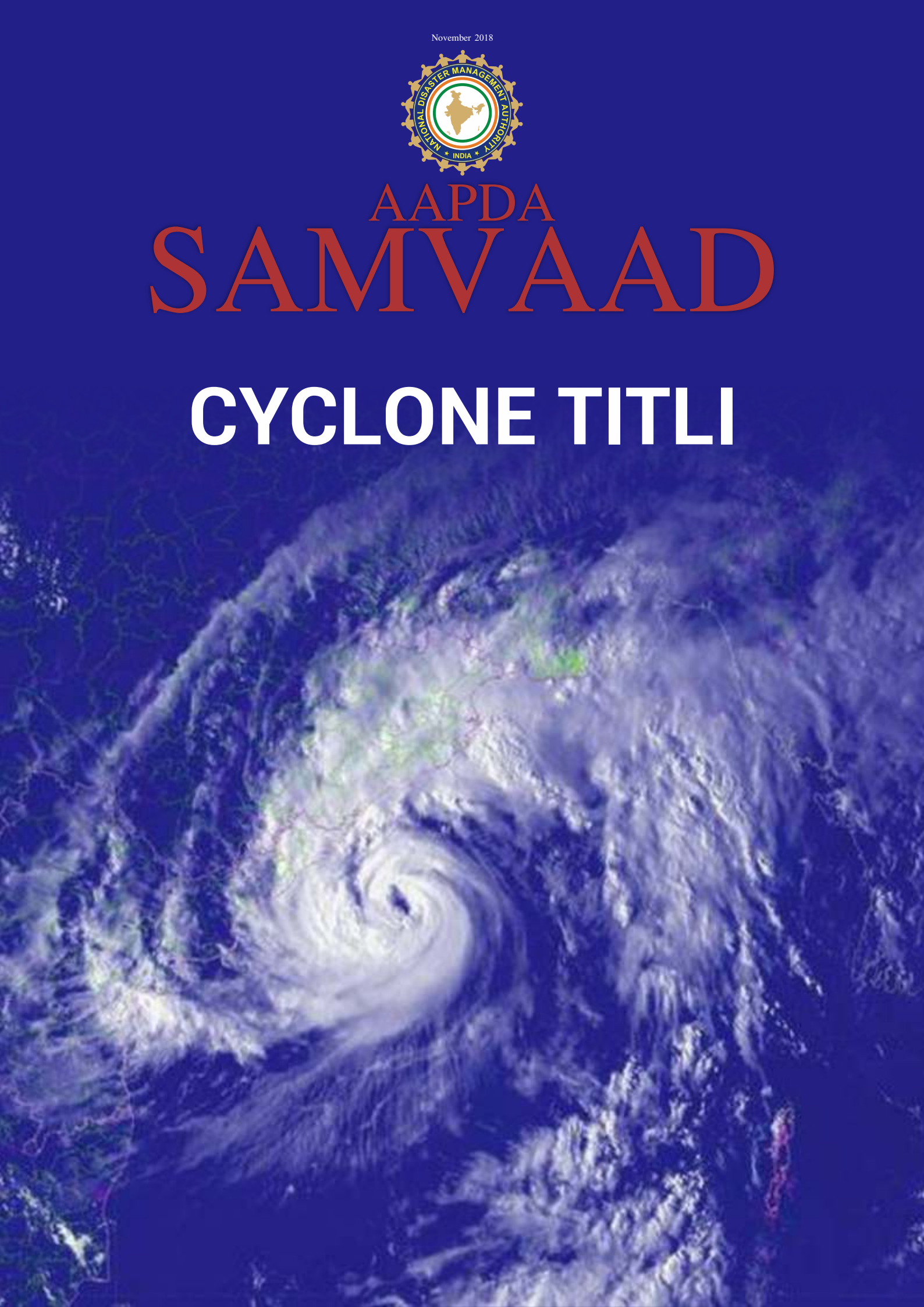
November 2018

AAPDA SAMVAAD

CYCLONE TITLI



Prime Minister chairs 6th meeting of NDMA

The Prime Minister, Shri Narendra Modi chaired the sixth meeting of National Disaster Management Authority (NDMA) at New Delhi, on October 18, 2018.

