

COLD WAVE ACTION PLAN

Prevention and Management of
Cold Wave and Frost



Revenue & Disaster Management Department
(Disaster Management Cell)
Haryana New Secretariat, Sector 17
Chandigarh

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D.O. No. R.M./2025/306

राजस्व एवं आपदा प्रबंधन,
शहरी स्थानीय निकाय एवं
नागरिक उड्डयन मंत्री, हरियाणा ।

Revenue & Disaster Management,
Urban Local Bodies &
Civil Aviation Minister, Haryana

Dated, Chandigarh 07/11/2025

Message

The State of Haryana is committed to ensuring the safety and well-being of every citizen, especially during extreme weather conditions. Cold waves pose a serious risk to vulnerable sections of society including the elderly, children, persons with disabilities, outdoor workers, and the homeless. With changing climatic patterns, the frequency and intensity of extreme cold weather events have increased, making it imperative for us to strengthen our preparedness and response mechanisms.

The Revenue and Disaster Management Department has developed a comprehensive Cold Wave Action Plan to guide key stakeholder departments, district administrations, and field functionaries in taking timely and coordinated measures for preparedness, response, and mitigation. This plan emphasizes inter-departmental coordination, community awareness, enhanced healthcare readiness, and the continuous availability of essential services to prevent loss of life and reduce hardship during severe cold spells.

I urge all Deputy Commissioners, line departments, disaster management authorities, and community organizations to ensure effective implementation of this plan with utmost sincerity and efficiency at every level. A resilient and compassionate response will help us protect lives, support the vulnerable, and maintain continuity of essential services during extreme weather.

Together, we must remain vigilant and proactive to safeguard our people during the winter season. Let us collectively strive to build a safer, well-prepared, and resilient Haryana.


(Vipul Goel)

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Date 02/12/2025

Message

The State of Haryana, due to its geographical and climatic conditions, experiences varying degrees of cold wave and frost during the winter season. These cold wave conditions often result in significant hardship to vulnerable sections of society, including the elderly, children, outdoor workers, and the homeless, and also have adverse impacts on livestock, crops and other allied sectors of a state.

Recognizing the increasing frequency, intensity, and impact of cold waves in recent years, the Government of India has emphasized the need for all States to formulate comprehensive and actionable plans to mitigate their effects. In this context, the **Department of Revenue and Disaster Management, Haryana**, has prepared the Cold Wave Action Plan for the State of Haryana.

This Action Plan provides a systematic framework for preparedness, mitigation, response, and recovery measures aimed at minimizing the adverse impacts of cold wave and frost conditions. It clearly defines the roles and responsibilities of various departments and agencies at the State, district, and local levels, thereby ensuring timely coordination and effective implementation of preventive and responsive actions.

The Plan has been developed through a consultative process involving key stakeholder departments, the India Meteorological Department (IMD), district administrations, and field-level functionaries. Their valuable suggestions and inputs have been incorporated to make the plan practical, comprehensive, and implementable.

It is hoped that this Action Plan will serve as a guiding document for all concerned authorities to enhance preparedness, minimize loss of lives and livelihoods, and ensure effective management of cold wave conditions across the State.

Suggestions and feedback for further improvement of this Action Plan are welcome and may kindly be shared with the Department of Revenue and Disaster Management, Haryana.

(Dr. Sumita Misra)

1

Introduction and Background

1.1 Introduction:

A Cold wave is a meteorological phenomenon characterized by a sudden and significant drop in temperature over a short period of time. Their duration can range from several days to few weeks, contingent upon the geography and climatic conditions of the region. The India Meteorological Department, defines cold wave (for plains) as a condition in which two or more stations in a subdivision report a departure of minimum temperature from normal between $\leq -4.5^{\circ}\text{C}$ to $^{\circ}6.4\text{C}$ (with an actual minimum temperature $\leq 10^{\circ}\text{C}$) **or** an actual minimum temperature between $> 2^{\circ}\text{C}$ to 4°C for atleast two consecutive days. A Severe Cold Wave is defined when two or more stations in a subdivision report a departure of minimum temperature from normal $\leq -6.5^{\circ}\text{C}$ (with an actual minimum temperature $\leq 10^{\circ}\text{C}$) or an actual minimum temperature between $\leq 2^{\circ}\text{C}$ for at least two consecutive days. Cold wave has significant impacts on human health, Agriculture, livestock's, infrastructure, environment and other allied sector.

India's 'core cold wave zone' covers Punjab, Himachal Pradesh, Ladakh, Jammu & Kashmir, Uttarakhand, Delhi, Haryana, Rajasthan, Uttar Pradesh, Gujarat, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, West Bengal, Odisha and Telangana. Cold waves are common in the plains of north India with foggy conditions that prevail during the winter season for several days or weeks at a stretch. It affects the day-to-day life of human and livestock. During a cold wave, common issues like electricity failures and health issues are reported. Electric sparking/fire incidences are also common during the winters due to excess load on the supply systems and unsafe heating measures.

1.2 Trends of Cold Wave in Haryana

In Haryana, Cold waves are predominantly experienced during the month of December to February, when minimum temperatures drop to very low levels, especially over the northern parts of India. According to the document titled "Statement on Climate for the state of Haryana for 2023" (jointly prepared by office of Climate Research and Services, India Meteorological Department, Pune (Ministry of Earth sciences) and the Government of Haryana) the state has witnessed the regional climate variability especially with reference to weather parameters like; temperature and rainfall which has huge impact on various sectors like Agriculture, Health, Power, Water Management and many other critical domains.

The State averaged annual mean land surface air temperature (22.7°C) during 2023 was -0.33°C cooler than its Long Period Average (LPA) for the period 1981-2010 thus making it the 35th coolest year on record for the state since 1901. The annual maximum temperature averaged over the state

agriculture and horticulture crops, forest, livestock, fisheries, water supply, power supply, tourism, transportation, economy and livelihood system of the State. No deaths have been reported from past five years due to cold wave in the state and no compensation have been distributed on account of damage to crops due to cold wave in the state from 2015-2022. In Rabi crops 2023, total 30004.96 ha. affected by the cold wave and Rs 210034727/- have been sanctioned in the state.

1.4 Vulnerable Group of population

Extreme variation in temperature does not impact all people equally. Some people are more vulnerable and its impacts than others. It is important to identify the more vulnerable areas and populations of the State in order to establish priorities and minimum thresholds for alerts and activities. Incorporating information about vulnerable population groups within the State will help planners create effective, targeted strategies for reaching and protecting these groups. This will make the Cold wave action plan more robust and equitable for all of the State residents. Following may be considered as vulnerable group:

- a) Young children
- b) Pregnant Women & Nursing mothers
- c) Older people mainly above the age of 60
- d) Below Poverty Line (BPL) families with no or poor housing conditions
- e) Infirm, isolated, and destitute
- f) People with pre-existing medical conditions (e.g., cardiovascular and respiratory illness, diabetes), people on certain medications
- g) People with limited mobility, impairment of thermoregulatory capacity and reduced ability to perceive changes in temperature.
- h) People engaged in outdoor occupations like vegetable vendors, rickshaw puller, daily wage workers, and roadside kiosk operators etc.

