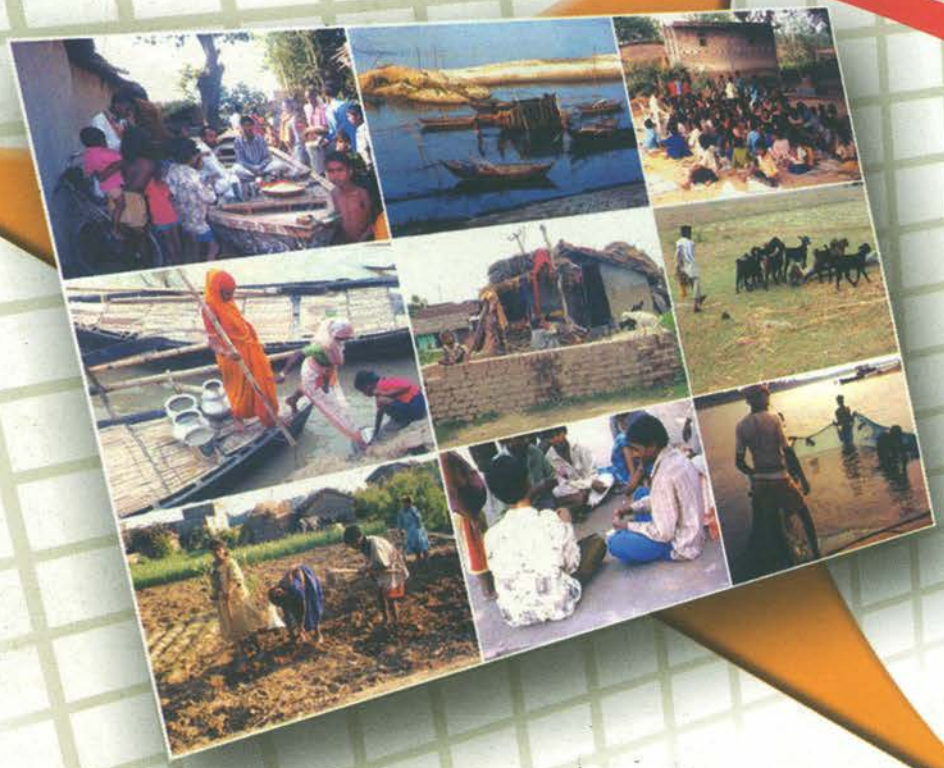

Socio-economic Status of Fishers of River Ganga

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Foreword

The fishers-fisheries interdependence has been a widely recognized phenomenon. The mutual relationship holds the key to the fisheries conservation and livelihood protection in the natural fisheries resources like rivers. Unfortunately, both of them suffered severely as the resources depleted, leading to the deterioration of the living conditions of the fishers. This phenomenon is demonstrated strongly in the case of the river Ganga, the largest river system in the country. Over the period of time, fisheries resources of river Ganga has depleted due to natural and anthropogenic factors like population pressure, over fishing, siltation, water abstraction, construction of dams, barrages, *etc.* The fishermen population depending exclusively on the fisheries was the worst sufferer as they were not able to cope with the changes and there were significant impact at the individual and community level.

Present study, the only one of its kind, has gone deep into this issue by systematically and scientifically studying socio-economic conditions of the fishers of the river Ganga across a stretch of about 1000 km with sample size of more than 2000 households. The study has clearly shown that the fishers as a community fared worse than even scheduled caste communities in both the states of Uttar Pradesh and Bihar. The study has described in details the literacy, health, income, livelihoods and other living standards of the fishers communities. I hope that the bulletin will be eye opener to the issue of the socio-economics of the fishers in country. The study also indicates towards the importance of the natural fisheries resource management in context of the protection of livelihoods of large number of fishers dependent on it.

Dr. K.K. Vass
Director

Barrackpore
24th June 2009

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I will be failing in my duties by ignoring the respondents, the fishers, who have to waste a good deal of time with investigating team. Their cooperation is deeply acknowledged.

Dated: 23rd June '09

R.K. Tyagi
(Principal Scientist)
CIFRI, Allahabad

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List of Abbrevations

APCESS	Agicultural Product Cess
B/W	Black & White
CIFRI	Central Inland Fisheres Research Institute
FG	Fishing Group
ICAR	Indian Council of Agricultural Research
IIM	Indian Institute of Management
NE	North East
NFG	Non Fishing Group
NFHS	National Family Health Survey
NGO	Non Governmental Organisation
NSS	National Sample Survey
OBC	Other Backward Class
PDS	Public Distribution System
PHC	Primary Health Centre
SC	Scheduled Caste
SL	Standard of Living
ST	Scheduled Tribe

Executive Summary

The river fisheries are on decline as a global phenomenon but the pace and implications had been varied across rivers. The researches had shown a fast decline in fisheries from Ganga during last five decades. The River Ganga, the largest river system of the country, passing through thickly populated regions used to provide livelihood to a large group of fishermen. The disjointed information about collapse of livelihood and destitutions had been reported. But, this information lacked the coverage, comprehensiveness and scientific basis. In order to fill these gaps and investigate the pertinent question of the socio-economic implication of the fisheries, present study was under taken during 2000-2003. The study covered the stretch from Kannauj to Bhagalpur covering approximately 960 km in the states of Uttar Pradesh and Bihar. In the survey, data from 162 villages covering 2029 families were collected. Data were entered; verified and analyzed using advanced softwares.

For comparison, the data were organized as fishing groups and non-fishing group within communities to compare between the groups of people who continue fishing and those who left fishing in recent times. The comparison showed the socio-economics dynamics as both the groups shared same socio-cultural conditions. Results were also compared with the National Sample Survey (NSS) data and National Family Health Survey (NHFS) data to derive the comparisons of the communities with that of others in the regions.

Along with the decline in fisheries, the livelihood structure of the fishers had undergone transformations. A large proportion of the fishers left fishing and was treated as non-fishing group in the report. Such shift has been due to both push and pull effect. As the income from fishing were not enough they searched for other alternatives. When alternatives were found they left fishing. Even in the changed scenario, the fishing group (FG) is still dependent upon fishery as major source of livelihoods with fishing labour and general labour as next alternative.

Agriculture constitute only a small share in the livelihoods. But for the Non Fishing Group (NFG), general labour and business were the main source followed by agriculture and allied activities. The business consisted of smaller enterprises like selling fish, vegetables, and fruits. The agriculture included cultivation of cucurbits and gourd in the riverbeds, riverbanks or leased-in lands.

Among the fishers, role of women in contributions to the livelihoods was significant. They were not only earned money but also participated in most of the family decisions. In the cases, where women participation was higher, the families performed better in terms of the livelihood achievements.

Livelihood structure was explained through capabilities, assets and resources at the disposal of the communities. The present survey had collected data on productive and non-productive assets of households. Around 3/4th of the communities had no land but around 57.3 % of the people had access to at least leased-in or unclaimed land. About half in U.P. and 1/3rd in Bihar had livestock to supplement their income. A very low percentage of people (1.2-20.0%) had assets of comfort (like televisions, two wheeler, fan, *etc.*). Even all the people in the community did not have essential household assets like cots.

The survey also collected data on the nature of pubic services available and access of the communities to them. The availability of the primary school (90.5%) and junior high schools (49.3%) were not a problem. But availability of the qualified doctors was reported to be major constraint. Even though ration cardholders proportion was high (90% in UP and 50% in Bihar), but essential commodities like kerosene and sugar were not available on the administered price. The supply of electricity to the communities was poor (26.6 and 28.7% for UP and Bihar) and they depended on oil or kerosene as major source for lighting in houses (71.3 and 73.2% for UP and Bihar, respectively). The main source of drinking water was hand pump and open well and lacked the piped water facilities in the villages. The public facilities for sanitation were also very poor as they lived in poor physical conditions lacking proper drainage and sanitation facilities. Even though one fifth of the villages had banks, only 18.1% fishers had bank accounts and out of them only 36% were operating them regularly.

The surveyed data analyzed with the livelihood framework and evaluated the achievements of the socio-economic systems on the fishers' communities. Such achievements were evaluated in terms of attainment in health, education, housing, income and expenditure. These achievements were the results of interactions of the resources, facilities, capabilities and endeavor of the fishers for their welfare. The sickness of the male was reported higher at early ages (0-14) but the female were sick in the age group of (19-24). The immunization percentage was also reported low except for polio. The prenatal and post natal health care was also found poor and dependent heavily on the village maid (dai) than qualified doctors. The two third of the people lived in kachha houses and only 24% had pucca houses. The number of person living in each room found to be much higher than NFHS-2 estimates. It was also found that 45% of the people did not have warm clothing in winter.

The literacy percentage was found to be lower than other people. Among males the literacy level was around 50%, but for females it was extremely low (16%). The school dropouts were also higher. Even those who went to school, very few proportion attained higher education. The reasons for such a state were involvement of the child in work and very low rating for child education particularly the girl child.

The demographic profile indicated higher sex ratio in younger age (1049) but reduced drastically after age of 15 (676) and improved further after age of 30 (932).

The phenomenon explained marriage of girls out of the community and differential access of the women to health care particularly during the time of maternity. The cases of increase in the unmarried male were reported due to non-availability of girl in the community. But, this phenomenon needs further investigation to derive concrete conclusion.

The overall assessment of the fisher's communities dependent upon the River Ganga presented a miserable picture of the community. They were found to be materially deprived, socially isolated and politically marginalized. Along with the decline in fishery and livelihoods, their capabilities to cope with such externalities had also declined. They were even worse then the poorest of the poor. In many cases, their livings were found to be more deplorable then SCs. The decline of fishery, poor public services, poor capitals and assets, poor cognitive and social capital, bad habits, lack of public support, etc. was collectively found to be responsible for this state of affairs. Despite such conditions, they were not able to organize themselves socially and politically to attract attention of the government and develop social capitals for their upliftment. Therefore, it is the order of the day to treat the group as special class and require urgent and special attention for the survival of the community. The policies need to be formulated to organize the community not only for protection of livelihoods but also sustainable utilization of the fishery of the river Ganga. They need to be involved in developing strategies to improve the fisheries and livelihoods simultaneously.

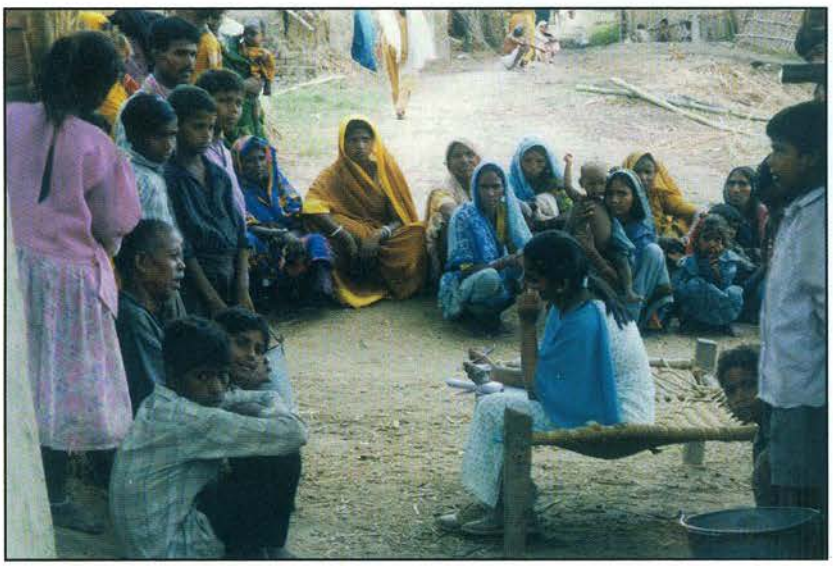
Introduction and Context

The fisheries are one of the oldest illustrations of the dependence of man to nature. It also shows elements of intricate associations of the man and nature in its crude form as with rise and fall of state of one, others followed same path or vice versa. In other words, the livelihood conditions and living standards of the fishers, being primary stakeholders were severely affected when capture fisheries resources deteriorated. The capture fisheries till recently before development of the aquaculture constituted major source of the fish. The fishing activities were developed as specialized activities attached to a group of caste or communities. The communities inherited the fishing skill over centuries as traditional skill and occupation. In recent times, the inland capture fisheries degraded to a level from where it is difficult to recover back to the earlier state. The question of sustainability and carrying capacity has emerged as major issue and serious concern has been raised over the implications of it on the living and livelihoods of fishers dependent on it. The critical issue has been discussed widely, but the systematic study has been lacking across the country. There is no study so far made in India on the socio-economics of the fishing communities. To bridge this gap the study on the techno-socio-economic status of the fishers associated with the river Ganga was initiated at Riverine Division of the Central Inland Fisheries Research Institute with the financial support from "APCESS fund of ICAR" during 1999-03. In this bulletin specific focus is given on the socio economic conditions of the fishers dependent on the river Ganga.

