

Challenges of Fisherwomen of Loktak Lake, Manipur

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Abstract- An attempt was done in the Bishnupur district of Manipur to evaluate the issues faced by the women who worked as fishermen in the three villages of Thanga, Ithing, and Phubala as well as one island (Karang). To gather the data for this study, primary sources were used. With 350 respondents, at a confidence level of 95%, and a margin of error of 3%, semi-structured interviews were performed in the academic year 2019–2020. As a result, 90 percent of the sampled respondents work in the fishing industry, including fishing, fish selling, fish drying, and fish preservation, and 53 percent have over 10 years of experience in this field. They are also literate (80 percent). However, they encountered numerous difficulties, including using outdated fishing methods, a decline in fish yield due to an increase in the number of fisherwomen, a shortage of transportation, a lack of storage, etc. Implementing appropriate government actions, policies, and programmes is necessary for the fishing sector as well living conditions of the people.

Keywords: Women contribution, Fisheries activities, livelihood, Loktak Lake and challenges.

Introduction

A fisherwoman is a woman who earns a living by capturing and selling fish. They can also help with home tasks and financial commitments by selling or supplying fish. Women have been given gifts by God. Women's incredible strength, on the other hand, is dormant. If the women of Asia wake up, they candazzle the world, Mahatma Gandhi, 18th July 1947 (Kumar, et.al. ,2003). However, India is the world's 3rd largest fish producer after Chinaand the United States. Annually, India fishing productionis 14.15MMT(3.72MMT in marine and 10.43 MMT in inland), collected in the year 2019-2020 (Department of Fisheries, 2020),with more than 12 million people are directly involved in fishing, while 60 million people are entirely dependent on fishing for their livelihood in India, as the sector is essential for employment creation, foreign exchange earnings, and national income, it is also a significant contributor to Indian economic growth (Bhargavi, et al.,2020).

'LoktakLake' is quite famous for being the largest fresh water lake in the north eastern part of India and also a Ramsar site of international importance with an area of 287 sq. km. ItislocatedonthesouthernsideofthecentralvalleyofManipurandabout38kmawayfrom Imphal, the capital of Manipur. The fishing activities provide essential contributions to socioeconomic development since they served as the primary employment source for low-income families.

Moreover, being fresh water, this lake produces abundant fisheries resources and supports millions of people living around this lake, that's why this lake is considered a 'lifeline'. About 279,935 people live in and around 'Loktak Lake' and the majority of their livelihood depends on fishing and the supply of fish (Census of India, 2011), but after the construction of 'Ithai Barrage', built across the Manipur River in 1983, blocked fish migratory routes like *Osteobramabelangeri*, *Labeoangra*, *Labeodero*, etc., which led to severe problem in the lake ecosystem mainly fisheries production have declined. More over, due to siltation, eutrophication, pollution from rivers, agricultural run-off, human encroachment, and destructive fishing practices, such as pesticides, the lake is at excessive risk (Devi, and Singh, 2021 and Bharati, et al., 2017).

Here, many women are entirely dependent on fishing as one of their primary sources of food and income. But because of a lack of resources, such as improper tools, insufficient transportation, poor roads, insufficient health facilities, etc. So, the purpose of the study is to find out the challenges they faced. And the results of this study will be valuable to the concerned government agencies for taking appropriate measures for the betterment of the fishers' livelihoods living in the area of study.

Objectives

- The main objectives of the present study were –
- To examine the social conditions of the fisherwomen
- To study the challenges faced by the fisherwomen of Loktak lake

Data Base and Methodology

The study was mainly based on primary sources of data. The data was collected during the year 2019-20. To attain the study's aim and objectives, direct personal interviews with the help of schedule/questionnaire were conducted. With 95% confidence level, 350 female fisher respondents (those who involved in fishing, marketing, processing) were selected using Simple random sampling technique from three lakeshore villages of Bishnupur district (Thanga, Phubala, and Ithing (hut dwellers) and one island (Karang) of Loktak lake of Manipur.

