

Traditional community fishing practices of rural Kamrup of Assam

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Community fishing is a unique feature in the state of Assam of north eastern part of India. Here, fishing is done in groups of hundreds of people and thus the name. The present case study narrates a community fishing event in the floodplain wetlands (*beels*) of Kamrup District in Assam, India, witnessing participation of different tribal communities in fishing and the *modus operandi* of diverse types of fishing gears with catch details. Technical specifications of the different types of gears employed were collected from the direct observation following a prescheduled proforma¹. The design details of the gear were documented and the photographs of different gears were prepared and gear categorisation is presented based on the FAO catalogue of Fishing Gear Designs².

The region

The rural part of Kamrup District lies in the lower Brahmaputra valley zone at a distance of 100 km to the west of the state capital, Guwahati. This lower Assam district covers an area of some 4,345 square kilometers and is bounded by the Brahmaputra River in the North, Morigaon District in the East, Goalpara District in the West and Meghalaya State in the South. The southern part of the district has a hilly terrain and is covered by forests and streams, while the northern part is attached to the southern bank of the Brahmaputra River and its associated tributaries and low lying floodplain zone.



Community fishing.



A tribe couple for fishing.

The fishing communities and the occasion

Local communities from different villages and localities assemble in a particular area and fish for an entire day. The process of fishing may last for a week or near to a month in specified wetlands of Assam, locally called beels. The fish catch is not made for any profit making venture and are usually used for their local consumption. None of the fishers were fishermen by profession but fish for joy and merriment. These types of community fishing practices are mostly seen among the tribal population of the state. The communities associated with traditional fishing in the district of Goalpara are the *Rabhas*, *Bodos*, *Hajong* and occasionally *Garos*. The tribesmen and women come from quite a distance with their fishing gear loaded on mini trucks which are hired for the day. The short distant travellers may come on cycles or by walk. Community fishing is done in the winter season during January-March in different parts of Assam. The depth of water in the beels during this season is usually knee height, where hundreds of fishers enter the water to fish at a time. The water is splashed and mud thumped while the gear is operated. This action is intended to disturb the bottom

dwelling fishes force them out of the mud. The majority of these fishes are catfish and freshwater eels. The fishers usually carry their food for the day and a few may cook on the spot. A portion of the fishes caught during the event are also consumed directly on the fishing ground with locally prepared rice beers, rice, vegetables and meat. The tribal people cheer for every attempt made, fish merrily and are full of content for whatsoever the catch is made.

The fish catch

The floodplain of the Ganga, Brahmaputra and Barak rivers have the distinction of nurturing some of the finest wetlands of the country comprising some 213,000 hectares³ where fish and fisheries remain a traditional economic activity with tremendous socio-economic impact in the rural sector. In India, Assam has maximum area of approximately 100,000 hectares of floodplain wetlands associated with Brahmaputra and Barak valleys⁴. These floodplain wetlands are inundated during the monsoon and therefore become nutrient rich and play a significant role as an economic resource through a substantial fisheries contribution for the people living

Table 1. Major type of gears operated during community fishing event.

Gear category	Gear type	Gender-wise percentage (%) contribution		Individual contribution among gears (%)
		Women	Men	
Scoop gear	Jakoi	90	10	25
	Chalonee	100	0	5
	Khorahee or Paachhi	100	0	5
Lift net	Porongi jal or Dharma jal	50	50	28
Falling gear	Polo	60	40	20
	Juluki	60	40	5
	Khewali jal	0	100	5
Spears	Jakhra	100	0	2
	Kosh or Hana	100	0	2
Push nets	Thela jal or ghoka jal or pah jal	60	40	3

adjacent to these beels^{5,6}. These beels are one of the prime sources of natural capture fishery pre-dominated by small fish species (*Puntius* spp., *Chanda* spp., *Mystus* spp., *Nandus nandus*, *Amblypharyngodon mola*); carnivorous catfish (*Wallago attu*, *Ailia coila*, *Ompok bimaculatus*); air-breathing species (*Heteropneustes fossilis*, *Clarias batrachus*, *Anabas*

testudineus); murrels (*Channa punctatus*, *C. striata*) and featherbacks (*Notopterus notopterus*, *Chitala chitala*). Some of aquatic insects such as giant water bug (*Lethocercus indicus*) and diving beetle (*Dytiscus marginalis*) are also caught and relished as food by the fishers during the event. Most of the beels are given on lease these days to beel



A mini truck carrying the participants.



A participant on arrival with his fishing gear on cycle.

lessees who are also local residents of the area and are profit making associations. This at times, creates a conflict among the lessees and tribal communities as the latter believes that fishing in these *beels* are their birth right, as fishing and hunting has been traditionally practised since their ancestral times. The district authority comes into force in these circumstances so as to maintain the law and order in the locality. It was observed that people of different age groups from 10 years to 65 years participate in fishing. The majority of the fishers are women representing 60-70% of the total gathering. Selectivity of fishing gears is much influenced by factors such as characteristics of the water body, nature of target fish, gear materials and its operational skill and handling⁷.