Several studies have been conducted to ascertain ecological characteristics of river Ganga and the factors responsible for declining fish production (Bilgrami and Munshi, 1985; Sinha *et. al.*, 1998). Barring studies conducted by CIFRI (unpublished) in sixties covering inventory of fishing villages; IIM, Ahemdabad (IIM, 1985) which focused mainly on economic aspects of riverine fishery; no information is available on social, economical and cultural aspects as well as occupational structure of fishermen of river Ganga over time and space. In case of rivers only detailed study was undertaken by CIFRI in the year 1991 for Narmada River (CIFRI, 1991) and for other rivers information is scanty.

The studies on fisheries from rivers have clearly indicated about a significant decline in fish catch and it is bound to affect severely the economy of fishers for whom it is the principal source of income. Thus, it becomes imperative to undertake study on techno socio-economic aspects of fishers of river Ganga for being most important river in Indian context. The present study would be instrumental in filling this gap and would form the baseline information for proper planning and policy formulation for the upliftment of riparian community of this alluvial region.

The following sections describe in detail the methodologies followed, description of fishers communities, demographic profile, household and productive assets, income and health conditions of the fishers. A comparison has been made with the other communities vis-a-vis fishers communities. In the bulletin a distinction has been made between the section of the people who left fishing and are involved in other activities and those continue to depend on fishing for their livelihood.



Investigating team members interacting with fisher's families

Methodology

Sampling methodology

A survey of fishing villages to assess fishing manpower, crafts and gears along the banks of river Ganga was undertaken by Riverine Division of Central Inland Fisheries Research Institute (CIFRI), Barrackpore during 1955-56. The present work was finalized keeping in mind the results obtained from that survey. Before initiating the present survey a list of fishing villages (village frame) was prepared on the basis of past survey and current survey was planned accordingly. Unfortunately, the village frame failed in the field and it was not possible to prepare new village frame due to physical and financial constraints. The state government offices were also approached for providing the list of fishing villages but efforts proved to be futile. The only option left was to conduct the survey on the basis of inquiry. For this purposes the entire stretch was divided into small segments. First fishing villages in the segment were selected for enumeration on the basis of past information and information collected from the persons of the area involved in fish marketing. The fishers were asked about the nearby fishing village both in up and down stretch. On the basis of information provided by them, next village was selected randomly. Information provided by them proved to be correct most of the time with some established constraints. Thus, the village frame updating continued with the survey.

Survey period

The survey spanned from February 2000 to April 2003. The survey work could not be undertaken on continuous basis due to lack of facilities and difficult access to villages in monsoon (July to October). The entire survey was conducted by a team of only three/ four investigators, who surveyed different segments possible at a point of time.

Survey instruments

Prior to present survey very little information was available about the fishers of river Ganga that also lost its importance due to a time gap of about fifty years. The present survey was planned with the aim to study the social, cultural and techno-economic aspects of the fishermen community, specifically those involved in fishing activities in river Ganga. After preparing draft schedules, a workshop was organized to give final shape to schedules. Two types of schedules (Village schedule & Household schedule) were finalized and pre tested in some nearby villages. Due to very long stretch (about 1000 km), pre testing could not be done in all the areas. Some improvements were made on the basis of pre testing results and schedules were finalized.

Target parameters

In village schedule information was collected at village/tola level through focus group discussions and important parameters covered were :

1. Availability of boats and fishing households in a village;
2. Information about river Ganga and other fisheries resources and their utilization;

3. Other natural resources such as forest, mineral, *etc.*;
4. Availability and access to basic facilities such as education, health care, public distribution system (PDS), *etc.*;
5. Availability of educational facilities in the village and the status of education;
6. Role of anganwadi in child development and impact of adult education programme;
7. Transportation means available to villagers;
8. Status of public distribution system;
9. Availability of electricity and drinking water facilities;
10. Availability of banks and communication means, *etc.*;
11. Involvement in salaried jobs;
12. Status of fishery, turtles and dolphins;
13. Fisher's family structure;
14. Community cultural aspects and ill habits.

In household schedule, information was collected at household level. An adult male from family was chosen as respondent and for questions related to females, adult lady from the family was chosen. The information on household characteristics, occupation and income, consumption, health, *etc.* was asked. The parameters of interest were as follows

1. Family demographic structure and educational status and reasons for not enrolling to schools;
2. Activities of family members;
3. Availability of fishing equipments, involvement in fishing, catch disposal and returns from fishing;
4. Status of agricultural land, their involvement and returns;
5. Family involvement in allied activities and economic returns from them;
6. Involvement in agricultural, general, fishing and water related labour and income from these activities;
7. Migration and related activities;
8. Durable assets and livestock with family;
9. Housing facilities;
10. Drinking water facilities, toilet, light source, fuel for cooking;
11. Family consumption on food and related items; expenditure on education, medical treatment, festivals, child birth/ marriage/ death ceremonies, toiletries, cloths and ill habits;
12. Sickness of family members, preventive vaccines for children, antenatal and postnatal care of mothers;
13. Autonomy to females;
14. Debt ness, *etc.*

Study area

On the northeast bank, Hardoi (U.P.) to Begusarai (Bihar) stretch and on southwest bank from Kannuj (U.P.) to Bhagalpur (Bihar) stretch was covered under the present study. However, district Bhagalpur was surveyed only up to Kahalgaon. The districts covered under study were as follows :

Northeast bank		Southwest bank	
State	**District**	**State**	**District**
Uttar Pradesh	Hardoi	**Uttar Pradesh**	Kannauj
	Unnao		Kanpur Nagar
	Rae Bareilly		Fatehpur
	Pratapgarh		Kaushambi
	Allahabad		Allahabad
	Sant Ravidas Nagar		
	Mirzapur		Mirzapur
	Varanasi		Varanasi
			Chandauli
	Ghazipur		Ghazipur
	Ballia		
Bihar	Saran	**Bihar**	Buxar
	Vaishali		Bhojpur
	Samastipur		Patna
	Begusarai		Munger
			Bhagalpur

In Bihar the number of fishing villages on N-E bank was small; this may be due to physical features of the river Ganga. During monsoon season, the river spreads mainly in northeast direction and for this reason the distance of villages from river was also found to be more. Similar was the situation in Hardoi, Unnao and Ballia districts of U.P. In all, 960 km stretch of river Ganga was covered during the survey.

Coverage

On the basis of survey total number of fishing villages was estimated at 334. Over all 162 villages were surveyed and 2029 families comprising 13245 persons were interviewed. In selection of families emphasis was given on those fishing community families, which were actually involved in fishing termed as Fishing Group (FG). Some families from the community, which were not involved in fishing but residing in the same localities and equivalent in all other respects, were also selected for the sake of comparison. The second group has been classified as Non Fishing Group (NFG). In fact a good proportion of NFG families were involved in fishing activities in the past and some families were separated only from existing fishing families. The decline in fisheries status forced them to leave

fishing and switched over to other alternatives mainly general labour or small agriculture. In spite of occupational change they were same in all other social and cultural aspects. In selected households, 1645 were fishing households (FG) and rest belonged to non-fishing group (NFG).

Comparison

There was only little information available about the fishers of river Ganga and that also lost importance due to a very wide time gap. Thus, no comparison could be made with earlier information. However, for housing characteristics and other variables of interest, obtained results were compared with the results of Household Consumer Expenditure Survey and Employment & Unemployment survey of National Sample Survey (NSS), 55th round and Second National Family Health Survey, NFHS-2. Out of NSS 55th round survey data only data pertaining to districts covered under present survey was considered. But from NFHS-2 data selection could be made only at state regions level. For some variables, data was compared on stretch basis. Entire surveyed stretch was divided in 12 approximately homogeneous stretches. The stretch details are given in Table 1.1.

Table 1.1: Number of villages and households surveyed by stretch

State	Stretch	District	Villages surveyed	Household surveyed	
				FG	NFG
U.P.	1	Hardoi, Unnao	11	94	28
U.P.	2	Kannauj	2	21	5
U.P.	3	Kanpur	11	114	35
U.P.	4	Fatehpur, Kaushambi	11	66	25
U.P.	5	Rae Bareli, Pratapgarh, Allahabad, Mirzapur north, Sant Ravidas nagar	22	205	56
U.P.	6	Allahabad south, Mirzapur south, Varanasi south	34	347	56
U.P.	7	Varanasi north, Ghazipur north	18	196	62
U.P.	8	Chandauli, Ghazipur south	11	91	46
U.P.	9	Ballia north & south	8	52	49
Bihar	10	Buxar, Bhojpur	10	102	37
Bihar	11	Patna, Munger, Bhagalpur	17	189	47
Bihar	12	Saran, Vaishali, Samstipur, Begusarai	7	86	20
		Total	**162**	**1563**	**466**

The stretches were formed on the basis of river condition, area topography, fishing practices and intensity of fishing, availability of boat and gears, agriculture and allied activities. Stretch 2 were the smallest stretch with only one district and only small portion touched Ganga. In this stretch only three fishing villages were reported. In two villages fishing intensity was high and in upper part of the stretch fishing rights were leased out by the district authorities. In Hardoi district of stretch 1 fishing rights were leased out but in all

other respects it was similar to Unnao district. The number of fishing villages was minimum in stretch 12 as the river distance was more in this stretch. During floods river spreads in northeast direction up to a long distance and for this reason no habitation was reported on the riverbank. In the earlier survey report (unpublished) no fishing village has been reported from the districts of stretch 12.

Worshiping ceremony of a new boat

Dip net fixed along the bank of river Ganga

Fishing boats and gears

The Community and River

Fishermen community as a whole constitutes about 3% of Indian population. National Association of Fishermen has given the total number of castes and sub-castes as 227, out of which 44 falls under scheduled caste category and 38 among scheduled tribes. In Uttar Pradesh and Bihar the number of castes and sub castes has been counted as 12 for each state. Fishermen were found in almost all of the villages and cities/ towns, involved in different activities depending upon the opportunities. William Crooks (1974) has given a detailed account of important fishing communities of North and Western India, and reported that fishing, cultivation, agriculture labour, plantation of water nuts (singhara), palanquin carrying, domestic services, basket maker, and some other small jobs were their main occupations.

Among fishers inhabited along banks of the river Ganga, fishing, goods transportation through boats, ferry ghats were their main occupation since time immemorial. With the introduction of The Northern India Ferries Act, 1878 (Act no. XVII of 1878) the states started auctioning (selling of rights) of ferry ghats. The fishers could not participate in auctions and were deprived from one of their livelihood source due to poor economic and social status. This was the first setback to their livelihood system. The developmental activities in the country also had an adverse effect on their livelihood resources. Due to rail and road transport, the transportation of goods through waterways has come almost to a halt. Being most important source of fisher's livelihood it was another jolt for them. Earlier fishers from middle and lower stretches of river Ganga used to go to long distances and even up to Kolkata carrying the goods through big size boats.

The water abstraction from Ganga and its tributaries for hydroelectric generation, industrial and agricultural needs, changed completely the hydrographic features of Ganga. A decline in water discharge during most part of the year was observed. This resulted in a big loss to fish habitat and hampered the breeding and recruitment of major carps seriously. As a result the fishery of major carps, the mainstay of fishery in the middle and lower stretches, showed a sharp decline. In addition, the construction of Farakka barrage on Ganga in the lower reaches obstructed migration of *Hilsa ilisha* and some other migratory species to upper reaches. This resulted in almost collapse of hilsa and large sized prawns fishery in Allahabad-Farakka stretch of Ganga and this shattered the livelihood of fishers, specifically in Bihar. In Bihar a good number of fisher left fishing as profession with the collapse of hilsa fishery.

The decline in fishery has posed serious problems for fishers who were exclusively dependent on fishery for their livelihoods. Most of them were landless by virtue of the nature of their profession. Due to involvement in fishing or boat transportation, the male members were not available for agriculture for quite considerable period of the year. Therefore, they never invested their savings in the purchase of land. The situation is more or less same for almost all of the perennial rivers of the country.

Demographic Characteristics

This section presents a profile of the demographic, educational characteristics, availability of general facilities such as housing, drinking water, *etc.* of the fishers community households. The results obtained have been compared with NSS 55th round Employment and Unemployment Survey (1999-00) and National Family Health Survey (NFHS) - 2 (1998-99).

Age-sex distribution of the household population

The average size of the households was estimated at 6.7. There were marginal differences between states and fishing (FG) and non-fishing (NFG) groups. As compared to fishers of Narmada (av. family size - 5.52, CIFRI, 1991) the estimate for Ganga fishers was quite high. The age distribution of the fisher's population was typical of high fertility populations, with a high proportion of younger age groups. About 44% were below 15 years of age and 3.5% were of age 65 or older. In comparison to NFHS-2 estimates the proportion of younger group in fishers was marginally high but for old age was low.