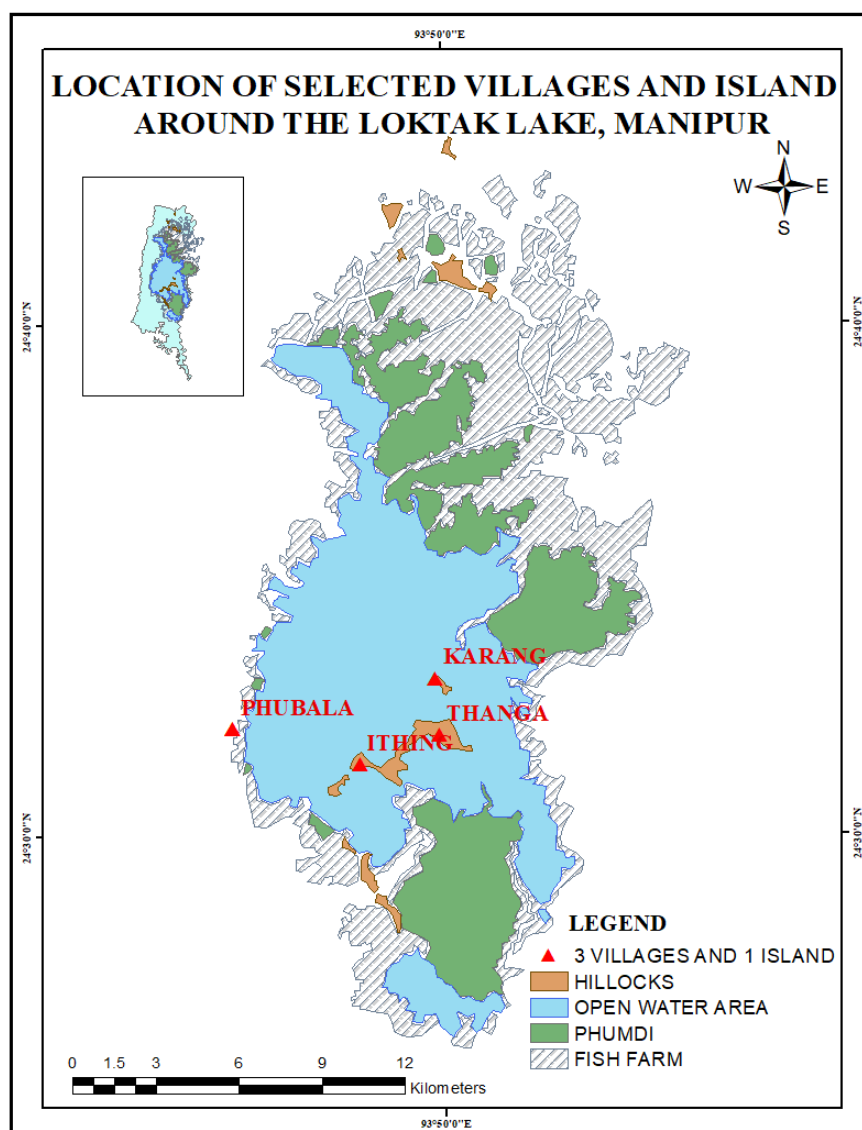
Study Area

In northeast India, lies the state of Manipur, which is connected to Myanmar (Burma) through an international boundary in the east. Despite having a population of 28.56 million (Census of India, 2011), 90 per cent of Manipur lies within the hilly region, while 10 per cent is within the valley region.

The valley region also known as Imphal valley of Manipur (93° 42' to 94° 11' E and 24° 41' to 25° 06' N) is an inter montane basin about 70 km long (north to south) and 30-35 km wide (east to west) and has oval-shaped with irregular outline enclosed by hills. The valley is a high floodplain with an elevation of about 760 m above mean sea level.

