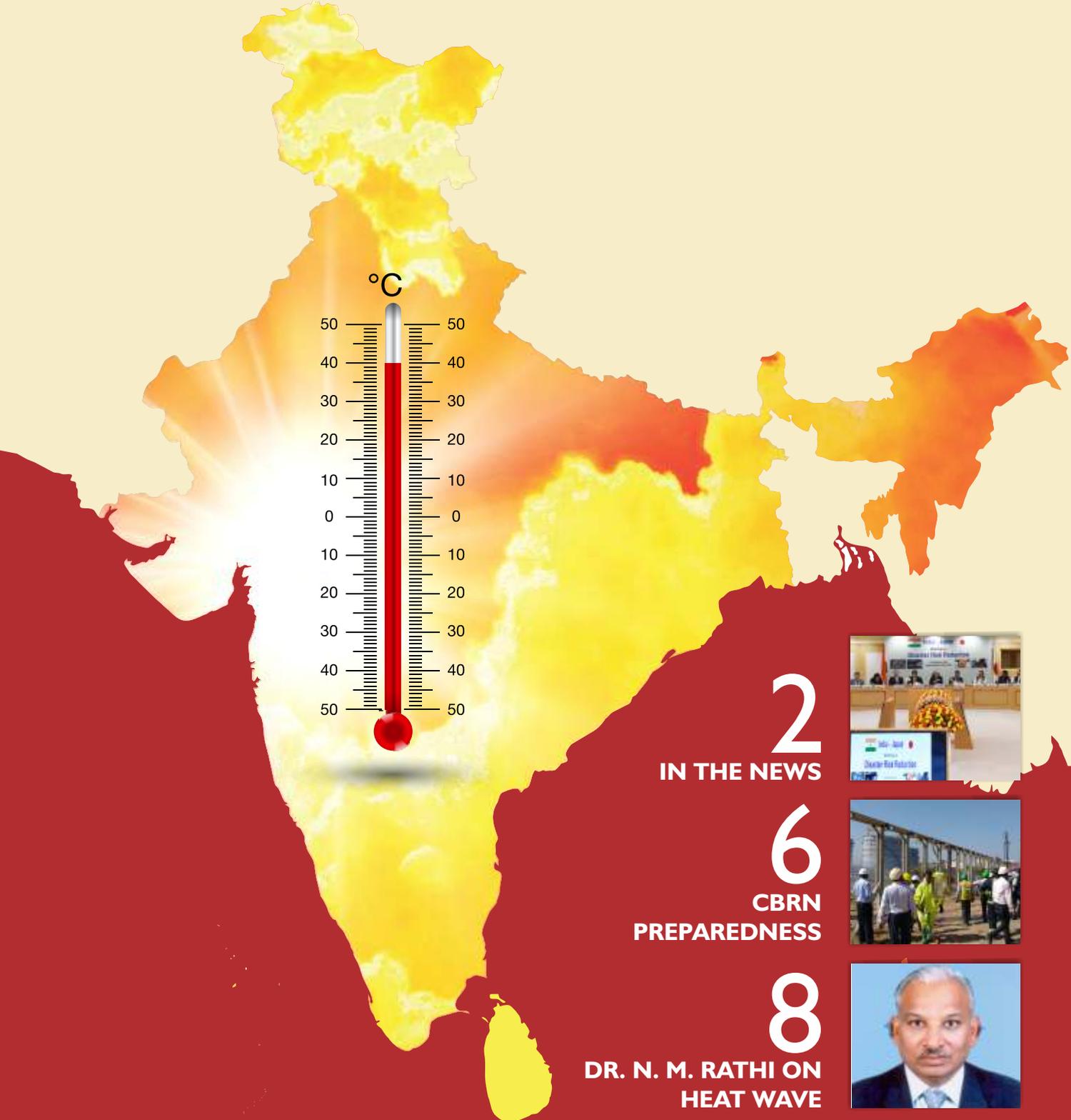




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First India-Japan Workshop on DRR held

India and Japan, two of the most disaster-prone countries in the world, came together for a two-day workshop in New Delhi on March 19-20, 2018 to discuss issues pertaining to disaster risk reduction (DRR), especially earthquakes.

Japan is situated along the Pacific Ring of Fire and is highly susceptible to earthquakes. Given its long history of devastating earthquakes, Japan has a very high level of community awareness. Its technological know-how, especially in the area of earthquake risk reduction, is among the most advanced in the world.

