

PROJECT COMPLETION REPORT

INTRODUCTION

Chilika is the largest lagoon along the east coast of India, situated between latitude 19° 28' and 19° 54' N and longitude 85° 05' and 85° 38' E. The lagoon is a unique assemblage of marine, brackish and fresh water eco-system with estuarine characters. It is one of the hotspots of biodiversity and shelters a number of endangered species listed in the IUCN red list of threatened species. It is an avian grandeur and the wintering ground for more than one million migratory birds.

The highly productive lagoon eco-system with its rich fishery resources sustains the livelihood of more than 0.15 million-fisher folk who live in and around the Lagoon. The water spread area of the Lagoon varies between 1165 to 906 sq.km during the monsoon and summer respectively. A 32 km long, narrow, outer channel connects the lagoon to the Bay of Bengal, near the village Motto, recently a new mouth was opened by CDA with a view to bring a new lease of life to the lagoon.

The total number of fish species is reported to be 225 (Dean and Saaltink, 1991). Along with a variety of phytoplankton, algae and aquatic plants, the Lagoon region also supports over 720 species of non-aquatic plants (CDA). A survey of the fauna of Chilika carried out by the Zoological Survey of India in 1985-87 recorded over 800 species in and around the lagoon. This list includes a number of rare, threatened and endangered species, including the Barakudia limbless skink. On account of its rich bio-diversity, Chilika was designated as a "Ramsar Site", i.e. a wetland of International Importance.

The Nalaban Island within the Lagoon is notified as a Bird Sanctuary under Wildlife (Protection) Act, the lagoon is also identified as a priority site for conservation and management by the National Wetland coral reefs Committee of Ministry of Environment & Forests, Government of India. The Lagoon is a highly productive ecosystem and with it's rich fishery resources sustains the livelihood of more than 1, 20,000 fisher folk who live in and around the lagoon.

However, it is of concern on the fishing pressure due to vitalization of economic activities and increasing population, and the negative impact on fisheries resources from water pollution caused by regional development. Since the traditional fishers depend on limited natural resources in the lagoon, their livelihood is quite vulnerable to these negative impacts. Therefore, it is an important issue to improve and stabilize the livelihood of people in extreme poverty around the lagoon while simultaneously protecting the wetland.

Prolonged collaborative activity by community people is indispensable for community development based on the conservation of natural environment and sustainable use of natural resources. Therefore, it is required to promote environmental awareness for conservation and sustainable use of natural resources. In this regard, the Chilika Development Authority (CDA) should take a major role to establish a system of support and collaboration among stakeholders and government agencies.

In view of the situation aforementioned, Japan International Cooperation Agency (JICA) agreed to implement the technical cooperation project aims to strengthen the capacity of CDA for implementing sustainable development of the rural communities in and around Chilika lagoon and to build up cooperation system among related agencies concerned.

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BASELINE STUDY

The project commissioned a baseline survey of 127 fisher villages in and around Chilika lagoon aiming to collect socio-economic information of fishers and their family members which will inform the programme strategy and activity package to be designed for their sustainable development besides contributing to the protection and conservation of the endangered lake.

Selection of the Agency

Selection of the agency to conduct the study on contract basis was based on competitive technical and financial bids submitted by reputed agencies working in Orissa with sound track record and proven capacity to undertake the assignment. Centre for Youth and Social Development (CYSD), Bhubaneswar begged the contract and conducted the study.

Study Design

The study was conducted in two phases with following targets respectively:

Phase	Commencement	Completion	No of villages	Remark
Phase I	25 January 2007	26 March 2007	91	Survey completed in time
Phase II	26 th April 2007	15 th June 2007	36	* Survey completed in time

Respondent profile:

Sl. No	Category	Description	Ratio per village	Number
1	Key Informant	Village president/ AWW/ President- Secy of PFCS etc	2/3 respondents per village subject to information required	Phase I- 7000 approx
2	Fisher	Person engaged in catching fish in Chilika and selling	Above 100 HH =30 % Between 30-99 HH= 30 + Less than 30 HH= As many possible	Phase II- 3000 approx
3	Fisher Wife	Wife of one of the fisher surveyed	At least 30 % of fishers surveyed in each village	Total= 10000 approx

Study Team:

- Supervisors: 8
- Surveyors : 40

Sampling Principle:

- Random selection skipping fixed number of houses from starting point depending on the target to be covered.

Study Instruments:

- Key Informant Questionnaire
- Fisher Questionnaire
- Fisher Wife Questionnaire

The questionnaires were developed by JICA. CYSD arranged a field testing of all the three sets of questionnaires in one of the target villages (Paniduar) in Jaripada Gram Panchayat of Chilika Block. All the supervisors and surveyors participated in it under the supervision of JICA authorities and CYSD senior faculty. Necessary changes were effected to the questionnaires in reference to field testing results. The team members were trained on objectives and modalities of survey before actual commencement of field work.

TABLE I: RESPONDENT COVERAGE PHASE- I &II

GROUP A VILLAGES COVERED IN PHASE- I									
SI	Name of Listed Village	Total Population	Fisher Population	Fisher H.H	Schedule Completed			Total	Remark
					Fisher	Wives	KI		
1	Badabandhakera	560	78	0	0	0	1	1	No fisher
2	Balabhadra pur	134	134	21	21	18	1	40	-
3	Balinasi	916	728	128	39	14	5	58	-
4	Balipatapur	6689	4868	727	220	70	15	305	-
5	Balipatna	1914	1255	161	0	0	1	1	No fisher
6	Barakudi	474	461	70	30	10	2	42	-
7	Bhagabatipur	3610	1226	183	55	17	2	74	-
8	Bhusandapur	2128	1528	205	62	20	3	85	-
9	Charibatia	350	217	48	30	10	2	42	-
10	Dochian	3499	538	62	30	18	5	53	-
11	Dokanda	994	907	142	44	14	4	62	-
12	Gadisagada	1146	1025	137	46	16	3	65	-
13	Gopinathpur	1185	0	0	0	0	1	1	No fisher
14	Jagannathpur	350	0	0	0	0	1	1	No fisher
15	Jagulaipadar	2260	2182	362	110	35	4	149	-
16	Janghar	692	252	40	30	10	2	42	-
17	Jankia	951	158	30	30	10	2	42	-
18	Jaripada	1942	25	5	5	5	1	11	-
19	Jhatinugaon	2602	1912	348	105	32	6	143	-
20	Kanasa	2247	0	0	0	0	1	1	No fisher
21	Karamala	1880	350	35	30	10	2	42	-
22	Karimpur	678	672	64	30	10	1	41	-
23	Kaudiapur	140	0	0	0	0	1	1	No fisher
24	Krishnasaranpur	1060	0	0	0	0	1	1	No fisher
25	Mangalajodi	8295	5509	743	224	67	12	303	-
26	Matiapada	332	249	41	30	10	2	42	-
27	Mudiratha	288	288	34	30	10	1	41	-
28	Nizgarhkuhudi	8347	1183	178	54	16	6	76	-
29	Nuagaon	1250	76	15	15	15	2	32	-
30	Panchupatia	772	644	86	30	10	3	43	-
31	Ratanpur	6039	1334	241	76	24	6	106	-
32	Sorana	7970	4342	846	254	76	6	336	-
33	Tangi	9557	1512	218	0	0	8	8	No Fisher
34	Totapada	276	245	56	30	10	2	42	-
35	Urumukhi	2240	1904	150	45	15	5	65	-
36	Baghalanji	488	488	71	30	10	1	41	-
37	Balisahi	126	28	4	4	4	1	9	-
38	Baraora	584	556	183	60	20	4	84	-
39	Barunpara	818	706	119	36	11	2	49	-
40	Jaganathpatna	1508	1508	176	59	20	4	83	-
41	Kaurikhani	2277	1558	232	75	22	4	101	-
42	Khajuria	1000	891	135	44	15	5	64	-
43	Patharapada	1180	351	60	30	10	2	42	-
44	Alanda	350	328	66	30	10	1	41	-
45	Balia	539	271	55	30	10	2	42	-

46	Baradihi	4342	2270	363	109	33	4	146	-
47	Baulabandha	6050	3283	513	154	47	6	207	-
48	Bheleri	491	34	3	3	3	1	7	-
49	Bidhar pur	350	42	6	6	6	1	13	-
50	Biripadar	1080	660	85	30	10	2	42	-
51	Chandraput	2040	1967	443	133	40	3	176	-
52	Chhedapadar	958	15	2	2	2	1	5	-
53	Dhuanla	2283	135	40	1	1	3	5	1 fisher
54	Gabapadar	1415	673	104	31	10	3	44	-
55	Galua	3166	67	12	12	10	1	23	-
56	Injanapur	584	0	0	0	0	1	1	No fisher
57	Khatikudi	1380	62	11	11	10	2	23	-
58	Khatisahi	937	831	164	49	15	2	66	-
59	Khirisahi	802	802	181	54	17	2	73	-
60	Krushnaprasad	1068	384	73	30	10	2	42	-
61	Kumandola	723	723	112	34	11	3	48	-
62	Mahisa	1035	851	142	42	13	3	58	-
63	Nuapada	358	328	36	30	10	2	42	-
64	Sananairi	5057	2820	478	143	43	6	192	-
65	Siandi	1021	101	17	17	17	1	35	-
66	Singeswar	950	103	17	17	10	2	29	-
67	Singipursasan	883	0	0	0	0	1	1	No fisher
68	Balugaon	15833	1720	350	105	31	4	140	-
69	Banpur	17132	88	15	15	10	1	26	-
70	Bhagabati Patna	650	442	85	30	10	1	41	-
71	Bhimapur	6584	819	134	40	12	2	54	-
72	Brahmpur	2099	1788	338	102	30	3	135	-
73	Mathapur	1553	121	22	22	10	2	34	-
74	Alupatna	1450	1418	211	72	22	4	98	-
75	Arakhakuda	3440	2136	807	242	72	5	319	-
76	Gangadharpur	700	700	150	50	15	3	68	-
77	Gopinathpur	1517	1517	241	103	31	3	137	-
78	Gorapur	557	189	50	30	10	2	42	-
79	Jadupur	146	146	13	13	13	1	27	-
80	Keutakudi	350	257	40	30	9	2	41	-
81	Manikpatna	670	0	0	0	0	1	1	No fisher
82	Mirjapur	771	765	145	45	13	2	60	-
83	Nuagaon	1356	0	0	0	0	1	1	No fisher
84	Padanapur	78	78	12	12	12	1	25	-
85	Satapada	1820	1600	159	48	15	3	66	-
86	Siara	800	753	141	43	13	2	58	-
87	Sipakuda	1127	1091	189	69	23	4	96	-
88	Gobakund	600	600	130	39	12	2	53	-
89	Parbatipur	268	268	34	30	9	2	41	-
90	Raipur	520	509	112	34	11	2	47	-
91	Sanapatna	1300	1300	145	44	13	2	59	-
	Sub Total	190931	76943	12802	4229	1418	253	5900	

GROUP BVILLAGES COVERED IN PHASE -II

92	Binchanapalli	650	650	85	30	10	3	43	-
93	Damodarpur	1680	1335	260	35	14	1	50	-
94	Gajpatinagar	2382	2139	378	114	34	4	152	-
95	Gokharkuda	1286	938	178	55	19	2	76	-
96	Gourangapatna	967	907	151	45	14	3	62	-
97	Kainchapur	1926	563	108	39	14	3	56	-
98	Kantiagarh	1328	1328	282	91	34	2	127	-
99	Kespur	1218	548	87	34	10	3	47	-

