Chapter 3

Chilika: The Inter-Relationship between Community and Ecology
CHAPTER – 3

THE INTER-RELATIONSHIP BETWEEN COMMUNITY AND ECOLOGY

There is a definite relationship between ecology and community. To understand this relationship it is pertinent to know both the demographic features of Chilika and also the kind of people living in the Lake vicinity.

SECTION: I

Chilika’s Ecology: Topographical, Historical and Demographical Features

Chilika Lake, a Lake of about five thousand years old, situated in the eastern coast of Peninsular India in the Bay of Bengal, is the pride of India as Asia’s biggest brackish water Lake. It is also the second largest Lake in the world (after Victoria Lake in South Africa) (see the map below).

Map 1: Position of Chilika Lake in India
Map 2: Location of Chilika Lake in Orissa
The Lake is situated between the latitude of 19°28' to 19°54' North and a longitude of 85°5'20" to 85°38' 20" East (Patro 1988: 1). The water-spread area of the lagoon varies between 1165 square kilometers to 906 square kilometers during monsoon and summer respectively. The average depth of the Lake varies from 1.73 to 3.7 meters during rainy seasons and 0.93 to 2.6 meters during summer. The number of mouths of the Lake, at present, is three. One is called Muggar Mukh near the village Arakhakuda, the other is Palur Muhara (see Map-4) and another is the opening of the new mouth opposite of Sipakuda village by CDA in September 2000. However, the Magarmukh region has become shallow with time due to the deposition of silt brought by the rivers viz. Daya, Bhargavi and other distributaries of the nearby Mahanadi river. The lagoon itself is broadly divided into four natural sectors based on the ecological characters: the Southern zone, Central zone, Northern zone and the Outer channel (see Map-4). A number of islands are present in the lagoon, prominent among which are Nalabana, Kalijai, Somola, Honeymoon, Breakfast and Birds islands. The length of the outer channel is 35 kilometers. The total area of islands inside it is 223 square kilometers. And the total number of rivers and nallas is 10. The rivers like Daya, Nuna, Ratnachira, Bhargavi, Malguni, Dhanu and Salia fall in it. The salinity of the Lake varies from 0.1 to 30.6 ppt. There are a number of school of thought about the origin of Chilika Lake. According to Hunter, the Lake originated due to raise of bed by deposition of silt brought by the rivers and it is probable that the low mud-flats which were pushing their way south-ward from the mouth of these rivers extended over the whole lagoon (quoted in Chilika Lagoon 2002: 12).¹

¹ For more details about the origin of the lagoon see the paper written by A.K. Pattnaik on Chilika Lake- An Overview, in Chilika Lagoon 2002.)
animals under IUCN (International Union for Conservation of Nature) that inhabit the Lake area for at least part of their life cycle (Chilika: A living lagoon: 1). The total number of fish species are reported to be around 180 (as per CDA report 2003). A survey of the fauna of the Lake carried out by the Zoological Survey of India in 1985-87 recorded over 800 species. This list includes in number of rare, threatened and endangered species, including the Barakudia limbless skink and Irrawady Dolphin of flagship species.²

Based on its rich biodiversity and socio-economic importance, Chilika Lake was designated as a Ramsar site in 1981, under the convention of Wetlands of International importance popularly known as Ramsar Convention, especially as water-fowl habitat. It was also included in the list of wetlands selected for intensive conservation and management by Ministry of Environment and Forests, Government of India.

Chilika also supports the largest congregation of aquatic birds in the country, particularly during the winter. The Nalabana Island within the Lake is notified as a Bird Sanctuary under Wildlife (protection) Act. Flocks of migratory water-fowl and shore birds arrive from as far as the Caspian Sea, Lake Baikal, Aral Sea, remote parts of Russia, Kirghiz Steppes of Magnolia, Central and South East Asia, Ladakh and Himalayas.

The mouth connecting the channel to the sea was almost closed to the north eastern end. High tides near this inlet mouth used to drive in salt water through the channel during the dry months, from December to June. With the onset of the rains the rivers falling into the northern zone are in spate, causing fresh water currents which gradually push the sea water out. As a result of these dynamics the inlet mouth constantly changes position. Due to shifting of the mouth proper exchange of water was not taking place. So, Chilika Development Authority opened a new mouth on 23rd September 2000 (Achievement Report of CDA 2004).

Topographically, the Chilika Lake can be divided into thee parts; i) the deeper Chilika, ii) Shallow Chilika iii) Landmass (as per Das Committee Report 1993). Spread over the districts of Puri, Khurda and Ganjan it extends over a stretch of 64 kilometers in north-south direction. The average breadth of the Lake is about 19

² ibid. 1
kilometers. On the eastern side the Lake is connected with the Bay of Bengal, whereas on the west it is surrounded by several hills called Deepa Mundia, Kalijugesar, Mamu-Bhanja, Solari, Bhaleri, Jatia, Ghantashila etc. which constitute a part of Eastern Ghats. The Lake falls within the police stations of Krushnaprasad and Bramhagiri of Puri district, Tangi and Banapur of Khurda district and Rambha police station of the district of Ganjam. The major portion of the Lake, however, falls under Krusnaprasad police station. Surrounding the Lake there are six constituencies of State Legislative Assembly. Which are (i) Satyabadi, (ii) Bramhagiri, (iii) Chilika, (iv) Khurda, (v) Chatrapur and (vi) Khallikote. Nearly 143 villages belonging to these constituencies are dependent on the Lake. These villages belong to the following blocks – Chilika, Banapur and Tangi blocks of Khurda district; Bahmagiri and Krushnaprasad block of Puri district; Khallikote and Ganjam blocks of Ganjam district (see Patnaik 1999).

Water Transport

Water transport is the lifeline of the fishermen in Chilika. Boat is the main instrument for the movement inside the Lake. Besides, this, there are various ghats for movement of boat (Naha). Mechanized boats play daily four times from Chamutia to Satapada via Mahensha. There is also motor lunch service from Balugaon to Kalijai on Sunday. Recently, Chilika Development Authority (CDA), has started a ferry service between Satpada and Jahnikada with the fare of Rs. 20 along with back once in day. This is, infact, benefiting more than 70,000 people who live on the islands of Krushnaprasad CD Block.

Chilika Development Authority (CDA)

Created in 1992 by the Forest and Environment Department, Government of India, CDA is working to restore the ecosystem of Chilika Lake and to improve the socio-economic conditions of the communities living around the Lake area and on its islands. It was awarded the Ramsar Award in recognition of its exemplary restoration work carried out with the active involvement of all stakeholders on 18th November 2002 at Valencia, Spain (Achievement Report of CDA, 2004). Chilika now is finally removed from the Montreux Record (Threatened list of Ramsar Sites) with effect from 11th November 2002. However, the recent surveys showed that the demographic condition is still precarious.
Chilika in Poetry and Literature

The Lake has always provided a fertile ground for poetic imagination. Radhanath Roy, a renowned Oriya poet, has described Chilika as a storehouse of beauty in his poem Chilika. Written in 1891 'The Chilika Kaavya' still remains an influential and inspiring document for its readers. In this work Radhanath Ray did not allow his imagination to wander on a plane complete away from empiricism and realism. His work on Chilika in historically and culturally sensitive to Oriya nationalism. In 'Chilika' he provided a vivid description of the beautiful and ecstatic scenario which the Lake generates in its ambience. While describing the various hills and rivers adjoining Chilika he realized the importance of literature in popularizing them and thereby bringing glory not only to them but for the entire land and its people. For example the small Govardhan mountain near Mathur and the tiny river Shipra near Ujjain have become world famous but not the huge mountain of Mahendragiri and the river of Mahanadi (of Orissa). The mountain of Govardhan has received adequate attention of Sanskrit poets while they were describing the story of Lord Krishna. The river of Shipra has been described by the famous Sanskrit poet Kalidas in his immoral meghdoot. But in the absence of adequate popularity and enrichment of Oriya literature the beauty of such rivers and mountains and forests of Orissa have not been able to gain wider attention. His description of Chilika has been done in a comparative framework which reflects the poet's patriotism.

In his description of Chilika Radhanath Ray has treated her as a person. Chilika has been personified as a beautiful daughter of the Goddesses of nature (Prakriti). While describing the journey of Gajapati king Shri Purshottam Development on his way back to Orissa after winning over the famous war or Kanchi, the poet described different qualities of Queen Padmavati comparing it with different dimensions of the Lake. Such a description added life to Chilika. The accuracy with which Purshottam Dev’s voyage to Kanchi and the untimely death of the Jaban (Muslim) invader Rakthabahu has been described speaks volumes about the historicity of Ray’s work on Chilika.

