

MOST IMMEDIATE / PERSONAL ATTENTION

Rc. No. N.C.I (4) / 3838 / 2018

Revenue Administration,
Disaster Management and
Mitigation Department,
Chepauk, Chennai 600 005.

Dated: 25.08.2018.

Circular

Sub: Disaster Management - North East Monsoon
2018 - Preparedness Measures for
Management of Cyclone - Instructions issued -
Regarding.

Ref: This Office Circular N.C.I (4) / 3137 / 2017,
dated 13.10.2017.

Preparedness Measures for Management of Cyclone

Cyclone storms are characterized by destructive winds, storm surges and very heavy rainfall, each having deleterious impact on human and livestock, the public infrastructure and private properties. Of these, storm surge is responsible for 90% of the loss of lives and cyclones are also characterized by their destructive force which damages structures such as houses, lifeline infrastructure such as power and communication towers, hospitals, food storage facilities, roads, bridges, culverts, crops, etc., due to high velocity winds. Impact of Cyclones in the coast of Tamil Nadu is significant because of the low flat coastal terrain and high density of population. Improved early warning system and dissemination, various risk reduction measures, preparedness, mitigation measures and improved response mechanisms have resulted in reducing the damages caused due to cyclones.

Tamil Nadu faces the threat of cyclonic storms very frequently during the North East Monsoon. The Cyclones are accompanied by gale winds with extremely heavy rainfall causing instant floods.

All the District Collectors are hereby instructed to ensure high level of preparedness to tackle any eventualities that may arise if any cyclonic storm strikes Tamil Nadu during the North East Monsoon 2018. Additional measures that may be required based on the past experience in the district should also be put in place.

Understanding the Four-stage Warning System

i) **The first stage is** a special bulletin called **Pre-Cyclone Watch** is issued containing early potential indications about the development of a cyclonic disturbance in the NIO region, its possible development into a cyclone and adverse weather that specific areas of the coastal belt are likely to experience. Additional warnings in respect of fisheries and ports are issued to enable the respective authorities to take necessary precautionary steps.

ii) At the **second stage**, a **Cyclone Alert** message is issued **48 hours prior** to the expected time of commencement of adverse weather over the specific coastal areas.

iii) **At the third stage**, a **Cyclone Warning** is issued **24 hours prior** to the cyclone's expected landfall time, in order to cover the devastating impact of cyclones over inland areas.

iv) Finally, a Post Landfall Outlook is issued 12 hours before the landfall and continues till such time as cyclone force gusty winds are expected to prevail over the interior areas.

Level 1: (Pre Cyclone Watch) 48 to 72 hours before expected landfall

Early warning information is normally provided by Regional Meteorological Centre in which a special bulletin called Pre-Cyclone Watch is issued containing early potential indications about the development of a cyclonic disturbance, its possibility to develop into a cyclone and adverse weather that specific areas of the coastal belt are likely to experience. Additional warnings in respect of fisheries and ports are issued to enable the respective authorities to take necessary precautionary steps.

The District Collectors should monitor the situation on an hourly basis.

- i) Information dissemination should be done in the area in Tamil so that the local people have full information about cyclones.
- ii) High Flood Level (HFL) and storm surge level markings need to be indicated in villages.
- iii) A warning siren, with a different type of warning tune, needs to be commissioned in cyclone prone areas.
- iv) There is a need for light indicators around the fishing vessels area.

Assessment of Needs

An assessment of the total requirement of cyclone shelters has to be made by all the Districts. The factors that need to be considered are:

- i) Vulnerability of the area,
- ii) Percentage of the total number of people in a habitation / village that would have to be evacuated and arrange for Relief Centres after taking into consideration the available and pre-identified buildings like MPES, schools, community halls, places of worship etc.,
- iii) Communication requirements, and
- iv) Identification of sites

Preparatory Arrangements

1. District Disaster Management Agency meeting to be convened and alert the entire District Administration. The fishermen should be advised not to venture into the sea for fishing activities. The public in vulnerable areas should be sensitized through media and also by open loudspeaker announcements in the vulnerable areas. Press / Audio – Visual media and Social media should be used to sensitize the community.
2. Alert the First Responders / snake catchers and Interdepartmental Zonal Teams.
3. Make necessary arrangements to ensure that the Relief Centres are operational.
4. The Fisheries Department while assessing the situation should keep track of the number of fishermen in the sea and monitor their return. Village level verification should be done with the help of First Responders, Village Administrative Officers and Fisheries Inspectors to ensure that no one is missing. In case Fishermen are already on High seas, they should be advised to return. Maximum efforts at this stage are to be taken to ensure that none of the fishermen are in the sea 24 hours before the expected landfall or sometime even prior to that as the sea becomes rough. Assistance of coast guard may be taken if required.
5. The Fire and Rescue Services, Police, Home Guards and Medical team should be alerted on the directions given by the District Disaster Management Agency to be in readiness for emergency operations.
6. Transport arrangements to be made for evacuation if the status of the threat is enhanced.

