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'Kunche Jal' Fishing: A low cost indigenous fishery in Ganga River Basin

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Abstract

River Ganga has been considered as the most important river of India. It supports enriched fish diversity and thus good number of people residing around the Ganga river basin is engaged in fishing to sustain their livelihood. Detail knowledge on fishing gear, crafts and fishing methods in use is very essential for scientific and judicious exploitation and management of fishery resources. Earlier scattered information on indigenous crafts and gears in use for fishing in river Ganga, India has been documented. In the present study, an attempt was made to document the existing indigenous fishing methods along the lower stretch of river Ganga more specifically around Triveni, Hooghly district, West Bengal. During the survey, an indigenous traditional fishing technique locally known as '*Kunche Jal*' fishing was observed. This low cost fishing technique is used to harvest small indigenous fishes which take shelter in mud/ silt during the low tide condition.

Keywords: Indigenous, Fishing, '*Kunche Jal*', Ganga river Basin

1. Introduction

River Ganga is a trans-boundary river that flows through two nations namely India and Bangladesh. It is the fifth largest river system in the world ^[1]; which is about 2,525 km long and its basin is 8,61,404 km², draining about one fourth area of India. It occupies a unique position in the history and civilization of the Indian subcontinent and has been regarded as the national river due to its historical, socio-cultural, geographical and economical reasons ^[2]. This river originates from 'Gomukh' in the Garhwal Himalaya; then flows through the Sivalik hills and enters the plains at Haridwar. Then it flows southwards through the Indo-Gangetic plains in Uttar Pradesh, Bihar and West Bengal and finally joins the Bay of Bengal. In respect to fisheries point of view, river Ganga has been considered as the most important river of our country. Apart from being the natural abode of most prized food fishes of the country i.e. *Labeo rohita*, *Catla catla* and *Cirrhinus mrigala*; it also supports fisheries of other commercially important fishes like catfishes, mahseers, hilsa etc. ^[3-6]. River Ganga supports a diverse fish fauna, with about 260 fish species reported from Indian waters ^[7]. Due to the presence of high diversity of commercially valuable fishes; this river provides food (in the form of fish) as well as supports the livelihood of about 7 million people residing in the Gangetic plains ^[7].

As good numbers of people residing in the Gangetic plains are engaged in fishing; there is high chance that extensive range of traditional fishing methods are available there which are in use to harvest fishes. Detail knowledge on fishing gear, crafts and fishing methods in use is very essential for scientific and judicious exploitation and management of fishery resources. Information gathered on traditional fishing techniques can help to devise modified fishing methods to enhance the capture as well as to reduce the operation period. On the other hand, these indigenous fishing techniques can also be used in other areas as per their suitability of application. In the present study, an attempt was made to document the existing indigenous fishing methods along the lower stretch of river Ganga more specifically around Triveni, Hooghly district, West Bengal.

2. Materials and Methods

An extensive survey was conducted along the lower stretch of River Ganga more specifically around Triveni, Hooghly district, West Bengal in between April-September, 2014 to document the indigenous fishing methods in practice by various fishers or communities there.

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The survey was conducted on monthly basis and information on various fishing methods was documented through repeated and extensive field visit, on-site (direct) observations, focused group discussions during personal interaction with the fishers (Fig. 1 and 2). During the survey, an indigenous fishing method, 'Kunche Jal' fishing was documented at Netaji Nagar fishing village (22°59'4.10"N and 88°24'14.19"E) adjacent to Bandel Thermal Power Station of Triveni (Fig. 3).

3. Results

'Kunche Jal' is a modified type of bag net, invented and in practice by fishers around the lower stretch of river Ganga (Triveni) to harvest the fishes during low tide condition. This part of River Ganga is a tidal freshwater zone which has gained its importance as it provides diverse fish habitat which offers to sustain rich fish diversity and play significant role as an essential sheltered area for growth and survival of fish assemblages. Due to tidal effect, water volume of this stretch is fluctuated continuously and during low tide, water volume and depth of the river bank used to decrease, makes fishing using common gears difficult and thus results in reduction in catch. To overcome this problem, fishers invent the technique of 'Kunche Jal' fishing to harvest fishes from shallow and muddy water during low tide condition. Details of gear, its mode of operation have been described below:

'Kunche Jal' fishing requires two components; first one is the 'Kunche Jal', a small meshed conical bag net tied to a triangular bamboo frame (2-3 m width and 3-4 m height) with a pocket and looks like a large scoop net (Fig. 4). This structure is used to trap the fishes. Another one is a bamboo made triangular or conical shaped (4-5 meter height and 1-2 meter width) structure (Fig. 5). This structure is made up with the help of three bamboo poles; a horizontal bamboo pole fixed strongly with two other poles placed vertical to it. The two vertical poles are kept separated at about 1-2 m distance and tied at the top to make a triangular or conical shaped structure. This total component is used to chase fishes by propelling the mud/silt towards the 'Kunche Jal'.

