



सत्यमेव जयते

PARLIAMENT OF INDIA
RAJYA SABHA

DEPARTMENT-RELATED PARLIAMENTARY STANDING COMMITTEE
ON HOME AFFAIRS

TWO HUNDRED ELEVENTH REPORT

**The Cyclone Ockhi-Its Impact on Fishermen
and damage caused by it**

(Presented to Rajya Sabha on 4th April, 2018)
(Laid on the Table of Lok Sabha on 4th April, 2018)



Rajya Sabha Secretariat, New Delhi
April, 2018/Chaitra, 1940

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C.S. (H.A.) - 414

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COMPOSITION OF THE COMMITTEE
(Re-constituted w.e.f. 1st September, 2017)

1. Shri P. Chidambaram — *Chairman*

RAJYA SABHA

2. Shri Pratap Keshari Deb
3. Shri K. Rahman Khan
4. Dr. V. Maitreyan
5. Shri Shamsher Singh Manhas
6. Shri Derek O'Brien
7. Shri Neeraj Shekhar
8. Shri K. Bhabananda Singh
9. Shri Ram Chandra Prasad Singh
10. Shri R.K. Sinha

LOK SABHA

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12. Shri S. Selvakumarachinnayan
13. Shri Adhir Ranjan Chowdhury
14. Dr. (Shrimati) Kakoli Ghosh Dastidar
15. Shri Ramen Deka
16. Shri Prataprao Ganpatrao Jadhav
17. Shri Mallikarjun Kharge
18. Shrimati Kirron Kher
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20. Shri Kaushal Kishore
21. Shri Ashwini Kumar
22. Shri P. Nagarajan
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24. Shri Dilip Patel
25. Shri Lalubhai Babubhai Patel
26. Shri Natubhai Gomanbhai Patel
27. Shri Bheemrao B. Patil
28. Shri Mohammed Faizal PP
29. Shri Bishnu Pada Ray
30. Shri Prem Singh Chandumajra
31. Shri B. Sriramulu

(ii)

SECRETARIAT

Shri P.P.K. Ramacharyulu, *Secretary*

Shri Rohtas, *Joint Secretary*

Shri Vimal Kumar, *Director*

Dr. (Smt.) Subhashree Panigrahi, *Additional Director*

Shri Bhupendra Bhaskar, *Additional Director*

Shri Pritam Kumar, *Under Secretary*

INTRODUCTION

I, the Chairman of the Department-related Parliamentary Standing Committee on Home Affairs, having been authorized by the Committee to submit the Report on its behalf, do hereby present this Two Hundred Eleventh Report on 'The Cyclone Ockhi - Its Impact on Fishermen and damage caused by it'.

2. In the Committee's meeting held on 20th December, 2017, the Home Secretary briefed the Committee about the development of the Cyclone Ockhi and its rapid intensification from 29th November to 6th December, 2017. A presentation was made before the Committee by the Indian Meteorological Department and the Ministry of Defence on the technical description of the cyclone, the efforts made by the Central Government to enable the States of Kerala, Tamil Nadu and UT of Lakshadweep to deal with the cyclone.

3. The Committee while making its observations/recommendations has mainly relied upon the following documents:-

- (i) Background Note on the rescue, relief operation and rehabilitation schemes in the affected States of Kerala, Tamil Nadu and UT of Lakshadweep in the aftermath of recent devastating Ockhi Cyclone received from the Union Ministry of Home Affairs;
- (ii) Presentation made before the Committee in its meeting held on 20th December, 2017 by the Union Ministry of Home Affairs, Indian Meteorological Department and Ministry of Defence;
- (iii) Written clarifications furnished by the Ministry, on the points/issues raised by the Members during the meeting of the Committee; and
- (iv) Replies furnished by the Ministry of Home Affairs to the questionnaire sent by the Secretariat.

4. The Committee considered the draft Report in its sitting held on 2nd April, 2018 and adopted the same.

5. For the facility of reference and convenience, observations and recommendations of the Committee have been printed in bold letters in the body of the Report. For further convenience, abbreviations used in the report have been compiled in a table under the Acronyms section.

NEW DELHI;
2 April, 2018

Chaitra 12, 1940 (*Saka*)

P. CHIDAMBARAM
Chairman,
Department-related Parliamentary
Standing Committee on Home Affairs
Rajya Sabha.

ACRONYMS

ACWCs	–	Area Cyclone Warning Centres
AIR	–	All India Radio
CS	–	Cyclonic Storm
CWCs	–	Cyclone Warning Centres
DAT	–	Distress Alert Transmitter
DG	–	Director General
ESCAP	–	Economic and Social Commission for Asia and the Pacific
EEZ	–	Exclusive Economic Zone
FFC	–	Fourteenth Finance Commission
HLC	–	High Level Committee
ICG	–	Indian Coast Guard
IN	–	Indian Navy
IMD	–	Indian Meteorological Department
IMCT	–	Inter-Ministerial Central Team
ITCA	–	Inter-Tropical Convergence Zone
ISRO	–	Indian Space Research Organization
INCOIS	–	Indian National Centre for Ocean Information Service
ISN	–	International Safety Net
MRCC	–	Maritime Rescue Coordination Centre
MoES	–	Ministry of Earth Science
MIDH	–	Mission for Integrated Development of Horticulture
MHA	–	Ministry of Home Affairs
NavIC	–	Navigation with Indian Constellation
NIO	–	North Indian Ocean
NWP	–	Numerical Weather Prediction
NDRF	–	National Disaster Response Force
NHM	–	National Horticulture Mission
NDMA	–	National Disaster Management Authority
NMSA	–	National Mission for Sustainable Agriculture

PMNRF	–	Prime Minister s National Relief Fund
RAD	–	Rainfed Area Development
SCS	–	Severe Cyclonic Storm
SDMA	–	State Disaster Management Authority
SOP	–	Standing Operating Procedure
SDRF	–	State Disaster Response Force
SMS	–	Short Messaging Service
SEOC	–	State Emergency Operation Centre
SNC	–	Southern Naval Command
SAR	–	Search and Rescue
SC-NEC	–	Sub Committee of National Executive Committee
TANGEDCO	–	Tamil Nadu Generation and Distribution Corporation
UTDRF	–	UT Disaster Response Fund
VSCS	–	Very Severe Cyclonic Storm
VHF	–	Very High Frequency
WMO	–	World Meteorological Organization

REPORT
CHAPTER- I
BACKGROUND

1.1 Introduction

1.1.1 A very severe cyclonic storm ‘Ockhi’ hit the coast of Tamil Nadu, Kerala and Lakshadweep, during November-December 2017, wreaking unprecedented havoc. Eight coastal districts of Kerala, one district of Tamil Nadu and a few islands of Lakshadweep faced the fury of the cyclone. The colossal human, material and environmental losses caused by the cyclone in these States were beyond the endurance of the affected people and the States. The devastating impact of Ockhi exposed not only the country’s ability to put in place a credible system of advanced cyclone warning but also comprehensive disaster mitigation preparedness. The magnitude of death and destruction was enormous thereby warranting a relook at the country’s disaster response system.

1.1.2 Indian coasts are no strangers to cyclones. India’s east-coast witnesses several cyclonic storms at periodic intervals. But, Ockhi was unlike other cyclones. It originated near the South-Western coast of Sri Lanka and after reaching India, it ravaged the coastal areas of Tamil Nadu, Kerala, and the Lakshadweep islands. There were two uncommon features of cyclone Ockhi. First, its rapid intensification in a short span of time from a deep depression into a cyclonic storm and second, its long gestation period. The cyclone gestated for 6.75 days at sea, much longer than the ‘long period average life’ of 4.7 days for very severe cyclonic storms that occur over the North Indian Ocean.

1.1.3 The Committee had taken up the subject ‘Disaster Management’¹, in its meeting held on 24th October, 2017, for examination. In view of the magnitude of devastation caused by Ockhi, the Committee decided to take up the subject “The Impact of Cyclone Ockhi Including Damage Caused by it and the Missing Fishermen Due to the Cyclone” for in-depth examination and to report thereon. The Committee, in its meeting held on 20th December, 2017, heard the views of the Home Secretary and other representatives of the Ministry of Home Affairs, representatives of National Disaster Management Authority, National Disaster Response Force, Ministry of Defence, Indian Navy, Indian Coast Guard and Indian Meteorological Department. All these witnesses, while deposing before the Committee, gave a detailed account of the damage caused by cyclone Ockhi and the various rescue, relief and rehabilitation measures undertaken by the Central Government, the State Governments concerned and the Administration of the Union Territory Lakshadweep. The Committee also took into consideration the background notes, replies to the questionnaire and other related materials furnished by the MHA.

1.2 Genesis of Cyclone Ockhi

1.2.1 The background note furnished by the Ministry of Home Affairs stated that due to an active inter-tropical convergence zone (ITCA) and the associated mesoscale convection, a trough in easterly winds or low-pressure systems developed over the southern part of the Bay of Bengal in November 2017. It moved westwards, causing rainfall over the southern peninsular region of India at regular intervals. In this scenario, a low-pressure area was formed over the Andaman Sea on 22nd November, 2017 under the influence of a remnant upper air cyclonic circulation from the Gulf of Thailand. It lay over the southeast and adjoining east central Bay of Bengal on 23rd November, the central part of the southern Bay of Bengal on 24th November, southwest bay and the adjoining equatorial Indian Ocean on 25th November and southwest bay and adjoining

¹ *Parliamentary Bulletin Part – II, No. 57019, dated 14th November, 2017*

southeast Sri Lanka on 26th November. Subsequently, it weakened and lay as a trough of low pressure over the southeast Arabian Sea and adjoining Maldives on 27th November, and over the southeast Arabian Sea and the region adjoining Lakshadweep and the Maldives on 28th November.

1.2.2 A fresh low-pressure area formed over the southwest Bay of Bengal, the adjoining area of south Sri Lanka, and the equatorial Indian Ocean in the forenoon (0830 IST) of 28th November, 2017. It became a well-marked low-pressure area in the early morning (0530 IST) of 29th November over the same region. Under favorable environmental conditions, it concentrated into a depression over the southwest Bay of Bengal off the coast of the southeast Sri Lanka in the forenoon (0830 IST) of 29th November. Moving westwards, it crossed the Sri Lankan coast and emerged into the Comorin Sea on the evening (1730 IST) of 30th November. It further moved in the northwest direction and intensified into a ‘Cyclonic Storm’ (CS) in the forenoon (0830 IST) of 30th November over the Comorin Sea.

1.2.3 There was a rapid intensification of cyclone Ockhi after its genesis as a depression. It intensified from a deep depression into a ‘Cyclonic Storm’ over the Comorin Sea within six hours. It intensified into a cyclonic storm, within 24 hours. Thereafter, Ockhi moved towards the west-northwest direction, further intensifying into a ‘Severe Cyclonic Storm (SCS)’ over the Lakshadweep area in the early morning (0530 IST) of 1st December, 2017 and into a ‘Very Severe Cyclonic Storm (VSCS)’ over the southeast Arabian Sea, to the west of Lakshadweep in the afternoon (1430 IST) of 1st December. It then moved towards the northwest direction and reached its peak intensity of 150-160 km/ph, rising to 180 km/ph in the afternoon (1430 IST) of 2nd December with a recorded central pressure of 976 hectopascals (hPa). It moved towards the north-northwest direction for some time and then towards the north-northeast direction, while maintaining its intensity, until the early morning of 3rd December. It then continued to move towards the north-northeast direction and gradually dissipated. It crossed the southern coast of Gujarat, between Surat and Dahanu, as a well-marked low-pressure trough around early morning (0530 IST) of 6th December, 2017.