7. Officials should be deputed to relief shelters to assess the facilities and arrange for proper lighting, water supply both for drinking and washing, adequate toilet facilities, as per number of people that can be accommodated.
8. Cattle mounds have to be located in close proximity to cyclone shelters. Every habitation needs a suitably designed cattle mound.
9. RTO to play a lead role in arranging for private buses and trucks/lorries for transport not only of people but also of relief materials to the identified shelters.
10. The people residing in the possible flood prone areas should be advised to move to safe places. Children in particular should be advised to avoid low lying areas, refrain from crossing through water bodies and channels.
11. Heavy rain can result in overflow of dams and lakes. The Public Works Department and the Block office to place their staff on high alert to ensure round-the-clock monitoring of flood levels in water bodies under their control and ensure release of water in accordance with existing flood manuals.
12. When water is being released from Dams / Reservoirs, Public Works Department authorities should alert the people in the downstream to move to safe locations. Besides sharing information with District Administration, information should be sent to Railways, AirPort Authorities, Highways Department, Transport Department and others.
13. This phase will test the effectiveness of the connectivity of the district administration with that of the communication system in the coastal hamlets.
14. To Check / assure the non-submergence of Water supply sources.
15. To make backup power arrangements for essential services.

16. To check whether the mobile companies have stocked appropriate quantity of diesel to run the generators to provide communication services.
17. Securing sand bags to prevent breaches at appropriate places.
18. To check the availability of Tree cutting machines and if additional members are required contact State Relief Commissioner / Commissioner of Revenue Administration.
19. To check whether storm water drains are cleared.
20. A 25 km band of the coastal stretch may be taken as most vulnerable to cyclones, with some scope for variation because of local topography and other factors.
21. Ensure proper conditions of roads and recheck for blockages under culverts and bridges to remove them on a war footing.
22. A reliable road network connecting vulnerable areas to select nodal centres from where transport, relief and rehabilitation operations can be coordinated in the event of a natural disaster will be an essential preparedness measure.

Level 2: (Cyclone Alert) 24 to 48 hrs before expected landfall

- 1) When the approximate position of the cyclone system is located at a distance of 500 km from the coast, the District Disaster Management Agency should meet frequently to review the situation as per the status of the India Meteorological Department forecast.
- 2) Whether the storm intensifies or otherwise, the review of disaster preparedness should be made by the District Disaster Management Agency at periodical intervals with the constant watch on fresh bulletins from India Meteorological Department.

- 3) The Rescue and Relief teams should be stationed by this time to familiarize themselves with the terrain and the settlements they are to assist.
- 4) As it is advisable to switch off the power supply during landfall to avoid electrocution related accidents due to snapping of overhead supply lines: Generators to be kept ready to be used for relief operations and in relief camps.
- 5) Announcements to be made - to close windows and have them secured; loose material to be secured by suitable methods.
- 6) Sandbags to be stacked on roofing that needs to be secured.
- 7) Arrangements for additional Ambulance help to be made.
- 8) Arrangements should be made for free flow of traffic by imposing one-way traffic where necessary.
- 9) Bulldozers and other Earthmoving equipment needed for clearing roads affected by fallen trees and to be move the fallen trees to make shift dump-yards close to coastal villages but not on the roads identified for evacuation - to avoid obstruction of evacuating vehicles.
- 10) If the cyclone is upgraded as Super Cyclone or Very Severe Cyclonic Storm, preemptive deployment of Tamil Nadu Disaster Response Force and National Disaster Response Force may be sought through Additional Chief Secretary / Commissioner of Revenue Administration.
- 11) During cyclone the existing communication networks may invariably collapse, therefore each officer should know his / her role in advance.
- 12) Battery operated Megaphones are quite useful for making announcements.

- 13) As the Police department has a stand- alone communication system - excellent coordination is needed to be in place to serve as effective back-up.
- 14) Sufficient numbers of boats are to be kept ready near low lying area already identified.