Once people at risk have been identified special care and interventions need to be implemented through the local health care and social services. It is important that those who are susceptible can be easily identified for outreach services. Possible methods of identification include local community groups and social service and active registration of individuals with a general practitioner or social services

1.5 Necessity of Cold Wave Action Plan

An increasing trend of Cold Wave in the State, it remains a challenge for disaster managers to take standardized preventive, preparedness, and mitigation measures to cope up with cold wave disaster. So, there is a dire need to prepare Cold Wave Action Plan in the State for improving the capacity of the States to deal with cold wave in a planned manner. The Cold wave action plan will help in take timely action for prevention, preparedness and mitigation measures to safeguard human lives, livestock and wildlife.

2.1 Early Warning and Forecast

The term 'early warning' is used in many fields to describe the provision of information on an emerging dangerous circumstances where that information can enable action in advance to reduce the risks involved. Early warning systems exist for natural geophysical, meteorological and biological hazards, complex socio-political emergencies, industrial hazards, personal health risks and many other related hazards.¹

India Meteorological Department (IMD), Ministry of Earth Sciences, is the nodal agency for providing current and forecast weather information, including warnings for all weather related hazards for optimum operation of weather- sensitive activities. It provides warning against severe weather phenomena like tropical cyclones, squally winds, heavy rainfall/snow, thunder-squall, hailstorm, dust storms, heat/ cold wave, warm night, fog, cold wave, cold day, ground frost, etc. It also provides real time data and weather prediction of maximum/minimum temperature, extreme temperatures, and alerts for vulnerable cities/rural areas.

IMD issues forecasts and warnings for all weather-related hazards in short to medium range (valid for then extend five days) every day as a part of its multi-hazard early warning system. These warnings, updated four times a day, are available at http://www.imd.gov.in/pages/allindia_wxfcbulletin.php.

A new system of exclusively temperature variation-related warnings has been introduced with effect from 03 April 2017. These warnings, valid for the next 5(five) days, are issued around 1600 hours IST daily and are provided to all concerned authorities (Departments of Health, Revenue & Disaster Management, Indian Red Cross and Indian Medical Association, NDMA etc.) for taking suitable action at their end. A bulletin in extended range with outlook for the next two weeks (for all hazards including Cold wave) is issued every Thursday (available at <http://www.imd.gov.in/pages/extended.php>).

In addition to the above, Climate Forecast System based forecasts maps of daily maximum temperatures and their departures from normal for the next 21 days (issued every Thursday) are also available on IMD website.

From 2016, IMD has introduced a system of issuing seasonal temperature outlooks for the next three months. For 2017, the first outlook valid for March to May was issued on 28 February 2017; and the second one valid for April to June was issued on 02 April 2017. These seasonal outlooks are issued

¹ NIDM (2014). Early warnings - National Institute of Disaster Management. https://nidm.gov.in/easindia2014/err/pdf/themes_issue/technology/early_warnings.pdf

in the form of a press release on the IMD website, and through electronic and print media. These are also provided to all concerned Chief Secretaries, Disaster Managers, General Public and to the health sector/department through the India Medical Association (IMA).

The operational system of weather forecasts and warnings is summarized in Figure 2.1

Figure 2.1: Operational System of Weather Forecasts and Warnings

Temperature Forecasting: Specific Range, Time Duration and Area

Now Casting
(Leading time/validity
of 3 to 6- hours)

**Short to Medium
Range**
(Leading time/validity
of 1 to 5- days)

Extended Range
(Leading time/validity
upto 2 weeks)

Seasonal Range
(Leading time/validity
upto 3 months)

Source: National Guidelines for Preparation of Action Plan - Prevention and Management of Cold Wave and Frost (2021) by National Disaster Management Authority

2.2 Identification of Color Signals for Cold Alert

IMD currently follows a single system of issuing warnings for the entire country through a color code system as given below (Figure-2.2). This system advises on the severity of an expected Cold hazard. However, threshold assessments carried out in different parts of the country tells us that there are different cut-off points that determine the warning signals appropriate for a specific state/region. The States should, therefore, carry out their respective threshold assessments for mortality and provide the information to IMD so that it can provide specific warning alerts to those States.

Figure 2.2: Color code early warning

Color Code	Alert	Warnings	Impact	Suggested Action
Green (No action)	Normal day	Minimum temperatures are near normal	Comfortable temperature.	No precautionary action required.
Yellow Alert (Be updated)	Cold Wave Alert	Cold wave conditions in isolated areas persist for two days.	Moderate temperature. Chilly winds may aggravate cold at time. Cold is tolerable but mild health concern for vulnerable people. (Infants, pregnant women, elderly, people with chronic diseases etc.)	Avoid prolonged exposure to cold. Wear several layers of loose fitting, light weight; warm woolen clothing rather than one layer of heavy cloth. Cover your head, neck, hands and toes adequately as majority of heat loss occurs through these body parts.
Orange Alert (Be prepared)	Severe Cold Wave Alert	(I) Severe cold wave conditions persist for two days.	An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get	Listen to radio; watch TV, read newspaper for weather updates/ forecasts. Wear insulated/waterproof shoes. Moisturise your skin regularly with

- Undertake carry out mass awareness campaign in local languages and to inform and educate the public on Cold Wave Do's and Don'ts

3.2 Mitigation Measures

It is important to prepare mitigation measures for cold waves and develop time bound strategies accordingly. Some of the important mitigation measures are as mentioned below

3.2.1 Agriculture Sector Prevention and Mitigation Measures: Farmers are to provide high irrigation as per need, immediately prune damaged tips of branches or shoot, burn leaves, waste material in the orchard to create smoke and manage rejuvenation of damaged crops through pruning, dead material, application of extra dose of fertilizer through foliar sprays. Some important mitigation measures are

- Sprinkler irrigation to release latent heat of fusion by releasing heat into the surrounding air through condensation of water droplets
- Cultivation of cold/frost resistant plants/crops/ varieties in frost prone areas should be popularized to minimize crop loss;
- Application of growth regulators and chemicals to enhance resistance to cold stress may also prove helpful;
- Mixed cropping of vegetables, viz., tomato, brinjal with a tall crop like mustard / pigeon pea will provide necessary shelter against cold winds;

3.2.2 Health Sector – Prevention and Mitigation Measures: In order to minimize cold weather health impacts, high risk groups like senior citizens (>65 yrs) / young children (0 to 5 yrs), homeless citizens, persons with chronic illness (cardiac/respiratory), and psychiatrically debilitated should be given extra care. Also, extra effort needs to be given to the sick, injured, and wounded individuals as they are very susceptible to cold injuries. Director/In-charge of Hospitals CHCs and PHCs in all States/Districts should ensure that the following measures are in place:

- A detailed action plan to tackle cold wave illnesses well in advance of winter months;
- Need for updating cold wave health action plan, and issuing advisories for hospital preparedness, surveillance and weekly monitoring, including capacity building;
- Standard Operating procedures to tackle all levels of cold-related illnesses.
- Develop a standard cold wave Treatment Protocol
- Identify surge capacities and mark the beds dedicated to cold wave affected patients
- Ensure adequate arrangements of staff, beds, essential medicines and equipment
- Primary health centers must refer the patients to the higher facility only after ensuring
- Adequate stabilization and basic definitive care;
- All cases of cold-related illnesses (suspected or confirmed) should be reported to IDSP (Integrated Disease Surveillance Programme) unit of the district.
- Ensuring display of IEC at all the Health Facilities.