1.2.4 Chronological genesis, intensification, weakening and dissipation of cyclone Ockhi, as furnished by the Indian Meteorological Department, is given in the following table:

Date	Time (IST)	Stage of Cyclone	Location
28.11.2017	0830	Low Pressure Area	Southwest Bay off Sri Lanka
29.11.2017	0830	Depression	Southwest Bay off Sri Lanka
30.11.2017	0230	Deep Depression	Comorin Area
	0830	Cyclonic Storm	Comorin Area
01.12.2017	0530	Severe Cyclonic Storm	Lakshadweep
	1430	Very Severe Cyclonic Storm	Lakshadweep
04.12.2017	1730	Severe Cyclonic Storm	East-central Arabian Sea
05.12.2017	0830	Cyclonic Storm	East-central Arabian Sea
	1730	Deep Depression	East-central Arabian Sea
	2030	Depression	East-central Arabian Sea

Date	Time (IST)	Stage of Cyclone	Location
06.12.2017	0230	Well Marked Low	North-east Arabian Sea
	0530	Low Pressure Area	South Coastal Gujarat

1.3 Cyclone Warning and Forecasting

1.3.1 As per the ‘Standard Operation Procedure of Cyclone Warning’ in India, the ‘Area Cyclone Warning Centres’ (ACWCs) and ‘Cyclone Warning Centres’ (CWCs) issue warnings to ships at high seas, ships in coastal waters, ports, fishermen, government officials and the general public regarding adverse weather likely to be experienced in their respective areas. The bulletins and warnings issued by ACWCs/CWCs for their respective areas of responsibility include:

- (i) Four stage warning bulletin
- (ii) Sea area bulletins for ships plying the high seas
- (iii) Coastal weather bulletins for ships plying coastal waters
- (iv) Bulletins for Indian Navy
- (v) Port warnings
- (vi) Fisheries warnings
- (vii) Four stage warnings for Central and State Government officials
- (viii) Bulletins broadcast through AIR for the general public
- (ix) Warning for registered users
- (x) Bulletins for the press
- (xi) Warnings for aviation (issued by the concerned Aviation Meteorological Offices)

1.3.2 The most important warning for disaster management is the one issued to the government officials under a four-stage warning system. The First Stage warning known as “*Pre Cyclone Watch*” is issued 72 hours in advance of the commencement of adverse weather. It contains an early warning about the development of a cyclonic disturbance in the North Indian Ocean (NIO), the likely intensification of this disturbance into a tropical cyclone and the adverse weather conditions that the coastal belt is likely to experience.

1.3.3 The Second Stage warning, known as “*Cyclone Alert*”, is issued at least 48 hours before the expected commencement of adverse weather over the coastal areas. It contains information on the location of the storm, its intensity, likely direction of its movement, intensification, and the coastal districts that are likely to experience adverse weather along with advice for fishermen, the general public, the media and disaster managers.

1.3.4 The Third Stage warning known as “*Cyclone Warning*” is issued at least 24 hours in advance of the expected commencement of adverse weather over the coastal areas. These warnings give information about the latest position of the cyclone and its intensity, the likely point and time of landfall, associated heavy

rainfall, strong wind and storm surge along with their impact and advice to the general public, media, fishermen and disaster managers.

1.3.5 The Fourth Stage of warning known as “*Post Landfall Outlook*” is issued at least 12 hours in advance of the expected time of landfall. It gives the likely direction of movement of the cyclone after its landfall and adverse weather likely to be experienced in the interior areas. All the above warnings are issued by ACWCs/ CWCs/and Cyclone Warning Division.

1.3.6 Cyclone Ockhi was an unusual cyclone, as was evident in its rapid intensification and unpredictable course. The Committee enquired about the timely warning or forecasting from the Indian Meteorological Department (IMD). The IMD, in its report submitted to the Committee, informed the Committee that the cyclone was monitored and its movements were predicted continuously by the IMD since the genesis of the low-pressure area over the southwest region of the Bay of Bengal on 28th November. Various national and international Numerical Weather Prediction (NWP) models and dynamic-statistical models were utilized to predict the genesis, track, and intensity of the cyclone. The IMD issued regular bulletins to the member countries of the World Meteorological Organization/Economic and Social Commission for Asia and the Pacific (WMO/ESCAP) Panel including Sri Lanka and the Maldives, National and State Disaster Management Agencies, the general public and the media since the inception of the cyclonic system over the Bay of Bengal.

1.3.7 During the meeting of the Committee, the Director-General, IMD submitted that after crossing Sri Lanka's southern part, Ockhi took a northwesterly turn towards south Tamil Nadu, Kanniyakumari and Trivandrum districts and then subsequently moved westwards. The unusual track towards the northwest and the rapid intensification in those 18 hours were because of the unusually warm ocean and the heat content at the ocean surface. The IMD informed the Committee that the next generation ocean cyclone prediction models will have to be based on both oceanic and atmospheric models. At the moment, there were only atmospheric models. Oceanic models are also required since it was observed in the instant case that the ocean was warming and behaving unusually as a result of global warming.

1.3.8 The Committee takes note of the submission by the Indian Meteorological Department (IMD) that cyclone Ockhi was an unusual phenomenon, which was evident in its rapid intensification. The Committee understands that forecasting rapid intensification of cyclones remains an area of concern. However, the Committee wishes to stress upon the fact that rapid intensification of cyclones is no longer a rare phenomenon and globally, several countries have evolved credible prediction models for this phenomenon. The Committee is of the opinion that the prediction of rapid intensification of cyclones is imperative, to bolster our existing capacity for advance cyclone warning. The Committee, therefore, strongly recommends that the IMD should focus on intensive research to develop forecasting models for the prediction of the ‘Rapid Intensification’ phenomenon. The Committee also recommends that the IMD must acquire inputs on sea surface temperatures from thermal satellites and integrate them into the cyclone forecasting models to make the prediction of cyclones like Ockhi more accurate.

1.3.9 The Committee understands that cyclones like Ockhi are likely to happen more frequently in the future due to the effects of global warming. The Committee, therefore, recommends that the IMD must learn from the best practices being followed globally to improve prediction of such phenomenon. If necessary, research should be undertaken to predict such cyclones in collaboration with international organisations.

1.3.10 A member of the Committee raised the issue that the State Government of Kerala had stated there was no communication from the IMD to the State Governments regarding the cyclone, and hence, the warnings could not be communicated to the fishermen. On the other hand, there have been reports that petitions have been filed in the High Court against the State Government for failing to timely pass on the communication received regarding the cyclone from the Central Government.

1.3.11 The IMD, in its written submission, informed the Committee that the first information regarding the formation of a depression during the next 48-72 hours (i.e. 29th November, 2017 onwards) was issued on 28th November in the 'Tropical Weather Outlook' issued at 1200 hours IST. The system developed into a depression in the forenoon of 29th November. In the first bulletin issued on 1150 IST, 29th November, 2017 the IMD indicated the west-northwestward movement of the system and its emergence into the Comorin Sea by 30th November. It was also mentioned that the system would intensify further. The system entered the Comorin Sea during the night of 29th November and intensified into a 'Deep Depression' in the early hours (0230 IST) of 30th November and into a 'Cyclonic Storm' in the forenoon (0830 IST) of 30th November.

1.3.12 The deep depression, after crossing over southern Sri Lanka, unusually intensified into a cyclone during a span of 12-24 hours from 29th November 2017 morning over the Comorin Sea. The cyclone specific advisory was issued on 30th November at 1155 hrs as per the protocol for south Tamil Nadu, south Kerala, and Lakshadweep. However, the IMD submitted that the cyclone watch/alert could not be issued due to unusual rapid intensification over the Comorin Sea. It was quite different as compared to other cases of cyclone intensification that usually occurs over the central part of the Bay of Bengal and the Arabian Sea. In those cases, the usual provision of issuing cyclone alert/watch normally exists as per the Standard Operating Procedure. In this case, a cyclone warning was issued directly on 30th November morning, only to enhance the actions already initiated by the respective State Governments based on the regular bulletins issued by the IMD since the forenoon of 29th November.

1.3.13 The Committee takes note of the submissions by the IMD that the prediction of cyclone Ockhi, due to its rapid intensification, was quite difficult. The Committee observes that the usual Standard Operating Procedure of issuing cyclone watch and an alert could not be followed by the Area Cyclone Warning Centres and the Cyclone Warning Centres when the depression developed on 28th November and intensified rapidly into a cyclonic storm on 29th November, 2017. However, the Committee feels that with the increase in sea temperatures due to global warming, the prediction, of both the path and the intensity of cyclones, will become more difficult in the future. Therefore, the Committee recommends that the Central Government should develop a Standard Operating Procedure for such unpredictable cyclones in collaboration with other developed countries and international organisations, so that the prediction of such unusual and rare phenomenon becomes more reliable in the coming times.

CHAPTER II

IMPACT OF CYCLONE OCKHI

2.1 Damage Caused by Ockhi

2.1.1 Cyclone Ockhi caused ‘isolated heavy rainfall’ over south Tamil Nadu on 28th and 29th November, 2017 and ‘heavy to very heavy rainfall’ and isolated ‘extremely heavy rainfall’ over south Tamil Nadu from 30th November to 2nd December. It caused isolated ‘heavy rainfall’ over south Kerala on 29th November and 1st December, and ‘heavy to very heavy rainfall’ on 30th November. In the Lakshadweep islands, it caused ‘heavy to very heavy rainfall’ on 1st and 2nd December. There was also heavy rainfall along the northern coast of Maharashtra and the adjoining southern coast of Gujarat on 5th December, 2017.

2.1.2 Ockhi hit the shoreline in the areas close to the Western Ghats and left a trail of destruction. Several houses and roads were damaged, power and communication lines were mutilated, crops were ravaged, and trees were uprooted due to the havoc. It was reported that rail and road traffic were also badly hit due to inundation and landslides. Several fishermen lost their lives while they were at sea, and many fishermen, who had ventured further into deep sea to fish before the arrival of the cyclone, were missing. It also caused massive losses to the livelihood of people living in the coastal areas. The details of damage as furnished by the MHA (as on 04th January, 2018):

Items	Tamil Nadu	Kerala	Lakshadweep
(i) Human lives lost (district wise)	30	75	Nil
(ii) Livestock	7654	Nil	1691
(iii) No. of missing fishermen	203	141	Nil
(iv) Houses damaged	Hut damaged- 6262 Pucca/kutchra houses partly damaged-101	Fully-221, Severely-3253	Fully -87 Partially -935
(v) Infrastructure Damage	<ul style="list-style-type: none"> ● Mechanized boats partially-640 ● Mechanized boats fully- 60 ● Fiber Reinforced Plastic (FRP)Vallams partially-3407 ● (FRP)Vallams fully-3407 ● Electricity Board Poles-15,858 ● Transformers-95 ● Fallen Trees -25,526 	<ul style="list-style-type: none"> ● Boats- fully damaged/lost-384 ● Loss of road- 41 km. ● Damage to Pumps – 180 ● Damage to Supply Tanks – 430 	<ul style="list-style-type: none"> ● Boats- fully damaged/lost-12 ● Boats partially damaged-25 ● Houses - fully damaged-87 ● Houses partially damaged-935 ● Government building-340 ● Coconut trees - 32747 ● Other trees – 5514

Items	Tamil Nadu	Kerala	Lakshadweep
	<ul style="list-style-type: none"> ● 38 Breaches in tanks and 31 Breaches in channels/canals ● 103 Government buildings damaged. ● Damage to 75.046 km State Highways, 98.93 km. National Highways, 417.18 km. Rural/Urban Roads. 		NIOT drinking water plant was also damaged to some extent
(vi) Coconut trees	-	-	32747
(vii) Total crop area affected (in hectares).	6625 hectares	7817.43 hectares	-
(viii) Damage caused to the environment	The subject environment pertains to the Ministry of Environment & Forest, and their response is pending.		

2.2 Missing Fishermen

2.2.1 The Committee was informed that 203 fishermen from Tamil Nadu and 141 from Kerala were missing, as on 4th January 2018, and the number was decreasing as more fishermen were returning home. The Home Secretary informed the Committee that fishermen, who venture into the high sea for fishing, go out for extended periods of time. The fishermen go up to 200 nautical miles and stay out for around a month, which involves ten days of going, about ten days of fishing and ten days of returning. So the fishermen are out at sea for about a month. The Committee was also informed that some fishermen had left prior to the warning being issued. The Home Secretary stated that the missing fishermen might have taken shelter at some other island and there was still hope that they might return. The Home Secretary also informed the Committee that around 845 fishermen had been rescued in Kerala, Lakshadweep and Tamil Nadu and ships had gone up to even 700 nautical miles during search and rescue operations. He also assured the Committee that no efforts were being spared to rescue the missing fishermen.

