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## AK Bose

ICAR-Central Inland Fisheries  
Research Institute, Barrackpore,  
Kolkata, West Bengal, India

## Ridhi

ICAR-Central Inland Fisheries  
Research Institute, Barrackpore,  
Kolkata, West Bengal, India

## S Gupta

ICAR-Central Inland Fisheries  
Research Institute, Barrackpore,  
Kolkata, West Bengal, India

## VR Suresh

ICAR-Central Inland Fisheries  
Research Institute, Barrackpore,  
Kolkata, West Bengal, India

## AK Das

ICAR-Central Inland Fisheries  
Research Institute, Barrackpore,  
Kolkata, West Bengal, India

## Indigenous fishing (*Char Kanta*): A traditional fisheries in River Tawa, Madhya Pradesh, India

AK Bose, Ridhi, S Gupta, VR Suresh and AK Das

### Abstract

Hook and line is one of the ancient, cheapest, comparatively harmless and sustainable fishing practices which are in use throughout the world. The present investigation documented an interesting traditional fishing method, '*Char Kanta*' from Sarni reservoir in river Tawa, which so far remain unexplored and under documented. This fishing technique is unique in nature and is easily practiced by the poor fishers. This fishing method is operated throughout the year in stagnant and low tidal areas of the river and is mainly practiced for catching high market value fishes like Indian Major Carps. It is a low cost fishing technique which supports the livelihood and food supply to the poor fishers.

**Keywords:** Indigenous fishing, *Char Kanta*, Hook, Bait, Tawa

### 1. Introduction

Fishing using effective indigenous traditional methods is an age old practice that has been followed by fishermen communities all through India. Fishing methodologies used in a particular geographical area depends on various behavioral characteristics and microhabitat type of the fish fauna available in that area<sup>[1]</sup>. The crafts and gears which are in use at present in our country are mostly primitive and non-mechanized<sup>[2]</sup>. A proper knowledge on the gears and crafts used as well as the methodologies followed by the fishers is important for sustainable exploitation and management of the fishery resources. So far a number of researches have been conducted in different parts of India to document the available traditional crafts and gears which are in use for fishing<sup>[1, 3-29]</sup>.

Hook and line is one of the ancient, cheapest, comparatively harmless and sustainable fishing practices which is in use for a long time. Fishermen utilized their own knowledge by using indigenously prepared bait for easily catching fish through this technique. Some selective ingredients are used to prepare bait for specific fish species. Selection of ingredients mainly depends on the feeding preference of the fishes to be captured. This kind of fishing technique supports the daily livelihood and food supply to the poor fishers.

Tawa River, which originates from the Satpura Range in Madhya Pradesh, is the longest tributary of River Narmada. It supports diversified fishery resources and thus a good number of traditional fishing methodologies are in practice by the fishers of this region. During the present study, a traditional fishing method named '*Char Kanta*' was documented at Sarni reservoir which involves the use of indigenously prepared bait and hooks for capturing high market value fishes like Indian Major Carps.

### 2. Methodology

The survey was conducted during 2010-2012 along the entire stretch of river Tawa from Rampur (22°08.910" N and 78° 20.318" E) to Bandrabha (22°48.250" N and 77° 47.443" E) covering nine selected sites namely Rampur in Chhindwara district, Khairwani, Rajdoh, Sarni Reservoir, Nandiya Ghat and Tawa Kuti in district Betul, Tawa Reservoir, Tawa Pool and Bandrabhan (confluence point of river Tawa and Narmada) in Hoshangabad district for documentation of the existing fishing gears in this area. The investigation was conducted on a monthly basis and information regarding various fishing aspect was collected through a scheduled survey, repeated and extensive field visit, on-site (direct) observations, group discussion with the farmers, focused interviews with questionnaire during personal interaction with the fishers and different communities living around river Tawa.

### Correspondence

#### AK Bose

ICAR-Central Inland Fisheries  
Research Institute, Barrackpore,  
Kolkata, West Bengal, India

A structured interview schedule and questionnaire were developed, incorporating all the queries to accomplish the objectives set for the study. An attempt was made to prepare an unbiased, clear, concise, complete and comprehensive interview schedule. Every sincere effort was made to clarify the question by repetition to ensure and collect reliable data from the respondents. Emphasis was given to the materials used in whole operation, type of bait used, mode of operation of the bait, operational process, targeted species, manpower, harvesting size and fishery related issues associated with them. Fishing with 'Char Kanta' was observed at Sarni reservoir in river Tawa.

### 3. Results

'Char Kanta' is a traditional fishing technique which was observed at Sarni reservoir in river Tawa. The reason behind this nomenclature is due to the fishing method which involves 'Char' (indigenously prepared bait) and 'Kanta' (specific hooks) for selective species with different sizes. This indigenous selective approach makes this technique interesting and unique in nature by which fishers easily catch fishes from all the ecological niches. This fishing method is mostly practiced for catching high market value fishes like Indian Major Carps. Some selective ingredients are used to prepare the selective bait for selected fishes while specific hooks are used to catch specific size of fishes. This is a low cost fishing technique which provides daily food and supports the livelihood to poor fishers. This fishing method is operated throughout the year in stagnant and low tidal areas of the river; and maximum 2-4 hours are required for each operation. Selection of ingredients to prepare the bait depends mainly on the feeding preference of the fishes.