3.2.3 Animal Husbandry Sector – Prevention and Mitigation Measures: Some of the preventive measures that can help reduce the impact of cold weather include:

- Improving livestock feeding practice and dietary additives.
- Selecting animal breeds especially fit for the weather conditions of the area.
- Use of high-quality forage or pastures.
- Fat supplementation in ration.
- Construction of climate smart sheds that allow maximum sunlight during winters and low radiation during summers.
- Covering the animals' especially smaller ruminants during cold days.
- Cover the animal habitat from all sides during the night to avoid direct exposure of animals to cold winds; and
- Using some bedding materials such as dry straw under animals during winters

Veterinary infrastructure and expertise need to be arranged/upgraded by the States which may also include:

- Arrangement of mineral mixtures, lifesaving drugs, fluids and other medicines and equipments
- in veterinary hospitals at all times
- Activation of mobile veterinary units
- Conducting awareness programmes in respect of cold management of animals
- Identifying disposal sites for dead animals
- Liaison with other stakeholders/agencies wherever required

3.2.4 Homeless and Urban Poor: The urban poor and migratory labourers who are homeless are especially vulnerable to cold waves. In that, the subgroups of aged, children, substance-abusers are especially vulnerable to cold wave spells. As the migration from rural to urban areas increases each year there is an overall deficit in housing and shelters for the urban poor. Following activities are undertaken to mitigate cold weather impacts on urban poor

- To provide shelter to the homeless in Rain Baseras/Vishram Grah throughout the year
- To provide a comfortable stay with basic facilities for homeless residents;
- To put up shelters at a strategic potential location for meeting the requirement of shelterless
- To make additional arrangements during the winter season under "Winter Action Plan"
- To make arrangements to shift homeless from open area roadsides to nearest shelter during winter season under rescue program

3.2.5 Education: Prevention and Mitigation Measure: Cold wave conditions can significantly affect school students, especially younger children, by increasing the risk of hypothermia, respiratory infections, and reduced concentration due to extreme cold. Early morning exposure during travel to school can further heighten health risks. Some of the important mitigation measures are as mentioned below.

- Modify school timings during severe cold wave conditions to avoid early morning exposure of students.
- Follow advisories issued by the District Administration, IMD, and Health Department
- Conduct basic training for teachers on identifying and responding to cold wave emergencies (hypothermia, frostbite).
- **School Preparedness Measures :**
 - Conduct morning briefings/awareness sessions on cold wave safety, early signs of hypothermia, and protective measures.
 - Advise parents to ensure children wear adequate winter clothing including sweaters, caps, gloves, and warm socks.
 - Monitor younger children (pre-primary and primary), children with disabilities, and those with poor health conditions for cold-related stress.
 - Allow flexibility in school uniform rules to permit additional warm clothing.
 - Ensure that outdoor activities, morning assemblies, and sports are minimized during peak cold wave periods.
 - Check that classrooms are properly sealed against cold winds.
 - Ensure availability of safe drinking warm water
 - Display IEC material (posters, notices) on staying warm and safe.
 - Provide warm spaces/rest rooms for students feeling unwell.
 - Maintain a record of emergency contacts.
 - Keep basic first-aid facilities available for cold-related illnesses.

3.2.6 Development and Panchayat – Prevention and Mitigation Measures

- Conduct awareness campaigns in coordination with the Health Department & Anganwadi workers in rural areas to educate the communities about the risks of cold weather, including frostbite, hypothermia, and respiratory illness.
- In areas where permanent shelters are not available, the department can coordinate with local Panchayats to open temporary shelters or warming centers for the homeless, elderly, and vulnerable populations. These shelters should have adequate heating, bedding, and food.
- Use community centers, Panchayat Bhawan (village halls), and school buildings as temporary shelters during the cold wave. These spaces should be made available to the public, particularly at night, for those who do not have proper housing.
- Distribute thermal blankets, woolen clothing, and socks to families who are unable to afford them. This could be done through Panchayat offices, local community organizations, or rural health workers.
- To instruct Gram Panchayat to include cold wave Dos and Don'ts as one of the agenda in Gram Sabha meeting and identify vulnerable groups particularly at risk during cold weather.
- Ensure daily dissemination of cold wave alerts over whatsapp group/SMS to village heads, or on radio, social media for precautions.

3.3 Preparedness Measures:

Effective preparedness measures need to be put in place by the State/District authorities for effective response in order to meet the challenges posed by Cold Wave and related threats. In general, preparedness activities can be characterized as the human component of pre-disaster hazard management. Training and public education are the most common preparedness activities, and, when properly applied, they have great potential to help people survive disasters. Although preparedness activities do little to prevent a disaster from occurring, they are very effective at ensuring that people know what to do once the disaster has happened. Following are the major areas of interventions with some broad action points towards preparedness.

3.3.1 Public awareness and Community/Family preparedness

Community/Family should be adequately prepared for meeting the challenges of cold wave. Community/local level preparedness plan, and IEC activities to create awareness among the community members is essential. As part of the awareness of the community & families, special focus should be paid to the following dos and don'ts.

- i. Assess the risks where you live, work, study and (kids) play
- ii. Assess individual capabilities and needs
- iii. Keep emergency contact and health information available
- iv. Make hazard-specific plans about whether to stay or go and where to shelter (applicable for other hazards as well). Learn the location of cold wave-shelters or temporary housing.
- v. Respond to early warnings issued by competent authority. Learn and participate in your community's early warning systems and practise regular emergency mock-drills
- vi. Construct your home in a safe place in compliance with building regulations • Take annual home maintenance measures to keep your home safe
- vii. Know your building well and identify places that may fail due to snowfall or heavy precipitation
- viii. As keeping hot-pots and other heating mechanisms is common during cold wave, practices home fire prevention methods
- ix. Protect your domestic animals and livestock
- x. In case of power outage, take fire precautions
- xi. After hazard impact, after making sure you're safe, help those around you

3.3.2 India Disaster Resource Network (IDRN)

India Disaster Resource Network is a web enabled data base that to collect and collate information on resources available at State/District for emergency response. It enhances the decision making capabilities of Government functionaries to mobilize resources for response in the shortest possible time. Inventory on IDRN portal must be updated and utilized with special emphasis on resources available with PSUs and Pvt Sector Industries.