100	Kholaganja	304	0	0	0	0	1	1	No Fisher
101	Khalamuhan	447	409	51	34	12	1	47	-
102	Kumarpur	1340	1326	277	84	25	3	112	-
103	Langaleswar	4249	797	138	48	17	5	70	-
104	Madhurchuan	1759	228	26	26	13	2	41	-
105	Maludakhas	1558	0	0	0	0	1	1	No Fisher
106	Naba	540	540	105	32	10	1	43	-
107	Pallibandha	1064	909	150	50	17	2	69	-
108	Patanasi	342	342	60	35	12	1	48	-
109	Pathara	5979	5767	966	290	87	5	382	-
110	Prayagi	1680	335	76	30	10	3	43	-
111	Ramalenka	890	482	80	30	10	2	42	-
112	Rasakudi	380	380	74	36	13	2	51	-
113	Sabalia	2312	1267	170	52	15	5	72	-
114	Sahabajpur	972	176	24	24	11	2	37	-
115	Samalnasi	1400	1284	291	90	27	3	120	-
116	Samantarapur	300	0	0	0	0	1	1	No Fisher
117	Belpada	562	535	91	32	10	2	44	-
118	Gajapati nagar	0	0	0	0	0	0	0	Repeat
119	Ganjam	484	351	55	0	0	1	1	No Fisher
120	Gourangapatna	0	0	0	0	0	0	0	Repeat
121	Kolorabadi	140	140	36	30	10	2	42	-
122	Kumarpur	0	0	0	0	0	0	0	Repeat
123	Laxmipur	760	705	150	46	14	2	62	-
124	Maleswari	352	340	63	37	12	2	51	-
125	Mathasamal	420	394	46	30	10	2	42	-
126	Rambha	851	685	124	39	13	3	55	-
127	Tentuliapada	1195	1138	253	78	24	3	105	-
	Sub Total	41717	26938	4835	1596	521	78	2195	
	Grand Total	232648	103881	17637	5825	1939	*331	8095	

TABLE II: DETAILS ON NO FISHER VILLAGE IN THE SURVEY LIST

Sl.	No Fisher Village	Village ID	Block	Remark
First Phase:				
1	Badabandhakera	1	Brahmagiri	As per survey no Household is engaged in fishing and fish selling for livelihood
2	Balipatna	5	Kanas	As per survey all the fisher households have changed profession after super cyclone, 1999
3	Gopinathpur	13	Kanas	As per survey no Household is engaged in fishing and fish selling for livelihood
4	Jagannathpur	14	Kanas	None of the Household is engaged in fishing and fish selling for livelihood
5	Kanasa	20	Kanas	None of the Household is engaged in fishing and fish selling for livelihood
6	Kaudiapur	23	Kanas	Very small village inhabited by general castes not engaged in fishing and fish selling
7	Krishnasaranpur	24	Brahmagiri	Located far away from Chilika, a few SCs catch very little fish in canals for consumption
8	Tangi	33	Tangi	Only one Mr Parana Behera does fishing for

				consumption though the fisher community is large consisting 218 households
9	Dhuanla	53	Chilika	Out of 40 Households only 1 is engaged in fishing and fish selling
10	Injanapur	56	Chilika	As per survey no Household is engaged in fishing and fish selling for livelihood
11	Singipursasan	67	Chilika	As per survey no Household is engaged in fishing and fish selling for livelihood
12	Manikpatna	81	Krushnaprasad	All Muslim households none engaged in fishing and fish selling
Second Phase:				
13	Kholaganja	100	Krushnaprasad	As per survey no Household is engaged in fishing and fish selling for livelihood
14	Maludakhas	105	Krushnaprasad	After separation of Maleswari from Maluda, none in Maludakhas found engaged in fishing and fish selling for livelihood
15	Samantarapur	116	Krushnaprasad	As per survey no Household is engaged in fishing and fish selling for livelihood
16	Ganjam	119	Ganjam	Traditional fishers have changed profession other than fishing

Table III: List of Hamlets included in the 127 Villages Covered during Baseline Survey

Sl.	Name of the Hamlet	Village ID	Name of the Revenue	Name of the Block
1	Charibatia	09	Nisibhanar	Brahmagiri
2	Gobakunda	88	Manikpatana	Krushnaprasad
3	Sanapatana	91	Manikpatana	Krushnaprasad
4	Biripadar	50	Kamalasingh	Krushnaprasad
5	Samantarapur	116	Naba	Krushnaprasad
6	Raipur	90	Padanpur	Krushnaprasad
7	Parbatipur	89	Mirzapur	Krushnaprasad
8	Bichanapalli	92	Hariपुरburudi	Ganjam
9	Gourangapatana	96	Madhurchuan	Ganjam
10	Tentulipada	127	Kespur	Khalikote
11	Belapada	117	Kespur	Khalikote
12	Laxmipur	123	Rambha	NAC Rambha
13	Kalarabhadi	121	Bhanrkudi	Ganjam

TABLE IV: INFORMATION FOR UNLISTED VILLAGES WITH FISHER POPULATION

Sl No	Number & Name of Revenue Village	Total Population	Total H.H	Fisher Population	Fisher H.H	Schedule Completed			
						Fisher	Wives	Key Informant	Total
Chilika Block									
1	Dadhibamanpur	1650	339	1631	335	100	30	5	135
2	Barakul	2758	466	685	84	30	10	3	43
	Total	4408	805	2316	419	130	40	8	178
Tangi Block									
3	Bidharpur	1052	176	585	98	30	10	3	43
4	Katalagatha Colony	1275	185	1275	185	55	17	3	75
5	Jaganathapur	1125	137	1104	132	40	12	3	45
6	Tulasi patna	1712	286	1070	193	58	17	3	78
	Total	5164	784	4034	608	183	56	12	241

Bramhagiri Block									
7	Gadakokal	1700	225	744	100	33	10	4	47
	Total	1700	225	744	100	33	10	4	47
Kanas Block									
8	Hariharpatna	365	50	365	50	16	7	1	24
9	Dayavihar	355	55	355	55	18	5	2	25
	Total	720	105	720	105	34	12	3	49
Krushnaprasad Block									
10	Kandaragaon	352	70	352	70	31	10	3	34
11	Satpoda Bhoisahi	344	56	332	55	30	10	2	32
	Total	696	126	684	125	61	20	5	66
	Grand Total	12688	2045	8498	1357	441	138	32	581

As per survey findings there are eleven unlisted villages around Chilika lagoon having fishers engaged in fishing and selling fish for livelihood. The block wise location of villages has been presented for easy reference. These villages are not included in the 127 villages identified for survey as per ToR of the Chilika Baseline Study. Out of 12688 population in these villages 8498 are fishers, similarly, out of 2045 households, 1357 are fisher households. A total 441 fishers, 138 fisher wives and 32 key informants have been interviewed during the survey.

PRELIMINARY ANALYSIS FINDINGS

Table 1: Geographical Profile of areas covered by Baseline Study

SI No	Name of Block	No of GPs	No of Revenue Villages	No Villages/ Hamlets
1	Brahmagiri	2	4	4
2	Banpur	5	7	9
3	Chilika	11	25	26
4	Ganjam	6	12	14
5	Kanas	12	17	19
6	Krushnaprasad	5	7	8
7	Khalikote	15	31	41
8	Tangi	7	8	26
	Total	63	111	147

Table 1 shows that a total 147 villages and hamlets were covered by the baseline study under 111 revenue villages, 63 Gram Panchayats and 8 Blocks around Chilika from Khurda, Puri and Ganjam districts. Highest number of GPs and villages were from Khalikote block whereas Brahmagiri had lowest number.

Table 2: Distance of surveyed villages from key institutions

Institution	Percentage of villages by location distance N=111					
	0-1 Km	1.1 – 2 Km	2.1 – 3 Km	3.1 – 4 Km	4.1 – 5 Km	Above 5 Km
GP office	44.14	26.13	11.71	4.50	3.60	9.92
Block	7.22	3.60	1.80	0.90	2.70	83.78
Tahasil	8.11	0.90	1.80	0.90	2.70	85.59
RI office	19.82	20.72	11.71	8.11	15.32	24.32

Bank	20.72	14.41	14.42	9.01	14.41	27.03
LI Centre	28.82	16.22	12.61	6.31	10.81	25.23

Table 2 shows the locational distance of fisher villages from key institutions. 44.14 % villages are located within 1 Km from GP office whereas 9.92 % have distance above 5 Km. 7.2 % villages are located within 1 Km from Block office whereas 83.78 % have distance above 5 Km. 8.11 % villages are located within 1 Km from Tahasil office whereas 85.59 % have distance above 5 Km. 19.82 % villages are located within 1 Km from RI office whereas 24.32 % have distance above 5 Km. 20.72 % villages are located within 1 Km from Bank whereas 27.03 % have distance above 5 Km. 28.82 % villages are located within 1 Km from LI Center whereas 25.23 % have distance above 5 Km.

Table 3: Distribution of fisher villages/ hamlets by distance from educational institutions

Institution	Percentage of villages by location distance N=111						
	Within village	Within 1 Km	1.1 – 2 Km	2.1 – 3 Km	3.1 – 4 Km	4.1 – 5 Km	Above 5 Km
Pre school Center	85.59	9.91	3.60	0.90	0.00	0.00	0.00
Primary School	89.19	5.40	5.41	0.00	0.00	0.00	0.00
UP School	74.77	8.11	14.41	2.71	0.00	0.00	0.00
ME	60.36	10.81	18.92	8.11	1.80	0.00	0.00
High School	50.45	18.02	15.32	12.61	1.80	0.90	0.90
Plus 2 College	9.91	3.60	9.91	9.91	10.81	13.52	42.34
Plus 3 College	7.21	2.70	9.01	8.11	9.01	10.81	53.15
ITI/JSS	1.80	0.00	2.71	3.60	1.80	0.90	89.19

Table 3 shows the locational distance of fisher villages from educational institutions. 85.59 % villages have preschool (Anganwadi) centre within village. 89.19 % villages have primary school within village. 74.77 % have UP school, 60.36 % have ME school, 50.45 % have High school within village. Distance is longer in respect of higher institutions with 42.34 % reporting Plus 2 College, 53.15 % reporting Plus 3 College and 89.19 % reporting ITI/ JEE above a distance of 5 Km.

Table 4: Distribution of fisher villages/ hamlets by distance from public health facilities

Institution	Percentage of villages by location distance N=111						
	Within village	Within 1 Km	1.1 – 2 Km	2.1 – 3 Km	3.1 – 4 Km	4.1 – 5 Km	Above 5 Km
Sub center	35.14	9.91	25.22	11.71	4.50	5.41	8.11
New PHC	7.21	12.61	26.13	11.71	5.41	13.51	23.42
PHC	3.60	1.80	9.01	8.11	7.21	1.80	68.47
Hospital	0	0	0.90	5.41	5.41	10.81	77.47

Table 4 shows the locational distance of fisher villages from health institutions. 35.14 % villages have Sub centre within village. 7.21 % villages have New PHC within village. Distance is longer in respect of higher health institutions with 68.47 % reporting PHC and 77.47 % reporting Hospital above a distance of 5 Km.

Table 5: Distribution of fisher villages/ hamlets by population

Number of Revenue Villages	Percentage of villages by range of population						
	Below 100	101-250	251-500	501-750	751-1000	1001-1500	Above 1500
111	0	7	17	14	17	20	36
Percentage>	0	6.31	15.32	12.61	15.32	18.02	32.43

Table 5 shows that 32.43 % fisher villages have population above 1500. 18.02 % have population between 1001-1500, 15.32 % have between 751-1000, 12.61 % have between 501-750, 15.32 % have between 251-500 and 6.31 % have between 101-250. No village has a population below 100 persons.

Table 6: Distribution of fisher villages/ hamlets by fisher population

Number of Revenue Villages	Percentage of villages by range of population							
	Having no fisher pop	Below 100	101-250	251-500	501-750	751-1000	1001-1500	Above 1500
111	10	12	12	19	16	13	9	20
Percentage>	9.01	10.81	10.81	17.12	14.41	11.71	8.11	18.02

Table 6 shows that 18.02 % fisher villages have fisher population above 1500. 8.11% have population between 1001-1500, 11.71 % have between 751-1000, 14.41 % have between 501-750, 17.12 % have between 251-50, 10.81 % have between 101-250 and 9.01 % listed revenue villages do not have fishers at all.

