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International Collective in  
Support of Fishworkers

# Report of the National Workshop on Small-scale Fisheries, Cyclone Ockhi and Disaster Risk Management

29 to 30 May, 2018

Hotel Apollo Dimora,

Thiruvananthapuram, Kerala, India



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**Thiruvananthapuram, Kerala, India**

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Registration at the workshop

## PREFACE

A National Workshop on Small-scale Fisheries, Cyclone Ockhi and Disaster Risk Management was held on 28 to 29 May, 2018 at Thiruvananthapuram. The workshop was organised by the International Collective in Support of Fishworkers (ICSF) Trust with the support of the Food and Agriculture Organization of the United Nations (FAO).

The workshop was attended by a large number of distinguished participants, including fishworker organisations, government officials, academics, non-governmental organisations, civil society organisations and the disaster affected community. Representatives from FAO and the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) also attended the programme.

On 29 November 2017, a deep depression, detected in the Indian Ocean southwest of Sri Lanka, rapidly intensified into a cyclonic storm off the coast of Tamil Nadu and Kerala and the Union Territory of Lakshadweep Islands. Cyclone Ockhi, as it was named, took the life of a number of fishers, injured many and destroyed fishing vessels and gear.

The United Nations Sendai Framework for Disaster Risk Reduction 2015-2030, which India has adopted, aims to achieve a substantial reduction in the loss of lives due to disasters, through the coordinated efforts of national and international agencies, including the central and state governments, civil society and the larger community to build resilience to natural and man-made hazards, including cyclones. The approach of Disaster Risk Management (DRM), central to the Sendai Framework, combines mitigation, prevention and preparedness, with response and recovery across institutions of government, private sector and civil society.

India's own Disaster Management Act, 2005 was a response to the unprecedented damage caused by the 2004 Indian Ocean tsunami and the gaps it revealed in the country's preparedness for dealing with natural disasters. Although national and state disaster management authorities were set up and plans formulated, their success has been mixed in the face of recurring cyclones along India's Bay of Bengal coast.

Towards developing new approaches to disaster preparedness, the 2013 FAO Guidelines for the Fisheries and Aquaculture Sector on Damage and Needs Assessments in Emergencies discuss the need for assessing disaster impact and for developing effective disaster response in an emergency situation. The 2014 Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication (the SSF Guidelines) discuss applying the "relief-development continuum" concept to emergency response and disaster

preparedness, and the “building back better” concept to relief, rehabilitation, reconstruction and recovery, especially to reduce vulnerabilities to potential future threats.

ICSF Trust, with financial assistance from the FAO, undertook a study of the impacts of Cyclone Ockhi with the following objectives:

- To assess the impacts of the Cyclone Ockhi and the emergency at the institutional and community level;
- To review central and state policies and plans to cope with cyclones to determine how loss of lives and livelihoods of the fishing communities can be minimized, in line with the SSF Guidelines;
- To evaluate, within the framework of a human rights-based approach, the state’s presence in the fisheries sector and its preparedness to respond to cyclones; and
- To suggest solutions to challenges in addressing particular disasters and the possible linkages between various institutions and the fishing community, especially in relation to disaster preparedness and fisheries management.

The study assessed the response to Cyclone Ockhi, both at the institutional and community level, reviewed DM and DRM strategies adopted by concerned actors and examined if the loss of lives could have been minimized by a more coordinated institutional response. In keeping with the internationally recognized DRM approach, the study reviewed the various mitigation and relief plans in place at the central, state and district level and their effectiveness. Considering that so many fatalities occurred at sea, the study looked into fisheries management issues of relevance to cyclone preparedness.

The workshop, inter alia, was organised to share the findings of the study and communicate the lessons learnt with the community, government agencies at all levels and other stakeholders, and to take feedback.



## ABBREVIATIONS

AIR	All India Radio
AIS	Automatic Identification System
BOBP-IGO	Bay of Bengal Programme – Inter Governmental Organisation
BSNL	Bharat Sanchar Nigam Limited
CDRRP	Coastal Disaster Risk Reduction Project
CG	Indian Coast Guard
CIFT	Central Institute of Fisheries Technology
CMFRI	Central Marine Fisheries Resources Institute
CRA	Commissioner of Revenue Administration
CRS	Community Radio Station
DADF	Department of Agriculture, Dairying and Fisheries
DAT	Distress Alert Transmitter
DM	Disaster Management
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EGC	Enhanced Group Call
EEZ	Exclusive Economic Zone
EU	European Union
EWS	Early Warning System
FAO	Food and Agriculture Organization of the United Nations
FFA	Fire Fighting Appliance
FIMSUL	Fisheries Management for Sustainable Livelihoods
FLC	Fish Landing Centre
GoI	Government of India
GoK	Government of Kerala
GoTN	Government of Tamil Nadu
GPS	Global Positioning System
HF	High Frequency
HFA	Hyogo Framework for Action
ICAR	Indian Council for Agricultural Research
ICSF	International Collective in Support of Fishworkers
IMD	Indian Meteorological Department
INCOIS	Indian National Centre for Ocean Information Services
ISRO	Indian Space Research Organisation

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IUU	Illegal, Unreported and Unregulated fishing
LSA	Life Saving Appliance
MCS	Monitoring Control and Surveillance
MF	Medium Frequency
MFRA	Marine Fishing Regulation Act
MMD	Mercantile Marine Department
NavIC	Navigation with Indian Constellation
NAVTEX	Navigational Telex
NCRMP	National Cyclone Risk Mitigation Project
NDMA	National Disaster Management Agency
NFF	National Fishworkers' Forum
NGO	Non-Governmental Organisation
nmi	Nautical Miles
OBM	Out-board Motor
PFD	Personal Floatation Device
PFZ	Potential Fishing Zone
SAR	Search and Rescue
SDG	Sustainable Development Goals
SDMA	State Disaster Management Agency
SEWA	Self Employed Women's Association
SIFFS	South Indian Federation of Fishermen Societies
SNEHA	Social Need Education and Human Awareness
SOP	Standard Operating Procedure
SSF Guidelines	FAO Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNTRS	United Nations Team for Recovery Support
UNISDR	United Nations International Strategy for Disaster Reduction
VHF	Very High Frequency
VMS	Vessel Monitoring System
WPC	Wireless Planning and Coordination Wing

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## Session 1: Inaugural Session

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*Dr. John Kurien, Managing Trustee, International Collective in Support of Fishworkers (ICSF) Trust, chaired the session, which began with a minute's silence to pay homage to lives lost during Cyclone Ockhi.*

### Welcome Address

**Ms. Nalini Nayak, Trustee, ICSF Trust,** welcomed the participants, saying that the workshop was organised to avert disasters of this magnitude in the future, despite the advent of climate change and its effects on cyclonic activity. She thanked the Food and Agriculture Organization of the United Nations (FAO) for supporting the workshop and then introduced the speakers of the session. She noted that the workshop participants include not only government officials and fishworker organisations, but also members of the disaster affected community interviewed for ICSF Trust's study.

### Overview of the Workshop

**Mr. Sebastian Mathew, Executive Trustee, ICSF Trust,** contextualizing the disaster and the workshop, said that Cyclone Ockhi was a sudden-onset disaster that wreaked havoc at sea and almost all the victims were either short- or long-haul fishers on board vessels from Kanniyakumari and Thiruvananthapuram districts. They mostly operated in clusters but were scattered by Cyclone Ockhi. Many of the affected mechanised vessels were registered in Tamil Nadu, operated from Cochin harbour, Kerala, and fished off the territorial waters in the Arabian Sea and landed catches in any fishing port on the western seaboard. Mr. Mathew said that Cyclone Ockhi had brought in its wake unprecedented destruction of life and livelihoods, in addition to social, health and psychological consequences.



P. H. Kurian, John Kurien, Anthony Adimai, Nalini Nayak, and Sebastian Mathew at the inaugural session of the workshop

In the context of the cyclone, he said that the workshop recognizes the importance of disaster risk management, as defined by the United Nations International Strategy for Disaster Reduction (UNISDR), focusing on the organisation, planning and application of measures preparing for, responding to and recovering from a sudden-onset disaster. The workshop would explore how to ensure that early warning leads to early action and in turn leads to preparedness at all levels for a quick and effective response.

Further, Mr. Mathew said that in the post-disaster scenario, the workshop would look at the role of the Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication (the SSF Guidelines) in disaster risk management. The workshop would examine concepts like “relief-development continuum” and “build back better” to strengthen resilience of small-scale fishing communities, including women and vulnerable and marginalised groups. Towards improving disaster and fisheries governance, the workshop would apply a human rights-based approach as advanced by the SSF Guidelines to look at the need for developing new and effective measures at the local, state and national levels in a coherent manner.

## Opening Remarks

### **Mr. P.H. Kurian, Additional Chief Secretary, Revenue and Disaster Management, Government of Kerala,**

referred to Cyclone Ockhi as unprecedented and its impact different from traditional cyclone-related impacts such as falling trees and electricity poles. He said that there was coordination within the government through real-time communication, using various WhatsApp groups. Mr. Kurian spoke about the plans to introduce the Indian Regional Navigation Satellite System or Navigation Indian Constellation (NavIC) and ongoing efforts to make it a two-way communication system. The government of Kerala

“When the news first came to me on 30 November, I was thinking about where the cyclone will cross the coast. That is the image in everybody’s mind—trees and electricity lines falling—because we never had an experience of this kind along the West coast in our lifetime. Now this will definitely be a part of our practice.”

—P.H. Kurian,  
Additional Chief Secretary,  
Revenue and Disaster Management,  
Government of Kerala

is also looking at the use of shortwave radio as an inexpensive way to communicate to those far out at sea. He said that adequate relief finance was available and that INR 20 lakh (INR 2 million) had been paid as solatium to the families of the dead and missing. Referring to the importance of a “relief-development continuum” in disaster risk management, Mr. Kurian said that in this year’s budget, INR 2000 crore (INR 20 billion) has been allocated for all-round development of coastal areas and there is a component for fishermen as well, the details of which were being worked out by the Department of Fisheries.

**Mr. C.M. Muralidharan, Consultant, FAO,** read out the message from **Mr. Shyam Khadka, FAO representative in India.** The FAO is committed to the Sendai Framework for Disaster Risk Reduction 2015–2030 and the Paris Climate Accord within the United Nations Framework Convention on Climate Change (UNFCCC). At FAO, disaster risk reduction and management is a corporate priority expressed in FAO’s overarching Strategic Objective to “increase the resilience of livelihoods to threats and crises.” FAO’s SSF Guidelines advocate for developing and implementing coherent and integrated national strategies for safety at sea, with the active participation of small-scale fishers themselves and through regional coordination. The SSF Guidelines also promote disaster risk management within the concepts of “relief-development continuum” and “building back better”.

As an intervention after the 1996 East Godavari cyclone in Andhra Pradesh state, the FAO project on training in sea safety helped give clear directions on community based disaster preparedness. After the 2004 Indian Ocean Tsunami, FAO was part of the joint UN initiative—the

United Nations Team for Recovery Support (UNTRS)—and also implemented a World Bank-supported project, Fisheries Management for Sustainable Livelihoods (FIMSUL). Both interventions helped set a direction for long term sustainable fisheries development on the lines of the “relief-development continuum” and “building back better” concepts. FAO has also been collaborating with the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) on various sea safety projects. The current support to ICSF for the study was to help draw lessons from Ockhi as FAO recognizes the need to prepare for future disasters and to fill gaps in policy or its implementation, which can have a direct effect on the lives and livelihoods of fishers on the coast and at sea. The lessons learnt will hopefully help develop clear strategies for the future, based on the collective knowledge and experience of the various stakeholders present at the workshop.

**Dr. Yugraj Singh Yadava, Director, BOBP-IGO**, said that BOBP has been highlighting the safety needs and the working conditions of fishers since the 1980s. He was concerned that while a number of activities were demonstrated to fishermen, many did not last very long. Hence, a process that could ensure the long term safety of fishermen at sea is essential. Dr. Yadava said that it was unfortunate that the focus on working conditions and safety remained low from all stakeholders, including the government and fishers; and that we are good at post-mortems but what is needed is an ante-mortem. Pointing out that fishing, even in good times, is one of the most dangerous occupations in the world, he said that the concept of safety and risk reduction needs to be holistic and practised continuously. Referring to the Chittagong Resolution that was accepted by BOBP member countries in 2008, he said that the development of a national plan on monitoring, control and surveillance (MCS) had hardly been realized in India. He concluded, calling for an effective MCS system, saying that community platforms of fishers such as cooperatives should prioritize safety issues and help implement policies at the ground level.

“The concept of safety and risk reduction needs to be a holistic one—total safety. However, what we do is usually pick and choose measures as we suffer from event to event. Cyclone Ockhi is another reminder that fishermen should ask for, participate in and practice total safety.”

—Dr. Yugraj Singh Yadava,  
Director, BOBP-IGO



C.M. Muralidharan, Yugraj Singh Yadava, P.H. Kurian, John Kurien, Anthony Adimai, Nalini Nayak and Sebastian Mathew at the inaugural session of the workshop

**Mr. Anthony Adimai, Chairman, South Indian Federation of Fishermen Societies (SIFFS),** pointed out that fishers leave for their fishing grounds at different times of the day. In the case of Cyclone Ockhi, by the time the warning was received, many fishers were already out at sea. Hence, it was necessary to ensure that information reaches the fishers at the right time. Fishers should also be told the reason why they are barred from going to fish when cyclone warnings are issued. He also pointed out that SIFFS had created a small disaster management fund, from which they had been providing some support for those affected by Ockhi and other disasters.

**Dr. John Kurien, Managing Trustee, ICSF Trust,** concluding the session, noted that unusual weather episodes were going to become the norm in the future. Everyone in the audience were, in some way or another, connected to the Ockhi disaster—as those directly affected, or part of the rescue operations, government, media, academics and so on. The focus at this workshop was not only to make an analysis of the disaster, but to also consider ways in which future risks can be reduced.

“In Aceh, Indonesia, after the 2004 tsunami, one thing I learnt is that in the recovery process it is very important to reflect on what has happened. All those affected and those unaffected have to come together, respect each other’s positions and knowledge, and work together to build back better.”

—Dr. John Kurien,  
Trustee, ICSF Trust



Participants at the workshop

## Session 2: ICSF Study Presentation

The session was chaired by Mr. C.M. Muralidharan, Consultant, FAO.

**Mr. Manas Roshan, Consultant, ICSF Trust**, presented the study, *Cyclone Ockhi: Disaster Risk Management and Sea Safety in the Indian Marine Fisheries Sector*. The objectives of the study were to assess disaster response and preparedness at national, regional and local levels; to review early warning systems and their efficacy; to evaluate, with a human rights-based approach, central and state policies and plans to cope with disasters and minimize loss of lives and fishery-based livelihoods; and to suggest national strategies to ensure safety at sea and disaster preparedness in line with the SSF Guidelines.



Manas Roshan presenting the study on Cyclone Ockhi at the workshop

Interviews were conducted in four of the worst affected villages in Kerala and Tamil Nadu. Most of the dead and missing fishermen from Kerala worked on small-scale *vallams* or motorised country craft, while those from Tamil Nadu were long-haul fishers (30-40 day trips) working on mechanised vessels. Disaggregated village- and craft-wise data was crucial to identify specific vulnerabilities, which require differential interventions for safety and dissemination of warnings. A timeline of events between 28 November and 6 December, 2017 was presented to identify key issues of early warnings, fishers' positions and disaster response by various agencies.

The role of meteorological and disaster management agencies, at the national and state level, was studied to examine both the gaps in cyclone management protocols and the opportunities for better coordination. The study looked into effective actions by Tamil Nadu agencies (such as the rapid relay of depression stage warnings to coastal communities using community organisations like churches), which could be applied in Kerala and other West coast states.

It was pointed out that the absence of an effective vessel monitoring system had led to a underestimation of the cyclone's threat to mechanised deep-sea vessels between the western seaboard and Lakshadweep Islands. Mr. Roshan analyzed the state disaster management plans of Kerala and Tamil Nadu, to point out that an almost exclusive focus on landfall of cyclones had led to gaps in determining threats at sea. Previous cyclone risk mitigation projects were also studied to point out the need for greater attention to sea safety and capacity building of the community, over coastal infrastructure development.

The study underlined the importance of disaster management institutions at the state and district level; and the lack of trained officials on the ground. The responsibilities of Fisheries Departments to create a contingency plan for accidents at sea; to devise a mass messaging system; and oversee how harbour warnings reach fishermen was highlighted. State Marine Fishing Regulation Acts (MFRA) and their safety requirements were studied, while pointing out how boat inspections are manipulated.

The Sendai framework for Disaster Risk Reduction 2015-2030, which India has adopted, aims to significantly reduce the loss of lives due to disasters through coordination and collaboration at all levels. The SSF Guidelines offer a roadmap for addressing both disaster risk management and sea safety, stressing on the need to integrate safety at sea into the management of fisheries. This includes MCS measures by Fisheries Departments. (Data on vessels and fishers at sea during Cyclone Ockhi would have been crucial to rescue operations, but was not available.) The SSF Guidelines recommend open and democratic access to disaster information and emergency location systems for fishermen.

The study examined Sri Lanka's implementation of MCS programme, as part of its policies to control illegal, unreported and unregulated (IUU) fishing. The country has integrated communications solutions and tsea safety into its management measures.

The study also addressed the issue of rehabilitation of fishers and families affected by the disaster. Kerala and the Tamil Nadu governments have disbursed compensation packages to the families of dead and missing fishermen. But residual vulnerabilities remain, especially the psychological trauma of survivors and the livelihood concerns of women who have lost their husbands.