Prime Minister reviewed the activities of NDMA to effectively manage and respond to disasters affecting the country. He also reviewed ongoing projects undertaken by NDMA.

Prime Minister emphasized upon the need for better coordination between the various stakeholders and undertake more joint exercises to bring about effective response to save life and property. He stressed upon the need to bring in global expertise in the field of disaster management.

Union Home Minister, Shri Rajnath Singh, Union Finance Minister, Shri Arun Jaitley and Union Minister of Agriculture & Farmers Welfare, Shri Radha Mohan Singh were present in the meeting, along with members and officials of NDMA.

Training programme for CBRN emergencies

NDMA conducted a basic five-day training training programme at the Rajiv Gandhi International Airport in Hyderabad from September 24-28, 2018. The programme was aimed at enhancing the preparedness of Airport Emergency Handlers (AEHs) to respond to CBRN emergencies at the airports.

CBRN emergencies pertain to threats emanating due to Chemical, Biological, Radiological and Nuclear material.

The training programme was conducted in collaboration with the Airport Authority of India

(AAI), Institute of Nuclear Medicine & Allied Sciences (INMAS) and National Disaster Response Force (NDRF).

The programme consisted of lectures as well as field training, including live demonstrations of detection and decontamination including use of Personal Protective Equipment (PPE). Besides equipping the AEHs to handle CBRN emergencies, the training programme also enabled them to provide medical first aid and initial psycho-social support.

Experts from stakeholder departments such as Department of Atomic Energy (DAE), INMAS, National Centre for Disease Control (NCDC), National Institute of Mental Health & Neuro Sciences (NIMHANS) trained the participants.

A total of 50 participants representing various agencies responsible for operation and maintenance of the airport were trained on various aspects of CBRN emergencies. Another 150 working level staff were sensitized on the subject in a half-day module.

This is the seventh in a series of such programmes being conducted at airports across the country to enable AEHs to respond suitably till the arrival of specialised response teams. Six batches have already been trained - one each in Chennai, Kolkata, Mumbai, Varanasi, Patna and Ahmedabad.

Training on Landslide Risk Mitigation

NDMA in collaboration with Central Road Research Institute (CRRI) conducted a two-day training programme on 'Landslide Mitigation and Detailed Project Report (DPR) Preparation' on September 6-7, 2018. The training programme, held at New Delhi, aimed to train various stakeholders for better landslide mitigation and DPR preparation to reduce impact of landslides on human lives and properties.

Speaking during the valedictory session, Lt. Gen. N. C. Marwah (Retd.), Member, NDMA, highlighted the importance of preparedness and mitigation measures. He also emphasised upon the need for indigenous research and technologies to address the problem of our difficult terrain and provide low-cost solutions to meet local requirements.

The programme brought together key groups, including geo-technical engineers, civil engineers, geologists, disaster managers, etc., which work towards developing, adopting, implementing and enforcing mitigation measures in their concerned States.

West Coast Tsunami Mock Exercise

A two-day mock exercise was held on September 4-5, 2018 to assess and improve the early warning and response mechanism of our agencies in the coastal areas to mitigate the impact of a high-intensity tsunami.

The exercise, organised by the Indian National Centre for Ocean Information Services (INCOIS), was also aimed at strengthening regional mutual cooperation on disaster risk reduction and preparedness with as many as 24 countries participating in the exercise.