3.3.3 Involvement of Aapda Mitra

Under Centrally sponsored scheme "Up-Scaling of Aapda Mitra" 2100 volunteers have been trained in districts namely Faridabad, Nuh, Gurugram, Sonipat, Rewari, Kurukshetra, Yamunanagar

and Panchkula. These volunteers may be utilized in cold wave preparedness and response activities in other districts volunteers from Red Cross Society, Nehru Yuva Kendra, NGOs may be contacted as and when required by district authorities.

3.3.4 Inter-department coordination

Effective coordination can be maintained between state departments and inter-departments such as IMD, Health, Animal, Agriculture, ULB etc for effectively manage and mitigate the impact of cold waves in the state. By leveraging each department capabilities, the state government ensures that resources are readily available, essential services remain uninterrupted and support extended to the most vulnerable population. This collaborative approach helps build resilience and enhance the community ability to endure and recover from cold wave impacts.

3.3.5 Inclusion of NGO's and Social Organisation

Non-Governmental Organisation and Social Organisations play a vital role in preparing for and responding to cold waves in the state. Their involvement complements government efforts in providing additional resources, manpower and community outreach. They provide essential winter items such as blankets, jackets, socks etc and also provide temporary shelters & other relief items to those in need. The inclusion of NGO's and social organisations in cold wave preparedness significantly strengthens the overall response framework.

3.3.6 Updation of Cold Wave Action Plan

Cold wave Action Plan is living document and updated whenever it feels necessary to the State Government.

4 Capacity Building & Information Education and Communication (IEC) - Strategy for Management of Cold Waves

4.1. Capacity Building and Training Programmes

Capacity building and training are vital components of the strategy to effectively address and mitigate the impacts of cold wave in the state in a better manner. These activities aim to enhance the skills, knowledge and resources of individual, communities, and institution involved in cold wave preparedness and response. By equipping stakeholders with the necessary expertise, the state can better prevent cold wave related fatalities reducing risks, and improve the resilience of vulnerable population. The following capacity building and training measures needs to be facilitated for cold wave management in the state:

- Integration of short and medium-term training courses on cold-wave management sessions within other official training programmes for senior and mid-level government officials from various line departments
- Training for Shelter Management including arrangement of essential supplies and medicines for local administration;
- Awareness campaigns;
- Training of health workers under Integrated Disease Surveillance Programme (IDSP);
- Training programmes for officials of agriculture and animal husbandry department to enhance their skills to protect crops, livestock, and the livelihood of the farmers from cold wave impact.

4.2 Information, Education, and Communication (IEC)

An Information, Education, and Communication (IEC) strategy is essential for increasing public awareness and encouraging proactive behaviors during cold wave conditions. The goal is to disseminate relevant and timely information to different segments of the population, including the

poor, homeless, elderly, disabled, pregnant or lactating mothers, children, etc who are more vulnerable to cold wave impacts.

4.3 IEC Activities and Awareness Campaigns

The IEC strategy for Haryana should focus on using multiple communication channels such as print, electronic, and social media, along with community level outreach activities to disseminate messages about cold wave safety measures. These messages could include guidelines on how to stay warm, recognize signs of hypothermia, and access health services. Additionally, promoting the use of local networks like Panchayats, schools, and healthcare centers can help in reaching the grassroots level. Following activities are suggestive in nature and should be amended as per the need of the hour at State and District/ local level:

State Level

the State may -

- Carry out mass awareness campaigns in local languages;
- Develop media and communication strategies and plans considering local socio-economic and behavioural factors;
- Mass awareness campaigns involving print, TV, radio, social media etc reaching out to all the vulnerable areas.
- Involve recognized artists of the state, such as folk singers, dancers, and other performers in cold management.
- Publish IEC print material, radio jingles in regional language.
- Conduct regular awareness programmes in all the districts;
- Conduct regular training programmes for interpersonal communication activities; and
- Identification and first-aid of cold disorders in both human beings and animals need to be addressed under all campaigns and State programmes on cold waves.

District/Local Level

The local authorities, due to their proximity to the cold wave prone population are in the best position for caring out IEC activities and last mile delivery of messages. They may -

- Conduct regular training and awareness programmes including demonstrating the safety tips to the vulnerable population in their local language, using local customs, cultural aspects and behaviour patterns. Local artists and art-forms may be utilised for entertainment based education programmes;
- IEC tools and materials (such as flyers, calendars, comic books, etc.) should be made available for field level functionaries for dissemination to local people;
- Strengthen and involve local communities such as RWAs, Municipal bodies, NGOs, Civil Society Organizations, Panchayati Raj Institutions, Anganwadis, Gram Panchayats, Police, medical professionals and other local networks;

- Put up display boards with colour coding for Cold Wave alert at different location.
- Closed group messaging services such as WhatsApp may be extensively used by these local community groups;
- Give special emphasis to dissemination in locations of “closed homogeneous groups” such as schools, colleges, offices, cinema houses, construction sites, agricultural markets etc.;
- Carry out special awareness programmes for specific occupations (farmers, horticulturists, livestock rearers, construction & other outdoor workers, etc.) and vulnerable groups making them aware of impacts and the preventive and curative measures to be adopted in the event of a cold wave.

5

Role & Responsibilities and Implementation Plan

5.1 Role of State Government:

State has notified Haryana State Disaster Management Authority (HSDMA) & State Executive Committee (SEC) at State level & District Disaster Management Authority (DDMA) at all Districts level under Disaster Management Act 2005 for effective mitigation, prevention, preparedness activities, prompt search & rescue activities, timely disbursement of relief materials and rehabilitation measures activities for disaster management. Department of Revenue & Disaster Management have established Disaster Management Cell (DMC) to assist SDMA & DDMA's. DMC also focuses on capacity building, participation and empowerment of these stakeholders in Cold wave/ frost management.

5.2 Departmental Responsibilities and Implementation Plan for Cold wave management.

Cold wave mitigation measure involves a multi-sectoral and multi-dimensional administrative approach involving activities such as provision for drinking water, temporary shelter, rescheduling the working hours, providing better emergency medical services/public health and so on. This Action plan provides a framework for implementation, coordination and evaluation of activities undertaken by Departments/Authorities in their respective area to reduce the adverse impact of extreme Cold wave. Role and responsibilities of various departments for effective management of cold wave in the state are identified and mentioned at table 5.2.1

5.2.1 Standard Operating Procedures (Department-wise)

Role of SDMA/Revenue & Disaster Management Department in the Cold Wave management			
S. No.	Actions	Operating Procedure	Stakeholders
Risk Analysis			
1.	Prepare cold wave risk map / hotspot	<ul style="list-style-type: none"> SDMA to constitute a Technical Working Group on Cold Waves to analyze cold wave risk in state to identify hotspots. SDMA to engage line department, technical institutions, CSOs/NGOs in technical working group. 	<ul style="list-style-type: none"> Agriculture Health Animal Husbandry Education