The development-led approach to disaster mitigation and risk management aims at reducing vulnerability to future threats, said Mr. Roshan. Based on the findings of the study, a number of recommendations were made. It is necessary to use multiple channels and technologies to communicate warnings and ensure that there is close coordination and collaboration between the IMD and disaster managers, between departments and between states. By combining old technology like community radio and Very High Frequency (VHF) radio with new ones like satellite phones, appropriate user-friendly technology options must be derived, with the participation of the fishing community. Fishermen's local knowledge must be used to identify locations where fishermen are likely to be fishing. Through community participation, there is a need to strengthen district and village level disaster risk management through periodic training programmes. This was to ensure an overall culture of safety. Disaster risk management must be integrated into fisheries management by expanding the regulatory role of Fisheries Departments. An updated database on fishing vessels, which includes information on harbours and landing centres, vessel movement and crew lists must be maintained. Data on migrant workers is a must as they are especially vulnerable during disasters and their numbers are on the rise. It is also necessary to monitor working conditions, contractual terms and the training of fishers. Finally, it is essential that governments apply a human-rights based approach to disaster risk management, respecting the rights and dignity of traditional fishers, women and migrants.

*The presentation was followed by a discussion, which largely dealt with the communication requirements of fishers. One comment noted that while the report was a good post-mortem, it was also necessary to look forward and plan for the future. It was pointed out that post-1999, the number of casualties on land due to cyclones had come down, but the safety of fishers at sea and the dissemination of warnings remains a challenge. It was also mentioned that expensive and cumbersome equipment was not preferred by fishers.*



Manas Roshan and C.M. Muralidharan during the presentation of the ICSF study



## Session 3: Panel Discussion 1

### Cyclone Ockhi: Fishers and coastal community perspective

*Mr. V. Vivekanandan, Trustee, ICSF Trust, chaired the session and introduced the panelists, who were fishermen and fisherwomen from the Ockhi affected villages. Mr. Vivekanandan said the session would give voice to the experiences of the community and the challenges they now face in recovering from the disaster.*

**Mr. Sahayam, a vallam fisherman from Vizhinjam, Kerala,** said that he and three other fishers had set out in one craft at 3 am on 30 November. They primarily used hooks and lines to fish and carried an extra outboard motor (OBM) and Global Positioning System (GPS) device on their craft. There was initially no problem but when they reached their fishing zone 15 nautical miles (nmi) from shore, they encountered the storm. The waves were the biggest he had ever seen. Two of the fishermen fell into the sea and drowned immediately. Mr. Sahayam and another fisher tied themselves to their overturned boat with rope and survived for two days before being rescued by a Navy vessel. He said that the Vizhinjam fishers had not received any warning. If they had been warned, they would not have set out that morning. They were treated in a hospital for five days and received a compensation of INR 20,000 but their losses due to the cyclone amounted to INR 600,000—for the craft, gear and the GPS. [Fishers were compensated for the loss of craft and gear in the weeks following the workshop.]

**Mr. Raju, a vallam fisherman from Poonthura, Kerala,** said that he had gone fishing with other fishers on two craft with three persons in each, to do hook-and-line fishing. The craft had a wireless set worth INR 12,000, used for communication with other vessels. They left on the night of 29 November and as they reached about 30 nmi from shore, the weather turned rough, and the current pulled them deeper into the sea. But they were somehow able to return to shore the next morning. Mr. Raju showed the audience a Distress Alert Transmitter (DAT) he had been given by the Department of Fisheries, Kerala, but said that he did not know how to use it.

**Mr. Dickson, a mechanised boat owner from Eraviputhenthurai, Tamil Nadu,** narrated his experience of going on a Search and Rescue (SAR) mission on a Coast Guard vessel from Thoothukudi. He used a map with the coordinates of fishing zones plotted and described the route of the Coast Guard vessel, which set out only on 5 December. Mr. Dickson clearly communicated the possible locations of his fellow fishers but didn't get a chance to interact with the officers overnight; in the morning he learned that they had reached a different location and was told that the vessel was not authorized to go to the areas he had suggested. Local fishers then launched their own rescue operation and found several capsized boats but it was too late to save the crew. He said that during SAR, the Coast Guard and the Navy should use fishers' knowledge and be more flexible with their protocols at the time of an emergency.

“Ockhi is a tale of two states and two fleets. The mechanised fleet is the least understood, whose fishing is based on dare devilry and inherited skills. It is necessary to understand which fleet goes where and that fishermen prize voice communication. This needs to be promoted with appropriate technologies.”

—Mr. V. Vivekanandan,  
Trustee, ICSF Trust

**Mr. Robinson, a fisher from Vallavilai, Tamil Nadu, working on a mechanised vessel,** departed from Thengapattinam harbour, Kanniyakumari, on 27 November along with 10 other crew members. They encountered the cyclone on the night of 30 November and the next day, their boat broke in half and capsized. They tied water cans together to make a raft and stay afloat. There was no food, so they ate the raw rice flour they had salvaged from the boat. While waiting for some sign of rescue vessels, three men from the group died during the storm. Eight of them finally drifted to the

rocks of Kalpeni (Lakshadweep Islands) along with one dead body. They recuperated in a hospital there for three days and were then dropped back home. They have been asking for some help from the government, even petitioning the district collector, because they don't have the confidence to return to the sea.

**Ms. Mercy Anthony, a fish vendor from Adimalathura, Kerala**, lost her husband in Cyclone Ockhi. A total of 13 people died from Adimalathura; ten of them were from her family. Her husband's body was recovered and the government announced a solatium of INR 20 lakh (INR 2 million). Of this, a small portion is for the parents and the rest for the wife and the children, which is deposited into a bank account. She receives INR 13,800 as interest and has to use this to pay off loans and provide for her family. To claim the money, the ageing parents have to go from the village to the treasury in person. Those whose kin's bodies were never found faced even greater challenges with the bureaucracy. She hoped that her presence at the workshop would bring about some change in the lives of the families affected by the tragedy.

**Ms. Saju Jeena from Vallavilai, Tamil Nadu**, lost her husband, along with his two brothers and their recently acquired mechanised fishing vessel, in the cyclone. She said that the reality of their plight was that the compensation paid by the government did not cover their debts and expenses in the absence of any earnings from fishing. She was hopeful because the local church and parish priests are training her and other women in tailoring and embroidery, helped by grants from charities. She hoped that the government could take forward such vocational training for women through its own programmes.

**Mr. Lawrence, a vallam fisherman from Poonthura, Kerala** was the last person rescued in Kerala, after drifting at sea for three days. He had received some medical assistance from the government and a little support from the local church. He said that he had attempted to go fishing again but had to abandon it because of the injuries he had sustained and the memories of the storm. (He suffers from chronic back pains and has lost hearing in one ear.)

*A discussion followed, where the issue of life-jackets and safety equipment was taken up: quality of the jackets distributed by the government; why fishermen did not use them; and their unavailability in the market. A suggestion was made to design vallams with a store for safety equipment. The discussion was followed by the screening of a film on a floatation device designed by BOBP-IGO in the aftermath of the 1996 Andhra Pradesh cyclone. The float was useful for a group of fishers and the design was open source. It was pointed out that safety equipment requires certification by appropriate agencies before distribution.*



Mercy Anthony, Sahayam, V. Vivekanandan, V.Raju, Dickson and Robinson during the first panel discussion on fishers and coastal community perspective of the disaster

## Session 4: Panel Discussion 2

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### Disaster preparedness at sea: Ensuring effective early warning systems and better prediction of cyclones

*The session was chaired by Mr. Satish Babu, Member, Global Humanitarian Activities Committee, Institute of Electrical and Electronic Engineers (IEEE). Mr. Satish said that this session would address issues of technology and its effective use for early warnings, prediction and dissemination of alerts. While various technologies are available, the decision would largely be based on the needs of fishermen, who have demonstrated that they will spend money on equipment and train themselves to use them if the implements help catch more fish and better their livelihoods.*

**Dr. P. Pravin, Assistant Director General (Marine Fisheries), Indian Council of Agricultural Research**, expressed concern over the lack of awareness about safety among fishermen and their unwillingness to carry the minimum required lifesaving appliances on their boats. He spoke about how boat owners move the same batch of safety equipment from boat to boat during inspections. Over the years, boat sizes and the size of the holds for fish and diesel have become larger, but fishers always claim there is no space for essential life jackets. All gear and equipment on board has the sole purpose of catching more fish. Unlike in the past, small vessels were now going deeper into the sea and communication is becoming more difficult. Dr. Pravin said that a lot of mobile apps were now available which gave information on both fish availability and sea conditions. Training in the use of these apps and safety equipment was essential. The motto, 'Safety first, profit next' should be firmly inculcated among fishermen.

**Mr. Ravi Shanker Srivastav, Engineer, Wireless Planning and Coordination (WPC) Wing, Ministry of Communications, Government of India**, said that internationally, there are several modes of sending navigational and meteorological warnings: Navigational Telex (NAVTEX) technology, which operates on the medium wave frequency (MF); Enhanced Group Call (EGC), a satellite based system, etc. But these might not be practical for small-scale fishers. The near-shore vessels can use VHF radio sets and deep sea fishing can use MF or HF sets, for which individuals or governments can apply for licenses with the WPC. Satellite phones are now available through BSNL but it remains to be seen if licenses will be issued to fishers. The misuse of marine radio frequencies by fishermen is a major issue, with distress channels sometimes getting jammed because of chatter between boats. Training and sensitization of fishers is essential. He said that the WPC mainly dealt with frequency management and regulation but would support all endeavors to better connect fishers.

**Dr. S. Balachandran, Director, Area Cyclone Warning Centre, Indian Meteorological Department, Chennai**, explained the systems and protocols for cyclone prediction and dissemination of warnings. Dr. Balachandran drew attention to the fact that data from the deep oceans was not available and this limits the analytical models used for predictions. The IMD uses data from satellites, radars and several other sources. The increase in accuracy of monsoon forecasts is because of improvements in technology.

In the case of cyclones Phailin and Hudhud, forecasters got a good lead time because they formed far away from the coast, but Ockhi intensified close to the coast. Normally storms dissipate as they travel over land but Ockhi rapidly intensified after crossing Sri Lanka. Dr. Balachandran said that as soon as it was confirmed as a depression, he called the Tamil Nadu Relief Commissioner; bulletins were also issued. He said that cyclone prediction is not an exact science and all models have limitations. He concluded saying that studies indicated an increase in the intensity of cyclones in the Arabian Sea due to climate change. Although recent cyclone prediction models showed that the number of cyclones will reduce in the Northern Indian Ocean, the inference of experts is that once formed, these systems will be very strong.

**Dr. Abhilash S., Assistant Professor at the Department of Atmospheric Sciences, Cochin University of Science and Technology,** explained the various pathways of cyclones on the Arabian Sea coast and the operational models used by the IMD for cyclone prediction. He said that he and his team have developed coupled models that use both atmospheric and oceanic data. The problem is that as lead time increases, so does the uncertainty of predictions, while the surety of forecasts decreases. Dr. Abhilash concluded by saying that there are four components to disaster preparedness: the risk knowledge of the community, which determines their mitigation actions; monitoring by disaster managers; prediction, which is the domain of scientists; and communication of warning, all of which need a bottom-up approach involving the community in order to succeed.

**Mr. Sajan Venniyoor, Community Radio Consultant,** used a chart outlining the flow of information during a disaster to show that the people who are supposed to receive the warnings are always at the bottom, an understanding of communication that needs to be inverted. Pointing out that the chain has too many links, which causes delays in relaying warnings, Mr. Venniyoor said that the quickest path was the media. Radio, although a powerful tool, is tightly controlled by the government. He explained how coastal community radio stations, which broadcast on FM, could easily broadcast as far as 35-50 nmi, which is very useful for traditional fishing craft as the costs of both transmission and the devices are very low. Mr. Venniyoor pointed out that fishermen need to hear alerts and messages in their own language and idiom, so using a single centralized broadcast was not practical.

*In the discussion that followed, key learnings from East coast states, which could be adopted by West coast states like Kerala, were discussed. It was pointed out that the initiative taken by IMD's local officials in Tamil Nadu, even before formal bulletins were prepared, revealed inconsistencies in communication channels and gaps in protocols for cyclone management. It was clarified that the government has reserved two frequencies for community radio stations in each district.*



P. Pravin, Satish Babu, Sajan Venniyoor, Ravi Shanker Srivastav, Abhilash S., and S. Balachandran during second panel discussion on early warning systems and disaster preparedness at sea

## Session 5: Group Discussion

Four questions were prepared for discussion and assigned to group coordinators (Annexure 2). Participants could choose the group and coordinators they wished to join, as per their areas of expertise. The outcomes from the hour-long discussions were presented on the second day.



Group 1: Channels of communication and early warning systems needed to reduce disaster risks  
(Coordinator and Rapporteur: Dr. Maxmillan Martin)



Group 2: Possibilities for participative local level coordination and collaboration for disaster management and relief  
(Coordinator: V. Vivekanandan; Rapporteur: Dr. Ahana Lakshmi)



Group 3: Appropriate technology and safety measures to reduce fishers' risks at sea  
(Coordinator: Dr. Leela Edwin; Rapporteur: Dr. Abhilash S.)



Group 4: Long-term strategies to be adopted on shore for disaster risk reduction  
(Coordinator: A.J. Vijayan; Rapporteur: Nalini Nayak)

## Session 6: Panel Discussion 3

### Disaster response and relief: Institutional coordination and collaboration.

*Dr. Y. S. Yadava, Director, BOBP-IGO, chaired the session and said the speakers will deliberate on the steps that need to be taken to improve institutional collaboration and coordination, the backbone of both post-event and pre-event activities.*

**Mr. S. Venkatesapathy, Director of Fisheries, Government of Kerala**, said that even prior to the cyclone, the Fisheries Department had been trying to ensure registration of all boats. He said that about 96 percent of all mechanised boats had been registered and colour-coded, and their locations generally known. This is a challenge for traditional craft because they are large in number and depart from their villages. As part of a project, the Department had struggled to install even 300 automatic tracking devices on these vessels. The second challenge is communication, as no long range two-way communication devices are available.

“One aspect of risk reduction we are finding difficult is knowing how many fishermen have gone to sea and their locations: They need not say the exact GPS coordinates. Just the direction, the departure time and expected time of return. We need these data.”

—S. Venkatesapathy,  
Director of Fisheries,  
Government of Kerala

The new NavIC devices developed by the Indian Space Research Organisation (ISRO) are being proposed along with more DAT devices. The last aspect the Department is working on is life-saving equipment. They are now trying to develop less cumbersome inflatable life jackets. Mr. Venkatesapathy concluded by saying that all such innovations need discussions and training at the grassroots level.

**Dr. Swathi Lakshmi, Principal Scientist, Central Marine Fisheries Research Institute (CMFRI), Vizhinjam**, conducted a field study on the impact of the cyclone in Poonthura and Vizhinjam villages. A sample of 34 fishermen from each village was used. According to Dr. Swathi's study, the lack of safety devices on board the craft and lack of communication systems were perceived as the main factors for deficiencies in preparedness. She emphasized the importance of traditional



Swathi Lakshmi, V. K. Varghese, Yugraj Singh Yadava, and S. Venkatesapathy during the third panel discussion on institutional collaboration and coordination during disaster response and relief

knowledge of fishers, many of who had observed unusual cloud and wind conditions and returned to shore before the cyclone struck. She concluded her presentation saying that counseling and career guidance for children of dead fishers was an urgent need expressed by the fisher families.

**Commandant V. K. Varghese, Commanding Officer, Indian Coast Guard, Thiruvananthapuram**, discussed the role of the CG in rescue operations during Cyclone Ockhi. He presented photos and videos to describe the weather conditions at the time, acknowledging that this slowed down their work. Commandant Varghese expressed concern that several fishers were reluctant to abandon their boats and gear, despite the threat to their lives, a sign that more needs to be done to secure their assets and livelihoods. Refuting reports that CG vessels were constrained by protocol, he pointed out their difficulties: limited number of SAR vessels in nearby locations; the vast area over which stranded boats were scattered; and the absence of precise location of these boats. The commandant was of the opinion that DAT devices, whose signals are monitored jointly by the CG and other agencies, was an essential tool for fishermen, along with life-saving equipment, which are crucial in the interim between accidents and the arrival of responders.

“There is no restriction—for humanitarian action, the Coast Guard can even cross international boundaries. Whenever a cyclone or low pressure area is formed, we are completely alert. But the search area is vast; unless there is a specific distress call, we will not divert our assets to a particular area.”

—Commandant V. K. Varghese,  
Commanding Officer, Indian Coast Guard,  
Thiruvananthapuram

**Dr. Sekhar L. Kuriakose, Head, State Emergency Operations Centre, Government of Kerala**, said that Cyclone Ockhi was an important lesson for Kerala whose last cyclone was nearly 100 years ago. Describing the Kerala SDMA's proactive efforts, both on- and offline, to strengthen coordination, Dr. Sekhar said that every district had interdepartmental teams to monitor monsoon conditions and this would now be expanded. He said that post-Ockhi, the Kerala SDMA had decided to change the cyclone warning protocol, so that even depression warnings activate the Standard Operating Procedure (SOP) for disasters. This means that fishing activity will be barred once depression warnings are issued. The SDMA will also make use of predictions from multiple reliable agencies, including the IMD. He said the challenge was to create localized prediction systems that are latitude-longitude specific, so that fishers' livelihoods are not adversely affected by frequent warnings.

*Dr. Y. S. Yadava, in his closing remarks said that the fisheries administration has an important role to play in preventing the loss of lives of fishers. Disasters are rare but routine accidents at sea account for the highest number of deaths. The precautions must start from the land, from the moment the boat leaves the harbour or landing centres.*



V. K. Varghese, Yugraj Singh Yadava, and Sekhar L. Kuriakose during the third panel discussion on institutional collaboration and coordination during disaster response and relief



## Session 7: Group Presentations

Group coordinators presented the key points of their discussions in a session chaired by Dr. P. Pravin, Assistant Director General (Marine Fisheries), Indian Council of Agricultural Research, New Delhi.