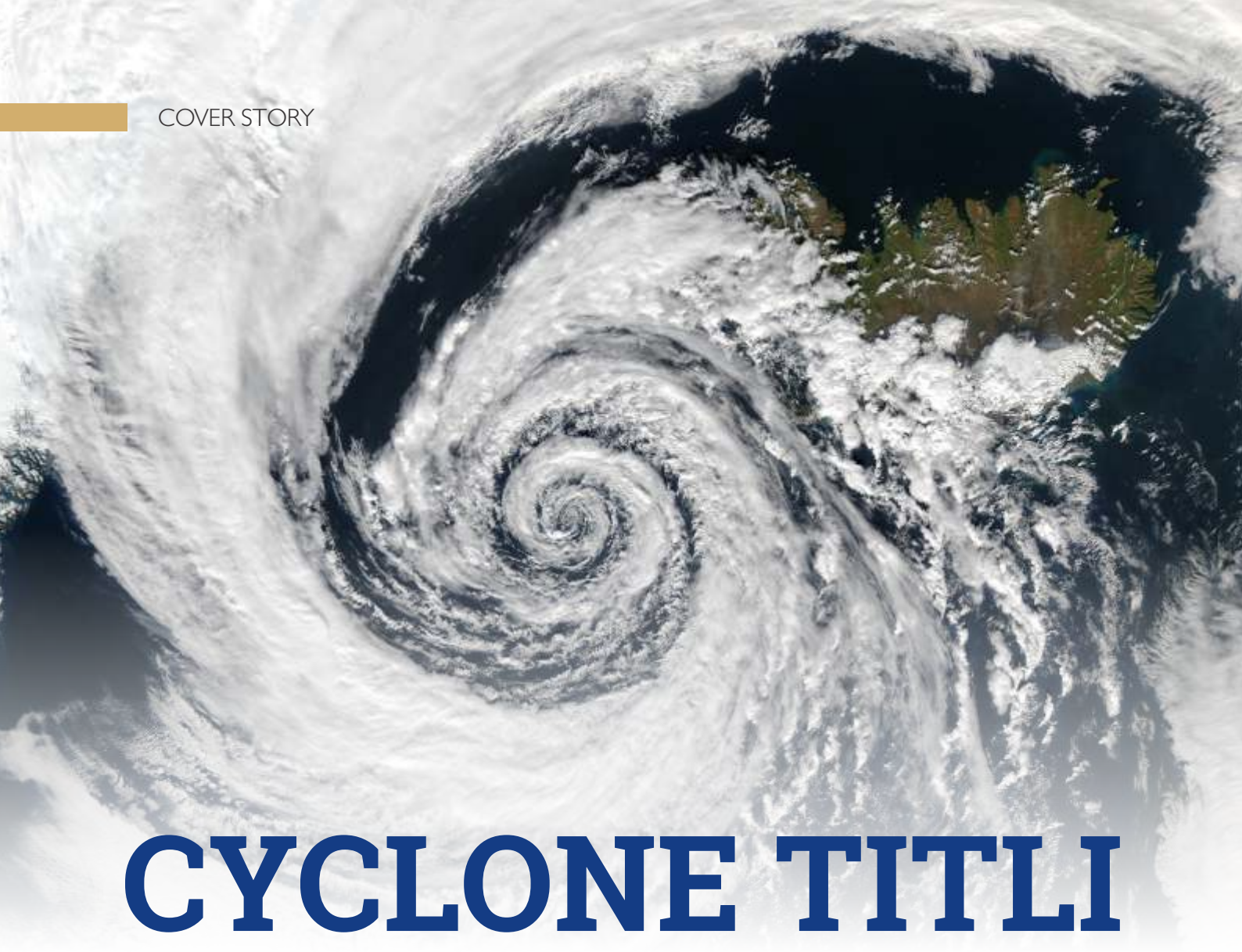
Earlier in August, a workshop was also held to prepare the stakeholders for the exercise.

NDMA participated in the exercise as an observer to oversee and verify that the Standard Operating Procedures (SOPs) are followed meticulously.

Lecture on DM

NDMA delivered a lecture on "Management of CBRN Emergencies" at Air Force Institute of NBC (Nuclear, Biological, Chemical) protection, Arjangarh, Delhi, on September 4, 2018. Around 50 mid and senior-level cadets were sensitized on the subject.

The NDMA representative also briefed the participants about the Authority's initiatives, viz. Mobile Radiation Detection System (MRDS), capacity building exercises on CBRN emergencies at Point of Entries and Incident Response System (IRS).•



CYCLONE TITLI

During October 2018, two very severe cyclones were formed on the two sides of the Indian mainland - Luban in the Arabian Sea (7-13 October) and Titli in the Bay of Bengal (6-14 October) - in what the India Meteorological Department called one of the "rarest of rare" occurences given the unique movement of both these cyclones. While Titli changed its direction and moved towards the northeast after making a landfall at Gopalpur in Odisha, Luban took multiple recurvatures before making a landfall on the Gulf coast.