S. No.	Actions	Operating Procedure	Stakeholders
		<ul style="list-style-type: none"> - Analysis of cold wave risk should include vulnerability/ capacity (socio economic data, population data, housing profile, livelihoods /work profile, health facility, agriculture and livestock), past cold wave data and impact and climate change projections. - Risk analysis should identify vulnerable areas, sectors and elements at risk. 	
S. No.	Actions	Operating Procedure	Stakeholders
Risk Analysis			
1		<ul style="list-style-type: none"> - SDMA to share cold wave hotspot/risk map with line department and DDMA. - SDMA to analyze actual cold wave and its impact against the cold wave risk map after the cold wave season. - SDMA to periodically update cold wave hotspot/risk map. 	
Early Warning			
2.	Disseminate seasonal winter (temperature) forecast, issued by IMD	<ul style="list-style-type: none"> - SDMA to receive seasonal forecast for winter from Indian Meteorological Department, Meteorological Centre, Chandigarh. - SDMA to analyze seasonal forecast in terms of geographical focus and sectors and identify probable impact and mitigation measures. - SDMA to disseminate seasonal forecast to concerned stakeholders and DDMA. - DDMA to disseminate forecast together with preparedness measures. - SDMA to receive 5-day and Daily weather (severe cold wave/fog) forecast for winter from IMD. - SDMA to identify areas in forecasted cold wave/fog zone and probable impact of different sectors/line department. - SDMA to communicate forecast together with Dos and Don'ts. - SDMA to disseminate cold wave/fog forecast to public through social media, newspaper, TV Network and radio - SDMA to corroborate 5-day and daily forecast of cold wave/fog with ground level information after the cold wave. - SDMA to compile the corroboration of forecast and actual situation for updating of cold wave risk map/ hotspots. 	<ul style="list-style-type: none"> • IMD • Agriculture • Health and Family Welfare • Animal Husbandry • Education • Urban Local Bodies • Rural Dev/ Panchayati Raj • Transport • Food and Civil supply • Education • Police/Traffic • Labour • Social Welfare • Information, Public relations & Languages

S. No.	Actions	Operating Procedure	Stakeholders
Preparedness			
3	Review and coordinate cold wave / fog preparedness measures	<p>SDMA to organize state level meeting to review preparedness for cold wave/fog response.</p> <p>SDMA meeting should review seasons forecast, identified cold wave hot spots, measures for response, coordination arrangement, preparedness of Disaster Management Cell relief measures, cold wave damage assessment system and mitigation measures.</p> <ul style="list-style-type: none"> - SDMA to organize the meeting in November, preferably after the seasonal forecast by IMD. - SDMA to conduct awareness on Dos and Don'ts related to cold wave/fog through TV, radio, social media, newspaper, social event, public discussion. - SDMA Promulgate National Disaster Alert Portal & Sachet Mobile, App meant for receiving early warnings/alerts related to disasters being disseminated by Alert Generating agencies/ SDMAs over CAP Platform. The android & ios version of Mobile App (Sachet) is available on Google Play & Apple App Store respectively. The link for National Disaster Alert portal & Mobile App are as under: - <ul style="list-style-type: none"> i. CAP National Disaster Alert portal: https://sachet.ndma.gov.in/ ii. CAP Mobile App (sachet): For Android: bit.ly/3Fb3Osz and for iOS : apple.co/3ywcV3f - SDMA to create a database of relief related NGOs/CSOs and volunteers at district and block level. - SDMA should organize a lesson learnt workshop on cold waves/fog after winter to draw key lessons from districts/ground level response. - SDMA to document good practices on cold wave preparedness and response. The learning's shall be widely shared with ATIs. 	<ul style="list-style-type: none"> - Health and Family Welfare - Animal Husbandry - Agriculture - Transport - Education - Panchayati Raj - Police - Food and Civil Supply - Urban Development - Social Welfare - Public relation, Information
Mitigation			
4	Coordinate cold wave risk mitigation measures into development interventions and relief and rehabilitation policy	<ul style="list-style-type: none"> - SDMA should coordinate with line department to identify measures for cold wave risk mitigation in development interventions of line departments. - SDMA to consolidate cold wave mitigation measures and prepare action plan for its implementation in partnership with line departments. - SDMA to coordinate with agriculture department for identification and promotion of cold wave risk mitigation measures in agriculture. It can include crop diversification, adoption of new locally appropriate measure, crop insurance, etc. - SDMA to coordinate with health department for strengthening cold wave medical response capacity at district and sub-district level. 	<ul style="list-style-type: none"> - DDM - Agriculture - Health and Family Welfare - Animal Husbandry - Public works - Urban local Bodies - Development and Panchayati Raj - Public Information

S. No.	Actions	Operating Procedure	Stakeholders
		<ul style="list-style-type: none"> - SDMA to coordinate with public works/housing, urban development, civil engineering college/ university, engineer and architect association to look into feasibility of housing design for cold wave risk mitigation. - SDMA in collaboration with State ATI, NIDM, universities and NGOs/CSO to develop short- term course on cold wave/fog management for capacity building of stakeholders. - SDMA to develop/adapt state specific cold wave Do's and Don'ts. 	
Risk Analysis			
5.	Integration of cold wave as one of the hazards in the DDMP as per the NDMA guidance provided in Model framework for DDMP	<ul style="list-style-type: none"> - Include cold wave in HRVCA process and identify risks to life, livelihoods and wellbeing of the people in district. In this regard ensure following: - Include cold wave in the vulnerability assessment of district with special reference to socio-economic profile, population data, vulnerable housing, agriculture and livestock. - Include cold wave as climate related hazard and conduct systematic hazard assessment indicating history, geographical hotspots of cold wave, frequency and intensity. - Conduct detailed capacity assessment including departmental capacities, local self-government institutions' (PRIs and ULBs) capacities and community capacities with special reference to coping and adaptive capacities for cold wave. - Finalize cold wave risk analysis and identify sector/ department related disaster risks with special reference to cold wave through multiple stakeholders' coordination. 	<ul style="list-style-type: none"> - District Administration - Agriculture - Health and Family Welfare - Animal Husbandry - Education - Urban Local Bodies - Panchayati Raj - ULBs - Block Panchayats - CSR Foundations - Civil Society Organizations

Role of DDMA in the Cold Wave management			
S. No.	Action	Operating Procedure	Coordinating Agencies
Capacity Building			
	Capacity building for risk analysis	<ul style="list-style-type: none"> - Build capacities of line departments, block, Panchayat and ULBs for conducting detailed needs assessment with special reference to cold wave. - Monitor the process and outcome of risk analysis at line departments, block, Panchayat and ULBs in timely manner and integrate findings into DDMP. - Encourage line departments, block, Panchayat and ULBs to take up enhanced preparedness and mitigation measures with special reference to cold wave. 	District Administration in coordination with: <ul style="list-style-type: none"> - Agriculture - Health and Family Welfare - Animal Husbandry - Panchayat & Development - ULBs - Civil Society Organizations - Red Cross
Early Warning			
	Disseminate seasonal forecast, issued by IMD	<ul style="list-style-type: none"> - DDMA to receive seasonal forecast for winter from meteorological centre, Chandigarh. - DDMA to analyze seasonal forecast in terms of geographical focus and sectors. - DDMA to disseminate seasonal forecast to concerned sectors at district levels, blocks and urban bodies. - DDMA to disseminate forecast together with preparedness measures based on analysis. 	<ul style="list-style-type: none"> - Agriculture - Health and Family Welfare - Animal Husbandry - Education - Urban Development - Panchayati Raj - Municipalities