Dr. Maxmillan Martin presenting for Group 1

On the question of effective early warning systems and channels of communication needed for the reduction of disaster risks, **Group 1, coordinated by Dr. Maxmillan Martin**, categorized the issues according to geographical zones or positions relative to the shore; appropriate media keeping the end users in mind; and the content of fisher warnings. Besides the technology options discussed in the sessions, village loudspeakers, visual aids and port signals were suggested. The group stressed that the message should be clear; it is important that fishers be explained what the risks are; and that they be informed about the specifics of storm intensity, location, track and other details. Government agencies should simplify and authenticate their bulletins using fisher feedback. Dr. Maxmillan also suggested an IMD 'hotline' with 24-hour channels of communication open to fishers.

**Group 2, coordinated by Mr. V. Vivekanandan**, deliberated on the possibilities for participative local level coordination and collaboration for disaster management and relief. **Group rapporteur, Dr. Ahana Lakshmi**, stressed on the need to identify strong, locally accepted community organisations (*gram panchayats*, customary and religious organisations, women's groups, self-help groups, cooperatives or boat associations) to aid both disaster and disaster risk management activities. Consultation with the community is paramount and the capacity of local organisations has to be built. In the case of SAR operations, local community-led efforts can complement the work of the CG and the Navy. People should be given the appropriate training, for both disaster situations and routine distress calls.



Ahana Lakshmi presenting for Group 2

The use of appropriate technology and safety measures to reduce fishers' risks at sea was discussed by **Group 3, coordinated by Dr. Leela Edwin and presented by Dr. Abhilash S.** The group felt that boat building yards, materials and specification need to be certified by competent agencies and then regulated so that boat owners don't risk the lives of fishers by modifying boat designs. Mechanised vessels must have storage space for life jackets and buoys. All harbours and landing centers must develop MCS centres in line with the national plan adopted in 2010. These MCS centres should implement a token system; maintain crew lists and record boat activity; and function round the clock. The group suggested that the utility and practicability of Automatic Identification System (AIS) be studied, after consulting fishers. Other low-tech solutions like radar reflectors were also recommended, along with marine ambulances in all harbours. Since effective communication is built on long-term relationships, the group stressed on the importance of regular meetings and training sessions for all stakeholders.



Dr. Abhilash S. presenting for Group 3

Moving the focus to long-term strategies to be adopted on shore for disaster risk reduction, **Group 4** discussed coastal protection measures. The group, **coordinated by Mr. A.J. Vijayan and Ms. Nalini Nayak** said that big harbours, sea walls and breakwaters on the Kerala coast cause

massive changes to the coastline, transforming fish habitat and endangering the lives and livelihoods of fishing communities. Open beach areas with green buffer zones must be strictly reserved for and managed by the community. The group recommended that the youth be up-skilled and trained in coastal engineering, marine enforcement and disaster management through government-supported educational institutions. Local self-government institutions and women's initiatives like *Kudumbashree* in Kerala can play an important role in including women in risk mitigation activities. In low-lying and crowded coastal areas that are at risk from sea-level rise and natural hazards, coastal communities must be rehabilitated after due consultation.

*In the discussion that followed, it was pointed out that communication devices must be multi-functional (Fishers will look forward to regular radio broadcasts that mix weather related information with entertainment, market updates and news; as opposed to DATs that have only one use). The regular broadcast on HF radio to Sri Lankan deep sea fishers was mentioned. It was agreed that empowering local organisations is a must to manage disaster situations but maintaining the community's interest is still a challenge. Questions of costs of safety equipment, government subsidies and accident insurance in fisheries were discussed. The pros and cons of using already existing coastal infrastructure, such as schools and hospitals were discussed.*

## Session 8: Panel Discussion 4

### Integrating sea safety into fisheries management and governance: Challenges facing the Indian fisheries sector.

*The chair, Mr. V. Vivekanandan, Trustee, ICSF Trust, said that sea safety measures cannot be implemented in isolation but must be integrated into fisheries management and that the panelists would discuss the roles that government, community and other stakeholders can play.*

**Captain Sureshkumar Nair, Nautical Engineer, Mercantile Marine Department, Government of India, Cochin,** compared the shipping and fishing industries, in terms of their attitudes to risk and the capacity to implement and enforce safety norms. Fishing is conducted with a sense of adventure, disregarding safety and comforts—not only is there no space on boats to store lifejackets, even sleeping arrangements are made on unprotected decks. Harsh working conditions and irregular hours lead to a perpetual state of fatigue. Accidents typically occur in such conditions. The Captain also expressed concern about migrant workers on long-haul fishing vessels, who were not trained to fish or even swim in the sea. He expected the younger generation, which is more aware, to demand and use advanced equipment and safety training as they get inducted into fishing.

**Dr. Leela Edwin, Principal Scientist and Head, Fishing Technology Division, Central Institute of Fisheries Technology (CIFT), Cochin,** discussed the Institute's contribution in the SAR efforts after the cyclone. Her team participated only in the second stage of operations on 10 December, and they took fishermen on board, who directed them to specific locations and were able to save a few lives. A survey conducted by CIFT after Ockhi found that safety equipment was nowhere in use in the cyclone affected areas; similarly, most vallams had not been certified for durability and stability. She was concerned about the low quality raw materials used to manufacture fibre vallams. CIFT suggested several changes in craft design to save lives in emergencies: chine rails along the bottom of the hulls; signal lights and radar reflectors to be visible to CG and merchant vessels; hand flares and waterproof torches, etc.

**Mr. Narendra Ramachandra Patil, Chairperson, National Fishworkers' Forum,** described his experiences as a member of the National Maritime Search and Rescue Board. He said that in Maharashtra and Gujarat, the cooperative societies have all the information about boats and crew members, and are usually consulted by the government during emergencies. He called for regular



Xavier Joseph, Narendra Ramachandra Patil, V. Vivekanandan, Leela Edwin, and Sureshkumar Nair during the fourth panel discussion on integrating sea safety into fisheries management and governance

training programmes to be held by Fisheries Departments so that owners and fishers learn about the importance of safety measures. Mr. Patil also discussed the issue of rehabilitation, which should not be understood simply as a payment of compensation to victims' families but a secure future for the disaster affected. He also called for strengthening cooperatives, following the model of states like Maharashtra and Kerala, and for their active involvement in disaster risk management.

**Mr. Xavier Joseph, Chief Executive, SIFFS**, discussed the federation's 35-year-long experience in several aspects of fishermen's safety: the design and marketing of reliable fishing vessels and the supply of spare parts; the development of radio beacons (or DAT) for distress messages; and a safety kit for small-scale fishing vessels. Sadly, fishermen have been slow to adopt these measures. Old surveys have shown the high rates of casualties due to routine accidents at sea. Large waves carrying men off deck and falls overboard still remain the biggest killers. Mr. Joseph underlined the role of fisher families, especially women, in supporting and inculcating a culture of safety. He concluded saying that safety should move from a voluntary to an obligatory aspect of fishing.

## Session 9: Panel Discussion 5

### Building back better keeping nature and people in mind

*The session was chaired by Mr. D. Nandakumar, Senior Adviser, Climate Change and Environment, Intercooperation Social Development India.*

**Mr. C.M. Muralidharan, Consultant, FAO**, drew from the experiences of three East coast disasters—1996 East Godavari cyclone, 1999 Odisha super-cyclone, and 2004 Indian Ocean tsunami—to highlight opportunities for sustainable development in the post-disaster period. In Odisha, multi-purpose cyclone shelters were more useful than single-purpose shelters in Andhra Pradesh. Post-tsunami housing reconstruction was a success story because the community was consulted on the choice of location and house type. On the other hand, donors helped fishers acquire a large number of boats after the disaster, but this led to overfishing and poor boat quality. Participatory planning is essential and so are the forward and backward linkages for both regulation and welfare. Mr. Muralidharan concluded saying that rehabilitation and reconstruction should aim at long term sustainable development, integrating fisheries livelihoods, fisheries management and disaster preparedness. There should also be a provision for continuous monitoring of results and impacts.

**Dr. Y. S. Yadava, Director, BOBP-IGO**, spoke about the importance of process-oriented disaster risk management, founded on a respect for rules and norms. Emphasizing the need to integrate sea safety into fisheries management, he pointed out how technology alone will not save lives. MCS regimes should have provisions that allow the community to take control wherever it is possible. He called for developing MCS processes in India.

**Mr. C.P. Geevan, Director, Centre for Environment & Social Concerns, Ahmedabad**, described the events in whose backdrop India's disaster management strategies were developed: 2001 Kutch earthquake, 2004 tsunami and the cyclones that battered the East coast till the 1990s. He said that building resilience into infrastructure, into institutions, and into policies are all part of the risk reduction approach. Coastal area management, looked at from a disaster management perspective, cannot be delinked from sustainable development and environmental concerns. He cautioned that intensification of economic activity on the coast will not reduce risks. The Sendai Framework recommends reducing existing risk, but also, crucially, avoiding the creation of new risks.



Yugraj Singh Yadava, C.M. Muralidharan, C.P. Geevan, T. Peter, Seeta Dasan, P. Robert, and D. Nandakumar during the fifth panel discussion on building back better after disasters

**Mr. Peter T., General Secretary, National Fishworkers' Forum**, spoke about the gaps in including the community in disaster preparedness planning. He reemphasized the importance of radio broadcasts for fishers. Mr. Peter said that central and state government agencies should work together in the future, through better communication of cyclone warnings and coordination of SAR operations. Referring to the fishers of Marianad in Kerala, who escaped the cyclone, he said that traditional knowledge together with modern scientific knowledge would have to be integrated into fishing in the future.

**Ms. Seeta Dasan, State Committee Member, Self Employed Women's Association (SEWA)**, spoke about the impacts of the cyclone on women. She pointed out how the fishing villages have several young widows, because many young fishers were lost at sea. Their economic burdens are now heavier and they have to depend on private money lenders, with the risk of exploitation. SEWA is encouraging women to start working, though the community is not always supportive of married women finding employment. SEWA is also organising counseling sessions and workshops for fishers traumatized by the disaster.

**Mr. P. Robert, with the NGO, Friends of Marine Life**, described the work of his collective, led by a group of youth from the fishing community in Thiruvananthapuram, to study the marine seabed ecosystem using the traditional knowledge of the community. After Ockhi, the collective conducted diving sorties to dredge up 'ghost nets' and record video footage of plastic pollution in the oceans. They continue to share their knowledge with the public to raise awareness about marine pollution. Showing images of the impact of Ockhi on the nearshore reefs and the coastline, Mr. Robert said that studies should look into the impacts of cyclones on marine ecosystems, which directly affect fisher livelihoods. He said that in the context of Ockhi, strong measures need to be taken for the protection of the coast, including ocean literacy programmes; mapping of fragile reefs and biodiversity hotspots; and the preservation of traditional knowledge about local ecology and sustainable fishing practices.

"Both central and state agencies should work together so that fishermen receive information on time. We have many agencies, but there is no coordination. At the same time, fishers must also adapt and start using safety devices. This must be made compulsory."

—Peter T.,  
General Secretary, National Fishworkers' Forum

"The cyclone left behind many young widows in the fishing villages. The debt of their husbands is now their burden. Some women have now started working again, and this must be encouraged despite their communities not supporting it."

—Seeta Dasan,  
State Committee Member,  
Self Employed Women's Association (SEWA)

## Statement

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A draft statement of the workshop was read out by Ms. Nalini Nayak. After discussion and feedback, the workshop statement was finalized and is produced below.

We, participants at the National Workshop on Small-scale Fisheries, Cyclone Ockhi and Disaster Risk Management, held in Thiruvananthapuram, India, on 29th and 30th May 2018;

Concerned that Cyclone Ockhi brought unprecedented fatalities to fishers, including migrant fishers, all along the entire range of their fishing operations, both in inshore and offshore waters;

Further concerned about the impact of Cyclone Ockhi on the women and children of the affected families of fishers;

Mindful that natural disasters have differential impacts and therefore need a differentiated approach at all levels;

Recognizing the need for a national perspective, legal and policy framework that integrate on-land and at-sea disaster management and disaster risk management;

Fearing that climate change impacts can enhance the intensity of cyclones in future in the Arabian Sea, in addition to the Bay of Bengal, and would have disastrous consequences for coastal communities and fishing communities;

Being aware that better disaster management and disaster risk management can contribute to mitigating new disaster risk and associated economic, environmental and social consequences;

Recognizing that the quality and success of disaster management and disaster risk management can be greatly enhanced through consultation and participation, applying a human rights-based approach within the Sendai Framework for Disaster Reduction 2015-2030, and the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty



Nalini Nayak presenting the draft statement at the workshop

Eradication (the SSF Guidelines);

Further recognizing that coastal fishing communities often have their own mechanisms, processes and institutions relevant for disaster preparedness that can effectively complement governance mechanisms under the jurisdiction of the State; and

Taking note of the Sustainable Development Goal (SDG) target 1.5 “[B]y 2030 build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.”

Recommend the following measures to the appropriate authorities at various levels and other relevant stakeholders:

## **I. Disaster management authorities**

1. Reduce the number of deaths and number of people affected, including migrant fishers, and reduce the direct economic losses caused by disasters;
2. Integrate fishers’ knowledge into search and rescue operations at sea;
3. Ensure that emergency relief and rehabilitation measures are expeditiously delivered without further aggravating economic, social and psychological distress of affected families;
4. Take care that relief and rehabilitation measures in a post-disaster scenario are proportional to the needs of affected men and women in fishing and post-harvest activities, including of those directly and indirectly affected;
5. Safeguard maternal health and education for children of affected families;
6. Develop, in consultation with fishing communities, appropriate mechanisms for disaster relief and rehabilitation in the fisheries sector and apply standardised protocols to promote coordination and cooperation at all levels;
7. Build and strengthen resilience and adaptive capacity of small-scale fishing communities and reduce their vulnerability to natural disasters;
8. Make adequate budget provisions to support disaster risk management at all levels;
9. Ensure that disaster management and disaster risk management measures applicable to the fishing sector are informed by reliable information regarding fishing fleets, fishing gear and fishing operations in cooperation with the relevant fisheries departments and the Coast Guard;
10. Develop baseline information on marine and coastal habitats (natural reefs, coral reefs, sandy beaches, etc.) to assess damages to these habitats and dependent species from natural and manmade disasters consistent with Article 7 (adaptation) and Article 8 (addressing loss and damage) of the 2015 Paris Agreement of the United Nations Framework Convention on Climate Change (UNFCCC);
11. Promote public awareness about natural disasters like cyclones, among other means, through school curricula reforms, school clubs and through ocean literacy programmes;
12. Strengthen the capacity of local self-governments to enhance community participation in disaster risk reduction;

## **II. Early Warning and Prediction Authorities**

13. Improve accuracy of cyclone prediction and efficiency of its dissemination among coastal fishing communities, and among near shore and offshore fishers;
14. Develop innovative new approaches (e.g. earmarking ‘dynamic cones of uncertainty’ as potential cyclone zones) for cyclone prediction, along with multichannel communication,



to rapidly disseminate cyclone alerts to local communities (community radio, VHF, HF, satellite phones, etc.);

15. Integrate safety of fishing vessels, vessel navigation and operations as well as occupational safety of fishers into disaster risk reduction protocols to reduce the number of fishers losing their life during cyclones, including through the provision of financial incentives;

### III. Fisheries Authorities

16. Recognize the role and responsibilities of the fisheries authorities in monitoring fishing activity and safeguarding sea safety and ensure them an active role, along with other agencies, in search and rescue operations as well as in relief, rehabilitation, reconstruction and recovery efforts; in this context, coastal state/union territory fisheries authorities and the fisheries department at the centre should collaborate;
17. Provide effective and appropriate communication equipment to all fishers and registered fishing vessels at sea;
18. Develop awareness of small-scale fishing communities and provide training about adoption of effective sea safety procedures including use and maintenance of communication equipment;
19. Enforce sea safety norms and integrate sea safety into fisheries management and governance of short-haul and long-haul fishing operations, consistent with the recommendations of the SSF Guidelines, employing the “relief-development continuum” and “build back better” principles and a human rights-based approach;
20. Build capacity, including through pre-sea training, to deal with fishing in rough sea conditions and working for excessive periods of time, after an assessment of the risks concerned;

### IV. Fishing Communities

21. Improve the efficiency of dissemination of cyclone alerts among coastal fishing communities, and among near shore and offshore fishers, using the most cost-effective means of communication (e.g. community radio);
22. Encourage traditional and local knowledge and use of traditional protocols to predict disasters and to reduce disaster risks, and to promote community-based disaster risk management planning;
23. Strengthen the capacity of community-based organisations, including women’s organisations, to deal with disaster risk management, particularly at the local level;
24. Propose ‘green zones’ under coastal disaster preparedness programmes to reduce the vulnerability of small-scale fishing communities to sudden-onset cyclones; and
25. Integrate sea safety into community-based initiatives for fisheries development and management.

In conclusion, building resilience of coastal communities to natural disasters and climate change requires coordination at all levels and open consultation with, and participation of, all stakeholders. This includes an awareness of the responsibilities of the community in ensuring an overall culture of safety at sea and on land.

### Vote of Thanks

N. Venugopalan, Programme Manager, ICSF Trust extended a vote of thanks to all the participants; the chairs and presenters in all sessions; and the translators, both for the workshop and preliminary material.