There is a popular and local interpretation of this literary work. The villagers are of the opinion that Radhanath Ray has conveyed poetic allegories and shuttle description of qualities. Witnessing Chilika evokes the feelings of ecstasy and pain at
the same time. It makes you realize that nothing is eternal in this world but at the same time the unparallel beauty creates a condition in which the beholder forgets himself altogether. ‘Chilika’ makes us realize that there are many things which might appear to be beautiful and soothing but actually they are different.

Radhanath Ray has attributed three universal qualities – *Sattva, Rajjo* and *Tamo gunas* – to Chilika which are basic not only to human nature but also other animate and inanimate objects. When he describes Chilika as a place of pilgrimage symbolizing peace and purity he is talking of the *Sattava guna*. The *Rojjo guna* is reflected while he was talking of the pride, power and victory of the Gajapati king in different wars. The way Chilika took revenge on Rakta Bahu, the cruel Muslim invader, by drowning him represents *Tamo guna* (see Patnaik’s Report 1999).

Gopobandhu Dash, a well known Oriya social worker and nationalist leader, was so much enchanted by the beauties of the Lake that he remembered the writings of Radhanath Roy who got immense peace and love from Chilika and not from any other place of India. He wrote:

"Raha Raha Kshane Baspiya Sakata, Dekhibi Chilika Charu Chitrapata"

Means, he requested the train in which he was going to Berahampur jail to stop so that he can observe the scenic beauty of the Lake.

Mr. Dash sees Chilika as a mine of beauties in his poem, ‘*Rail Upare Chilika Darshan*’. Tohim, like Roy, the past glory of Orissa is associated with the name of Chilika, as the people of the areas surrounding Chilika was resisting tooth and nail the entry of British into Orissa. The fighting spirit of Krutibasha Patsani, Dalabehera and Buxi Jagabandhu Bidyadhara is linked to the areas surrounding Chilika.

Godabarisha Mishra, through his story poem, *Kalijai*, has described the real picture of the then rural Orissa, the social and cultural link between the people living inside Chilika and around Chilika. The poem has also brought to the notice of the eaders the horrors of deep Chilika and the occasional storms. (locally known as *Aohuli*).

Chilika is also called ‘Maa Chilika’ or ‘Mother Chilika’ by the large group of ishermen inhabiting in various villages of the Lake (see Appendix I) as it ensures
their livelihood similar to that ensured by a cow addressed as *gomata* by the Hindus and also the Ganges as *Gangamaya* by the northern India people.

Table 3.1: Region-wise Demographic Features of the Fifteen Sample Villages in and Around Chilika (in percentage)

<table>
<thead>
<tr>
<th>Region</th>
<th>Population</th>
<th>Literacy</th>
<th>Migration</th>
<th>Caste wise Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male 2</td>
<td>Female 3</td>
<td>Male 4</td>
<td>Female 5</td>
</tr>
<tr>
<td>North East</td>
<td>51.58</td>
<td>48.42</td>
<td>33.81</td>
<td>19.06</td>
</tr>
<tr>
<td>North</td>
<td>52.56</td>
<td>47.42</td>
<td>45.43</td>
<td>23.82</td>
</tr>
<tr>
<td>West</td>
<td>52.07</td>
<td>47.93</td>
<td>24.11</td>
<td>10.08</td>
</tr>
<tr>
<td>South</td>
<td>51.04</td>
<td>48.06</td>
<td>32.06</td>
<td>14.33</td>
</tr>
<tr>
<td>South-East</td>
<td>53.64</td>
<td>46.36</td>
<td>13.07</td>
<td>6.21</td>
</tr>
</tbody>
</table>

From the above table it is seen that the percentage share of male population is greater than that of female population. Among the five different regions, the percentage of male population is the highest in the southeast region and lowest in the south region. Among the caste-wise population of the sample villages in different regions, in the South-East region, the population of the Scheduled Castes (SC) is only about 19%, indicating that the region is dominated mostly by the non-fishermen population. The percentage of out migration is quite low in the sample villages. However, the percentage of immigration is quite significant in the western region i.e., 12.31 per cent. This is due to the inclusion of the village *Balipatana* where around 68-96 per cent of the total population are immigrants (Bengali refugees).
 SECTION : II

The Social Structure of the Lake and the Construction of Community

Fish:

Fishery resources of Chilika Lake are one of the most potential source of income for the local people and also for the Government of Orissa through export and inland supplies. It has become the culture and way of life for these fishermen. There are 137 fishermen villages and 22,032 fishermen households in and around Chilika. Out of the total fishermen population of 1,22,339, 30,936 are active fishermen (male), part time fishermen 3654 (male) and 827 are occasional fishermen (male) (Directorate of Fisheries Statistics report 2000-01). Chilika’s fishing ground is sufficient to sustain the livelihood of more than one lakh fishermen. One hundred fifty eight types of fish and shrimp (27 are fresh water type and 131 are marine type) are found in the Lake. There are eight types of shrimps and two types of crabs. But due to the natural and man-made causes, the production of the other brackish water species like shrimp and crab is also decreasing. According to Zoological Survey of India, about 40 per cent of brackish water fish species recorded in 1920 have vanished at present (Samal and Meher report 1999). The Lake supplies a good brackish water (Salt water plus sweet water but salinity is more than sweetness) fisheries but most of the important commercial fishes of the Lake are of marine origin. The fishes of the Lake, being offspring of salt and sweet water posses a peculiar distinct taste which is favoured not only in the state but also in other parts of the country and the prosperous countries like Japan and USA. Among the shrimps, the tiger shrimp is in demand throughout the world. Shrimps can be grown by culture and it can be captured by Khandas. But shrimps captured by traditional method have soft skin and they decay early and so they are not in much demand by the exporters who prefer thick and hard shrimps as they resist natural process of decay.

Fishermen: The fishermen community maintains the ecological balance of the Lake as well as breaks it as may be seen from the following factors.

By 1989 the Lake was supporting a population of one lakh, with 27,000 active fishermen living in 122 villages. In addition to this, at least 27,000 women from the
community were remained economically active in the area by getting the catch in the market (Mohanty and Das: unpublished report). Again in 1996-97 the number increased to 1,04,040 out of which 30,634 were male, 26,540 were female and 46,866 were children (as per Directorate of Fisheries Statistics data 1996-97: 47). However, at present the total no of fishermen population is 1, 22,339 out of which 36, 540 are male and 31, 588 are female and 54, 211 are children (Directorate of Fisheries Statistics 2000-01). Chilika offers a training ground for fising to the children. Every new hand born goes to Chilika from his very childhood.

**Khatias** are mostly found in Satpada area. Most of them are highly educated. They perform several ceremonial functions like other upper caste people of the locality. According to the local people, they were, in past, engaged in fish trade and were not directly fishing. Gradually, they have adopted fishing as occupation. Khatias are divided into several sub-groups, viz., Khatia Mahajan, Khatia, Keuta, etc. Khatias having ‘Behera’ surname are Scheduled Caste (SC) while Khatias with surname ‘Jena’ are not SC. However, the latter have gone to the court appealing that they should be declared as SC.

*Kaibarta/Keuta*

The Keutas or Kaibartas are fishermen by caste. Previously they were fishing by net which was made by them from cotton thread. They are considered to belong to the higher strata. The social difference between Keuta and Khatia are negligible. Keutas catch fish only with nets and are not supposed to use traps which are meant for the lower caste fishermen. Keutas prefer themselves to be called as Kaibartas – as Sanskrit word – to add respectability. Keutas are also divided into various sub-groups such as Dhibara, Niari, Rashti, Hula Keuta, Bilua Keuta, Chudutia Keuta, Kaibarta Keuta etc. Keutas belong to Scheduled Caste and are very aggressive. Earlier they were not SC. They are found mostly near Satpada area and on the northern and western banks of the Lake. They observe *Chaitra parba* as their caste festival and worship goddess Baseli. During this festival, they perform *ghodanacha* (horse dance).

*Kandara*

The name *Kandara* is said to be derived from the word Kanda (means arrow). They had the skill in archery and, in the past, they and Panas formed the rank and file
of the local militia. The Kandaras around Chilika are engaged in fishing and usually capture fish shrimp by traps like dhaudi with tattas. They are fishermen in the southern and south-east side of Chilika are Kandaras. They belong to Scheduled Caste. They are well-behaved, sober, hospitable and good host.

Tiara

Tiaras mainly capture small fish by trap called baza (small box). They belong to Schedule Caste. They are found in the north-east and in the western side of the Lake in few villages.