‘Loktak Lake’ has an area of 287 sq.km. Situated between 93°46' to 93°55'E' and 24°25' to 24°42' N(Fig.1). The lake appears soval-shaped, measuring 26 km long and 13km wide, with the natural catchment area being 1,040 sq. km. The indirect catchment area is 7,157 sq. km. (Moirangleima, and Devi, 2021). This lake is primarily covered with emergent, submerged, and floating vegetation. Normally, the submerged (locally known as ‘Charang’) site is embedded in every corner of the lake, and it provides an important function in exchanging nutrients between the ecosystem. The sediments or liquids above a body of water and their biological life are interconnected. The submerged macrophytes act as a flora/plant for controlling the water quality. Moreover, ‘Lokta klake’ is known for its large floating mats known as ‘*phumdis*’ which are made up of biomass, dead organisms, and sediments in differing thickness levels, and these ‘*phumdis*’ move according to the wind’s direction” (Devi, and Singh,2021).

Figure 1: Location of Sampled Villages in and around Loktak Lake, Manipur



Source: 1. Census of India, 2011; 2. Google Earth, 2019; 3. Google Map, 2019; 4. Sentinal 2a Msslic, Esa 2018

There are roughly 8 towns and 52 villages in and surrounding this lake, with a total population of about 2,20,017 people, or 9 percent of Manipur total population (Moirangleima, and Devi, 2021). The people around this lake can be divided into lakeshore villages (living near the lake), island villages (living on islands), and 'Phum' dwellers (living on floating huts). The 'Phum' dwellers are entirely engaged in fishing and other inhabitants are also dependent on fisheries to varying degrees. Manipur fishing industry is a significant economic resource, accounting for 3 percent of the state's total domestic product. The 'Loktak lake' and its accompanying wetlands within the Manipur River basin provide over 60 percent of the state's fish requirement (Singh, and Moirangleima, 2009).

Fish is the main food of most of the population, particularly of the Meitei, and occupies a special place in the traditions and livelihoods of people. As part of the ritual and traditional activities, fish are used 'Ushilshinba' (releasing fish in the water body to protect against illness/spirit), 'NgamuThaba' (in the time of marriage ceremony, to know if a couple lives together or not), as well as the grand festivals such as the 'Mangani Chakouba', 'Swasti Pooja', 'Manahutpa', 'Imoinueratpa' and 'Ningol Chakouba', etc. 'Ningol Chakouba' is the biggest festival of Manipur, especially for the 'Meitei' communities generally occurred in October and November every year. It is a festival for having a grand feast (fish dishes) with sisters, especially those who are married arranged by the brothers and parents. For this occasion, a fish fair with competition among fishermen is also organized in many parts by the government which promotes their interest in fish production with the hope of winning prizes and the sale of fishes are maximum during these days (Economic Survey of India, 2018). So, the fishermen living around the 'Loktak Lake' used to participate in this competition so and they sell fish at different prices during the time of above said festivals according to the demand.

Manipur is a state in north-eastern India famed for its freshwater lake ('Loktak Lake'). Because it is an abundant source of resources with high biodiversity, it has provided a lot of socio-economic value for the people's livelihood. In other words, the people who live near this lake rely on it to survive. This is because it is the simplest and most cost-effective way for them to earn money. They also faced considerable obstacles as a result of their status and severe economic conditions.

Discussion

In the field survey, the vast majority of participants were aged between 15 and 65. Over 95 percent of those in the sample were married. Their participation in fishing and associated activities contributes to the livelihood of their families. The process is much easier for them since 80 percent of them are illiterate. About 84.75 percent of the population is Meiteis. About