Role of DDMA in the Cold Wave management			
S. No.	Action	Operating Procedure	Coordinating Agencies
Early Warning			
1.	Disseminate weather (severe cold wave/fog) warning to response related agencies and community	<ul style="list-style-type: none"> - DDMA to receive 5 day and Daily weather (severe cold wave/fog) forecast for winter from IMD/DDMA - DDMA to communicate cold wave/ fog forecast to line departments, blocks and local bodies related to cold wave/fog zone along with Dos and Don'ts. - Block to disseminate cold wave forecast and Dos and Don'ts to Gram Panchayats falling under forecast zone. - ULBs to disseminate cold wave/fog forecast and Dos and Don'ts to municipal wards. - DDMA to disseminate cold wave/fog forecast to public through social media, Local Cable TV Network, FM, Community Radio, social media. - DDMA/Block to coordinate with relief/response related NGOs, for volunteer mobilization and relief work. 	<ul style="list-style-type: none"> - Health and Family Welfare - Education - Panchayat and development - Police - Local TV channel(s) and FM Radio Station(s) - ULBs
Preparedness			
	Implement cold wave /fog preparedness measures	<ul style="list-style-type: none"> - DDMA to organize a meeting of members and first responders to review cold wave/fog preparedness in the district. - In the meeting, review overall cold wave preparedness including dissemination plan for 5- day/daily forecast for cold wave/fog; response plan of departments; temporary shelters for poor and Homeless; relief distribution plan and stocks; plan for assessment of agriculture sector; animal husbandry, etcetera; plan for activation of emergency operation centre/control room during severe cold wave forecast days; emergency directory of response agencies and volunteers. 	<ul style="list-style-type: none"> - Health and Family Welfare - Animal Husbandry Department - Education Department - Panchayati Raj Department - Police - Other agencies.

Role of DDMA in the Cold Wave management

S. No	Action	Operating Procedure	Coordinating Agencies
Preparedness			
	Build capacities of line departments	<ul style="list-style-type: none"> - As guided in NDMA's model framework on DDMP (chapter six) formulate capacity building plan of line departments, ULBs and PRIs on climate change adaptation, mitigation and main streaming of disaster risk reduction including cold wave as important hazard. - Considering cold wave as one of the climate related hazard, designed conduct training for stakeholders/ Departments, ULBs and PRIs on climate change adaptation, mitigation and mainstreaming of disaster risk reduction including cold wave as important hazard, as per the guidance of Mainstreaming Disaster Risk Reduction & Climate Change Adaptation in District Level Planning. 	District administration in coordination with all the stakeholders at district level/ Development block/MC
Mitigation			
	Monitor the progress of integration of risk reduction measures in departmental plans	<ul style="list-style-type: none"> - Provide guidance to line departments, ULBs and PRIs for the mainstreaming of disaster risk reduction in development planning with special reference to mitigation measures for cold wave. - Monitor the progress of the work taken up by departments for mitigation of cold wave through DDMA meetings as per the guidance provided in article 32 of DM Act2005. 	District Administration

Role of Development and Panchayats Department in the Cold Wave management

S. No.	Action	Operating Procedure	Coordinating Agencies
Risk Analysis			
	Inclusion of cold wave in village plans	<ul style="list-style-type: none"> - Development of guidelines for conducting risk analysis at Gram Panchayat level with special reference to climate change and multiple hazards including cold wave. - Inclusion of cold wave in the hazard mapping indicating frequency, intensity, timeline and impact. - Inclusion of vulnerability factors in risk analysis with special reference to cold wave including vulnerable housing, nutrition status, agriculture and livestock. - To identify cold wave susceptible Gram Panchayats based on past cases and seasonal forecast by IMD/SDMA. - To identify vulnerable groups (age, income, profession) in the cold wave zones. 	<ul style="list-style-type: none"> - Gram Panchayats - SHGs and CBOs - Front line Workers - Agro Producer Companies - Local Dairy Centre(s) - Fair Price Shop Vendors
Early Warning			
	Disseminate warning to GPs	<ul style="list-style-type: none"> - Panchayati Raj department to receive 5- day and daily weather (severe cold /fog) forecast from SDMA or DDMA or IMD. - Panchayati Raj department to analyze the forecast and identify Gram Panchayats in forecasted zone. - Panchayati Raj department to disseminate cold wave forecast and Dos and Don'ts to identified Gram Panchayats. - Panchayati Raj department to activate an emergency control room/facility for the forecasted duration. 	<ul style="list-style-type: none"> • Blocks Gram Panchayats • Response/relief related NGOs

Role of Development and Panchayats Department in the Cold Wave management

S. No.	Action	Operating Procedure	Coordinating Agencies
Preparedness			
	Prepare cold wave emergency response plan	<ul style="list-style-type: none"> - To take stock of emergency response and relief resources (firewood, blankets, food), volunteers and its location. - To prepare coordination and communication. - Identify structure for cold wave emergency response. 	<ul style="list-style-type: none"> - D/M/A - Blocks - Gram Panchayats
	Create mass awareness	<ul style="list-style-type: none"> - To create mass awareness on Dos and Don'ts related to cold wave at block and gram panchayat level. - To disseminate Do's and Don'ts related to cold wave through local cable channel, radio and community level cultural events. - To instruct Gram Panchayat to include coldwave Dos and Don'ts as one of the agenda in gram Sabha meeting. - Gram Sabha to identify vulnerable groups for cold wave and plan support mechanism. - Gram Sabha to discuss the risk of toxic fumes due to lack of proper ventilation, especially during night-time. 	<ul style="list-style-type: none"> - Blocks - Gram Panchayats - Cable Operators/ Radio - Cultural events related organizations
Response			
	Information dissemination	<ul style="list-style-type: none"> - Ensure daily dissemination of cold wave alerts over whatsapp group/SMS to village heads, or on radio, social media for precautions. 	<ul style="list-style-type: none"> - Public relation
	Fuel, Food and Warm Clothing	<ul style="list-style-type: none"> - Provision adequate fuel supply, food supply and quilts/blankets at night shelters (Rain Basera) for homeless/stranded people 	<ul style="list-style-type: none"> - Food and Civil Supplies Department

