



# Insight into the Socio-economic Life of Fishers of Loktak Lake, Manipur - A Ramsar Site

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## Abstract

Loktak lake, with an area of about 26 000 ha is the largest fishery resource of Manipur accounting for more than 50% of the fish producing area and it is also known as the lifeline of the state as around 12% of the people of Manipur depend on its resources. There are around 50 400 fishers dependent on Loktak lake. Fishing has been an age old practice of the communities around the lake who largely depend on it for their livelihood. A study of the present socio-economic status of the fishers of Loktak lake, Manipur was performed through direct interview of fishers using semi-structured interview schedule. The study revealed that 56.7% of the fishers belonged to age above 45 years, 35% had attained secondary education, 97.5% had kachcha house, 75% were occupied in fishing as primary activity and 36.7% had more than 16 years of experience in fisheries. A total of 46.7% of fishers had agricultural land and 35% of them had ring bunds for fish culture. The average annual income of the fishers was ₹ 42 222 and 51% of them had Below Poverty Line ration cards. The study found that the highest annual expenditure was spent on food (53%) followed by fisheries (17%). About 15.8% of fishers were indebted with credit above ₹ 15 000 and only 20% of fishers were found to have savings deposited either in Government banks or local non-formal organizations called "Marup". Engel's coefficient was 53% indicating the poor living condition of fishers of the lake which draws appropriate initiatives by concerned government organizations.

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## Introduction

Among the Wetlands of International Importance designated by the Ramsar Convention, the Loktak lake of Manipur, India has got its place. Due to its importance in socio-economic and cultural life of the people, it is considered as 'The lifeline of Manipur'. There are around 55 settlements in and around Loktak lake with a total population of 2 79 935 which account for nearly 12% of the total population of the state. Loktak lake, with an area of about 26 000 ha is the largest fishery resource of the state accounting for more than 50% of the fish producing area. Loktak Development Authority and Wetlands International – South Asia (2010) reported that there are around 50 400 fishers dependent on Loktak lake and fisheries of the lake support livelihood of about 44% of the households living in and around the lake.

Prior to 1950's, the lake contributed 60% of the fish production of the state. Later, it was reported to contribute only about 11% of the total state fish production (Trisal & Manihar, 2004). The commissioning of the Ithai Barrage, which is a barrage built across the Manipur river in 1983 blocked the migratory route of riverine fishes like *Osteobrama belangeri*, *Labeo angra*, *Labeo dero*, etc. which in turn resulted in the decline of fisheries of the lake. The barrage has changed the hydrological regime of the lake into a more or less permanent water level. The lake is facing severe threats due to siltation, eutrophication, pollution of rivers draining into it, agricultural run-off, human encroachment and destructive fishing practices such as use of pesticides by the local fisherfolk.

A proper management plan for Loktak lake with special consideration for sustaining its fisheries is the need of the hour, which is possible only when the fishers are involved in decision making and management of the lake. Henceforth, it is imperative to have a sound knowledge of the socio-economic and livelihood status of the fishers dependent on the lake to reach out to them. With this background, a study with the objective to analyze the present socio-economic status of fishers of Loktak lake, Manipur with regard to fisheries was performed. The findings of the study would bring light on the livelihood and living standard of the fishers that will help in taking up appropriate initiatives by concerned Government organizations.

## Materials and Methods

The study was conducted in selected fishing villages around Loktak lake of Manipur during 2012 to 2013. The lake is distributed in mainly two districts of Manipur, *viz.*, Bishnupur and Imphal West districts. Preliminary visits and interaction with Department of Fisheries, Manipur revealed that fishing activity in Loktak lake is carried out mainly in Bishnupur and Imphal West districts. Keeping this in mind, five fishing villages (Ithing, Thanga, Keibul Lamjao, Moirang and Toubul) from Bishnupur district and one fishing village (Samusang Shantipur) from Imphal West were selected for the study. It is noteworthy to state that two of the fishing villages (Ithing and Thanga) are island villages situated in the central open water zone of the lake while the other four (Keibul Lamjao, Moirang, Toubul and Samusang Shantipur) are lakeshore villages.

The fishers of the selected six villages constituted the sampling unit. The sample size selected for each village was 20 and thus, a total sample size of 120 was chosen for the study. Out of the total sample size of 120 respondents, 60 male and 60 female respondents were selected respectively. The respondents were selected using simple random sampling method.