India is rapidly urbanising and a massive investment in the infrastructure sector is imminent. As nearly 59% of India's landmass is prone to moderate to severe earthquakes, it will not only save lives in the event of an earthquake but also make for great economic sense that this investment is made earthquake resilient.

The workshop helped explore as to how Japan invests in making its infrastructure resilient to present and future disaster risks. It also helped understand recent advancements in Japan in the area of earthquake detection and early warning systems and adapt them to India's context.

This workshop was jointly organised by the Ministry of Home Affairs, NDMA, India and Government of Japan. Dr. Rajiv Kumar, Vice-Chairman, NITI Aayog, inaugurated this workshop.

Six technical sessions were held during the workshop - Disaster Management Policy Framework, Risk Assessment, Disaster Resilient Infrastructure, Early Warning System, Preparedness/Response at sub-national level and Approaches by private sector.

Around 120 delegates from governments of both countries, educational institutes, specialized disaster management agencies, the private sector and civil society organizations participated in the workshop.

A detailed article on the workshop will follow in the next issue of Aapda Samvaad.

NDMA urges States to use Emergency Whistle

An emergency whistle can become a life-saving tool in a crisis situation. Post an earthquake, a victim's voice may not be strong enough to reach out to the rescuers. The whistle can let the rescuers know that somebody is beneath the rubble. It can work as a two-way communication system. Rescuers can also blow a whistle to inform their presence near the debris. Its sharp sound with a low pitch is easier to identify and perceive in a chaotic situation.



NDMA has urged all Central Ministries /Agencies and the State governments to include an emergency whistle in the conference /workshop kit given to delegates/participants in all the programmes organised by them. Several other countries also follow this practice.

Training programme for CBRN emergencies

NDMA conducted a six-day basic training programme at the Chhatrapati Shivaji International Airport in Mumbai from March 5-10, 2018. The training programme enhanced the preparedness of Airport Emergency Handlers (AEHs) to respond to CBRN emergencies.

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) and Institute of Nuclear Medicine & Allied Sciences (INMAS).

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 programme also enabled them to provide medical first aid and initial psycho-social support.

A total of 200 personnel were trained on various aspects of CBRN emergencies. This includes sensitization of 150 working level staff in a half day module.

Earlier, similar programmes were successfully completed at Chennai and Kolkata airports.

Training Programme on NDMS Pilot Project



NDMA conducted a two-day training programme on March 8-9, 2018 to familiarise and enable State/District personnel to handle the equipment related to National Disaster Management Services (NDMS). Middle-level officials with working experience in the State/District Emergency Operation Centres (SEOCs/DEOCs) were trained in using advanced technology such as Very Small Aperture Terminal (VSAT), voice calls, Internet, email, video, satellite phones and High Frequency Radios, among others.

NDMS is a pilot project for connecting the Control Rooms of the Ministry of Home Affairs (MHA), NDMA, headquarters of the National Disaster Response Force (NDRF), all the States and Union Territories as well as 81 hazard-prone districts. It aims to provide failsafe communication infrastructure and technical support for EOCs in the case of a disaster.

Earthquake ME in Himachal Pradesh

NDMA in collaboration with the Govt. of Himachal Pradesh conducted a State-level Mock Exercise on earthquake preparedness on February 9, 2018. The exercise that was held simultaneously in all districts of the State aimed to enable all



stakeholders in evaluating the effectiveness of their disaster response plans.

The mock exercise was part of a three-day event which began with a Co-ordination Conference on February 7, 2018 followed by a Table-top Exercise on February 8, 2018.

The entire State falls in the seismic zone V and IV, and has been shaken more than 80 times by earthquakes measuring 4 or above on the Richter Scale as per the recorded history of earthquakes. The Kangra Earthquake of 1905, which killed around 20,000 people, remains the last major earthquake witnessed by the State. Since then, the risk has increased manifold given population explosion and construction activity across the State.

IRS Training in Manipur

NDMA conducted a two-day training programme on Incident Response System (IRS) at Imphal, Manipur on February 23-24, 2018.

IRS is an effective mechanism to systematically respond to an incident. By attributing roles and responsibilities to each stakeholder, it deconstructs a very complex response mechanism resulting in a swift and streamlined response.

It can be successfully implemented irrespective of size, location, type and complexity of a disaster in India.