For 0-4 yr age group the proportion of female was higher than male although the difference was less in case of NFG. After that up to 14 year the proportions were almost same (Fig. 2.1 & Fig. 2.2). All of a sudden the percentage of female in the age group of 15-24 dropped and after that the proportion for both was almost same. The situation was almost similar irrespective of states or class.

As compared to NFHS-2, in fishers the proportion of male was less in 0-4 yr age group but after that up to 20-24 yr age group the proportion of male was more. After that up to 65-69 yr the proportion was almost same with marginal differences. But above 69 yr the proportion of fisher's population reduced considerably (2.1%) against 3.9% (U.P.) and 2.6% (Bihar) of NFHS-2 rural population. In case of female the situation was reverse.

Sex composition of the human population is one of the basic demographic characteristics, which is extremely vital for any meaningful demographic analysis. The first and foremost is the simple count of males and females. Changes in sex composition largely reflect the underlying socio-economic and cultural patterns of a society in different ways. Sex ratio defined as the number of females per 1000 males in the population. It is an important social indicator to measure the extent of prevailing equity between males and females in a society at a given point of time.

The sex ratio for the entire stretch was estimated at 836, which was much below the ratio for India (933) based on Census 2001 (Census, 2001a, 2001 b) and NFHS-2 (927). In case of Narmada the sex ratio for fishers was 864 in 1991 (CIFRI, 1991). It indicates that among fishers in general the sex ratios are low. The sex ratio for FG was significantly

lower than NFG. The ratio for 0-4 yr age group was much higher than NFHS-II estimates. But 15-29 yr age group showed a sharp decline in sex ratio (Tab. 2.3), which came down to only 676 against 1000 (U.P.) and 1062 (Bihar) of NFHS-2. Again the reason may be ascribed to high proportion of unmarried males.

Fig. 2.1: Population Pyramid for Uttar Pradesh

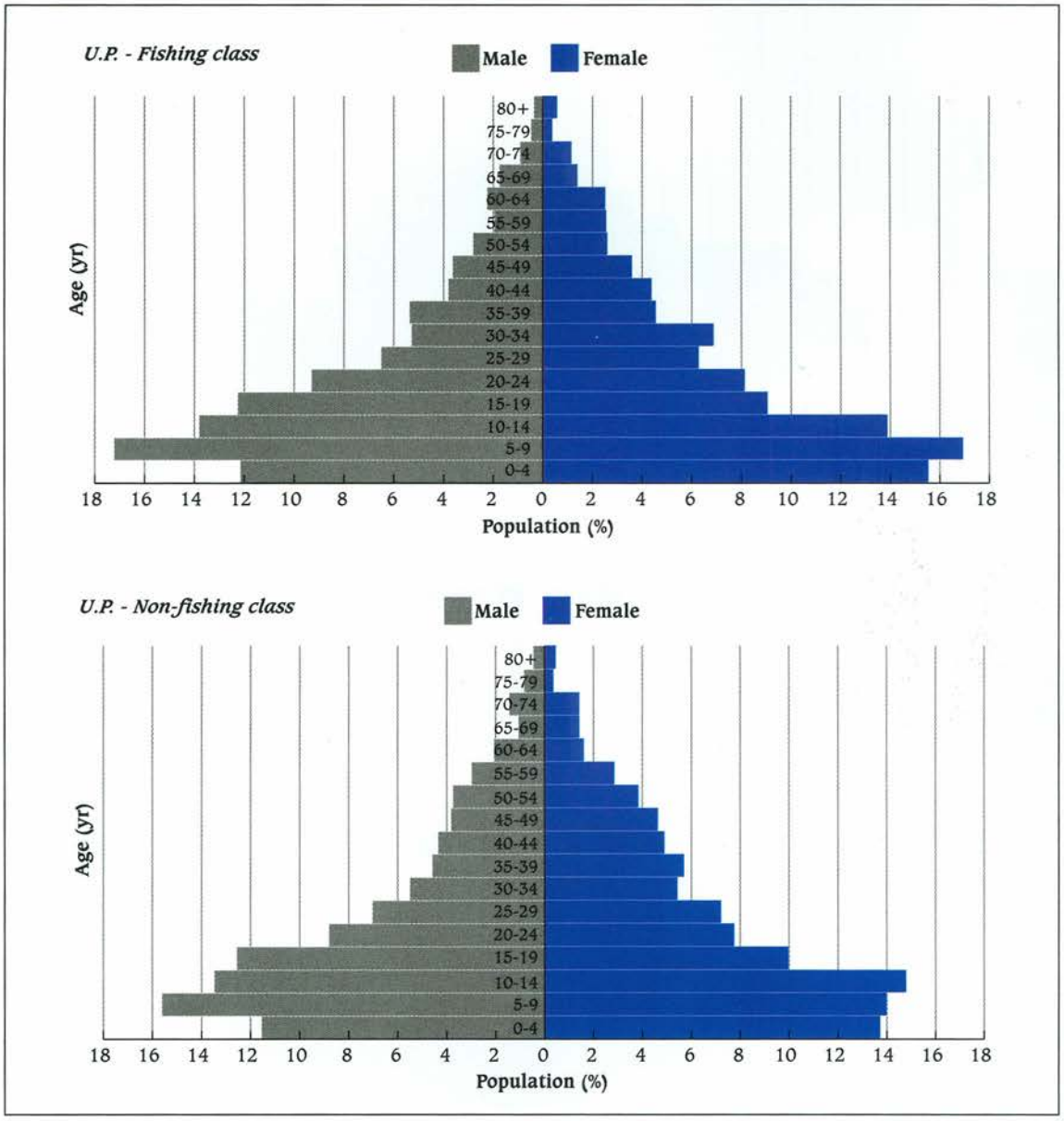
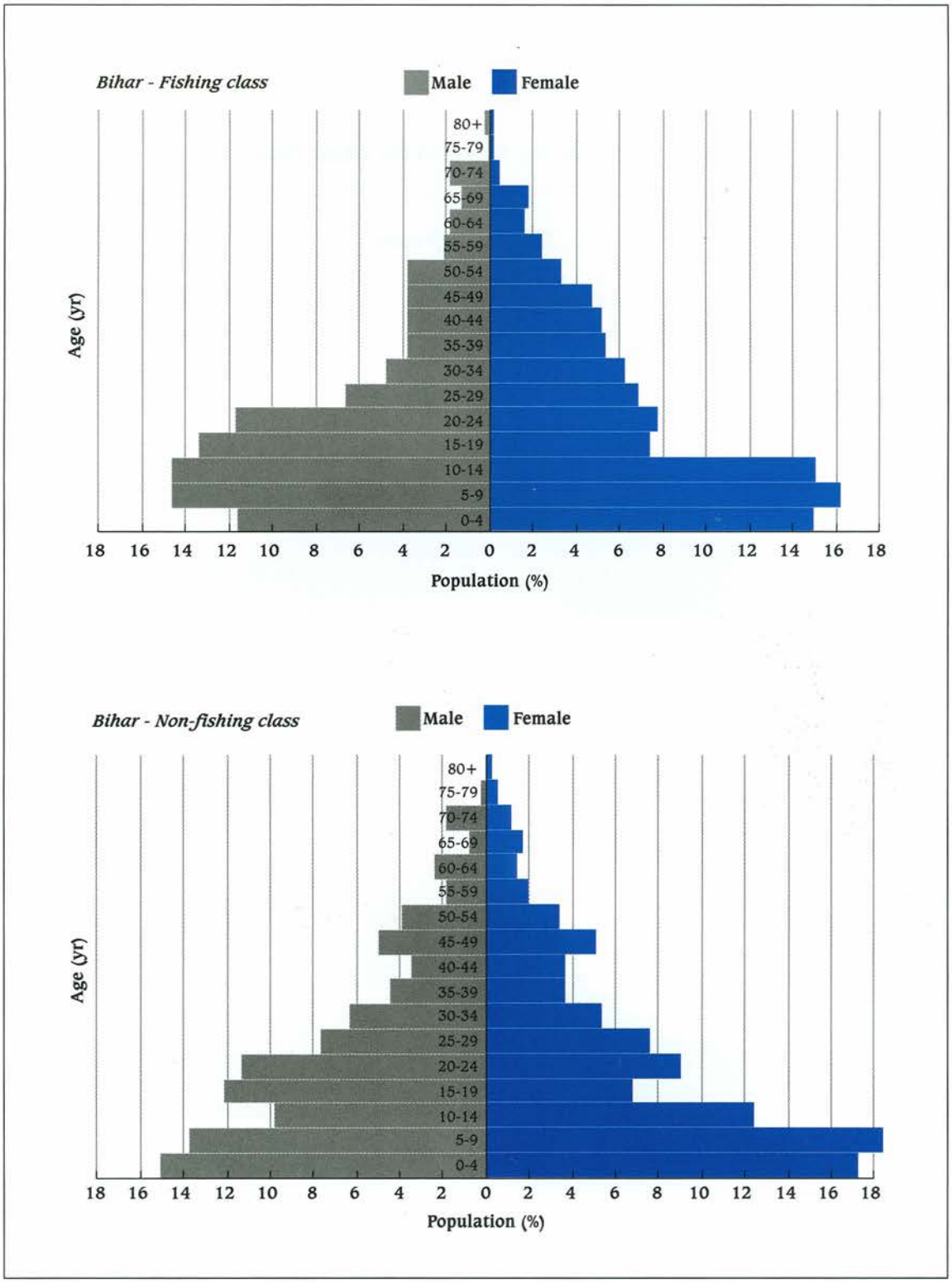


Fig. 2.2: Population Pyramid for Bihar



Among children (under age 6) the high values of sex ratio (966) in comparison to country (927, Census 2001a) clearly reflects that there is no evidence of natality bias among fishers, one of the distinct faces of gender inequality (Sen, 2005). The lower sex ratio for above 6-14 may be due to gender bias in health care and social attention. Among fishers the females are involved in all sorts of domestic and within household economic activities at an early age, which seriously affects their health.

Education

Education is considered as an important indicator of human development or development in a society. It forms an important input in the overall development of individuals enabling them to comprehend their social, cultural and political environment better and respond to it appropriately. It increases the capabilities and endowments by utilizing the social, political and economics opportunities (Sen, 1981). Higher levels of education and literacy lead to a greater awareness and also contribute in improvement of economic conditions. Improved levels of literacy are prerequisites for acquiring various skills. When economic growth creates new job opportunities, the unskilled and illiterate are not capable of accessing them. Access to different types of employment is strongly related to education and training. Illiterate individuals or with little education are disproportionately represented among agricultural wage labourers, while the well-educated are more likely to be self employed, employed in business, or working in regular salaried employment (Srivastava, 2000; Lanjouw and Shariff, 2001).

Census 2001 defines crude literacy rate as number of literates divided by total population, and literacy rate is defined after excluding the population in 0-6 yr age group. The same concept has been followed here. For fishers the crude literacy and literacy rates were very low as compared to national level (Census, 2001a, 2001b). In case of females the situation was very bad with a wide gap in male female literacy rates (Table 2.1). As compared to NSS the literacy rate for fishers was poor and again the gaps were wider in case of female. However the situation for male was little bit better in U.P.

The educational status of fishers is presented in Table 2.2. The status of higher education is very poor with marginal differences between FG and NFG.

In case of Narmada fishers the literacy rate for male and female were estimated as 33.3 and 14.0% in 1991 (CIFRI, 1991), although the literacy rates were low but there was a significant difference between males and females. Higher values for males obtained for Ganga may be due to a gap of about 12 years between two surveys and impact of Government schemes such as Sarva Siksha Abhiyan, *etc.* The very low level of literacy among females may be due to involvement of female children in domestic and household economic activities from childhood. From the survey it can be inferred that the parents don't perceive any worth in girls' education and they were required more in the domestic chores and taking care of kids in the absence of mothers.

