



# Fishing Wisdoms of Fisher-Folks of Sepahijala District of Tripura

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## ABSTRACT

Fishing is an important as well as integral activity for livelihood of fisher-folk community of Sepahijala district. In this study, an effort was made to document the traditional fishing wisdoms in terms of fishing boats and practices of Tripura. For the purpose, participatory rural appraisal (PRA) in three important fishing grounds namely Gumti river basin, Bijoy rivulet, and Rudrasagar lake was conducted. Group discussion, direct observation, filling of questionnaires with 30 fishermen through survey was made to document the details of traditional fishing boat and fish harvesting practices. Three basic types of traditional wooden boats/crafts viz., *Choto kusa*, *Bara Dingi* and *Saranga* being were used during fish harvest. Most of the fishing boats were constructed using locally available wooden materials and fishing without gear, stupefying methods, poisoning, using spit and joined cast netting were also practiced.

**Key Words:** Fishing technique, Sepahijala, Traditional fishing boat.

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## INTRODUCTION

Fish is an important constituent in the diet of people of Tripura with more than 95 per cent of the populace being fish lovers. The state has an estimated 3.26 per cent of the total geographical area as water bodies. Area under open water fisheries constitutes 23.29 per cent with remaining 76.71 per cent being under culture fisheries. The total demand of fish in Tripura is 92,505.12 Mt with a major chunk (nearly 76%) of fish supply derived from local production. Total number of ponds/ tanks which are used for culture of fish is around 19,8501 which covers a total water area of 26,538.18 ha accounting for total fish production to the tune of 70220.49 Mt. Aquaculture is also practiced in mini barrages, covering an area of 9241.54 ha and contributes to about 23,773.93 Mt of fish production (Anon, 2012).

Capture fisheries also have an important role to play in total fish supply in Tripura. Dumbur reservoir with an area of 30,49.34 ha accounts to a production

of about 668.83 Mt. Fishes are also collected from Rudrasagar Lake which has a total area of 100.46ha at Sepahijala district and production is 27.00Mt. At present, the total productivity from culture fisheries is 2783kg/ha/yr whereas those from capture fisheries is merely 220kg/ha/yr. Total requirement of fish seed for culture fisheries is 2693.20 lakh while of capture fisheries is 39.39 lakh (Anonymous, 2017).

Sepahijala district is bounded in the west by Bangladesh, north by West Tripura, east and south by Gomati, Khowai and South Tripura district. From fisheries point of view, Sepahijala district stands tall as an important district with huge potential for expansion. This area is blessed with river Gomati, numerous rivulets and a wetland Rudrasagar lake-a Ramsar site. In terms of fish production from those resources it accounts for nearly 2.13 per cent share. It is mainly contributed by fishermen community of this area (Upadhyay and Singh, 2013). The total number of fulltime fishing population in the State

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is 18190, while, 16029 are part time fisherman and around 9122 are occasional. There are 142 numbers of Fishermen co-operative Societies at Tripura (Munilkumar *et al*, 2011; Anonymous, 2017). The fishermen have been following the traditional methods for capturing or harvesting the fish. Report of fishing at Brahmaputra river was also documented wherein line fishing was used (Barua *et al*, 2019). Piscicidal plants/fish attractants used for catching fishes from Assam was also reported (Devi *et al*, 2014).

Tripura, a state of north eastern India has rich aquatic biodiversity and has been placed 6<sup>th</sup> among 25 hot spot biodiversity of World (Saha and Nath, 2013). From various literatures, it was observed that very few studies were taken up in context to Tripura as well as Sepahijala district to document traditional fishing boats and fish harvesting practices by fishermen community. So, this investigation was carried out to document the indigenous fishing techniques and traditional fishing boats of Sepahijala district.