Kartia

The Kartia, a minor fishermen caste, are distributed in and around five villages, viz., Borokudi, Baghnanji, Panchapatia, Mangalajodi and Kumandal. The Kartias mainly operate bamboo screen traps though some of them use net.

Nolia

Nolias of Chilika area are living in between the sea-coast and the bank of Chilika. As such, they do fishing in both the sea and the Lake. They are Telugu-speaking fishermen but prefer to be called as Dhibara. In the past, they have migrated from the South particularly from Andhra Pradesh. There are two sub-castes: Jalia and Khalasi. The important Nolia villages near Chilika are Arakhkuda, Sanapatna and Khirsahi. In Arakhkuda, Nolia children are seen collecting wild shrimp seedling in the mouth of the Lake.

Bengali Refugee

A large number of refugees from East Bengal who have settled in Balipatpur and Chhatinuangan of Bhusandpur area since 1950s have taken to fishing as their means of livelihood. They are operating from Kalupadaghat to Rambha. The refugees were given land. They do not have rights over fishing in Chilika as they own agricultural land. However, as fishing became a commercial proposition and cultivation does not offer a good return due to water logging they took fishing on a regular basis. The women of this community themselves fish in the Lake. They go to fish in groups in boat. The female member of these refuges are making sipala patti – a type of mat made from sipala available in the western shore of Chilika. It has a good
market in the locality. They use improved method of fishing. It is alleged that they first used zero net in Chilika.

Others

Very insignificant number of Gokha and Niari live in Chilika area. Gokhas are found in one of two villages. They use mainly shaua made of bamboo sticks for fishing. Some use drag nets and cast nets for fishing. Niaris are a small group of fishermen confined to only a few villages in the western side of the Lake. Their social status is similar to Keuta. They were operating nets for fishing. Gradually they have switched to other profession like farming, pressed rice preparing etc.

This social stratification of the fishermen based on the use of fishing gear also avoids maximum concentration in any particular sector of Lake. This serves and excellent tools to maintain operational balance and to ensure orderly exploitation of the resources of the Lake. For example, ‘Nolias’ are migrants from the south. Strictly speaking, they do not depend on Chilika as they catch fish from the sea. Kandaras on the other hand, are the original inhabitants of the region. They catch prawns by using “Traps”. Hula Keuta stew at the one end of the boat and catch fish at night. Bilua Keuta use nets for fishing and shout loudly to draw the attention of fish. Chudutia Keutas do not catch fish at all. They sell rice products and earn their living. Kaibartar earn their livelihood by rowing boats in Chilika. Khatias who used to sell dry fish, have recently changed their occupation. Now-a days they take up enclosure and trap for fishing near the mouth of Chilika. Triaras catch only prawns. But on the backdrop of recent made race for shrimps and change in technology, the above stratification based on the use of fishing gear is under threat of extinction. This has led to unhealthy concentration of fishing activity in respective sectors of the Lake and in turn has seriously jeopardized the age-old balance in the lagoon.

Non-Fishermen

The cast-class occupation relationships have undergone a radical change in modern times. Occupational are no loner caste or class-based. There exists a caste-cum-class distinction between the fishermen and non-fishermen. The later belong to superior caste and class and the former belong to socially inferior caste. So long as fishing in the Lake was considered to be an inferior job, it remained as the exclusive
domain of the fishermen. Consequent upon the advent of culture fishery in Chilika, the situation has dramatically changed and the non-fishermen have taken to fishing in the Lake by giving up all social and psychological inhibitions which they had in the past. Today the occupations are no longer caste-based. There exists a caste-cum-class distinction between the fishermen and non-fishermen. The latter belong to superior caste and class and the former belong to socially inferior caste. So long as fishing in the Lake was considered to be an inferior job, it remained as the exclusive domain of the fishermen. Consequent upon the advent of culture fishery in Chilika, the situation has dramatically changed and the non-fishermen have taken to fishing in the Lake by giving up all social and psychological inhibitions which they had in the past. Today the occupations are no longer caste-based.

Many non-fishermen in the neighbouring villages of Chilika have taken to fishing as their profession since long. It is difficult to ascertain the exact number. In the past they used to fish either through the help of the fishermen or used to catch fish in Janos. Dians, Uthapanis for themselves through puluhas and Khainchis during a specific period when Janos cease to operate. With the onset of culture fisheries in the eighties, most of the non-fishermen are engaged in fishing. On local enquiry by the Revenue authorities it is reported that the total number of non-fishermen engaged in fishing in Chilika in 1992-93 is 71,244 as detailed below:

Tahasil-wise break-up of the number of non-fishermen engaged in fishing operation in Chilika
1. Banpur       34 villages       13,320
2. Puri          45 villages       24,000
3. Krushnaprasad 75 villages       33,924
                   Total            71,244

(Das Committee Report, 1993: 36)

Among the non-fishermen, Khandayat is the dominant caste, particularly in Krushnaprasad block. The ward Khandayat is derived from the word Khandapati, a headman governing a Khanda or group of villages corresponding to the pragana of the Mohammedan times. Orissa was formally divided into Khandas. Another view is that they belong to the warrior class. At present, many of them depend on agricultural as a means of livelihood. The other non-fishermen castes are Karana, Brahmin, and OBCs.
government Jamindars, Jagirdars, Khas Mahal areas of Khurda and others. The Raja of Parikuda, Raja of Khalikote, the government of Suna Bibi, Choudhary families of Bhinagarpur, Mirja Tahir Beg, Durga Charan Jaddeve, Shridhar Khuntia and Jagannath Gochikar were the principal owners. The Jamindars used to lease out fisheries exclusively to the local fisher-folk (Samal and Meher 1999). However, it should be noted that by the time of the interdependence of the country, these local fisher-folk were mostly indebted to the local moneylenders for fulfilling their social commitments and for purchasing equipment like country boats and nets. With the development of communication, Calcutta provided the biggest market for fishery resources caught in the Lake. So a class of middlemen trades grew who functioned both as traders for the fisher-people’s catch and a money lenders for their day to day needs. These traders became the greatest exploiting class and the fisher-folk community virtually became a class of bonded labour. During the 1950s, when popular government was established, an attempt was made to free the fisher-folk from exploitation and abject bondage from the middle class traders.

However, as mentioned above in own discussion in the part of cooperative society that when Chilika Reorganization Scheme (CRS) 1989 started, in tried to intend to eliminate trades, middlemen and Mahajans from the scene and ensure the payment of fair prices to fisher-folk in order to improve their socio-economic standards. The fisher-folk were organized under more than fifty primary co-operative societies and all these primary co-operatives were integrated to a central or apex society. The apex body used to take all the fishery sources of Chilika on lease from the government and sub-lease them to the primary societies. The apex society gave loans to fisher-folk to purchase equipment and would purchase their entire catch for marketing. It was mostly sent outside, particularly the Calcutta market where Chilika fish, crab, prawn equipment were very prized commodities. Thus the exploitation of the middlemen ended and the condition of the fisher-folk community began to improve. But this was short lived. After a decade or so, the condition of the apex society deteriorated due to lack of support of co-operative banks and bureaucratic control of the administrators of the government. Though the government continued to lease the fisheries sources to the traditional fisher-folk co-operatives, gradually middlemen trades again appeared in the scene. There was constant pressure on the
government by the non-fisher-folk of the locality that they be were also local men
living on Chilika. Behind this move were a few traders from outside who wanted to
enter Chilika and control the resources. The year 1977-78 saw the emergence of prawn
as an important export commodity (CPSW 1994: 88). The name Chilika became
synonymous all over Orissa with prawn and money (Chilika: Voice of the People
1993:3).

Fishing and Marketing

The traditional fishermen are using boats, nets and traps for fishing. In Chilika
there are around 454 motorised boats and 4,971 traditional boats (Directorate of
fisheries 1996-97: 47). There are mainly three types of boats of Chilika – (i) dug-out-
boat (donga), not in much use now; (ii) flat-bottomed boat (naha); (iii) mechanized
boat. They use talai if wind is favourable for speed movement of the boat.

Among various types of Nets they use cast net (Khepa-jala) by which small
fishers are usually captured. Drag Nets to catch small fishes, Khadi-jala (one type of
drag net), catamaran-jala which is used for deep fishing, patual-jala is one kind of
soine-net to catch small fish as well as bigger varieties like hilsa and Sahal and
captured during November-April season.

At present, however, the nylon nets have changed the whole scenario of nets in
the Lake and diluted the distinction among traditional nets.

Traps

Another method of catching fish is by various traps such as

- Baza is a smaller trap like a box of bamboo sticks operated chiefly by the
Tiaras. Shrimps are caught in abundance from January-March in baza.
- Dhaudis used mostly by Kandaras, are large shrimp traps set in shallow areas
of the Lake.
- Khanda used by Kandaras to capture shrimps.

