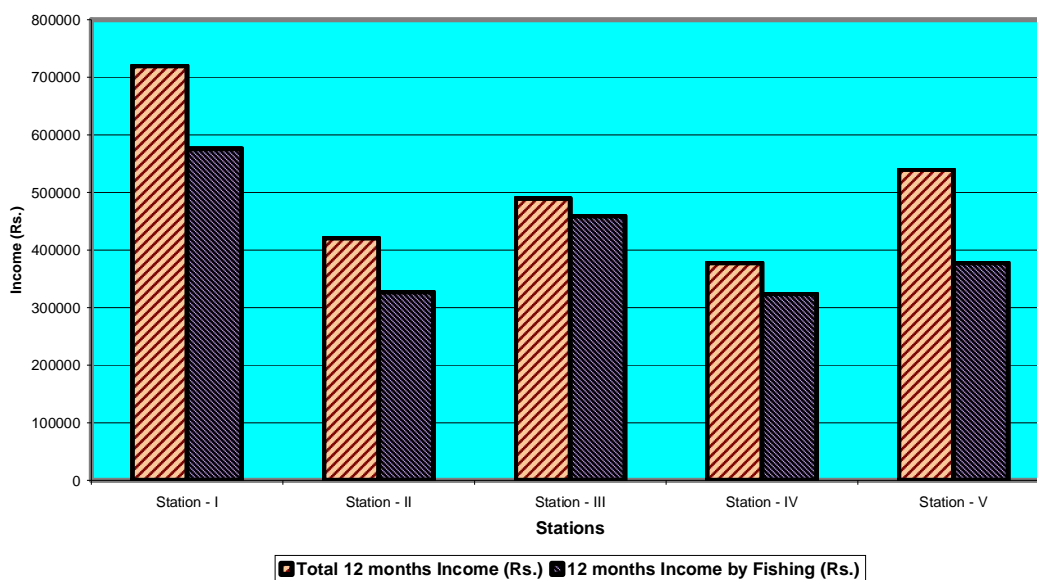


Fig 4. Station wise Income Level of Fishermen Families Inhabiting the Study Area

**3.5. Using Equipment or Gear and Craft:-**

The type of fishing gear used varies by type of fishing operation and target species – Gill net are commonly used in family fishing as they are considered as relatively low cost gear situated for catching many fish species. About 53% Gill nets are used on left bank and 34% on the right bank. Drag net formed 18% of total gears used on the left bank 32% on the right bank. Beside scoop net, drag net and hook lines are also used for large scale fishing. Left bank net distribution – 10% Scoop-nets, 6% Cast nets, 13% Hook-lines net, 18% Drag-nets, 53% Gill-nets. Right bank net distribution – 17% Scoop-nets, 3% Cast nets, 14% Hook-lines net, 32% Drag-nets, 34% Gill-nets.

**3.6. Literacy and Education or Educational Status:**

The literacy level of these fishermen is very low. The majority is of illiterate whereas only few fishermen have their education up to primary level and some only write their name and give a signature. Children are also educated till the primary or 5<sup>th</sup> class and than onwards they drop-it in order to earn some

money. On the contrary women folk is illiterate who don't even know to read and write their name.

**3.7. House Condition:**

Most of the fishermen lived in very poor housing conditions. Majority of them live in huts made of mud, few of them also have houses made of cement and bricks.

**4. Fish fauna condition:**

On fisheries, the researcher observed that the main groups of major fishes were Carps, *Catla*, *Labio*, Catfish, *Hilsa* and Prawns.

Listing of all important fishery species found in the river system need further investigations, which may be categorized, as rare like, *Labeo cobas*, *Labeo dyochedus* and endangered or threatened like *Labeo fimbriatus*, *Notopterus Notopterus*, *Tor tor*, And also which are likely to increase like *Catla catla*, *Labeo rohita* and *Cirrhinus mrigala*.

### 5. Employment Opportunities:-

Employment opportunities can be generated not only from fish production but employment would also be provided through different allied occupations viz hatchery management, seed production, fish marketing, net making, packing of fish, ice factories, boat operation and also in other ancillary industries like basket making, patta making, transport of fish etc. Fishermen would be getting better remunerations which will ensure increase in their per capita income. Adequate storage, transportation and marketing facilities for efficient disposition of fish will further add to enhance revenue.

By evaluating the magnitude of costs, benefits, impacts and distribution of these impacts through individual and group responses it was intensely felt that the fishermen do not receive what actually they deserve. At present fishermen do not get their actual price due to lack of transportation and malpractice in the marketing system. At a policy level, mechanism should be developed so as to distribute revenues equitably.

### 6. Technological Extension Services and Innovation in Technology To Enhance Production:-

Deficiency of proper equipments or instruments, which are necessary for fishing, hinders the socio-economic growth of fishermen. In many cases these are formed of illiterates / semi literate, indigent fishermen who lack the knowledge of latest fishery technology and proper attitude to fishery development and also lack resources to make use of it. In the absence of proper techniques and skills they cannot lead towards their development. Proper training programs supported by financial input may improve the situation.

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