2.2.2 The Committee observes that the advisory issued on 29th November did not clearly predict a cyclonic storm and, therefore, it was not taken with the seriousness it deserved. Moreover, rapid intensification did not leave enough time for the IMD to issue a cyclone watch or alert and, therefore, both the affected State Governments and the people were not sufficiently alert. Officially, a cyclone specific advisory was issued only on 30th November, the very date of the arrival of cyclone Ockhi but by then many fishermen would have already ventured out to sea. This was a clear departure from the Standard Operating Procedure wherein the first cyclone specific advisory, the *Pre-cyclone Watch*, is issued three days prior to the landfall of the cyclone. While rapid intensification of a cyclone is a reasonable justification for this omission, the fact remains that the State Government machinery and the people may not adequately understand the technicalities and therefore they should be proactively informed in such cases. The Committee is of the opinion that the advisory issued on 29th November, 2017 would have been taken more seriously had it clearly forewarned of

an impending cyclone. The Committee, therefore, recommends that the IMD should be more proactive and take every instance of weather disturbance with utmost seriousness in the future.

2.2.3 The Committee also feels that the advisory issued by the IMD might not have been given wide publicity in the mass media and through radio stations. This might be the reason for the concern raised regarding the absence of any prior warning or alert. The people should have been alerted through media channels and radio stations in a timely manner before cyclone Ockhi hit the coast. The Committee recommends that in the future, the Ministry should issue an advisory when there are weather disturbances, as a measure of abundant precaution, to the State Governments. All the media units and radio stations in such States may be sensitized and instructed to give wide publicity, in a prioritized manner, to all the advisories, regarding any imminent disaster, issued by the IMD and the Area Cyclone Warning Centres/Cyclone Warning Centres. The Committee also recommends that coastal communities, like fishermen, who are at grave risk due to disasters, may be regularly sensitized about the fact that certain natural disasters cannot be predicted well in advance and they must, in their own interest, strictly adhere to any advisories/warnings in the future.

2.2.4 The Committee also sought to know the details of the existing mechanism for establishing a communication link with the fishermen, who venture into the deep sea for their livelihood, to promptly transmit early warning forecast of the IMD.

2.2.5 The State Government of Tamil Nadu informed the Committee that as soon as the information regarding an early warning bulletin is received, from the IMD or the State Disaster Management Authority (SDMA), the Distress Management Cell functioning in the Directorate of Fisheries, and the Office of the Assistant Director of Fisheries, at the District Level, transmit the forecast promptly to the Fishermen Associations, Fisheries Cooperative Societies at village level, Fishing Harbour Management Committees, etc., by means of telephone, fax, message (SMS) and other social media platforms (like Whatsapp). The details of weather warnings are displayed at the Fishing Harbour Notice Board and the messages are communicated to the fishermen, who had already ventured into the sea prior to the forecast, and are fishing within a distance of 20 to 50 nautical miles, by means of mobile phones and Very High Frequency (VHF) sets.

2.2.6 Almost all the fishing boats that venture into the deep sea for multi-day fishing are equipped with VHF sets for communication between the boats. Many boats have mobile phones and a few boats also have Distress Alert Transmitter (DAT) in the fishing craft for communication. However, mobile phones can reach up to 10-12 nautical miles only and the VHF sets are capable of providing communication between the boats, within a radius of 50-60 nautical miles, when the weather conditions are very clear. The DATs provided by the State Government and the Indian Coast Guard are utilised to send signals to the Coast Guard stations when the fishing boats are in distress.

2.2.7 However, the Committee was apprised that a gap in communication system still exists in disseminating early warning messages to those fishermen who are fishing beyond 50 nautical miles from the shore as there are no means of communication available to the fishermen in such parts of the deep sea. The Committee was also informed that the Indian Space Research Organization (ISRO) was taking the following measures to address this lacuna:

Fishing vessel tracking system

2.2.8 ISRO has developed a satellite-based transponder having a range of 200 nautical miles to which the

Indian satellite “INSAT 5B” has the coverage. The vessel tracking system consists of a user terminal (transponder) to be located in the fishing vessel and a central hub to receive the tracking information. The transponder units have the facilities to track the position of the fishing vessel and to push short messages having weather forecast and information on potential fishing zones. These transponder units are on trial in Gujarat and Tamil Nadu. ISRO has also developed multiple vendors capable of delivering such units to the fishermen community. These devices can be useful to locate vessels going into deep sea so that the alerts received from the IMD and the Indian National Centre for Ocean Information Service (INCOIS) can be analyzed and deep sea fishing vessels, which are at risk, can be alerted about the threat and guided to safety to prevent any loss of life. ISRO has already extended assistance to provide the transponders, on a trial basis, to 500 boats.

Fisherman App

2.2.9 ISRO has also developed an indigenous solution, based on the satellite communication and navigation systems, for addressing the concerns of safety of fishermen at sea. The Fisherman App is a mobile-based application using the position and messaging capabilities of „Navigation with Indian Constellation (NavIC) system, which enables navigation in the Indian Ocean region using a combination of Geostationary Orbit (GEO) and Geostationary Orbit (GSO) satellites. It is a user-friendly app that works even on basic smartphones along with a compact Bluetooth enabled NavIC device. This system enables the fishermen to receive the alerts in emergencies such as cyclone, high waves, tsunami, etc. It provides information on potential fishing zones and can also be used for geo-fencing applications. The inputs provided by agencies such as INCOIS-MoES can be transmitted to the fishermen through NavIC system that covers the Indian mainland and 1500 km. around India. Field trials were successfully conducted off the Andhra Pradesh coast. NavIC devices are being manufactured by the Indian industry and will be made available to fishermen communities in about two month’s time. The State Government of Kerala has proceeded to collect the mobile numbers of active fishermen in the State and decided to start a State level control room to transmit the messages and to monitor the situation at the Directorate level.

2.2.10 The Committee was also apprised by the Ministry that the government of Tamil Nadu was in the process of providing VHF sets (5 watts and 25 watts) at subsidized rates with requisite towers and shore stations to enable the fishermen to communicate through VHF sets to the shore stations.

2.2.11 The Committee takes note of the efforts being made by the Government, in collaboration with ISRO, to address this challenge. The Committee recommends that the trial of the vessel tracking system, which consists of user terminals (transponders), installed in the fishing vessels and a central hub to receive the tracking information, should be completed at the earliest and the Central and State Governments should provide all assistance and resources to ISRO for the purpose. The Committee also recommends that after the completion of the trial, the vessel tracking system should be expanded to cover every boat that ventures out for deep sea fishing and all the remaining boats may be equipped with Very High-Frequency sets and Distress Alert Transmitters, at subsidised rates.

2.2.12 The Committee also takes note of the efforts of ISRO in developing the Fisherman App that can work even on basic smartphones along with a compact Bluetooth enabled NavIC device. The Committee recommends that all the State Governments of cyclone affected areas may be advised to collect the mobile numbers of active fishermen, as is being done by the State Government of Kerala.

The Committee also recommends that the State Government of Kerala may be requested to complete the collection of mobile numbers of active fishermen and start the operation of the State level control room at the earliest to strengthen the monitoring system. The Committee further recommends that the mobile phones fitted with NavIC devices may be made available to all the fishermen within the next six months.

2.3 Search and Rescue Operation

2.3.1 The Committee also sought comments of the Ministry on the issue of delay in launching the search and rescue operations as was highlighted in some news reports. The Home Secretary informed the Committee that the Central Government had immediately deployed aircraft, ships and helicopters. The Indian Air Force, the Navy and the Coast Guard were also pressed into action for the search and rescue operations. The National Disaster Response Force (NDRF) teams were pre-positioned in the cyclone-affected areas of Tamil Nadu and Kerala to assist the local administration. The Ministry maintained a close and regular coordination with the State Governments, the Ministry of Defence and other concerned Central Government Ministries and Departments. A Meeting was held by the National Crisis Management Committee under the Chairmanship of the Cabinet Secretary which was attended by the concerned State Chief Secretaries.

2.3.2 In its written replies, submitted to the Committee, the Ministry of Home Affairs informed the Committee that the first information for initiating Search and Rescue (SAR) operation was received by the Ministry of Defence at the Southern Naval Command (SNC) at 1530 hours on 30th November, 2017. Five Indian Navy (IN) ships at Kochi and two aircraft were immediately deployed for SAR operations. This number was subsequently enhanced to ten ships and eight Indian Navy aircraft. In addition to the Indian Navy, the Indian Coast Guard (ICG) launched a large-scale SAR Operation for rescuing the stranded fishing boats and fishermen. Ten surface platforms of the ICG were immediately deployed in cyclone-affected areas by the night of 30th November and the early hours of 1st December, 2017 for search and rescue operation at sea. Dornier aircraft and helicopters were engaged on 1st December, 2017 by early morning for the extended aerial search of the sea areas. ICG coordinated the rescue of twelve boats and seventy-one fishermen by the night of 30th November, 2017 with the assistance of Fisheries Authorities of Tamil Nadu. Three additional ships from other locations were deployed to augment the deep sea search efforts. A helicopter was also deployed on the ICG ship to increase the coverage of search areas to locate distressed fishermen and facilitate speedy recovery/assistance.

2.3.3 The track and progress of the cyclone were continuously monitored by various operation centres of ICG. Based on the updates of the progress of the cyclone and the inputs received from the units at sea, the planning of the SAR operation was continuously updated and SAR units were repositioned to achieve maximum efficiency. Regular communication was maintained with the local fishing associations and inputs received from them were factored in Search and Rescue plans. Based on the inputs and the requirements projected by the Fisheries Department and fishing associations, the fishermen were also taken aboard the ICG ship to undertake joint search and rescue mission. Regular Dornier sorties were conducted covering the areas from Tamil Nadu/Kerala/Lakshadweep coast up to the fringes of the Indian EEZ.

2.3.4 International Safety Net (ISN) messages were activated on 1st December, 2017 and on subsequent days, the Maritime Rescue Coordination Centre (MRCC) requested the mariners transiting through the cyclone-affected areas to keep a lookout for missing fishermen/stranded fishing boats.

2.3.5 The Committee expresses concern over the fate of the missing fishermen and the reports that there was a delay in the launch of ‘Search and Rescue’ operations. The Committee, however, takes note of the submission of the Ministry that the Government, despite the unpredictable circumstances, launched search and rescue operations in a timely manner. While the Central Government has made efforts to rescue the fishermen stranded at sea, the Committee observes that nearly 244 fishermen were still missing as on 4th January, 2018. With the search and rescue operation being called off by the Government, the Committee painfully notes that the chances of return of the remaining missing fishermen may now be very dim. The Committee desires that the Ministry of Home Affairs collect the final number of missing fishermen and submit a report to the Committee. The Committee recommends that the Government must make adequate arrangements for providing a viable means of livelihood to the families of missing fishermen and they should be provided livelihood assistance, as an interim measure, without any delay.

2.4 Deployment of Forces

2.4.1 The Committee was informed that there is a Standard Operating Procedure (SOP) for deployment of the NDRF. This SOP is also circulated to the Relief Commissioners of all the States/UTs by the NDRF. As per the SOP, teams of the NDRF can be requisitioned by the States for deployment during the pre-disaster/impending disaster phase as well as during the actual disaster.

2.4.2 In the pre-disaster phase, the State Governments request for pre-positioning of the Unit/Sub-units of the NDRF, as a measure of pro-active response to deal with the impending disaster, when there are plausible reasons to believe that the magnitude of the disaster will be beyond the managing capacity of the State Governments. In case of floods, cyclones, tsunamis and other disasters, where forecast or early warning is available, the NDRF prepositions its teams in consultation with the respective state authorities as per the forecast of early warning agencies like IMD, CWC, INCOIS, etc.