The style of arrangements of dhaudi / baza in the Lake is called Khanda. Among
the types or ways of fishing, Jana, Dian and Uthapani are the most important
type. At present there are 210 number of fisheries of various types of viz., Jana-109,
shrimp-71, bahani-33, dian-88 and uthapani-9 (see the following table-7). Around 60

109
per cent of the fishing method is by balani (net fishing), 25 per cent by traps (shrimp fishing) and 15 per cent by \textit{jana} (enclosing by bamboo screen) (Directorate of fisheries statistics 1996-97: 77).

Table 3.2: Types and Number of Fisheries in Chilika

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Types</th>
<th>Number</th>
<th>Seasons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>1.</td>
<td>\textit{Jana}</td>
<td>109</td>
<td>October-January</td>
</tr>
<tr>
<td>2.</td>
<td>Prawn/shrimp</td>
<td>71</td>
<td>March-June</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>And October-January</td>
</tr>
<tr>
<td>3.</td>
<td>Bahani</td>
<td>33</td>
<td>March-June</td>
</tr>
<tr>
<td>4.</td>
<td>Dian</td>
<td>88</td>
<td>June-September</td>
</tr>
<tr>
<td>5.</td>
<td>Uthapani</td>
<td>9</td>
<td>July-October</td>
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</table>

Source: ibid., 47.

\textit{Jano}: Among the three, the \textit{Jano} fishing is the most important and common method of fishing. It is an extensive bamboo enclosure by which the fish that came for shelter and food in the shallow water near the bank of Chilika are cut-off from the rest of the water and are kept confined for daily capture, until the enclosure dries up and the whole of the fish is caught. The Jana method of fishing also maintains the ecological balance of the Lake. It merits some elucidation. In case of Jana fisheries, large shallow water areas are enclosed by bamboo screens and mud walls to catch fish. These areas become highly productive as feeding ground. Because during September and October on account of right type of temperature and increased salinity many varieties of fish migrate from the Bay of Bengal to the Lake in search of food. The fishermen watch the movement of those fish and enclose the opening of the \textit{Janos}. The area of varies between 13 and 8/3. It requires 70-100 fishermen to close the biggest Jano (Mohanty and Das: unpublished report).

Depending on the size of the Jano, it has one or more catching areas called \textit{Gohoras} which has two parallel bamboo or net screens about three metres apart. The bamboo screen has an opening – one fish enters that opening, it is difficult for the fish to come out. After that fishermen catch them gradually. It fish is very small, fishermen allow it go back to Chilika as they feel themselves as owner of the Lake and believe
that the small fish after being grown will only be theirs. This kind of mental conditioning of the fishermen and their family of belongingness always prompt them to maintain the ecology of the Lake. But the non-fishermen community and the Bengali refugees who have settled near Balugaon do not believe in the above ethics and mercilessly kill the small fry and fingerlings in reduction of fish production.

To discourage the non-fishermen from using nets of very small mesh, the Government of Orissa had introduced Orissa Marine Fishing Regulation Act, but the same is yet to be enforced. This has seriously affected the character of coexistence in Chilika Lake. In the north-east side of the Lake the Janos are used the channels whereas in the Southeast sides they are in the shore of Lake.

*Dian:* when fish remain in the enclosure, they move. When they strike the *tatta* (bamboo screen) they jump over tatta and fall on the nets on the other side of the enclosure. This is called dian (i.e., jumping) (Samal and Meher Report: 1999). This is usually practiced in the north-east side of the Lake. Usually this type of dian near *jano* belong to the fishermen. *Dians* near *gramatali* (some area inside the Lake reserved by the government as infertile for fish culture) of non-fishermen villages belongs to the non-fishermen. Dian fisheries cover the uplands or gramatali areas having small shallow patches of water which are contiguous to *jano* fisheries. Such fisheries extended approximately 100 to 200 yards from the shore towards *jano* sources (Das Committee Report: 1993). Further, Das Committee Report maintains that the right of fishing by the non-fishermen near the *jano* and shrimp *khandas* not only adversely affect the catch in *janos* and shrimp *khandas* but breeds disputes among the fishermen and non-fishermen.

But, according to the fishermen, this is not correct; Dian is not enclosure by the side of the bamboo enclosure of *Janos*. When the fish moves and strikes at the bamboo enclosure, it jumps to other side and falls on net enclosure (i.e., *dian*) on the other side of the bamboo enclosure. Usually dian is owned by the persons who also own the *janos* there (Samal and Meher: 1999)

*Uthapani:* Uthapani refers to fishing in shallow water (i.e., patches like small ponds) during the first rainfall in the month of June. When the rain water from the shore areas flows into the Lake, fishes ruse against the flow of water and goes to the small ponds
nearby. Sometimes, the rain water are checked with certain ridges and fishes are trapped. Mostly fish live kantia are capered by this process.

Marketing of Fish

Before independence, most of the catches were disposed of in the fresh state through the assembly godowns situated or the western bank particularly at Kalupadaghata, Soran and Balugaon, while a part was marketed locally. The surplus fish was usually cured and dried. With entry of several merchants from Calcutta and a few firms of Orissa, fresh fish trade developed. The fresh fish trade (mainly to Calcutta and Tatanagar) grew rapidly after first World War particularly after the establishment of an ice factory at Kalupadaghat which was the largest exporting centre on the Lake in the mid-1940s (Samal and Meher 2003: 3320).

Fish is also processed in and around Chilika. Some people collects eggs of fish and shrimp (known as 'Sridhar') that float near the bank during the monsoon and fry them for consumption. Dry salting is the most common method employed for preserving fish. Dry fish called as 'Sukhua' is prepared in Rambha area in South and Arakhkuda in the North East. In the past, boiling and drying in the sun was followed in case of shrimps which was exported to Burma. This processed process products was known as 'murchunda'. At present, there are three modern processing plants around Chilika for processing shrimps for export to foreign market. Usually, the head and the skin of the shrimp are taken away from the body of the shrimp in an air-conditioned house and the headless shrimps are packed with ice.

Fishing and System of Share

There is also a prevalent system of share of the fish catch between the fishermen, boat, and net. As a general rule, equal shares are given for the catches, nets and boats.

However, at present, minimum three persons, are required for night bahani besides one boat and 7-10 kg of net. In this case, the catch will be distributed among six shares by kandara fishermen, one share each to three fishermen, one shares to the boat and two shares to nets. If the boat is owned by one of the fishermen in the group, he will take the share of boat, i.e., he will take two shares. The boat owner may get koli where may very from Rs. 200 to Rs. 500 per month on the basis of the size of the
traditional boat and around Rs. 1,000 for mechanized boat as rent (versions of fishermen villages collected during field survey). In *kandara* community, net is not purchased on share basis. In case of *Keuta* and *Khatia*, the boat is taken on *koli* (monthly rent) and net on share basis (i.e., if 9 kg. net is required, each will provide 3kg of nets).

*Commission Agents*

Around 90 per cent of the fishermen engaged in capture fishing is occupationally related to Commission Agents and thus the latter plays a major role in shaping the economic life of the traditional fishermen. It is to be noted that shrimp and fish are not caught uniformly throughout the year. There is a drastic fall in fish catch during March-April every year and due to some traditional custom, some of the fishermen do not go for fishing in months like *Kartika* and *Baisakha*. On the other hand, the fishermen have meagre income and low saving habit due to which it is very difficult for them to maintain the family in the aforesaid seasons. So, there is urgent need of money during these periods. Since almost every PFCS is in near-bankrupt situation, they are of no help to the fisherman. Hence, the fishermen are compelled by the circumstance to go to others – the informal sector credit agents – who are popularly known as Commission Agents in the locality for provision of funds.

Unusually, the fishermen with sound economic and social background act as Commission Agent. He has a motorized boat costing around Rs. 60,000 to Rs. 1,2000 known as ‘Commission Boat’ which facilitates his easy and speedy movement inside Chilika Lake. The total credit provided by him to the fisherman does not belong to him fully. He mainly acts as an agent of the fish merchants of Calcutta and other places. The need of fund for immediate medical treatment, ceremonial functions like marriage and funeral, purchase of nets and boats and repairing of boats of the fishermen has created the informal institutions like “Commission Agent”. Besides these, the Commission Agents provide grocery items and drinking water on credit to the fisherman who are staying and fishing inside Chilika Lake for months together. He has boat for this purpose which is popularly known as “Commission Boat”. It is interesting to note that the Commission Agent do not charge any interest (i.e., interest rate is zero) on the money advanced to the fishermen or on items supplied on credit. But he takes many times more than the interest rate on the credit advanced in different
ways. The fishermen are compelled to sell all his capture to the Commission Agent only that too at a price usually 10 to 20 per cent below the market price prevailing in the local market. He also takes 10 per cent extra on the weight of fish (i.e., 100 gms, extra on each kg of fish). The Commission Agent has an upper hand in bargaining the rate and quality of fish and shrimp due to his position.