Table 2.1: Distribution of population (%) for crude literacy rate and literacy rate

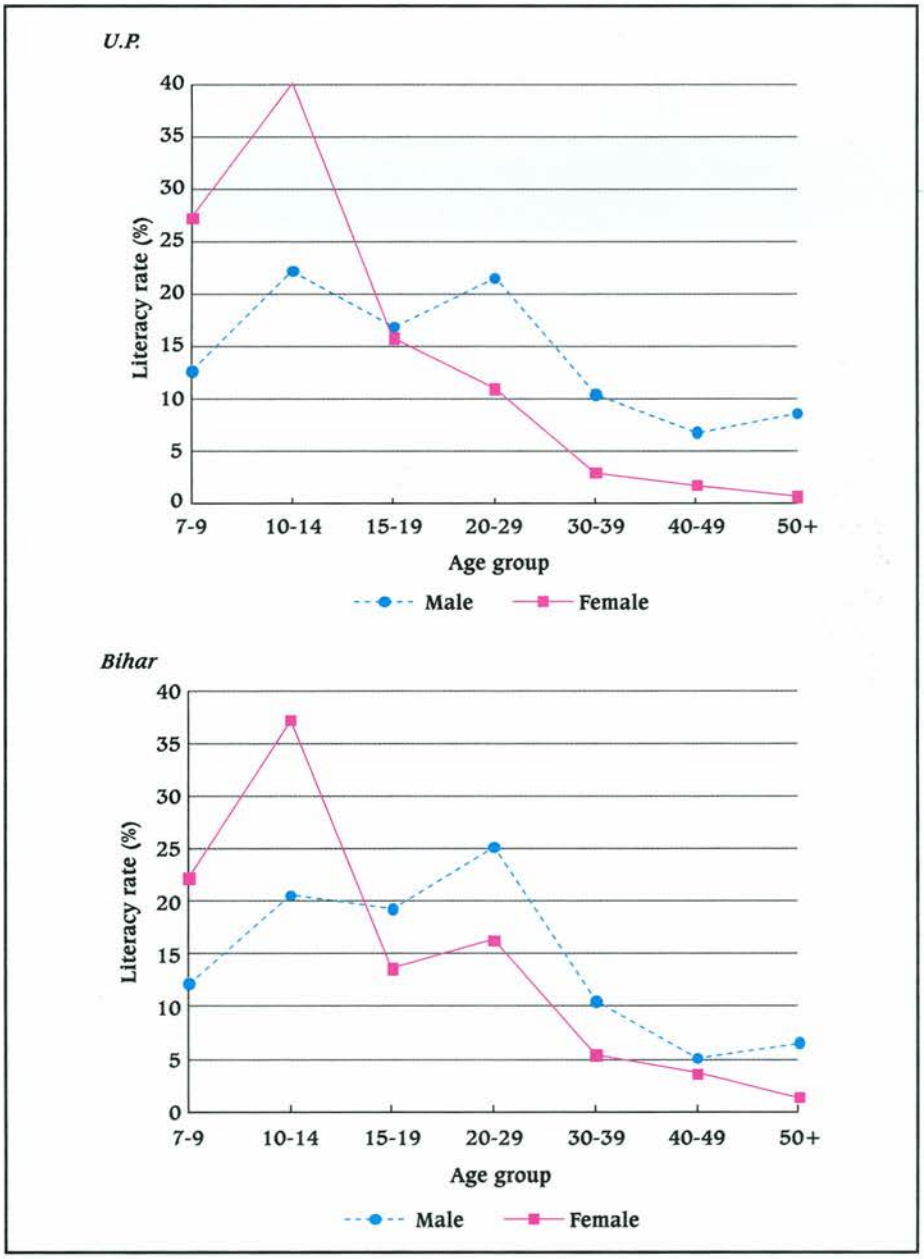
Crude literacy rate					
Area	**Sex**	**APCESS**	**NSS Sch10 55th round**	**NFHS-2**	**Census 2001**
All	Male	44.1	49.8	56.2	64.1
	Female	16.4	26.7	29.8	45.8
U.P.	Male	45.1	53.4	59.8	n.a
	Female	16.1	29.2	32.5	n.a
Bihar	Male	41.0	42.79	53.3	n.a.
	Female	17.3	21.99	27.5	n.a.
Literacy rate (age>6)					
All	Male	51.8	59.7	68.5	76.0
	Female	19.0	31.1	35.4	54.3
U.P	Male	53.3	64.0	73.2	70.2
	Female	18.7	33.8	38.7	43.0
Bihar	Male	47.3	51.6	64.8	60.3
	Female	19.9	26.0	32.7	33.6

Table 2.2: Percent distribution of population for educational status by sex and class

Area	Education	Fishing group		Non-fishing group	
		Male	Female	Male	Female
U.P.	Illiterate	50.1	84.1	34.9	72.6
	Below primary	21.8	11.0	21.4	14.5
	Primary	13.4	3.0	15.9	6.5
	Middle	9.0	1.5	12.6	4.9
	High School	3.7	0.1	8.1	0.9
	Higher	2.1	0.3	6.8	0.7
	Professional	0.0	0.0	0.3	0.0
	Total	**100.0**	**100.0**	**100.0**	**100.0**
Bihar	Illiterate	57.7	83.7	33.4	68.3
	Below primary	17.3	11.2	18.1	17.4
	Primary	10.8	3.3	16.4	6.2
	Middle	8.5	1.1	16.1	3.9
	High School	4.3	0.5	8.0	3.5
	Higher	1.4	0.2	8.0	0.8
	Professional	0.0	0.0	0.0	0.0
	Total	**100.0**	**100.0**	**100.0**	**100.0**

In discussions it was found that a good proportion of children were sent to schools due to mid-day-meal attraction. Children were also interacted to have an idea about their knowledge base and in general it was very poor. As per Public Report on Basic Education in India - Probe Report (Probe Team, 1999), 98% parents said that it was important for boys to be educated and 89% responded similarly for girl's education. But in case of fishers, scenario was almost negative and a good proportion did not find any advantage of education.

Figure 2.3: Percentage literacy by age and sex



Over time changes in literacy status can be seen by examining the differences in literacy level by age (Fig. 2.3). In 10-14 yr age group the literacy rates of females were higher than males but after that there was a sharp decline in both the states. However, cohort differences in literacy suggested considerable improvement over time and particularly in case of female where increase was substantial.

Dropout rates at below primary level were almost comparable with NSS estimates. But at other levels the estimates for fishers were much higher; however, the values for Bihar at middle class level were much lower than NSS values.

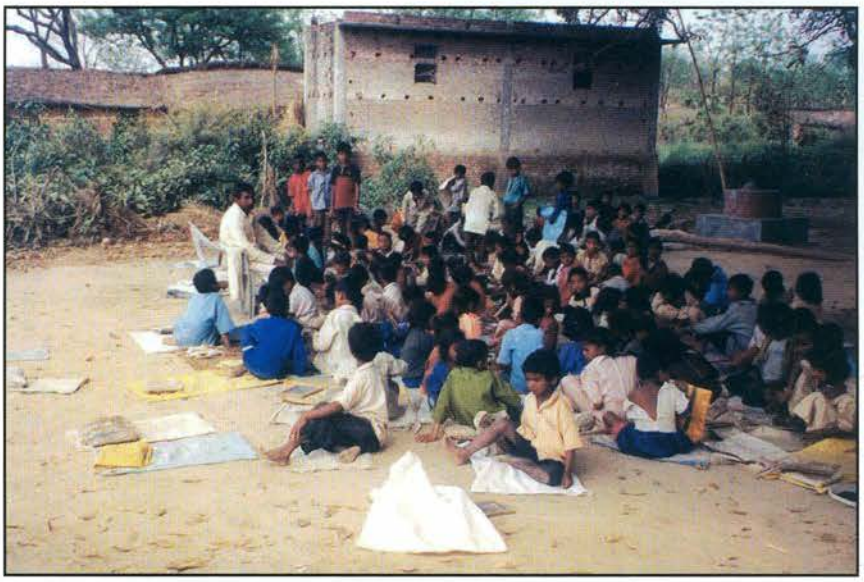
In general dropout estimates were higher for female as compared to male (Table 2.3). A comparison between FG and NFG showed that dropouts were more in FG class, this may be due to their involvement in domestic or household economic activities.

Table 2.3: Proportion of dropouts by sex, state and class

State	U.P.		Bihar	
Education status	Male	Female	Male	Female
Below primary	10.0	13.6	12.6	16.5
Primary	34.2	34.3	29.0	52.6
Middle	44.0	69.6	22.7	16.7
High School	41.0	75.0	41.2	80.0
Higher	50.0	100.0	50.0	100.0
Class	**FG**		**NFG**	
Education status	**Male**	**Female**	**Male**	**Female**
Below primary	11.0	15.8	8.8	10.6
Primary	38.0	42.0	21.4	30.8
Middle	43.5	51.9	29.3	76.0
High School	43.2	100.0	36.8	66.7
Higher	60.0	100.0	40.0	100.0

By 40% respondent financial hardships was given the main reason for not enrolling or dropping of male children from the schools. For girls, their involvement in household activities was found to be the main cause (48%). Proportion of disinterested children was also substantial (Male-27.4%; Female-22.4%). Complaints about lack of educational facilities were almost negligible. As far as basic education was concerned, in 99.3% villages the primary schools were available within a distance of 2 km, and for 72% village's junior high schools facility were available within 2 km distance.

It is a general phenomenon that educational level would increase with rise in income. In case of fishers also, reporting of financial problems for education decreased with increase in economic status, specifically in case of males (31-46%). But involvement of children in household economic activities or domestic work as reason did not show any association with economic status and in case of girls it was the main reason (45-59%) for dropping or not sending to school. Children disinterested were also very important cause (21-36%).



Primary school in fisher's tola, single teacher for all classes

Fishers of the future

Assets, Provisions and Facilities

The assets, provisions and facilities are the critical parameters to assess the state of the living of the communities. These assets and provisions are essential requirements for their day-to-day activities. The surplus generated through the economics activities is being transformed and stored in the form of the household assets where as the public provisions and facilities were provided by the government and other agencies.

Housing characteristics

House

The analysis of types of house suggested that there were about two third of families live in kachha houses (made with mud, thach, or other low quality materials), 10% live in semi-pucca houses (using partly low quality and partly high quality materials) and about 24% in pucca houses (made with high quality materials, including cemented roof and walls). As compared to U.P., the condition seemed to be little bit better in Bihar. Floor type was mostly earthen and even in case of pucca and semi-pucca houses (Table 3.1). In U.P. the proportion of kachha structures was more than NFHS-2 estimate (42.8%) but in case of Bihar it was almost equal. In case of semi-pucca the NFHS-2 estimates were much higher for both states. Surprisingly the share of pucca houses in Bihar was almost double of NFHS-2. This may be due to locational difference. In Bihar the major population of fishers was on the south bank, which was not much affected by floods and the households had good economic condition to construct pucca houses.

Table 3.1: Percentage of house type and floor type by state

Structure type	U.P.	Bihar
Hut/Madaiya	43.2	26.4
Tiled kachha	25.8	29.9
Semi pucca	9.4	11.4
Pucca	21.6	32.2

Floor	U.P.	Bihar
Earthen	88.5	79.2
Bricks	2.1	3.3
Cemented	8.6	17.5
Stone tiles	0.8	0.0

The survey suggested that fishers lived in very poor physical conditions. Generally, there was lack of proper drainage system and sanitation. Size of the rooms was also small. In some houses a single room was partitioned with curtains and occupied by different families. As compared to NFHS-2, fishers' condition seemed to be very poor. Crowded housing conditions affected health as well as the quality of life. More than 80% of households in U.P. and Bihar lived in houses with three or more persons per room. The mean number of persons per room was almost equal for U.P. and Bihar (4.1) which

was higher than NFHS-2 (U.P.-2.9, Bihar-3.1). In Kahalgaon an old lady when asked about number of rooms in the house, showed two rooms and told that she slept at terrace in an old bricks water tank due to bigger family size.

Sanitation facility

The analysis of data suggested 96% households had no toilet facility (U.P.-97.2%; Bihar-92.1%). As compared to NFHS-2, the differences were only marginal. In a village of Mirzapur district good number of fishers family were provided with septic tank toilets with the aid of Danish Government, but all were out of use and in locked state. When asked about the reason for not using, the fishers said that they feel open fields more convenient and water for flushing is also a problem.

Source of drinking water

Water sources have an important influence on the health of household members, especially children. For fishers the main source of drinking water was hand pump (Table 3.2). The situation was better in U.P. as compared to Bihar. In U.P. the government under different welfare schemes provided the hand pumps. Complaints about water quality were almost negligible. In general the number was not sufficient and females and children had to spend a good deal of time in fetching water. In Bihar most of the hand pumps were personal and shared by neighbors also. The condition of open wells was very bad and wells were full with algae and no water purification treatment was given. Families using surface water for drinking use alum as purifier during monsoon. For other activities such as bathing, washing clothes, utensils, *etc.* river water was used except when distance was prohibitive. About half of the families had to travel small distance for drinking water.