## MATERIALS AND METHODS

This study was conducted in vicinity of 3 fishing grounds of Gumti river basin, Melaghar; Bijoy rivulet, Bishalgarh and Rudrasagar lake, Melaghar of Sepahijala district. Out of 7 blocks, 3 blocks were selected for study purpose (Bishalgarh, Melghar and Nalchar). A questionnaire proforma was designed to collect various information related to use of traditional fishing boats, indigenous fishing practices, fishing nets, fishing gears etc through participatory rural appraisal (PRA) technique/methodology. Thirty (30) numbers of fishermen were selected randomly for this study. Field visits along with respondent were done to find out the traditional ways of fishing. An account of verbal discussion with the fishing community of that area was adopted. Details of technical information related to fishing practices were recorded in survey formats in local dialect (Bengali language) after direct observation and group discussion in those

study areas. Literature survey also followed to obtain secondary data.

## RESULTS AND DISCUSSION

### Fishing boats (crafts) used for traditional fishing practices

The fishermen of this state are highly resource poor. They themselves or sometimes the village carpenters go for construction of boat as wood is mainly used for boat building. There were different types of boat used by the fishermen. Those practices are inherited pattern of individual. Most of the gears are operated from boats according to their convenience for catching fishes. Most of those boats were utilized by the fishermen for catching fishes from *beels*, rivers here.

#### Chota Kusa

This is a flat bottom plank-built canoe (Fig.1). “*Chota Kusa*” is mostly used by the fishermen in Tripura. Earlier, “*Bhora*”, floating platform so called raft, made up of banana trees, were used but now only in some places it is in use. This type of boat may be about 3-5m in length but it may extend up to 10m in length. Displacement of boat is 130kg when empty. It is sometimes painted with coal tar for protection purpose from degradation of wood. It is mainly used for putting or placing traps in the shallow areas of Rudrasagar Wetland. Construction of this type of boat is about Rs 5500-7000/-. This type of boat lasts for 5-6 yr.

#### Bara Dingi

This is ‘U’ bottom dugout canoe (Fig.2). It is built from wooden log (tree *Gamai*) and propelled by bamboo pole. Its length is 5 mt. It helps in operation of drag nets in Rudrasagar lake. Construction cost of this type of boat is around Rs 4500-5000/-. This type of boat lasts for 4-5 yr.

#### Saranga

This is also a ‘U’ bottom plank-built boat (Fig.3). Its length is 4-5m. It is mainly used in the Rudrasagar lake during night hours for duty

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purpose or for watching purpose. It is also seen in Bijoy river. V- bottom boats are very rare in Tripura. Construction cost of this type of boat is about Rs 6500-6800/-. This type of boat lasts for 7-8 yr.

### Traditional Fishing Practices

#### Fishing without Gear

This is so simple, that small kids often engage themselves in collection of small fishes (example *Puntius* spp., *Glossogobius* spp. etc.). This type of practices is mostly encountered in swamps, canals, drains, low lying areas, domestic ponds of hilly regions, river sides etc. In summer, when water level of pond recedes, then it is practiced. Sometimes, the fishermen make the water body turbid and catch the fish by hand. Hence, such type of fishing with grasping by hands locally known as “*Hataiya Machhdhara*”. Sometimes, snails, mussels, crabs (*Sarteroana spinigera*) are caught by this way. Another way of catching fish is by diving, locally known as “*Dubaiya Machhdhara*”. It is mostly seen in rivers for catching catfishes.

#### Stupefying methods (Poisoning)

Locally it is called as “*Bish dhala*”. The fishermen collect toxic plants barks, leaves, fruit etc for poisoning. It is prohibited legally, but its popularity and use is growing day-by-day. The roots extract of *Mitellia* spp. locally called “*Bishlata*” is used in rivers, ponds, reservoirs for poisoning. The kernel of cotton seeds is also used for poisoning. The barks of Karat plant and Tamarind husks are grinded and its extracts are used for poisoning. The fruits of *Baringtonia* plant used as poison. Among chemicals, Endosulphan and Agrosulphan are generally used. These toxicants cause haemolysis of blood cells resulting in suffocation and death (Hussein *et al*, 2019). The herbal extractives also have narcotic effect and the fish become senseless. They float on the surface and these fishes are collected by net (Fig. 4).