Table 7: Distribution of fisher villages/ hamlets by access to potable water

Number of Revenue Villages	Percentage of villages by type of water source access					
	Open well	Tube Well	Artesian well	Tap Water	Other Source	
					Tank	River
111	76	91	15	24	68	10
Percentage>	68.47	81.98	13.51	21.62	61.26	9.01

Table 7 shows that 68.47 % fisher villages have open well, 81.98 % have tube well and 21.62 % have piped water as source of drinking water. 13.51 % use artesian well, 61.26 % use tank and 9.01 % use river water for various domestic uses.

Table 8: Distribution of fisher villages/ hamlets by access to potable water during summer

Number of Revenue Villages	Open well	Tube Well	Artesian well	Other Source	
				Tank	River
111	23	48	12	22	9
Percentage>	30.26	52.75	80.00	32.35	90.00

Table 8 shows availability of adequate quantity of drinking water during summer. 30.26 % fisher villages have get from open well, 52.75 % get from tube well and 80 % get from artesian well. There is no disruption with respect to piped water. 32.35 % use tank and 90 % use river water for various domestic uses to meet the shortfall in summer months.

Table 9: Distribution of fisher villages/ hamlets by access to electricity

Number of Revenue Villages	Have electricity		Don't have Electricity	
	Number	Percentage	Number	Percentage
111	104	93.69	7	6.31

Table 9 shows availability of electricity in fisher villages. The situation appears to be quite satisfactory as 93.69 % have it whereas only 6.31 % do not have.

Table 10: Distribution of fisher villages/ hamlets by access to roads

Number of Revenue Villages	Connected by all weather roads		Roads affected during rainy season		A part of the village is not connected	
	Number	Percentage	Number	Percentage	Number	Percentage
111	58	52.25	47	42.34	6	5.41

Table 10 shows connectivity of fisher villages. 52.25 % villages are connected with all weather roads, roads are affected during rainy season in 42.34 % villages. Only 5.41 % villages report lack of road connectivity to some hamlets.

Table 11: Distribution of fisher villages/ hamlets by link to development institutions

Number of Revenue Villages	NGO	PFCS	CBO	SHG	Others
111	7	39	28	111	16
Percentage>	6.31	35.14	25.23	100.00	14.41

Table 11 shows presence of development facilitation institutions in fisher villages. All the villages have SHGs. In contrast, 35.14 % villages have PFCS units, 25.23 % villages have CBOs and 6.31 % have presence of NGOs. Similarly, 14.41 % villages have other forms of associations.

Table 12: Distribution of fisher villages/ hamlets by possession of Boats

Number of Revenue Villages	Mechanized Boats			Non Mechanized Boats		
	Below 20	21-40	41 and above	Below 20	21-40	41 and above
111	50	13	20	32	23	35
Percentage>	45.05	11.71	18.02	28.83	20.72	31.53

Table 12 shows the possession of boats by fisher villages. This is based on information collected from Key Informant survey. 45.05 % villages have less than 20 mechanized boats, 11.71 % have between 21-40 whereas only 18.02 % have more than 41 mechanized boats. On the other hand, 28.83 % villages have less than 20 non-mechanized boats, 20.72 % have between 21-40 whereas only 31.53 % have more than 41 non-mechanized boats.

Table13: Distribution of fisher villages/ hamlets by distance from fishery facilities

Institution	Percentage of villages by location distance						
	Within village	Within 1 Km	1.1 – 2 Km	2.1 – 3 Km	3.1 – 4 Km	4.1 – 5 Km	Above 5 Km
Jetties	13.86	4.95	10.89	8.92	8.91	14.85	37.62
Fish landing center	28.71	4.95	8.91	11.88	4.95	8.91	31.69
Fish Markets	10.89	5.95	14.85	6.93	5.94	8.91	46.53
Godowns	11.88	5.94	8.91	11.88	4.95	7.92	48.52
Ice Plant	7.92	8.91	11.88	5.94	2.97	6.93	55.45

Table 13 shows the locational distance of fisher villages from fishery facilities. Only 13.86 % villages have Jetty within village whereas 37.62 % have it at a distance of above 5 Km. 28.71 % villages have Fish Landing Centre within village whereas 31.69 % have it at a distance of above 5 Km.

10.89 % villages have Fish Markets within village whereas 46.53 % have it at a distance of above 5 Km. 11.88 % villages have Godowns within village whereas 48.52 % have it at a distance of above 5 Km. 7.92 % villages have Ice Plant within village whereas 55.45 % have it at a distance of above 5 Km.

Respondent profile

Table 14: Background of Key Informants by professional background

SI No	Name of Block	Num	Status of Fisher respondents by percentage					
			Village president	AWW	President/ Secy of PFCS	School Teacher	Village Leader	Others
1	Banpur	5	1	1	1	1	1	0
2	Brahmagiri	16	2	7	3	0	1	3
3	Chilika	73	5	37	10	3	14	4
4	Ganjam	34	6	11	7	1	7	2

5	Kanas	41	8	18	8	2	4	1
6	Khalikote	28	5	16	3	0	3	1
7	Krushnaprasad	79	12	39	14	3	8	3
8	Tangi	61	15	27	9	4	5	1
	Total	337	54	156	55	14	43	15
	Percentage>		16.02	46.29	16.32	4.15	12.76	4.45

Table 14 shows that 337 Key Informants were interviewed during the study. Out of that 16.02 % are village presidents (Sarpanchs), 46.29 % are Anganwadi Workers, 16.32 % are functionaries of PFCS, 4.15 % are school teachers, 12.76 % are village leaders and rest 4.45 % are drawn from leaders of fishing communities. Krushnaprasad block have maximum PFCS members followed by Tangi whereas village leaders are found more from Chilika block.

Table 15: Background of Key Informants by professional background

Total Respondents	Wife of Household Head		Wife of Household Head's son	
	Number	Percentage	Number	Percentage
1938	1807	93.24	131	6.76

Table 15 shows that 1938 Fisher wives were interviewed during the study. Out of that 93.24 % are Wife of Household Head whereas 6.76 are Wife of Household Head's son.

Table 16: Background of Fisher wives Respondents by education

Total Respondents	Educational Background of Fishers wives						
	College	High School	UP	Primary	Literate	Illiterate	Others
1938	17	90	124	507	180	1017	3
Percentage >	0.88	4.64	6.40	26.16	9.29	52.48	0.15

Table 16 shows the educational background of fisher wives interviewed during the study. 52.48 % of them are illiterates. 26.16 % report primary, 6.40 % report UP, 4.64 % report High school and 0.88 % report college education. While 9.29 % are just literate only 0.15 % has other kind of education.

Table 17: Background of Fisher Respondents by family position and boat ownership

No of fishers surveyed	Status of Fisher respondents by percentage						
	Head of House	Son of Head	Boat owner	Boat owner partner	Family Crew	Hired crew	Others
5825	5486	339	3810	229	18	1564	204
Percentage >	94.18	5.82	65.41	3.93	0.31	26.85	3.50

Table 17 shows that 94.18 % of fishers are head of household whereas 5.82 % are son of head. 65.41 % of them own boats by themselves, 3.93 % own boats in partnership with others. While 0.31% of fisher surveyed is family crew, 26.85 % are paid crew and just 3.50 % are engaged in other fishing and marketing activities.

Table 18: Caste details of fisher households surveyed

No of Fisher HH	Keuta	Kan dara	Tiar	Nolia	Niary	Gokha	Kar tia	Kha tia	Refugee	Other
5825	3576	797	278	514	22	7	43	165	185	239
% >	61.39	13.68	4.77	8.82	0.38	0.12	0.74	2.83	3.18	4.10

Table 18 shows that a majority 61.39 % of fishers belongs to Keuta caste whereas the lowest 0.12 % are Gokhas. Among others 13.68 % are Kendara, 4.77 % are Tiar, 8.82 % are Nolia, 0.38 % are Niary, 0.74 % are Kartia, 2.83 % are Khatia 3.18 % are Bengalee refugees and 4.10 % are from other scheduled castes. Incidentally, Keuta is the traditional fisherman caste in Orissa.

Table 19: Place of origin of fisherman surveyed

No of respondents	Native to Chilika	From other districts of Orissa	From outside Orissa	Refugee
5825	5416	70	154	185
Percentage	92.98	1.20	2.64	3.18

Table 19 shows the place of origin of fishers interviewed during the study. 92.98 % are natives of Chilika. While 1.20 % has come from other districts of Orissa, 2.64 % are from outside Orissa. The refugees account for 3.18 % only.

Table 20: Background of Fisher Respondents by age

No of fishers surveyed	Age Group			
	15-25 Years	26-35 years	36-45 Years	Above 46 Years
5825	260	1390	1886	2289
Percentage >	4.46	23.86	32.38	39.30

Table 20 shows the age groups of fishers interviewed during the study. 39.30 % are above 46 years. While 32.38 % are aged between 36-45 years, 23.86 % are aged between 26.35 years and only 4.46 % are aged between 15-25 years.

Table 21: Background of Fisher Respondents by education

Total Respondents	Educational Background of Fishers						
	College	High School	UP	Primary	Literate	Illiterate	Others
5825	142	527	815	2067	564	1708	2
Percentage >	2.44	9.05	13.99	35.48	9.68	29.32	0.03

Table 21 shows the educational background of fishers interviewed during the study. 29.32 % of them are illiterates. 35.48 % report primary, 13.99 % report UP, 9.05 % report High school and 2.44 % report college education. While 9.68 % are just literate only 0.03 % has other kind of education.

Table 22: Fishing assets possessed by fisherman surveyed- Boats

Total Number of fishers interviewed	Mechanized Boat- Own		Mechanized Boat- part		Non-Mechanized Boat- Own		Non-Mechanized Boat- part		Not have any	
	Num	%	Num	%	Num	%	Num	%	Num	%
5825	1445	24.81	37	0.64	2380	40.86	191	3.28	1772	30.42

Table 22 shows the ownership of boats by fishers interviewed during the study. 69.58 % own boats but 30.42 % do not have any. 24.81% of them own mechanized boats in individual capacity and just 0.64 % have such boats in partnership.

40.86 % of them own non-mechanized boats in individual capacity and just 3.28 % have such boats in partnership. The number of non-mechanized boats is higher than mechanized ones. The falling catch quantity as reported by fishers surveyed is responsible for this because the cost of running mechanized boats act as a deterrent.

Table 23: Fishing gears used by fisherman surveyed: N=5825

Fishing Gear	Num	%	Fishing Gear	Num	%	Fishing Gear	Num	%
Thatta Khanda	96	1.65	Hilsajal (Ilisi jal)	228	3.91	Patua jal	352	6.04
Baja	99	1.70	Dubi jal	1511	25.94	Khepa jal	422	7.24
Dhaudi	157	2.70	Noli jal	278	4.77	Bada jal	225	3.86
Poluha	85	1.46	Khainga jal	361	6.20	Zero net	876	15.04
Khanda	3572	61.32	Dossta jal	110	1.89	Mantle net	54	0.93
Dosti jal	201	3.45	Kekenda jal	101	1.73	Pelana jal	120	2.06
Menjia jal	854	14.66	Boroga jal	148	2.54	Jano	41	0.70
Ora jal	46	0.79	Khadi jal	274	4.70	Other	10	0.17
Sahala jal	336	5.77	Mani jal	57	0.98	Other	1	0.02

Table 23 shows the type of fishing gears used by fishers interviewed during the study. A majority 61.32 % use Khanda followed by 25.94 % using Dubi, 15.04 % using Zero net, 14.66 % using Menjia jal, 7.24 % using Khepa jal, 6.20 % using Khainga jal, 6.04 % using Patua jal, 5.77 % using Sahala jal, 4.77 % using Noli jal, 4.70 % using Khadi, 3.45 % using Dosti jal, 3.86 % using Bada jal, 2.70 % using Dhaudi jal and minimum 0.79 % using Ora jal. The data base also contains information on other gears used by fisherman not listed in the questionnaire.

