

In the Eye of the Storm

In the wake of tropical cyclone Ockhi, the focus now should be on improving at-sea cyclone preparedness and search-and-rescue co-ordination to save precious lives

As a low-pressure system in the Bay of Bengal, near the southeast coast of Sri Lanka, intensified into a depression in the early hours of 29 November 2017, as per its well-established protocol, the Indian Meteorological Department (IMD) issued its first bulletin warning of gusty winds and heavy rainfall over south Kerala and south Tamil Nadu. The bulletin was dispatched to the senior-most levels of the central and state governments, including the control room of the National Disaster Management Authority and the chief

crucial to the coastal villages in the region where the rough weather was expected. For fishermen along India's Arabian Sea coast, the October-December months are the busy period, and particularly so along the densely populated coasts of southern Kerala and Tamil Nadu. The post-monsoon Arabian Sea, where cyclones are relatively rare, is calm and the catch is plentiful. Fishing is as diverse as it is competitive in these parts. Shore seines dot the coasts of several villages; small non-motorized catamarans go out on short morning fishing trips near the shore; larger motorized plywood and fiberglass craft or *vallams* go out farther—at least 20 nautical miles—staying out at sea for anywhere between half a day to five days. Larger mechanized vessels (15-18 m overall length or OAL), leave from the harbours in Kochi and Kollam, some of them long-liners voyaging 800 nautical miles in search of shark and tuna. Each group presents a different set of challenges of fishermen at sea, but these groups as a whole had been neglected in official disaster planning.

Ultimately, any solution has to take into account fishers livelihood and working conditions. Fishworkers' safety has to become a priority now.

secretaries of the states of Kerala and Tamil Nadu. Fifteen per cent of all depressions develop into cyclones, and the bulletins are meant to forewarn the government's disaster managers, the shipping industry and coastal communities.

As the information reached the Kerala government, Alban Alphonse was preparing to go to sea for the day's fishing in Poonthura village, less than 10 km from the state capital, Thiruvananthapuram. Each day at least 600 fishermen from the village set out to fish at around 2 pm and return just after dawn the next day. Since they did not get any information from their state government warning them not to go out to sea, Alban and the others went fishing at the same time on that fateful November day.

The exact time when the bulletin was issued—1150 hrs IST—was

Early warning system

Thirty-seven-year-old Alban was accompanied by two other fishermen in a 30-ft-long plywood craft fitted with an outboard engine, the most common type of fishing vessel in the region. They navigated 19 nautical miles southwest of Poonthura and at sunset, they lowered anchor to start paying out the nets. "There were a few waves and some wind but this wasn't unusual in our work. But then it started to rain and it got foggy, and when we pulled in our nets at 3 the next morning, we noticed on our GPS (global positioning system) that the

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vallam had drifted another 12 miles.” The current had been too strong for the anchor and had pulled them down deeper. They decided to return to the shore but the winds buffeting the boat made the progress very slow. Then, suddenly, the waves started to crash against the boat from every direction.

Contrary to the IMD’s initial forecast, BOB 07—as the system was called—had rapidly strengthened into a cyclonic storm by the early morning of 30 November. The process took just 24 hours, as against the usual 72 hours or more. Meteorologists were calling it Ockhi—which means ‘eye’ in Bengali—and while its winds were between 45-65 kmph at the shore, Alban and other fishermen were caught in the cyclone’s cloud bands, which covered a radius of over 200 km. A 10-ft wave finally capsized their vessel and threw the three men overboard. “Normally, we can withstand fairly strong winds, though a careless operator could cause the vessel to flip even against a slight breeze,” said Alban, sitting in his house in Poonthura last month. “This time, there was no way to hold it steady even by riding with the wind.”