Concerned officials from all stakeholder departments participated in the training programme. •



KILLER HEAT WAVES: 2018 ACTION PLAN



A major part of India battles heat wave conditions every year. During the heat wave period between April and June, many States witness temperatures rising up to 40 degrees Celsius and above.

Reports about heat-induced deaths make headlines every year. The numbers, however, vary from report to report for lack of accurate data.

Usually, very obvious cases of death due to direct heat stroke, in which the affected person dies within a few hours, are reported as a heat wave related death. The more common form is indirect heat stroke, which majorly affects the elderly or those suffering from chronic diseases. Death may occur within 24-48 hours after the stroke and are not counted as heat wave related deaths due to ignorance," according to Dr. Dileep Mavalankar,

Director, Indian Institute of Public Health, Gandhinagar.

In 2015, the number of heat-wave related deaths across the country crossed 2,000. Moreover, the number was higher than deaths caused by any other disaster. Noticing this severity of killer heat waves, the National Disaster Management Authority formulated and circulated to the States the 'Guidelines for Preparation of Action Plan – Prevention and Management of Heat-Wave' in 2016. The Guidelines provide a framework for implementation, coordination and evaluation of activities undertaken by local authorities to reduce the adverse effects of extreme heat wave. Its effective implementation significantly brought down the number of heat wave-related deaths in 2016 and 2017.

Heat wave is a period of abnormally high temperatures, more than the normal maximum temperature that occurs during the pre-monsoon (April to June) summer season. The extreme temperatures and resultant atmospheric conditions adversely affect people living in regions reeling under heat wave conditions as they may cause dehydration, heat exhaustion, physiological stress and sometimes even death.

"We closely reviewed and monitored the preparedness and actions taken by States and with the combined efforts of all stakeholders, were able to bring down the number of deaths drastically," says Shri R.K. Jain, Member, NDMA, adding that the approach should be to have zero tolerance to heat wave deaths this year.



To tackle heat wave 2018, NDMA organised a national workshop on heat wave risk reduction through sharing of best practices on 21-22 February, 2018, at Vijayawada in collaboration with the Government of Andhra Pradesh. The workshop highlighted the importance of preparing and implementing Heat Action Plans, mass awareness campaigns, community capacity building and reviving indigenous traditions and knowledge. It also discussed the need to collect accurate information and data to plan and take most suited mitigation measures.

Lt. Gen. N. C. Marwah (Retd.) and Shri Kamal Kishore, Members, NDMA, also attended the workshop.

NDMA had organised a similar workshop in 2017 at Hyderabad, Telangana.



The workshop equipped States to update their Heat Action Plans through sharing of best practices by some vulnerable States which have largely been able to successfully fight the heat wave.

One of the most effective ways to mitigate the impact of heat waves is to help vulnerable populations help themselves by building their community capacity through awareness campaigns in local languages. This enables the vulnerable populations to recognise and respond to heat wave situations. Community-run pyau and sarai (water kiosks and shelters by the roadside) to help anyone and everyone passing through the area to cool off during the summer months are excellent examples of community participation towards Disaster Risk Reduction (DRR).

Authorities will help, but the best way out is to help yourself, your family and your friends. How about starting with placing a bowl filled with clean drinking water for birds who do a pit stop on your balcony or terrace during the hot and humid summers?•

Technical Sessions

- i) *Heat Wave Action Plan and Risk Reduction*
- ii) *Early warning, forecasting and Preparedness for heat wave*
- iii) *Experience Sharing & lessons learnt for heat wave mitigation measures and emerging issues in 2018*
- iv) *Capacity building & Enhancing effective response to Heat wave*
- v) *Monitoring, review and updating of Heat Action Plan*



PREPARING JAMNAGAR FOR CBRN EMERGENCIES

With rapid industrialisation and technological advancements, CBRN emergencies, which pertain to threats emanating due to Chemical, Biological, Radiological and Nuclear material, have become a reality across the world. These may occur because of human error, accidental exposure, terrorist attacks and sabotage besides being triggered as a secondary disaster after an earthquake, cyclone, etc.

Handling CBRN emergencies need specialised skills and efforts, and coordination among all stakeholders. Even a small CBRN related event can cause panic among people.

CBRN disasters, though few and far between, can cause immense immediate as well as long-term losses to both lives and property. It is, therefore, important to ensure the preparedness and resilience of vulnerable establishments.