Table 24: Fishing gears used by fisherman during summer season

Fishing Gear	March		April		May		June	
	Num	%	Num	%	Num	%	Num	%
Thatta Khanda	62	1.06	61	1.05	58	1.00	61	1.05

Baja	63	1.08	63	1.08	62	1.06	61	1.05
Dhaudi	102	1.75	105	1.80	106	1.82	108	1.85
Poluha	47	0.81	50	0.86	49	0.84	47	0.81
Khanda	3243	55.67	3391	58.21	3399	58.35	3362	57.72
Dosti jal	111	1.91	128	2.20	133	2.28	132	2.27
Menjia jal	509	8.74	541	9.29	567	9.73	562	9.65
Ora jal	17	0.29	16	0.27	18	0.31	18	0.31
Sahala jal	156	2.68	200	3.43	206	3.54	206	3.54
Hilsajal (Ilisi jal)	86	1.48	98	1.68	99	1.70	103	1.77
Dubi jal	1187	20.38	1244	21.36	1239	21.27	1230	21.12
Noli jal	119	2.04	136	2.33	145	2.49	144	2.47
Khainga jal	122	2.09	129	2.21	135	2.32	136	2.33
Dossta jal	58	1.00	58	1.00	62	1.06	60	1.03
Fishing Gear	March		April		May		June	
	Num	%	Num	%	Num	%	Num	%
Kekenda jal	48	0.82	49	0.84	50	0.86	50	0.86
Boroga jal	71	1.22	72	1.24	74	1.27	74	1.27
Khadi jal	139	2.39	138	2.37	145	2.49	148	2.54
Mani jal	23	0.39	23	0.39	24	0.41	24	0.41
Patua jal	250	4.29	253	4.34	252	4.33	249	4.27
Khepa jal	235	4.03	254	4.36	255	4.38	255	4.38
Bada jal	112	1.92	121	2.08	127	2.18	126	2.16
Zero net	526	9.03	547	9.39	565	9.70	559	9.60
Mantle net	22	0.38	28	0.48	27	0.46	28	0.48
Pelana jal	78	1.34	88	1.51	88	1.51	91	1.56
Jano	21	0.36	21	0.36	21	0.36	21	0.36
Other	600	10.30	620	10.64	609	10.45	603	10.35
Other	55	0.94	59	1.01	62	1.06	76	1.30

Table 25: Fishing gears used by fisherman during rainy season

Fishing Gear	July		August		September	
	Num	%	Num	%	Num	%
Thatta Khanda	41	0.70	41	0.70	34	0.58
Baja	47	0.81	48	0.82	31	0.53
Dhaudi	81	1.39	81	1.39	64	1.10
Poluha	42	0.72	41	0.70	27	0.46
Khanda	3205	55.02	3190	54.76	2883	49.49
Dosti jal	149	2.56	147	2.52	68	1.17
Menjia jal	561	9.63	564	9.68	253	4.34
Ora jal	17	0.29	16	0.27	8	0.14
Sahala jal	180	3.09	182	3.12	43	0.74
Hilsajal (Ilisi jal)	140	2.40	142	2.44	72	1.24
Dubi jal	1211	20.79	1228	21.08	604	10.37
Noli jal	123	2.11	128	2.20	67	1.15
Khainga jal	151	2.59	151	2.59	72	1.24
Dossta jal	62	1.06	62	1.06	30	0.52
Kekenda jal	33	0.57	34	0.58	22	0.38

Boroga jal	97	1.67	97	1.67	29	0.50
Khadi jal	75	1.29	78	1.34	60	1.03
Mani jal	54	0.93	53	0.91	3	0.05
Patua jal	280	4.81	282	4.84	184	3.16
Khepa jal	246	4.22	230	3.95	148	2.54
Bada jal	315	5.41	303	5.20	44	0.76
Zero net	133	2.28	134	2.30	120	2.06
Mantle net	59	1.01	58	1.00	30	0.52
Pelana jal	39	0.67	39	0.67	28	0.48
Jano	368	6.32	372	6.39	113	1.94
Other	271	4.65	272	4.67	237	4.07
Other	2	0.03	2	0.03	2	0.03

Table 26: Fishing gears used by fisherman during winter season

Fishing Gear	October		November		December		January		February	
	Num	%	Num	%	Num	%	Num	%	Num	%
Thatta Khanda	38	0.65	39	0.67	38	0.65	37	0.64	36	0.62
Baja	54	0.93	55	0.94	56	0.96	56	0.96	53	0.91
Dhaudi	83	1.42	88	1.51	88	1.51	88	1.51	80	1.37
Poluha	40	0.69	40	0.69	37	0.64	36	0.62	34	0.58
Khanda	3019	51.83	3098	53.18	3112	53.42	3044	52.26	3839	65.91
Dosti jal	123	2.11	130	2.23	130	2.23	129	2.21	122	2.09
Menjia jal	538	9.24	569	9.77	555	9.53	554	9.51	525	9.01
Ora jal	21	0.36	24	0.41	22	0.38	23	0.39	22	0.38
Sahala jal	160	2.75	170	2.92	167	2.87	162	2.78	156	2.68
Hilsajal (Ilisi jal)	84	1.44	81	1.39	78	1.34	76	1.30	72	1.24
Dubi jal	1202	20.64	1239	21.27	1234	21.18	1213	20.82	1147	19.69
Noli jal	132	2.27	133	2.28	133	2.28	126	2.16	122	2.09
Khainga jal	141	2.42	154	2.64	147	2.52	139	2.39	142	2.44
Dossta jal	64	1.10	67	1.15	65	1.12	66	1.13	65	1.12
Kekenda jal	49	0.84	51	0.88	51	0.88	51	0.88	50	0.86
Boroga jal	73	1.25	78	1.34	75	1.29	75	1.29	75	1.29
Khadi jal	130	2.23	128	2.20	125	2.15	126	2.16	114	1.96
Mani jal	22	0.38	23	0.39	22	0.38	22	0.38	22	0.38
Patua jal	252	4.33	265	4.55	262	4.50	258	4.43	256	4.39
Khepa jal	251	4.31	261	4.48	259	4.45	248	4.26	240	4.12

Bada jal	123	2.11	132	2.27	134	2.30	125	2.15	110	1.89
Zero net	553	9.49	560	9.61	557	9.56	550	9.44	525	9.01
Mantle net	23	0.39	26	0.45	25	0.43	26	0.45	24	0.41
Pelana jal	80	1.37	85	1.46	87	1.49	88	1.51	76	1.30
Jano	21	0.36	21	0.36	21	0.36	21	0.36	21	0.36
Other	616	10.58	636	10.92	632	10.85	620	10.64	601	10.32
Other	65	1.12	67	1.15	65	1.12	60	1.03	57	0.98

Table 27: Fishing areas covered by fisherman surveyed N= 5825

Map Code	Num	%	Map code	Num	%	Map code	Num	%	Map code	Num	%
1H	28	0.48	3K	398	6.83	5I	404	6.94	7F	10	0.17
1I	73	1.25	3L	153	2.63	5J	330	5.67	7G	2	0.03
1J	72	1.24	4D	34	0.58	5K	175	3	7H	12	0.21
1K	63	1.08	4E	139	2.39	5L	149	2.56	7I	108	1.85
1L	47	0.81	4F	262	4.5	6C	136	2.33	8B	142	2.44
2G	61	1.05	4G	354	6.08	6D	345	5.92	8C	285	4.89
2H	89	1.53	4H	414	7.11	6E	315	5.41	8D	154	2.64
2I	63	1.08	4I	559	9.6	6F	221	3.79	8E	82	1.41
2J	94	1.61	4J	529	9.08	6G	163	2.8	8F	59	1.01
2K	232	3.98	4K	277	4.76	6H	167	2.87	8G	80	1.37
2L	196	3.36	4L	91	1.56	6I	500	8.58	9A	90	1.55
3E	70	1.2	5C	20	0.34	6J	450	7.73	9B	275	4.72
3F	127	2.18	5D	212	3.64	6K	338	5.8	9C	249	4.27
3G	158	2.71	5E	384	6.59	7B	134	2.3	9D	54	0.93
3H	72	1.24	5F	1069	18.4	7C	339	5.82	10A	74	1.27
3I	180	3.09	5G	1163	20	7D	424	7.28	10B	67	1.15
3J	446	7.66	5H	683	11.7	7E	58	1	10C	16	0.27

Table 27 shows the area wise fishing intensity in Chilika lake. The results are based on information collected from fishers based on identification of respective fishing areas on map. The entire lagoon has been divided into 68 fishing blocks. It is observed that highest intensity is in block 5G (20%) followed by 5F (18.4%). Other prominent blocks are 5H-11.7 %, 4I- 9.60 %, 4J- 9.08 %, 6I 8.58 %, 3J- 7.66 %, 6J- 7.73 %, 4H- 7.11%, 5I- 6.94%, 4G- 6.08 %, 6D- 5.92 %, 6E- 5.41 %. The lowest intensity areas are 7G- 0.03 %, 10C- 0.27 %, 7H-0.93 % and 9D- 0.93 %.

Table 28: Season wise time spent for fishing by fisherman surveyed

Name of Season	Less than 5 days		6-10 Days		11-15 Days		16 days to 30 days		Above 30 days	
	Num	%	Num	%	Num	%	Num	%	Num	%
Summer	7	0.12	117	2.01	584	10	4792	82.30	0	0
Rainy	20	0.34	455	7.81	1195	20.50	3493	60.00	1	0.02
Winter	15	0.26	201	3.45	821	14.10	4426	76.00	0	0

Table 28 shows the time spent for fishing by fisherman during different seasons. It is found that 0.12 % of them spend less than five days, 2.01 % spend 6-10 days; 10 % spend 11-15 days; 82.30 % spend 16-30 days whereas no one spends more than 30 days for fishing during summer. 0.34 % of them spend less than five days, 7.81 % spend 6-10 days; 20.50 % spend 11-15 days; 60 % spend 16-30 days whereas only 0.02 % spends more than 30 days for fishing during rainy season. 0.26 % of them spend less than five days, 3.45 % spend 6-10 days; 14.10 % spend 11-15 days; 76 % spend 16-30 days whereas no one spends more than 30 days for fishing during winter.

Table 29: Season wise average catch per trip reported by fisherman surveyed

Name of Season	Below 2 Kg		2-5 Kg		6-10 Kg		11-15 Kg		Above 15 Kg	
	Num	%	Num	%	Num	%	Num	%	Num	%
Summer	30	0.52	1788	30.70	2055	35.28	474	8.14	1244	21.36
Rainy	27	0.46	1268	21.77	2469	42.39	518	8.89	1214	20.84
Winter	30	0.52	1966	33.58	1894	32.52	339	5.82	1254	21.53

Table 29 shows the average fish catch by fisherman per trip during different seasons. It is found that 0.52 % of them catch less than 2 Kg, 30.70 % catch 2-5 Kg; 35.28 % catch 6-10 Kg; 8.14 % catch 11-15 Kg whereas 21.36 % catch more than 15 Kg per trip during summer. 0.46 % of them catch less than 2 Kg, 21.77 % catch 2-5 Kg; 42.39 % catch 6-10 Kg; 8.89 % catch 11-15 Kg whereas 20.84 % catch more than 15 Kg per trip during rainy season. 0.52 % of them catch less than 2 Kg, 33.58 % catch 2-5 Kg; 32.52 % catch 6-10 Kg; 5.82 % catch 11-15 Kg whereas 21.53 % catch more than 15 Kg per trip during summer.

Table 30: Season wise average time spent for fishing in sea by fisherman surveyed

Name of Season	Less than 5 days		6-10 Days		11-15 Days		16 days to 30 days		Above 30 days	
	Num	%	Num	%	Num	%	Num	%	Num	%
Summer	0	0	1	0.02	1	0.02	5	0.09	91	0.12
Rainy	0	0	1	0.02	1	0.02	10	0.17	86	0.21
Winter	0	0	1	0.02	1	0.02	11	0.19	85	0.22

Table 30 shows that out of 5825 fisherman surveyed only 268 of them (4.60%) go to sea for fishing. It presents the time spent for fishing in sea by fishermen going to sea during different seasons. It is found that 0.02 % spend 6-10 days; 0.02 % spend 11-15 days; 0.09 % spend 16-30 days whereas 0.12 % spend more than 30 days for fishing in sea during summer.

