

Traditional fisheries

Jammed in Jambudwip

The traditional stake-net fishers of the ecologically sensitive Jambudwip island face a likely ban of their seasonal fisheries

In the South 24-Parganas district of the State of West Bengal in India is the 20-sq km island of Jambudwip. Located about 10 km offshore in the southwest corner of the Sundarbans at the mouth of river Hooghly in the Bay of Bengal, the island can be reached in 45 minutes from the Frasergunj fishing harbour by *bhut bhuti*, a small powered country craft.

Jambudwip has been used as a site for fisheries camps at least since 1955, according to Bikash Raychoudhury's *Moon and Net* (published by the Anthropological Survey of India in 1980). *Behundi jal* or stake-net fishery is a traditional activity in different parts of the Sundarbans delta, on both the Indian and Bangladesh sides.

The largest stake-net fishing operation in the Sundarbans is based in Jambudwip. It is the *Jalia Kaibartha* community from the Chittagong hills that mainly practices *behundi jal* fishery in the marine waters of the Sundarbans. After India attained independence in 1947, the members of this highly enterprising fishing community settled down in places like Kakdwip, Namkhana, Sagar and Pathar Pratima in West Bengal, and Champaran in Bihar.

However, this traditional source of livelihood and sustenance is now under serious threat. The Central Empowered Committee (CEC), has said that the seasonal "occupation" of the Jambudwip island by fishermen and the fish-drying activity was a non-forest activity that cannot be permitted under the Forest (Conservation) Act, 1980, without prior approval of the central government. (The CEC was constituted by the Supreme Court of India by a Notification on 20 June 2002 to provide relief against any

action taken by the Central/State Governments or any other authority regarding, *inter alia*, deforestation and encroachments, and the implementation of legal instruments for forest conservation.) It has directed the West Bengal government to remove all traces of encroachment on Jambudwip island by 31 March 2003.

While the Fisheries Department of West Bengal under Minister Kiranmoy Nanda strongly defends the fishermen's claim to the seasonal use of the island, the Forest Department is bitterly opposed. The fishermen are now living in the shadow of uncertainty. Will their two-generations old fishery be treated as an activity eligible for regularization or will they be summarily evicted?

It was on 29 May 1943 that, under a Notification of the Government of West Bengal, Jambudwip became reserved forest as part of the protected forests in the Namkhana Division. As a result, no activity was allowed on the island, except those permitted by the Forest Department. From at least 1968 onwards, fishermen have been issued permits to use the island to collect firewood and to launch boats into the main creek.

Since 1989, Jambudwip has been part of the Buffer Zone of the Sundarbans Biosphere Reserve, where ecologically sound practices, including fisheries, are permitted (unlike the Core Area of a Biosphere Reserve, which is securely protected for conserving biological diversity). Jambudwip is, however, located outside the Sundarbans Tiger Reserve.

Mangroves destroyed

The CEC visited Jambudwip on 3 December 2002, in response to an

application from the Executive Director, Wildlife Protection Society of India, seeking suitable relief against alleged encroachment and destruction of mangroves by fishermen.

The CEC's report of 24 December 2002 directed the West Bengal government to remove all traces of encroachment on Jambudwip by 31 March 2003. However, the CEC observed that the proposal for fish drying on the island could still be considered, but only after obtaining clearance from the Ministry of Home Affairs and the Ministry of External Affairs for the fishermen involved, since some Bangladeshis were alleged to be involved illegally in the island's fisheries.

The CEC denouement followed a series of events consequent to the Supreme Court order of 12 December 1996 on the issue of forest encroachment. Further to its Order of 23 November 2001 restraining the Central Government from regularizing all encroachments, the Ministry of Environment and Forests (MoEF) wrote to all States and Union Territories on 3 May 2002 to regularize *only* eligible encroachments before 1980 and to evict all other encroachments by 30 September 2002. The Forest Department, soon after receiving this letter from the MoEF, ordered the Jambudwip fishermen not to use the island and to remove their fishing implements from their makeshift sheds.