Even as Titli continued to batter out coastline with strong winds speed touching close to 149 kmph, torrential rain and a metre high storm surge, a prepared Odisha administration was all set to dampen its spirits. It had set for itself the target of 'zero casualty'. Around 3,00,000 people from low-lying areas and kuchchha houses, especially in five coastal districts of Ganjam, Puri, Jagatasinghpur, Khurda and Kendrapara, were evacuated and brought to designated shelters. Emergency services such as hospitals and power companies were put on alert. Schools, colleges and anganwadis were ordered to shut across the State for October 11 and 12. At least eight trains were cancelled and the Khurda Road (Odisha) - Vizianagaram (Andhra Pradesh) section was closed for trains on the day of expected landfall. Fishermen were warned not to venture out to the sea. National Disaster Response Force (NDRF) teams were put on standby and armed forces alerted for providing immediate assistance, if needed. The government was also closely monitoring rainfall in Bansadhara and Rushikulya river basins in southern parts of the where the cyclone is likely to have more impact. District administrations were on high alert; control rooms were set up. Andhra Pradesh had put up similar preparedness measures in place.

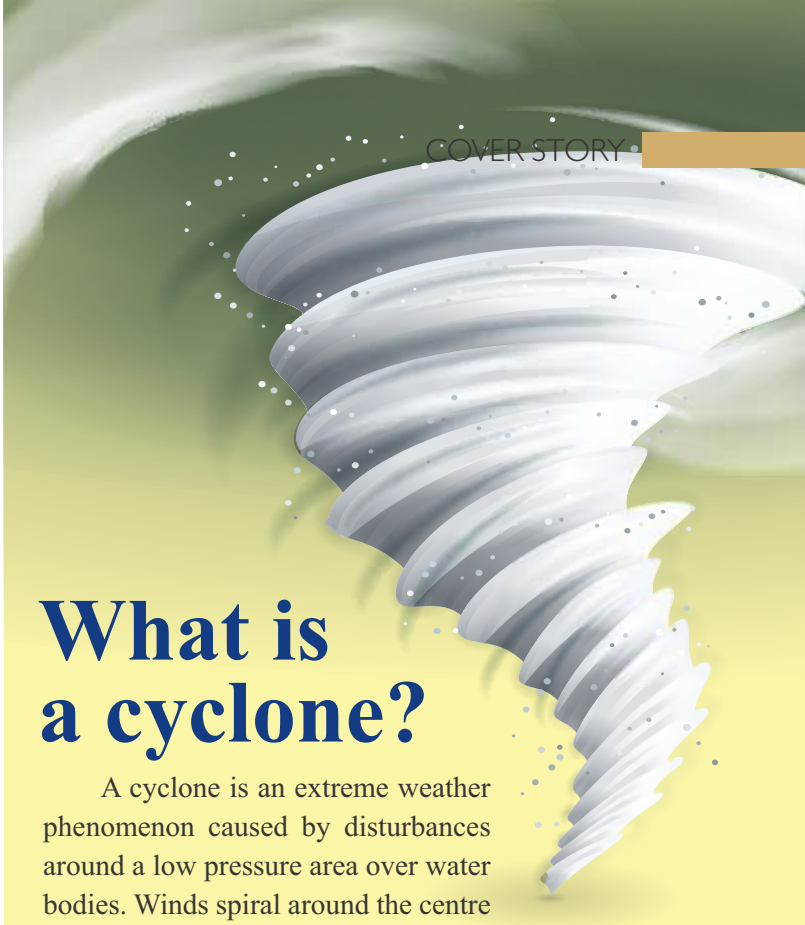
The Centre too was on its toes. Union Cabinet Secretary Shri P. K. Sinha on October 10 chaired a meeting of the National Crisis Management Committee (NCMC) to take stock of preparatory measures for the impending landfall of Titli. The meeting was attended by senior officials from the Ministry of Home Affairs, Defence, NDMA, NDRF, India Meteorological Department (IMD) and Integrated Defence Staff (IDS). Odisha, Andhra Pradesh and West Bengal participated through video conference.