On the other hand, 0.02 % of them spend 6-10 days; 0.02 % spends 11-15 days; 0.17 % spends 16-30 days whereas 0.21 % spends more than 30 days for fishing in sea during rainy season. 0.02 % spends 6-10 days; 0.02 % spends 11-15 days; 0.19 % spends 16-30 days whereas 0.22 % spends more than 30 days for fishing in sea during winter. None of them spend less than five days.

Table 31: Place of keeping boats as reported by fishers surveyed

Fishers Having Boats	Landing center in village	Jetty in the village	In front of house	Other Places
4039	2658	838	136	407
Percentage>	65.81	20.75	3.37	10.08

Table 31 shows the place of keeping boats as reported by fisherman during the baseline study. It is found that 65.81 % of them keep in landing centre of the respective village, 20.75 % keep in nearby Jetty, 3.37 % keep in front of house and 10.08 % keep their boats in other places.

Table 32: Type of crew engaged as reported by fishers surveyed N-4039

Fishers Having Boats	Family Members		Hired Employee	
	Num	%	Num	%
4039	2357	58.36	1682	41.64

Table 32 shows the type of crew engaged as reported by fisherman during the baseline study. It is found that 58.36 % of them engage family crew whereas 41.64 % engage hired crew for fishing activities.

Table 33: Places of landing fish as reported by fishers surveyed

Place	Num	%	Place	Num	%	Place	Num	%
Bhusandapur	82	1.41	Balugaon	317	5.44	Arakhakuda	99	1.70
Mangalajodi	47	0.81	Chandraput	24	0.41	Gangadharpur	6	0.10
Kalupada Ghat	191	3.28	Pathara	81	1.39	Gourangpatana	19	0.33
Sorana	291	5.00	Keshpur	55	0.94	Alupatana	53	0.91
Baulabandha	107	1.84	Sabulia	33	0.57	Godown in other sites	89	1.53
Boradi	22	0.38	Rambha	68	1.17	Collection boats	1513	25.97
Nairi	73	1.25	Gajapatinagar	44	0.76	Your village	1523	26.15

Table 33 shows the places of landing catch as reported by fisherman during the baseline study. It is found that 26.15 % of them bring the catch to own village followed by 25.97 % taking to collection centre. The choice for landing is more or less evenly distributed in respect of other areas indicating preference for nearest location.

Table 34: Buyers of fish catch as reported by fishers surveyed

No fishers selling fish	Sell to money lenders	Sell to middlemen	Sell to Godowns	Sell in village/ town	Other places
5825	3152	1215	423	238	38
Percentage>	54.11	20.86	7.26	4.09	0.65

Table 34 shows the places of selling catch as reported by fisherman during the baseline study. It is found that 54.11 % of them sell to money lenders followed by 20.86 % selling to middlemen. On the other hand 7.26 % sell to Godowns, 4.09 % sell in the village or nearby town whereas only 0.65 % sell in other places.

Table 35: Payment made to hired crew as reported by fishers surveyed

Fishers paying crew	Range of payment in Rs per day				Range of payment as share of catch per day			
	20 -30	31-45	46-50	51-70	Below 10%	10-15%	16-20 %	Above 20 %
4039	423	629	564	66	5	15	55	112
Percentage>	10.47	15.57	13.96	41.64	0.12	0.37	1.36	2.77

Table 35 shows the mode and amount of payment per day made to hired crew members as reported by fisherman during the baseline study. On cash payment front, it is found that 10.47 % of them pay

between 20-30 rupees; 15.57 % of them pay between 31-45 rupees; 13.96 % of them pay between 46-50 rupees and 41.64 % of them pay between 51-70 rupees. In terms of kind as percentage of catch 0.12 % of them pay below 10 %; 0.37 % of them pay between 10-15 %; 1.36 % of them pay between 16-20 % and 2.77 % of them pay above 20 % of the catch.

Table 36: Payment made to family crew as reported by fishers surveyed

Fishers paying family crew	Range of payment in Rs per day				Range of payment as share of catch per day			
	20 -30	31-45	46-50	51-70	Below 10%	10-15%	16-20 %	Above 20 %
4039	637	950	827	110	0	2	12	52
Percentage>	15.77	23.52	20.48	2.72	0	0.05	0.30	1.29

Table 36 shows the mode and amount of payment per day made to family crew members as reported by fisherman during the baseline study. On cash payment front, it is found that 15.77 % of them pay between 20-30 rupees; 23.52 % of them pay between 31-45 rupees; 20.48 % of them pay between 46-50 rupees and 2.72 % of them pay between 51-70 rupees. In terms of kind as percentage of catch 0.05 % of them pay between 10-15 %; 0.30 % of them pay between 16-20 % and 1.29 % of them pay above 20 % of the catch.

Table 37: Other income sources as reported by fishers owning boats

No of fishers	From fish or shrimp culture		From non-fishery related business		From labour works		No additional income	
	Num	%	Num	%	Num	%	Num	%
4039	412	10.20	303	7.50	1074	26.59	2339	57.91

Table 37 shows other income sources as reported by boat owning fisherman during the baseline study. 10.20 % earn from fish or shrimp culture; 7.50 % of them earn from non fishery related business; 26.59 % of them earn from paid labour works whereas 57.91 % report no additional income source.

Table 38: Seasonal income as reported by crew surveyed: N=1572

Name of Season	Below 1500/-		1501/- to 2000		2001/- to 2500/-		2501-3000		Above 3000/-	
	Num	%	Num	%	Num	%	Num	%	Num	%
Summer	30	1.91	84	5.34	132	8.40	171	10.88	1155	73.47
Rainy	246	15.65	290	18.45	290	18.45	310	19.72	436	27.74
Winter	45	2.86	70	4.45	84	5.34	185	11.77	1188	75.57

Table 38 shows the average income earned by crew members during different seasons. It is found that 1.91 % of them earn below 1500/- rupees; 5.34 % earn between 1501-2000 rupees; 8.40 % of them earn between 2001-2500 rupees; 10.88 % of them earn between 2501-3000 rupees and 73.47 % of them earn above 3000/-rupees during summer.

15.65 % of them earn below 1500/- rupees; 18.45 % earn between 1501-2000 rupees; 18.45 % of them earn between 2001-2500 rupees; 19.72 % of them earn between 2501-3000 rupees and 27.74 % of them earn above 3000/-rupees during rainy season. 2.86 % of them earn below 1500/- rupees; 4.45 % earn between 1501-2000 rupees; 5.34 % of them earn between 2001-2500 rupees; 11.77 % of them earn between 2501-3000 rupees and 75.57 % of them earn above 3000/-rupees during winter. The income is comparatively less during the rainy season.

Table 39: Other income sources as reported by crew surveyed

No of Crew responding	From fishing at own initiative		From selling fish at village/ town		From labour/ business works		No additional income	
	Num	%	Num	%	Num	%	Num	%
1572	123	7.82	110	7.00	381	24.24	958	60.94

Table 39 shows other income sources as reported by hired crew members during the baseline study. 7.82 % earn from fishing at own initiative; 7.00 % of them earn from selling fish at own village or nearby town; 24.24 % of them earn from paid labour works whereas 60.94 % report no additional income source.

Table 40: Engagement in fishing activities as reported by crew surveyed N-1572

Season	Days engaged in Fishing Activities				
	Less than 30 days	31-45 days	46-60	Above 61 days	No Work
Summer	116	103	209	1060	84
%	7.38	6.55	13.30	67.43	5.34
Rainy	163	404	574	307	124
%	10.37	25.70	36.51	19.53	7.89
Winter	40	33	88	1299	112
%	2.54	2.10	5.60	82.63	7.12

Table 40 shows the time spent for fishing by crew in fishing activities during different seasons. It is found that 7.38 % of them spend less than 30 days, 6.55 % spend 31-45 days; 13.30 % spend 46-60 days; 67.43 % spend above 61 days whereas 5.34 % report no work during summer. 10.37 % of them spend less than 30 days, 25.70 % spend 31-45 days; 36.51 % spend 46-60 days; 19.53 % spend above 61 days whereas 7.89 % report no work during rainy season. 2.54 % of them spend less than 30 days, 2.10 % spend 31-45 days; 5.60 % spend 46-60 days; 82.63 % spend above 61 days whereas 7.12 % report no work during winter.

Table 41: Engagement in non fishing activities as reported by crew surveyed N-1572

Season	Days engaged in Non Fishing Activities				
	Less than 30 days	31-45 days	46-60	Above 61 days	No Work
	Less than 30 days	31-45 days	46-60	Above 61 days	No work
Summer	355	58	19	23	1117
%	22.58	3.69	1.21	1.46	71.06
Rainy	398	66	31	9	1068
%	25.32	4.20	1.97	0.57	67.94
Winter	393	140	67	70	902
%	25.00	8.91	4.26	4.45	57.38

Table 41 shows the time spent for fishing by crew in non fishing activities during different seasons. It is found that 22.58 % of them spend less than 30 days, 3.69 % spend 31-45 days; 1.21 % spends 46-60 days; 1.46 % spends above 61 days whereas 71.06 % report no work during summer. 25.32 % of them spend less than 30 days, 4.20 % spend 31-45 days; 1.97 % spends 46-60 days; 0.57 % spends above 61 days whereas 67.94 % report no work during rainy season. 25 % of them spend less than 30 days,

8.91 % spend 31-45 days; 4.26 % spend 46-60 days; 4.45 % spend above 61 days whereas 57.38 % report no work during winter.

Table 42: Possession of assets as reported by fishers surveyed

Asset Type	Num	%	Asset Type	Num	%	Asset Type	Num	%
House land	5808	99.71	Pond	85	1.46	Poultry	496	8.52
Cultivable land	1166	20.02	Domestic Animal	1041	17.87	Cycle/ Cart / Watch etc	3427	58.83
Other Land	83	1.42	Ornaments	5020	86.18	Trees/ Orchards	939	16.12
Tank	44	0.76	Utensil	5605	96.22	Others	133	2.28

Table 42 shows the assets ownership as reported by fisherman during the baseline study. It is found that 99.71 % of them have own land for house. 96.22 % report possession of utensils, 86.18 % report possession of ornaments, 58.83 % report possession of cycle/ cart/ watches etc, 17.87 % report possession of domestic animals whereas only 20.02 % own cultivable land.

The fishers surveyed have borrowed from different sources. 19.76% reported that they borrowed money from banks, 4.43% from SHG, 55.73% from money lender, 9.01% from relatives, 8.43% from friends and 1.7% get from other unspecified sources. Indeed, this remains a fact that in spite of all claims by Govt. agencies, people opt to go to moneylenders, pay higher rate of interest.

Table 43: Loan status as reported by fishers surveyed

Fisher Surveyed	Source of Borrowing					
	Bank	SHG	Money lender	Relatives	Friends	Others
5825	1151	258	3246	525	491	99
Percentage>	19.76	4.43	55.73	9.01	8.43	1.7

Knowledge on Banned Gears:

Table 44: Knowledge of banned gears as reported by fishers surveyed

Fisher Surveyed	Fishers knowing use of banned gear		Fishers not knowing use of banned gear	
	Number	Percentage	Number	Percentage
5825	2630	45.15	3195	54.85

It is ironical that majority of the fishers do not know about the banned fishing gears and they constitute 54.85% whereas only

45.15% respondents reported that they are aware about it.

Source of information on banned gears:

When asked about the source of information on banned fishing gears, 60.72% reported that they got from their colleagues, 15.59% mentioned village

meeting, 19.66% mentioned PFCS, 1.67% mentioned Govt. officers, 3.99% mentioned CDA staff, 1.06% mentioned NGO / CBO, and 1.67% mentioned other unspecified sources. It may be noted here that the information coming from Govt. sources, CDA is only 3.99% and majority of them got the information from colleagues.