'Char Kanta' fishing method requires several type of ingredients and materials such as bamboo (*Bambusa vulgaris*) stick, bamboo pieces, hooks, nylon thread, scoop net, fermented rice (*Oryza sativa*), decomposed coconut (*Cocos nucifera*), dust of gram (*Cicer arietinum*), mustard (*Brassica juncea*) oil cake, jowar (*Sorghum bicolor*), fenugreek (*Trigonella foenumgraecum*), cardamom (*Elettaria cardamomum*), ekangi (*Kaempferia galangal*) bark powder, jayatri (*Myrsitica fragrans*) etc.

#### 3.1 Bait Preparation

The bait is usually prepared using fermented rice (*Oryza sativa*), decomposed coconut (*Cocos nucifera*), wheat (*Triticum spp.*) powder, Gram (*Cicer arietinum*) powder, mustard (*Brassica juncea*) oil cake, Jowar (*Sorghum bicolor*) powder, with little amount of different types of attractants like fenugreek (*Trigonella foenumgraecum*), cardamom (*Elettaria*

*cardamomum*), ekangi (*Kaempferia galangal*) bark powder, jayatri (*Myrsitica fragrans*) etc. Species specific feeding ingredients and herbal attractants are mixed and mashed properly with water to prepare dough like component.

#### 3.2 Mode of operation

First of all, the bamboo stick is selected according to the depth of the water where the fishing to be performed. Generally the length of the selected stick should be 2-4 m more than the water depth. Bottom of the bamboo sticks are serially fixed on the river bed of the selected fishing point. For support hassle free fishing against wind action and force of the fish, an extra bamboo pole is fixed just near to bamboo stick in operation. A triangular shaped pocket is made in the middle portion of a hollow bamboo piece (1-1.5 feet length) and it is then fixed on a selected height of the bamboo stick. The position of the bamboo piece to be fixed on the bamboo stick depends on the feeding habitat/ niche of the targeted fish species. A small ring like structure is fixed on the upper portion of the bamboo stick, through which a nylon thread (1 mm in diameter) is passed and a specific hook (based on the size of the fishes to be captured) is strongly tied to the end of that thread. Size of the hook is chosen on the basis of targeted fish size and generally small sized (15-20 mm) hooks are used by which fishers are used to catch 4-5 kg size of fishes. Length of the nylon thread is set according to the depth of the water and it should be 5-8 m higher than the water depth. The hook is placed in the triangular pocket of the bamboo piece and is properly covered with the indigenously prepared bait. At a time, 5-10 of this kind of set up is used. In some cases, apart from keeping hooks covered by the bait inside the pocket; sometimes hooks with bait attached are also kept hanging near the bamboo piece to enhance the chance of capture. Upper end of the nylon thread carrying the hook at the bottom end is held by the fishermen and they used to watch the set up from a distance sitting on a boat. When any fish nibbles the bait and starts feeding, the upper portion of the nylon thread attached to the bamboo stick starts vibrating that alerts the fisher. In response, the fisher quickly starts to pull the nylon thread as a result of which the hook comes out from the pocket and gets entangled to the mouth of the fish. Finally, the fisher harvests the fish out of the water with the help of a small scoop net. In this kind of fishing operation, installation of the gear and fishing is done using small non-mechanized boat.

#### 3.3 Harvesting size

Harvesting size is not always fixed for this type of gear; reportedly it varies from 4-5 kg in each operation.

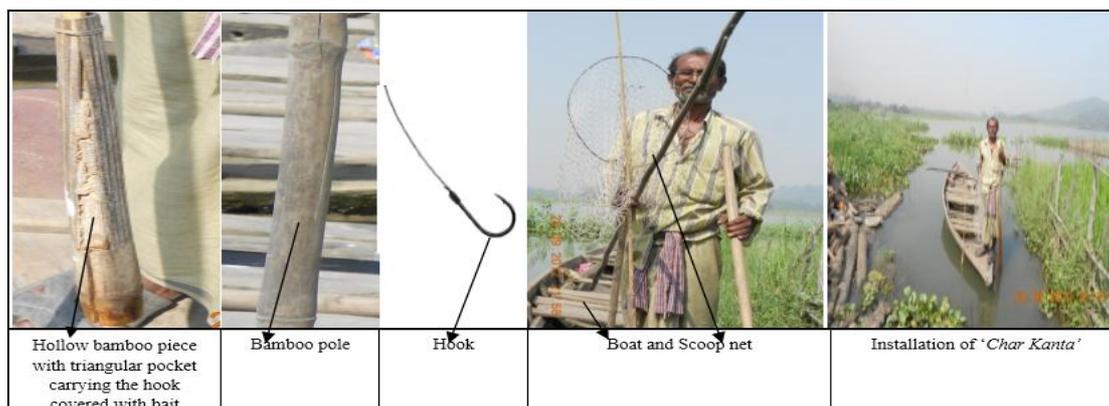


Fig 1: Overall representation of 'Char Kanta' fishing

#### 4. Discussion

Fishing using baits is an excellent technique which is in practice for a long time in different parts of India<sup>[1, 17, 20, 23, 24, 27, 29]</sup>. 'Char Kanta' is also a kind of bait fishing where inclusion of attractants has been made to lure the targeted species and to make the fishing practice fast. There is the scope of further research to identify more suitable attractants for this kind of fishing technique. Venkateshwarlu *et al.*<sup>[30]</sup> have reported higher attraction of *Catla catla* towards food containing ekangi (*Kaempferia galangal*), latkhandhana (*Bixa orellana*) and aobel while *Labeo rohita* showed higher attraction towards food with kakla (*Piper cubeba*), ekangi, latakasturi (*Abelmoschus moschatus*), kharbaz and tambul. So, the existing technique of 'Char Kanta' can be further modified using baits with these kinds of attractants to enhance the catch potential.

#### 5. Acknowledgement

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