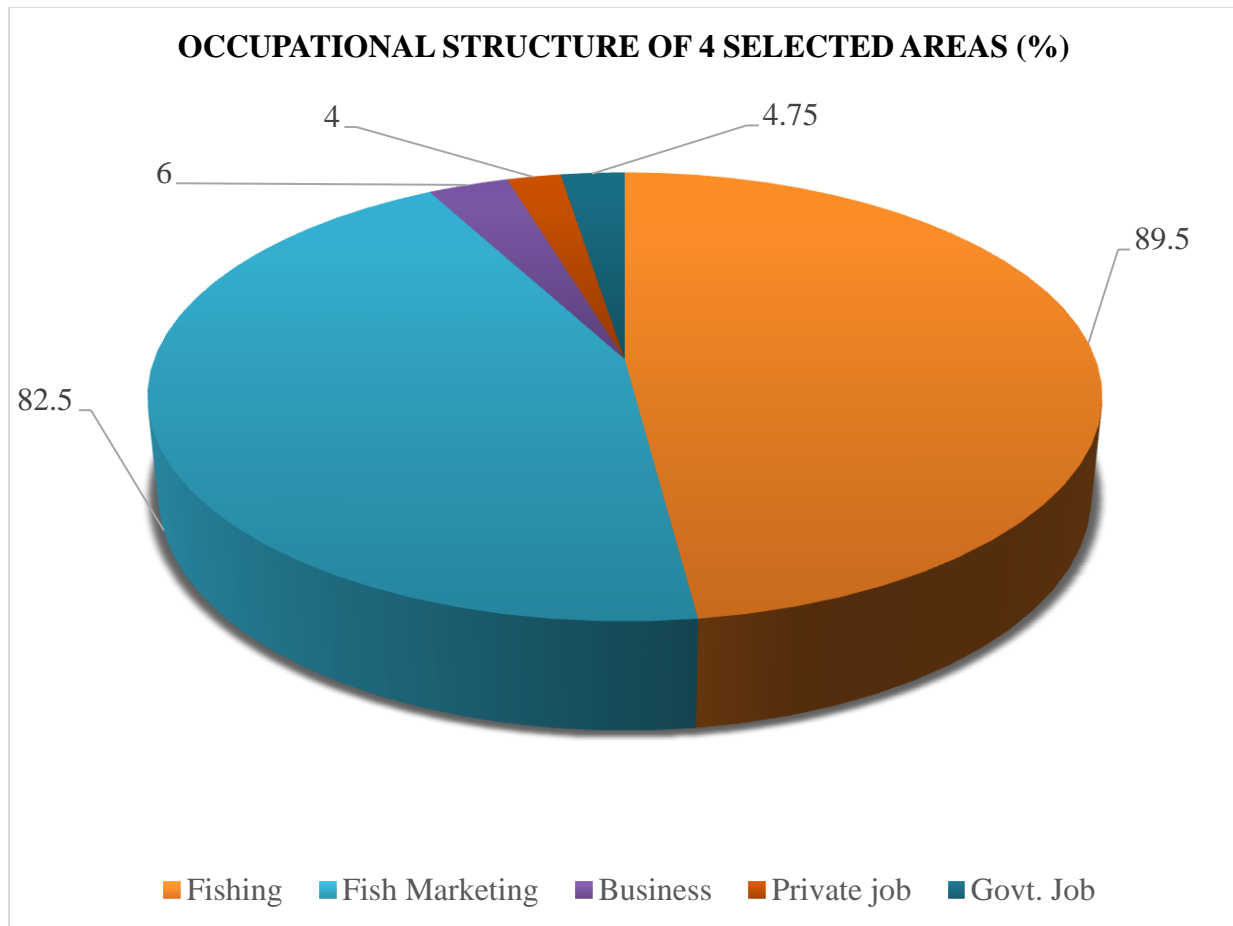


Figure no. 2: Survey results based on field research, 2019-2020

70 percent of the population lives in huts called '*kutchha*', 28.5 percent in 'semi-pucca houses', and 1.25 percent in 'pucca'. Most of the people who live near 'Loktak lake' drink its water for domestic use. In contrast, due to the lack of water connections or drainage systems, all home waste is discharged directly into 'Loktak Lake'.

According to the study, respondents are most likely to be involved in fishing (89.5 percent) and fish marketing (82.5 percent), with fewer being involved in businesses (6 percent), doing government work (just over 5 percent), and doing private work (4 percent) and being completely dependent on the lake (figure 2). Over 53 percent have been fishing for at least ten years.