Table 45: Source of information about banned gears as reported by fishers surveyed N=5825

Fishers reporting source	Source of Information							
	Colleagues	Village Meeting	PFCS	Govt. Officers	CDA Staff	NGO/CBO	Others	
2630	45.15	1597	410	517	44	105	28	44
Percentage>	60.72	15.59	19.66	1.67	3.99	1.06	1.67	

Table 46: Use of banned gears by villagers as reported by fishers surveyed N=5825

No of Fishers responding		Source of Information					
		Many villagers use banned gears		Only some use banned gears		None use banned gears	
Num	%	Num	%	Num	%	Num	%
2630	45.15	1279	48.63	597	22.7	764	29.05

The respondents expressed their opinion on use of banned gears and 48.6% reported that villager use banned gears which is relatively higher percentage, whereas 22.7% told that only few people use banned fishing gears and 29.05% told that

No one use banned fishing gears.

Respondent's opinion was sought on banned fishing gears. Their response was mixed. 46.08% respondents were of the opinion that it should be stopped immediately, 34.03% told that

Table 47: Opinion on stopping use of banned gears as reported by fishers, N=5825

No of Fishers responding		Responses					
		Should stop use immediately		They should but they have no other option		No, it is there choice	
Num	%	Num	%	Num	%	Num	%
2630	45.15	1212	46.08	895	34.03	523	19.89

there should be ban subject to other option and 19.89% clearly told that if there is no alternative, it should not be banned.

Table 48: Institutional membership as reported by fishers surveyed

No of responses	Type of Institution							
	PFCS		CBO		SHG		Others	
	Num	%	Num	%	Num	%	Num	%
4007	332	8.3	121	3.02	37	0.92	1148	28.65

4007 affirmative responses were obtained from 4081 persons claiming membership in some institution. Of them, 83% respondents are associated with PFCS, 3.02% with Community Based Organizations, 0.92% with

SHG and 28.65% with other institutions.

Questions were asked to the fishers and those who were not affiliated to any institution has given reason for not being associated. 9.06% reports that there is no institution exists and they are not interested, 29.13% told that though there is no institution but they want to be associated with such institution, 20.76% reported that there are institution but not as per their liking, 38.13% reported that they are not interested in existing once and 2.92% respondents did not spelled out the reason for not being associated.

Table 49: Interest for Institutional membership as reported by fishers

Fishers not associated with any institution	Options mentioned				
	None exists/ Not interested	None exists/ I am interested	Exist but not of my liking	Not interested in those exist	Exist but not interested for other reasons
1744	158	508	362	665	51
Percentage>	9.06	29.13	20.76	38.13	2.92

Nature of work done by Fisher’s wives (between 2 am to 5 am.):

Table 50: Work participation as reported by the fisher’s wives during (2 AM-5AM)

Type of work	Num	%
Meals preparation	142	7.33
Cloths washing	139	7.17
House cleaning	917	47.32
Water drawing	480	24.77
Firewood (leaves) collecting	126	6.50
Fish net repairing	9	0.46
Marketing fish	13	0.67
Fish processing	14	0.72
Fish & prawn seed collection	1	0.05
Handicraft producing	2	0.10
Child caring	56	2.89
Paid Labour works	3	0.15
Others	329	16.98

Questions were asked on nature of work being performed by the fisher’s wives during 2 am to 5 am and the responses were recorded which are shown in the table. The major tasks include house cleaning -47.32%, fetching water -24.77%, preparation of food -7.33% and 16.98% unspecified task. It is not the simple %, which is important, but the timing when most of the people sleep, these families strive hard to do so much work, which is an indirect indicator of their life pattern.

The respondents were divided on the hardest and strenuous work. 60.58% respondent feel that fetching water is the most difficult and strenuous work to them, 38.54% perceive that collecting firewood (leaves) is the difficult task, 30.91% finds washing cloths is the most difficult task and 14.4% finds marketing fish is the most difficult and strenuous task to them.

Table 51: Hardest and Strenuous work perceived by fisher’s wives

No of Fisher wives responses	Responses							
	Water drawing		Firewood (leaves) collecting		Cloths washing		Marketing fish	
	Num	%	Num	%	Num	%	Num	%
1938	1174	60.58	747	38.54	599	30.91	279	14.4

Table 51 B: Hardest and Strenuous work as perceived by fisher's wives

No of Fisher wives responses	Responses							
	Meals preparation		House cleaning		Paid Labour works		Child caring	
	Num	%	Num	%	Num	%	Num	%
1938	240	12.38	230	11.87	179	9.24	120	6.19

Questions related to the most difficult task being faced by the respondents, 12.38% reported, "preparing food is the most difficult task", 11.87% find house cleaning is the most hardest work, 9.24% find that when they go for paid labour work, they need to work hard and 6.19% feels that caring

children is the most difficult task to them.

Availability of Grocery:

Respondents were asked on the availability of grocery items, and 81.11% told that they get it in the village shop itself, 9.39% go beyond village shop, 0.21% through barter system (exchange) in neighborhood and 9.29% depends on other places. This gives a feeling that most of the respondents have limited scope to move beyond their villages just to purchase daily items.

Table 52: Source of grocery items as reported by fisher's wives

No of Fisher's wives	Responses							
	Village shop		Market outside village		Exchange through barter in neighborhood		Other sources	
	Num	%	Num	%	Num	%	Num	%
1938	1572	81.11	182	9.39	4	0.21	180	9.29

Drinking Water Source:

Table 53: Source of drinking water as reported by fisher wives surveyed

No of Fisher wives responses	Public open well	Private open well	Public Tube well	Private Tube well	Artesian well	Lake water	Piped water	Others
1938	546	123	1114	87	110	9	305	97
Percentage	28.17	6.35	57.48	4.49	5.68	0.46	15.74	5.01

Data on drinking water source was analyzed and it is found that 28.17% respondents (Fisher's wives) gets water from public open well, 6.35% from private open well, 57.48% from public tube well, 4.49% from private tube well, 5.68% from artisan well,

15.74% from piped water supply and 5.01% from other sources. If we see the water quality from safety point of view, it is presumed (water quality not tested by the research team) that the public tube well and the piped water supply is the only safe drinking water, which accounts roughly to 73% and rest is unsafe water.

Drinking Water Source by Distance:

Water, which is the most precious thing used by all, remains the key issues. The respondents depends of different water source and reported that 52.18% families get drinking water from public open well, which is available within one k.m. Whereas 47.04% get the same water in a radius of 1-3 k.m. Families who depend on private open wells, majority of them 97.62% reported that they get water

Table 54: Distance of drinking water by source: as reported by fisher's wives

Distance	Source of drinking water				
	Public open well	Private open well	Public Tube well	Private Tube well	Artesian well
Less than 1 Km	335	123	1012	79	107
Percentage	52.18	97.62	86.87	96.34	99.07
1Km to 3 Km	302	3	152	3	1
Percentage	47.04	2.38	13.05	3.66	0.93
3 Km to 5 Km	3	0	0	0	0
Percentage	0.47	0	0	0	0
More than 5 Km	2	0	1	0	0
Percentage	0.31	0	0.09	0	0
Total	642	126	1165	82	108

within one k.m. Radius and only 2.38% need to travel 1-3 k.m distance to get the water. A large No. of families 86.87% depends upon public tube wells, which is accessible in one k.m. radius and 13.05% need to travel between one to three k.m. There are families who get water from private tube wells and in this category 96.34% get water within one k.m. radius and a very little 3.66% reported that they travel 1-3 k.m. for water.

Table 55: Place of defecation as reported by fisher's wives

No of Fisher wives responses	Own Toilet	Open field	Public toilet	Others
1938	80	1856	0	2
Percentage>	4.13	95.77	0	0.1

Place of Defecation:

The respondents reported that only 4.13% families have own toilets and rest 96% use open fields as place for defecation. This is the one area where

they are lacking very much and lot of preventable diseases occurs due to lack of sanitation and poor hygiene practices which increases economic burden and loss of working man-days.

Access to Electricity:

Table 56: Source of electricity as reported by fisher's wives

No of Fisher wives responses	Grid	Generator	Battery	Not have
1938	971	17	0	950
Percentage>	50.1	0.88	0	49.02

Question pertaining to availability of electricity in the study area, only 50.1% respondents reported that they have electric connections and a few have generator sets to meet their energy requirement, but a large No. of

respondents 49.02% reported that they do not have electricity. Consumption of electricity can be an indicator to judge the quality of life, especially the women who own lot of family responsibilities.

Cooking Medium:

Table 57: Type of cooking fuel used by the fisher's wives

No of Fisher's wives	Fire leaves	Firewood	Cow dung cake	Charcoal	Kerosene	LPG	Others
1938	1201	1461	441	39	689	14	0
Percentage>	61.97	75.39	22.76	2.01	35.55	0.72	0

The fisher's wives are using a variety of cooking fuel. Many are having multiple options (more than one means). 61.97% families reported that they

use fire leaves for cooking, 75.39% firewood, 22.76% cow dung, 2.01% charcoal, 35.55% kerosene and 0.72 % . LPG. This also indicates that the modern method of cooking like LPG has reached to very little population and majority of them are depending on traditional means of cooking.

Institutional Affiliation of Fisher's wives:

There are two types of fisher's wives group, one, which is associated with CBOs / SHGs and the other is not associated with it. Those who are associated with, majority of them 97.23% are from Self Help Group (SHG) and less than 3% are associated with other CBOs / organizations.

Table 58: Institutional membership of fisher's wives

Fisher's wives associated with	Type of Institution		
	CBO	SHG	Other organization
903	1	878	24
Percentage>	0.11	97.23	2.66

Opinion of Fisher's wives on Institutional Affiliations:

Table 59: Opinion on Institutional membership as reported by fisher's wives

Fisher's wives not associated with CBO/SHG	Options mentioned					
	None exists/ Not interested	None exists/ I am interested	Exist but not of my liking	Not interested in those exist	Exist but not allowed by family	Exist but not interested for other reasons
1035	15	124	122	520	145	109
Percentage>	1.45	11.98	11.79	50.24	14.01	10.53

Out of 1938 fisher's wives interviewed during the survey 1035 were not associated with any institution.

1.45% reported that there is No institution in existence and because of this, they are not interested. Whereas 11.98% told that No institution exists but they are

interested to join one.

On the other hand 11.79% reported that there are institutions available in the village but not as per their liking. A majority of the respondents 50.24% reported that there are institution but they are not interested to be part of it. 14.01% respondents told that they are interested but their family members do not allow them and 10.53% were not interested due to unspecified reasons. Thus, we can see the whole opinion is divided in to various actions and seems to be lot of difference of opinion due to variety of reasons.

Questionnaire for Key Informant Survey

1. General
 - 1.1.1 Name of Block :
 - 1.1.2 Name of GP :
 - 1.1.3 Name of Revenue Village :
 - 1.1.4 Name of Hamlet :
 - 1.2.1 Name of Village President :
 - 1.2.2 Name of Anganwade Worker :
 - 1.2.3 Name & designation of other interviewee (1) :
 - 1.2.4 Name & designation of other interviewee (2) :
 - 1.2.5 Name & designation of other interviewee (3) :
 - 1.3 Date of interview:
 - 1.4 Time of interview: Start Finish
 - 1.5 Name of Enumerator: .

Expected Interviewees for the key informant survey

Key informant survey aims to collect general information of the village.

Basically, these information are available at the following persons:

Items	Person who have the information
Administrative structure of village	Village President
Basic infrastructure in the village such as road, schools, PHC, etc.	
Population, Nos. of households	Anganwade workers
SHG activities in the village	
Activities of PFCSs	President/ Secretary of PFCS

	Name of Institution	Distance (km)
1	GP Office (Name _____)	
2	Block Office (Name _____)	
3	Tahsil office	
4	RI Office	
5	Bank	
6	LI Centre	

3. Population and Nos. of Households in the Village

Total population	
Nos. of total household	
Fisher's population	
Nos. of fisher's household	
Farmer's population	
Nos. of farmer's household	
Other employees population	
Nos. of other employees household	

4. Main Water Supply

Type of Source	Nos. in the village	Availability in summer (1. Yes / 2. No)
Public Open Well (Sanitary well) in the village		
Public Tube Well in the village		
Artesian Well (Chua)		
Tank		
Piped water/tap water	1. Available, 2. Not available	
Other (Specify: _____)		

5. Electricity Supply

Do you have electricity supply by grid extension in your village?

1. Yes, we can get electricity from grid. 2. No, there is no grid extension.

6. Road network

Does all areas in the village are connected to the road?