The operation of Commission Agent is a necessary evil for the fishermen. While on the one hand, he extends financial and commodity credit and a ready market for perishable shrimp and fish, on the other, he exploits the poor fishermen through payment of low price and manipulation of grade, weight and quality of product. The villages which are capturing fish by *bahani* in deep Chilika (*bhitara* Chilika) through boat and net and the villages which are far away from the shore of Chilika such as Kaudikhani, Jagulipadar, Bhimpur, Galua, Balikera, Patharipada and the others are more dependent on Commission Agents and hence are more exploited.

Once the Commission Agent established relationship with the fishermen with strong financial support from fish merchant, it is very difficult for the later to liberate from their clutches. Ultimately this system ruined the marketing base of the Primary Fisherman Co-Operative Societies (PFCSs).

The ‘Commission agent’ thus plays a vital role in case of capture fishing.

**Shrimp Agent**

Shrimp culture in Chilika Lake has paved the way for backdoor entry of shrimp exporting merchants / firms in Chilika. After facing severe resistance both from the fishermen and non-fishermen at Jadupur-Pansapada, it is not so easy for aquaculture firms to directly involve themselves in shrimp culture in the Lake and the lease policy does not permit them to do so. As a result, the shrimp merchants choose the side of the non-fishermen and some influential fishermen as their minor partners. Shrimp culture requires a huge investment on both fixed and working capital which is beyond the means of poor villagers. Yielding to the temptation of making quick money, local inhabitants engage themselves in shrimp culture paving the way for shrimp merchants to enter. The man who acts in between shrimp exports firms and the real shrimp is called *Chingudi* Agent (Shrimp Agent / Shrimp Trader). He has a sound economic background with some infamous reputation of muscleman.
All the materials, fixed capital and working capital are supplied by the shrimp merchants through the local shrimp agent with a condition that all the catch from the culture sources must be surrendered to them. Thus, the total capital invested belongs to the shrimp merchants and the total production (output) belongs to them also. That is, shrimp merchants act as absentee landlords with shrimp traders as their agents to directly supervise the culture farming. The shrimp merchants are in a much better position because they only share the profit but the loss is borne by the local shrimp farmers themselves.

Thus, while in case of capture fishing the role of Commission Agent is important; the shrimp agent plays a vital role in case of 'culture' fishing particularly in shrimp culture (Samal and Meher: 1999).

Socio-economic Profiles of Sample Households in and around Chilika

The socio-economic condition of the people living in and around the Chilika Lake is dependent to a great extent on the environment. The field survey was conducted in different villages of Chilika on the basis of the socio-economic profile of households in different villages. The social structure as discussed in previous section shows that it is dominated by the traditional fishermen. In economic terms, a majority of the households in all the selected villages depend on fishing, except Niladripur of Southern region where salt cultivation is the main occupation. The detail socio-economic conditions of the sample households of our study collected during field survey are presented below:

Table 3.3: Distribution of the sample households in Different Regions of Chilika on the Basis of Castes (Gen/SC/OBC/SEBC) (in numbers)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Region</th>
<th>General Caste</th>
<th>OBC/SEBC</th>
<th>Schedule Caste</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>North-East</td>
<td>7</td>
<td>3</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td>2</td>
<td>North</td>
<td>--</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>West</td>
<td>2</td>
<td>1</td>
<td>28</td>
<td>31</td>
</tr>
<tr>
<td>4</td>
<td>South</td>
<td>4</td>
<td>1</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>5</td>
<td>South East</td>
<td>2</td>
<td>8</td>
<td>14</td>
<td>24</td>
</tr>
<tr>
<td>6</td>
<td>All</td>
<td>15</td>
<td>14</td>
<td>76</td>
<td>105</td>
</tr>
</tbody>
</table>
From the above table is seen that a significant proportion of the sample households belong to the fishermen community and majority (around 72.4 per cent) of them are schedule castes. The share of general and other backward class households in my sample survey is marginally more than one fifth of the total sample.

Around 95 per cent of the total sample households are Oriya fishermen, while more than 4 per cent are Bengali speaking fishermen (i.e., Bengali refugees) and less than one percent is Telugu speaking fishermen (Nolias). The Bengali speaking fishermen are found only on the western side of Chilika Lake while Telugu speaking fishermen are on the north-eastern side of Chilika Lake nearer to both the sea and the Lake. But the Oriya speaking fishermen are found in and around Chilika.

**Family Size**

The average family of the respondents consists of 4-5 adults and 3-4 children, though maximum of 8-9 adults in the family have been taken into account as well as widows. The families are mostly extended though there are some nuclear families too.

**Table 3.4: Distribution of Sample Households in different regions of Chilika on the Basis of their Castes/Sub-castes**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Caste / Sub-Caste</th>
<th>North-East</th>
<th>North</th>
<th>West</th>
<th>South</th>
<th>South East</th>
<th>All Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Fishermen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>62</td>
</tr>
<tr>
<td>a)</td>
<td>Keuta</td>
<td>7</td>
<td>4</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>b)</td>
<td>Kandara</td>
<td>3</td>
<td>--</td>
<td>--</td>
<td>5</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>c)</td>
<td>Kartia</td>
<td>--</td>
<td>--</td>
<td>4</td>
<td>1</td>
<td>--</td>
<td>05</td>
</tr>
<tr>
<td>d)</td>
<td>Khatia</td>
<td>3</td>
<td>--</td>
<td>2</td>
<td>1</td>
<td>--</td>
<td>06</td>
</tr>
<tr>
<td>e)</td>
<td>Tiara</td>
<td>2</td>
<td>--</td>
<td>7</td>
<td>--</td>
<td>--</td>
<td>08</td>
</tr>
<tr>
<td>f)</td>
<td>Nolia</td>
<td>2</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>02</td>
</tr>
<tr>
<td>g)</td>
<td>Refugee</td>
<td>--</td>
<td>--</td>
<td>3</td>
<td>--</td>
<td>--</td>
<td>03</td>
</tr>
<tr>
<td>2.</td>
<td>Non-Fishermen</td>
<td>13</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td>17</td>
<td>43</td>
</tr>
<tr>
<td>3.</td>
<td>All</td>
<td>30</td>
<td>5</td>
<td>25</td>
<td>19</td>
<td>26</td>
<td>105</td>
</tr>
</tbody>
</table>
### Table 3.5: Region-wise Distribution of Member of Samples Households according to their years of Schooling

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Region</th>
<th>No. of Schooling</th>
<th>1 to 5</th>
<th>6 to 10</th>
<th>11 to 15</th>
<th>Above 15</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>North-East</td>
<td>21.67</td>
<td>37.04</td>
<td>30.67</td>
<td>9.28</td>
<td>1.34</td>
<td>100.00</td>
</tr>
<tr>
<td>2</td>
<td>North</td>
<td>35.61</td>
<td>45.98</td>
<td>11.98</td>
<td>5.62</td>
<td>0.81</td>
<td>100.00</td>
</tr>
<tr>
<td>3</td>
<td>West</td>
<td>39.48</td>
<td>38.62</td>
<td>17.91</td>
<td>3.51</td>
<td>0.48</td>
<td>100.00</td>
</tr>
<tr>
<td>4</td>
<td>South</td>
<td>25.11</td>
<td>37.42</td>
<td>25.49</td>
<td>11.18</td>
<td>0.98</td>
<td>100.00</td>
</tr>
<tr>
<td>5</td>
<td>South East</td>
<td>31.91</td>
<td>33.48</td>
<td>26.62</td>
<td>7.11</td>
<td>0.88</td>
<td>100.00</td>
</tr>
<tr>
<td>6</td>
<td>All</td>
<td>32.19</td>
<td>36.63</td>
<td>23.49</td>
<td>7.18</td>
<td>0.51</td>
<td>100.00</td>
</tr>
</tbody>
</table>

From the above table, it is observed that the fishermen of the western and northern side have highest illiteracy and the north-east have lowest illiteracy. The highest share of college going population is found in the northeast region followed by the southern region and the lowest share is found in the western and northern side of Chilika.