When they noticed the change in weather, the families on shore had expected their men to return before their usual time. But when many did not return later that morning, the women rushed to the local church, a pillar for the communities on the coast in southern Kerala and Tamil Nadu. “Only when Father made frantic calls to the local administration did we find out that there was a cyclone coming,” said Delby, who lost her 38-year-old husband in the cyclone. A month after the cyclone, the government informed the Lok Sabha (India’s lower house of Parliament) that 100 people were confirmed dead and nearly 500 were still missing, all of them fishermen caught in Ockhi’s devastating path. Over 260 fishermen were injured. Nearly 400 fishing vessels were either fully damaged or lost.

On that first day, 90 men had not returned to Poonthura. Several swam or floated to safety farther up north, even as far as Karnataka, or were rescued by other fishers, the Coast

Guard and the Indian Navy. Alban was rescued with five other men by a navy helicopter on the afternoon of 1 December. They had stayed afloat holding on to their capsized boat for over 30 hours. By end December, seven dead bodies had been recovered but 29 men were still missing from the village. Poonthura’s beaches are lined with loudspeakers for emergency announcements but these went unused on the 29th. “Bad weather warnings are rare in these parts but we did occasionally get them from the church during the monsoons. The Collector’s office usually alerts the church,” said Leon, Alban’s boatowner and a retired fisherman. “If we had been informed, no one would have gone to sea that day.”

The Kerala government has questioned the IMD’s delay in issuing a cyclone warning, which came only at 8:30 am on 30 November, by which time hundreds of boats were already in the storm’s path. “Normally, meteorologists get at least five to six days to track the progress of a cyclone from genesis to landfall,” said S Sudevan, director of IMD’s Thiruvanthapuram Met Centre. “But Ockhi intensified in just 24 hours, which is very rare. Even so, our very first bulletin warned fishermen not to venture into the

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Silveraj, 38, of Poonthura village in Kerala, India, died due to the cyclone on 30 November. His wife, Delbi, doesn’t want their son to be a fisherman

Interview with Sahayam, Vizhinjam survivor

Vizhinjam in Thiruvananthapuram's Nayanattinkara taluk is a busy fishing village just a few kilometres from the bustling tourist hub of Kovalam. The village of about 20,000 people has over 5,000 active fishermen. Most fishermen in Thiruvananthapuram coastal villages like Poonthura and Vizhinjam use 6-8m long non-mechanized boats made of plywood or fiberglass fitted with outboard engines (usually two, of 25 hp and 9 hp). They are mostly single-day fishers but in each village the timing of departure and return varies, depending on the topography of the coastline and the composition of the catch in their traditional fishing zones. In Vizhinjam, the fishermen set out between 2-3 am every morning and return by 11 am. Vizhinjam has its own harbour which allows the fishermen to venture out at night and not depend on the tide.

In the aftermath of cyclone Ockhi, seven bodies of fishermen have been identified but 30 are still missing (20 from non-mechanised and 10 from mechanized boats operating in other districts.) A majority of those dead/missing were young—under 35 years.

Q: How far do your boats go to fish and is there a particular type of fish that dominates your catch?

Sahayam: We travel about 20 nautical miles to begin with, because there's no catch closer to the shore. Then depending on what the conditions are like, we even go up to 60 nautical miles. There isn't any one type of fish we look for. We bring home whatever we catch but get a lot of *choora* (tunnies).



Sahayam, a fisherman from Vizhinjam, held on to his capsized *vallam* (motorized country craft) for nearly two days before he was rescued by the navy near the Kollam coast, India

Q: What are your costs per trip and how much do you catch on a good day?

A: To fish within 25 nautical miles, the cost is about INR3,000. To go deeper, it can go up to INR4,000 to 5,000. On a good day we can get even INR10-20,000 worth of fish. On bad days, we might even make a loss.

Q: So, this last month that you haven't been working, how much have you had to borrow?

A: In a month we need about INR20,000: children's school fees, food expenses, etc.

Q: When did you go to sea on the day of the cyclone and what was the weather like?