1. Yes, all areas are connected to the road, and we can use it in all year.
 2. Yes, all areas are connected to the road, but a part of road is not able to use during rainy season.
 3. No, a part of the village is not connected to the road.

7. Educational institutions in and around the Village

Type of school	Nos. in the village	Distance to the nearest school (km) (* if no school in the village)
Preschool education facility		
Primary school		
Upper Primary		
Middle School (M.E.)		
Secondary School (High School)		
Plus Two College		

Plus Three Collage		
ITI/JSS		

8. Health Facilities in and around the Village

Type of Health Facilities	Nos. in the village	Distance to the nearest facility (km) (* if no facility in the village)
Subcentre		
New PHC		
Primary Health Centre		
Hospital		

9. Assets of the village (owned by the village / village management committee)

Type of asset	Quantity (acre)
Cultivable Land	
Cultivable Waste	
Forest Land	
Gochar	
Water tank for common use	
Water tank for fresh water fish farming	
Brackish water pond for prawn farming	
Others (specify: _____)	

10. Organization in the Village

Name of the organization	Category (*1)	Grade (*2)	Date of registration	Nos. of member		Nos. of BPL in the members	Main activities (*3) (Multiple answers allowed)	Status of activities (*4)
				Male	Female			

Note :

*1: Category 1. NGOs, 2. PFCS, 3. CBO, 4. SHG, 5. Other organizations

*2: Grade (Question for SHG only) 1. Grade 1, 2. Grade 2

*3: Main Activities 1. Dry fish processing, 2. Other type of fish processing, 3. Fish marketing, 4. Fish/prawn culture,
5. Vegetable farming, 6, Poultry farming, 7. Sheep/goat farming, 8.
Cow farming/milk marketing,
9. Others (enter code '9' and specify in the cell)

*4: Status of activities 1. Active, 2. Not active

11. Fishing Facilities

11.1 Numbers of fishing boats in the Village

Type	Nos.
Mechanized boats	
Non-mechanized boats	

11.2 Numbers of Fisheries Related Facilities in and around the Village

Category	Nos.	Distance to the nearest facility (km) (if no facility in the village)
Jetties		
Fish Landing Centers		
Fish Markets		
Godowns		
Ice Plant		

12. Development plan / activities planed by village community

Activity	Physical Target

Questionnaire for Fishers

1. General

1.1.1	Name of Block		1.1.2	Name of GP	
1.1.3	Revenue Village		1.1.4	Hamlet	
1.2	Name of Respondent				
1.3	Interview Date				
1.4	Time of Interview	Start		Finish	
1.5	Name of Enumerator				

Definition of "Household"

A household consists of the members of a family i.e. head (eldest workable man in the family), wife of head, children, parents of head (in case of dependent), sister or brother of head (in case of unmarried).

Children and other relatives who got married are not included in the member of household, even though they live in same house of the respondent.

2. Detail of Respondent / Household

2.1 Position of respondent in the family

1. Head of household, 2, Son of the head,

2.2 Respondent category

1. Boat owner (self), 2. Boat owner (partnership),
3. Crew (family), 4. Crew (hired)

2.3 Family structure (who live in the house)

Relationship to head of household (*1) (*2)	Sex (*3)	Age	Occupation (*4)	Education (*5)
1. Head of household				
2.				
3.				
4.				
5.				
6.				

Relationship to head of household (*1) (*2)		Sex (*3)	Age	Occupation (*4)	Education (*5)
7.					
8.					
9.					
10.					
11.					
12..					
13.					
14.					
15.					

*1: Relationship: 1. Spouse, 2. Child, 3. Brother/sister, 4. Father, 5. Mother, 6. Others (put code '6' and specify in the cell)

*2: Put cross (x) for the respondent, and if married, put "s" for the respondent's spouse.

*3: "M" for male, "F" for female

*4: 1. Fisher, 2. Fish trader, 3. Paddy farmer, 4. Vegetable farmer, 5. Livestock keeper, 6. Small business, 7. Others (put code '7' and specify in the cell)

*5: Educational Background (highest certificate or qualifications):

1. Collage, 2. High school 3. Upper primary school, 4. Primary school, 5.. Dropout the Primary school (literate), 6. No educational back ground / illiterate, 7. Others (put code '7' and specify in the cell)

For children, put their current status by code. If they do not go to school, then put their daily work to *4.

2.4 What is your sub-caste?

1. Keuta (Kaibarta/Khatia), 2 Kandara, 3. Tiar, 4. Nolia,
5. Niary (Niaries), 6. Gokha, 7. Kartia, 8. khatia,
9. Bengali Refugee, 10. Others (specify: _____)

2.5 Are you a native fisherman in Chilika?

1. Yes, I'm native to Chilika.
2. No, I moved from other districts of Orissa.
3. No, I moved from other states of India.
4. No, I'm a refugee.

3. Fishing assets

3.1 Do you have your own boat(s)?

1. Yes, I have. 2. No, I do not have.

If answer is "1", number of owned boats.

Reference	Mechanized boat	Non-mechanized boat
Nos. of owned boats individually		

Nos. of owned boats by partnership		
------------------------------------	--	--

**3.2 What kind of fishing gears do you have? Put cross (x) in the box.
(Multiple answers are allowed)**

	1.	Thatta Khanda		10.	Hilsa jal (Ilise jal)		19.	Patua jal
	2.	Baja		11.	Dubi jal		20.	Khepa jal
	3.	Dhaudi		12.	Noli jal		21.	Bada jal
	4.	Poluha		13.	Khainga jal		22.	Zero net
	5.	Khanda		14.	Dossta jal		23.	Mantle net
	6.	Dosti jal		15.	Kekenda jal		24.	Pelana jal
	7.	Menjia jal		16.	Boroga jal		25.	Jano
	8.	Ora jal		17.	Khadi jal		26.	Other()
	9.	Sahala jal		18.	Mani jal		27.	Other()

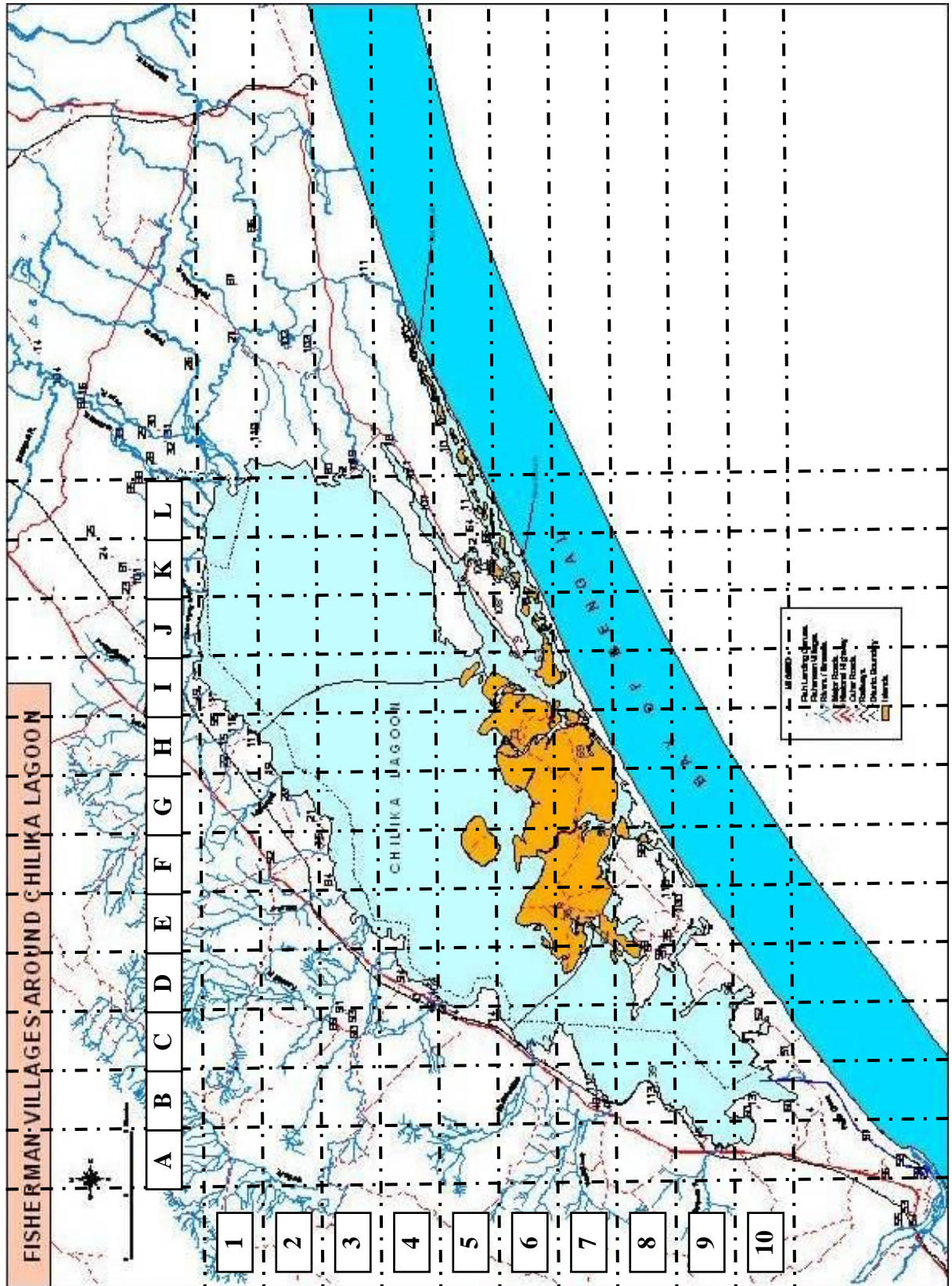
4. Fishing operation

4.1 Do you change fishing gear in the lagoon by season?

Name of gear (*1)	Operation period (*2)												
	Summer (Mar – June)				Rain (Jul – Sep)				Winter (Oct – Feb)				

Note: *1: For name of fishing gear, put a code of fishing gear used on Q3.2.
*2: Draw the line on the operated months.

4.2 Where do you operate fishing? Put the mark on the attached map.



4.3 How many days in a month do you go to fish in the lagoon?

Season/ Months	Fishing gear	Operation days/month
Summer (Mar-June)		
Rainy (Jul-Sep)		
Winter (Oct-Feb)		

Note: For name of fishing gear, put a number of fishing gear used on Q3.2

4.4 What time do you go for fishing from the jetty/beach? What time do you come back?

Go for fish : p.m. (describe time at 30 minutes interval)

Back to village: p.m. (describe time at 30 minutes interval)

Spend days / trip on the lagoon.

4.5 How much fish can you catch per trip in the lagoon by season?

	Name of target fishes (*) (Multiple answers allowed)	AVG catch (kg/trip)	AVG selling amount (Rs./trip)	(for boat owner only)	
				AVG trip (/month)	AVG selling amount (Rs./month)
Summer (Mar-June)					
Rainy (Jul-Sep)					
Winter (Oct-Feb)					

(*) Name of fishes	1. Khainga	2. Kabala	3. Sorada	4. Manji	5. Dangala
	6. Kekanda	7. Dangala	8. Ilisi	9. Balanga	10. Patua
	11. Babana	12. Bekti	13. Jagili	14. Dhala	15. Khuranti
	16. Bherandi	17. Sahala	18. Borei	19. Golara	20. Kania
	21. Gania	22. Saragara	23. Kantia	24. Kaunda	25. Singada
	26. Sunga	27. Sukura	28. Kundala	29. Baligirida	30. Chuna
	31. Chota	32. Chingudi	33. Nahama	34. Seba	35. Khaninga
	36. Bagada	37. Kantala	38. Morada	39. Panu	40. Gandia
	41. Green Kankada	42. Red Kankada	43. Balia	44. Magura	45. Jalanga
	46. Pahana (Rohi)	47. Pahana (Bhakura)	48. Pahana (Mirikali)	49. Pahana (Kerandi)	50. Seula
	51. Fali	52. Todi	53. Chaina Kau	54. Kekarnda	55. Other fresh water fish

4.6 Do you go fishing to the sea?

1. Yes, I do 2. No, I don't.

If yes, which season do you go fishing to the sea?