Challenges

The fishery practices in the 'Loktak lake' are traditional fishing methods such as dugout canoes, nets, traps, hook/line fishing, wounding gears (Barbed and non-barbed), spears, pole and line, haps, cast nets, drag nets, gill nets, encircling nets and lift nets. Fish aggregation and capture, on the other hand, is the most visible fishing technique in the lake ('*Athaphum*' – making of '*Phum*' circles for fishing purposes inside the lake), and this floating '*phumdis*' after '*athaphum*' are a severe hazard to farmers as well as fish habitats (Chanu, and Singh, 2019).

Traditional Use of Fishing Tools



Many fishes can be caught at once with this '*Lang*', but it requires at least two pairs (persons).

Lang



'*Een*' is a very simple tool that's easy to use for those who don't know anything about fishing but still manage to catch fish.

Een



Een with small wooden canoe

Wooden canoe' helped the women catch more fish in the middle of the lake.

As a result, the middle lake has a higher catch rate than the lake site.

Photo plate no. 1: Types of traditional Fishing methods practiced by Sampled Respondents

As demonstrated in photo plate no. 1, the majority of the sampled respondents still use '*Een Chingba*' ('*Een*' means net and '*Chingba*' means pulling) which is supported by X-shaped bamboo, joints (*Hangen*) of different sizes which suit the size of the dip net ('*Een*'). Net Hauling Rope (*Eenching* – '*thouri*') and Bamboo Poles that fix the net in the water ('*Poura*') or '*Lang Thaba*' ('*Lang*' means net and '*Thaba*' means to keep, and some others name called it '*Een Jao*' means big net. And, there is a reinforced rope border around the net, which measures approximately 15' x 30' (Inch). When immersed in water, four edges of the net are projected upwards by bamboo poles. Whereas, bait consists of roasted rice, rice mixed with oil cake, or waste from the production of local wine. Usually, fish are lured by these baits inside a net when fishing. After a few hours or even days, a floating '*phumdi*' with 4 to 6 fisherwomen hauls up the net and collects the fish that have been trapped (Ngasepam, 2015) nets with sieve sizes of 18 and 20. The fish may not be caught right immediately and the process is long which might take up to six hours, but this can result in a host of health issues. They also had to cope with broken bamboo and nylon fishing gear at the time of fishing as these are mainly made of bamboo and wooden materials. However, because they are poor, they cannot afford to replace their tools, which is a bad situation for everyone involved.

During autumn and the rainy season (impact of climate change):

Fishing is one of the most vulnerable industries to the unpredictable effects of climate change. Weather and climate are still important variables in influencing fishing yield in most parts of South Asia, despite technological advancements in the twentieth century (Srikanthan, 2013). And the impact of climate change on fish can be seen directly since it affects their growth, physiology, and behaviour. It can also be observed indirectly, for as through effects on ecosystem structure and function. The metabolism of cold-blooded species, such as fish, is directly affected by warming. Temperature (moderate temperature) species will grow more quickly as the temperature rises, but they will shrink as they battle to sustain heart function and respiration (E-Pao, 2022).

During October and November (the autumn season), the sampled respondents reported experiencing strong winds that blew away most of their tools, while during the rainy season (monsoon season), significant rains generating floods may cause fish to migrate from the lake water. As a result of their incapacity to catch fish, fisherwomen have had to deal with several unpleasant situations. They have also reported being killed by lightning while catching fish during thunderstorms, as they are compelled to go fishing even in poor weather to feed their family.

Lack of storage and Preservation process

Fermentation, salting, drying, and smoking are some of the most effective tactics for storing fish in Southeast Asia. Traditional, preservation methods continue to play a significant role in the

state. But some of the nutrients are also lost during the sun-drying process (Chanu, and Singh, 2019).

Sampled respondents living near 'Loktak Lake' has several advantages, including the availability of fresh and dried fish (smoked, salted, and fermented), which are both in high demand because dried fish can be maintained for longer periods, resulting in a more substantial profit than fresh fish (due to excessive dehydration, 1 kg of fresh fish equals 500g of dry fish).