## Annex 1: Workshop Programme

### National Workshop on Small-scale Fisheries, Cyclone Ockhi and Disaster Risk Management

Iris Hall, Apollo Dimora Hotel, Thiruvananthapuram, Kerala, India,  
29th to 30th May, 2018

#### Programme

29 MAY, 2018: DAY 1	
08:30 – 09:00	Registration
09:00 – 09:40	<p><b>Inaugural Session</b> A minute's silence to pay homage to fishers lost at sea during Cyclone Ockhi</p> <p><b>Welcome:</b> Ms. Nalini Nayak, <i>Trustee, ICSF Trust</i></p> <p><b>Overview of the Workshop:</b> Mr. Sebastian Mathew, <i>Executive Director, ICSF</i></p> <p><b>Opening Remarks:</b> Mr. P. H. Kurian, <i>Additional Chief Secretary, Revenue and Disaster Management, Revenue Department, Government of Kerala</i> Mr. Muralidharan C. M. <i>Consultant, Food and Agriculture Organization of the United Nations</i> Dr. Yugraj Singh Yadava, <i>Director, Bay of Bengal Programme-Inter-Governmental Organisation</i> Mr. Anthony Adimai, <i>Chairman, South Indian Federation of Fishermen Societies</i></p> <p><b>Chair:</b> Dr. John Kurien, <i>Managing Trustee, ICSF Trust</i></p>
09:40 – 10:15	Group Photo Tea-Coffee Break
10:15 – 12:00	<p><b>Study Presentation</b> <i>Cyclone Ockhi: Disaster Risk Reduction and Sea Safety in the Indian Marine Fisheries Sector:</i> Mr. Manas Roshan, <i>Consultant, ICSF Trust</i></p> <p><b>Chair:</b> Mr. Muralidharan C. M. <i>Consultant, Food and Agriculture Organization of the United Nations</i></p> <p>Discussion</p>
12:00 – 13:15	<p><b>Panel 1: Cyclone Ockhi: Fishers and coastal community perspective</b></p> <p><b>Chair:</b> Mr. V. Vivekanandan, <i>Trustee, ICSF Trust</i></p> <p>Motorised vessels from Vizhinjam (Thiruvananthapuram): Mr. Sahayam Fishermen of multi-day vessels from Vallavilai (Kanniyakumari): Mr. Dickson and Mr. Robinson Motorised vessels from Poonthura (Thiruvananthapuram): Mr. Raju Fisherwoman from Thiruvananthapuram: Ms. Mercy Antony from Adimalathura (Thiruvananthapuram) Fisherwoman from Kanniyakumari: Ms. Saju Jeena</p> <p>Discussion</p>

13:15 – 14:00	<i>Lunch</i>
14:00 – 15:15	<p><b>Screening of film:</b> ‘Life Float’ (8 minutes) (by Bay of Bengal Programme Inter-Governmental Organisation)</p> <p><b>Panel 2: Disaster preparedness at sea: Ensuring effective early warning systems and better prediction of cyclones</b></p> <p><b>Chair:</b> Mr. Satish Babu, <i>Member, Institute of Electrical and Electronics Engineers, Global Humanitarian Activities Committee</i></p> <p>Dr. P. Pravin, <i>Assistant Director General (Marine Fisheries), Indian Council of Agricultural Research</i></p> <p>Dr. S. Balachandran, <i>Director, Area Cyclone Warning Centre, Chennai, Indian Meteorological Department</i></p> <p>Mr. Ravi Shankar Srivastav, <i>Engineer, Wireless Planning and Coordination Wing, Ministry of Electronics and Information Technology, Government of India</i></p> <p>Dr. Abhilash S., <i>Assistant Professor, Department of Atmospheric Sciences, Cochin University of Science and Technology</i></p> <p>Mr. Sajan Venniyoor, <i>Community Radio Consultant</i></p> <p>Discussion</p>
15:15 – 16:30	<p><b>Panel 3: Disaster response and relief: Steps needed for improved institutional coordination and collaboration</b></p> <p><b>Chair:</b> Dr. Yugraj Singh Yadava, <i>Director, Bay of Bengal Programme Inter-Governmental Organisation</i></p> <p>Mr. S. Venkatesapathy, <i>Director of Fisheries, Government of Kerala</i></p> <p>Mr. V.K. Varghese, <i>Commanding Officer, Indian Coast Guard, Thiruvananthapuram</i></p> <p>Dr. Sekhar L. Kuriakose, <i>Head, State Emergency Operations Centre, Government of Kerala</i></p> <p>Ms. Swathi Lakshmi, <i>Principal Scientist, Central Marine Fisheries Research Institute</i></p> <p>Discussion</p>
16:30 – 16:45	Tea-Coffee Break
16:45 – 17:30	<b>Group Discussions</b>

<b>30 MAY, 2018: DAY 2</b>	
09:00 – 11:00	<p><b>Panel 4: Integrating sea safety into fisheries management and governance: Challenges facing the Indian fisheries sector</b></p> <p><b>Chair:</b> Mr. V. Vivekanandan, <i>Trustee, ICSF Trust</i></p> <p>Dr. Leela Edwin, <i>Principal Scientist &amp; Head, Fishing Technology Division Central Institute of Fisheries Technology</i></p> <p>Mr. Narendra Ramachandra Patil, <i>Chairperson, National Fishworkers' Forum</i></p> <p>Mr. Xavier Joseph, <i>Chief Executive, South Indian Federation of Fishermen Societies</i></p> <p>Mr. Sureshkumar Nair V.G., <i>Nautical Engineer, Mercantile Marine Department, Government of India</i></p> <p>Discussion</p>
11:00-11:15	Tea-Coffee Break
11:15-13:00	<p><b>Group Presentations</b></p> <p><b>Chair:</b> Dr. P. Pravin, <i>Assistant Director General (Marine Fisheries), Indian Council of Agricultural Research</i></p>
13:15-14:00	Lunch
14:00-16:00	<p><b>Panel 5: Building back better keeping nature and people in mind</b></p> <p><b>Chair:</b> Mr. Nandakumar. D., <i>Senior Advisor-Climate Change and Environment, Intercooperation Social Development</i></p> <p>Mr. Muralidharan C. M., <i>Consultant, Food and Agriculture Organization of the United Nations</i></p> <p>Dr. Yugraj Singh Yadava, <i>Director, Bay of Bengal Programme Inter-Governmental Organisation</i></p> <p>Mr. C.P. Geevan, <i>Director, Centre for Environment &amp; Social Concerns</i></p> <p>Mr. Peter T., <i>General Secretary, National Fishworkers' Forum</i></p> <p>Ms. Seeta Dasan, <i>Member, State Committee, Self Employed Women's Association (Union)</i></p> <p>Mr. P. Robert, <i>Friends of Marine Life</i></p> <p>Discussion</p>
16:00– 16:30	Tea-Coffee Break
16:30-17:00	<p><b>Presentation of the Workshop Statement</b></p> <p>Ms. Nalini Nayak, <i>Trustee, ICSF Trust</i></p>
16:45 – 17:00	<p><b>Vote of Thanks</b></p> <p>Mr. Venugopalan N., <i>Programme Manager, ICSF Trust</i></p>

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## Annex 2: Questions for group discussion

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### National Workshop on Small-scale Fisheries, Cyclone Ockhi and Disaster Risk Management

Iris Hall, Apollo Dimora Hotel, Thiruvananthapuram, Kerala, India,  
29th to 30th May, 2018

### Questions for group discussion

#### Group Discussion 1:

- What are the effective channels of communication and early warning systems needed (on shore and at sea) for better prediction of cyclones and to reduce disaster risks? (*Coordinator and Rapporteur: Dr. Maxmillan Martin*)

#### Group Discussion 2:

- What are the effective measures to be taken for participative local level coordination and collaboration for disaster management and relief? (*Coordinator: Mr. V. Vivekanandan; and Rapporteur: Ms. Ahana Lakshmi*)

#### Group Discussion 3:

- What technology and safety measures (in craft, gear, communications, etc.) should be initiated in fishing operations to reduce the risk of natural hazards at sea? (*Coordinator: Dr. Leela Edwin; Rapporteur: Dr. Abhilash S.*)

#### Group Discussion 4:

- What long term measures are needed on shore to minimize risk from future disasters? (*Coordinator: Mr. A.J. Vijayan; Rapporteur: Ms. Nalini Nayak*)

## Annex 3: List of Participants

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### National Workshop on Small-scale Fisheries, Cyclone Ockhi and Disaster Risk Management

Iris Hall, Apollo Dimora Hotel, Thiruvananthapuram, Kerala, India,  
29th to 30th May, 2018

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## Annex 4: Feedback from Participants

### National Workshop on Small-scale Fisheries, Cyclone Ockhi and Disaster Risk Management

Iris Hall, Apollo Dimora Hotel, Thiruvananthapuram, Kerala, India,  
29th to 30th May 2018

Sl. No.	1. Was the content of the workshop adequate (was it too basic/simple, was there too much information, was there unnecessary information, was more information needed (if yes, on what)?	2. Were the methods used adequate (panel discussion, group discussion)? Did you have enough time for discussion?	3. Was the material given to you useful? Have you understood the draft study on Cyclone Ockhi: Disaster Risk Reduction and Sea Safety in the Indian Marine Fisheries Sector? Do you think you will use it again?	4. Mention 2-3 key learnings of the workshop that you are likely to take forward in your work.	5. What do you suggest we can do to make the workshop more interesting and useful?
I	Sufficient for the duration	Generally yes, but more time would have been good in some cases where slides have a lot of details and	Yes	The fact that most people worked hard in the aftermath of Ockhi, but still people died shows the need for coordination and better Standard Operating Procedures (SOP)	More group sessions would give more opportunities for the community to speak.
2.	Adequate	Adequate	Good insight	1. An understanding of the various bodies working for fishermen 2. ICSF projects 3. BOBP projects	Involvement of the following authorities in Kerala: 1. Department of Ports 2. Coastal police 3. Marine Enforcement
3.	It was informative, adequate and up to the point. Role of social and religious agencies could be added	Adequate and sufficient	The material was useful. I will be using it for my own research work	1. Safety should be the prime concern of the fishermen 2. The importance of life saving devices 3. IMD warnings should be taken seriously	There should be the presence and participation of more media organisations and journalists

Sl. No.	1. Was the content of the workshop adequate (was it too basic/simple, was there too much information, was there unnecessary information, was more information needed (if yes, on what)?	2. Were the methods used adequate (panel discussion, group discussion)? Did you have enough time for discussion?	3. Was the material given to you useful? Have you understood the draft study on Cyclone Ockhi: Disaster Risk Reduction and Sea Safety in the Indian Marine Fisheries Sector? Do you think you will use it again?	4. Mention 2-3 key learnings of the workshop that you are likely to take forward in your work.	5. What do you suggest we can do to make the workshop more interesting and useful?
4	Adequate	Adequate	Useful	<p>1. Needs more stress on sea safety aspects.</p> <p>2. Give importance to communication and local networks</p>	No suggestions. It was well organised and well conducted. Congratulations.
5	Adequate. But, perhaps the workshop could have had more information on natural disasters and weather management systems	Adequate	The Cyclone Ockhi study was comprehensive but a bulleted summary of key findings and recommendations would have been useful	<p>1. Need for hyper-local prediction systems</p> <p>2. Public private partnership in weather analysis</p> <p>3. Role of Indigenous technical knowledge</p>	<p>1. Needs better translation facilities</p> <p>2. Quick summarising notes</p> <p>3. More videos of actual on-site disaster situations</p>
6	Adequate	Most panel discussions were delayed		There is no “management” to speak of	It was an interesting and useful format
7	Content was satisfactory but the presentations were many in number, resulting in shortage of time	Too many panelists, resulting in less time for discussion.	Material was useful. The study is also useful and will be used time and again	<p>1. Modalities for setting up of community radios</p> <p>2. Integration of the community into disaster risk reduction programmes</p>	More interaction with the speakers in advance could be useful in preparing them for their presentations
8.	Adequate	Not enough time given for discussion	The study was very useful	<p>- Community radio</p> <p>- Geographic zonation</p>	Invite more affected fisher folks than government officials
9.	More legal aspects could have been covered	Time for discussion has to be increased	We are planning for a consultation disaster focusing on Sendai Framework. We will definitely use the study	Use all strategies to support the victims (especially families of the missing people)	

Sl. No.	1. Was the content of the workshop adequate (was it too basic/simple, was there too much information, was there unnecessary information, was more information needed (if yes, on what)?	2. Were the methods used adequate (panel discussion, group discussion)? Did you have enough time for discussion?	3. Was the material given to you useful? Have you understood the draft study on Cyclone Ockhi: Disaster Risk Reduction and Sea Safety in the Indian Marine Fisheries Sector? Do you think you will use it again?	4. Mention 2-3 key learnings of the workshop that you are likely to take forward in your work.	5. What do you suggest we can do to make the workshop more interesting and useful?
10	Adequate	More time for discussions would have been good	Useful	1. Available communication systems in operation, 2. Lacunae in systems and what type of improvements can be carried out	The workshop programme should be distributed a week ahead for more effective participation
11	Adequate	Just enough time	The material will definitely complement any technical study taken up by CIFT	1. The experience of survivors. 2. New knowledge gained on communication systems	Group discussion topics and panel discussion topics are similar or overlapping. So points tend to be repeated
12	Needs more participation from the affected communities	Needs more time for discussion. Group discussions were fruitful	I shall use it for further reference.	Communication aspects were really useful	More participation from the audience would have made it more informative
13	More information needed on fishers' direct experience of preparedness and response	Yes	Yes	1. Difficulties in coordination 2. Channels of communication	

## Annex 5: Concept note in Malayalam

ഇൻറർനാഷണൽ കളക്ടീവ് ഇൻ സപ്പോർട്ട് ഓഫ് ഫിഷ് വർക്കേഴ്സ് (ICSF)

ചെറുകിട മത്സ്യബന്ധനം, ഓഖി ചുഴലിക്കാറ്റ് ദുരന്തനിവാരണ നിർവ്വഹണം -

ദേശീയ ശില്പശാല

അപ്പോളോ ഡിമോറ ഹോട്ടൽ, തിരുവനന്തപുരം, കേരള, ഇന്ത്യ, 2018 മേയ്

29-30

ആശയാധിഷ്ഠിത കുറിപ്പ്

മുഖവുര

ഇന്ത്യൻ മഹാസമുദ്രത്തിൽ ശ്രീലങ്കയുടെ തെക്ക്-പടിഞ്ഞാറ് ഭാഗത്ത് 2017 നവംബർ 29 തീയതിയിൽ ഒരു ന്യൂനമർദ്ദം ആയി രൂപപ്പെടുകയും, അത് പെട്ടെന്ന് തന്നെ ഒരു ചുഴലിക്കാറ്റായി രൂപാന്തരപ്പെട്ട് തമിഴ്നാട്, കേരള, ലക്ഷദ്വീപ് ഭാഗത്തേക്ക് വീശിയടിക്കുകയുണ്ടായി. ഓഖി എന്ന പേരിലറിയപ്പെട്ട ഈ ചുഴലിക്കാറ്റ് മൂലം അനേകം മത്സ്യത്തൊഴിലാളികൾക്ക് ജീവഹാനി സംഭവിക്കുകയും, അനേകം പേർക്ക് പരിക്ക് പറ്റി, ഒട്ടനവധി മത്സ്യബന്ധനയാനങ്ങൾക്ക് കേടുപാട് സംഭവിച്ചു.

228000 ആൾക്കാരുടെ ജീവൻ അപഹരിച്ച ഇന്ത്യൻ മഹാസമുദ്ര സുനാമിക്കുശേഷം ദുരന്തനിവാരണത്തെക്കുറിച്ച് നടന്ന അന്തർദേശീയ കോൺഫറൻസിന്റെ ശുപാർശ പ്രകാരം "ഹ്യോഗോ ഫ്രെയിം വർക്ക് ഫോർ ആക്ഷൻ" (HFA) 2005-2015 പ്രയോഗത്തിൽ വരുത്തിയിരുന്നു. രാജ്യത്തിന്റെയും സമൂഹത്തിന്റെയും ജീവനും സ്വത്തിനുമുള്ള നാശനഷ്ടങ്ങൾ കുഴിവതും കുറയ്ക്കുന്നതിന് ദുരന്ത നിവാരണ മുന്നൊരുക്കങ്ങളാണ് പ്രയോഗത്തിൽ വരുത്തേണ്ടത് എന്ന് HFA ആവശ്യപ്പെടുന്നു.

ഓഖി ചുഴലിക്കാറ്റ് ബാധിച്ച തീരദേശ ഗ്രാമങ്ങളിലെ ചെറുകിട മത്സ്യത്തൊഴിലാളികളുടെ ജീവനെ സംബന്ധിച്ചിടത്തോളം HFA- യിൽ ചർച്ച ചെയ്യപ്പെട്ട മാർഗ്ഗനിർദ്ദേശങ്ങള് വളരെ പ്രസക്തമാണ്.

ദുരന്ത മൂന്നറിയിപ്പ്, നിവാരണം, ലഘൂകരണം എന്നിവ ഉൾപ്പെടുന്ന സമഗ്ര ദുരന്തനിവാരണ പരിപാലന സമീപനം ഇക്കഴിഞ്ഞ കാലങ്ങളിൽ വികസിപ്പിച്ചെടുത്തിട്ടുണ്ട്. ഇത് പ്രയോഗത്തിൽ വരുത്തുന്നതിന് പൗരസമൂഹം, സ്വകാര്യമേഖലകൾ, സർക്കാർ സ്ഥാപനങ്ങളുടേയും എന്നിവയുടെ കൂട്ടായ പ്രവർത്തനവും ചുമതലാബോധവും അത്യാവശ്യമെന്ന് ചൂണ്ടിക്കാണിക്കപ്പെട്ടിട്ടുണ്ട്.