Strengthening the capacity of local resources to swiftly and efficiently respond to such situations is critical to containing the losses. Conducting regular Mock Exercises is an effective way of achieving better synergy and coordination among the stakeholders. NDMA regularly conducts such exercises in its efforts to improve preparedness and response mechanisms for CBRN disasters. In January this year, on the request of Gujarat SDMA, it chose to conduct one in Jamnagar, Gujarat.

Jamnagar falls under High Risk Seismic Zone – IV. It has various major accident hazard (MAH) units such as Reliance Petrochemical, Essar Refinery, Tata Chemicals, Gujarat State Fertilizer Corporation (GSFC), etc. "The vulnerability of the district increases manifold as huge quantities of hazardous chemicals are not only stored at these plants but also transported from jetty to the refineries and vice-versa, and even a mild earthquake can cause major damage and destruction," said Kunal Sharma, Consultant, Chemical Preparedness, NDMA.

Add to that its coastal location and the risk of cyclones and tsunamis can also not be ruled out. Moreover, the district is just around 20 minutes of flying time from some air bases in Pakistan.

The exercise began with a co-ordination conference on January 3 which helped participants in understanding the concept of Incident Response System and their roles and responsibilities. This was followed by a three-day training (January 15-17) of first responders by the National Disaster Response Force (NDRF) on the handling of CBRN emergencies and related equipment. At the table-top exercise on January 18, various disaster scenarios were discussed and responses were sought from the participants in the run-up to the actual exercise the next day.

Multiple scenarios were simulated during the mock exercise to test the efficacy of the Emergency Response Plans of the district administration as well as the Industry. A Chlorine tanker was hijacked by terrorists, crashed into the main gate of the Reliance refinery and exploded. Another group of terrorists made LPG-fuelled explosions causing fire in the refinery. Simultaneously, an ammonia pipe line of GSFC was sabotaged outside the main gate of the Reliance tank farm. After about 20 minutes, two large explosions were reported from the nearby Sikka village. Also, the ammonia pipeline running through this village was sabotaged.

The situations demanded both on-site and off-site response at the refinery as well as at the affected village. People had to be evacuated, transported to a relief camp and given medical support. The District Administration activated its EOC, mobilised its resources and launched an evacuation plan. "This needed coordination among different Emergency Support Functions as well as among the district administration, central agencies and the Industry. Mutual support plans were activated and all the



stakeholders responded to the situation adequately," NDMA's Maj. Gen. V. K. Datta (Retd.), who led the entire exercise observed.

A detailed debriefing was done afterwards, gaps identified and ways to improve them discussed.

"The exercise helped us in understanding our capacities and training all stakeholders to respond to emergency situations. It also helped in making the vulnerable communities aware about the risks as well as ways to reduce the impact of a disaster," said Shri Ravi Shankar, District Collector, Jamnagar. The exercise also served as an eye-opener, helped us fix the gaps and revise, upgrade and streamline our District Emergency Operation Centre (DEOC) and Standard Operating Procedures (SOPs), he added.

The district administration now conducts a mock exercise on one or the other disaster almost every month. "We involve the industries, local people, central agencies present in the district in these exercises so that the responses are fine tuned with each exercise," he said. •



DR. N. M. RATHI ON HEAT WAVE



Heat wave is a quiet disaster. It arrives gradually, stays for a long period and kills silently. It is very important to prepare for these killer waves much before they arrive. To know more about them, AapdaSamvaad spoke with Dr. N. M. Rathi, public health specialist, Nagpur Municipal Corporation. Dr. Rathi was instrumental in developing the Nagpur Heat Action Plan.

Q. Heat wave can prove to be fatal. What preparations should people living in heat-prone regions do to reduce its adverse impact?

A. They should keep a watch on daily temperature forecast during the heat wave season, which begins by the mid-March and stays till June, even extending up to July in some cases. If the maximum temperature is predicted to be 43 degrees and above, they should avoid stepping out between 12 noon and 4 PM. If it's important to go out, they must wear cover their head with a dupatta/hat/helmet/umbrella. They should drink adequate water, say a glass full every half an hour. Wearing loose, light coloured cotton clothes also help.

Q. Which are the most vulnerable sections of the population? What special care should be taken to help them tide over a heat wave?

A. People who work outdoors or indulge in heavy physical activity such as construction workers, salespersons, coolies, brick kiln workers, rickshaw pullers, dhaba workers/cooks, slum dwellers, etc. form the most vulnerable section. They should avoid working during peak heat hours as even prolonged exposure to sunlight can cause heat exhaustion, even heat stroke. They should carry a bottle of water with them at all times, cover their heads and wear footwear. They should also take frequent breaks and take enough rest to ease their bodies.