Photo plate no. 2: *Preservation of fresh fishes through net*



Sun drying



*Smoking fishes with the help of
Jalou*



Leirang for Smoking fishes

Photo plate no. 2: *Preservation Process of Fishes*

Apart from smoking, salting, and frying, they also adopted the fermentation method, which is done in the traditional technique known as '*Ngari*' (first it is covered in salt and then cleaned with water before being wrapped in bamboo mats (known as '*kharai*' in the region) and left in the sun for 3 to 4 days. After having lightly oiled (sunflower oil) the clay pot, it will be filled with dry fish and pounded tightly by hand), as well as '*hentak*' (a paste of dry fish powder rolled into a circle and exposed to the sun for 7-9 days in an earthen pot), etc. (Photo Plate no. 3). On the other hand, there is no access to cold storage and are dealing with the added burden of increased firewood costs as they used firewood to dry their fish for storage. The freshness of fish could be retained for an extended period by icing. However, none of the respondents had utilized or been aware of this technique. But only this type of drip net, shown in photo plate no. 2 is used to hold fresh fish for a few hours.

Lack of Transportation:

The fisherwomen use water boats (made from wood, shown in picture no. 2) and Tata Magics (comparable to a jeep) as means of transportation. Water boats are used in catching fish as well as for navigation especially on Karang island while Tata Magic transports fish near the markets. But the problem is that Tata Magic only runs 3 times a day (like morning, afternoon, evening, etc.). Karang Island faced more challenges as compared to others in this as it is only connected through waterways as well as more problems due to bad weather conditions. The longest distance they travel for selling fish to Ima Market (mother's market) is 31.5 kilometres especially in the early morning around 3-4 am. They also missed public transport buses which are available at Thanga village as well as Moirang Bazaar (20 minutes to reach) due to early morning & sometimes unavailability. So, they hire private vehicles (tata magic) in groups of 3 or 4 passengers per trip which added more cost than public transport. Due to some unstable situations in the state like sudden strikes/bandh/blockade, they faced severe problems in selling as well as storing a large number of fishes that they caught.

Marketing

Bishnupur, Ningthoukhong, Nambol, Moirang, and 'Ima Kethel' are the available markets where these fisherwomen used to sell their fish. The majority of respondents prefer to sell on the main market i.e., Ima Market, where they got more profit as compared to other smaller markets. But these respondents used to sell their fish to retailers at a wholesale rate and they are unable to find a permanent seat in these markets. Thus, about 35 percent of women respondents sell at the wholesale rate at a lower price while 50 percent of them risk their lives by selling fish at the roadside (Photo plate no. 4). Even they sometimes faced road accidents as well as traffic authorities also not allowed to sit there. But the main reason is that having poor women and unavailability of limited tools and an increasing number of fish vendors cause very challenging for them. Due to this, the fish vendors reduced sale rates and compel to sell at lower prices Some are selling fish from home to home (15 percent), as shown in picture no. 5.



Photo plate no. 4: Selling fishes on the road.

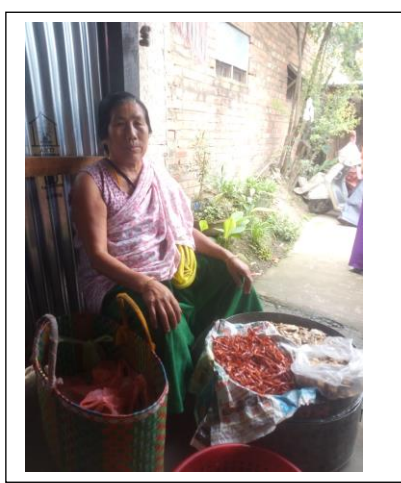


Photo plate no. 5: Selling fishes home to home.

Fetching water for Drinking water

The quality of water, which is vital to humanity, has a direct impact on human health (Chanu, and Singh, 2019). From the MPCB, 2019-20 data the drinking water quality of 'Loktak lake' meets BIS drinking water quality criteria for drinking and domestic use since the physio-chemical parameters of the lake water are below the optimal limits of BIS requirements". Field surveys reported that all the sampled respondents i.e., 100 percent depend on the 'Loktak Lake' for drinking but it is difficult to fetch water from the middle of the lake as it is quite clear in the middle of the lake. But bad weather conditions have posed numerous challenges for fisherwomen's families. Thus, they may prefer a private water tanker service for drinking water which added a cost price.