Table 3.2: Distribution of households (%) by source and distance of drinking water

Source	U.P.	Bihar
Tap water	6.8	1.9
Open well	9.0	17.1
Hand pump	82.6	73.8
Tubewell	0.1	0.0
River	1.5	7.3

Distance	U.P.	Bihar
Within campus	53.2	51.6
<0.5 km	44.4	48.4
0.5 to 1 km	2.3	0.0
>1 km	0.1	0.0

As compared to NFHS-2, the differences were marginal excepting use of surface water (mainly river) in Bihar. Only small proportion of families reported water problem during summer (U.P.-3.2%, Bihar-1.7%). In U.P. surface water was given the main alternative source and hand pumps in other *tolas* as alternative in Bihar.

Source of light

About three fourth of the families uses kerosene or other oils for lighting purpose and rest uses electricity (Table 3.3). The number of legal electricity connections seemed to be low.

Table 3.3: Distribution of families (%) by source of light

Source	U.P.	Bihar
Oil/ kerosene	73.2	71.3
Electricity	26.6	28.7
Gobar gas	0.1	0.0
Other	0.2	0.0

As most of the fisher villages were near to cities or towns, availability of power lines was reported to be in a high proportion (U.P.-64.3%, Bihar-58.5%). But supply of power was found to be for short duration. In some of the villages fishers reported that power lines were only for namesake and no power supply for months. In case of NFHS-2 only a very small proportion of villages were reported as electrified (U.P.-22.8%, Bihar-11.3%).

Fuel for cooking

In U.P. almost all households used wood as main fuel (Table 3.4) with major concentration of leaves/ twigs/ crop residues collected from fields and river banks. Collection and foraging was an important activity of females and children and they had to spend a good deal of time in these activity. In Bihar only about half of the families went for collection, as a good proportion of female were involved in outside economic activities leaving children at home to attend domestic work. During shortage of wood specifically during monsoon, the cow dung cake was used as secondary fuel for cooking.

Table 3.4: Percent distribution of families for main and secondary fuel used for cooking

Fuel	Main fuel		Secondary fuel	
	U.P.	Bihar	U.P.	Bihar
Wood	18.9	17.5	1.7	3.7
Leaves/twigs/crop residues	78.0	54.1	1.9	6.0
Cow dung cake	1.0	7.3	93.2	84.6
Coal	0.5	18.9	0.6	4.0
Kerosene	0.5	0.0	2.1	0.6
Electricity	0.0	0.0	0.2	0.2
LPG	1.1	1.7	0.2	0.6
Other	0.0	0.6	0.2	0.2

As compared to NFHS-2, the differences in main fuel were marginal, excepting the source of wood as the data was collected only for wood and crop residues.

Productive assets

Agricultural land

Land and livestock are taken as indicators of socioeconomic status of the households. Table 3.5 presents the distribution by own land, shared land and unclaimed land (along river banks, open access after floods), for FG and NFG class. Overall, 43.1% households

had agricultural land either owned or shared or unclaimed, but the proportion in Bihar was only 23.9%. In comparison to NFHS-2, the situation for fishers seemed to be very poor. According to NFHS-2 estimates, about three fourth households in U.P. had agricultural land, however for Bihar the proportion was almost half.

As far as own land is concerned, proportion of fisher's households was low for both states and holding size was also small. In case of unclaimed land, occasionally village landlords created problems for fishermen. They charged rent by virtue of proximity to their land. The proportion of households with patta land were almost negligible, this may be due to their social status. As in both the states they were given the status of OBC and generally the government land is distributed among STs or SCs. The mean area of total holding was maximum for Hardoi and Unnao districts (2.2 bigha*) followed by Ballia (1.8 bigha). In Bihar districts the mean land holding size was small (<1.1 bigha). In Patna, Munger and Bhagalpur districts it was almost negligible.

In U.P. only 14.7% of households with land reported no irrigation facility, however, in Bihar the proportion was high (44.4%). Tube wells were the main source of irrigation (U.P.-47.7%, Bihar-67.2%) followed by other natural resources mainly river (U.P.-44.2%, Bihar-31.3%). For the land along riverbanks, the main irrigation source was river, pumped by motors or transported manually.

Table 3.5: Percent distribution of households by availability of land area

Group	Land area (bigha)	Own land		Shared land		Unclaimed land	
		U.P.	Bihar	U.P.	Bihar	U.P.	Bihar
FG+NFG	No land	74.9	80.9	42.7	15.7	78.6	98.3
	up to 1	15.7	14.8	27.7	42.6	15.0	0.9
	up to 2	4.3	3.5	15.3	27.0	3.4	0.9
	up to 3	2.1	0.0	5.1	5.2	1.5	0.0
	>3	3.0	0.9	9.3	9.6	1.5	0.0
FG	No land	74.8	83.1	45.6	15.7	75.0	97.6
	up to 1	16.3	14.5	27.6	48.2	17.1	1.2
	up to 2	4.4	1.2	14.3	24.1	3.8	1.2
	up to 3	2.2	0.0	4.6	4.8	2.0	0.0
	>3	2.2	1.2	7.9	7.2	2.0	0.0
NFG	No land	75.0	75.0	34.3	15.6	89.0	100.0
	up to 1	14.0	15.6	27.9	28.1	8.7	0.0
	up to 2	4.1	9.4	18.0	34.4	2.3	0.0
	up to 3	1.7	0.0	6.4	6.3	0.0	0.0
	>3	5.2	0.0	13.4	15.6	0.0	0.0

Livestock

About half of the families in U.P. possessed milch animals, whereas in Bihar proportion was only 28%. In both states the proportion of families keeping goats was maximum (U.P.-

* [1 bigha =approximately 0.25 ha]

42.7%, Bihar-58.5%). They reared goats mainly for meat purposes as it fetched good cash for them.

Durable goods

The possession of durable goods is another indicator of household's socioeconomic level, although these goods may also have other benefits. For example, having access to radio or television may expose household members to innovative ideas or important information about health and family welfare; a refrigerator prolongs the storability of food; and a means of transportation allow greater access to many services outside the local area. For selected durable goods, the proportion of families possessing them was almost same in U.P. and Bihar with marginal differences for bi-cycle, B/W television, cots and chairs (Tab. 3.6). The number of persons per cot was 1.9 for U.P. and 3.0 for Bihar (considering persons with age>5 yr). In a village of district Saran, Bihar, 90% of fisher's households were without cots and use thick mats for sleeping. In comparison to NFHS-2, the differences were marginal excepting two-wheelers, tables and chairs.

Table 3.6: Percentage of households owning selected durable goods

Item	Fishers		NFHS-2	
	U.P.	Bihar	U.P.	Bihar
Bi-cycle	65.4	48.9	62.8	42.7
Two-wheeler	1.2	0.2	4.2	2.9
Fan	11.2	17.7	19.4	10.6
Heater	0.3	0.6	n.a	n.a
Transistor	26.0	23.7	27.2	25.8
B/W Television	16.5	20.2	14.5	7.5
Col. Television	1.0	0.4	1.1	1.0
Watch	48.6	52.0	52.5	46.5
Chair	4.1	12.9	20.0	36.0
Table	3.6	7.5	19.1	29.7
Cots	98.0	86.9	97.4	92.9
Cassete player	7.6	8.9	n.a.	n.a.
Other	6.7	7.3	n.a.	n.a.

n.a.: not available

Public distribution system

Around 90% of the families in U.P. were issued ration cards, but in Bihar only 50% households got the cards. The proportion of families with general type of ration cards was high (U.P.-65%, Bihar-50.4%). The type of ration card issued to them did not match with their economic status. The ration cards were mainly used to get kerosene oil and in Bihar they got the kerosene oil even without ration card. There were general complaints about charging higher price than administered price for kerosene. Sugar was rarely distributed and they did not prefer to purchase other food items due to inferior quality with same price.

Availability of facilities and services to fishers

In village schedule information were collected on access to education, health, means of transport, *etc.* One of these indicators is distance of village from these facilities. Table 3.7 summarizes the availability of some of basic facilities in villages and distance from the villages. Primary schools were available in almost 90% villages, but with the increase in level of education, the availability decreased and intermediate colleges were available only in 19% villages. Anganbari facility was available only in 28% villages. Medical facilities were poor in general, and there were general complaints about non-availability of doctors and medicines in PHCs (primary health centre). Qualified private doctors were available only in 17.7% villages and villagers specifically of low income had to consult unqualified doctors.

Table 3.7: Percent distribution of villages and tola by availability and distance of basic facilities

Facility	Availability in village		Facility distance from tola (km)			
	No	Yes	<0.5	0.5-2	2-10	>10
Primary School	9.5	90.5	28.0	71.3	0.7	0.0
Middle School	50.7	49.3	5.3	66.7	28.0	0.0
High School	74.3	25.7	0.7	34.0	62.0	3.3
Inter College	81.1	18.9	0.7	23.3	62.7	13.3
Anganbari	72.0	28.0	30.8	64.1	5.1	0.0
PHC	72.7	27.3	3.5	29.2	50.7	16.7
Hospital	89.9	10.1	0.0	6.0	44.0	50.0
Qualified private doctor	82.3	17.7	2.0	20.1	51.0	26.9
PDS	25.9	74.2	18.6	66.9	13.8	0.7

In case of major surgery, orthopedic problem, tuberculosis and another serious complication, the persons had to travel more than 10 km distance in more than three fourth of the villages. The distance depended upon the distance of village from nearby cities and sometimes it was more than 50 km, even for abortions they had to travel long distances (53%).

Generally, fishers did not send their children to anganbari, in 21 villages no child was sent to anganbari, in 18 villages less than 25% children availed the facility. The adult education program of Government also had limited impact on fishers. In 146 surveyed villages none of them was benefited from the program. In rest surveyed villages only 26 males and 19 females were benefited from the adult literacy campaign.

In 68% of surveyed villages none of the fishers read newspaper and in 31% villages small number (<25%) of fishers went through newspapers. In around 95% villages fishers reported that they have no interaction with gram sevak or any other government officials related with developmental activities. Role of NGO's was also minimal.

Bank facility was available in about one fifth villages but only 18.1% households had bank accounts. Out of account holders only 36% operated the account regularly. In about 7% of families some members were insured, continuation of insurance policy could not be ascertained.

Standard of living

NFHS-2 reports included a standard of living (SLI) index, defined in terms of ownership of household goods by adding the following scores:

House type : 4 for pucca, 2 for semi-pucca, 0 for kachha

Toilet facility : 4 for own flush toilet, 2 for public or shared flush toilet or own pit toilet, 1 for shared or public pit toilet, 0 for no facility;

Source of lighting : 2 for electricity, 1 for kerosene, gas, or oil, 0 for other source of lighting;

Main fuel for cooking : 2 for electricity, liquid petroleum gas, or biogas, 1 for coal/ coke/ lignite, charcoal or kerosene, 0 for other fuel;

Source of drinking water : 2 for pipe, hand pump, or well in residence/ yard/ plot, 1 for public tap, hand pump, 0 for other water source;

Separate room for cooking : 1 for yes, 0 for no;

Ownership of house : 2 for yes, 0 for no;

Ownership of agricultural land : 4 for 5 acres or more, 3 for 2.0 to 4.9 acres, 2 for less than 2 acres, or acreage not known, 0 for no agriculture land;

Ownership of live stock : 2 if owns livestock, 0 if does not own livestock;

Ownership of durable goods : 4 for each for a car or tractor, 3 each for a moped/ scooter/ motorcycle, telephone, refrigerator, or color television, 2 each for a bicycle, electric fan, radio/ transistor, sewing machine, black and white television, water pump, bullock cart, or thresher, and 1 each for a mattress, pressure cooker, chair, cot/ bed, table, or clock/ watch.

Index scores range was from 0-14 for a low SLI, 15-24 for a medium SLI and 25-67 for a high SLI.

Although the data collected on fishers were little bit different from NFHS-2 and information on some of the items were not collected, using subjective information and making some modifications such as giving score 2 for boat, the SLI were computed for fishers.

The computed SLI are presented in Table 3.8. It was inferred from the table that standard of living of fishers was very poor and for about three fourth the SLI is low. The estimates obtained were significantly different form NFHS-2, and difference was more in case of U.P. In case of FG and NFG groups the proportion of families with high standard of living was much higher in NFG group.

Table 3.8: Distribution of families (%) by standard of living index

Standard of living	Fishers		NFHS-2	
	U.P.	Bihar	U.P.	Bihar
Low	74.3	76.5	44.1	59.5
Medium	21.0	18.9	42.8	28.7
High	4.7	4.6	13.1	11.8
Group	**FG**		**NFG**	
Low	75.6	79.1	69.9	67.3
Medium	21.1	17.8	20.7	23.1
High	3.3	3.2	9.4	9.6

Living conditions of fishers

Typical house of fishers

Fetching river water for daily activities

Fishermen with a herd of goats

Children preparing agricultural land piece for next crop

An innovative way of fishing specifically for A. morar

Income — Strength and Weaknesses

The measurement of income is a delicate task and generally it is either under or over estimated. Imputations, recall bias, seasonality, long questionnaire, and multiple sources apply with greater force to the measurement of income as compared to consumption (Deaton, 1997). The fishers were mainly involved in self - employment that is irregular in nature, and in case of self - employment the problems in measurement of income increase further. Even in the industrialized countries, the measurement of self - employed income is notoriously inaccurate.