A: On the morning of 30th November. I had my own boat, *Sajitha-Sajith*, and there were four of us that day on board. Two of us returned but the others were lost. The weather was perfectly fine when we left. We were five boats travelling together and we lowered anchor at about 25 nautical miles. But our catch was negligible and one of the boatmen said that the wind was getting stronger and that we should go ashore. So, we started at around 7 am from that spot and when we were about 9 miles out, the storm struck. We'd been moving for over two hours when the wind and the rain came. It was so stormy after that; we couldn't look at our GPSs and we lost our bearings. We couldn't even see the other boats near us.

The boats were filling up with water and finally a big wave threw two of the men into the sea. We'd managed to hold on till about noon. We couldn't do anything when the men first fell overboard. The wind was pulling the boat away and if we didn't hold on, we'd also fall out of the boat. Then 20 minutes later, another wave overturned our boat but before we were thrown, Jose (*the other fisherman who remained with Sahayam*) and I had tied ourselves to the boat. The wind and the waves were terrifying through that evening and night. But we held on to the rope and were finally rescued by a navy vessel on Friday

afternoon (1st December). Not that we expected to live; we were certain that we'd drown, because even the previous day we thought some ship or fishing vessel would rescue us but then when there was no pause in the storm, we lost hope. But at least our bodies wouldn't be lost if we tied ourselves to the boat. Those back home would know it's us looking at the name of the boat because the corpses are unrecognizable after a few days at sea.

Q: Did your family expect to see you again?

A: They had gone from worry to despair before they saw us but while there was the joy at seeing us alive, their cries only got louder—tears of joy and relief. Others, whose husbands or sons had been with us at sea, were still grieving but they were happy at least some of us had returned.

Q: While you were floating with your boat, did you encounter any ships passing by?

A: On the evening of the 30th a big ship passed very close to our boat. We waved with our shirts and called out but they didn't see us. We saw another ship just about two hours before the navy arrived. We waved to that one too but they didn't come to save us. Then, when the navy rescued us, the personnel told us that they wouldn't normally venture that far but had been alerted about our location by a ship.

Q: Did the navy personnel tell you what your location was when you were rescued?

A: Yes, they said that we were found 54 nautical miles west of the Kollam coast (over 90 miles north of Vizhinjam). We were on the navy vessel for four days; they took very good care of us. They moved us to a smaller vessel which dropped us at Cochin. They were told to extend their search for seven days so they themselves couldn't bring us back.

Q: The IMD's alerts said that the wind speed that day was about 45-55 kmph, which many say is fairly common. Are your boats threatened by such strong winds or were the conditions that day very different?

A: If we'd got a warning that day, we wouldn't have gone. We don't go fishing when we know that the sea is rough. One can tell as soon the boat leaves the shore, so we don't go very deep into the sea and come back soon. I've never see such big waves as we experienced that day. A wall of water would tower over you.

Q: Why is it that the fishermen continue to go to sea without life jackets despite there being a rule to carry safety equipment?

A: Certainly, life jackets would have saved several lives, but they're not something you can buy in the market around here. The fisheries department had distributed a few life jackets to some boat owners years ago but there are over 2,000 boats going from this harbour and the surrounding areas. That is around 5-6,000 men.

Q: What would be a better way to warn fishermen about cyclones when they are already at sea? Would you be able to afford satellite phones or distress signals?

A: If the government can provide them to us, we can. Even an expense of INR10,000 is a big amount for us to afford. There might be a few well-to-do boat owners who can afford satellite phones but the most effective way to warn us is through the church.

Q: Will you continue to go fishing after this or would you like to do something else?

A: All I know is fishing; I've been doing it for 15 years. I left school after class 5. The government says it will help us and compensate us for our losses but what do we do till the money arrives? I need to repay the bank loan on my boat. I asked the bank for an extension but they didn't allow it. Nowadays, we mostly stay home, come here to the harbour in the evenings and return at night to our families. The mood at home is also changing; they were very happy when we returned but how long can we live on debt? So, the conversations at home are also getting tense.

sea. The IMD has a well-established standard operating procedure (SOP)."