2.4.3 During the disaster phase, the District Magistrate concerned or the State Government can submit a request for a specialised disaster response of the teams or the companies of the NDRF, to deal with the disaster, when the gravity of the disaster is so severe that it becomes unmanageable for the State Government to deal with even after proper use of the State Disaster Response Force (SDRF). The Committee was informed that when a disaster is of a larger magnitude, the NDRF teams are mobilised even on a telephonic request to save the time.

2.4.4 During the meeting of the Committee, a query was raised as to why seven battalions were prepositioned in Gujarat, where the impact of the cyclone was minimal, while only four and three battalions were prepositioned in Kerala and Tamil Nadu, respectively, where the damage caused by the cyclone was on a much larger scale. An allusion to discrimination by the Central Government in the deployment of the NDRF in the states affected by cyclone was also made. The Ministry of Home Affairs, in its written reply on the query, submitted that the teams of the NDRF are deployed based on the requisition/request received from the disaster-affected State(s) and during cyclone Ockhi, teams of the NDRF were prepositioned and deployed for SAR operations, as requested by the respective States.

2.4.5 The Committee also sought details regarding date and time of prepositioning of the NDRF teams in the States affected by cyclone Ockhi. The details furnished by the MHA are as follows:

Sl. No.	Name of Place	No. of teams	Date & Time of Prepositioning	Date & time of de-induction
Kerala				
1.	Thrissur	02	On 01.12.2017 at 1545 hrs.	On 04.12.2017 at 2320 hrs. one team was withdrawn and one is still at Thrissur.
2.	Sabarimala	02	On 13.11.2017 but also alerted in view of Ockhi on 30.11.2017	Presently pre-positioned at Sabarimala for festival duty.
Tamil Nadu				
3.	Kanyakumari	02	On 29.11.2017 at 2345 hrs.	On 07.12.2017 at 0550 hrs.
4.	Cuddalore	01	On 04.12.2017 at 0700 hrs.	On 08.12.2017 at 1000 hrs.
5.	Bn. HQ Arakkonam	04 (Standby/Reserve)		
Gujarat				
6.	Surat	02	On 04.12.2017 at 0700 hrs	On 07.12.2017 at 1305 hrs
7.	Navsari	01	On 04.12.2017 at 0700 hrs	On 07.12.2017 at 1330 hrs
8.	Valsad	01	On 04.12.2017 at 0700 hrs	On 07.12.2017 at 1400 hrs
9.	Amreli	01	On 04.12.2017 at 0700 hrs	On 07.12.2017 at 1400 hrs
10.	Bhavnagar	01	On 04.12.2017 at 0700 hrs	On 07.12.2017 at 1200 hrs
11.	Somnath	01	On 04.12.2017 at 1600 hrs	On 07.12.2017 at 0630 hrs
12.	Bn. HQ Vadodara	03 (Standby/Reserve)		
Maharashtra				
13.	Mumbai	03	Teams already deployed on permanent basis at RRC Mumbai	
14.	Bn. HQ Pune08	(Standby/Reserve)		

(Total teams pre-positioned -17 and Standby/Reserve - 15)

2.4.6 The Committee was also informed by the Ministry that the NDRF BN HQ Arrakonam, Tamil Nadu is far from Kerala. Therefore, two teams were mobilized for Thrissur, Kerala in addition to the two teams that were already deployed at Sabarimala, District Pathanamthitta for use within the State as well as for airlifting to the Lakshadweep Islands, if possible, as it was the shortest route. Two teams that were prepositioned at Kanyakumari assisted the local authority in the restoration of the roads by clearing the trees.

2.4.7 Moreover, as per the IMD s forecast *vide* their Bulletin No. 34 dated 3rd December 2017, the cyclonic storm was very likely to cross south Gujarat Coast near Surat, around midnight 5th December, 2017, as a deep depression. There was a warning of heavy rainfall over Saurashtra and south Gujarat on 5th

December 2017 (Valsad, Surat, Navsari, Bharuch, Tapi, Amreli, Somnath, Bhavnagar, etc.). In a meeting held at the State Emergency Operation Centre (SEOC), Gandhinagar, on 1st and 4th December, 2017, the Chief Secretary, Government of Gujarat requested the Commandant, 6th Battalion NDRF, who attended the meeting, to pre-position seven teams of the NDRF. Accordingly, two teams were pre-positioned at Surat and one team each at Valsad, Navsari, Amreli, Bhavnagar, Somnath w.e.f. 4th December 2017.

2.4.8 One NDRF battalion was positioned each at Arrakonam (Tamil Nadu), Vadodara (Gujarat) and Pune (Maharashtra), where five teams were also kept as reserve in a state of alertness, in addition to the deployment of the teams in the affected states.

2.4.9 The Ministry also submitted that two meetings of the National Crisis Management Committee were held under the Chairmanship of Cabinet Secretary on 1st and 4th December, 2017, respectively. In these meetings, when the affected states were specifically asked if they required any more teams of the NDRF, other than the ones prepositioned/provided, no extra team was demanded by any of the concerned States including Tamil Nadu, Kerala & Lakshadweep. The Committee was assured that no shortage of forces was reported by any of the States.

2.4.10 On perusal of the details of prepositioning of the NDRF teams, the Committee comes to a conclusion that there was timely prepositioning of the NDRF teams and the deployment was consistent with the requisitions submitted by the State Governments of the affected states. However, the Committee feels that the State Governments may not be able to make an optimal need-based assessment of the requirements and sometimes the number of teams requested by them may be more than the requirement, while at other times the number of teams requisitioned may not be sufficient. The Committee, therefore, recommends that the National Disaster Management Authority (NDMA) should also make an independent assessment of the number of battalions that may be required for deployment as per the circumstances prevalent in the ground level. Such an arrangement is all the more necessary in case of the disasters affecting several States where each State will make competing demands for prepositioning of the Forces. In such a situation, a rational assessment of needs and optimal pre-positioning of the Forces may be essentially required from a national perspective keeping the larger public interest in view.

CHAPTER III

RELIEF & REHABILITATION

3.1 Immediate Relief and Restoration Measures

3.1.1 Timely relief and rehabilitation constitute the defining features of an effective disaster response system. Therefore, the Committee sought to know the immediate relief and restoration measures undertaken by the Central and the State Governments during the course of the Cyclone Ockhi and thereafter. The Ministry of Home Affairs, in its written submission, stated that the primary responsibility of undertaking rescue, relief and rehabilitation measures in the event of a natural disaster rests with the State Government concerned. The Central Government, depending on the requirement, supplements the efforts of the State Government by providing logistics and financial support in cases of natural disasters that are of a severe nature and are beyond the capacity of the State Government concerned. The Committee was informed that the following immediate measures were taken by the Central Government and the State Governments/UT Administration during cyclone Ockhi:

Measures Taken by the Central Government

3.1.2 The Ministry of Home Affairs, in close coordination with the Ministry of Defence and other Central Ministries/Departments, extended all necessary assistance to Tamil Nadu, Kerala and Lakshadweep during the Search and Rescue (SAR) operation.

3.1.3 The Central Government immediately deployed ships and helicopters of the Indian Airforce, the Indian Navy and the Indian Coast Guard for search and rescue of the fishermen who were at sea during the occurrence of the cyclone. Seven teams of the NDRF were deployed in the cyclone-affected areas of Tamil Nadu and Kerala to help the local administration and to carry out search and rescue operation. The Committee was apprised that the ships had gone up to 700 nautical miles during the search and rescue operation and 845 fishermen were rescued despite inclement weather conditions.

3.1.4 In order to supplement the efforts of the State Government, in dealing with the natural disasters, including Cyclone Ockhi, the Government of India released the 2nd instalment of the State Disaster Response Fund (SDRF) for the year 2017-18, in advance, to the State Governments of Kerala and Tamil Nadu, pending the receipt of the Utilization Certificates. During the financial year 2017-18, the Central Government released ₹ 153 crore and ₹ 561 crore to the State Governments of Kerala and Tamil Nadu, respectively, as the annual central contribution of SDRF.

3.1.5 The Committee was also informed that on 3rd December, 2017, the Defence Minister had visited cyclone-affected areas and reviewed the search-and-rescue operations undertaken in the aftermath of cyclone Ockhi. The Prime Minister also visited cyclone-affected areas in Tamil Nadu, Kerala, and Lakshadweep on 19th December, 2017 and interacted with the people, including fishermen and farmers. He held separate detailed review meetings on the current situation and relief measures, at Kavaratti, Kanyakumari, and Thiruvananthapuram. The Prime Minister announced the following package of relief measures:

- (i) The Centre will dispatch immediate financial assistance worth ₹ 325 crore to cater to the requirements of Kerala, Tamil Nadu and Lakshadweep, over and above the assistance of ₹ 280 crore to Tamil Nadu and ₹ 76 crore to Kerala.

- (ii) The Government of India will support the reconstruction of approximately 1400 houses fully damaged due to Cyclone Ockhi, on priority, under the Pradhan Mantri Awas Yojana (PMAY). Under this programme, each beneficiary will get up to ₹ 1.5 lakh as support for building a new house.
- (iii) Insurance companies have also been advised to expeditiously pay the insurance claims of the people affected by Ockhi.
- (iv) An *ex-gratia* assistance of ₹ 2 lakh to the next of kin of the deceased and assistance of ₹ 50,000/- to each of those seriously injured due to the cyclone have been sanctioned under the Prime Minister's National Relief Fund (PMNRF).

3.1.6 The Committee takes note of the measures taken by the Central Government and observes that the *ex-gratia* assistance of ₹ 2 lakh, to the families of the deceased, and ₹ 50000, to the persons seriously injured, are quite low. The Committee recommends that the assistance in case of death and injury may be enhanced to at least ₹ 5 lakh and ₹ 1 lakh, respectively. The Committee also recommends that the Government must announce a special assistance for the families of the missing fishermen and urge the States to provide them alternate means of livelihood.

Measures Taken by Government of Kerala

3.1.7 The Committee was informed that the Revenue, Police and Fire Rescue Services, Marine Enforcement, Fisheries Department and Coastal Police of the State of Kerala were pressed into service for the Search and Rescue Operations within the available resources. Fisheries Department officials were deputed to Gujarat, Maharashtra, Goa, and Karnataka to support their fishermen who had reached the coasts of these States in the aftermath of the cyclone.

3.1.8 The State Government, in the aftermath of Cyclone Ockhi, declared the following immediate relief measures:

- (i) All active fishermen enrolled in the Savings-Cum-Relief Scheme of Fisheries Department numbering 1.69 lakhs were provided a one-time assistance of ₹ 2000/person as the fishermen community could not venture into the sea for over two weeks after 30th November 2017.
- (ii) Families of the deceased were given ₹ twenty lakh (20,00,000/-) as *ex-gratia*.
- (iii) All seriously injured individuals were extended ₹ five lakh (5,00,000/-) as assistance.
- (iv) The State Government declared equal compensation for both the boats and nets lost.
- (v) Children from the families of the deceased are to get free education and training in alternative livelihood.

3.1.9 Apart from the relief measures, the Government of Kerala has also planned some corrective measures for the future like fitting all boats compulsorily with GPS and revamping the coastal police by inducting 200 persons from fishermen community and giving preference to the kith and kin of the families of the deceased.

3.1.10 The Committee takes note of the relief measures undertaken by the Government of Kerala and feels that these measures, if implemented sincerely, can make a positive impact on the families of the affected persons. The Committee desires to be apprised of the action taken in this regard within three months.

Measures Taken by Government of Tamil Nadu

3.1.11 The Government of Tamil Nadu released an amount of ₹ 5 crore immediately to the District Collector, Kanyakumari for immediate relief and ₹ 20 crore was also released to the Tamil Nadu Generation and Distribution Corporation (TANGEDCO) as Ways and Means advance for power restoration works in Kanyakumari, Tirunelveli, and Thoothukudi districts.