The fishing gears

Jakoi: This is a device made of non-textile webs in which the capture of fish is affected by a brailing or dipping action, and manually disturbing the bottom. The gear is triangular in outline and is made up of bamboo matting. The mouth of the gear is kept open by a single piece of thick bamboo split stitched to the matting at regular intervals. The same bamboo split extends further beyond the apex to form a short handle. A string or rope is attached to two arms of the mouth near to its base. The operator places the gear with its mouth facing him and disturbs the bottom mud with its feet, so that in trying to escape the fish enter the trap. The gear is scooped periodically to remove the harvest. This gear is versatile and

found in almost all the districts of Assam, and is effective in capturing most of the bottom dwelling fishes such as *Mystus* spp., *Mastacembelus* spp., *Macrognathus* spp., *Heteropneustes* spp. etc.

Chalonee: This is a saucer shaped circular sieve made of bamboo matting with a diameter of 0.8-1.2 m. The device is inserted below a patch of floating water hyacinth in weed infested water bodies such as *beels* and ponds. Fish taking shelter underneath and within the roots of the water hyacinths are shaken on the sieve thereby forcing the fishes to fall on the sieve from the root tufts. Murrels, perches, eels etc. are its major catch. The gear is operated during the winter months (December-February).

Khorahee or **Paachi:** This device is similar to the above gear in the mode of operation, fishing season and the catch composition. However, these are bowl shaped (concave) baskets and thereby reduce the chances of fishes from escape. A *paachi* is a bigger basket than *khorahee* and can lift heavier load of floating weeds and have higher longevity. The catch composition of both the gears is mostly small prawns, *Puntius* spp., *Chanda* spp., *A. mola*, *Channa* spp., eels etc.

Porongi jal or **Dharma jal:** This is a hand lift net, framed with a small piece of webbing, held horizontally and used entirely by hand or partly by mechanical power, in which the capture is affected by vertical lifting motion of the gear. This gear has

a frame in the form of two split bamboos crossing each other and fixed in the form of an arch. To this is attached the square shaped net which has an uneven mesh size ranging from 15-60 mm which is stretched by the frame. The intersecting point of the cross bars/splits are fastened to a handle made of a whole bamboo piece of desirable length. The cross bars are approximately 2.4 m in length. The bamboo handle is used to facilitate the manipulation of net. The net is operated by hand or installed to shore. The net is set either at the bottom or in mid water for some time and then lifted to trap the fish swimming above it. The webbing material of the net is polyamide 210/1/3. A single person usually operates the net. Small sized fish are its usual catch such as *Danio* spp., *Barilius* spp., *Rasbora* spp., *Clupisoma garua*, *Eutropiichthys vacha* etc.

Polo: This is a covering pot or plunge basket of wicker construction, and the principle is to catch the fish by covering from above. This device is bell-shaped entrapping device devoid of a non-return valve with an opening both at the base and the apex. The gear is locally known as *polo* and is made of finely woven bamboo strips. The strips are 0.5 cm thick and are stitched by cane ropes at a interval space of 0.5-1.5 cm

and 5-12 cm within vertical and horizontal strips respectively. The height of these gears varies from 47-155 cm with a diameter of 57-125 cm at the base and 15-25 cm at the apex. The fisher carries the trap in hand, slowly wades and plunges it into water in a probable place. The fisher firmly presses the pot; insert one hand through the top/apex opening and takes out the fishes caught inside. Medium sized fishes are the usual catch such as murels, featherbacks, carps etc.

Juluki: The design, mode of operation and size of this pot is similar with that of *polo*. However, the interval spaces between adjacent woven bamboo splits are much smaller (2-3 mm) as compared to *polo*. As a result, very small sized fishes like minnows and barbs are caught in this gear. In certain locations, bait such as rice bran, flour is applied over a small canopy in shallow water areas to attract fishes before operating the gear. This gear is used year round.

Khewali jal: These are conical shaped nets usually operated by one person which are thrown or cast to cover the fish without waiting for a long time. The lower edges of these nets are folded or turned up inwardly and stitched to the webbings at regular intervals to form peripheral pockets. The nets are



Local girls walk to the fishing ground.



The wetland.



A Chalonee.



Polo and Juluki.



A Hana or kosh.



Preparation of fish for consumption.



Fishers taking rest and food during the fair.