### Table 3.6: Distribution of All the Sample Households on Literacy Level from Gender Perspective

<table>
<thead>
<tr>
<th></th>
<th>Less than primary level</th>
<th>Primary level</th>
<th>Higher Secondary</th>
<th>Graduate and above</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Fishermen</td>
<td>40%</td>
<td>80%</td>
<td>43%</td>
<td>20%</td>
</tr>
<tr>
<td>Non-fishermen</td>
<td>80%</td>
<td>95%</td>
<td>90%</td>
<td>92%</td>
</tr>
</tbody>
</table>

The men and women from fishermen households are mostly illiterates or at best educated up to primary level. Only 16% of the male respondents were educated up to the higher secondary level. There have no respondents either male or female who are educated more than higher secondary level. The fishermen households were not keen on education as they have the apprehension that literacy means leaving the family in the villages and going away to the urban centers. However, among the non-fishermen households, the level of education in higher secondary is quite significant among males though not quite satisfactory among females. The education level of girls up to higher secondary or graduation level among fishermen households is perceived only for the purpose of getting a better partner for marriage and not for earning.
Table 3.7: Region-wise Occupational Pattern of Sample Households in and Around Chilika

(in percentage)

<table>
<thead>
<tr>
<th>Region</th>
<th>Agriculture</th>
<th>Fishery</th>
<th>Salt Cultivation</th>
<th>Dairy</th>
<th>Trade</th>
<th>Fishing</th>
<th>Non fishing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fresh fish</td>
<td>Dried fish</td>
<td>Shrimp</td>
</tr>
<tr>
<td>1</td>
<td>2.31</td>
<td>95.13</td>
<td>Nil</td>
<td>Nil</td>
<td>1.00</td>
<td>Nil</td>
<td>0.62</td>
</tr>
<tr>
<td>North-East</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>33.68</td>
<td>57.51</td>
<td>Nil</td>
<td>Nil</td>
<td>3.21</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>West</td>
<td>34.91</td>
<td>50.04</td>
<td>Nil</td>
<td>Nil</td>
<td>10.89</td>
<td>1.06</td>
<td>Nil</td>
</tr>
<tr>
<td>South</td>
<td>37.42</td>
<td>50.21</td>
<td>6.28</td>
<td>Nil</td>
<td>0.65</td>
<td>0.56</td>
<td>Nil</td>
</tr>
<tr>
<td>South East</td>
<td>16.28</td>
<td>60.15</td>
<td>Nil</td>
<td>Nil</td>
<td>16.27</td>
<td>0.6</td>
<td>Nil</td>
</tr>
</tbody>
</table>

Majority of the households in the sample villages of different regions depend on Chilika for their livelihood. From the above table it is observed while in the northeast region about 95 per cent of the population depend on the fishing and fish trade (viz., fresh fish and shrimp), the percentage share of the households having agriculture as the main occupation is only 2.31 per cent. Due to salinity the productivity of agricultural land has declined and most of the agricultural lands have been converted to fishing ponds for shrimp culture in this region. This is mostly observed in the sample village of Modiratha where both fishermen and non-fishermen households have been taken as samples of study. Likewise, in the Southeast region, the percentage share of households depending on agriculture as their main occupation remains lower compared to other regions (except north-east). This is also due to the salinity of the soils and consequent conversion of agricultural lands to shrimp ponds. Similarly, fresh fish trade is prevalent in the sample villages of the all the regions. But it is mostly practiced in the western region. Dried fish trade is observed in both the western and southern region, with the higher share in case of the former than the later. There is shrimp trade in two regions - Northeast and Southeast. Salt cultivation is found only in the Southern region. This is due to the inclusion of Niladripur village in this region where the main occupation of the households is salt cultivation.
Table 3.8: Percentage share of possession of Occupational Equipment by the Sample Households for fishing

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Castes</th>
<th>Mechnized Boat</th>
<th>Country Boat</th>
<th>Net</th>
<th>Bamboo</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fishermen</td>
<td>3.83</td>
<td>49.66</td>
<td>83.62</td>
<td>36.52</td>
<td>7.05</td>
</tr>
<tr>
<td>2</td>
<td>Non-fishermen</td>
<td>6.25</td>
<td>9.28</td>
<td>35.78</td>
<td>20.54</td>
<td>61.72</td>
</tr>
</tbody>
</table>

Occupation and Income

Table 3.9. Castewise Annual Net Income of the Sample Households

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Castes</th>
<th>Annual Per capita Net Income of the Members of the Sample Households</th>
<th>Annual Average Household Net Income of Members of Samples Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fishermen</td>
<td>3560</td>
<td>23,819</td>
</tr>
<tr>
<td>2</td>
<td>Non-Fishermen</td>
<td>4672</td>
<td>34,651</td>
</tr>
<tr>
<td>a)</td>
<td>Fishing activity</td>
<td>4881</td>
<td>38,580</td>
</tr>
<tr>
<td>b)</td>
<td>Salt cultivation</td>
<td>2802</td>
<td>16,421</td>
</tr>
<tr>
<td>c)</td>
<td>Others</td>
<td>2764</td>
<td>28,216</td>
</tr>
</tbody>
</table>

Though the average income of the fishermen households is significantly lower than that of non-fishermen households, the average income of the latter not engaged in fishing activity is much lower than that of the former. This indicates that the non-fishermen households, those are not engaged in fishing activity are comparatively poorer than the fishermen households in and around Chilika.
Table 3.10: Caste-wise per Capita Consumption-Expenditure of the Members of Sample Households

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Households</th>
<th>Per-capita Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fishermen</td>
<td>3786</td>
</tr>
<tr>
<td></td>
<td>Keuta</td>
<td>4006</td>
</tr>
<tr>
<td></td>
<td>Kandara</td>
<td>3217</td>
</tr>
<tr>
<td></td>
<td>Kartia</td>
<td>2997</td>
</tr>
<tr>
<td></td>
<td>Khatia</td>
<td>3616</td>
</tr>
<tr>
<td></td>
<td>Tiara</td>
<td>4036</td>
</tr>
<tr>
<td></td>
<td>Nolia</td>
<td>3472</td>
</tr>
<tr>
<td></td>
<td>Bengali Refugees</td>
<td>3189</td>
</tr>
<tr>
<td>2</td>
<td>Non-Fishermen</td>
<td>3723</td>
</tr>
</tbody>
</table>

From the above table it is observed that there is not much difference in the annual per capital consumption expenditure between members of the sample fishermen and non-fishermen households. But, the difference is more profound among the different sub-castes of fishermen, that is, it is found to be highest among the Tiara and lower among the Kartia. The difference in the per capita consumption expenditure between the sub-castes of fishermen households may be due to the difference in income.

Table 3.11: Annual per capita income of the members of sample fishermen and non-fishermen households who are engaged in Culture Fishing

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Category</th>
<th>Per capita Income (in Rs.)</th>
<th></th>
<th>From Culture Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Gross</td>
<td>Net</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Fishermen</td>
<td>4072</td>
<td>3819</td>
<td>860</td>
</tr>
<tr>
<td>2</td>
<td>Non-Fishermen</td>
<td>6172</td>
<td>6083</td>
<td>4320</td>
</tr>
</tbody>
</table>

Here, it is seen that the per capita income of the member of the fishermen households engaged in culture fishing is lower than that of the member of the non-fishermen households.

The difference is more prominent when the income from culture source alone is taken into consideration. The per capita income of the non-fishermen from culture source is almost five times than that of the fishermen. This indicates that the non-fishermen are mainly engaged in culture fishing. This may be due to their higher
Here, it is observed that the share of the informal sector loan is significantly higher than that of the formal sector loan in both the cases of fishermen and non-fishermen households. Also, the rate of interest in case of informal sector loan is about five times higher than that of the formal sector as was told by the villagers during field survey. On account of the failure of formal credit institutions to supply credit to meet the requirement of the households engaged in fishing activities, they are forced to borrow money at a higher rate of interest from the moneylenders. Fishermen get credit from different credit institutions viz., Fishing-Cooperative Society, Cooperative Bank, Gramya Bank, Scheduled Commercial Bank and Land Development Bank. However, the PFCSs, found in different regions are quite less from our sample surveys. Other types of credit institutions are also not found in all the different regions, though they are present in few number only in some of the sample villages. Therefore, the villages suffer due to non-availability of credit from formal sectors.

Table 3.13: Purpose of Loan of the Sample Households

<table>
<thead>
<tr>
<th>Category of Household</th>
<th>Purpose of Loan</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cultivation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fishing Equipment / Working Capital</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social and Religious Function</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Consumption</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fishermen</td>
<td>6</td>
<td>170</td>
</tr>
<tr>
<td>Non-Fishermen</td>
<td>13</td>
<td>11</td>
</tr>
</tbody>
</table>

Note: Since the sample households give multiple response the total response therefore in case of the sample households are more than the total number of households.