A semi structured interview schedule encompassing various aspects of socio-economic and livelihood was the main tool used. The information on socio-economic status, livelihood of fishers and their dependency on Loktak lake were collected through direct interview of individual fisher respondents with the help of the interview schedule. The collected data were analyzed using descriptive analyses of SPSS version 16. Engel's coefficient was

estimated to assess the standard of living of the fishers using the following formula

$$\text{Engel's coefficient} = \frac{\text{Annual expenditure on food}}{\text{Annual total expenditure}} \times 100$$

## Results and Discussions

The socio-personal characteristics are represented in Table 1. The study revealed that majority of the respondents (56.7%) were in the old age group (> 45 years) followed by 27.5% who belonged to middle age group (36 – 45 years) and the remaining (15.8%) belonged to young age group (upto 35 years). Salim et al. (2013) reported in their assessment of social status of fishers' in India that 51.7% of the sample respondents were of the age group of 36-55 years.

Around 20% of the respondents were illiterates and 35% were educated upto secondary level, 25.8% upto primary level, 12.5% upto middle school level and only 6.7% upto college level. Devi et al. (2012) reported an illiteracy rate of only 8% fishers of Loktak lake region in an earlier study. Salim et al. (2013) revealed an average literacy rate of 79.96 and 71.22% in the inland capture fisheries sector of India. All respondents belonged to *Meitei* community, an ethnic community of Manipur. Majority of them (93.7%) were Hindus and few were Christians (3.3%).

Majority of the respondents (76.7%) had nuclear families and only 23.3% of the respondents had joint families. Majority of them (53.3%) had family size of upto five members and 46.7% had larger family size of more than five members with a maximum of nine members. Devi et al. (2012) observed that 58.67% of the fishers of Loktak lake region had family size of more than five members.

Majority of the respondents (97.5%) had kachcha houses and only 2.5% had semi- pucca houses. No respondent had pucca house. Bordoloi et al. (2012) reported similar findings that 90 % of the fisher respondents of Upper Brahmaputra River lived in kachcha houses. All the respondents had kachcha sanitation facilities. No case of open defecation was reported unlike the hook and line fishers of Vishakhapatnam who had no toilet facilities (Immanuel & Rao, 2012). Majority (40%) were found to use the lake water, 40% use pond water, 16.7% use well water and 16.7% use tap water for drinking purpose. With regard to fuel for cooking, 84.2% of

Table 1. Socio-personal characteristics of fishers

| S. No. | Characteristics            | Category                | Number | Percentage (%) |
|--------|----------------------------|-------------------------|--------|----------------|
| 1.     | Age (years)                | Young (Upto 35 years)   | 19     | 15.8           |
|        |                            | Middle (36 – 45 years)  | 33     | 27.5           |
|        |                            | Old (Above 45 years)    | 68     | 56.7           |
| 2.     | Marital Status             | Married                 | 119    | 99.2           |
|        |                            | Unmarried               | 1      | 0.8            |
| 3.     | Education                  | Illiterate              | 24     | 20             |
|        |                            | Primary Education       | 31     | 25.8           |
|        |                            | Middle school Education | 15     | 12.5           |
|        |                            | Secondary education     | 42     | 35             |
|        |                            | Collegiate education    | 8      | 6.7            |
| 4.     | Family type                | Nuclear                 | 92     | 76.7           |
|        |                            | Joint                   | 28     | 23.3           |
| 5.     | Family size                | ≤ 5 members             | 64     | 53.3           |
|        |                            | > 5 members             | 56     | 46.7           |
| 6.     | Religion                   | Hinduism                | 116    | 96.7           |
|        |                            | Christianity            | 4      | 3.3            |
| 7.     | Community                  | Meitei                  | 120    | 100            |
| 8.     | Social Participation       |                         |        |                |
| 9.     | Nature of involvement      | Office bearer           | 1      | 0.8            |
|        |                            | Member                  | 10     | 8.3            |
|        |                            | Non member              | 109    | 90.8           |
| 10.    | Frequency of participation | Weekly                  | 2      | 1.7            |
|        |                            | Monthly                 | 6      | 5              |
|        |                            | Occasionally            | 3      | 2.5            |
|        |                            | Never                   | 109    | 90.8           |

the respondents use firewood and only 15.8% use LPG (Liquefied Petroleum Gas) as majority of them cannot afford the cost of LPG. All the households had electricity.