"We convened an emergency meeting on 30 November, as soon as we saw the word 'cyclone' in the sixth bulletin that morning. The rescue operations began soon after," said P Kurien, Principal Secretary of Revenue and the Disaster Management State Relief Commissioner for Kerala. It is a fact that 45-65-kmph winds are common for the fishermen at sea, but contrary to what the Kerala government has said, the IMD bulletins are only issued in the case of a depression, along with a disclaimer about possible intensification. Next door, in Kanyakumari's fishing villages, the Tamil Nadu government used the churches on the coast to alert fishermen the previous day, a testament to the state's well-developed disaster management systems and infrastructure. "Our control room in Chennai got the IMD alert on 29 November and as per the SOP, we informed all coastal district collectors and fisheries directors through email, fax and text messages," said Rajendra Ratnoo, Tamil Nadu's Commissioner of Disaster Management. "One gazetted officer is posted on duty round the clock and during the October-December period, which is the cyclone season, it's an officer at the level of Deputy Collector," said Ratnoo, who claims to have personally informed the fisheries department at 1:30 pm on the 29th.

Despite the state's efforts, eight villages in Kanyakumari sustained the heaviest losses, with 24 dead and 237 still missing. This was because most fishermen of Thoothoor and its surrounding villages work on the mechanized vessels operating from Kochi. Their month-long fishing trips in search of shark and tuna completely cut them off from the government's warning systems and now their routes—west and northwest of the Kerala coast—put them directly in Ockhi's path. As Alban and other fishermen were tossed around and finally pushed north, the cyclone's real fury was headed towards the Lakshwadeep Islands, where gusting

winds of up to 180 kmph were recorded, according to the IMD's preliminary report on the cyclone.

Selvaraj, a 35-year-old boatowner from Vallavilai in Kanyakumari district, had left Kochi harbour with 13 workers on board his 18-m boat on the night of 26 November. After navigating west, they were fishing to the south of Lakshwadeep Islands on 1 December when the cyclone struck. "In that area, the navy usually informs us if we're in a restricted area, through our wireless radios (Very High Frequency or VHF sets). They could have warned us similarly about the cyclone," said Selvaraj, sitting on the beach sand outside his village church. His boat safely reached Lakshwadeep's Kavaratti Island on the morning of the 3rd after he and his men had weathered the storm for over two days. "The boat was heavily damaged. It'll cost us about INR2-2.5 mn (1 USD=INR 64) to replace the nets, VHF sets, repair the boats, etc," he said, adding that they were lucky to be alive.

"All our boats carry two VHF radio sets. One is always tuned to channel 16 (156.8 MHz, a marine VHF radio frequency used internationally for distress calls) but we communicate using channel 65 because otherwise our conversations would clutter up the airwaves used by the ships and the navy," said Dickson, another experienced fisherman from Vallavilai. "We frequently contact passing ships when our drift-nets are in their paths, and most of them respond. Our cellphones are unreachable that far inside the sea and we don't have satellite phones. Why couldn't the ships have alerted us?"

Kurien, Kerala's disaster relief commissioner, said that this was done but that it was impossible to save everyone. "On 1 December, the Chief Secretary informed the shipping director general and many lives were saved by the ships," said Kurien.

Coastline

Remarkably, the physical coastline of the two states bears no signs of the devastation caused by Ockhi because almost all the loss of life occurred at

sea rather than on land. There is little reliable data on previous cyclones and the number of fishers lost at sea—a United Nations study on the 1996 Andhra Pradesh cyclone lists 600 casualties, though the number of dead on land was much higher. But meteorologists agree that the disproportionate number makes Ockhi unique and points to an overlooked facet of cyclones: the safety of fishermen at sea. “The IMD has specialized bulletins for sea conditions and fishermen warnings but landfall is the main concern”, said Mrityunjay Mohapatra, a senior IMD scientist and head of the Regional Specialised Meteorological Centre (RSMC) of the World Meteorological Organization (WMO) in New Delhi. Perhaps the blind spot with regards to fishermen is because the efforts of most disaster-management programmes in the past have been on mitigating the damage caused by storm surges—unusually big waves caused by cyclonic winds, which account for 90 per cent of casualties during cyclones, according to the NDMA’s cyclone management guidelines.