Role of Development and Panchayats Department in the Cold Wave management			
S. No.	Action	Operating Procedure	Coordinating Agencies
Mitigation			
	Mainstreaming of disaster risk reduction	<ol style="list-style-type: none"> 1. Improve the capacities and reduce vulnerability at District Planning Committee level with special reference to climate related hazards including coldwave. 2. Ensure inclusion of mitigation measures and risk informed development planning based on the local vulnerabilities and needs in sectoral plans at Zilla Parishad and District Planning Committee (DPC) level with special reference to climate related hazards including cold wave. 	<ul style="list-style-type: none"> - Zilla Parishad - District Planning Committee
	Inclusion with GPDP	<p>Based on the risk analysis conducted for village disaster management plan, include climate adaptation and special mitigation measures in gram Panchayat development plans as per guidance provided in NDMP 2019 and guidelines for preparing Gram Panchayat Development Plans for:</p> <ol style="list-style-type: none"> 1. Resilient housing 2. Resilient agriculture 3. Nutrition 4. Livestock development 	Gram Panchayats

Role of Urban Local Bodies in the Cold Wave management

S. No.	Action	Operating Procedure	Coordinating Agencies
Risk Analysis			
	Conduct HRVA of city as per the Guidance provided by Ministry of Housing & Urban Poverty Alleviation, in Disaster Risk Reduction.	<ul style="list-style-type: none"> - Prepare hazard and exposure database. - Conduct spatial mapping of the vulnerable population to climate related hazards including cold wave. - Map vulnerability profile with special reference to the buildings made from temporary material and damaged housing. - Conduct risk assessment with special reference to the identification of risks to life, livelihoods and wellbeing of population based on combined effect of hazard, exposure database, spatial population vulnerability mapping and - building vulnerability mapping. 	<ul style="list-style-type: none"> - UIBs - Academic Research Institutions - Disaster Management Professionals - GIS and Technocrat Professionals
Early Warning			
	Disseminate weather (severe cold wave/fog) warning to ward level officials	<ul style="list-style-type: none"> - Urban bodies to receive 5-day and daily weather (severe cold /fog) forecast from SDMA or DDMA or IMD. - Urban local bodies to disseminate cold wave forecast and Dos and Don'ts to ward level functionaries. - Urban local bodies to disseminate cold wave forecast through social media, FM radio, local cable operators and newspaper(s). - Urban local bodies to reschedule large-scale public gathering events in open areas during extreme cold wave durations. 	<ul style="list-style-type: none"> - SDMA/DDMA - IMD - Ward Functionaries - Local Cable Operators - FM Radio(s) - Response/relief related NGOs

Role of Urban Local Bodies in the Cold Wave management			
S. No.	Action	Operating Procedure	Coordinating Agencies
Preparedness			
	Prepare cold wave emergency response plan	<ul style="list-style-type: none"> - Urban local bodies to take stock of cold wave emergency response and relief resources (firewood, blankets, food), volunteers, night shelters (Rain Bassera) and its capacity, facility and location. - Urban local bodies to review large-scale public gathering events planned in open areas during extreme cold wave forecasted period. - Urban local bodies to review cold wave response measures for slum areas. - Urban local bodies to disseminate Dos and Don'ts related to cold wave through social media, FM radio, local cable operators and newspaper. - Urban local bodies to update emergency contact details. - Urban local bodies to check cold wave/fog preparedness features in the public transport: repair broken windows and door, fog light, fixing speed limit, signage in foggy condition, reschedule local transport timing and duration. 	<ul style="list-style-type: none"> - Ward Functionaries - Volunteers/ NGOs/ charitable Trusts - FM Radio(s) - Red Cross - Cable Operators
Response			
	Cold wave information dissemination	<ul style="list-style-type: none"> - Urban local bodies to identify cold wave vulnerable spots based on age, income, profession, etc. - Ensure daily dissemination of cold wave alerts through local cable operator and over website for precautions. 	-

Role of Animal Husbandry Department in the Cold Wave management

S. No.	Action	Operating Procedure	Coordinating Agencies
Preparedness			
	Preparedness for cold wave response for animals	<ul style="list-style-type: none"> - Animal husbandry department to identify hot spots based on past cases and seasonal cold wave forecasts by IMD/SDMA. - Prepare emergency response plan for stray animals in case of extreme cold wave. - Identify/create emergency shelter facilities for stray animals for protection from cold waves. - Take stock of fodder and related items for animals in case of long spell of cold waves affecting supply chain of fodder. - Check stock of medicines at veterinary hospitals and stockpile if required. - Create/update emergency contact list related to animal husbandry. 	<ul style="list-style-type: none"> - PRI - ULB
Response			
	Response to Cold Wave	<ul style="list-style-type: none"> - Ensure veterinary hospitals cater to ill animals in case of mass impact of cold wave on animals. - Conduct quick damage needs assessment of livestock for relief distribution. 	Panchayati Raj Department
	Emergency Shelter	<ul style="list-style-type: none"> - Make provision of fodder for stray animals during cold wave in emergency shelter. 	<ul style="list-style-type: none"> - ULB - PRI
Mitigation			
	Non-structural	<ul style="list-style-type: none"> - Promote livestock insurance schemes. - Ensure storage facilities and availability of nutritious fodder during cold wave. 	<ul style="list-style-type: none"> - Animal Husbandry - Panchayati Raj Department - Gram Panchayats
	Structural	<ul style="list-style-type: none"> - Development of low cost climate resilient cattle sheds from MGNREGS, RKVI and NRLM under GPDP. 	

Role of Agriculture Department in the Cold Wave management

Action	Operating Procedure	Coordinating Agencies
Risk Analysis		
Climate risk assessment of the agriculture	<ul style="list-style-type: none"> Identify impact of climate related hazards including cold wave on the agricultural practices, cropping patterns and productivity. Identify coping and adaptive capacity of the local farming capacities with special reference to climate related hazards including coldwave. Integrate existing district agriculture contingency plan with DDMP. 	<ul style="list-style-type: none"> Agriculture Department KVKs Agriculture Universities DDMA
Early Warning		
Disseminate 5-Day and Daily weather (severe cold wave/fog)	<ul style="list-style-type: none"> Agriculture Department to receive 5-day and daily weather (severe cold /fog) forecast from SDMA or DDMA or IMD. Agriculture Department to disseminate coldwave forecast and Dos and Don'ts to farmers. 	<ul style="list-style-type: none"> Agriculture Department SDMA/ DDMA/ IMD
Preparedness		
Create awareness on Dos and Don'ts related to crop for cold wave/ frost	<ul style="list-style-type: none"> Agriculture department to develop UP specific Dos and Don'ts related to crop for coldwave/frost. The Dos and Don'ts should have visual representations. Disseminate the Dos and Don'ts through TV& radio especially programme like Krishi darshan or related. Disseminate Dos and Don'ts through social/cultural events. 	<ul style="list-style-type: none"> Agriculture Department Panchayati Raj Department Gram Panchayat Cable TV operators Radio
Relief to Affected Farmers	<ul style="list-style-type: none"> Coordinate with DDMA, KVK and helpline for immediate technical assistance to farmers for crop protection in case of major impact. Conduct quick damage needs assessment to crop damage for relief distribution. 	Agriculture Department
Mitigation		
Non- structural mitigation (Research)	<ul style="list-style-type: none"> Promote research, monitoring and information systems consistent with the anticipated GACC impacts Develop Database management system relating to Climate Change & cold wave 	Agriculture Department

- Moisture your skin regularly with oil, petroleum jelly or body cream.
- Move pet-animals indoors. Likewise, protect livestock or domestic animals from cold weather by moving them inside.