Health Issues

Health is most directly linked to social and economic status (Chanu, and Singh, 2019). Of the sampled respondents, almost all are facing lots of problems regarding the processing in the fishing activities like spending long hours catching fish 5 - 6 hours; carrying heavy loads; travelling long distances; smoking fish, sitting in a hygienic area; cutting fish pieces with no precaution; not taking adequate rest, etc. can

result in headaches, fevers, back-borne, water-borne diseases, skin problem, etc. but smokers are more likely to develop lung cancer and have blood pressure problems

Based on figure no. 3, only 42.7 percent are taking healthcare like consulting the doctor, taking medicine properly, taking a meal also, handwashing, washing cloth, etc. Thus, awareness programs, surveys, and care are in high demand.

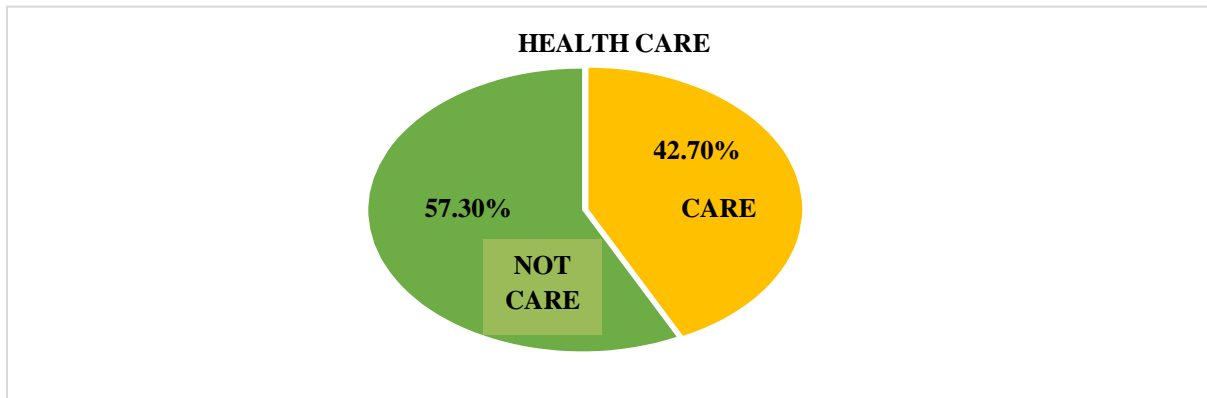


Figure no 3: Survey results based on field research, 2019-2020

Family support

In the fishing community, over 80 percent of women live in appalling conditions. This is due to their husband-and-wife disrespect for each other, as well as the misbehaviour of their family members. As a result, they try to obtain as much money as possible to go in peace. So, people that live near the lake are more willing to lean on it for basic needs and maintenance, which contributes to poverty. As a result, this lake is regarded as Manipur's lifeline.

Conclusions and Suggestions

Fishing women face a wide range of challenges throughout their lives, as discussed in this paper. 90 percent of the sampled respondents are in the fishing industry. Having 80 percent of the people literate makes it easy for them to find ways to earn money, but their challenges make them in worst conditions like the traditional use of fishing tools, winter and autumn rains (impact of climate change), lack of storage and preservation, lack of transportation, marketing, fetching water for drinking, health challenges, and family issues, etc. But increasing fish vendors and improper fishing techniques and means of transportation issues make their life more difficult. So, they want some needs from the government which had not taken any action for their suitable like improper roads, means of transportation etc. till now, the people have been struggling to improve their living conditions.

Despite several problems occurring in these 4 sample areas, the paper points out that they are experiencing critical health issues. They do not know about the benefits of government programs and do not know how to provide appropriate care for themselves. For this reason, they need some training in fishing and processing to get more demand. In addition, taking care of their health is also highly imperative and can be accomplished.

Although, if they are not proactive and alert here, no highlight have not been seen them. So, they better find their need and take action accordingly.

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