Majority (90.8%) were not involved in any social organizations or institutions. This may be attributed to their occupation as they are busy indulging in fishing and fish culture and other allied activities for livelihood and have no time for participation. A small group of fishers (8.3%) were involved as members of Panchayats, Self-help groups or local clubs and 0.8% of them were office bearers. Devi et al. (2012) in a study around Loktak lake reported that only 18% of the respondents attended training programme. However, it was observed in the present study that the fishers had not attended any sort of training programme with respect to lake

management or conservation. Social participation was found low among the fishers which suggest clearly that there is a great need to train the fishers of Loktak lake region on aspects of the lake's fisheries and management.

The economic and livelihood characteristics are provided in Table 2. Majority of the respondents (75%) practised fishing as primary occupation and 25% practised fishing as secondary activity. Mangang (2012) in his study on Thanga village of Loktak lake of Manipur also reported that majority of the respondents (50.5%) were fishermen by occupation. A total of 36.7% of the respondents had more than 16 years of experience, 23.3% had 6 to 10 years, 24.2% had upto 5 years, and 15.8% had 10 to 15 years of experience in fisheries. Both men and women were involved in fishing. Majority of the respondent

Table 2. Economic and Livelihood characteristics of fishers

| S.No. | Characteristics           | Category                      | Number | Percentage (%) |
|-------|---------------------------|-------------------------------|--------|----------------|
| 1.    | Occupation                | Fishing as primary activity   | 90     | 75             |
|       |                           | Fishing as secondary activity | 30     | 25             |
| 2.    | Experience in fisheries   | Upto 5 years                  | 29     | 24.2           |
|       |                           | 6 - 10 years                  | 28     | 23.3           |
|       |                           | 10 - 15 years                 | 19     | 15.8           |
|       |                           | > 16 years                    | 44     | 36.7           |
| 3.    | Annual income             | ≤ Rs. 10,000                  | 0      | 0              |
|       |                           | Rs. 10,001 – 20,000           | 3      | 2.5            |
|       |                           | Rs. 20,001 – 30,000           | 41     | 34.2           |
|       |                           | Rs. 30,001 – 40,000           | 36     | 30             |
|       |                           | Rs. 40,001 – 50,000           | 17     | 14.2           |
|       |                           | Rs. 50,001 – 1,46,000         | 23     | 19.2           |
| 4.    | Credit                    | Nil                           | 63     | 52.5           |
|       |                           | ≤ Rs. 5000                    | 4      | 3.3            |
|       |                           | Rs. 5001 – 10,000             | 17     | 14.2           |
|       |                           | Rs. 10,001 – 15,000           | 17     | 14.2           |
|       |                           | > Rs. 15,000                  | 19     | 15.8           |
| 5.    | Number of Earning members | 1 member                      | 14     | 11.7           |
|       |                           | 2 members                     | 77     | 64.2           |
|       |                           | 3 members                     | 25     | 20.8           |
|       |                           | 4 members                     | 4      | 3.3            |
| 6.    | Agriculture land          | Agriculture land owned        | 56     | 46.7           |
|       |                           | No Agriculture land           | 64     | 53.3           |
| 7.    | Ring bundh                | Ring bundh owned              | 42     | 35             |
|       |                           | No ring bundh                 | 58     | 65             |

families (64.2%) were found to have 2 earning family members as both men and women members equally take part in fishing and allied activities for their livelihood. In addition to fisheries, agriculture (paddy cultivation), horticulture (vegetable cultivation) and livestock (dairy) were also practised.

The annual income of the respondents was found to be low. Annual income of 34.2% of the respondents was between ₹ 20 001 to ₹ 30 000, another 30% had annual income between ₹ 30 001 to ₹ 40 000, 19.2% had ₹ 50 001 to ₹ 1 46 000, 14.2% had percent ₹ 40 001 to ₹ 50 000 and 2.5% had ₹ 10 001 to ₹ 20 000. The average annual income of respondents for all the six fishing villages was between ₹ 27 800 to ₹ 59 775 with an average annual income of ₹ 42 222 Leima et al. (2008) in their socio economic study in nearby villages of Keibul lamjao

National Park of Loktak lake reported the average annual income between ₹ 37000 to ₹ 60938.