#### Other Methods (Using spit)

This is a peculiar type of fish catching. The fishermen hold a smaller piece of cloth (with or

without bamboo pole) on water. He starts spitting on it. Indian Flying barb (*Esomus danricus*), large razor belly minnow (*Slamostoma bacyle*) etc come to eat the spit. When they aggregate over it, he slowly pulls up the cloth and harvests it (Fig. 5).

#### Joined cast netting

It is mainly practiced in river. About 8-9 boats go to cover the whole breadth of river and throw the cast net from each of boat (Fig. 6). During raining season and flood in river this method is followed (Anon, 2012). Fish catching in Sepahijala district is an important and integral part/ activity for supplementary livelihood of people. Government is supporting continuously the poor fishermen. Around 1641 Dwelling houses have been constructed for poor fishermen families by the State Department of Fisheries, Tripura. Traditional boats are in use till date in various corners of this district. There is no strict implementation of rules and regulation for catching fish from wild water bodies. Some of these measures are to be followed to conserve the fish biodiversity and integrity of ecosystem.

Though, traditionally cast net and drag nets are very popular, the gill nets of different mesh sizes are replacing gradually them and contributing more than 70 per cent of the total catch. Dynamite (explosive) to collect the fish is not practiced as it is now banned as it creates natural pollution. The fishes in the water suddenly lose their balance by explosive sound and floats on the surface and these are harvested by using net.

The traditional fishing methods now-a-day are converted into indiscriminate fishing methods. Tortoises are seen very hardly due to overexploitation. Earlier brooders of Giant Freshwater Prawn (*Macrobrachium rosenbergii*) were plenty in the rivers but now it is also very rare. There should be provision for closed season, sanctuary, mesh size regulation, closed areas of fishing. The problem due to poaching and poisoning only can be solved by mutual understanding. Time has come to be aware about preventing the water pollution only to save aqua resources.

Photographs of Traditional Fishing Boats and  
Fish Harvesting Practices of Sepahijala District of Tripura



Fig 1. *Choto kusa* .



Fig 2. *Bara Dingi* .



Fig 3. *Saranga* .

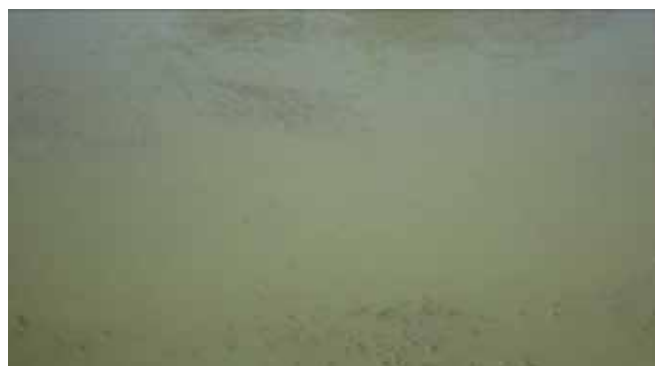


Fig 4. Fishes are floating due to poisoning .



Fig 5. Fishing using spit.



Fig 6. Cast netting.

**CONCLUSION**

Traditional fishing crafts/ boats that are used by fishermen community may be studied in order to improvise for better performance for fish catch. Fishing in open water may be a threat to biodiversity. More studies need to be initiated on this aspect. Indigenous fishing techniques may be

documented and preserved for future referencing. Tripura may become one of the leading inland states of India if its aqua resources are harvested to optimum level with increasing emphasis on aquaculture rather than traditional capture fishery. This study may be helpful for scientific community, researchers and policy makers for relooking the

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fisheries management of natural aquatic resources and conservation of local fish biodiversity followed by germ plasm conservation in the future days to come.

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