3.1.12 A Relief Package to rehabilitate the livelihood of fishermen under immediate relief and restoration measures was also sanctioned, the details of which are as follows:

Sl. No.	Category	Relief package announced by the Tamil Nadu Government
1	(a) Fishermen who died due to Ockhi cyclone - 16 (b) Other deaths due to Ockhi-14	₹20 lakh ₹10 lakh
2.	Fishermen injured/disabled (could not do fishing in future) rehabilitation assistance	₹5 lakh
3.	Hospitalized and under treatment	₹50 thousand
4.	Livelihood assistance to fishermen families	₹2,500/ family
5.	Livelihood assistance to the families of missing fishermen	₹5,000/ family
6.	Diesel & food allowance to the MFBs for returning to their base	
	(1) Gujarat, Maharashtra, Lakshadweep	
	(a) Diesel Allowance	1000 Litres / boat
	(b) food allowance	₹2000/person
	(2) Karnataka and Kerala	
	(a) Diesel Allowance	750 Litres/ boat
	(b) food allowance	₹2000/person
7.	Diesel to country boats to return to their base Food allowance	200 Litres/boat ₹2000/per son
8.	Assistance to the damaged craft, gear and engines	As per the recommendations of the assessment team

3.1.13 A summary of amount sanctioned for food and diesel allowance for fishermen stranded in other States/UTs is as follows:

Sl. No.	State	Food Allowance			Diesel
		No. of fishermen	Amount (₹)	No. of Boats	
1	Veraval, Gujarat	464	928000	55	55000
2	Malpae, Karnataka	320	640000	94	70300

3	Karwar, Karnataka	126	252000	9	6750
4	Ratnagiri, Maharastra	202	404000	24	24000
5	Devgad, Maharastra	212	422000	5	5000
6	Kerala and Lakshadweep	244	468000	18	17500
TOTAL		1568	3114000	205	178550

- (i) 3154 persons were evacuated and accommodated in 35 relief camps.
- (ii) An amount of ₹42,50,000/- was sanctioned to provide livelihood assistance of ₹5,000/- per family to the families of fishermen who went missing due to Ockhi.
- (iii) A livelihood assistance to the tune of ₹5,000/- was sanctioned to the fishermen families of Kanyakumari district affected by Ockhi. The bank accounts of 30771 fishermen families of Kanyakumari District were credited with ₹5,000 each. In addition, lean fishing season special allowance of ₹5,000 each which was due in the month of January was paid in advance to 28618 families through bank transfer.
- (iv) An amount of ₹2,20,95,800/- was sanctioned towards providing diesel for bringing back the boats to respective hometowns and to meet ration expenses to the fishermen affected by Ockhi.
- (v) An amount of ₹2.72 crores has been sanctioned towards hut damages.
- (vi) An amount of ₹0.21 crores has been sanctioned towards cattle loss.

3.1.14 The Committee notes the relief efforts undertaken by the Tamil Nadu Government and the monetary assistance that has been provided to the affected persons. However, the Committee feels that monetary assistance, at best, could be a mere stop-gap arrangement and affected households, especially those of deceased and missing fishermen, may not be able to sustain for long on monetary assistance in the absence of a viable means of livelihood. The Committee, therefore, recommends that the State Government of Tamil Nadu should make arrangements to provide free education to the children of the deceased/missing fishermen and training in an alternative livelihood to at least one member of all the affected families.

Measures Taken by UT Administration of Lakshadweep

3.1.15 UT of Lakshadweep submitted that there was a warning of a storm surge, of one meter or above astronomical tides, by IMD/INCOIS. In response to this warning people living in the low lying/vulnerable areas were evacuated to designated shelters, at different points of time, depending upon the risk. All the necessary arrangements for providing the basic amenities including food were made in the shelters.

3.1.16 Many fishing boats having registration numbers of Tamil Nadu and Kerala and crew from the mainland were also rescued by the Lakshadweep Administration, with the help of the Indian Navy, the Indian Coast Guard, and the Indian Air Force, and every possible support was extended to these fishing boats. The Committee was informed that 367 fishermen from the mainland belonging to different states were rescued from 34 fishing boats/MSVs. Eleven relief camps were opened for the rescued fishermen and all the basic

facilities, including medical aid and food, were provided to them. Relief material was also provided by Indian Navy which was distributed to different islands. The Navy and the Coast Guard had also deployed various ships and aircraft for the rescue of the fishermen.

3.1.17 Free rice from available stocks was also distributed at the rate of 2 kg. per adult and 1 kg. per child. An amount of ₹ 10,000/- was provided, in cash, to the owners of the houses that were damaged completely while ₹ 5,000/- were given to the owners of the partially damaged houses as an interim emergency relief. The owners of the boats that were fully damaged were paid ₹ 5,000/- and the owners of the partially damaged boats were paid ₹ 2,500/- as an interim emergency cash relief. The rescued fishermen belonging to the mainland were also adequately compensated.

3.1.18 The Committee takes note of the efforts made by the UT Administration of Lakshadweep to rescue its fishermen as well as those from the mainland and to provide relief materials to them. The Committee, however, feels that a sum of ₹ five thousand provided, as an interim emergency relief, for the damaged houses and boats, is paltry and may not be sufficient for even temporary restoration. The Committee, therefore, recommends that the Ministry of Home Affairs should undertake immediate measures to provide enhanced and sufficient assistance, to the owners of damaged houses and boats, without any delay.

3.2 Financial Assistance to the States

3.2.1 The Ministry submitted that the financial assistance in the wake of natural calamities is towards relief and not for compensation of loss as suffered/claimed. Relief means help to reduce the level of suffering and mitigate the distress so as to bring out the affected people from the shock and trauma of suddenly losing their means of livelihood. Further, the main objective of the relief fund is to assist the affected persons to restart their economic activities. Relief is by way of gratuitous assistance as an immediate help to overcome the stress. On the other hand, compensation is basically a replacement for the damage in financial terms. Insurance is one such instrument. It is generally understood that no country in the world is in a position to fully compensate the losses incurred due to natural calamities.

3.2.2 The scheme of financing the relief expenditure under SDRF and NDRF is based on the recommendations of the successive Finance Commissions. The present scheme, which is in operation from 2015-16 to 2019-20, is based on the recommendations of the Fourteenth Finance Commission (FFC). The 14th Finance Commission had recommended an allocation of ₹ 61,220 crore in SDRF for the years 2015-16 to 2019-20 as against ₹ 33,580.93 crore recommended by 13th Finance Commission for the years 2010-11 to 2014-15. The Central share of SDRF is to be released in two equal instalments, subject to fulfilment of conditions given in the guidelines. The Ministry of Home Affairs has issued the guidelines to the states for operation of SDRF for the award period of 2015-16 to 2019-20.

3.2.3 The Ministry, in its background note, also informed that contribution to SDRF is shared between the Centre and the States in the ratio 75:25 for the General States and 90:10 for the Special Category States. Finance Commission has mandated all the States to follow the required accounting practices to properly account for relief expenditure.

3.2.4 The Committee perused the recommendations of the 14th Finance Commission on this issue. Para Nos. 10.39 and 10.40 of the said report state that:

“10.39 Our examination of the existing arrangements leads us to conclude that the sharing formula

of 75:25 between the Union and State Governments for contribution to the SDRFs (earlier the CRFs) is not appropriate, given the additional responsibility cast on States and their district administrations by the Disaster Management Act, and the scale, frequency and magnitude of relief and restoration undertaken in the recent past. In our view, there is a case for enhancing the share of the Union Government in SDRFs. At the same time, even though many States urged us to recommend that the SDRF be entirely funded by the Union Government, in our assessment State contributions to the Fund need to continue to bring in States' commitment towards, and ownership of, relief measures.

10.40 We, therefore, recommend that all States contribute 10 per cent to the SDRF during our award period, with the remaining 90 per cent coming from the Union Government. We have calculated the State-wise amount, with the respective shares of the Union Government and each individual State..."

3.2.5 The Committee takes note of the recommendation of the 14th Finance Commission and is at loss as to why it has not been accepted and why the States still have to contribute 25% of SDRF. The Committee, therefore, strongly recommends that the pattern of contributions to the SDRF may be revisited as per the recommendation of the 14th Finance Commission.

3.2.6 In order to supplement the efforts of the State Governments in dealing with the natural disaster including cyclonic storm 'Ockhi' the Government of India released 2nd instalment of SDRF for the year 2017-18 in advance to the State Governments of Kerala and Tamil Nadu, pending receipt of Utilisation Certificate. During the financial year 2017-18, the Central Government released ₹ 153 crore and ₹ 561 crore to the State Governments of Kerala and Tamil Nadu, respectively as the annual central contribution to SDRF.

3.2.7 The Ministry submitted that the State Governments have informed that amounts (approx.) of ₹175 crore and ₹550 crore are available in SDRF accounts of Kerala and Tamil Nadu, respectively for providing relief assistance to people affected by cyclone Ockhi. In case of the UT of Lakshadweep, the fund was available under UT Disaster Response Fund (UTDRF), amounting to ₹ 10 crore, and under Major Head No. 2245-Relief on Natural Calamities amounting to ₹ 1.05 crore.

3.2.8 On the status of Inter-Ministerial Central Team (IMCT) of Kerala and Tamil Nadu, with respect to cyclone Ockhi, the Ministry informed that the MHA had already constituted IMCTs, which will visit Kerala and Tamil Nadu, for on-the-spot assessment of the damage and the admissibility of such supplemental central assistance in the wake of Ockhi.

3.2.9 Subsequently, the Committee was apprised that the Governments of Kerala and Tamil Nadu had submitted a memoranda projecting the demand for immediate relief of ₹ 422.16 crore and ₹ 5255.07 crore, respectively, for Ockhi. The UT Administration of Lakshadweep has submitted a memorandum projecting a demand of ₹ 92.13 crore.

3.2.10 The Ministry then informed that the IMCT had completed its field visit recently and the report was being finalized in conformity with the norms of the SDRF/NDRF. Thereafter it will be placed before the sub-committee of the National Executive Committee (SC-NEC) and the High-Level Committee (HLC) for its consideration and thereafter the decision on the quantum of additional assistance, from the NDRF, will be taken as per the established procedure.

3.2.11 Based on field visits, the IMCT's preliminary view was that the extent of damage is severe in nature in the affected areas of the States.

3.2.12 The Committee observes that Inter-Ministerial Central Team (IMCT) visits the disaster-affected States only after submission of the memoranda by the States. The Committee understands that in the aftermath of the disaster, the priority of the State Government is to provide relief to the people and the preparation of the memorandum may take some time. However, by the time the IMCT visits the disaster-affected states, to make an assessment of the damage caused by the disaster, the signs of the disaster are on the verge of diminishing. This may lead to variance in the damage assessments of the State Government and the IMCT, as has been observed in most cases. The Committee feels that this anomaly can be rectified if the assessment is done by a joint team of the Central and the State Government. The Committee, therefore, recommends that for every disaster an inter-ministerial Central Government team should make a preliminary visit to the disaster-affected areas, within one week of the disaster, and a joint preliminary damage assessment should be done in conjunction with the State Governments concerned. The Committee feels that this will not only eliminate the variance in the amounts assessed by the State Government and the IMCT but will also expedite the process of approval and sanctioning of the funds.

3.2.13 The Committee sought to know the quantum of assistance the Central Government was planning to give to the affected States and UT, to enable them to undertake necessary relief measures. The Ministry submitted that the concerned State Government was required to undertake necessary relief measures in case of natural calamities, including cyclones, through the funds readily available in the corpus of the State Disaster Response Fund (SDRF) as per the norms. In the case of a disaster of 'severe nature', additional assistance is extended from the National Disaster Response Fund (NDRF) after following the procedure laid down, which includes an assessment based on the visit of an Inter-Ministerial Central Team. Financial assistance is towards relief and not towards compensation of loss suffered. Additional expenditure, if any, incurred over and above or on other than approved items/norms, is required to be met by the States from its own resources.

3.2.14 In order to support the affected people of State, after the cyclone 'Ockhi' ₹413.50 crore (₹ 280.50 cr. from SDRF and ₹133 crore from NDRF on account basis) and ₹ 209.50 crore (₹ 76.50 cr. from SDRF and ₹133 crore from NDRF on account basis) were released to the State Governments of Tamil Nadu and Kerala, respectively, for carrying out relief measures. Further assistance under NDRF will be provided after the consideration of the report of the IMCT by the High-Level Committee (HLC) as per the established procedure. The Ministry also stated that in view of the intensity and the magnitude of Ockhi, it has been classified as a calamity of 'severe nature' for all practical purposes.