From the above table it is seen that the purpose of loan for fishing equipment / profession and consumption is quite higher among the fishermen households, whereas among non-fishermen, the loan for the purpose of cultivation has a significant share. It was found from the survey that the moneylenders give money at the rate of 8-10 per
cent interest. The repayment is quarterly or yearly, through fish and shrimp, which the moneylenders buy at a lower rate than the market rate. Again, these people don’t prefer to go for bank loans because the elaborate process of bank loan application and the corruption that is involved in applying for a bank loan has deterred than to go in for bank loans. They, therefore, prefer the private prawn mafia moneylenders.

**Gender Roles**

From my samples survey, though female respondents were also interviewed, but due to their least or marginal participation in the occupational sector, their number were not included for tabulation here. The participation of women in different sectors have just been carried in the form of description which are as follows: from the total sample households, women’s participation in:

- **Fishing Sector** → only 1.1 per cent (only for selling of fish, weaving net and preparing dried fish)
- **Agriculture** → only 3 per cent
- **Shrimp Culture** → 1.8 per cent (only catching shrimp seedlings, giving feed to the shrimps, shrimp grading, removing weeds from the aquaculture ponds etc.).

For the women, the dual responsibility of managing the home as well as work outside is certainly a tiresome task. The daily burden of households work and the wage earning activity (by some due to acute poverty) has taken its toll on the women (Patel: 2002). Due to their poor economic condition, women are contended with their limited role and scope in the economic and social environment. The young and adolescent children in these family too have compartmentalized gender roles. The boys help their fathers and get the informal training to carry on the family’s traditional economic activity. For the girls, the areas of activity is definitely inside the housewife no scope for any training (informal) to increase their capacity. For the families of the higher castes whose male are involved in shrimp trading or are agents for the companies, the women too have a second role.
Cooperative Societies of Fishermen

The Balugaon fishermen cooperative store was formed in 1923. It was enjoying the Government owned fisheries for the first few years. In latter stage, some more societies were formed in the Chilika region and fishing rights were gradually distributed to them. The formation of fishermen's Cooperative Societies reduces considerably the monopoly of the merchants who were exploiting the poor fishermen. During early 1950s, around 14 cooperative societies were functioning in the Chilika area particularly at Kalupodaghat, Gangadharapur, Kuhudi, Balugaon, Khallikot, Rambha, Chhatrapur, etc. (See Mitra and Mahapatra, 1957; also quoted in Samal and Meher 1999).

Organization of Cooperatives

The Lake has 290 Sairats (fishing grounds) of different types. The local fishermen have not fishing rights over their sairats on traditional basis. Basing on the Chilika re-organization scheme, 1959 by Prof. A.F. Laidlaw, a Canadian engaged by the state Government, two tier cooperative structure was set up for the fishermen. This scheme also made a landmark in the history of management of the Sairats in the Lake like 'Bahani', 'Jano,' 'Uthapani' 'prawn Khanda' and 'Dian' by the government of Orissa (Das Committee Report 1993: 12). Primary fishermen Cooperative Society (PFCS) at the village level are affiliated to the Central Fishermen Cooperative Marketing Society (CFCMS) organized centrally for the whole of the Lake. The CFCMS accepts the Lake on lease from the government annually and lets out on sub­leases to the PFCSs. In other words, the PFCS are only allotted with the Sairats upon which they have got traditional rights. The cooperative structure was implemented with a number of primary fishermen cooperative societies at the grassroots level and an apex body at the top known as the Central Fishermen Cooperative Marketing Society (CFCMS) Ltd. The CFCMS used to take the lease of various sources from the Revenue Department of Government of Orissa through the collectors of Puri and Ganjam and sub­lease them to the PFCSs. These sources were not taken on lease by the CFCMS and were being settled through open auction by the Tahasildars of Puri.

1 ibid.
Krushnaprasad, Banapura, and Khallikote. The CFCMS handled all types of lease except Chulimumda and Uthapani.

**Fishermen by Profession**

According to a Government circular (Department of Forest, Fishery and Animal Husbandry) in 1981, persons eligible to be the member of the fishery co-operative must be either fishermen by caste or by profession or person exclusively depending upon pisciculture as a profession.

In 1990-91, the State Government allowed the non-fishermen of neighbourhood villages to form primary co-operative societies. As a result, few societies (around six) of the non-fishermen have come into existence.

1. **Fish Fed**

Orissa State Fishermen's Co-operative Federation Ltd. (OSFCF) known as FISH FED was formed and registered in 1989-90 after getting assurance from National Co-Operative Development Corporation (NCDC) for advancing loan to PFCS and finance for infrastructure development and training. The main objectives of the state level organization are:

- social and economic development of affiliated PFCSs and their members;
- development of fish marketing and infrastructure in fishermen concentration area;
- arrangement of training of fishermen / fish farmers;
- arrangement of credit, share capital and subsidy for PFCSs on institutional credit in order to minimize loan burden;
- supplying fishing inputs at reasonable price and many other objectives

The Federation started functioning from 16th September 1991. Though there are registered 616 PFCS in the state, only 316 societies are affiliated to FISHFED in which 52,000 fishermen members have been enrolled till now. Up to 1996-97, the FISH FED has availed loan to the tune of 217 from NCDC and the state Government.

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4 ibid., p. 12.
The CFCMS of Balugaon was amalgamated with FISH FED on 20th May 1993. That is, instead of decentralization of power in the co-operative structure, there is centralization at the state level at Bhubaneswar.

**ii. Mahensa PFCS**

At present, there are 92 registered co-operative societies of the fishermen in Chilika area, and six of the non-fishermen. But, most of them are defunct except one or two. One is Mahensa PFCS which is working satisfactorily. In Mahensa (which is also our sample village), all the fish captured by the fishermen of the village are to be deposited near the village Pradhan who hold his office for three years and is selected by the village committee on the basis of efficiency and honesty. The Pradhan is a salary holder and collection and grading of fish is done by him. The fish collected are sent to Balugaon by a motorized boat belonging the Society after proper packing by rice, etc. The PFCS has also a godown at Balugaon.

The Balugaon godown of the Society sells the shrimp to the companies / merchants and other fishes to local trades in the prevailing market rate at Balugaon. In the godown, there is a Secretary and a clerk. They are salary holders and appointed by the Society. The Government directs the PFCS to appoint a Secretary if turnover is more than Rs. 3 lakh. They keep the daily rate (i.e., dispatch rate) after proper classification of fish. Everyday, a chalan mentioning the amount of fish and its price comes from Balugaon depo to the village. Every 15 days, accounts and money are sent by the godown to the village and the Pradhan distribute the amount among the fishermen on the basis of the challan. A free of Rs. 3.00 per kg in case of big fish and Rs. 2.00 per kg in case of small fish is deducted from the amount and is deposited with the Society. Thus, it is claimed that there is no exploitation of the fishermen by traders who are agents of the export merchants / companies. Every year, the account of the PFCS is audited by the co-operative Auditor. But the fish catch is gradually declining due to siltation and collection of wild seed at the mouth. If the fish catch gradually reduces, then it will be difficult to manage even the working PFCS of Mahensa.
Table 3.14: Fishermen by Cooperative Society and Help Received from it from the Sample Households

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Category of household</th>
<th>No. of Households Who are Member of Society</th>
<th>No. of households getting regular help</th>
<th>Percentage of household</th>
<th>Percentage of help</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fishermen</td>
<td>51</td>
<td>36</td>
<td>82.25%</td>
<td>58.06%</td>
</tr>
<tr>
<td>2</td>
<td>Non-fishermen</td>
<td>23</td>
<td>17</td>
<td>53.48%</td>
<td>39.53%</td>
</tr>
</tbody>
</table>

About 82 per cent of the members of the sample households are found to be members of different Primary Fishermen Cooperative Societies (PFCSs) whereas only 58 per cent of them are getting regular help. Among the non-fishermen community, only 53 per cent of them are members and 39 per cent of them are getting loans regularly. These societies help the members in marketing the product, regulating of fish supplies to the market and maintaining price levels, purchasing fishing implements in subsidized price and other helps.

Problem and Failures of Cooperative Societies

They are a number of problems relating to these cooperative societies. However, the Mahensa PFCS is an exception. This is not the case with the other PFCS. Various factors are attributed to the failure of PFCS in Chilika.