Subsequently, the Department set fire to the sheds and fishing implements in July-August 2002. The torching of bamboo-and-reed sheds and fishing implements is particularly intriguing since there was a Ministerial meeting held between the Fisheries and the Forest Departments on 9 August 2002. At this meeting, a decision was made, as reported in the press, to regularize the seasonal use of a demarcated area of Jambudwip for fish drying by fishermen holding identity cards issued by the Fisheries Department.

A subsequent letter dated 30 October 2002 from the MoEF even made provision for setting up district-level committees or commissions to settle disputed claims of eligible encroachments. But no such initiative was taken in the case of Jambudwip. The letter also revealed a softening of the MoEF's position; the earlier rigid stand on "summary eviction" by 30 September gave way to "showing progress on the eviction of ineligible encroachments".

Entry blocked

The West Bengal forest authorities, however, hardened their stand on Jambudwip. They erected concrete pillars at the mouth of the creek—the lifeblood of the fishermen and their fisheries—allegedly to block the entry of fishing vessels into the creek. On 12 November 2002, for the first time in the history of Jambudwip, ten fishermen drowned at

sea during a cyclone, as they were unable to seek shelter in the creek.

Soon after the drowning incident, the National Fishworkers' Forum (NFF), India, launched an agitation on 18 November 2002 against preventing seasonal fisheries camps and blocking entry of fishing vessels into the creek in Jambudwip. Subsequently, the Principal Secretary of Fisheries, West Bengal, informed the CEC that the West Bengal State Government had decided to permit fishing activity in Jambudwip on the ground that it has been continuing for almost 50 years.

The fishermen resumed fishing but they were still prevented from landing their catch in Jambudwip. On 25 November 2002, after removing a few of the concrete pillars erected by the West Bengal Forest Department, the fishermen entered the creek and sat in their fishing vessels in peaceful protest against being denied access to the island.

On 26 November 2002, the Chief Secretary of West Bengal wrote to the CEC requesting it to agree to the State Government proposal to allow the fishermen to resume fish-drying activities up to February 2003 as an interim measure and to await a formal proposal on the issue from the State Government. The letter also contained viable proposals for long-term solutions to the vexing issue, such as allowing the seasonal fishery in a fenced area along the seaboard of Jambudwip, with full protection to mangroves beyond the fenced area.

Although it indirectly makes provisions for resuming fish-drying activities for the 2002-03 season, the report of the CEC hangs like a Damocles sword on the future of the Jambudwip fishery. As we go to press, there is still uncertainty if the fishermen could resume their fishery from the year 2003-04. About 3,000 fishworkers live on the island during the season, staying in makeshift sheds of bamboo and reed, repairing fishing nets, sorting, drying and storing fish, while about 3,500 fishermen engage in *behundi jal* fishing in the adjacent sea. What makes *behundi jal* fisheries possible is the unique delta ecosystem and the community's

indepth understanding of the inter-relationships between the lunar cycle, oceanic currents and the migratory behaviour of fish, in conjunction with the dynamics of bottom topography of the sea, including the pattern of sedimentation and soil quality. The fishery is marked by simultaneous capture, transport and processing activities, with different sets of people involved round-the-clock as one unit under one *bahardar*, or fleet operator.

In actual practice, it is like setting up two camps: one on land and the other at sea, since the fishermen who fish do not return to the island until the end of the season, unless there is a cyclone or some accident. The fishing ground is connected to the fish-drying yards by fish transport vessels that operate daily, sometimes twice a day.

The island—especially the creek during high tide—is not only useful for unloading fish and loading victuals for the fishermen staying on the fishing ground, it is also beneficial as a refuge from cyclones. Drinking water and firewood are also available on the island. Easy access to sufficient quantities of firewood was a long-term requirement not only for cooking, but, more importantly, for boiling hemp fishing nets in natural dyes to make them invisible to fish in the thick mud of *khari*. These days though, firewood is used only for cooking since everyone has switched to nylon nets, which do not require any dyeing.