India was ready for Cyclone Titli.

It struck with full force. It killed 93 people - 77 in Odisha, including those gone missing - Gajapati (52), Ganjam (19), Kandhamal (02), Keonjhar (01), Nayagarh (01), Angul (01) and Cuttack (01) and 16 in Andhra Pradesh - Srikakulam (14) and Vizianagaram (02). It affected more than 60 lakh people in Odisha and more than 14 lakh in Andhra Pradesh. Cyclone Titli damaged huts, tore tin roofs, fell trees, broke poles, battered vehicles, mangled electricity wires, blocked roads and scattered debris all over the place. It also disrupted the communication networks, the supply of essentials such as bread and milk and led to long power cuts. Flights were either cancelled or re-routed.

The story of Titli, however, does not lie in what it did. It lies in what it could not do. Despite its ferocity, the number of deaths were contained within two digits. With the IMD accurately predicting its path and ferocity well in advance, a pro-active government machinery timely putting preparedness and mitigation measures in place, and the indefatigable spirit of the affected people, the States picked up their pieces and were up and running within a few days.

Due to effective strategies adopted during the preparatory phase, the States ensured unified action by multiple agencies and speedy mobilization of additional rescue teams, relief material and equipment, and restored normalcy within a short span of time.



What is a cyclone?

A cyclone is an extreme weather phenomenon caused by disturbances around a low pressure area over water bodies. Winds spiral around the centre of this low pressure area in a snake-like coil and gather speed. These winds rotate anti-clockwise in the northern hemisphere and clockwise in the southern hemisphere. When it develops over tropical waters, it is known as a tropical cyclone. Similarly, when it is formed over extra-tropical waters, it is known as an extra-tropical cyclone.

Tropical cyclones that are formed over the Atlantic Ocean are called hurricanes; those formed over the Indian Ocean are called cyclones, and those which are formed over the Pacific Ocean are called typhoons.

The average life period of a tropical cyclone is about seven days. However, they are relatively short-lived over the north Indian Ocean with a life period of about 5-6 days.

There are two cyclone seasons in the north Indian Ocean - pre-monsoon season (April-June) and post-monsoon season (October-December). The months of May-June and October-November are known to produce cyclones of severe intensity. Tropical cyclones that develop during the monsoon months (July to September) are generally not intense.

The eastern coast of India is more vulnerable than the western coast. Odisha and Andhra Pradesh are the most vulnerable followed by West Bengal and Tamil Nadu and Puducherry. On the western coast, Gujarat is most vulnerable.

Five strongest cyclones in India in recent past

Ockhi, 2017

Starting over the Bay of Bengal as a depression on November 29, it intensified into a cyclone the very next day off the Kanyakumari coast in Tamil Nadu. It travelled up to the Gujarat coast before it dissipated on December 6 after weakening into a low pressure area. Ockhi, literally meaning the eye, was the first severe cyclonic storm in 40 years to have travelled almost 2,400 kms from the Bay of Bengal to as far as the Gujarat coast.

Vardah, 2016

The storm, which started brewing in the Bay of Bengal on December 3 grew strong enough by the early hours of December 8 to be called Cyclone Vardah, literally meaning the red rose. It made its landfall close to Chennai by the early hours of December 12.

Hudhud, 2014

Developed from a low pressure area which lay over Tenasserim coast and adjoining North Andaman Sea in the morning of October 6. Struck the Andhra Pradesh Coast at Visakhapatnam on October 12, causing heavy to extremely heavy rainfall with strong gale winds leading to large scale structural damage over North Andhra Pradesh and adjoining districts of South Odisha coast. The name 'Hudhud' refers to the Hoopoe bird in Arabic.

Phailin, 2013

It turned out to be one of the most successful disaster management efforts by India. Phailin, which was stronger than Hurricane Katrina upon landfall in Odisha on October 12 with wind speeds of more than 200 km/hour, was prepared for so well that its story lay in the fact that the human death toll was contained in two digits. Phailin is the Thai word for sapphire.