(x)	SEASON	(days/season)
	Summer (Mar-June)	
	Rainy (Jul-Sep)	
	Winter (Oct-Feb)	

【 Questions for the boat owners (self/partnership)】

4.7 Where do you keep your boat(s)? (Multiple answers allowed)

1. Landing centre in the village, 2. Jetty in the village,
3. In front of your house, 4. Others (specify:_____)

4.8 How many crews do you have on your boat(s)?

Family members on / boat

Employees / boat

4.9 Where do you land your catch? Put cross (x) in the box. (Multiple answers allowed)

	1.	Bhusandapur		8.	Balugaon	15.		Arakhakuda
	2.	Mangalajodi		9.	Chandraput	16.		Gangadharpur
	3.	Kalupada Ghat		10.	Pathara	17.		Gourangpatana
	4.	Sorana		11.	Keshpur	18.		Alupatana
	5.	Baulabandha		12.	Sabulia	19.		Godown in other sites
	6.	Boradi		13.	Rambha	20.		Collection boats
	7.	Nairi		14.	Gajapatnagar	21.		Your village

4.10 Who do you sale your catch? (Multiple answers allowed)

1. Money lenders (whom you owe money from),
2. Other middlemen,
3. Godowns, 4. You / your family sale it at the village/town,
5. Others (specify:_____)

4.11 A. How much do you pay for hired crew?

1. In case of fixed wage, Rs.

2. In case of sharing catches the catch

B. How much do you pay for family members (crew)?

1. In case of fixed wage, Rs.

2. In case of sharing catches the catch

4.12 How much do you spend for one fishing trip on average?

Items	Quantity	Unit price (Rs.)	Sub total (Rs.)
Hire/maintenance cost of the boat	-	-	Rs.
Transit cost from home to lake and back	-	-	Rs.
Fuel	litters	Rs.	Rs.
Lubricant Oils	litters	Rs.	Rs.
Bait	kg	Rs.	Rs.

Food / water	-	-	Rs.
Cigarette/Tobacco	-	-	Rs.
Ice	kg	Rs.	Rs.
Wage for family members	crews	Rs.	Rs.
Wage for the hired crews	crews	Rs.	Rs.
Others (_____)		Rs.	Rs.
Grand Total	—	—	Rs.

4.13 Do you have other income sources? (Multiple answers allowed)

1. Yes, I am operating fish or shrimp culture for additional income.
2. Yes, I am running non-fishery related business. (Specify: _____) (e.g. eco-tourism boatman)
3. Yes, I work as a labour sometimes.
4. No, I do not.

【 Question for boat crews (family member, hired)】

4.14 How much income do you get as an employed crew?

Period	Summer(Mar-June)	Rainy (Jul-Sep)	Winter (Oct-Feb)
Income- Rs. / season			

4.15 Do you have other income sources except for being a crew? (if any)

(Multiple answers allowed)

1. Yes, I also do fishing as an individual fisherman.
2. Yes, I also sell fish at villages/towns.
3. Yes, I also work as a labour / employee in non-fishery related business. (specify: _____) (e.g. eco-tourism guide)
4. No, I do not.

4.16 How many days do you work as a crew?

And how many days do you work in other occupation?

	Fishing	Other occupation
Summer (Mar-June)		
Rainy (Jul-Sep)		
Winter (Oct-Feb)		

【 QUESTION FOR ALL】

5. Asset and Debt

5.1 What kind of asset do you have?

Type of Asset	Quantity
Land for house	acre
Land for cultivation	acre
Land for other propose	acre
Tank(s) for fresh water fish farming	acre
Pond(s) for prawn fariming	acre
Domestic Animals	Rs.
Ornaments	Rs.
Utensils	Rs.

Poultry	Rs.
Cycle / Cart watch etc.	Rs.
Trees / Orchards	Rs.
Others(specify: _____)	Rs.

5.2 Do you rent any money from bank or other institute? If yes, fill up the table below.

Source	Loan amount (Rs.)	Purpose (*)	Interest (%)	Mortgage Given	Amount repaid (Rs.)	Loan balance (Rs.)
Bank			/annum			
SHG			/annum			
Money Lender			/month			
Relatives						
Friends						
Others (specify)						

Remarks: * loan was used for:

1. Purchasing fishing boat, 2. Purchasing fishing gears and/or nets,
3. Purchasing engine, 4. Purchasing other materials for fishing activities,
5. Purchasing/ lent for ponds for fish/prawn farming, 6. Purchasing/ lent for agriculture,
7. Purchasing livestock, 8. Education of children (school fee, etc),
9. Marriage (preparation of Dowry), 10. Other purpose (specify: _____)

6. Illegal fishing

6.1 Government of Orissa bans some fishing gear for using in Chilika lagoon.

Do you know what kinds of fishing gears are banned?

1. Yes, I know. 2. No, I don't.

If yes, please list up the banned gears you know.

1. _____ 2. _____ 3. _____

—

4. _____ 5. _____ 6. _____

—

If yes, how did you get that information?

1. By my colleagues. 2. By village meeting. 3. By PFCS.
4. By government officers (e.g. Extension Officers). 5. By CDA staff.
6. By local NGO/CBOs. 7. Others (specify: _____)

6.2 Are there any fishers who use those illegal fishing gears in your village?

1. Yes, many fishers use them.
2. Yes, but only some fishers.
3. No, there are none.

6.3 How do you think about these fishers who using illegal fishing gears? Should they stop their illegal activities?

1. Yes, they should stop it immediately.

2. Yes, they should. But they have no other options. 3. No, it is their choice.

7. PFCS, CBO, SHG and other organization

7.1 Do you belong to any groups/organization? (Multiple answers allowed.)

Organization Type	Name of organization	Activity (*1)	Support from outside (*2)	Problems facing to (*3)
PFCS				
CBO				
SHG				
Other organizations				

Note: *1 Activity : 1. very active, 2. partially active, 3. not active, 4. defunct

*2 Supported by : 1. NGOs, 2. Government agencies, 3. Bank MFI, 4. Cooperatives, 5. Others (specify: _____), 6. No support from outside

*3 Problems : 1. No harmonization / cooperation among members. 2. No concrete activities as a organization. 3. Lack / short of operation cost. 4. Others (specify _____)

(For respondent who does not participate any organization, otherwise skip to Q.8 onward)

7.2 Is there any organization available such as SHGs, CBOs in your village?

1. No, there is none. And I'm not interested to join any.
2. No, there is none. But I have interest for participating.
3. Yes, there is. But there is no organization I have interest for.
4. Yes, there is. But I have no interest to join any..
5. Yes, there is. But I'm not interest in them due to other reason :
(describe it down below)

8. Activities of other family members

8.1 Are there any family members who earn money other than you?

1. None
2. Yes, there are family members who earn money.

Continue 8.1, If yes, how much approximately do they earn?

Relationship to head of household (*1)	Average income (Rs./year)	Relationship to head of household (*1)	Average income (Rs./year)
1. Head of household		6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

*1: Relationship: 1. Spouse, 2. Child, 3. Brother/sister, 4. Father, 5. Mother, 6. Others (specify: _____) (cross check with the answer of "Q2.2")

9. Two major important problems identified by the respondents. (describe it down below)

Questionnaire for Fisher's Wives

1. General

1.1.1	Name of Block		1.1.2	Name of GP	
1.1.3	Revenue Village		1.1.4	Hamlet	
1.2	Name of Respondent				
1.3	Interview Date				
1.4	Time of Interview	Start		Finish	
1.5	Name of Enumerator				

2. Detail Information about Respondent/ Household

2.1 Position of respondent in the family

1. Wife of household head, 2. Wife of head's son

2.2 Educational Background (highest certificate or qualifications):

1. Collage, 2. High school, 3. Upper primary school, 4. Primary school
 5. Dropout the Primary school(literate), 6. No educational back ground / illiterate,
 7. Others (specify: _____)

3. Your daily life

3.1 Tell your works/routines from getting up in the morning until going to bed in the night.

Put the number below for major works (Multiple answers allowed), and for other works then specify it.

Time	Non-income generating works	Income generating works
Early Morning (2a.m. – 5a.m.)		
Morning (5a.m. – 8a.m.)		
Forenoon (8a.m. – 11a.m.)		
Noon (11a.m. – 2p.m.)		
Afternoon (2p.m. – 5p.m.)		
Evening (5p.m. – 8p.m.)		
Night (8p.m. – 11 p.m.)		
Late night (11p.m. – 2a.m.)		

Legend: 1. Uprise, 2. Meals preparing, 3. Cloths washing, 4. House cleaning, 5. Water drawing, 6. Firewood (leaves) collecting, 7. Fish net repairing, 8. Marketing fish, 9. Fish processing, 10. Fish & prawn seed collection, 11. Handicraft producing, 12. Labouring, 13. Having food/tea, 14. SHG/group meeting, 15. Chattering / meeting with neighbours, 16. Child caring, 17. Rest, 18. Go to bed, 19. Others (specify it in the table)

3.2 Among the above works, which do you find the hardest and strenuous?

Answer the two hardest works.

3.3 How do you obtain your daily _____ for family?

Answer your major way of getting those.

1. I buy it from shop (kiosk) in the village.

2. I buy it from market outside the village (bigger market nearby).
3. I do exchange and barter in the neighbourhood.
4. Other ways. (Specify: _____)

3.4 How do you get drinking water mainly from? Put (x) for your water sources, then put code how far you have to walk to the source? (Multiple answers allowed)

Type of Source	(x)	Distance (km)	Availability in summer (1.Yes / 2. No)
Public Open Well (sanitary well) in the village			
Individual Open Well (sanitary well) in the village			
Public Tube well in the village			
Individual Tube well in the village			
Artesian Well (Chua)			
Lake water			
Piped water/tap water		1. Available, 2. Not available	
Other (Specify: _____)			

Distance to the water source

1. Less than 1 km (in the village), 2. 1-3 km, 3. 3-5 km, 4. More than 5 km

3.5 Where do your family defecate?

1. Own toilet,
2. Open field,
3. Public toilet,
4. Other (specify: _____)

3.6 Do you have access to electricity supply?

1. Yes, by grid. 2. Yes, by generator. 3. Yes, by battery (Excluding dry battery). 4. No, I don't have.

3.7 What fuel mainly do you use for cooking? How much do you spend?

If you also collect any of them by yourself, put (x) in the box.

Type	Cost (Rs./ month)	(x)	Type	Cost (Rs./ month)	(x)
Fire-leaves			Charcoal		
Firewood			Kerosene		
Dried cow dung cake			LPG		
Other (specify):					

3.8 If you put any (x) in the Q.3.8, how long does it take for the collection?

Type	Time (hours/ day)	Type	Time (hours/ day)
Fire-leaves		Dried cow dung cake preparation	
Firewood		Other (specify: _____)	

4. SHG / Other organizational activities

4.1 If you belong to any groups / organizations, please fill up the table below.
(Multiple answers allowed.)

Organization Type	Name of organization	Activity ^{*1}	Support from outside ^{*2}	Problems facing to ^{*3}
CBO				
SHG				
Other organizations				

Note: *1 Activity : 1. very active, 2. partially active, 3. not active, 4. defunct

*2 Supported by : 1. NGOs, 2. Govt. Agencies, 3. Bank/MFI, 4. Cooperatives,
 5. Others (specify:_____), 7. No support from outside

*3 Problems : 1. No harmonization / cooperation among members. 2. No concrete activities as a organization. 3. Lack / short of operation cost. 4. Others (specify _____)

(For respondent who does not participate any organization)

4.2 Is there any organization available such as SHGs, CBOs in your village?

1. No, there is none. And I'm not interested to join any.
2. No, there is none. But I have interest for participating.
3. Yes, there is. But there is no organization I have interest for.
4. Yes, there is. But I have no interest to join any.
5. Yes, there is. But I am not allowed to join by family.
6. Yes, there is. But I'm not interested in them due to other reason: (describe it down below)

5. Two major important problems identified by the respondent. (describe it down below)