In the *behundi jal* fishery, a series of bag nets are fixed in the black, sticky mud in the seabed undulations called *khari* at a distance of about 25 nautical miles from Jambudwip. The *khari* has a combination of disintegrated mangrove wood and mud, and is an important source of food for bottom-feeder fish. Aggregation of benthic fish attracts other fish that predate on them. Both prey and predator fish become quarry to the fishermen.

Bagnet design

Each fishing unit has about 20 bag nets. The bag net has an average length of 75 ft and has a 60-ft mouth. Ropes, corresponding to the water column depth, bind wings of bag net on either side of its mouth to metal stakes driven into the mud. The knots are ingeniously tied so

that the mouth of the net always faces the water current, in both high and low tide.

The net is designed in such a manner that a strong current would take it to the bottom of the channel, while a weaker current would keep it at the midwater level. In the absence of a current, the net would float on the surface. Two hardy bamboo poles are tied vertically to the mouth of the net, 20 ft apart, to keep it open. The nets are fixed at depths of 12 to 15 fathoms. The high opening of the bag net, in synchrony with the currents, allows both demersal and midwater species to be caught.

In each of the *khari*, five nets are fixed in a row, as a cluster. Often, different *khari* are chosen to deploy the nets. Unlike the trawl net, which furrows the seabed, the stationary bag nets do not cause any damage to the seabed. The fish are emptied every six hours, at the time of the equilibrium between the high and low tides, when there are no currents, and when the mouth of the net floats on the surface of the sea. Fish are emptied from the cod-end of the net; *doa* the Bengali word for emptying the cod-end can be translated as "milking" the net. Each unit catches about 400 tonnes of fish in a single season. Two-thirds of the catch comprise species like Bombay duck, ribbonfish, anchovies, silver belly and wolf herring that are dried for human consumption and poultry feed. The remainder one-third comprises high-value species like shrimp, jewfish, catfish, Indian salmon, eels, and rays, which are sold fresh. It is estimated that each unit catches fish worth Rs4 mn (approx. US\$80,000) in a good season. Putting all the units together, Jambudwip produces about 16,000 tonnes of fish worth Rs168 mn (approx. US\$3.4 mn) in a five-month long fishing season.

According to Dr L K Banerjee, Retired Joint Director, Botanical Survey of India, who has worked on the mangroves of Sundarbans for the past 30 years, Jambudwip has successive stages of vegetation, comprising mainly *Avicennia* species of mangroves, and species of grass like *Porteraesia coarctata* and *Phoenix paludosa*. The species diversity on the island is not that significant. However, the satellite imageries of Jambudwip for the

period 1981 to 2001 from the National Remote Sensing Agency (NRSA) furnished to the CEC by the Forest Department as "irrefutable proof" of mangrove destruction show dense mangrove vegetation coverage except in areas that are allegedly cleared by the fishermen. Moreover, since higher-resolution satellite images clearly showing deforestation to the detail that the NRSA images are claiming to portray have been produced in India only from 1998, the authenticity of the images as irrefutable proof for the period prior to 1998 needs to be independently verified scientifically.

Even if there is felling of mangroves on the Jambudwip island for firewood by the fishworkers, it is not an impossible situation to salvage since the *Avicennia* species of mangroves found on the island can be successfully regenerated. There are several examples from India as well as other parts of the world. Moreover, the fishworkers are ready to move from firewood to liquefied petroleum gas for cooking purposes.

There are about 10,000 people dependent on the stake-net fishery today, as against a couple of hundreds 35 years ago. Instead of extinguishing the fishery, what is required is to recognize its salient aspects and mitigate negative impacts through better coastal area management, treating the island and the fishing ground within one framework. The Fisheries and Forest Departments have to develop mechanisms to collaborate with the fishermen to achieve this goal.

"I gave commands; Then all smiles stopped together", the poet Robert Browning made the Count say in "My Last Duchess". In the case of Jambudwip, it is high time to retract the command and bring back the smiles to the faces of the fishermen of the island. 3

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