The fishers were involved in number of activities and in some family number were more than seven. For the purpose of income, activities were classified as

a) Fishing
b) Culture fisheries
c) Agriculture
d) Agricultural labour
e) Fishing labour
f) General labour
g) Water labour
h) Allied jobs
i) Business
j) Service
k) Outside income
l) Government aid, and
m) Others

Remittance from outside employed family members, temporary migrants, help by friends and relatives were put under outside income. Service pension, old age pension and disability pension were put under government help. Incomes from animal husbandry, mainly goat keeping, *etc.* were put under others.

Income: General overview

The questions about income from different sources posed serious problems during survey. In case of agriculture and allied jobs no values were imputed for family labour. In both cases almost all family members were involved.

Median values for activity-wise per family income are given in Table 4.1. This is based only on income of involved families in a particular activity, and may not be interpreted as income for all surveyed families and values presented in the table does not have a summation value. Income from capture fishery and fishing labour was much higher in Bihar; this may be ascribed to better output in Bihar stretches. In culture fishery activities only a few families were involved and thus, irrelevant in present context. Information provided on government aid and income from service was also unreliable and therefore not presented here. Efforts were made to ascertain the information from other community members, but in most of the cases they were not cooperative.

There were better returns in Bihar in business activity irrespective of class, and income was higher for NFG. The income from general labour was much higher for NFG and in Bihar the difference was highly significant.

Table 4.1: Median values for annual income (Rs) per family by class and state

Source	FG		NFG	
	U.P.	Bihar	U.P.	Bihar
Fishing	8527	11205	–	–
Culture fisheries	9950	4813	–	–
Agriculture	3050	3349	4575	6100
Agricultural labour	2720	2520	2900	2300
Fishing labour	3500	5200	–	–
Allied jobs	3600	4200	4230	–
Business	7500	10000	10650	15000
Outside income	10000	10000	13150	11000
General labour	6000	7240	9000	16800
Water labour	8400	5500	8000	9325
Service	18000	8000	37200	36000
Others	2000	2000	3000	3000

River fishing

Income from river fishing was computed as Rs. 40.03 per day per fishermen (working members). After subtracting amount spent on gear and craft repairs, the adjusted income was Rs. 36.34 per day. Income and adjusted income in different stretches are presented in Table 4.2.

Table 4.2: Income and adjusted income (in Rs) per fishermen per day

Stretch	Income	Adj. income	Av. river distance (km) from village
1	31.09	30.55	3.0
2	36.58	35.09	0.2
3	36.80	32.95	1.3
4	43.00	39.77	0.5
5	47.47	43.29	0.5
6	40.42	37.00	0.6
7	43.54	38.71	0.6
8	42.23	38.34	0.4
9	28.97	21.52	2.2
10	30.50	27.64	0.6
11	42.95	38.98	0.8
12	31.23	28.05	3.4

The income was low in stretch 1, 9, 10 and 12, where fishing activity was low and river distance from villages was also more as compared to other stretches excepting stretch 10. In these stretches main fishing activity took place during monsoon and post monsoon seasons, when river water spreads.

Income from labour activities

Fishers as agricultural labourer were mainly involved in harvesting of wheat, coarse grains, paddy and sowing of paddy. In case of fishing labour either they worked in nearby areas or migrate to long distances for fishing in reservoirs.

In case of local fishing, catch was shared by all party members after deducting share for gears and boats. In case of reservoirs they were paid amount based on output. Generally it was around Rs 2.00 per kg. Fishers reported that sometime they did not save anything and returned to home by spending own money; contractors cheating them were also reported.

Per day income from different labours is presented in Table 4.3. The income was higher in Bihar as compared to U.P. excepting water labour.

Table 4.3: Per day income (Rs) by labour

Labour	U.P.	Bihar	FG	NFG
Agriculture	30.13	36.01	31.10	30.57
Fishing	36.12	38.01	36.72	–
General	46.60	56.39	47.77	51.42
Water	54.06	51.63	52.65	56.06

The wages received for different labours in case of migration was significantly high (Table 4.4) and contribution to family in the form of savings was around Rs 30.00 per day. For water labour wages per day was highest, but opportunities were low.

Table 4.4: Wage per day at local and distant places (Rs)

Labour	Local	Migratory
Agriculture	30.99	_
Fishing	30.57	55.62
General	46.29	64.59
Water	51.81	80.48

Based on NSS 55th round Employment and Unemployment data (1999) the wages for agricultural labour and non-agricultural labour were estimated and presented in Table 4.5. In spite of a time lag of about three years the NSS estimates were higher in case of U.P., but low in case of Bihar.

Table 4.5: Wage per day based on NSS 55th round data (Rs)

Labour	U.P.	Bihar	Total
Agriculture	31.13	31.66	31.34
Non Agriculture	49.74	45.14	46.50

Wages received by fishers of different stretches is presented in Table 4.6, wages were higher for agriculture labour in upper and lower stretches, but in case of fishing labour difference was marginal between the stretches. For general and water labour wages were highest in stretch 11. Wages difference was highly significant between migratory and local labour with few exceptions.

Table 4.6: Per day income (Rs) for different labours by stretch and place of work

Stretch	Local labour				Migratory labour		
	Agriculture	Fishing	General	Water	Fishing	General	Water
1	34.01	29.64	29.39	_	_	70.25	_
2	38.62	30.00	59.39	20.00	_	_	_
3	31.91	27.79	49.75	19.21	_	88.00	_
4	31.28	24.63	43.25	35.41	_	64.07	_
5	28.00	27.47	38.99	57.95	18.00	58.37	_
6	29.39	32.33	42.87	45.71	51.60	61.91	_
7	28.42	28.73	46.50	63.64	98.32	64.92	84.13
8	28.20	31.39	55.29	30.47	32.86	66.13	_
9	35.10	26.52	46.05	43.88	_	65.68	80.00
10	34.89	29.88	46.26	42.52	_	57.57	79.27
11	31.46	33.59	59.44	88.46	66.89	72.35	_
12	43.39	32.46	49.75	40.00	59.46	78.55	_

Allied activity

Preparation of kans/ munj (type of grass found in river banks) twine or mats was the only allied activity of fishers. The activity intensity was high in stretches 4-6. In Kannauj to Kanpur in U.P. and below Buxar in Bihar, their involvement was negligible. In this activity almost all family members were involved.

Male's main responsibility was procurement of raw material from the field by the side of river. In search of raw material they had to go long distances. Sometime it was free for them but in some cases they had to pay a good price for the raw material. The returns in case of munj twine were higher, but the availability of raw material was low. Per person per day returns are shown in the box. The maximum return was only Rs 6.55 which was too low for a person working as whole day labour, but, they were engaged as there was no alternative opportunity for them. Moreover, family got substantial amount out of this activity, as all family members were involved. As the raw material was collected during summer months, its storage was a problem for them. It was dangerous being prone to fire and in number of cases entire fisher's locality was gutted to fire due to bulk storage of dried munj/ kans bundles.

Stretch	Per day income (Rs)
4	6.34
5	6.55
6	5.66
7	2.67
8	2.57
9	4.67
10	2.33

Agriculture

Just like allied activity, income from agriculture for fishers was low. Income from agriculture per person per day is presented in Table 4.7. Returns for NFG were higher as compared to FG. It is obvious from the table that income from agriculture was of low order and if value for family labour was imputed than in most of the cases income became negative. As already discussed, there own agriculture holdings were small and they worked on others land either on share basis or on rent. In the entire stretch landlords share was almost 50% of the produce without sharing any expenditure. At some places cost of seed was shared. Rent ranged from Rs 1500 to 4000 per bigha per year. They kept produce for their own consumption, and occasionally sold. The agriculture activity was just like a bank for them. In agriculture they invested from their other earnings and finally they got cereals, *etc.* in bulk. If they had not invested that amount it would have been spent either on food items or bad habits. Income was higher in stretches 6-10 as compared to stretches 1-5. This may be due to cropping of vegetables and millets with better returns in higher proportion in stretches 6-10.

Table 4.7: Income (Rs) from agriculture per person per day

Stretch	Income
1	10.31
2	7.04
3	7.94
4	9.69
5	11.29
6	18.79
7	17.86
8	19.64
9	17.26
10	15.63
11	37.05**
12	13.23

Class	Income
All	13.57
FG	12.48
NFG	16.57

***only five families and one with very high income (Rs 124)*

In districts Ghazipur, Ballia and part of Buxar, their main crop was vegetables, specifically, parval (pointed gourd), requiring higher investments. In case of parval rent paid for land was maximum (Rs 2000-4500 per bigha) and seedlings were also costly (Rs 1000-3000 per thousand). Total cost for its cropping was around Rs 10000 per bigha. The normal crop was a good source of income for them, but in case of failure they had to bear heavy losses. In Navranga village of Ballia district, a fisherman was under heavy debt (around Rs. 10 lakh) and the main reason was failure of parval crop for three consecutive years. They treated parval fields as a pious place. In those fields they do not defecate, females during menstrual periods were not allowed in fields, and males or females would not visit fields without a bath after having sex intercourse, *etc.* This indicated the importance attached to the parval crop by the community.

In middle stretches their main involvement in agriculture was cropping of cucurbits. These crops were grown on river banks and in most of the cases it was free or small amount was paid to gram panchayats or other illegal owners. In few cases the paid amount was substantial. In these crops output was very uncertain. Ultimately increase in river water level spoils the entire crop. There were substantial difference in price paid by the consumers and amount received by them; their share in consumer's rupee was hardly 30%. The main beneficiaries were middlemen like retailers or wholesalers.

Cropping of water nut (singhara) was reported only from stretch 1 and a few cases from stretch 3. In district Varanasi in Kaithi and a few nearby villages cropping of marigold flowers was their main crop, flowers were either sold as such in nearby cities or in the form of garlands in the nearby areas.

Business

For business activity it was assumed that they were involved throughout the year and only one family member was involved at one time. They were involved in very small business enterprises like selling of fruits, vegetables, ice cream, old garments, fish retailing, milk retailing, and small grocery shops, tea or pan shops, *etc.* In districts Varanasi, Chndauli and Ghazipur, a good number of fishers were involved in selling of synthetic flowers either as labour or as business. Income for NFG was more as compared to FG Table 4.8. The income was higher in stretches 6-9.

Table 4.8: Income per day (Rs) from business activities

Stretch	Income
1	30.20
2	–
3	30.50
4	28.70
5	29.57
6	44.57
7	34.95
8	49.07
9	48.99
10	30.03
11	38.05
12	32.32

Class	Income
All	37.26
FG	33.23
NFG	43.76

In Bihar (stretch 11 & 12) the female's involvement in business was of higher order. In stretch 11, they were mainly involved in selling of fruits, spices by hawking in villages. They were involved in activity throughout the day. The consumption of milk powder was reported only from this stretch, as the infants were left at home with other family members and in the absence of breast milk they were fed on powdered milk. In stretch 12, specifically in Begusarai district their main business was selling of old garments. Old garments were procured from Ludhiana (Punjab) and they go there in groups (generally traveling without tickets). After repairs, the old garments were sold in nearby villages.

Loan

On the basis of their earnings it was obvious that their earnings were low irrespective of activities and wages. The income was hardly sufficient to meet their day-to-day requirements and for the reason most of the families were under debt, and in some cases it was too high. About 75% families were under debt; the distribution of families according to outstanding amount and source of loan is presented in Table 4.9. As their income sources

were irregular they had to borrow money even for food, specifically, during monsoon and peak winter seasons. In case of any unforeseen event, marriage, death, serious illness of family members, *etc.*, borrowing was the only source for them.