“The failure of the state was on two levels,” said T Peter, Secretary of the National Fishworkers’ Forum (NFF) in Thiruvananthapuram. “First, IMD’s alert came too late and the message didn’t reach the fishermen. The second is a bigger problem: once the situation was assessed, why were the search-and-rescue measures so badly managed?” Throughout the coastal villages of Thiruvananthapuram and Kanyakumari districts, distressed fisher families complained of inadequate response. “They could have taken the fishermen along with them sooner. We know where our men go to fish,” said Benjamin Mammanus from Poonthura, who accompanied an Indian Navy vessel on 4 December. “With our help, they were able to find several large vessels but by then it was too late for the crew on smaller craft,” he said.

The centre and the state agencies are deliberating sophisticated technological solutions for emergency warnings, like VHF and satellite

radio sets, distress alert transmitters and the Indian Space Research Organization’s ‘NavIC’ (similar to the GPS). These will be necessary to address the needs of Thoothoor’s deep-sea fishermen. But closer to shore, the fishermen are now learning about simpler measures that had been overlooked: port warning systems, safety equipment like life jackets and buoys (mandatory according to the law but never enforced), and a registration system where all boats and crew lists are maintained on shore. “The fishermen will have to stop viewing sea-safety measures as a burden. The floatation devices could have saved several lives,” said Peter (NFF).

The authorities admit that the dissemination of weather warnings to the last mile remains a challenge; but here, too, it has overlooked a cheap and effective solution: community radio. Locally run stations in Odisha and Gujarat provide crucial lessons for a community-based disaster-management approach. During the 2013 Phailin cyclone in Odisha, the state government managed to evacuate over 800,000 people from coastal villages, albeit with the help of accurate IMD predictions issued six days in advance. But the dissemination of the warning was helped by the media, particularly community radio stations like Radio Namaskar, a Konark-based coastal station which broadcasts content developed by, and for, the fishing community, in Odiya and Telugu. “FM radio technology is cheap and if the towers are on the coast, boats as far as 50 km in the sea can listen to our bulletins,” said N A Ansari Shah, chairman of Radio Namaskar. “We don’t only broadcast weather forecasts, but also songs, discussions, market prices and other practical information that is crucial to fisherfolk.”

“Ultimately, any solution has to take into account fishers livelihood and working conditions,” said Peter. “This problem cannot be solved with another welfare scheme or state relief package. Fishworkers’ safety has to become a priority.”

For more



http://www.imd.gov.in/alerts/20171129_al_238.pdf

**IMD Bulletin 1
(29 November, 2017)**

http://www.imd.gov.in/alerts/20171130_al_245.pdf

**IMD Bulletin 6
(30 November, 2017)**

<http://www.rsmcnewdelhi.imd.gov.in/images/pdf/sop.pdf>

IMD Cyclone SOP

<http://www.rsmcnewdelhi.imd.gov.in/images/pdf/publications/preliminary-report/cs29nov-06dec.pdf>

IMD Ockhi Preliminary Report

<http://www.ndma.gov.in/images/guidelines/cyclones.pdf>

NDMA Cyclone Management Guidelines

<http://www.fao.org/docrep/012/al216e/al216e.pdf>

Baseline Study for training in sea safety development programme in East Godavari District, Andhra Pradesh, India

<https://www.researchgate.net>

A Description and Analysis of the Events Occurring at sea and Land on 6 and 7 November, 1996 in East Godavari Andhra Pradesh