- Around 90 per cent of PFCS, have no house for their office and no resources to pay the salary of the secretary of the societies.
- The traders who are the agent of the export companies entice the members of the society to sell the fish catch to them on payment of the spot while the society pays once in a week on a fortnight. Even the PFCS is not able to meet the total credit need of the fisherman for purpose of nets and boats.
- The lease operations by the CFCMS is found to be faulty. There is the Lake of a clear cut demarcation of fishing sources in the Lake. The central society did not have the power to enforce the lease term. It merely operated as an intermediary between the Revenue Department of the State Government and the PFCSs. Most of the PFCSs marketed their catch directly through the Commission Agents of fish merchant of Calcutta for ready payment by passing
the Central Society. In course of time, most of the PFCS became sick and defunct (Das Committee Report, 1993: 19).

- In some areas litigation in Chilika and rose due to the lack of fair and equitable distribution of fishery sources among the PFCS, villages and fishermen community. In some cases, the CFCMS made an erratic distribution of sighing sources due to favourtism and nepotism of the President of the Central Society. This resulted dissatisfaction among some PFCSs as well as fishermen community.

- The PFCSs are not repaying the loan to the tune of Rs. 53 lakh advanced towards cyclone loan and the lease amount to the CVCMS/FISH FED (at present). The PFCSs are also not taking any step for recovery of these loans from its members putting FISH FED into financial trouble. The CFCMS is also not repaying the loan amount of Rs. 4.75 lakh to FISH FED which was taken from NCDC for installation of an ice factory at Balugaon.

- The members of the PFCSs are not repaying their loans, perhaps due to the psychology of ‘loan waiver’ As a consequences, most of the PFCSs have not rapid their load to the Central Society and the commercial banks. For this, most of the PFCSs are not eligible to get loan from the fund sanctioned to FISH FED by National Co-operative Development Corporation (NCDC).

Moreover, the respondent’s view regarding the causes of failure of primary fishermen cooperative societies (PFCSs) collected from field survey include the following:

- lack of adequate funds of PFCS and consequent inadequate credit facilities
- unauthorized occupation of leased areas of the societies by others,
- failure of the PFCS, in marketing the products (fish, shrimp crab) of its member
- disunity among the members,
- unhelpful attitude of the state-Government,
- in efficient administration
- political interference and others.
However, not only the problems, but the solutions are also collected from the villagers / respondents for the above problems. The suggestions of the sample fishermen households in order to solve the problems of PFCFs are:

- financial help from the government to the societies,
- proper lease policy for serving the interests of the societies;
- payment of loans at low rate of interest;
- re-organization of the co-operative societies,
- marketing of fish through the cooperative societies and
- others including construction of society buildings, regular election of societies etc.
SECTION: III
The Cultural Ecology of the Lake

Chilika: A Cultural Symbol

For the people who inhabit the Lake areas, Chilika is not just a Lake whose water is required for industrial and domestic use, it is also a symbol of their culture. The Lake does not simply occupy a space in the exterior world, it also occupies a space in their psyche as an object of religious faith and worship. The communities who inhabit its shore worship it on every occasion.

Moreover, there are several opinions regarding the origin of the Lake from different sources: one is the explanation coming out from the great tradition or the all India tradition of Hinduism and another is the local explanation. According to one myth when the cosmic creator was engaged in its beautiful work of creating the world he created sun from whom emerged a saint called Kashya Muni having 13 daughters. The youngest daughter married her brother-in-law practicing surrogate polygyny. The name of these two sisters who married the same man were Kodru and Binota. Kodru used to torture Binota as she did not like her youngest sister Binota marrying her husband. Binota was very shy and docile, she was taking all nonsense from Kodru. With the passage of time both the sisters conceived. Kodru gave birth to a Nagputra, or *sapo*, a snake personified a son. Binota gave birth to garuda (vulture) and Aruno. When Gaurunda tired to bring amruto the Nagputra or *sapo* tried to stop him. The local name of Garuda is *chilo*. A great battle was fought between *chilo* and *sapo*. During the battle the *chilo* hit he earth with his wings and the earth got a depression at that particular area. This depression got filled up by sea water and was named Chilika. (Patnaik 1999 Report).

Another story regarding how the Lake originated relates to the time of Samudra-manthan or the great cosmic churning of the sea during the dawn of universal creation. While churning a spill of water from sea jumped off and fell on the adjoining area. Gradually this stretch of water got connected with the sea and became a lagoon.

According to the local villagers in *purukaal* (remote past) the mountains used to have wings and they could fly. This particular area in which Chilika was located
was close to sea and birds used to come to this area as it was full of natural food and forests. In fact God wanted to create a 'bihang bihar' (a bode of birds) in this area. But these mountains were naughty by nature and they used to hurt birds while flying. Most of the birds got injured and it became a regular affair. The birds then went to God, complained against the mountains and requested him to solve their problem. On hearing such mischievous acts of mountains the God got very angry and cut the wings of mountains. All of them dropped from the sky and 'got fixed up where they are now and started crying. It created a lot of water. Chilika was thus created out their fears which mingled with water of the sea.

**The Lake, Community Traditions and Social Institutions in the Indigenous System**

The dependence of the traditional fishing community on Lake resources was institutionalized through variety of social and cultural mechanism. Through religion, tradition and social stratification based on the use of fishing, the fishing community have drawn a practice ring around the Lake ecology.

The social stratification of the fishermen community based on the use of fishing gear also avoids maximum concentration in any particular sector of the Lake. This serves as an excellent tool to maintain operational balance and to ensure orderly exploitation of the resources of the Lake (Mohanty and Das Unpublished).

The fishermen community have also co-operation among themselves, which is reflected strongly in their village life. Each village has an organization called *desha*, which is like a caste panchayat (Ram 1994: 35). Each *desha* has a headman (Behera), a minister (mantri) and Rai Behera (somewhat like Vice-Headman). These are elected and not hereditary posts. The desha (and the behera) is responsible for settling disputes, administering collective property, organizing collective fishing for community purposes, etc.

It is apparent that the role and importance of the Lake in the life of the fishing community of Lake Chilika is highlighted by the existence and ongoing social and cultural institutions as well as religious practices which enable the community to reproduce its existence. The religious observances and rituals believed by the community reduce resource use, as for example, when taboos connected with births
and deaths and ceremonial occasions prevented fishermen from fishing and touching boats and nets for weeks at that time.

For the past few centuries the Lake had been managed by the traditional fishing communities through the system of caste panchayats. The panchayats imposed controls on various aspects of fishing. Numerous rules regarding the seasonal catch areas and community related fishing equipment ensured that the Lake was managed like a common property. There were festivals related to "No fishing days" and also "restricted fishing seasons" (The Hindu 1998: 79). During these restricted fishing seasons and no fishing days, these traditional fisher-folk worship their boats, nets, as well as 'Mother Chilika' and in this way all the inhabitants on her shore are referred to as her children. The Lake is both the 'Mother Goddess', the 'Mother Nature' and in both forms she loves and cares for her children. 'Mother Chilika', boats, nets are sacred to the fishing community of the Lake. They are a sacred force for them that provide sanctions for violation of taboos, that inculcates moral responsibilities in the group, which creates a common bond or collectivity among the group and binds them through their religious sentiments. Thus, this manifestation is also an affirmation of the collectivity in a Durkheimian sense as Durkheim saw religious beliefs and rituals as representing social realities, as a way of expressing and dramatizing social realities and is thus a sort of mythological sociology (Lukes 1975: 292). This myth is clearly applicable and seen in case of the religious taboos practiced by the fishing community of Chilika Lake.

This ideology aims at understanding the place that the natural order (i.e., the Lake) assumes in the life of the Fishing community of Chilika region. The traditional fishing community acts on nature and transforms it into forms that are of use to it. It is, therefore, asserted that the values of equality in society, collectivity in economy, accommodation in history, ethical living in philosophy, folkism in literature and group participation in are and music - the overriding social values which lead to harmonious relationship between community and their environment (Xaxa 1998:127).

India, even today, abounds in examples of such overriding traditions and social values. In the Yamuna, valley just upstream from Mussoorie the villagers poison the river with a drug derived from an elp just once a year at the time of the festival. All the fish killed by poisoning are then consumed in a communal feast to the accompaniment
of barley wine. The fish may be caught at other times of the year but only with nets; anybody poisoning the river at any other time is socially outcast. The Dheevar caste of Bhandara district of Maharashtra never catch fish going upstream on spawning migration, although they are exhausted and easy to catch. There are entire sacred groves and ponds in which no plant or animal is damaged. Many endangered and rare species of plants and animals survive today in such protected localities through such protected practices. Monkeys, peafowl, the banyan and other fig trees, and a variety of other plants and animals are regarded as sacred and protected wide over India (Gadgil and Malhotra 1994: 36-37). Thus the case of the Lake Chilika is singularly similarly important to the local traditional fisher-folk community and also for the environment.