Not all the respondents had the habit of saving and only 20% of fishers had savings deposited either in Government banks or in local non formal organisations called “*Marup*”. Savings were found low ranging between ₹ 5000 to ₹ 60 000. Angela et al. (2012) also recorded similar findings that only 13% of fisher respondents of Stanley reservoir to have the habit of saving. Salim et al. (2013) found that majority of fisher respondents (59%) had no or negligible savings. Gopal et al. (2014) also observed the saving pattern among fishers of post-harvest fisheries sector in the country to be low with about 44.7% not having any savings and about 41.6% having total savings of less than Rs. 50 000. Around 47.5% of fishers were indebted with credit.

All the fishers were found to own the house area in which they live in but not all of them had agricultural land or ring bunds. Only 46.7% of the respondents had agricultural land and 35% had *ring bunds* for fish culture (Table 3). Ring bunds are fish culture ponds created around the periphery of Loktak lake by cutting *phumdis* (vegetation mass) and bunding the dyke of the pond with *phumdis* only.

Table 3. Status of Agriculture land and Ring bund area holdings among respondents owning them

| Characteristics       | Category      | Number | Percentage (%) |
|-----------------------|---------------|--------|----------------|
| Agriculture land (ha) | < 0.5 ha      | 17     | 30.4           |
|                       | 0.5 to 1.0 ha | 34     | 60.7           |
|                       | 1.1 to 1.5 ha | 4      | 7.1            |
|                       | 1.6 to 2 ha   | 1      | 1.8            |
|                       | >2 ha         | 0      | 0.0            |
|                       | Total         | 56     | 100            |
| Ring Bund (ha)        | < 0.5 ha      | 12     | 28.6           |
|                       | 0.5 to 1.0 ha | 30     | 71.4           |
|                       | 1.1 to 1.5 ha | 0      | 0.0            |
|                       | 1.6 to 2 ha   | 0      | 0.0            |
|                       | >2 ha         | 0      | 0.0            |
|                       | Total         | 42     | 100            |

Majority (95.8%) owned fishing craft i.e. dug-out wooden canoe and 98.3% had their own fishing gears like gillnets, hooks, cast nets, lift nets, etc. This shows their great dependence on fishing for livelihood. No ownership of four wheeler vehicles was observed but 6.7% of the respondents had two wheeler vehicles. Majority of them (55%) had bicycles because of its necessity in their daily livelihood activities. All of them had mobile phones. A total of 99.2% had radio and 53.3% had television in their houses. There was no account of the respondents using internet for communication. Majority of the fisher families (51%) had BPL (Below Poverty Line) ration card, 31% had APL (Above Poverty Line) ration card and 16% had AAY (Antyodaya Anna Yojana) ration card. This clearly shows their poor conditions with majority of them depending on BPL and AAY ration cards.

Ownership of gold jewellery was observed with 35% of the respondents. They mortgage gold jewellery

for credit as a common way of availing credit from local money lenders. Such case of hypothecation of jewellery for credit is also reported among the fishers of Andhra Pradesh (Gopal et al., 2014).

Table 4. Average Annual Expenditure of fishers

| Characteristics            | Category         | Average percentage (%) |
|----------------------------|------------------|------------------------|
| Average Annual Expenditure | Food             | 53                     |
|                            | Clothing         | 5                      |
|                            | Fuel for cooking | 6                      |
|                            | Lighting         | 3                      |
|                            | Education        | 7                      |
|                            | Medical          | 3                      |
|                            | Fisheries        | 17                     |
|                            | Farming          | 4                      |
|                            | Entertainment    | 2                      |

The study observed that 53% of total expenditure went on food, 17% on fisheries, 7% on education, 6% on fuel for cooking, 5% on clothing, 4% on farming, 3% on medical, 3% on lighting purpose (electricity bills) and the least 2% on entertainment (Table 4). The Engel's coefficient that indicates the proportion of food expenditure to the total household expenditure of the fishers was found to be 53%. The higher the Engel's coefficient value, the lower is the standard of living (Dahiya & Viswanathan, 2014). Salim et al. (2013) and Gopal et al. (2014) observed in their studies that the expenditure of fishers on food was the highest i.e. 38.47 and 31.54% of the total expenditure respectively showing that the living condition of fisher community is still low.

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