Children, elderly and pregnant women are also more vulnerable than others. It's important to check on them as frequently as possible during extreme heat wave.

Q. Please tell us about some simple, cost effective techniques that can be used in houses in heat prone region?

A. Some very simple techniques like putting agricultural waste on roofs, cultivating a terrace garden or spreading a green net on roof and walls can bring down indoor temperatures substantially inside a house. The indigenous practice of lime coating and making roof ponds also help in reducing temperature. Barrier covers, which reflect heat rather than absorbing it, also help in reducing temperature. Gardens on rooftops, vertical wall gardens and plants on walls also reduce the felt temperatures.

Q. Is it possible to accurately forecast heat waves? How can this early warning communicated to communities?

A. Yes, it is possible to forecast heat waves. India Meteorological Department (IMD) forecasts heat wave days in advance. This gives enough time to the authorities to prepare for and alert the communities.

Warnings may be sent through e-mail, SMSes, WhatsApp groups. Media should be widely used to alert the communities about an imminent heat wave. Interpersonal communication through support groups and tertiary healthcare providers such as Auxiliary Nurses/Midwives (ANMs), Accredited Social Health Activists (ASHA), Anganwadi workers, Mahila Arogya Samiti is an effective way of communicating about heat wave, its adverse effects and ways to deal with them. Mobile public service announcements on loudspeakers on very hot days should also be done.

Q. Will the intensity of heat waves increase in the future if the current trend continues? What measures should be taken by the cities to enhance their heat resilience?

A. Yes, studies show that the intensity and frequency of heat waves are likely to increase in the future.



Cities should go for major plantation drives and develop gardens as they provide shade from the sun. Educational institutions should alter their timings and function from 7 AM to 11 AM. Similarly, markets should remain closed during peak heat hours.

Civic bodies should ensure that there is no electricity breakdown during peak hours. Labour laws should be strictly implemented; work timings should be restricted to morning and evening hours; arrangements for cool shelters and safe drinking water should be done at public places.

Authorities should promote the use of alternative fuels to minimize air pollution. Use of bicycles should be promoted.

Q. When, Why & How was the Nagpur Heat Action Plan prepared?

A. Nagpur experiences intense heat wave for at least 30-50 days every summer season. In the last 10 years, the city has grown exponentially in terms of infrastructure and population, thus leading to water scarcity and deforestation. The Nagpur Heat Action Plan was made in 2015 to prepare the city for heat waves.

At a workshop organized by the Public Health Department of Maharashtra on Preparedness for Climate Change in May, 2015, experts stressed upon the need to take collective action for battling the heat wave and its increasing intensity and

frequency. Six cities – Nagpur, Chandrapur, Gondia, Akola, Jalgaon and Nanded – were selected for preparing their Heat Action Plans (HAPs) in line with the Ahmedabad HAP and knowledge gained in this workshop. Nagpur Corporation was asked to take the lead role.

The Plan was prepared in coordination with NDMA, Indian Institute of Public Health (IIPH), Ahmedabad and National Research Development Corporation.

Q. How did the Plan help the city improve its heat wave preparedness?

A. The Plan strengthened inter-departmental coordination, monitoring and reporting of preparedness activities, heat-induced illnesses and deaths. It also helped increase community awareness and widespread use of preventive measures, both at community and authoritative levels. It helped in enhancing the capacity of medical professionals and health care workers in diagnosing and treating cases of heat illnesses. All these measures substantially reducing the heat-induced mortality as compared to previous years.

Q. Is the Nagpur Corporation ready to face the heat wave this year?

Yes. A meeting of all stakeholders has already been held and activities planned for the upcoming heat wave season 2018. •



Are you prepared for the **HEAT WAVE?**

TAKE THE FOLLOWING PRECAUTIONS

- Drink sufficient water - even if not thirsty.
- Use ORS (Oral Rehydration Solution), homemade drinks like lassi, torani (rice water) lemon water, buttermilk, etc. to keep yourself hydrated.
- Keep updated with local weather news through Phone, TV, Radio, Newspaper.
- Wear lightweight, light-coloured, loose, cotton clothes.
- Cover your head: Use a cloth, hat or umbrella.
- Keep animals in shade and give them plenty of water to drink.
- Do not leave children or pets in parked vehicles - as they may get affected by Heat Wave.