3.2.15 The Committee was also apprised that the State Government of Kerala had submitted its memorandum on 19th December, 2017, to the Central Government, seeking financial assistance of Rs 422.16 crores while the Government of Tamil Nadu submitted its memorandum, on 21st December, 2017, seeking an assistance of ₹ 5255.07 crore.

3.2.16 On the issue of a huge difference in the financial assistance sought by the State Governments and the assistance finally approved by the Central Government, the Ministry of Home Affairs was asked to submit the details of assistance from NDRF sought by the States vis-à-vis the amount approved by the HLC of the Central Government during the last four years. The Ministry submitted the details in a tabular form which are as follows:

Year: 2014-15

(₹ in crore)

Sl. No.	Name of State	Calamity	Assistance sought by States	Amount approved by HLC		Difference between Assistance Sought and Approved (%)
				NDRF	NRDWP*	
1.	Kerala (1st Memo)	Flood/ Landslide - 2014	141.65	38.77	-	72.63
2.	Nagaland	Flood/ Landslide - 2014	220.88	20.20	5.00	90.85
3.	Karnataka	Flood - 2014	371.23	71.37	3.92	80.77
4.	Uttar Pradesh	Flood - 2014	769.07	176.75	-	77.02
5.	Arunachal Pradesh	Flood/ Landslide - 2014	2426.12	134.22	18.00	94.47
6.	J&K Pradesh	Flood/ Landslide -	2675.67	1602.56	20.00	40.11
7.	Kerala (2nd Memo)	Flood/ Landslide -	258.22	64.46	2.00	75.04
8.	Meghalaya	Flood/ Landslide -	963.45	72.82	15.00	92.44
9.	Andhra Pradesh	Cyclone Hudhud/ Flood - 2014	4861.18	737.60	8.13	84.83
10.	Odisha	Cyclone Hudhud/ Flood -2014	776.18	136.43	-	82.42
11.	Himachal Pradesh	Flood/ Landslide/ Cloudburst - 2014	831.84	170.53	9.00	79.50
12.	Assam	Flood - 2014	2450.02	387.20	6.53	84.20

*NRDWP: National Rural Drinking Water Programme

Year: 2015-16

(₹ in crore)

Sl. No.	State	Calamity	Assistance sought by States	Amount approved by HLC		Difference between Assistance Sought and Approved (%)
				NDRF	NRDWP	
1.	Bihar	Cyclone Storm- 2015	434.79	317.09	-	27.07
2.	Gujarat	Flood- 2015	979.69	561.82	9.45	42.65

3.	West Bengal	Flood- 2015	8834.36	1104.73	12.18	87.50
4.	West Bengal (Darjeeling)	Landslides - 2015	418.924	33.45	9.00	92.02
5.	Manipur	Flash Flood/ Landslides - 2015	457.02	68.84	-	84.94
6.	Andhra Pradesh	Flood- 2015	1116.14	280.19	9.00	74.90
7.	Assam	Flood- 2015	1523.79	332.57		78.17
8.	Himachal Pradesh	Flood/Landslides	787.46	170.19	12.00	78.39
9.	Nagaland	Flood/Landslides	142.25	16.02	4.00	88.74
10.	Tamil Nadu	Flood- 2015	7955.36	1737.65	32.00	78.16
11.	Puducherry	Flood- 2015	488.72	35.14	-	92.81
12.	Arunachal Pradesh	Flood/Landslides- 2015	1737.36	66.33	18.00	96.18
13.	Manipur	Earthquake - 2016	279.28	14.65	1.23	94.75

Year: 2016-17

(₹ in crore)

Sl. No.	State	Calamity	Assistance sought by States	Amount approved by HLC		Difference between Assistance Sought and Approved (%)
				NDRF	NRDWP	
1.	Uttarakhand	Flood/ cloudburst/ Landslides - 2016	369.93	188.91	20.00	48.93
2.	Assam	Flood- 2016	10333.78	269.40	-	97.39
3.	Bihar	Flood- 2016	4111.98	812.96	10.00	80.23
4.	Andhra Pradesh	Flood- 2016	313.24	63.68	1.60	79.67
5.	Telangana	Flood- 2016	943.17	311.75	2.47	66.95
6.	Karnataka	Flood- 2016	386.435	165.50	5.19	57.17
7.	Himachal Pradesh	Flood/Landslide/ Cloudburst - 2016	863.97	140.28	12.00	83.76
8.	Manipur	Hailstorm/ thunderstorm - 2016	37.26	19.11	-	48.71
9.	Rajasthan	Flood- 2016	1375.48	362.92	7.35	73.62
10.	Tamil Nadu	Cyclone Storm VARDAH	1977.10	264.11	2.06	86.64

11.	Uttar Pradesh	Flood- 2016	812.50	303.05	-	62.70
12.	Arunachal Pradesh	Flood/Landslides- 2016	1061.18	81.69	21.61	92.30
13.	Nagaland	Flash Flood/ Flood/ Landslides - 2016	163.56	25.89	2.71	84.17

Year: 2017-18

(₹ in crore)

Sl. No.	State	Calamity	Assistance sought by States	Amount approved by HLC		Difference between Assistance Sought and Approved (%)
				NDRF	NRDWP	
1.	Mizoram	Flood/Landslides - 2017-18	116.12	42.77	6.25	63.17
2.	Manipur	Flood/ Landslides - 2017-18	358.19	130.65	-	63.52
3.	Bihar	Flood - 2017	7444.60	Under Process	-	-
4.	Assam	Flood/ Landslides - 2017	2280.00	Under Process	-	-
5.	Rajasthan	Flood- 2017	1957.98	Under Process	-	-
6.	West Bengal	Flood- 2017	15924.78	Under Process	-	-
7.	Gujarat	Flood- 2017	2094.92	Under Process	-	-
8.	Uttar Pradesh	Flood- 2017	812.53	Under Process	-	-
9.	Nagaland	Flood/ Landslides- 2017	750.63	Under Process	-	-
10.	Himachal Pradesh	Flood/ Landslides - 2017	914.05	Under Process	-	-
11.	Andhra Pradesh	Flood- 2017	844.64	Under Process	-	-
12.	Sikkim	Flood/Landslides- 2017	245.80	Under Process	-	-
13.	Kerala	Cyclone Ockhi- 2017	422.16	Under Process	-	-
14.	Tamil Nadu	Cyclone Ockhi- 2017	5255.07	Under Process	-	-

3.2.17 The Committee is surprised to observe a huge difference, ranging from a high of 97% to

27%, between the assistance sought by the States and the amounts approved by the High-Level Committee of the Central Government in the aftermath of the disasters. The Committee is intrigued by the fact that in most of the disasters, the shortfall between the funds sought and those approved was more than 70% and in some cases, the shortfall was more than 95%. The Committee wonders as to how the State Governments, especially those with limited sources of revenue such as the State Governments of the North-Eastern States, are able to manage in light of such a huge shortfall. The Committee, therefore, recommends that the Central Government should sensitise the State Governments about the approved norms for assistance so that exaggerated demands are not made. At the same time, the Central Government should re-examine the norms and bring about necessary changes in the policy of funding the damage caused by various disasters to ensure adequate relief to the affected populace.

3.2.18 The Committee is also aware that the State Governments have, time and again, raised the issue of the increase in the frequency and intensity of disasters and the spiraling costs of relief, rehabilitation, and reconstruction. The Committee, therefore, recommends that the Central Government should devise urgent measures to diversify the sources of financing and expand the corpus of the National and State Disaster Relief Funds. The Committee may also be apprised about the current mechanism being followed for funding the NDRF under the GST regime.

3.3 RECONSTRUCTION AND REHABILITATION

3.3.1 The Committee desired to know the strategy that has been formulated to ensure adequate reconstruction and rehabilitation in the affected areas. The State Governments of Tamil Nadu and Kerala submitted their respective strategies which are as follows:

Tamil Nadu

3.3.2 As reported by the State Government of Tamil Nadu, extensive damage took place in Kanniyakumari district due to cyclone Ockhi. Restoration work was taken up under the direct supervision of Director (Distribution) and Director (Transmission) with 28 teams formed under Chief Engineers/Superintending Engineers with 250 officers and 8000 workmen. All the eleven 110 KV substations and four 33/11 KV substations in Kanyakumari district were normalized on 03.12.2017 after attending to the breakdown in transmission lines.

3.3.3 The Committee was also informed that many houses were damaged due to this cyclone and assessment of the damaged houses was carried out by the special team formed by the Kanyakumari district administration. The initial assessments indicated that 1153 huts were fully damaged, 5109 huts were partly damaged and 101 pucca/kutchra houses were partly damaged. Reconstruction has been proposed at a cost of ₹48 crore, under 'Blue Revolution', for fishermen and under the PMAY, for tribal families.

3.3.4 The following long-term mitigation measures through 'Building Back Better' are under consideration by the Government of Tamil Nadu:

- (i) Development of Integrated Fishing Infrastructure in Kanyakumari district
- (ii) Rehabilitation of farmers

3.3.5 Rubber is cultivated in Kanyakumari district in an area of 27,407 hectares of which 1408 hectares were affected due to Ockhi. The assistance extended under the National Mission for Sustainable Agriculture

(NMSA) - Rainfed Area Development (RAD) and the Mission for Integrated Development of Horticulture (MIDH) are proposed as follows:-

Sl. No.	Scheme	Assistance proposed per hectare (₹)	Total amount (₹ in lakhs)
I	Re-cultivation of Rubber Tree Saplings with Inter-cropping with Banana and Pineapple under 100% assistance.		
(a)	National Mission on Sustainable Agriculture (NMSA) - Rainfed Area Development (RAD) Horticulture based Farming System (50% Subsidy)	25,000/-	352.00
(b)	State Fund (Balance 50%)	25,000/-	352.00
II	Pollination support through Bee Keeping (40% Subsidy) 20 sets of Honey Bee Hives and colonies per hectare.		
(a)	Mission for Integrated Development of Horticulture (Sub-scheme of National Horticulture Mission)	32,000/-	450.56
TOTAL		82,000/-	1154.56

3.3.6 Banana is cultivated in an area of about 6,382 hectares in Kanyakumari district, of which 1926.03 hectares (as per preliminary survey) had been damaged due to Ockhi. The assistance proposed under MIDH - National Horticulture Mission (NHM) is as follows:-

Sl. No.	Scheme	Assistance proposed per hectare (₹)	Total amount (₹ in lakhs)
I	MIDH National Horticulture Mission (40% Subsidy)		
(a)	Re-cultivation of Banana (sucker) (For 1st Year) (2017-18)	26,250/-	505.58
(b)	Re-cultivation of Banana (sucker) (For 2nd Year) (2018-19)	8,750/-	168.53
TOTAL		35,000/-	674.11

Kerala

3.3.7 As part of the long-term rehabilitation plan, the Government of Kerala intends to implement the following:

- (i) Special assistance to the dependents of deceased fishermen and livelihood support for fishermen deceased/disabled for fishing

- (ii) Pension to fishermen disabled for fishing and special assistance for educating the children of deceased fishermen
- (iii) Upgradation of “motorized traditional fishing craft” into “mechanized deep sea fishing boats”
- (iv) Upgradation of educational infrastructure facilities in coastal areas
- (v) Establishment of residential marine Skill Development Institutes and National Skill Institute for Fishermen
- (vi) Safe housing for homeless fishermen
- (vii) Revitalizing agriculture sector in the coastal area and supporting the animal husbandry for alternate livelihood
- (viii) Insurance coverage for the seagoing fishermen community
- (ix) Revamping coastal police with sufficient facilities and setting up a community-centered digital Early Warning System
- (x) Building weatherproof coastal roads and constructing sea wall in highly vulnerable areas
- (xi) Converting overhead power cables to underground power cables
- (xii) Strengthening harbours, fish landing centers and debt relief for fishermen.