2004 ലെ ഇന്ത്യന് മഹാസമുദ്ര സുനാമി വരുത്തി വച്ച നഷ്ടങ്ങളും, പ്രകൃതി ദുരന്തങ്ങൾ നേരിടുന്നതിലുള്ള രാജ്യത്തിന്റെ മുന്നോട്ടുള്ള പ്രാപ്തിയില്ലായ്മയും പരിഗണിച്ച് ഒരു പ്രതികരണമെന്ന നിലയിലാണ് 2005 ലെ ദുരന്ത നിവാരണ നിയമം നമ്മുടെ രാജ്യം രൂപപ്പെടുത്തിയത്. ദേശീയ/സംസ്ഥാന ദുരന്ത നിവാരണ അതോറിറ്റികൾ സംഘടിപ്പിച്ച്, പരിപാടികൾ ആസൂത്രണം ചെയ്തു എങ്കിലും ബംഗാൾ ഉൾക്കടൽ തീരത്ത് ആവർത്തിക്കപ്പെട്ട കൊടുങ്കാറ്റുകളെ നേരിട്ട സംവിധാനങ്ങൾക്ക് സമ്മിശ്രമായ പ്രതികരണമാണ് ലഭിച്ചത്.

ആപത് ഘട്ടങ്ങളിൽ മത്സ്യബന്ധന/മത്സ്യകർഷക മേഖലകളിലെ ദുരന്ത ഫലങ്ങൾ വിലയിരുത്തുന്നതിനും ഫലപ്രദമായ ദുരന്ത നിവാരണ നടപടികൾ സ്വീകരിക്കുന്നതിനുമായി 2013 ല് FAO പുറത്തിറക്കിയ മാർഗ്ഗ നിർദ്ദേശങ്ങളുടേയും, ദുരന്ത നിവാരണ മുന്നോട്ടുള്ളതുകൾക്ക് ഒരു പുതിയ ദിശാബോധം നൽകിയിട്ടുണ്ട്. ദുരന്തങ്ങളെ നേരിടുന്നതിന് ഒരു വികസന - സമാശ്വാസ രീതിശാസ്ത്രം നടപ്പിലാക്കണമെന്ന് 2014 ലെ ചെറുകിട മത്സ്യബന്ധന മാർഗ്ഗനിർദ്ദേശങ്ങളുടേയും നിഷ്കർഷിക്കുന്നു. ദുരന്തം മൂലമുള്ള ഭാവി വെല്ലുവിളികൾ പരമാവധി ലഘൂകരിക്കുന്നതിന്, പുനരധിവാസം, പുനർനിർമ്മാണം, പുനപ്രാപ്തി എന്നിവയടങ്ങിയ സമാശ്വാസ ആശയങ്ങൾ നടപ്പിലാക്കേണ്ടതാണെന്ന് ചെറുകിട മത്സ്യബന്ധന മാർഗ്ഗനിർദ്ദേശങ്ങളുടേയും നിഷ്കർഷിക്കുന്നു.



ശില്പശാല

ഐക്യരാഷ്ട്രസഭയുടെ സാമ്പത്തിക സഹായത്തോടെ, ഓഖിയെക്കുറിച്ച് ഒരു പഠനം, ICSF സമീപകാലത്ത് നടത്തിയിട്ടുണ്ട്. ബന്ധപ്പെട്ട സ്ഥാപനങ്ങളും, സമൂഹവും ഓഖി ചുഴലിക്കാറ്റിനെ നേരിടുന്നതിന് കാണിച്ച ചുമതലാബോധം ഈ പഠനം തിട്ടപ്പെടുത്തുന്നു. മറ്റു ബന്ധപ്പെട്ടവർ സ്വീകരിച്ച നിവാരണ തന്ത്രങ്ങളെ ഈ പഠനം വിലയിരുത്തുന്നു. കുറെക്കൂടി മെച്ചപ്പെട്ട ഏകോപനം ഉണ്ടായിരുന്നെങ്കിൽ ദുരന്തം മൂലമുള്ള ജീവൻറെ നഷ്ടം ലഘൂകരിക്കാൻ കഴിയുമായിരുന്നോ എന്നും ഈ പഠനം പരിശോധിക്കുന്നു. കേന്ദ്ര-സംസ്ഥാന-ജില്ലാ തലങ്ങളിൽ സ്വീകരിച്ച പുനരധിവാസ-സമാശ്വാസ പരിപാടികളുടെ പ്രയോജനം, അന്തർദേശീയ തലത്തിൽ സ്വീകരിച്ചിരിക്കുന്ന DRM സമീപനത്തിനനുസൃതമായി തന്നെയായിരുന്നോ എന്ന് പഠനം വിലയിരുത്തുന്നു. കടലിൽ ഭീകരമായ നാശനഷ്ടങ്ങൾ സംഭവിച്ച സാഹചര്യത്തിൽ, ദുരന്ത മുന്നറിയിപ്പുകളുമായി ബന്ധപ്പെട്ട മത്സ്യമേഖലാ പരിപാലന പരിപാടികളെ ഈ പഠനം നിരീക്ഷിക്കുന്നു. മത്സ്യമേഖലാ മാനേജ്മെന്റിലും, ദുരന്ത നിവാരണ മുന്നറിയിപ്പുകളിലും വരുത്തേണ്ടുന്ന മെച്ചപ്പെടുത്തലുകൾ ഈ പഠനത്തിൽ നിർദ്ദേശിക്കുന്നുണ്ട്. ഈ പഠനത്തിൽ നിന്ന് ലഭിച്ച പാഠങ്ങളു് കേന്ദ്ര-സംസ്ഥാനതല ഭരണാധികാരികൾ, തീരദേശ സമൂഹം, ഇതര ബന്ധപ്പെട്ടവർ എന്നിവരുമായി പങ്കുവെയ്ക്കുന്നതിനുവേണ്ടിയാണ് ഈ ശില്പശാല സംഘടിപ്പിച്ചിരിക്കുന്നത്.

ശില്പശാലയുടെ ഉദ്ദേശ്യങ്ങൾ

ചെറുകിട മത്സ്യമേഖലാ പ്രവർത്തനങ്ങളിലെ ദുരന്തനിവാരണ/മുന്നൊരുക്ക പ്രവർത്തനങ്ങളെപ്പറ്റി പദ്ധതി ആസൂത്രണതലങ്ങളിൽ ഒരു വ്യക്തമായ ധാരണ ഉണ്ടാകണമെന്ന് FAO/SSF മാർഗ്ഗനിർദ്ദേശങ്ങളിൽ പ്രത്യേകമായി പ്രതിപാദിക്കുന്നു.

മത്സ്യത്തൊഴിലാളി സമൂഹം ദുരന്തങ്ങളിൽ നിന്ന് മുക്തിനേടി പൂർവ്വ സ്ഥിതി പ്രാപിക്കുന്നതിനായി "അവിരാമ വികസന സമാശ്വാസ തന്ത്രം" ഈ മേഖലയിൽ നടപ്പാക്കേണ്ടിയിരിക്കുന്നു. ഈ ശില്പശാലയുടെ ഉദ്ദേശ്യങ്ങൾ താഴെചേർക്കുന്നു.

- ഓഖി ചുഴലിക്കാറ്റിനെ തുടർന്നുള്ള ആപത് അവസ്ഥ ബന്ധപ്പെട്ട സമൂഹത്തിലും സ്ഥാപനങ്ങളിലും സൃഷ്ടിച്ച ആഘാതം നിർണ്ണയിക്കുക.
- ആപത് ഘട്ടങ്ങളിൽ മത്സ്യബന്ധന/മത്സ്യകർഷക മേഖലകളിൽ സംഭവിക്കാവുന്ന കഷ്ടനഷ്ടങ്ങൾ വിലയിരുത്തുന്നതിനും പരിഹാരം കണ്ടെത്തുന്നതിനുമുള്ള മാർഗ്ഗനിർദ്ദേശങ്ങള് **FAO** പുറത്തിറക്കിയിട്ടുണ്ട്. മത്സ്യത്തൊഴിലാളി സമൂഹത്തിന്റെ ജീവനും ജീവനോപാധികൾക്കും കൊടുങ്കാറ്റുകള് സൃഷ്ടിക്കുന്ന നാശങ്ങള് കുറയ്ക്കുന്നതിന് നിലവിലുള്ള കേന്ദ്ര-സംസ്ഥാന നയങ്ങളും പരിപാടികളുമായി എഫ്.എ.ഒ മാർഗ്ഗനിർദ്ദേശങ്ങളും, ചെറുകിട മത്സ്യബന്ധന മാർഗ്ഗനിർദ്ദേശങ്ങളും എത്രമാത്രം ഒത്തുചേർന്നു പോകുന്നുവെന്ന് അവലോകനം ചെയ്യുക.
- മത്സ്യമേഖലയിൽ സർക്കാര് ഇപ്പോള് നിയമങ്ങള്, മനുഷ്യാവകാശാധിഷ്ഠിത സമീപനത്തിന്റെ ചട്ടക്കൂടുകള്, മുന്നൊരുക്കങ്ങൾ എന്നിവ കൊടുങ്കാറ്റുകളെ നേരിടുന്നതിന് എത്രമാത്രം സഹായകമാണെന്ന് വിലയിരുത്തുക.
- മത്സ്യത്തൊഴിലാളി സമൂഹവും, ബന്ധപ്പെട്ട സ്ഥാപനങ്ങളുമായി യോജിച്ച് മാത്രം ദുരന്ത നിവാരണ മുന്നൊരുക്കങ്ങളും മത്സ്യമേഖലാ പരിപാടികളും നടപ്പിലാക്കേണ്ടതാണ്. കൂടാതെ ദുരന്തങ്ങൾ നേരിടുമ്പോഴുള്ള വെല്ലുവിളികൾക്ക് പരിഹാരമാർഗ്ഗങ്ങള് നിർദ്ദേശിക്കുക.

## Annex 6: Concept note in Tamil

மீன் தொழிலாளர்களுக்கு ஆதரவான சர்வதேச கூட்டிணைவு  
(ICSF) நடத்தும்

சிறுவீத மீன்பிடி - ஓக்கி புயல் - பேரழிவு அபாய மேலாண்மை குறித்த சர்வதேச  
பயிற்சிப் பட்டறை

அப்பல்லோ டிமாரோ ஹோட்டல், திருவனந்தபுரம், கேரளா, இந்தியா

மே 29-30, 2018

### கருத்துக் குறிப்பு

முன்னுரை

29 நவம்பர் 2007 அன்று கடுமையான காற்றழுத்த மண்டலம் உருவாகியிருப்பது கண்டுபிடிக்கப்பட்டது. அது விரைவில் தமிழ்நாட்டு - கேரளா - லட்சத் தீவுகள் கடற்கரைக்கு அருகே தீவிரப் புயலாக வடிவெடுத்தது. ஓக்கி என்று பெயரிடப்பட்ட அந்த புயல் மீனவர்களின் உயிர்களைப் பறித்து மீனவர்களின் படகுகளையும் அழித்தது.

இந்தியப் பெருங்கடலில் சுனாமியால் 2 லட்சத்து 28 ஆயிரம் பேர் கொல்லப்பட்ட சம்பவத்தின் பின் ஒரு வாரம் கழித்து பேரழிவு குறைப்பு குறித்து நடந்த உலக மாநாட்டில் செயல்பாட்டுக்கான ஹைகோ திட்ட வடிவு 2005-2015 (Hyogo Framework for Action -HFA) நிறைவேற்றப்பட்டது. பேரழிவு நடைபெற்ற பின்னர் வந்த பின்னர் காப்பது போல அவசரகால நிவாரண வேலை செய்வதற்குப் பதிலாக பேரழிவுக்கு முந்தைய கட்டத்திலேயே “உயிர் இழப்புகள், சமூகங்களின் - நாடுகளின் சமூக பொருளாதார சுற்றுச்சூழல் சொத்துகள் இழப்பு என்பதாக பேரழிவு இழப்பில் கணிசமான குறைப்பு” செய்யப்படும் வகையில் பேரழிவு குறைப்பு நடவடிக்கைகளுக்கு (disaster risk reduction -DRR) முக்கியத்துவம் கொடுக்க வேண்டும் என்று அது சொன்னது. பிதிகிவில் விளக்கப்படும் கோட்பாடுகள், ஓக்கி புயலால் பாதிக்கப்பட்ட கடற்கரை கிராமங்களின் வாழும் சிறுவீத மீன்பிடி மீனவர்களுக்கு மிகவும் குறிப்பான பொருத்தம் உள்ளதாகும். பிதிகிவைத் தொடர்ந்த வருடங்களில் வளர்ச்சியடைந்த பேரழிவு அபாய மேலாண்மை (DRM) பேரழிவு ஆபத்துத் தணித்தலையும், முன்கூட்டிய தடுப்பு நடவடிக்கைகளையும், தயார்நிலையையும் ஒன்றிணைத்தது. அதுமட்டுமல்லாமல், அவற்றோடு அரசு யந்திரங்கள், தனியார் துறை, மற்றும் சிவில் சொசைட்டி அமைப்புகளும் பேரழிவின்போது செயல்படுவதையும், மீட்பு நடவடிக்கைகளில் ஈடுபடுவதையும் ஒன்றிணைத்தது.

2004 இந்தியப் பெருங்கடல் சுனாமி ஏற்படுத்திய முன்னெப்போதும் இல்லாத சேதம் மற்றும் இயற்கை பேரழிவை எதிர்கொள்வதில் தயார் நிலையில் இருந்த

இடைவெளிகளை அது வெளிப்படுத்திய விதத்தின் காரணமாக இந்தியா தனக்கான பேரழிவு மேலாண்மைச் சட்டத்தை 2005ல் (Disaster Management Act, 2005) இயற்றிக்கொண்டது. மத்திய மற்றும் மாநில பேரழிவு மேலாண்மை அதிகாரத்துவ அமைப்புகள் அமைக்கப்பட்டிருந்த போதும், அவற்றுக்கான திட்டங்கள் உருவாக்கப்பட்டிருந்தபோதும், வங்கக் கடலில் திரும்பத் திரும்ப எழும் புயல்களின் முன்பு அவற்றின் வெற்றி கலவையான ஒன்றாகவே இருக்கிறது.

புதிய வகையிலான பேரழிவு தயார் நிலை அணுகுமுறைகளை உருவாக்கும் வகையில் 2013ன் அவசர நிலையின்போது சேதம் மற்றும் தேவை மதிப்பீடு பற்றிய மீன்பிடி-நீருயிர் வளர்ப்புக்கான வழிகாட்டு நெறிமுறைகள்” (FAO Guidelines for the Fisheries and Aquaculture Sector on Damage and Needs Assessments in Emergencies) அவசர நிலையின்போது, பலனுள்ள முறையிலான பேரழிவு மீட்பு நடவடிக்கைகளை மேற்கொள்ளவும் பேரழிவின் தாக்கத்தை மதிப்பீடு செய்யவும் தேவையானவை பற்றி விவாதிக்கிறது. உணவுப் பாதுகாப்பு மற்றும் வறுமை ஒழிப்பு என்ற பின்புலத்தில் நிலைத்தத் தன்மையுள்ள சிறுவீத மீன்பிடியைப் பாதுகாப்பதற்கான தன்னார்வ வழிகாட்டுதல்கள் 2014 (Voluntary Guidelines for Securing Sustainable Small- Scale Fisheries in the Context of Food Security and Poverty Eradication- SSF Guidelines) மறுவாழ்வையும், மறுகட்டுமானம் மற்றும் மீட்பையும் அதன் மூலம் எதிர்காலத்தில் வர வாய்ப்புள்ள பாதிப்புகளைக் குறைக்கும் வகையில் அவசர நிலை மீட்டு நடவடிக்கைகளின்போது நிவாரணம்- வளர்ச்சி ஆகியவற்றுக்கு இடையே தொடர்ச்சி இருக்க வேண்டும் என்பதைப் பற்றி விவாதிக்கிறது.

### பயிற்சிப் பட்டறை

ஐக்கிய நாடுகள் சபையின் உணவு மற்றும் விவசாய அமைப்பின் (Food and Agriculture Organization of the United Nations – FAO) உதவியோடு, ஓக்கி புயல் பற்றிய ஆய்வு ஒன்றை மிசிஷிதி சமீபத்தில் மேற்கொண்டிருக்கிறது. நிறுவன மட்டத்திலும், சமூகத்தின் மட்டத்திலும் ஓக்கி புயலை எதிர்கொள்ள மேற்கொள்ளப்பட்ட நடவடிக்கைகளை ஆய்வு மதிப்பீடு செய்கிறது. சம்பந்தப்பட்ட ஒவ்வொருவரும் மேற்கொள்ள பேரழிவு மேலாண்மை செயல்பாடுகளைப் பரிசீலித்து மேலும் ஒருங்கிணைந்த நிறுவனச் செயல்பாடுகள் இருந்தால் உயிர் இழப்பைகளைக் குறைத்திருக்க முடியுமா என்று பார்க்க வேண்டும் என்றும் ஆய்வு மதிப்பீடு செய்கிறது. சர்வதேச அளவில் ஒப்புக்கொள்ளப்பட்டுள்ள ஞிஸிவி அணுகுமுறையை மனதில் கொண்டு மத்திய அளவிலும், மாநில மட்டத்திலும், மாவட்ட மட்டத்திலும் உள்ள பல்வேறு நிவாரணத் திட்டங்களையும், நிவாரணத் திட்டங்களையும் அவற்றின் பலன் என்ன என்பதையும் மதிப்பீடு செய்கிறது. நடுக்கடலில் மிகப்பெரும் அளவு உயிர் இழப்பு ஏற்பட்டது என்பதை மனதில்கொண்டு, புயல் தயார் நிலையை மதிப்பீடு செய்வதற்காக மீன்பிடி மேலாண்மைத் தொடர்பான பிரச்சனைகளையும் ஆய்வு செய்கிறது. சமூகத்தோடும், மத்திய- மாநில அதிகாரிகளோடும், மற்றும் தொடர்புடைய பிறரோடும் ஆய்வையும், அதன் மூலம் பெற்ற படிப்பினைகளையும் பகிர்ந்துகொள்வதற்காக பயிற்சிப் பட்டறை ஏற்பாடு செய்யப்பட்டுள்ளது.