Usually this kind of fishing requires two fishers; one holds the 'Kunche Jal' and other one propels the mud towards the gear. During low tide as water level recedes, some species like *Apocryptes bato*, *Glossogobius giuris*, *Channa punctata*, *Odontamblyopus rubicundus* etc. take shelter in silt/mud. To harvest these species; one fisher chases these fishes by beating the triangular bamboo frame in muddy water and by

propelling the mud towards the direction where the gear is fixed firmly in position by the another fisher. Beating and propelling of the mud is continued for a time period to chase the fishes towards the gear and finally trapped fishes are collected after lifting and filtering the 'Kunche Jal' (Fig. 6). The operation time of this fishing is around 1-2 hour.



Fig 1: On-site observation



Fig 2: Focused interview

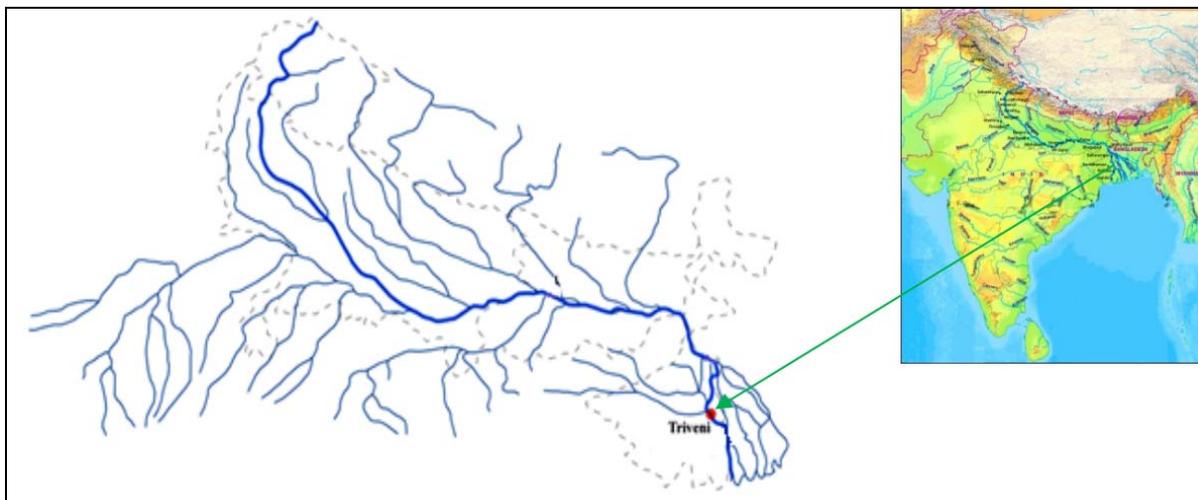


Fig 3: Map representing the survey site



Fig 4: *Kunche Jal*



Fig 5: Triangular bamboo frame



Fig 6: Fishing using '*Kunche Jal*'

4. Discussion

So far numbers of researches have been conducted in different parts of India to document the available traditional crafts and gears which are in use for fishing [8-25]. Hornell [26] was the

first to report the different fishing methods which are in practice in river Ganga; but after that unfortunately except few scattered reports [27-34], comprehensive and updated information on the existing fishing methods in river Ganga is unavailable.

Bag net is the main fishing gear in the Hooghly-Matlah estuarine region contributing about 70 % of the total annual fish catch [27, 29, 32, 34-37]. It has been reported that in lower stretch of river Ganga which is popularly known as Hooghly-Matlah estuary; this bag net fishery is mostly practiced within the 250 km tidal stretch extended between Triveni to Fraserganj. Apart from this tidal stretch, in some places of Bhagirathi river and in Ganga feeder canal (Farakka, Dhulian etc), bag net fishery has also been reported [34]. Manna *et al.* [34] recently have reported an improvised crab trap as attachment of bag net to harvest catfish in lower Ganga. The present inventory is also a kind of modified bag net (the gear, '*Kunche Jal*') which is in practice in this estuarine region to harvest fishes which are used to take shelter in mud/silt during the low tide condition.

5. Conclusion

This fishing method is eco-friendly and requires locally available low cost materials; thus easy to avail by the poor fishers. The fishing operation is also very simple; no need to use any crafts as such as fishing is done in the banks of river. On the other hand, it involves engagement of just two persons; thus no need of multiple sharing of the harvest. So overall, this is a very novel fishing method having the potential to support the livelihood of the poor fishers.

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