3.3.8 The Committee is apprehensive as to how the families of the deceased, missing and disabled fishermen would survive in the absence of a regular income. The Committee recommends that the Government while implementing the reconstruction programs must focus on the concerns of the fishermen including a comprehensive package to provide them with sufficient funds and enable them to restart their livelihood activities. The Committee also recommends that the State Governments should undertake several positive measures for them such as a regular monthly livelihood assistance for at least a year, debt relief, interest free loans, subsidy for purchasing new boats, free education to their wards and training in alternate means of livelihood for at least one member of their families. The Committee further recommends that the Central Government should provide all necessary support and assistance to the State Governments concerned. The Committee desires to be apprised about the progress in this regard within three months.

3.3.9 The Committee feels that neither the State Governments’ revenues nor the budgetary and other forms of assistance from the Central Government are sufficient to provide adequate funds for the purpose of restoration. The plans of the State Governments for the provision of safe housing to the homeless fishermen, revitalisation of the agriculture and animal husbandry sectors, the establishment of the Marine Skill Development Institutes, relief of debt of the fishermen, and revamping the coastal police may require a significant amount of funds. The State Governments will, therefore, need to mobilize resources from sources other than the budgetary allocations to implement such measures. The Committee, therefore, recommends that the Central Government should consider measures to seek more funds from sources such as the corporate sector by categorizing their contributions to NDRF/SDRF under Corporate Social Responsibility funds and motivate them to contribute generously to the Prime Minister’s Relief Fund and NDRF/SDRF.

CYCLONE WARNING AND FORECASTING

The Committee takes note of the submission by the Indian Meteorological Department (IMD) that cyclone Ockhi was an unusual phenomenon, which was evident in its rapid intensification. The Committee understands that forecasting rapid intensification of cyclones remains an area of concern. However, the Committee wishes to stress upon the fact that rapid intensification of cyclones is no longer a rare phenomenon and globally, several countries have evolved credible prediction models for this phenomenon. The Committee is of the opinion that the prediction of rapid intensification of cyclones is imperative, to bolster our existing capacity for advance cyclone warning. The Committee, therefore, strongly recommends that the IMD should focus on intensive research to develop forecasting models for the prediction of the 'Rapid Intensification' phenomenon. The Committee also recommends that the IMD must acquire inputs on sea surface temperatures from thermal satellites and integrate them into the cyclone forecasting models to make the prediction of cyclones like Ockhi more accurate. (Para 1.3.8)

The Committee understands that cyclones like Ockhi are likely to happen more frequently in the future due to the effects of global warming. The Committee, therefore, recommends that the IMD must learn from the best practices being followed globally to improve prediction of such phenomenon. If necessary, research should be undertaken to predict such cyclones in collaboration with international organisations. (Para 1.3.9)

The Committee takes note of the submissions by the IMD that the prediction of cyclone Ockhi, due to its rapid intensification, was quite difficult. The Committee observes that the usual Standard Operating Procedure of issuing cyclone watch and an alert could not be followed by the Area Cyclone Warning Centres and the Cyclone Warning Centres when the depression developed on 28th November and intensified rapidly into a cyclonic storm on 29th November, 2017. However, the Committee feels that with the increase in sea temperatures due to global warming, the prediction, of both the path and the intensity of cyclones, will become more difficult in the future. Therefore, the Committee recommends that the Central Government should develop a Standard Operating Procedure for such unpredictable cyclones in collaboration with other developed countries and international organisations, so that the prediction of such unusual and rare phenomenon becomes more reliable in the coming times. (Para 1.3.13)

MISSING FISHERMEN

The Committee observes that the advisory issued on 29th November did not clearly predict a cyclonic storm and, therefore, it was not taken with the seriousness it deserved. Moreover, rapid intensification did not leave enough time for the IMD to issue a cyclone watch or alert and, therefore, both the affected State Governments and the people were not sufficiently alert. Officially, a cyclone specific advisory was issued only on 30th November, the very date of the arrival of cyclone Ockhi but by then many fishermen would have already ventured out to sea. This was a clear departure from the Standard Operating Procedure wherein the first cyclone specific advisory, the *Pre-cyclone Watch*, is issued three days prior to the landfall of the cyclone. While rapid intensification of a cyclone is a reasonable justification for this omission, the fact remains that the State Government machinery and the people may not adequately understand the technicalities and therefore they should be

proactively informed in such cases. The Committee is of the opinion that the advisory issued on 29th November, 2017 would have been taken more seriously had it clearly forewarned of an impending cyclone. The Committee, therefore, recommends that the IMD should be more proactive and take every instance of weather disturbance with utmost seriousness in the future. (Para 2.2.2)

The Committee also feels that the advisory issued by the IMD might not have been given wide publicity in the mass media and through radio stations. This might be the reason for the concern raised regarding the absence of any prior warning or alert. The people should have been alerted through media channels and radio stations in a timely manner before cyclone Ockhi hit the coast. The Committee recommends that in the future, the Ministry should issue an advisory when there are weather disturbances, as a measure of abundant precaution, to the State Governments. All the media units and radio stations in such States may be sensitized and instructed to give wide publicity, in a prioritized manner, to all the advisories, regarding any imminent disaster, issued by the IMD and the Area Cyclone Warning Centres/Cyclone Warning Centres. The Committee also recommends that coastal communities, like fishermen, who are at grave risk due to disasters, may be regularly sensitized about the fact that certain natural disasters cannot be predicted well in advance and they must, in their own interest, strictly adhere to any advisories/warnings in the future. (Para 2.2.3)

The Committee takes note of the efforts being made by the Government, in collaboration with ISRO, to address this challenge. The Committee recommends that the trial of the vessel tracking system, which consists of user terminals (transponders), installed in the fishing vessels and a central hub to receive the tracking information, should be completed at the earliest and the Central and State Governments should provide all assistance and resources to ISRO for the purpose. The Committee also recommends that after the completion of the trial, the vessel tracking system should be expanded to cover every boat that ventures out for deep sea fishing and all the remaining boats may be equipped with Very High-Frequency sets and Distress Alert Transmitters, at subsidised rates. (Para 2.2.11)

The Committee also takes note of the efforts of ISRO in developing the Fisherman App that can work even on basic smartphones along with a compact Bluetooth enabled NavIC device. The Committee recommends that all the State Governments of cyclone affected areas may be advised to collect the mobile numbers of active fishermen, as is being done by the State Government of Kerala. The Committee also recommends that the State Government of Kerala may be requested to complete the collection of mobile numbers of active fishermen and start the operation of the State level control room at the earliest to strengthen the monitoring system. The Committee further recommends that the mobile phones fitted with NavIC devices may be made available to all the fishermen within the next six months. (Para 2.2.12)

SEARCH AND RESCUE OPERATION

The Committee expresses concern over the fate of the missing fishermen and the reports that there was a delay in the launch of 'Search and Rescue' operations. The Committee, however, takes note of the submission of the Ministry that the Government, despite the unpredictable circumstances, launched search and rescue operations in a timely manner. While the Central Government has made efforts to rescue the fishermen stranded at sea, the Committee observes

that nearly 244 fishermen were still missing as on 4th January, 2018. With the search and rescue operation being called off by the Government, the Committee painfully notes that the chances of return of the remaining missing fishermen may now be very dim. The Committee desires that the Ministry of Home Affairs collect the final number of missing fishermen and submit a report to the Committee. The Committee recommends that the Government must make adequate arrangements for providing a viable means of livelihood to the families of missing fishermen and they should be provided livelihood assistance, as an interim measure, without any delay. (Para 2.3.5)

DEPLOYMENT OF FORCES

On perusal of the details of prepositioning of the NDRF teams, the Committee comes to a conclusion that there was timely prepositioning of the NDRF teams and the deployment was consistent with the requisitions submitted by the State Governments of the affected states. However, the Committee feels that the State Governments may not be able to make an optimal need-based assessment of the requirements and sometimes the number of teams requested by them may be more than the requirement, while at other times the number of teams requisitioned may not be sufficient. The Committee, therefore, recommends that the National Disaster Management Authority (NDMA) should also make an independent assessment of the number of battalions that may be required for deployment as per the circumstances prevalent in the ground level. Such an arrangement is all the more necessary in case of the disasters affecting several States where each State will make competing demands for prepositioning of the Forces. In such a situation, a rational assessment of needs and optimal pre-positioning of the Forces may be essentially required from a national perspective keeping the larger public interest in view. (Para 2.4.10)

IMMEDIATE RELIEF AND RESTORATION MEASURES

The Committee takes note of the measures taken by the Central Government and observes that the *ex-gratia* assistance of ₹ 2 lakh, to the families of the deceased, and ₹ 50000, to the persons seriously injured, are quite low. The Committee recommends that the assistance in case of death and injury may be enhanced to at least ₹ 5 lakh and ₹ 1 lakh, respectively. The Committee also recommends that the Government must announce a special assistance for the families of the missing fishermen and urge the States to provide them alternate means of livelihood. (Para 3.1.6)

The Committee takes note of the relief measures undertaken by the Government of Kerala and feels that these measures, if implemented sincerely, can make a positive impact on the families of the affected persons. The Committee desires to be apprised of the action taken in this regard within three months. (Para 3.1.10)

The Committee notes the relief efforts undertaken by the Tamil Nadu Government and the monetary assistance that has been provided to the affected persons. However, the Committee feels that monetary assistance, at best, could be a mere stop-gap arrangement and affected households, especially those of deceased and missing fishermen, may not be able to sustain for long on monetary assistance in the absence of a viable means of livelihood. The Committee, therefore, recommends that the State Government of Tamil Nadu should make arrangements to provide free education to the children of the deceased/missing fishermen and training in an alternative livelihood to at least one member of all the affected families. (Para 3.1.14)

The Committee takes note of the efforts made by the UT Administration of Lakshadweep to rescue its fishermen as well as those from the mainland and to provide relief materials to them. The Committee, however, feels that a sum of ₹ five thousand provided, as an interim emergency relief, for the damaged houses and boats, is paltry and may not be sufficient for even temporary restoration. The Committee, therefore, recommends that the Ministry of Home Affairs should undertake immediate measures to provide enhanced and sufficient assistance, to the owners of damaged houses and boats, without any delay. (Para 3.1.18)

FINANCIAL ASSISTANCE TO THE STATES

The Committee takes note of the recommendation of the 14th Finance Commission and is at loss as to why it has not been accepted and why the States still have to contribute 25% of SDRF. The Committee, therefore, strongly recommends that the pattern of contributions to the SDRF may be revisited as per the recommendation of the 14th Finance Commission. (Para 3.2.5)

The Committee observes that Inter-Ministerial Central Team (IMCT) visits the disaster-affected States only after submission of the memoranda by the States. The Committee understands that in the aftermath of the disaster, the priority of the State Government is to provide relief to the people and the preparation of the memorandum may take some time. However, by the time the IMCT visits the disaster-affected states, to make an assessment of the damage caused by the disaster, the signs of the disaster are on the verge of diminishing. This may lead to variance in the damage assessments of the State Government and the IMCT, as has been observed in most cases. The Committee feels that this anomaly can be rectified if the assessment is done by a joint team of the Central and the State Government. The Committee, therefore, recommends that for every disaster an inter-ministerial Central Government team should make a preliminary visit to the disaster-affected areas, within one week of the disaster, and a joint preliminary damage assessment should be done in conjunction with the State Governments concerned. The Committee feels that this will not only eliminate the variance in the amounts assessed by the State Government and the IMCT but will also expedite the process of approval and sanctioning of the funds. (Para 3.2.12)

The Committee is surprised to observe a huge difference, ranging from a high of 97% to 27%, between the assistance sought by the States and the amounts approved by the High-Level Committee of the Central Government in the aftermath of the disasters. The Committee is intrigued by the fact that in most of the disasters, the shortfall between the funds sought and those approved was more than 70% and in some cases, the shortfall was more than 95%. The Committee wonders as to how the State Governments, especially those with limited sources of revenue such as the State Governments of the North-Eastern States, are able to manage in light of such a huge shortfall. The Committee, therefore, recommends that the Central Government should sensitise the State Governments about the approved norms for assistance so that exaggerated demands are not made. At the same time, the Central Government should re-examine the norms and bring about necessary changes in the policy of funding the damage caused by various disasters to ensure adequate relief to the affected populace. (Para 3.2.17)