### பயிற்சிப் பட்டறையின் நோக்கங்கள்

FAOவின் SSF வழிகாட்டு நெறிமுறைகளில் குறிப்பிட்டுள்ளபடி, சிறுவீத மீன்பிடியில் பேரழிவுக்கு முந்தைய தலையீடுகள் குறித்தும் பேரழிவுக்குப் பிந்தைய தலையீடுகள் குறித்தும், அதாவது, பேரழிவு தயார் நிலை மற்றும் பேரழிவு நிவாரணம் உள்ளிட்ட செயல்பாடுகள் குறித்தும் திட்டமிடும் அமைப்புகள் புரிதல் உள்ளவையாக இருக்க வேண்டும். 'நிவாரணமும் அதன்பின்னான வளர்ச்சியும் தொடர்ச்சியுடையவையாக இருப்பது' என்ற அணுகுமுறையைப் பயன்படுத்துவது மீனவ சமூகத்தின் மீண்டெழும் ஆற்றலைக் கட்டமைப்பதற்குத் தேவையானதாக இருக்கிறது. இதற்குப் பொருந்தும் வகையில் பயிற்சிப் பட்டறையின் நோக்கங்கள் அமைந்துள்ளன. அவை:

- ஓக்கி புயலும் அதனைத் தொடர்ந்த அவசர நிலையும் நிறுவனங்கள் மற்றும் சமூகத்தின் மீது ஏற்படுத்திய தாக்கம்;
- “அவசர நிலையின்போது சேதம் மற்றும் தேவை மதிப்பீடு பற்றிய மீன்பிடி- நீருயிர் வளர்ப்புக்கான வழிகாட்டு நெறிமுறைகள்” மற்றும் SSF வழிகாட்டுதலின் அடிப்படையில். புயலின் தாக்கத்தைத் தாங்கி நிற்பது, மீனவ சமூகத்திற்கு ஏற்படும் உயிர் மற்றும் பொருளாதார சேதங்களைக் குறைப்பது ஆகியவற்றுக்கான மத்திய மாநில கொள்கைகளையும் திட்டங்களையும் மதிப்பீடு செய்வது;
- மனித உரிமை அடிப்படையிலான அணுகுமுறை மற்றும் மீன்பிடி தொழிலில் அரசின் இருத்தலைக் கட்டுப்படுத்தும் சட்டங்களின் அடிப்படையில் புயலின் தாக்குதலை எதிர்கொள்வதற்கான தயார் நிலையை மதிப்பீடு செய்வது ; மேலும்
- குறிப்பிட்டதொரு பேரழிவை எதிர்கொள்வதில் உள்ள சாவல்களை எதிர்கொள்வது மற்றும் பல்வேறு நிறுவனங்களையும் மீனவ சமூகத்தையும் இணைப்பதில், குறிப்பாக பேரழிவு தயார் நிலை மற்றும் நிர்வாகத்தில் உள்ள சவால்களை எதிர்கொள்வதற்கான தீர்வுகள் குறித்த ஆலோசனைகளை அளித்தல்.

## Annex 7: Study: Executive summary in English

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### CYCLONE OCKHI: DISASTER RISK REDUCTION AND SEA SAFETY IN THE INDIAN MARINE FISHERIES SECTOR

The cyclone Ockhi developed in the Northern Indian Ocean southwest of Sri Lanka and rapidly intensified into a cyclonic storm, killing over 350 people from southern Tamil Nadu and Kerala between 30 November and 3 December 2017. There were also some unidentified fishers from the north-eastern states of India who were lost at sea while working on board fishing vessels. The full force of the storm was borne by fishermen at sea, unlike previous cyclones.

Supported by the Food and Agriculture Organization (FAO) of the United Nations, the International Collective in Support of Fishworkers (ICSF) undertook a study to assess disaster response and preparedness in light of cyclone Ockhi, to review cyclone warning systems and their efficacy, as well as central and state policies and plans (Tamil Nadu and Kerala) to cope with disasters and to minimize loss of human life and damage to fishery-based livelihoods in line with the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (the SSF guidelines).

The research consisted of field interviews with survivors and the families of missing fishermen from cyclone-affected coastal fishing villages in Thiruvananthapuram, Kerala; and Kanniyakumari, Tamil Nadu. The study looked at short-haul and long-haul fishing operations—the latter undertaken in the maritime zones adjacent to states along the western seaboard up to Maharashtra and Gujarat, and the archipelagic waters around Lakshadweep Islands. Secondary research and interviews with central and state governments, fishers' associations and the scientific experts were conducted. Interviews were used to construct a timeline of events between 28 November and 6 December 2017 to identify key issues of early warnings, fishing positions, disaster response and relay time between different agencies.

The study recognizes the need to improve disaster risk management and disaster risk reduction framework to reduce the vulnerabilities of coastal fishing communities. Considering the diversity of fishing communities and fishing operations, the study recommends a multipronged approach to reducing economic and social damages including the loss of human life. While a majority of fishermen casualties in Kerala were those employed on board traditional motorised craft fishing less than 50 nautical miles from shore, almost all the fatalities in Tamil Nadu were from mechanised, deep-sea vessels undertaking fishing trips of 40-day duration within the Indian exclusive economic zone (EEZ) and the high seas.

The study observes that the disaster management plans at the central and state levels are primarily focused on risk reduction and mitigation on shore where storm surges have historically led to over 90 per cent of deaths. The study points out the need to integrate safety of fishing operations at sea into disaster preparedness protocols to reduce the number of fishers losing their life during cyclones. The role and responsibilities of the fisheries department in monitoring fishing activity and ensuring sea safety are highlighted and the study seeks a more active role, along with the revenue department, for the state fisheries department in search and rescue operations as well as in relief, rehabilitation, reconstruction and recovery efforts.

Various efforts by state governments to regulate the fishing sector and their effectiveness are analyzed in the study. The study stresses the need to address the differential impact of cyclones, in particular, on small-scale fishers and vulnerable and marginalized communities. The study reviews fisheries and sea safety legislation, rules and policy frameworks at various levels and proposes integrating disaster preparedness into fisheries management. Such integration is to be consistent with the recommendations of the SSF Guidelines, employing “relief-development continuum” and “build back better” principles and a human rights-based approach.

The study underscores the importance of developing a national legislation for the EEZ on fisheries that integrates sea safety considerations into fisheries management and governance, and seeks greater cooperation and coordination between the littoral states, and between coastal states and the central government. The United Nations Sendai Framework for Disaster Risk Reduction 2015-2030, which India has adopted in 2015 for implementation, aims to achieve a substantial reduction in the loss of lives through the coordinated efforts of national and international agencies, civil society and the community.

As an example, the study draws attention to how an effective monitoring, control and surveillance system in Sri Lanka, recently implemented as part and parcel of its fisheries management regime has, in fact, led to improved and effective disaster preparedness during cyclone Ockhi. Although the damage caused by the cyclone was limited to Kerala and Tamil Nadu, the lessons gleaned from the study point to the need for a national strategy to ensure the safety of fishermen consistent with paragraphs 6.16 and 6.17 of the SSF Guidelines.

Following are the main recommendations of the study:

1. Reconfigure the notion of the last mile in the communication of disaster warnings and to include fishermen at sea.
2. Ensure constant communication between the IMD and disaster managers so as to effectively warn the coastal communities.
3. Reduce relay time between departments by using multiple channels and technologies.
4. Develop low-cost and user friendly communication technology, keeping in mind the end users, i.e., fisher families.
5. Conduct periodic awareness and training programmes in disaster preparedness guided by community-based disaster management approach, to build a culture of safety among fishermen.
6. Widen the scope of disaster management plans to include at-sea disaster and accident risks
7. Develop the already existing national cyclone plan to include best practices from various states, based on each state's strengths and weaknesses in handling various disasters.
8. Improve coordination between different agencies in disaster management to reduce response times and more effectively collaborate during search and rescue and other mitigation measures.
9. Utilize the traditional knowledge of fishers in identifying likely fishing zones during search and rescue operations by the Coast Guard and Navy. Identify experienced fishers in each village to accompany rescue teams.
10. Strengthen disaster management at the district and village levels through well-manned 24-hour control rooms, community participation and training, and ensuring the availability of technology and infrastructure to reduce damage to lives and livelihoods.
11. Integrate disaster management into fisheries management through appropriate legislation and its implementation.
12. Ensure safety of fishers at sea through free flow of information between fishers and the administration. Strengthen monitoring measures and compliance to safety norms.
13. Expanding the regulatory role of the fisheries department to include monitoring, control and surveillance measures, reporting of all fishing activity, including accidents, and enforcement of norms for sea safety. This also includes maintaining robust up-to-date data on all fishing vessels and the vessels at sea and where at a point of time
14. Use new technologies for improving sea safety measures, such as mobile applications for information sharing and dissemination of alerts (E.g. Fisher Friend Mobile Application, Mfisheries or Abalobi).

## Annex 8: Executive summary in Malayalam

സംഗ്രഹം

### ഓഖി ചുഴലിക്കാറ്റ് - കടൽ മത്സ്യമേഖലയിലെ സുരക്ഷയും, ദുരന്ത നിവാരണവും

ഇന്ത്യൻ മഹാസമുദ്രത്തിൽ ശ്രീലങ്കയ്ക്ക് തെക്കു-പടിഞ്ഞാറായി രൂപപ്പെട്ട ഒരു ന്യൂന മർദ്ദം, വളരെ പെട്ടെന്ന്, "ഓഖി" എന്നറിയപ്പെട്ടിരുന്ന ചുഴലിക്കാറ്റായി രൂപാന്തരപ്പെട്ട് 2017 നവംബർ 30 നും ഡിസംബർ 3 നും ഇടയിൽ കേരളം, തെക്കൻ തമിഴ്നാട് എന്നിവിടങ്ങളിലെ തീരപ്രദേശത്തെ 350-ൽ അധികം പേരുടെ ജീവൻ അപഹരിച്ചിരുന്നു. ഇതിൽ, കടൽ മത്സ്യബന്ധനത്തിൽ ഏർപ്പെട്ടിരുന്ന വടക്കു-കിഴക്കൻ സംസ്ഥാനങ്ങളിലെ, ഇനിയും തിരിച്ചറിയപ്പെടാത്ത മത്സ്യത്തൊഴിലാളികളും ഉൾപ്പെട്ടിരുന്നു. മുൻകാലങ്ങളിൽ സംഭവിച്ചിരുന്ന ചുഴലിയെ അപേക്ഷിച്ച് ഇപ്പോഴത്തെ ചുഴലിക്കാറ്റിന്റെ ആഘാതം പൂർണ്ണമായും ഏറ്റുവാങ്ങിയത് കടലിൽ പ്രവർത്തിച്ചുകൊണ്ടിരുന്ന മത്സ്യത്തൊഴിലാളികളായിരുന്നു.

ദുരന്തങ്ങൾമൂലം മത്സ്യമേഖലയിൽ ജീവനും ജീവനോപാധികൾക്കും സംഭവിക്കുന്ന നാശനഷ്ടങ്ങൾ ലഘൂകരിക്കുന്നതിന് സഹായകമായ കേന്ദ്ര-സംസ്ഥാന നയപരിപാടികൾ, ദുരന്തനിവാരണ പ്രവർത്തനങ്ങൾ, മുന്നൊരുക്കങ്ങൾ, മുന്നറിയിപ്പ് സംവിധാനങ്ങൾ എന്നിവയൊക്കെ നിലവിലുള്ള "ചെറുകിട മത്സ്യബന്ധന മാർഗ്ഗനിർദ്ദേശങ്ങളു"മായി എത്രമാത്രം യോജിച്ച് പോകുന്നുവെന്ന് വിലയിരുത്തുന്ന ഒരു പഠനം ഐക്യരാഷ്ട്രസഭയുടെ കീഴിലുള്ള എഫ്.ഏ.ഓ-യുടെ സഹായത്തോടെ ഐ.സി.എസ്.എഫ് നടത്തിയിട്ടുണ്ട്.



A.J. Vijayan translating from Malayalam to English during the first panel discussion at the workshop



ഓഖി ദുരന്തത്തിൽ നിന്ന് രക്ഷപ്പെട്ട കേരളത്തിലെ തിരുവനന്തപുരം തമിഴ്നാട്ടിലെ കന്യാകുമാരി എന്നീ ജില്ലകളിലെ മത്സ്യത്തൊഴിലാളികളുടെയും അവരുടെ കുടുംബാംഗങ്ങളുടെയും ഇൻറർവ്യൂ വിവരങ്ങൾ ഈ പഠനത്തിൽ ഉൾപ്പെടുത്തിയിട്ടുണ്ട്. രാജ്യത്തെ തീര/ദൂര കടൽമേഖലയിലുള്ള ചെറുവല (short haul) മീൻപിടുത്ത പ്രവർത്തനങ്ങളും, മഹാരാഷ്ട്ര ഗുജറാത്ത്, ലക്ഷദ്വീപ് സമൂഹം എന്നീ മേഖലകളിലെ ദൂരക്കടലിൽ പ്രവർത്തിക്കുന്ന നീട്ടുവല/വൻവല (long haul) മീൻപിടുത്ത പ്രവർത്തനങ്ങളും പഠന വിധേയമാക്കിയിട്ടുണ്ട്. കേന്ദ്ര സംസ്ഥാന സർക്കാരുകൾ, മത്സ്യത്തൊഴിലാളി സംഘടനകൾ, ഗവേഷണ വിദഗ്ധർ എന്നിവരുടെ അഭിമുഖവും ലഭ്യമായ ഗവേഷണ വിവരങ്ങളും പഠനത്തിൽ ഉൾപ്പെടുത്തിയിട്ടുണ്ട്. 2017 നവംബർ 28 നും ഡിസംബർ 6 നും ഓഖി സംഭവ പരമ്പരകൾ (ദുരന്ത സാധ്യതാ മൂന്നറിയിപ്പുകൾ, മത്സ്യബന്ധന പ്രദേശങ്ങൾ, ദുരന്തനിവാരണ പ്രവർത്തനങ്ങൾ, വിവിധ ഏജൻസികളുടെ പ്രവർത്തന ക്രമ വ്യത്യാസവും രീതിയും) കോർത്തിണങ്ങുന്നതിന് ഈ അഭിമുഖം ഉപയോഗിച്ചിട്ടുണ്ട്. ഇടയിൽ ഉണ്ടായ ഓഖി സംഭവ പരമ്പരകൾ (ദുരന്ത സാധ്യതാ മൂന്നറിയിപ്പുകൾ, മത്സ്യബന്ധന പ്രദേശങ്ങൾ, ദുരന്തനിവാരണ പ്രവർത്തനങ്ങൾ, വിവിധ ഏജൻസികളുടെ പ്രവർത്തന ക്രമ വ്യത്യാസവും രീതിയും) കോർത്തിണങ്ങുന്നതിന് ഈ അഭിമുഖം ഉപയോഗിച്ചിട്ടുണ്ട്.

തീരദേശ മത്സ്യത്തൊഴിലാളി സമൂഹം അനുഭവിച്ച മർമ്മഭേദകമായ മുറിവുകൾ ലഘൂകരിക്കുന്നതിന് ദുരന്തനിവാരണ - ലഘൂകരണ പ്രവർത്തനങ്ങളിൽ കാതലായ മെച്ചപ്പെടുത്തലുകൾ ആവശ്യമായിരുന്നുവെന്ന് പഠനം അംഗീകരിക്കുന്നു. മത്സ്യബന്ധന പ്രവർത്തനങ്ങൾ, മത്സ്യത്തൊഴിലാളി സമൂഹങ്ങൾ എന്നിവയിലുള്ള വൈവിധ്യം പരിഗണിച്ച് മനുഷ്യ ജീവൻ ഉൾപ്പെടെയുള്ള സാമൂഹിക-സാമ്പത്തിക നഷ്ടങ്ങൾ ലഘൂകരിക്കുന്നതിന് ഒരു ബഹുമുഖ സമീപനം ആവശ്യമാണെന്ന് പഠനം ശുപാർശ ചെയ്യുന്നു. യന്ത്രം ഘടിപ്പിച്ച പരമ്പരാഗതയാനങ്ങളിൽ 50 നോട്ടിക്കൽ മൈലിനുള്ളിൽ മത്സ്യബന്ധനം നടത്തിക്കൊണ്ടിരുന്ന മത്സ്യത്തൊഴിലാളികൾക്കാണ് കേരളത്തിൽ പ്രധാനമായും ജീവഹാനി സംഭവിച്ചത്. എന്നാൽ തമിഴ്നാട്ടിൽ പ്രധാനമായും ഇത് EEZ- ന് അകത്തും ആഴക്കടലിലും യന്ത്രവൽകൃത യാനങ്ങൾ, ആഴക്കടൽ മത്സ്യബന്ധന യാനങ്ങൾ എന്നിവ ഉപയോഗിച്ച് മത്സ്യബന്ധനം (40 ദിവസം വരെയുള്ള ഫിഷിംഗ് ട്രിപ്പ്) നടത്തിയിരുന്ന തൊഴിലാളികൾക്കായിരുന്നു.