A young girl operating a jakoi.

heavily weighted around the base by fixing iron weights to the free edges of the pockets and each is provided with a retrieving line attached to the apical portion. All the lines/strings converge to the centre where they are tied to a central cord which passes through a ring forming the apex of the net. As soon as the net is thrown, it goes down due to its weight as well as the weight of the sinkers. When the net is hauled the sinkers disturb the fish, which enter the pockets and are secured there. Based on the mesh number and net size the cast net is known by various local names viz., 'khewali jal', 'asra jal', 'rekh jal', 'pachon jal', 'afolia jal', 'jhaki jal', 'athar jal' and 'angtha jal'. Among these the 'athar jal' is the largest and cannot be operated by a single person. The other nets are relatively smaller in size and are operated by a single person. The overall length of these nets varies from 3.0-6.5 m from the apex to the base. The mesh along the circumference at the apex and the base ranges from 3-200 numbers and 144-2000 numbers respectively. The nets have mesh size ranging from 15-160 mm and the webbing is made of polyamide (210/12/3, 210/9/3). The size of the sinkers is 1.5 x 1.2 x 0.4 cm or 16.0 x 1.5 x 0.6 cm. The catch composition varies with net size which includes *Labeo bata*, *L. gonius*, *L. rohita*, *L. calbasu*, *Cirrhinus mrigala*, *C. reba*, *Catla catla*, *Hypophthalmichthys molitrix*, *Ctenopharyngodon idella*, *Aorichthys aor*, *Channa marulius*, *C. striatus*, *Chitala chitala*, etc.

Jakhra: This is a wounding gear provided with pointed, barbed or barb less blades, which may be detachable or non-detachable from the handle or shaft and thrown by hand. This instrument possesses 20-24 pieces of bamboo splits, firmly tied together as a bunch towards the butt. The other end has prongs and are arranged in a way as to cause them to diverge from one another. The pointed ends are capped with simple, sharp iron points. This is a heavy weapon and requires considerable strength to hurl. It is generally thrown by a man standing at the prow of a boat, sometimes from the bank of a stream. The gear is operated to catch medium to large sized fishes such as carps, murrels and a few catfishes.

Kosh or Hana: The length of the bamboo pole is around 2.5 m. The piercing part is made of either split bamboo strips or iron rods having barbs at each point. It is operated in beels and rivers. *Wallago attu*, murrels, *Mystus* spp. and *Puntius* spp. are the catch.

Thela jal: These are triangularly-framed push nets operated by one man and the capture affected by a forward, horizontal pushing motion along the bottom of shallow waters by hand wading or from boats by handle. Locally push nets are also known as *ghoka*, *pah jal* or *thela jal*. These nets resemble the skimming nets in all details. The triangular frame consists of three bamboo poles. One of the intersecting poles is longer than the other and the extended portion serves as the handle. The webbing of this gear is made of mosquito net or polyamide which is hung as a long cod end for 2.3 m from

the frame. The overall length of the gear varies from 1.3-1.5 m, and the width at the base is 1.3 m. The net is operated in beels and the catches are mostly small sized fishes, fingerlings and prawns.

All the fishing gears used during the event are traditionally prepared and are eco-friendly, light weight and low cost. Destructive fishing techniques such as chemicals, poisons, explosives, electro-fishers, water suction pumps, unauthorised fish nets and similar are not used. It was observed that fishing at this time of the year also does not have any impact on the propagation of fish stock or decline of fish population as the beels are land-locked and typically dry out completely by late winter. It was also observed that fishing methods that disturb the mud release trapped noxious gases, which makes the environment suitable for fish and potable for the grazing cattle.

Tribal fishers were of the opinion that community fishing has lost much of its past glory due to several factors such as modernisation, anthropogenic changes and occupational status. It was said that community fishing is just not about



A *Khorahee*.

catching and selling fish, but a community festival, locally called *mela* which is based on the present day barter system where commodities and products are exchanged instead of currency. Villagers from distant places take part in this community fair with a perception that the practice of fishing brings goodwill and togetherness among the people of the villages. Similar occasions (*melas*) were also observed



Women operating *Porongi Jal*.



A Thela Jal.

specially among the *Tiwa* tribe of Assam using traditional fishing methods, on the eve of *Bhogali bihu* festival in a particular *beel* known as *Joonbeel* in Morigaon district. The event is popularly known as *Joonbeel mela* which is believed to have begun in the 15th Century A.D. and was first organised by *Tiwa* and *Ahom* Kings to exchange views and ideas on the then prevailing political situations. Therefore, it can be concluded that these floodplains of the Brahmaputra and Barak river basins serve as some of the finest resources to sustain such traditional activities with tremendous impact on the rural harmony as well as in conserving the techniques of usage of locally made fishing gears and their methods for harvesting fish. Considering the cultural perspective in the state, similar fishing activities can also be promoted under fish based eco-tourism and recreational fisheries for celebration of many local occasions to increase the solidarity among the villagers in other parts of the state.

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A man with his collapsible fishing gear.



Tribe communities for fishing.