The Committee is also aware that the State Governments have, time and again, raised the issue of the increase in the frequency and intensity of disasters and the spiraling costs of relief, rehabilitation, and reconstruction. The Committee, therefore, recommends that the Central Government should devise urgent measures to diversify the sources of financing and

expand the corpus of the National and State Disaster Relief Funds. The Committee may also be apprised about the current mechanism being followed for funding the NDRF under the GST regime. (Para 3.2.18)

RECONSTRUCTION AND REHABILITATION

The Committee is apprehensive as to how the families of the deceased, missing and disabled fishermen would survive in the absence of a regular income. The Committee recommends that the Government while implementing the reconstruction programs must focus on the concerns of the fishermen including a comprehensive package to provide them with sufficient funds and enable them to restart their livelihood activities. The Committee also recommends that the State Governments should undertake several positive measures for them such as a regular monthly livelihood assistance for at least a year, debt relief, interest free loans, subsidy for purchasing new boats, free education to their wards and training in alternate means of livelihood for at least one member of their families. The Committee further recommends that the Central Government should provide all necessary support and assistance to the State Governments concerned. The Committee desires to be apprised about the progress in this regard within three months. (Para 3.3.8)

The Committee feels that neither the State Governments' revenues nor the budgetary and other forms of assistance from the Central Government are sufficient to provide adequate funds for the purpose of restoration. The plans of the State Governments for the provision of safe housing to the homeless fishermen, revitalisation of the agriculture and animal husbandry sectors, the establishment of the Marine Skill Development Institutes, relief of debt of the fishermen, and revamping the coastal police may require a significant amount of funds. The State Governments will, therefore, need to mobilize resources from sources other than the budgetary allocations to implement such measures. The Committee, therefore, recommends that the Central Government should consider measures to seek more funds from sources such as the corporate sector by categorizing their contributions to NDRF/SDRF under Corporate Social Responsibility funds and motivate them to contribute generously to the Prime Minister's Relief Fund and NDRF/SDRF. (Para 3.3.9)

MINUTES

IV
FOURTH MEETING

The Committee met at 4.00 P.M. on Wednesday, the 20th December, 2017 in Room No. 63, First Floor, Parliament House, New Delhi.

MEMBERS PRESENT

1. Shri P. Chidambaram — *Chairman*

RAJYA SABHA

2. Shri K. Rahman Khan
3. Shri Shamsher Singh Manhas
4. Shri Derek O' Brien
5. Shri Neeraj Shekhar

LOK SABHA

6. Shri S. Selvakumara Chinayan
7. Shri Adhir Ranjan Chowdhury
8. Dr. (Smt.) Kakoli Ghosh Dastidar
9. Shri Mallikarjun Kharge
10. Shrimati Kirron Kher
11. Shri Kaushal Kishore
12. Shri P. Nagarajan
13. Shri Baijayant "Jay" Panda
14. Shri Dilip Patel
15. Shri Bheemrao B. Patil
16. Shri Mohammed Faizal PP

SECRETARIAT

1. Shri Rohtas, *Joint Secretary*
2. Shri Vimal Kumar, *Director*
3. Dr. (Smt.) Subhashree Panigrahi, *Additional Director*
4. Shri Bhupendra Bhaskar, *Additional Director*
5. Shri Pritam Kumar, *Under Secretary*

WITNESSES

Representatives of Ministry of Home Affairs

1. Shri Rajiv Gauba, Home Secretary
2. Shri Bipin Mallick, Additional Secretary (DM)
3. Shri P.K. Srivastava, Additional Secretary (UT)
4. Shri S.K. Jindal, Joint Secretary
5. Shri Goutam Ghosh, Director
6. Shri Pradeep Kumar, Deputy Secretary

Representatives of National Disaster Management Authority

1. Shri Kamal Kishore, Member
2. Shri B. Pradhan, Additional Secretary
3. Shri Pradeep Kumar, Additional Secretary
4. Dr. V. Thiruppugazh, Joint Secretary

Representatives of National Disaster Response Force

1. Shri Sanjay Kumar, Director-General
2. Shri Ravi Joseph Lokku, Inspector-General

Representative of Ministry of Defence

Smt. Devika Raghubanshi, Joint Secretary (Navy)

Representatives of Indian Navy

1. Admiral S. N. Ghormade, Vice Admiral
2. Shri Kunal Rajkumar, Commodore

Representatives of Indian Coast Guard

1. Shri V.S.R. Murthy, Additional Director-General
2. Shri S. Paramesh, Deputy Director-General

Representatives of Indian Meteorological Department

1. Shri K.J. Ramesh, Director-General
2. Dr. M. Mohapatra, Scientist

2.0 At the outset, the Chairman welcomed the Members to the meeting and informed them about the agenda of the meeting *i.e.* to hear the views of the Ministry of Home Affairs and other concerned departments/agencies on the impact of Cyclone Ockhi including damage caused by it and the missing fishermen due to the Cyclone.

2.1 The Chairman then read out the Rule 294 (1) of the Rules of Procedure and Conduct of Business in the Council of States (Rajya Sabha) regarding declaration of interests.

(After the arrival of witnesses)

3.0 The Chairman welcomed the representatives of the Ministry of Home Affairs, Ministry of Defence, National Disaster Management Authority and the Indian Meteorological Department to the sitting of the Committee. The Ministry thereafter briefly informed the Committee on the damage caused by the cyclone Ockhi and rescue, relief and rehabilitation measures undertaken by the Central and State Governments.

4.0 The Director-General, Indian Meteorological Department (IMD) apprising the Committee about the course taken by the cyclone Ockhi, its nature and severity of its impact stated that the cyclone first hit the coastal areas of South Tamil Nadu and South Kerala on 30th November around 6.00 P.M. and affected Lakshadweep, north coastal Maharashtra and adjoining south coastal Gujarat. The Committee was also informed that IMD had issued bulletins and disseminated information through fax, emails and over social media to the concerned authorities and affected states or likely to be affected from time to time. It was also informed that the cyclone was an unusual one and very rare as per the last 125 years records. It developed

from a depression into a storm and then severe cyclonic storm in a very, very short period of 18 hours and the IMD had very less time to issue early warnings.

5.0 The Home Secretary stated that the Central Government immediately deployed logistics available with the Indian Air Force, the Navy, the Coast Guard and the NDRF for search and rescue operations. He also mentioned that coordinated effort was made by the National Crisis Management Committee, State Governments, Ministry of Defence and other Central Ministries/Departments towards mitigating the miseries faced by the affected people.

5.1 The Committee was informed by the Ministry that sometimes Fishermen set off to high Sea upto 200 nautical miles. Therefore it was not possible to warn them. All efforts were being made to rescue and trace them for which the help of local fishermen was also sought. The State Government was conducting door to door verification to know the details of the missing fishermen. The number of missing fishermen was changing everyday as some had returned who might have landed in other States or islands. It was also informed that the lives lost were substantial in sea and a few on land due to falling of trees and electric poles.

5.2 It was also informed by the Ministry that Prime Minister had announced immediate assistance of RS.325 crore to states of Kerala, Tamil Nadu and Lakshadweep besides the funds available under SDRF and NDRF mechanism.

6.0 The Committee was also informed that the Government of India would provide assistance of ₹ 1.5 Lakh for reconstruction of the houses fully damaged by cyclone Ockhi from the Prime Minister's Awas Yojana. *Ex-gratia* assistance of ₹ 2 lakh to the next of the kin of deceased and ₹ 50,000 to each of those seriously injured was sanctioned from the Prime Minister's National Relief Fund. It was also stated that the Ministry had constituted an inter-Ministerial Central Team to go to Kerala and Tamil Nadu and would visit the states after getting memoranda from these states.

7.0 Following issues were raised by the Chairman and Members of the Committee:

- (i) mismatch of data relating to death, casualties and devastation caused by the cyclone provided by the Ministry and as reported by different Media. The Ministry was asked to provide the updated and accurate information on this account;
- (ii) Odisha has faced many of the severe Cyclones over the past many years and based on its experiences it has developed SOPs which are implemented within the first 48 hours to 72 hours. This has brought down casualties to single digit. These inputs about improving standard operating procedure can be taken by the Ministry to improvise upon for disaster management;
- (iii) for strengthening of disaster related infrastructure 20,000 walkie-talkies were procured for ₹45 crore by the Tamil Nadu Government from the World Bank funding. But due to non installation of the towers required for operating them they remained dumped in godown;
- (iv) Member from Lakshadweep raised the issue of urgent financial assistance to fisherman whose boats were damaged beyond repair and for farmers whose coconut trees were uprooted by the cyclone;
- (v) the Chairman expressed concern about the casualties at sea by the cyclone and asked whether radio or wireless communication could be established with the fishermen who were in deep sea. The Indian Coast Guard informed that the fishermen in deep sea were equipped with

Distress Alert Transmitter (DAT) developed by ISRO for giving SOS/distress message in case of any eventuality on any of the vessels at high sea. The alert from vessel is sent as one way communication through satellite, to the Coast Guard Maritime Rescue Coordination Centre (MRCC) at Chennai for rescue operations. About 1700 DAT were provided by the Indian Coast Guard and 1000 by the State Governments. The Chairman then directed NORF/ NOMA to explore a mechanism by which warning about Cyclone etc. can be issued from land into deep sea, 200 nautical miles away or beyond;

- (vi) the issue of non release/ disbursal of ₹ 14,000 crores by the Central Government to the State of West Bengal, where 152 flood related deaths and other damage had occurred, was also broached up;
 - (vii) Some Members stated that disaster affected States either did not get assistance according to their demands or got very meager amount even after announcement of big financial help by the PM. Details in writing were sought from the Ministry on the financial assistance announced by the Prime Minister in the last 4-5 years when he visited disaster affected States and the amount that had actually reached the concerned State Governments; and
 - (viii) the issue of discrimination or differentiation in deployment of NDRF teams in different States that were affected by the Cyclone Ockhi with different intensity, was raised by the Members. They also sought other details like date, time and number of NDRF units deployed in affected states.
8. A Verbatim record of the proceeding of the meeting of the Committee was kept.
 9. The Committee then adjourned at 5.24 P.M.

XII
TWELFTH MEETING

The Committee met at 4.30 P.M. on Monday, the 2nd April, 2018 in Room No. 63, First Floor, Parliament House, New Delhi.

MEMBERS PRESENT

1. Shri P. Chidambaram — *Chairman*

RAJYA SABHA

2. Shri K. Bhabananda Singh
3. Shri R.K. Sinha

LOK SABHA

4. Dr. Sanjeev Balyan
5. Shri S. Selvakumara Chinayan
6. Shri Mallikarjun Kharge
7. Shrimati Kirron Kher
8. Shri Ram Mohan Naidu Kinjarapu
9. Shri Kaushal Kishore
10. Shri P. Nagarajan
11. Shri Baijayant “Jay” Panda
12. Shri Bheemrao B. Patil

SECRETARIAT

1. Shri Rohtas, *Joint Secretary*
2. Shri Vimal Kumar, *Director*
3. Dr. (Smt.) Subhashree Panigrahi, *Additional Director*
4. Shri Bhupendra Bhaskar, *Additional Director*
5. Shri Pritam Kumar, *Under Secretary*

2.0 At the outset, the Chairman welcomed the Members and informed them about the agenda of the meeting, *i.e.*, to consider and adopt the following two draft Reports of the Committee:-

- (i) * * *
- (ii) 211th Report on the Cyclone Ockhi - Its Impact on Fishermen and Damage Caused by it.

3.1 * * *

3.2 The Committee, then, took up the draft 211th Report for consideration and adopted the same without any change.

3.3 The Committee authorised the Chairman to carry out any typographical/factual errors, if necessary and also decided for presentation of the Reports to both the Houses of Parliament in the current session itself.

*** Relate to other matters.

- 4.1 * * *
- 4.2 * * *
- 4.3 * * *
- 4.4 * * *
- 5.0 A Verbatim record of the proceeding of the meeting of the Committee was kept.
- 6.0 The Committee then adjourned at 4.53 P.M.