കേന്ദ്ര-സംസ്ഥാന തലങ്ങളിലുള്ള ദുരന്തനിവാരണ പരിപാടികളെല്ലാം തന്നെ സമാശ്വാസ പ്രവർത്തനങ്ങളിലോ ദുരന്ത ലഘൂകരണ പ്രവർത്തനങ്ങളിലോ മാത്രം കേന്ദ്രീകരിച്ചിട്ടുള്ളതാണെന്ന് പഠനം നിരീക്ഷിക്കുന്നു. 90% ജീവഹാനിയും സംഭവിക്കുന്നത് കടൽക്ഷോഭം മൂലമാണ്. ചുഴലിക്കാറ്റ് മൂലമുള്ള മത്സ്യത്തൊഴിലാളികളുടെ ജീവഹാനി ലഘൂകരിക്കുന്നതിന് കടൽസുരക്ഷ കൂടി ദുരന്ത സാധ്യതാ മൂന്നറിയിപ്പുകളിൽ ഉൾപ്പെടുത്തണമെന്ന് പഠനം ചൂണ്ടിക്കാട്ടുന്നു. മത്സ്യബന്ധന പ്രവർത്തനങ്ങൾ നിരീക്ഷണ വിധേയമാക്കി, കടൽ സുരക്ഷ ഉറപ്പു വരുത്തേണ്ടത് ഫിഷറീസ് വകുപ്പിന്റെ ധർമ്മവും, ഉത്തരവാദിത്തവുമാണെന്ന് പഠനം വിലയിരുത്തുന്നു. റവന്യൂവകുപ്പ് നടപ്പിലാക്കിക്കൊണ്ടിരിക്കുന്ന സമാശ്വാസ, പുനരധിവാസ, പുനർനിർമ്മാണ, പുനപ്രാപ്തി പ്രവർത്തനങ്ങളിൽ ഫിഷറീസ് വകുപ്പ് കൂടി കൂടുതൽ സജീവമായി പങ്കെടുക്കണമെന്ന് പഠനം നിരീക്ഷിക്കുന്നു.

മത്സ്യബന്ധന മേഖലയെ നിയന്ത്രിക്കുന്നതിന് സംസ്ഥാന സർക്കാരുകൾ നടത്തുന്ന വിവിധ പരിശ്രമങ്ങളും അവയുടെ ഫലപ്രാപ്തിയും ഈ പഠനത്തിൽ വിശകലനം ചെയ്യുന്നുണ്ട്. പാർശ്വവൽകൃത സമൂഹങ്ങൾ, ചെറുകിട മത്സ്യത്തൊഴിലാളി സമൂഹങ്ങൾ, ഇതരപ്രണിത സമൂഹങ്ങൾ എന്നിവയിൽ കൊടുങ്കാറ്റുകൾ സൃഷ്ടിക്കുന്ന ആഘാതത്തിന്റെ താരതമ്യ സംബോധനം ആവശ്യമാണെന്ന് പഠനം ഊന്നിപ്പറയുന്നു. വിവിധ തലങ്ങളിലുള്ള മത്സ്യമേഖല/കടൽസുരക്ഷാ മാർഗ്ഗങ്ങൾ, നിയമങ്ങൾ, ചട്ടങ്ങൾ, നയരേഖകൾ എന്നിവ ഈ പഠനം പുനരവലോകനം ചെയ്യുന്നുണ്ട്. ദുരന്തസാധ്യതാ മൂന്നറിയിപ്പുകൾ മത്സ്യമേഖലാ മാനേജ്മെന്റുമായി സംയോജിപ്പിക്കണമെന്ന് പഠനം നിർദ്ദേശിക്കുന്നു. ഈ സംയോജനം

ചെറുകിട മത്സ്യബന്ധന മാർഗ്ഗനിർദ്ദേശങ്ങൾക്കനുസൃതവും; മനുഷ്യാവകാശാധിഷ്ഠിത സമീപനം, മെച്ചപ്പെട്ട പുനഃസ്ഥിതി, നിരന്തര ക്ഷേമ-വികസനം എന്നിവ പ്രയോഗത്തിൽ വരുത്തുന്ന തരത്തിലുള്ളതുമായിരിക്കണം. നമ്മുടെ EEZ- ൽ മത്സ്യവിഭവ മാനേജ്മെന്റ്, അതിന്റെ നിർവഹണം എന്നിവയെ കടൽസുരക്ഷയുമായി സംയോജിപ്പിച്ചുകൊണ്ടുള്ള ഒരു കേന്ദ്ര നിയമത്തിന്റെ ആവശ്യകത ഈ പഠനം അടിവരയിട്ട് സ്ഥാപിക്കുന്നു. പ്രസ്തുത നിയമം കടലോര സംസ്ഥാനങ്ങളും കേന്ദ്ര സർക്കാരും തമ്മിലും നിരന്തരമായ സഹകരണവും ഏകോപനവും ഉണ്ടായി ഉറപ്പിക്കുന്ന തരത്തിലായിരിക്കണം. ദേശീയ-അന്തർദേശീയ ഏജൻസികളും, പൗരസമൂഹവും യോജിച്ചുള്ള പരിശ്രമങ്ങളിലൂടെ മനുഷ്യ ജീവന്റെ നഷ്ടം ഗണ്യമായി കുറയ്ക്കാനാകുമെന്ന് ഇന്ത്യ കൂടി അംഗീകരിച്ച 2015 ലെ "United Nations Sendai Framework for Disaster Risk Reduction 2015-2030" ലക്ഷ്യം വയ്ക്കുന്നു.

ഉദാഹരണമായി സമീപകാലത്ത് ശ്രീലങ്കയിൽ ഫിഷറീസ് മാനേജ്മെന്റ് പ്രവർത്തനങ്ങളിലെ ഫലപ്രദമായ നിരീക്ഷണം, നിയന്ത്രണം, മേൽനോട്ടം എന്നിവ മൂലം ഓഖി മുന്നൊരുക്കങ്ങളെ മെച്ചപ്പെടുത്തുന്നതിന് സാധിച്ചു എന്ന് പഠനം ശ്രദ്ധയിൽപ്പെടുത്തുന്നു. ഓഖി കൊടുങ്കാറ്റുമൂലമുള്ള നാശനഷ്ടങ്ങൾ കേരള, തമിഴ്നാട് സംസ്ഥാനങ്ങളിൽ മാത്രമായിരുന്നെങ്കിലും മൊത്തം രാജ്യത്തെ മത്സ്യത്തൊഴിലാളികളുടെ സുരക്ഷ ഉറപ്പുവരുത്തുന്നതിന്, ചെറുകിട മത്സ്യബന്ധന മാർഗ്ഗനിർദ്ദേശങ്ങളിലെ (SSF Guidelines) 6.16, 6.17 പാരഗ്രാഫുകളിലെ നിർദ്ദേശങ്ങൾക്കനുസൃതമായി ഒരു രാജ്യാന്തര തന്ത്രം ആവശ്യമാണെന്ന് പഠനത്തിൽ നിന്ന് ലഭിച്ച പാഠങ്ങൾ സൂചിപ്പിക്കുന്നു.

**ഓഖി പഠനത്തിന്റെ പ്രധാന ശുപാർശകൾ താഴെച്ചേർക്കുന്നു.**

1. ദുരക്കടലിലും ആഴക്കടലിലും പണിയെടുക്കുന്ന മത്സ്യത്തൊഴിലാളികൾക്ക് ദുരന്ത സാധ്യതാ മുന്നറിയിപ്പുകൾ ലഭ്യമാകുന്ന തരത്തിൽ വാർത്താവിനിമയ സിസ്റ്റം രൂപപ്പെടുത്തേണ്ടതാണ്.
2. തീരദേശ സമൂഹത്തിന് ഫലപ്രദമായ രീതിയിൽ കാലാവസ്ഥാ മുന്നറിയിപ്പുകൾ ലഭ്യമാക്കുന്നതിന് ദുരന്തമേഖലാ മാനേജർമാരും ദേശീയ കാലാവസ്ഥാ പഠനവകുപ്പും തമ്മിൽ നിരന്തരമായ വിനിമയ ബന്ധം ഉറപ്പു വരുത്തേണ്ടതാണ്.
3. ബഹുമുഖ സന്ദേശ വിനിമയ മാർഗ്ഗങ്ങളും സാങ്കേതിക വിദ്യകളും ഉപയോഗപ്പെടുത്തി ബന്ധപ്പെട്ട വകുപ്പുകൾ തമ്മിലുള്ള റിലേ ടൈം ലഘൂകരിയ്ക്കേണ്ടതാണ്.
4. ആത്യന്തികമായി മത്സ്യത്തൊഴിലാളി കുടുംബങ്ങളാണ് ഉപഭോക്താക്കളെന്ന് മനസ്സിലാക്കി, ചെലവുകുറഞ്ഞതും എളുപ്പത്തിൽ കൈകാര്യം ചെയ്യാവുന്നതുമായ വാർത്താവിനിമയ സാങ്കേതിക വിദ്യ വികസിപ്പിച്ചെടുക്കേണ്ടതാണ്.
5. മത്സ്യത്തൊഴിലാളികൾക്കിടയിൽ ഒരു സുരക്ഷാ സംസ്കാരം വളർത്തിയെടുക്കുന്നതിന് ദുരന്ത സാധ്യതാ മുന്നറിയിപ്പുകളെപ്പറ്റിയുള്ള ബോധവൽക്കരണം/പരിശീലന പരിപാടികൾ സമൂഹത്തിന് മൊത്തമായി ആവർത്തിച്ച് സംഘടിപ്പിയ്ക്കേണ്ടതാണ്.
6. കടൽ അപകട സാധ്യതകളും കടൽ ദുരന്തങ്ങളും ഉൾപ്പെടുത്തി ദുരന്തനിവാരണ പരിപാടികൾ വിപുലപ്പെടുത്തേണ്ടതാണ്.

7. വിവിധ ദുരന്തങ്ങൾ കൈകാര്യം ചെയ്യുന്നതിന് സംസ്ഥാനങ്ങളിൽ പ്രയോഗത്തിലുള്ള ഫലപ്രദമായ മാർഗ്ഗങ്ങൾക്കുടി ഉൾപ്പെടുത്തി "ദേശീയ സൈക്ലോൺ പ്ലാൻ" വികസിപ്പിച്ചേണ്ടതാണ്.

8. കടലിലെ തെരച്ചിലുകൾ, രക്ഷാപ്രവർത്തനങ്ങൾ, ദുരന്ത ലഘൂകരണ പരിപാടികൾ എന്നിവയുടെ ഫലപ്രാപ്തി ഉറപ്പു വരുത്തുന്നതിന് ദുരന്ത നിവാരണ പ്രവർത്തനങ്ങളിൽ പങ്കെടുക്കുന്ന വിവിധ ഏജൻസികൾ തമ്മിലുള്ള ഏകോപനം മെച്ചപ്പെടുത്തേണ്ടതാണ്.

9. മത്സ്യബന്ധന സാധ്യതാമേഖലകൾ കണ്ടെത്തി രക്ഷാ പ്രവർത്തനങ്ങൾ ശക്തിപ്പെടുത്തുന്നതിന് മത്സ്യത്തൊഴിലാളികളുടെ പരമ്പരാഗത അറിവുകൾ കോസ്റ്റ് ഗാർഡും നേവിയും ഉപയോഗപ്പെടുത്തേണ്ടതാണ്. രക്ഷാപ്രവർത്തനങ്ങളിലേർപ്പെട്ടിരിക്കുന്ന ടീമിനെ അനുഗമിക്കുന്നതിന് പരിശീലനം സിദ്ധിച്ച മത്സ്യത്തൊഴിലാളികളെ മത്സ്യഗ്രാമതലത്തിൽ കണ്ടെത്തേണ്ടതാണ്.

10. 24 മണിക്കൂറും പ്രവർത്തിക്കുന്ന കൺട്രോൾ റൂമുകൾ, മത്സ്യത്തൊഴിലാളി സമൂഹത്തിന്റെ പങ്കാളിത്തം/പരിശീലനം, മത്സ്യത്തൊഴിലാളികളുടെ ജീവനും ജീവനോപാധികൾക്കുമുള്ള നാശനഷ്ടങ്ങൾ ലഘൂകരിക്കുന്നതിനുള്ള സാങ്കേതിക വിദ്യ, ഉപയുക്തമായ അടിസ്ഥാന സൗകര്യങ്ങൾ എന്നിവ ഉറപ്പു വരുത്തിക്കൊണ്ടുള്ള ദുരന്തനിവാരണ പ്രവർത്തനങ്ങൾ ഗ്രാമതലത്തിലും, ജില്ലാതലത്തിലും ശക്തിപ്പെടുത്തേണ്ടതാണ്.

11. ഉചിതമായ നിയമനിർമ്മാണത്തിലൂടെയും അവയുടെ നിർവ്വഹണത്തിലൂടെയും ദുരന്ത നിവാരണ മാനേജ്മെന്റിനെ മത്സ്യമേഖലാ പരിപാലന പരിപാടികളുമായി സംയോജിപ്പിക്കേണ്ടതാണ്.

12. മത്സ്യത്തൊഴിലാളികളുടെ കടൽസുരക്ഷ ഉറപ്പു വരുത്തുന്നതിന് മത്സ്യത്തൊഴിലാളികളുടെയും ഭരണകൂടത്തിന്റെയും ഇടയിൽ മുന്നറിവുകൾ നിരന്തരം പകർന്നു നൽകേണ്ടതാണ്.

13. മത്സ്യമേഖലയിലെ പ്രവർത്തനങ്ങളുമേലുള്ള നിരീക്ഷണം, മേൽനോട്ടം, നിയന്ത്രണം, റിപ്പോർട്ടിംഗ് എന്നിവയിൽ ഫിഷറീസ് വകുപ്പിന്റെ പങ്ക് കൂടുതൽ വികസിപ്പിച്ചേണ്ടതാണ്. മത്സ്യബന്ധനയാനങ്ങൾ, ഓരോ സമയത്തും കടലിൽ പ്രവർത്തിക്കുന്ന യാനങ്ങൾ എന്നിവയെപ്പറ്റിയൊക്കെയുള്ള സ്ഥിതിവിവരക്കണക്ക് ഫിഷറീസ് വകുപ്പ് സൂക്ഷിക്കേണ്ടതാണ്.

14. കടൽ രക്ഷാ പരിപാടികൾ മെച്ചപ്പെടുത്തുന്നതിന് പുതിയ സാങ്കേതിക വിദ്യകളായ മൊബൈൽ ആപ്ലിക്കേഷനുകൾ ഉപയോഗപ്പെടുത്തേണ്ടതാണ്. ജാഗ്രതാ മുന്നറിയിപ്പുകൾ പങ്കുവെയ്ക്കുന്നതിനും, പ്രചരിപ്പിക്കുന്നതിനും ഇത്തരം സാങ്കേതിക വിദ്യകൾ ഉപയോഗിച്ചേണ്ടതാണ്. (ഉദാ: മത്സ്യത്തൊഴിലാളി സൗഹൃദ മൊബൈൽ ആപ്ലിക്കേഷൻ, അബലോബി).

## Annex 9: Executive summary in Tamil

அறிக்கையின் சாரமான / அடிப்படை அம்சங்கள்

ஓக்கி புயல்: இந்திய கடல் மீன்பிடித் துறையில் பேரழிவு அபாயக் குறைப்பும் கடல் பாதுகாப்பும்

இலங்கையின் தென்மேற்கு பகுதிக்கு அருகில் இந்தியப் பெருங்கடலின் வடக்குப் பகுதியில் உருவான ஓக்கிப் புயல் சூறாவளிப் புயலாகத் தீவிரமடைந்தது. புயலின் காரணமாக, 2017 நவம்பர் 30க்கும் டிசம்பர் 3க்கும் இடைப்பட்ட நாட்களில் தமிழ்நாட்டையும், கேரளாவையும் சேர்ந்த 350 பேர் இறந்துபோயினர். இவர்கள் மட்டுமல்லாமல், மீன்பிடிப் படகுகளில் வேலை செய்த, வட கிழக்கு இந்தியாவைச் சேர்ந்த அடையாளம் தெரியாத மீன்பிடித் தொழிலாளர்கள் சிலரும் புயலால் இறந்துபோயினர். இதற்கு முந்தைய புயல்களைப் போலல்லாது, இந்தப் புயலின்போது, கடலில் இருக்கநேர்ந்த மீனவர்கள் புயலின் முழு தாக்கத்தையும் எதிர்கொள்ள வேண்டி வந்தது.

ஐக்கிய நாடுகள் சபையின் உணவு மற்றும் விவசாய அமைப்பின் (Food and Agriculture Organization of the United Nations -FAO) உதவியோடு, ஓக்கி புயல் பற்றிய ஆய்வு ஒன்றை ICSF சமீபத்தில் மேற்கொண்டது. ஓக்கிப் புயல் நிகழ்வுகளின் விவரங்களைக்கொண்டு, பேரழிவை எதிர்கொள்ளத் தயாராக இருப்பதையும் பேரழிவிற்குப் பிந்தைய நடவடிக்கைகளை மேற்கொள்ள தயார் நிலையில் இருப்பதையும் மதிப்பீடு செய்வதும், புயல் முன்னெச்சரிக்கை கட்டமைப்பு, அதன் திறன் ஆகியவற்றை பரிசீலனை செய்வதும், உணவுப் பாதுகாப்பு மற்றும் வறுமை ஒழிப்பு என்ற பின்புலத்தில் நிலைத்தத் தன்மையுள்ள சிறுவீத மீன்பிடியைப் பாதுகாப்பதற்கான



G.M. Chandra Mohan translating from Tamil to English during the first panel discussion at the workshop

தன்னார்வ வழிகாட்டுதல்கள் 2014 (Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication- SSF Guidelines) என்ற SSF வழிகாட்டு நெறிமுறைகளுக்கு ஒத்துப்போகும் வகையில், பேரழிவின்போது மனித உயிர் இழப்பின் எண்ணிக்கையைக் குறைக்கும் வகையில் ஈடுகொடுப்பதுடன், மீன்பிடி சார்ந்த வாழ்வாதாரத்திற்கு ஏற்படும் சீர்குலைவைக் குறைப்பது என்ற வகையில் மத்திய மற்றும் மாநில (கேரளம்- தமிழ்நாடு) கொள்கைகளும் திட்டங்களும் இருக்கின்றனவா என்பதையும் சரிபார்ப்பதும் இந்த ஆய்வின் நோக்கங்கள் ஆகும். உயிர் பிழைத்த மீனவர்களோடும், புயலால் பாதிக்கப்பட்ட கேரள மாநிலத்தின் திருவனந்தபுரம் மற்றும், தமிழ்நாட்டின் கன்னியாகுமரி மாவட்டங்களின் கடற்கரை கிராமங்களைச் சேர்ந்த காணாமற்போன மீனவர்களின் குடும்பத்தினரோடும் நிகழ்த்தப்பட்ட நேரடி நேர்காணல்கள் இந்த ஆய்வில் இடம்பெற்றுள்ளன. குறைந்த தூர மீன்பிடியையும், நீண்ட தூர மீன் பிடியையும் ஆய்வு கணக்கில் எடுத்துக்கொண்டது. நீண்ட தூர மீன்பிடி என்பது மகாராஷ்டிரம்- குஜராத் வரை நீள்கின்ற மேற்குக் கடற்கரையிலும், லட்சத் தீவுகளைச் சுற்றியுள்ள கடல் பகுதிகளில் நடக்கின்ற மீன் பிடியைக் குறிப்பதாகும். மத்திய- மாநில அரசுகள், மீனவர்களின் சங்கங்கள், அறிவியல் நிபுணர்கள் உடன் நேர்காணலும் துணை நிலை ஆய்வுகளும் (Secondary research) மேற்கொள்ளப்பட்டன. 2017ன் நவம்பர் 28க்கும், டிசம்பர் 6க்கும் இடைப்பட்ட காலத்தில் நடைபெற்றவற்றின் காலவரிசையைக் (timeline) கண்டுபிடித்து அதன் மூலம் முன் கூட்டிய எச்சரிக்கை, மீன்பிடிக்காக கடல்பரப்பில் இருந்தவர்கள், பேரழிவு மீட்பு நடவடிக்கைகள், பல்வேறு முகமைகள் மத்தியில் தொடர்பு பற்றிய காலவரிசை ஆகியவற்றில் உள்ள பிரச்சனைகளை இனம் காண்பதற்காக நேர்காணல்கள் பயன்படுத்தப்பட்டன.