Table 4.9: Distribution of families according to outstanding amount and loan source and rate of interest by source

Outstanding amount (Rs)	Household proportion	Loan source	Household proportion	Mean interest rate (%) per month
-2500	8.3	Bank	7.8	0.77
2501-5000	16.3	Other institutions	0.4	1.67
5001-10000	23.8	Middlemen	2.3	0.85
10001-20000	23.8	Wholesalers	2.9	0.89
20001-50000	20.8	Money lender	65.8	5.28
50001-100000	5.9	Friends	19.0	0.67
>100000	1.1	Others	1.8	1.14

Table 4.10: Household proportion by purpose and loan categories

Rs / Purpose	-2500	2501-5000	5001-10000	10001-20000	20001-50000	50000-100000	>100000
Fishing assets	15.9	19.6	18.5	19.5	13.5	4.6	14.3
Culture fisheries	0.3	0.0	0.2	0.0	2.4	0.0	0.0
Allied activities	0.8	0.2	1.1	2.6	0.0	0.0	0.0
Housing	3.1	3.2	3.6	4.4	0.0	4.6	0.0
Consumption	19.2	10.0	4.2	2.6	0.6	0.0	0.0
Sickness	26.7	26.4	21.2	17.7	19.4	9.1	14.3
Birth	1.1	0.9	0.2	0.0	2.9	0.0	0.0
Marriage	10.3	19.0	28.3	35.2	37.1	36.4	14.3
Death	2.0	1.7	2.5	0.5	1.2	0.0	0.0
Others	20.6	19.1	20.3	17.5	22.9	45.5	57.1
Total (%)	**100**	**100**	**100**	**100**	**100**	**100**	**100**

In spite of low income, a good sum was spent on birth and death functions for the sake of society. Sometime they had to borrow money to pay the interest of other moneylender. As they had limited things to mortgage in the form of assets, the rate of interest paid was very high (5-10% per month). In case of small amounts, the amount was paid only after deducting the interest for first month. Generally the interest was paid regularly, and in case of non-payment it was added to principal amount. In some cases part of interest was waved off at the time of final payment. Due to non-payment, some males run away from their villages leaving their families in the village. In such cases moneylenders exploited their families in all respects. When fishers were asked that how they got huge

amounts as loan without any guarantee, they responded that moneylenders given loan only for interest, and generally the fishers were treated honest in this respect.

It was inferred from the Table 4.10 that higher loans were mainly for medical treatment, fishing assets, marriage ceremony and others (main component of which was agriculture). Though the proportion for consumption was high, but borrowed amount was small.

Consumption of liquor, pan, bidi, etc. and gambling

The fishers are well known for their ill habits and illicit liquor extraction. As far as extraction of illicit liquor is concerned, they were involved only in Unnao and Hardoi districts in the upper stretch and around Allahabad in the middle stretch. Situation in Unnao was very bad. At Shuklaganj in Unnao district a significant proportion of families were involved in hooch trade. A male child of about 6 yr age came to a member of investigating team and asked whether he wanted a bottle of mahua, name of illicit liquor. It is true that in olden days they were involved in this trade, but with the opening of country liquor shops in almost all villages, they had given up this profession as the police and contractor's musclemen created problems for them.

The consumption of liquor or its substitutes was common among fishers, but the proportion of chronic drunkard was low. Guests in family were served with the liquor and seen as norms in community feasts. Females did not take liquor excepting a few who were involved in fish retailing business. Children were also away from this habit.

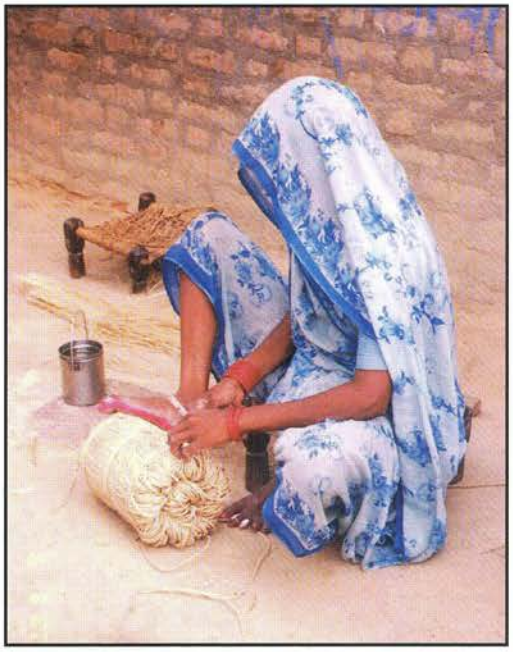
The consumption was related to income; it increased with income. In Bihar in place of liquor, tari (juice extract of palm tree) was popular. Fishers said that tari was cheaper as compared to country liquor and more effective. They were aware of ill affects of liquor on economy and health, but found difficult to leave it.

Chewing of pan, tobacco or gutkha (a kind of tobacco product) was common among males irrespective of age. Some females who were involved in outside economic activities also used these things; however, girls were not in this habit. Use of biri was also common among young and adult males.

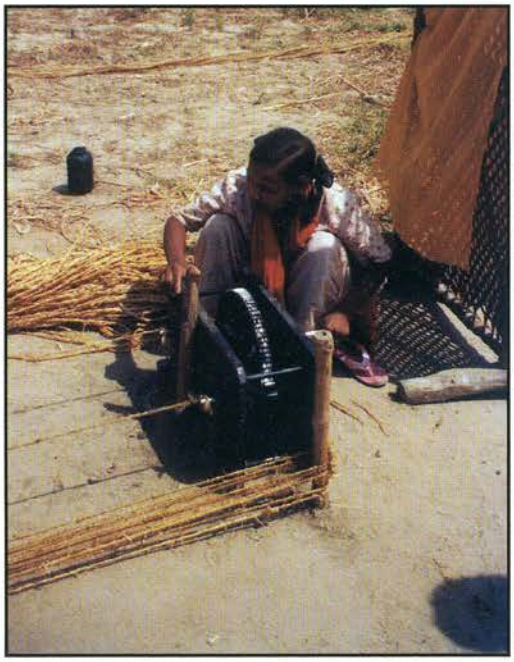
These habits was a burden on the families and on the average 7.9% of consumption value was spent on these habits, whereas expenditure on education was only 2.1%.

Card games involving money was common among fishers. The problem was deeper in villages, which were near to cities. At Sujabad, a village near Varanasi about 30 groups at a time was observed playing cards with money. Females complained that males did not attend their work properly and all earnings were wasted in gambling and drinking. Surprisingly, small aged children were also seen busy in playing cards with stakes. Problem was more in middle and lower stretches. In discussions they responded that stake and risk is in their blood, when they go for fishing, they are not sure about catch and even not sure about their safe return to home.

Preparing material for fabrication of munj twine



Munj twine bundle for sale



Female child preparing munj twine

Crop of parval, both boon and curse for fishers

Fisher woman involved in biri making

Fisher women involvement in fish retailing

Playing cards with stakes, draining their small earnings

Collection of fish catch, drag net operation

Sand digging activity in river Ganga

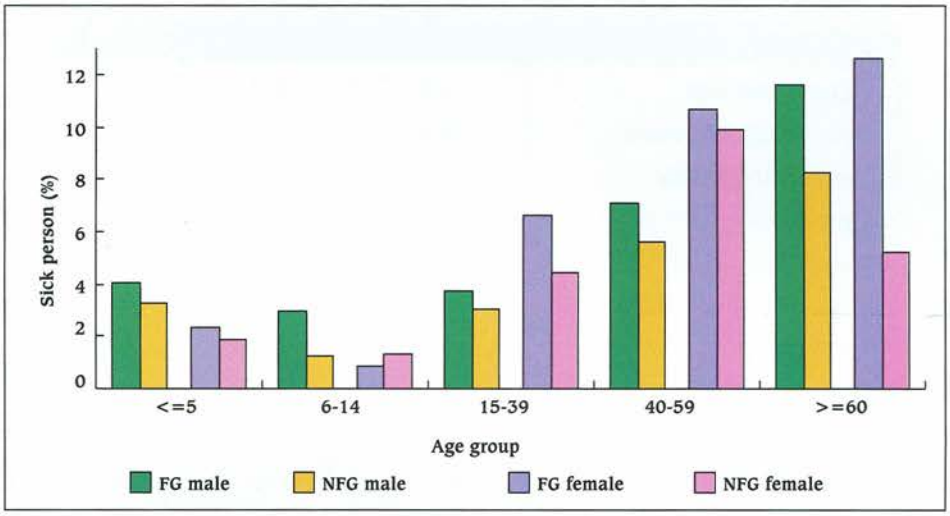
Health

The assessment of the health status constitutes an important aspect of the study. The health status is an important indicator of the standard of living. The people put efforts to betterment of the health status after fulfilling food requirements. But, achievement of it is dependent upon physical living condition, access to health services, expenditure on treatments, belief system, *etc.* Therefore, to study the health status the survey collected data on nature of illness, types of health service accessed, immunization and other facilities available.

Illness

Fishers were asked whether any family member was sick for more than 15 days during preceding 365 days (one year) and the proportion of sick persons is presented in Fig. 5.1. Up to 14 yr age the proportion of sick persons was low, however, proportion of males was more as compared to females. In age group 15-39 the proportion of sick females showed an increasing trend and increase was more in case of females. The increase continued further and was higher in case of FG males and females. In population of more than 59 yr there was a sharp difference in FG and NFG females' proportion. It was maximum for FG and for NFG the proportion decreased significantly. At every stage the proportion of sick was more in FG as compared to NFG. This may be due to their better economic status and working conditions.

Fig. 5.1: Percentage of sick persons ill for more than 15 continuous days during last 365 days



The percent distribution of sick persons by reasons of illness is presented in Table 5.1. Accidents cases were more in case of children and about 40% cases were related to them. In case of fever, male children proportion was higher as compared to females. This may be due to their contact with river, as most of them accompanied their father or relatives in fishing activity. In case of males, tuberculosis cases were reported from all age groups, but in case of females no such case was reported among female children. Breathing problems were reported only among more than 39 yr aged males, but a good proportion of cases were related to 15-39 yr age group females. Prevalence of mental problems was more in females. Among the diseases others formed a sizeable proportion, specifically for males. The cases related to skin diseases, boils, problems concerned with bones, diabetes, cholera, *etc.*, were put under others.

Table 5.1: Percent distribution of persons by reasons of illness

Reason	Male	Female
Accident	6.7	3.3
Fever	14.7	11.3
Stomach	12.2	16.2
Breathing	5.8	6.0
Heart	3.9	1.7
Liver	3.5	1.3
Tuberculosis	10.3	7.3
Eyes	1.9	3.0
Permanent disability	2.6	1.0
Mental	1.9	2.3
Gynecological & child birth	_	18.6
Others	36.5	28.1
Total	**100.0**	**100.0**

Table 5.2: Percent distribution of illness cases and treatment by sex

Treatment	Male	Female	Total
Vaidya/ Hakeem	1.2	0.0	0.6
Ojha/ religious persons	3.4	0.6	2.0
Unqualified doctor	2.1	1.0	1.6
Chemist shop owner	9.8	10.9	10.3
Local Govt. facility	2.8	2.6	2.7
Outside Govt. facility	7.3	4.5	6.0
Local qualified doctor	14.1	14.7	14.4
Outside qualified doctor	58.1	64.4	61.2
Other	1.2	1.3	1.3
Total	100.0	100.0	100.0

Distribution of illness cases by treatment is presented in Table 5.2. It was presumed that they had much faith in superstitions, witch crafts, evil powers, *etc.* (tona, totka, jhar funk, *etc.*). But, it proved to be wrong, only in 2% cases such treatments were given. In about 12% cases unqualified doctor/ chemist shop owner were consulted. For treatment they did not prefer local and outside Govt. facilities. Non-availability of doctors and poor facilities were given the reasons for not consulting local Govt facilities. Even outside, their preference was more for private hospitals in spite of financial hardships and in almost half of the cases they had borrowed money for treatment. The reason given was their lower status and uttered "who bothers for us in government hospitals". This indicated the poor social, political status and sense of dejection and isolation in these communities.

Only 3.52% children in age group 0-3 suffered from diarrhea of any type (past 30 days preceding to survey date), which was too low as compared to estimates of NFHS-2 (19.2%) wherein period was only past two weeks. This seemed to be peculiar for the community. No satisfactory answer could be found for low incidence of diarrhea and it needs further investigation.

Child immunization

The vaccination of children against six serious, but preventable diseases (Tuberculosis, Diphtheria, Pertussis, Tetanus, Poliomyelitis and Measles) has been a cornerstone of the child health care system in the country. In the present survey data on measles preventive were not collected, but for others, situation was very poor. Hardly 15% children were given BCG and DPT vaccination (box). However, polio drops were given to 98% children, this may be due to government efforts for immunizing all against polio. As per NFHS-2 estimates for rural India, 64.3% of children were administered BCG vaccine and more than 46-65% children were given DPT vaccine. Poor proportion for BCG and DPT vaccination in fishers may be ascribed to very poor status of government health facilities at village level. Very few mothers were holding child vaccination card. It also indicated the poor awareness about the health care and facilities available in government centres.

Preventive	Proportion
BCG	16.8
Smallpox	11.7
DPT	14.3
Polio	97.9
No	1.8

Antenatal and postnatal care

The health of a mother and newborn child depends not only on health care she receives during her pregnancy and delivery, but also on the care she and the infant receive during the first few weeks after delivery.