Odisha Super Cyclone 1999

Also known as Cyclone 05B and Paradip cyclone. Originating as a tropical depression over the Malay Peninsula, it made its landfall in Odisha on October 29. It killed over 10,000 persons, rendered lakhs homeless and caused massive economic losses. The scale of this tragedy emphasized the need for improved preparedness resilience.

Why and how are cyclones named?

Cyclones are named for quicker and easier identification in warning messages as names are far easier to remember than technical terms and numbers. It also makes it easier for the media to report on cyclones thus contributing to wider warning dissemination and greater community awareness. Naming a cyclone also ensures that the public does not get confused in case there is more than one tropical cyclone in the same area or at the same time, as was the case with Luban and Titli.

The WMO/ESCAP Panel on Tropical Cyclones at its twenty-seventh session held in 2000 in Muscat, Sultanate of Oman, agreed in principal to assign names to the tropical cyclones in the Bay of Bengal and the Arabian Sea. The naming of the tropical cyclones over the North Indian Ocean commenced from September 2004.

The Regional Specialized Meteorological Centre for Tropical Cyclones over North Indian Ocean, New Delhi, is responsible for identifying a name from a pre-determined list contributed to by all the eight member countries - India, Pakistan, Bangladesh, Sri Lanka, Maldives, Myanmar, Oman and Thailand. The list is used sequentially and as a cyclone cause so much death and destruction, its name is "considered for retirement and hence is not used repeatedly."

For more information, please visit: http://www.rsmcnewdelhi.imd.gov.in/images/pdf/cyclone-awareness/tc-names/tc-names.pdf

Do's & Dont's

Before cyclone

- Ignore rumours, Stay calm, Don't panic
- Keep your mobile phones charged for emergency communication; use SMS
- Listen to radio, watch TV, read newspapers for weather updates
- Keep your documents and valuables in water-proof containers
- Prepare an emergency kit with essential items for safety and survival
- Secure your house; carry out repairs; don't leave sharp objects loose
- Keep cattle/animals unties to ensure their safety
- Identify safe shelters in your area. Find the closest routes to reach them
- Store adequate food grains and water
- Conduct mock drills for your family and community

During and After Cyclone

A) If Indoors

- Switch off electrical mains and gas connection
- Keep doors and windows shut
- If your house is unsafe, leave early before the onset of a cyclone
- Listen to radio; rely only on official warnings
- Drink boiled/chlorinated water
- Do not go out until officially advised that it is safe. If evacuated, wait till advised to go back.

B) If Outdoors

- Do not enter damaged buildings
- Watch out for broken electric poles and wires, and other sharp objects
- Seek a safe shelter as soon as possible

Fishermen should

- Ignore rumours, Stay calm, Don't panic
- Keep your mobile phones charged for emergency communication; use SMS
- Keep a radio set with extra batteries handy
- Listen to radio, watch TV, read newspapers for weather updates
- Keep boats/rafts tied up in a safe place
- Don't venture out in the sea

LOOKBACK

Why Vardah failed to wreak havoc?

- Dr. K. Satyagopal
State Relief Commissioner, Tamil Nadu.

In December 2015, Chennai was taken by surprise with unabated rainfall submerging large parts of the city bringing it to a standstill. The catastrophe was due to excessive rainfall in the upstream rivers to the extent of 68 cm within 48 hours (as against an annual rainfall of 63 cm during the entire north east monsoon in Kancheepuram District) and the problem was compounded due to encroachments in water courses, on river banks and constructions in flood plains. However, some quarters opined that the preparedness could have been much more elaborate to face extreme weather events. A year later, in December 2016, the city was face-to-face with another extreme weather event, the tropical Cyclone Vardah. This time around, the government had put in place preparedness measures to deal with any freak rainfall, flooding, cloudburst, drought or cyclonic storm incident well in advance. It saved the city when Vardah struck.

Using the legacy data from past incidents, vulnerable areas were identified and classified as very highly vulnerable, highly vulnerable, moderately vulnerable and low vulnerable. Based on

the vulnerability analysis, vulnerability maps were drawn for these areas complete with evacuation routes to relief centres.