கடற்கரை மீனவச் சமூகங்களின் பாதிப்புகளைக் குறைக்க வேண்டுமெனில், பேரழிவு அபாய நிர்வாகம், பேரழிவு அபாயக் குறைப்பு திட்டங்களை மேம்படுத்த வேண்டும் என்று இந்த ஆய்வு கண்டுணர்கிறது. மீனவ சமூகத்தின் பன்முகத் தன்மையையும் மீன்பிடி நடவடிக்கைகளின் பன்முகத் தன்மையையும் கருத்தில்கொண்டு, மனித உயிர் இழப்பு உள்ளிட்ட பொருளாதார-சமூக சேதங்களைக் குறைப்பதற்கு பன்முகப்பட்ட அணுகுமுறையை மேற்கொள்ள வேண்டும் என்று இந்த ஆய்வு பரிந்துரைக்கிறது. கேரளாவைப் பொறுத்தவரை கரையிலிருந்து 50 கடல் மைல்களுக்கு உட்பட்ட கடற்பரப்பில், மோட்டார் பொருத்தப்பட்ட பாரம்பரிய படகில் மீன்பிடிப்பவர்கள்தான் புயலின்போது பாதிப்புக்கு ஆளானவர்களில் பெரும்பான்மையாக இருக்கின்றனர். தமிழ்நாட்டைப் பொறுத்தவரை, இந்திய தனியுரிமை பொருளாதார கடல் பகுதியில் (Indian exclusive economic zone -EEZ), அல்லது ஆழ்கடலில் 40 நாட்கள் தங்கி ஆழ்கடல் இயந்திரப் படகு மீன்பிடியில் ஈடுபடுபவர்கள்தான் அதிக இழப்பைச் சந்தித்திருக்கின்றனர். மத்திய- மாநில பேரழிவு நிர்வாகத் திட்டங்களும், அபாயக் குறைப்புத் திட்டங்களும் முதன்மையாகப் பார்த்தால் கரையின் மீதுதான் கவனம் செலுத்துவதாக இருக்கின்றன என்பதையும், வரலாற்று ரீதியாகப் பார்த்தோமென்றால், புயலின்போதான மரணங்களில் 90% கரையில்தான் ஏற்பட்டிருக்கின்றன என்றும் இந்த ஆய்வு

உற்றுநோக்குகிறது/அவதானித்தது. புயல்களின்போது மீனவர்களின் உயிரிழப்பு எண்ணிக்கையைக் குறைப்பதற்கு பேரழிவுத் தயார் நிலை செயல்முறைகளையும் (protocols) மீன்பிடி நடவடிக்கைகளின் பாதுகாப்பு ஏற்பாடுகளையும் ஒருங்கிணைக்க வேண்டிய தேவையிருக்கிறது என்று இந்த ஆய்வு சுட்டிக்காட்டுகிறது. மீன்பிடி நடவடிக்கைகளைக் கண்காணிப்பதோடு கடல் பாதுகாப்பு நடவடிக்கைகளையும் மேற்கொள்வதில் மீன்வளத்துறையின் பாத்திரங்களும் பொறுப்புகளையும் அடிக்கோடிட்டுக் காட்டிய ஆய்வு, மாநில மீன்வளத் துறை வருவாய் துறையுடன் சேர்ந்து தேடுதல்- மீட்பு நடவடிக்கைகளிலும் அதுபோல, நிவாரணம், மறுவாழ்வு, மறுகட்டமைப்பு, மீட்டெடுப்பு நடவடிக்கைகளிலும் கூடுதல் செயல்துடிப்புள்ள பாத்திரம் வகிக்க வேண்டும் என்று விரும்புகிறது.

மீன்பிடித் தொழில் துறையைக் கட்டுப்படுத்துவதற்கு மாநில அரசுகள் மேற்கொண்டுள்ள பல்வேறு முயற்சிகளையும் அவற்றின் விளைவுகள் என்னவென்பதையும் இந்த ஆய்வு பரிசீலனை செய்தது. குறிப்பாக சிறுவீத மீன்பிடியாளர்கள், பாதிப்புக்கு ஆளாக வாய்ப்புள்ள மற்றும் ஓரங்கட்டப்பட்ட சமூகத்தினர் மீது புயல்கள் ஏற்படுத்தும் வேறுபட்ட தாக்கங்களை எதிர்கொள்வதற்கு கவனம் செலுத்த வேண்டும் என்று இந்த ஆய்வு அழுத்தம் கொடுக்கிறது. மீன்வளத்துறையையும் அத்துடன், கடல் பாதுகாப்பு சட்டம், விதிகள், கொள்கை வரையறைகள் குறித்து பல்வேறு மட்டங்களில் பரிசீலனை செய்த ஆய்வு பேரழிவு தயார் நிலையை மீன்பிடி மேலாண்மைக்குள் ஒன்றிணைக்க வேண்டும் என்று முன்மொழிகிறது. அதுபோன்ற ஒன்றிணைப்பது, 'நிவாரணம்- வளர்ச்சியின் தொடர்ச்சியாக இருப்பது' (relief-development continuum) 'இருந்ததை விடச் சிறப்பாக மறுகட்டமைப்பு செய்வது (build back better) என்ற SSF வழிகாட்டு நெறிமுறைகளுக்கும் மனித உரிமை அணுகுமுறைகளுக்கும் பொருந்திப் போவதாக இருக்க வேண்டும். மீன்வள மேலாண்மையுடன் கடல் பாதுகாப்பையும் ஆளுகையையும் ஒன்றிணைக்கின்ற, கடற்கரையோர மாநிலங்களுக்கு இடையேயும், கடற்கரை மாநிலங்களுக்கும் மத்திய அரசுக்கும் இடையேயும் சிறந்த ஒருங்கிணைப்பைக் கொண்டுவரக் கூடிய தனியுரிமை பொருளாதார மண்டலத்துக்கான (EEZ) தேசியச் சட்டத்தை வளர்த்தெடுப்பதற்கான முக்கியத்துவத்தை இந்த ஆய்வு அடிக்கோடிட்டுக் காட்டுகிறது. ஐக்கிய நாடுகளின் பேரழிவு குறைப்பு சென்டை 2015-2030க்கான பணிச் சட்டகத்தை (United Nations Sendai Framework for Disaster Risk Reduction 2015-2030) 2015ல் இந்திய அரசு ஏற்றுக்கொண்டது. தேசிய மற்றும் சர்வதேச முகமைகள், சிவில் சொசைட்டி அமைப்புகள், மக்கள் சமூகத்தின் ஒருங்கிணைந்த முயற்சிகளின் மூலம் உயிரிழப்புகளின் எண்ணிக்கையைக் கணிசமாகக் குறைப்பது அப்பணிச் சட்டகத்தின் (Framework) நோக்கமாகும். அதனை ஏற்றுக்கொண்டதன் காரணமாக அப்பணிச்சட்டகத்தை அமலாக்கம் செய்ய வேண்டிய பொறுப்பில் இந்திய அரசு இருக்கிறது.

இதற்கான உதாரணம் ஒன்றையும் ஆய்வு முன்வைக்கிறது. மீன்வள மேலாண்மை ஆளுகை முறையின் பிரிக்கமுடியாத ஓர் அங்கமாக திறன்மிகு மேற்பார்வையும்,

கட்டுப்பாடு- கவனமிகுக் கண்காணிப்பும் (surveillance) இருப்பதை சமீபத்தில் இலங்கை அமுலாக்கம் செய்தது. இதன் காரணமாக, ஓக்கிப் புயலின்போது அந்நாட்டின் பேரழிவு தயார்நிலை மேம்பட்டதாகவும் பலன் தருவதாகவும் மாறியது. மேலும், ஓக்கிப் புயலின் காரணமான இழப்பு கேரளாவிலும் தமிழ்நாட்டிலும்தான் ஏற்பட்டது. SSF வழிகாட்டு நெறிமுறைகளின் 6.16 மற்றும் 6.17 பத்திகளுக்கு ஒத்திசைந்து போகின்ற, மீனவர்களின் பாதுகாப்பை உறுதி செய்கின்ற தேசிய செயல் திட்டம் தேவையானதாக இருக்கிறது என்பதை இந்த ஆய்வில் சேகரிக்கப்பட்ட விஷயங்கள் காட்டுகின்றன.

ஆய்வின் முக்கியமான/பிரதானமான பரிந்துரைகள் பின்வருமாறு:

1. பேரழிவு முன்னெச்சரிக்கை தகவல் அளிப்பின் கடைசி கட்டம் (last mile) பற்றிய கருத்தாக்கத்தை கடலில் உள்ள மீனவரையும் உள்ளடக்கியதாக மறு உருவாக்கம் செய்து மாற்றிட வேண்டும்.
2. இந்திய வானிலை துறைக்கும் பேரழிவு நிர்வாகிகளுக்கும் இடையில் நிரந்தரமான தகவல் தொடர்பு இருப்பதை உறுதிப்படுத்தி கடற்கரைச் சமூகத்தினருக்கு பலன் தரும் வகையிலான முன்னெச்சரிக்கை கிடைப்பதை உறுதி செய்ய வேண்டும்.
3. பலமுனைத் தகவல் தொடர்பு மற்றும் தொழில்நுட்பத்தைப் பயன்படுத்தி துறைகளுக்கிடையே தகவல் பரவ தேவைப்படும் காலத்தைக் குறைக்க வேண்டும்.
4. கடைசிப் பயனாளியாக நிற்கின்ற மீனவரை மனதில் நிறுத்தி செலவு குறைவான மற்றும் பயன்படுத்துபவருக்கு எளிதான தகவல் தொடர்பு தொழில்நுட்பத்தை உருவாக்க வேண்டும்.
5. மீனவர்கள் மத்தியில் பாதுகாப்பை ஒரு கலாச்சாரமாக மாற்றுவதற்காக, சமூகத்தை அடிப்படையாகக் கொண்ட பேரழிவு மேலாண்மை அணுகுமுறையின்படி குறிப்பிட்ட காலத்துக்கு ஒருமுறை, பேரழிவு தயார் நிலை குறித்த பயிற்சிகளை நடத்திட வேண்டும்.
6. கடலில் ஏற்படும் பேரழிவையும் விபத்து அபாயங்களையும் உள்ளடக்கியதாக பேரழிவு மேலாண்மை திட்டத்தின் செயல்பாட்டுப் பரப்பை விரிவுபடுத்த வேண்டும்.
7. பல்வேறு பேரழிவுகளைக் கையாளுவதில் மாநிலங்களுக்கு உள்ள பலம் மற்றும் பலவீனங்களை அடிப்படையாகக் கொண்டு, பல்வேறு மாநிலங்களின் ஆகச்சிறந்த நடைமுறைகளை உள்ளிணைக்கும் வகையில், புயலை எதிர்கொள்வதற்கான தற்போதிருக்கும் தேசிய திட்டத்தை மேலும் வளர்த்தெடுத்து எடுக்க வேண்டும்.
8. பேரழிவின் போது செயல்படுவதில் உள்ள கால இடைவெளியைக் குறைக்கும் வகையில், பேரழிவு மேலாண்மையில் ஈடுபடும் பல்வேறு துறைகளுக்கு

இடையிலான ஒருங்கிணைப்பை மேம்படுத்த வேண்டும். மேலும் தேடுதல்- மீட்பு-பிற துயர் தணிப்புப் பணிகளின் போது கூடுதல் பலன் தரும் வகையில் கூட்டு செயல்பாடுகளை மேம்படுத்த வேண்டும்.

9. கடல் படையும் கடலோரக் காவல் படையும் தேடுதல்- மீட்புப் பணிகளை மேற்கொள்ளும்போது மீனவர்கள் எந்த மீன்பிடிக் களத்துக்குச் சென்றிருப்பார்கள் என்பதை அறிய மீனவர்களின் பாரம்பரிய அறிவைப் பயன்படுத்த வேண்டும். மீட்புக் குழுக்களில் இணைக்கப்படுவதற்காக அனுபவமிக்க மீனவர்களை ஒவ்வொரு கிராமத்திலும் இனம் காண வேண்டும்.

10. போதுமான அளவுக்குப் பணியாற்றும் ஆட்கள் உள்ள கட்டுப்பாட்டு அறைகளின் மூலமும் சமூகத்தின் பங்கேற்பு மற்றும் பயிற்சி வழியாகவும் பேரழிவு நிர்வாகத்தை மாவட்ட மட்டத்திலும் கிராம மட்டத்திலும் வலுப்படுத்துத வேண்டும். அவை, இருபத்தி நான்கு மணி நேரமும் இயங்க வழிவகை செய்ய வேண்டும். மேலும், உயிர்களுக்கும் வாழ்வாதாரத்திற்கும் ஏற்படும் சேதத்தைக் குறைக்கும் வகையிலான தொழில்நுட்பம் மற்றும் அடிக்கட்டுமானத்தை உறுதி செய்தல் அவசியம்.

11. பொருத்தமான சட்டத்தை இயற்றுவதன் மூலமும் அதனை நடைமுறை படுத்துவதன் மூலமும் மீன்பிடி நிர்வாகத்துக்குள் பேரழிவு மேலாண்மையை ஒன்றிணைக்க வேண்டும்.

12. நிர்வாகத்துக்கும் மீனவர்களுக்கும் இடையில் தங்குதடையற்ற தகவல் தொடர்பு இருப்பதன் மூலம் கடலில் இருக்கும் பாதுகாப்பை உறுதி செய்திடல் வேண்டும். கண்காணிப்பு செயல்முறைகளையும், பாதுகாப்பு விதிகளுக்குக் கீழ்ப்படுவதையும் வலுப்படுத்திடல் வேண்டும்.

13. மேற்பார்வை செய்தல், கட்டுப்பாடு, கவனக் கண்காணிப்பு (surveillance) நடவடிக்கைகள், விபத்துகள் உள்ளிட்டு அனைத்து மீன்பிடி நடவடிக்கைகளையும் அறிக்கையாகத் தயாரித்தல், கடல் பாதுகாப்புக்கான விதிகளை அமுலாக்கம் செய்தல் ஆகியவற்றை மீன்பிடித்துறைக்குள் இணைப்பதன் மூலம் அந்தத் துறையின் கட்டுப்பாட்டு நடவடிக்கைகள் பாத்திரத்தை விரிவாக்க வேண்டும். அனைத்து மீன்பிடி கலங்கள் மற்றும் கடலில் உள்ள கலங்கள் எந்த நேரத்தில் எங்கிருக்கின்றன என்பன பற்றிய தகவல் தொகுப்பும் அவை ஒவ்வொரு நாளும் மேம்படுத்தப்படுவதற்கானத் தகவல் தொகுப்பும் மீன்பிடித்துறையின் நடவடிக்கைகளில் ஒன்றாக இருக்க வேண்டும்.

14. பாதுகாப்பு நடவடிக்கைகளையும் மேம்படுத்துவதற்கான தகவல் பரிமாற்றம் மற்றும் எச்சரிக்கைத் தகவல்களைப் பரப்புவதற்கான மொபைல் போன் அப்ளிகேஷன்கள் (உதாரணம்: Fisher Friend Mobile Application, Mfisheries or Abalobi) போன்ற புதிய தொழில்நுட்பங்களைப் பயன்படுத்துதல் அவசியம்.





Fishing harbour, Kochi, India  
by Shibani Chaudhury





## REPORT OF THE NATIONAL WORKSHOP ON SMALL-SCALE FISHERIES, CYCLONE OCKHI AND DISASTER RISK MANAGEMENT

This publication is a report of the proceedings of the National Workshop on Small-scale Fisheries, Cyclone Ockhi and Disaster Risk Management, held from 29 to 30 May, 2018 at Thiruvananthapuram, India. The workshop brought together 68 participants from India representing the fishing community, fishworker organisations, civil society organisations, governments, multilateral organisations, and the media.

This report will be useful for fishworker organisations, researchers, policy makers, members of civil society and anyone interested in small-scale fisheries, disasters risk management and climate change, sea safety and resource management.



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