In the case of Hypothermia

- Get the person into a warm place and change his/her clothes.
- Warm the person's body with skin-to-skin contact, dry layers of blankets, clothes, towels, or sheets.
- Give warm drinks to help increase body temperature. Do not give alcohol.
- Seek medical attention if the condition worsens.

Don'ts

- Avoid prolonged exposure to cold.
- Don't drink alcohol. It reduces your body temperature; it actually narrows your blood vessels, particularly those in the hands, which can increase the risk of hypothermia.
- Do not massage the frostbitten area. This can cause more damage.
- Do not ignore shivering. It is an important first sign that the body is losing heat and a signal to quickly return indoors.
- Do not give the affected person any fluids unless fully alert.

Agriculture

Cold wave and frost damages crops by causing illnesses including diseases of black rust (wheat, barley etc) white rust (mustard, radish, cauliflower, broccoli, turnip, cabbage etc), late blight (Potato, tomato etc) etc. Cold wave also causes a variety of physiological disruptions in germination, growth, flowering, yield and storage life.

Dos

- Undertake curative measures for cold illness/injury like spray with Bordeaux mixture or Copper Oxi-chloride, phosphorus (P) and potassium (K) to activate better root growth.
- Do light and frequent surface irrigations (high specific heat of water) during the cold wave wherever it is possible.
- Use sprinkler irrigation (condensation-release heat into surrounding), if possible.
- Cultivate cold/frost resistant, plants/crops/varieties.
- Use intercropping farming in the horticulture and orchards.
- Mixed cropping of vegetables, viz., tomato, brinjal with a tall crop like mustard will provide necessary shelter against cold winds (shelter against cold).
- Increase radiation absorption and provide warmer thermal regime through covering of nursery and young fruit plants during winter by plastic or by making thatches (jhuggies) of straw or sarkanda grass etc.

- Organic mulching (for thermal insulation).
- Planting of wind breaks/shelter belts (to reduce wind speed).

Don'ts

- Do not apply nutrient to soil during cold weather, plant can't uptake due to poor root activity.
- Do not disturb the soil; loose surface reduces the conduction of heat from lower surface.

Animal Husbandry

During Cold wave animals and livestock require more food for sustenance as the energy requirement goes up. Extreme variations in temperature may affect the fertility rate in animals during the optimum breeding season for buffaloes /cattle.

Do's

- Cover the animal habitat from all sides during night in order to avoid direct exposure of cold winds.
- Protect and cover livestock and poultry from cold weather by keeping them inside.
- Improving livestock feeding practice and dietary additives.
- Use of high-quality forage or pastures.
- Provide fat supplements and concentrate ration.
- Construction of climate smart sheds which allow maximum sunlight during winters and low radiation during summers.
- Apply some bedding materials such as dry straw under animals during winters.
- In Poultry, keep the chicks warm by providing artificial light in the poultry sheds.

Don'ts

- Do not leave animals tied/roam in open area during cold wave.
- Avoid animal fair (pashumela) during cold wave.
- Avoid giving cold feed and cold water to the animals.
- Avoid dampness and smoke in animal shelter.



क्या आप शीत लहर / ठंड से बचाव के लिए तैयार हैं ?



शीतलहर और ठंड से बचने के उपाय

- मौसम संबंधी जानकारी के लिए रेडियो सुनें, टी.वी. देखें या समाचार-पत्र पढ़ें।
- यथा संभव घर के अंदर रहें, ठंडी हवा से बचने के लिए केवल आवश्यक यात्रा ही करें।
- भारी कपड़ों की एक परत के बजाय हल्के, ढीले, विंडप्रूफ ऊनी कपड़ों की कई परत पहनें। बाहर निकलते समय अपने सिर, चेहरे, हाथों और पैरों को भी उपयुक्त गर्म कपड़े से ढकें।
- शरीर में ऊष्मा का प्रवाह बनाए रखने के लिए पोष्टिक आहार जैसे कि विटामिन C से भरपूर स्वस्थ आहार, फल एवं सब्जियों का सेवन करें।
- शरीर का तापमान बनाए रखने के लिए नियमित रूप से गर्म तरल पदार्थ पिएं।
- अपने शरीर को सूखा रखें। यदि गीले हो जाएं, तो शरीर की गर्मी को बचाने के लिए शीघ्रता से कपड़े बदलें।
- बुजुर्गों और बच्चों की ठीक से देखभाल करें और अनावश्यक घर से बाहर न जाने दें।
- शराब का सेवन न करें। यह आपके शरीर के तापमान को कम करता है।
- कंपकपी को नजरअंदाज न करें। यह एक महत्वपूर्ण पहला संकेत है कि शरीर गर्मी खो रहा है और प्रभावित व्यक्ति को तुरंत घर के अंदर ले आना चाहिए।
- लंबे समय तक ठंड के संपर्क में आने से त्वचा का रंग पीला, सख्त और सुन्न हो सकता है और अंगूठे, पैर की अंगुलियां, नाक या कान की लोब जैसी शरीर की खुली जगहों पर काले घाव हो सकते हैं। यदि ऐसा हो, तो तुरंत डॉक्टर से संपर्क करें।
- कम तापमान में अपने पालतू जानवरों का ध्यान रखें और उन्हें घर के अंदर रखें। यदि कोई स्वास्थ्य समस्या उत्पन्न हो, तो पशु चिकित्सक से संपर्क करें।
- राज्य सरकार द्वारा ठंड के समय शहरी क्षेत्रों में बेघरों के लिए रैन बसेरों का प्रबंध किया जाता है, जहाँ कंबल/बिस्तर आदि उपलब्ध रहते हैं। जरूरत के समय इन सुविधाओं का उपयोग करके ठंड से बचा जा सकता है।

हाइपोथर्मिया (शरीर के तापमान के कम होने) की स्थिति में, निम्नलिखित कदम तुरंत उठाएं

- व्यक्ति को गर्म स्थान पर ले जाएं और कपड़े बदलें।
- व्यक्ति के शरीर को त्वचा से त्वचा के संपर्क, सूखे कंबल, कपड़े, तौलिये या चादरों से गर्म करें।
- शरीर के तापमान को बढ़ाने में मदद के लिए गर्म पेय दें। शराब न दें।
- यदि स्थिति बिगड़ती है तो तुरंत चिकित्सा सहायता प्राप्त करें।

**आपातकालीन
स्थिति में
112 डायल
करें**

राजस्व एवं आपदा प्रबंधन विभाग, हरियाणा द्वारा जनहित में जारी |