Teams comprising members from various stakeholder departments such as fire services, rural development, agriculture, police were formed to monitor these vulnerable areas. The State Disaster Response Force (SDRF) was strengthened by training more than a 1,000 police personnel. A deployment plan for prepositioning of these teams and relief material for swift rescue and relief operations in case of a disaster was also drawn. Senior officers were appointed across districts to monitor preparedness measures and inter-departmental coordination.

Besides these, massive exercises for desilting 22,899 tanks and 11,446 km of water bodies and clearing blockages on either side of at least 15,870 bridges and more than 1.4 lakh culverts for up to 500 metres upstream as well as downstream were undertaken. Not only were new recharge pits created but thousands of defunct bore wells also converted as recharge pits.

Community participation at the grass root was ensured by enrolling and training volunteers, skilled in swimming and climbing, by Fire Services, SDRF and Red Cross Society to act as first responders in an emergency situation. More than 10,000 such volunteers were trained and formed into batches of 10 for highly vulnerable areas across the State.

The Indian Meteorological Department (IMD) issued a warning about Vardah crossing Chennai on the afternoon of 12th December, 2016 and affecting Chennai, Tiruvallur and Kancheepuram districts just a day in advance. The administration, however, was on high alert from 8th December itself.

Despite the paucity of time, advance preparedness measures enabled swift action by first responders and inter-departmental teams towards evacuating thousands of persons from coastal as well as low-lying areas. Four teams of SDRF, six teams of NDRF and 700 personnel from the Fire Department were positioned in vulnerable areas. While two columns of Army personnel were kept ready for deployment, Navy, Air Force and Coast Guards were also alerted.

Similarly, government hospitals were supplied with adequate stock of generators, oxygen cylinders, medicines and other supplies to respond to any emergency. Private hospitals were also alerted to keep emergency arrangements ready.

Fishermen were advised to not venture out in the sea. Boats were kept ready for speedy rescue operations in case of flooding. A holiday was declared for schools and colleges on 12th December to limit vehicular traffic and movement of people. This played a significant role in reducing the loss of lives during the cyclone and speedy clearing of uprooted trees or other damaged structure on roads thus restoring traffic the same night. This could be achieved by mobilising responders and conservancy staff from districts not affected by the cyclone to clear the roads and prevent stock piling of garbage to prevent the outbreak of any disease, respectively. Health camps to check the spread of communicable diseases were also organised.

A sustained Information campaign using multiple channels of communication making the vulnerable communities aware of the Do's and Don'ts of the event along with repetitive public advisories not only promoted community involvement but was also instrumental in minimising the loss of lives during the cyclone.

Each disaster presents an opportunity to learn from it. The Tamil Nadu Government used the opportunity presented to it after the December 2015 deluge to internalise the importance of disaster preparedness. Preparedness that helped it save human lives, minimise losses and ensure that the affected areas were back on its feet in a matter of a few days.•

DO's & DON'TS FOR SMOG/AIR POLLUTION

- Remain indoors: Go out when it's bright and sunny. Children's and persons especially suffering from heart and lung ailments are advised to stay indoors as much as possible
- Use nasal filters or air purifiers, if you experience difficulty in breathing. They can provide short-term relief.
- Regular intake of fruits rich in vitamin C, magnesium and omega fatty acids will boost your immunity.
- Drink more water to flush toxins from the body.
- Don't use main roads. Pollution drops away substantially when you're walking in smaller lanes away from the main roads.
- Avoid strenuous activity, which leads to inhalation of greater volumes of minute pollutants.
- If you have to exercise, do it indoors, preferably in the evening.
- Don't step out or indulge in outdoor activities during the early morning or when the levels of air pollution/smog are high.
- Keep some air purifying plants in homes and offices such as Tulsi, Money Plant, etc.
- Try alternative modes of transport; pool your car with friends and fellow commuters.
- Avoid Smoking.
- Do not burn garbage and even do not allow anyone to do so in your neighborhood.
- Consult a doctor or emergency department of nearest hospital in case of difficulty in breathing, severe coughing or onset of any other acute symptoms.

BE SMART BE PREPARED!

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