The question was asked about the deliveries during past three years. Antenatal care was provided to only 19% women. In 57% cases qualified doctors were consulted (Govt. or

private). Tetanus injection was administered in 19% cases, which was equal to proportion of females provided medical aid. 93% deliveries were at home and in most of the cases with the help of village dai (village maid). Only in 5.2% cases females were admitted to hospitals. The proportion of females getting postnatal care was slightly higher than antenatal care; this may be due to delivery complications.

Promotion of maternal and child health care has been one of the most important objectives of the family welfare programme in India and government has taken several steps in this direction, but looking in to the situation in fishers it is evident that they have not been benefited by all those programmes. This may be due lack of awareness, sense of dejection and isolation and lack of confidence in the government supported programmes.

Conclusions and Recommendations

The study has clearly emerged with following conclusions and recommendations which are supported by the data presented in the document.

- Studies have clearly shown a serious decline in fisheries from riverine resources, ultimately highly affecting the fishers dependent on it for their livelihood. The present study established the collapse of their livelihood system. The interaction between the fishery and livelihood systems was found to be two way process. But, to delineate the pathway and develop dynamic models, it needs further in depth studies in fewer areas as case studies.

- The study pointed out the poor social and psychological capabilities of the fishers. Therefore, developmental efforts need to be given to develop their capabilities for community mobilizations. The collective institutions like cooperative needs to be strengthened and monitored properly so as to contribute in developing their capabilities.

- There are needs for the launching an awareness programme to make them aware about the ill effects of bad habits, child labour, *etc.* Along with it the existing laws in these aspects should be enforced strictly.

- They suffered from poor asset base to switch over to other alternative livelihood sources. In absence of that they were resorting to low paying menial job. To strengthen them, the programme should be launched to provide skill, training, credit facilities in micro-enterprises. Such programme should give special importance to women as they hold the key in sustaining fishers livelihoods.

- The land reform programme had been carried out to provide secured access of the tenants to the land and that had improved the tenant's condition. But in fisheries, the fishery resources like ponds, jheels were privatized directly or indirectly ignoring the rights of fishers. With the decline of the riverine fishery or exclusion of the fishers from fishery, the community suffered silently. To change the scenario, the rights of the fishers in the natural fishery resources need to be explicitly recognized as has been done for the agriculturists.

- The rights on land along the riverbanks and diara lands (between two streams of the river) should be clearly defined and fishers should be given preference in allotment of these lands.

- The fishers were not treated as SCs and therefore were deprived from the facilities available to the SCs. In practice, the fishers were worse than SC in terms of the poverty and living conditions. The human development status was lower than any other communities. Therefore, the fishers should be recognized as special class to channelize the benefits of the government sponsored programmes.

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List of Surveyed Villages

Village	Stretch	District	State
DEOKALI	1	Hardoi	U.P.
SRIMAU	1	Hardoi	U.P.
CHIBRAMAU	1	Hardoi	U.P.
MADHIA	1	Hardoi	U.P.
SAYEPUR PAWAR	1	Hardoi	U.P.
NAUBATGANJ	1	Unnao	U.P.
FHATEHPUR CHAURASI	1	Unnao	U.P.
DABOLI KHIRI	1	Unnao	U.P.
PARIYAR	1	Unnao	U.P.
CHAMPA PURVA	1	Unnao	U.P.
RAJWA KHERA	1	Unnao	U.P.
MEHNDIPUR	2	Kannauj	U.P.
DAYEPUR	2	Kannauj	U.P.
SABIYAPUR	3	Kanpur	U.P.
NANAMAU	3	Kanpur	U.P.
GADANPUR	3	Kanpur	U.P.
RADHEN	3	Kanpur	U.P.
PATKAPUR	3	Kanpur	U.P.
VITHUR	3	Kanpur	U.P.
TIWARI GHAT	3	Kanpur	U.P.
GOLAGHAT	3	Kanpur	U.P.
JANA	3	Kanpur	U.P.
RAHNAS	3	Kanpur	U.P.
DIBIYAPUR	3	Kanpur	U.P.
NAUBASTA	4	Fatehpur	U.P.
RAMNAGAR	4	Fatehpur	U.P.
MATINPUR	4	Fatehpur	U.P.
BHITTORA	4	Fatehpur	U.P.
FATEHPURGHAT	4	Kaushambi	U.P.
UJAHINI	4	Kaushambi	U.P.
BADANPUR	4	Kaushambi	U.P.
KURAI	4	Kaushambi	U.P.
PALHANA	4	Kaushambi	U.P.
KADA	4	Kaushambi	U.P.

Village	Stretch	District	State
KANTHUA	4	Kaushambi	U.P.
RALPUR	5	Rae Bareli	U.P.
DALMAU	5	Rae Bareli	U.P.
TEER KA PURVA	5	Rae Bareli	U.P.
GUTNI	5	Pratapgarh	U.P.
GARHI MANIKPUR	5	Pratapgarh	U.P.
KARENTI	5	Pratapgarh	U.P.
KIHUNI	5	Allahabad (north bank)	U.P.
KANDLA-KASAUDHAN	5	Allahabad (north bank)	U.P.
BADHAULI	5	Allahabad (north bank)	U.P.
HARIHARPUR	5	Allahabad (north bank)	U.P.
DUMDUMA	5	Allahabad (north bank)	U.P.
NEWAN-BHATKAR	5	Allahabad (north bank)	U.P.
CHATNAG	5	Allahabad (north bank)	U.P.
MAWAIYA	5	Mirzapur (north bank)	U.P.
DALAPATTI	5	Mirzapur (north bank)	U.P.
KEWTABIR	5	Mirzapur (north bank)	U.P.
ISSARPATTI	5	Mirzapur (north bank)	U.P.
SULTANPUR	5	Mirzapur (north bank)	U.P.
DEEGH	5	Sant Ravidas Nagar	U.P.
JAHANGIRABAD	5	Sant Ravidas Nagar	U.P.
GOPALPUR	5	Sant Ravidas Nagar	U.P.
IBRAHIMPUR	5	Sant Ravidas Nagar	U.P.
NEEVA UMARPUR	6	Allahabad (south bank)	U.P.
MAVAIYA	6	Allahabad (south bank)	U.P.
LAVAIN	6	Allahabad (south bank)	U.P.
MANAIYA	6	Allahabad (south bank)	U.P.
DEEHA	6	Allahabad (south bank)	U.P.
SIMRAHA	6	Allahabad (south bank)	U.P.
SIRSA	6	Allahabad (south bank)	U.P.
CHATWAN	6	Allahabad (south bank)	U.P.
DASHRATHPUR	6	Allahabad (south bank)	U.P.
TANDARIYA	6	Allahabad (south bank)	U.P.
MADARA	6	Allahabad (south bank)	U.P.

Village	Stretch	District	State
UNNAUR	6	Allahabad (south bank)	U.P.
PANDEY KA PURA	6	Allahabad (south bank)	U.P.
NARVAR	6	Allahabad (south bank)	U.P.
DENGURPUR	6	Allahabad (south bank)	U.P.
CHEHRA	6	Mirzapur (south bank)	U.P.
GOGAON	6	Mirzapur (south bank)	U.P.
DUGOLI	6	Mirzapur (south bank)	U.P.
BIJAR KALAN	6	Mirzapur (south bank)	U.P.
JOPA	6	Mirzapur (south bank)	U.P.
MARGURA	6	Mirzapur (south bank)	U.P.
GANJHIHA UJHALA	6	Mirzapur (south bank)	U.P.
BISUNDARPUR	6	Mirzapur (south bank)	U.P.
NEVADIAGHAT	6	Mirzapur (south bank)	U.P.
CHAUHANPATTI	6	Mirzapur (south bank)	U.P.
CHANDIKA	6	Mirzapur (south bank)	U.P.
SINDHAURAGHAT	6	Mirzapur (south bank)	U.P.
SAMASPUR	6	Mirzapur (south bank)	U.P.
CHUNAR	6	Mirzapur (south bank)	U.P.
RAIPURIA	6	Mirzapur (south bank)	U.P.
GANGPUR	6	Mirzapur (south bank)	U.P.
MIRZAPUR KHURD	6	Mirzapur (south bank)	U.P.
RAMNAGAR (MALLAHIYA)	6	Varanasi (south bank)	U.P.
SUJABAD	6	Varanasi (south bank)	U.P.
MUDADEV	7	Varanasi (north bank)	U.P.
RAJGHAT NAYAMAHADEV	7	Varanasi (north bank)	U.P.
SARAI MOHANA	7	Varanasi (north bank)	U.P.
MUSTAFABAD	7	Varanasi (north bank)	U.P.
MOHKALPUR-KUR	7	Varanasi (north bank)	U.P.
SARSAUL	7	Varanasi (north bank)	U.P.
CHANDRAWATI	7	Varanasi (north bank)	U.P.
DHAKWAN	7	Varanasi (north bank)	U.P.
KAITHI	7	Varanasi (north bank)	U.P.
JAUHARGANJ	7	Ghazipur (north bank)	U.P.
CHONCHAKPUR	7	Ghazipur (north bank)	U.P.

Village	Stretch	District	State
KARKATPUR	7	Ghazipur (north bank)	U.P.
MAHEPUR	7	Ghazipur (north bank)	U.P.
JAITPURA	7	Ghazipur (north bank)	U.P.
MIYAPURA	7	Ghazipur (north bank)	U.P.
GAUSPUR	7	Ghazipur (north bank)	U.P.
BIRPUR	7	Ghazipur (north bank)	U.P.
PALIHA BUJURG	7	Ghazipur (north bank)	U.P.
KAILIGHAT	8	Chandauli	U.P.
MAHRAURA	8	Chandauli	U.P.
KANWAR	8	Chandauli	U.P.
BALUA	8	Chandauli	U.P.
SONVARSA	8	Chandauli	U.P.
NARAULI	8	Chandauli	U.P.
SUNAUHALI	8	Chandauli	U.P.
TARIGHAT	8	Ghazipur (south bank)	U.P.
GAHMAR	8	Ghazipur (south bank)	U.P.
GHATAMPUR	8	Ghazipur (south bank)	U.P.
JAMANIA	8	Ghazipur (south bank)	U.P.
BHARAULI	9	Ballia (north bank)	U.P.
INDERPUR	9	Ballia (north bank)	U.P.
KOTWAGHAT	9	Ballia (north bank)	U.P.
NASEER MATH (MATHIA)	9	Ballia (north bank)	U.P.
NAVRANGA	9	Ballia (south bank)	U.P.
PRABODHPUR MUDADIH	9	Ballia (north bank)	U.P.
RAMPURCHIT	9	Ballia (north bank)	U.P.
UDAICHAPRA	9	Ballia (north bank)	U.P.
CHAUSA NARBATPUR	10	Buxar	Bihar
THAURA	10	Buxar	Bihar
AHRAULI	10	Buxar	Bihar
KESHOPUR	10	Buxar	Bihar
NAINIJOR	10	Buxar	Bihar
KHAWASPUR	10	Bhojpur	Bihar
PIPARPANTI	10	Bhojpur	Bihar
ACHRAJ LAL KA TOLA	10	Bhojpur	Bihar

Village	Stretch	District	State
SOHRA	10	Bhojpur	Bihar
MOHALI GHAT	10	Bhojpur	Bihar
ISLAMGANJ	11	Patna	Bihar
SHAHPUR	11	Patna	Bihar
NARIAL GHAT	11	Patna	Bihar
DEEGHAGHAT	11	Patna	Bihar
GOSAINGHAT	11	Patna	Bihar
BAGH JAFARKHAN BANSTAR	11	Patna	Bihar
PHULWARIA	11	Patna	Bihar
NEVADA	11	Patna	Bihar
LALLO POKHAR	11	Mungher	Bihar
CHAWKHANDI	11	Mungher	Bihar
SITAKUND DEEH	11	Mungher	Bihar
KUMARPUR	11	Mungher	Bihar
JAHANGIRA	11	Bhagalpur	Bihar
SULTANGANJ	11	Bhagalpur	Bihar
CHAMPANALA (NATH NAGAR)	11	Bhagalpur	Bihar
BARARI	11	Bhagalpur	Bihar
KAHALGAON	11	Bhagalpur	Bihar
SAIDPUR	12	Saran	Bihar
NIYAJI TOLA	12	Saran	Bihar
RASOOLPUR	12	Saran	Bihar
PALVAIYA (HASANPUR)	12	Vaishali	Bihar
BHABAGAWAN	12	Vaishali	Bihar
RASALPUR	12	Samastipur	Bihar
SIHMA KARPURIANAGAR	12	Begusarai	Bihar