Level 3: (Cyclone Warning) 12 to 24 hours before expected landfall

- 1) This warning is issued when the cyclone is located at a distance of 200 km from the coast.
- 2) The District Disaster Management Agency in consultation with the State Disaster Management Agency need to order for the evacuation of people depending on the intensity of the Cyclone.
- 3) The advisories from Government of India / National Disaster Management Agency may also to be taken into consideration.
- 4) Vulnerable people should be evacuated first including elderly, disabled, children, women, widow and the shelter to which they are heading should be informed to their family members and neighbours.
- 5) First Responders may be involved in listing out the names of the people evacuated and the location where they are accommodated. The official in-charge of the shelter should alert the control room if the shelter is fully accommodated.
- 6) The eye of the cyclone is generally 30 to 65 km in diameter; the spiraling winds may influence a region of up to 50 to 60 km. Necessary measures to be taken to alert the regions in the path of the cyclonic storm.
- 7) Evacuation should be completed in about 12 hours as the wind speed is expected to be very high when the eye wall reaches the shore. The

duration of very high winds may be for 6 hours and in the location of landfall it is normal to have unusually calm weather whereas the adjoining villages are being devastated by winds.

- 8) Proper patrolling is necessary at this stage to avoid looting and arson by anti-social elements.
- 9) The official in-charge of the relief shelters should ensure that food packets and water are made available in the relief camps and arrange milk for infants and children.
- 10) Diapers, women dignity kits should be provided in the shelters.
- 11) Mats, Bed sheets, Clothes and bleaching powder should be provided in the shelters.
- 12) The medical team should be available to provide for minimum medical care at the camps with necessary medicines.

Level 4: (Lookout) 0 to 12 hours

- 1) The lookout is issued when the cyclone system is within a distance of 200 km from the coast.
- 2) Floods and gusting winds of high velocity are the main cause of fatalities due to the cyclone - all instructions on avoiding flooding will need to be reiterated.
- 3) Advise people repeatedly not to come out on to the streets and not to travel by vehicles.
- 4) It should be highlighted that during high winds, trees, boardings, poles etc., can fall on the road & on parked vehicles. Therefore people should stay indoors in pucca buildings. However, people in lowlying areas

should be moved to relief centres well in advance preferably before 24 hours.

- 5) Sufficient number of Boats should have been mobilized and located in easy access to spots which have a history of flooding.
- 6) The wind velocity will increase during this period and reach a maximum. If the wind speed reduces suddenly, it does not mean that the cyclone has dissipated. It is also possible that in the same location the eye of the storm is making landfall. The wind will once again become destructive and attain high speed after an interval which will depend on the forward motion of the cyclone. The time of lull in the wind may last up to six hours.

Cyclone De- Warning Stage

When the system weakens or is not going to affect coastal area under alert, a de-warning message will be issued.

Post Disaster

- After the Cyclone, it becomes necessary to assess the Damage and each department will need to follow the guidelines given to it.
- A separate committee should be formed to identify missing person, dead and injured and assess the damage to the properties, loss or injured of livestock, loss of crops, agricultural lands, etc for providing suitable relief.
- Removal of debris; Clearing the fallen trees; Restoring power lines; Restoration of basic Infrastructure - All of this requires a massive effort and will need special mobilization of extra manpower.
- Teams for Disposal of Dead Bodies and Disposal of Carcasses will need to be organised on war-footing where the casualties have been high.

- Spoilt foodstuffs that are dumped on the road should be disposed.
- Air dropping of food and essential commodities in the inaccessible areas of cyclone and rain affected should be considered by the District Administration.
- Cooked or dry food needs to be provided at the Shelters.
- Sufficient clothing and blankets need to be provided to the affected people to ensure their dignity, safety and well-being.
- Warm and inner clothes, and additional clothes need to be provided to Children, sick, elders, women and widows.
- Immediate restoration of roads to motorable condition.
- Press into service additional Earth moving machineries like JCB, Tractors etc.,

The District Collectors / the Commissioner, Greater Chennai Corporation besides taking necessary action have to monitor the situation closely in the event of a Cyclone up to the end of post disaster phase.

The District Collectors / the Commissioner, Greater Chennai Corporation have to send regular updates and shall not hesitate to escalate the problem to State level as and when the situation warrants by bringing it to the notice of Additional Chief Secretary / Commissioner of Revenue Administration so that assistance can be strengthened from the State level.

Sd/-K.Satyagopal,
Additional Chief Secretary /
Commissioner of Revenue Administration.

To

1. The District Collectors of all Districts.
2. The Commissioner of Greater Chennai Corporation.

Copy to

1. The Chief Secretary to Government, Secretariat, Chennai -9.
2. The Principal Secretary to Government,
Revenue and Disaster Management Department,
Secretariat, Chennai -9
3. National Disaster Management Authority, Government of India, New Delhi.
4. Stock File

M. S. S. S.
27/8/19

for Additional Chief Secretary /
Commissioner of Revenue Administration.

27/08/2018