सत्यमेव जयते

Government of Rajasthan

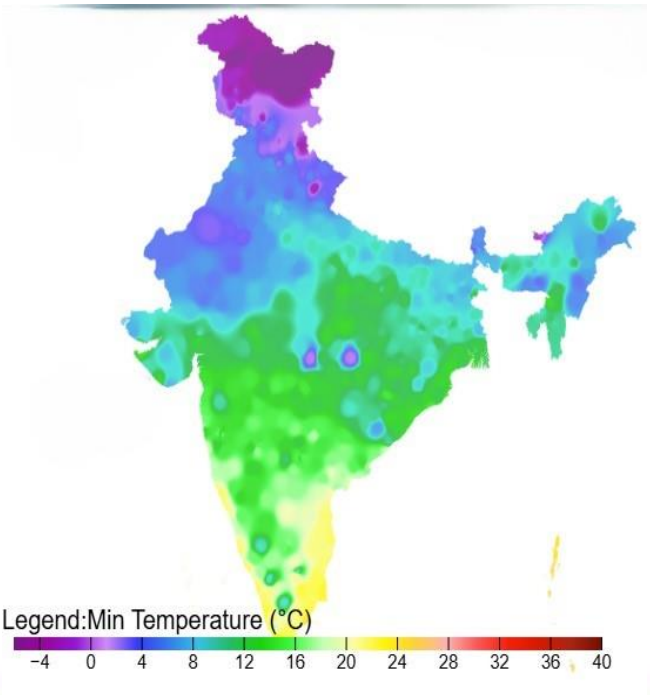
COLD WAVE ACTION PLAN 2025

DISASTER MANAGEMENT RELIEF & CIVIL DEFENCE

Executive Summary

The Cold Wave Action Plan for Rajasthan addresses the growing threat posed by cold waves, a significant weather hazard in India. A cold wave is characterized by abnormally low temperatures significantly below normal minimum levels, occurring between November and February. Its slow onset and severe impacts on human and animal lives have earned it the designation of a "Silent Disaster."

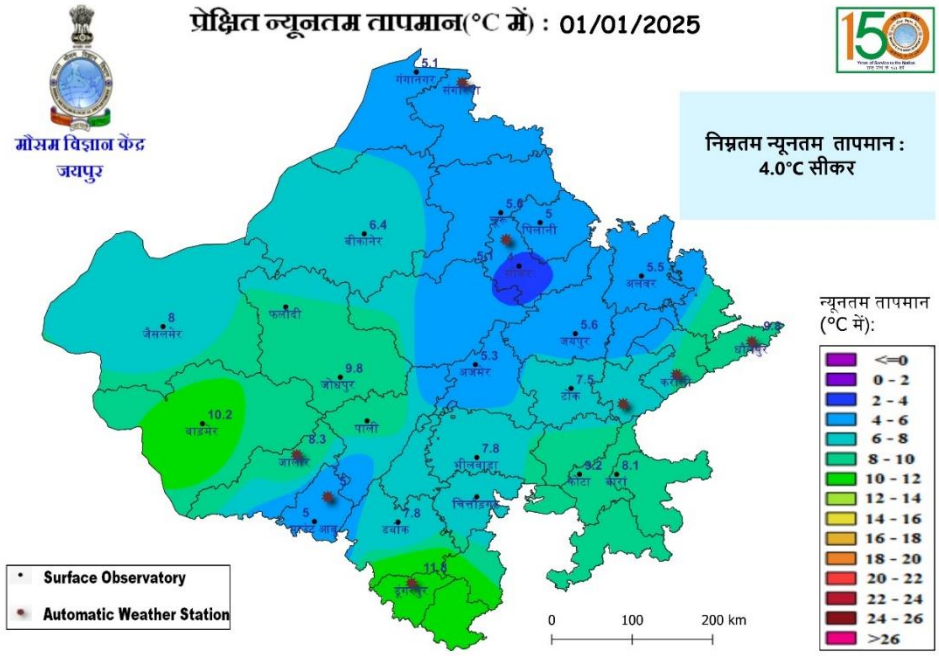
Recent years have witnessed an increase in the frequency and intensity of cold waves due to climate variability and global weather changes. Rajasthan, along with other states such as Punjab, Haryana, and Uttar Pradesh, experiences extreme cold conditions, further intensified by atmospheric factors like wind chill and frost. These conditions cause physiological stress, hypothermia, frostbite, and sometimes fatalities, disproportionately affecting vulnerable groups such as the elderly, children, and the homeless.



(SOURCE IMD WEBSITE)

Cold waves also disrupt essential community infrastructure, including power supply, water distribution, and public transportation, while posing challenges to agricultural activities and livestock health. The declining trend in winter mean minimum temperatures over Rajasthan amplifies these vulnerabilities.

The Cold Wave Action Plan is designed to enable state and local administrators to effectively mitigate the impacts of cold waves. It focuses on preparedness, timely interventions, and community awareness to reduce health risks and infrastructure disruptions. By implementing preventive measures, coordinating with various stakeholders, and ensuring timely dissemination of information, the plan aims to enhance resilience and minimize the adverse effects of cold waves on human lives, livestock, and essential services in Rajasthan.



(source IMD)

1. INTRODUCTION

There is a strong and global scientific consensus that the climate is changing, and this change will lead to shifts in weather patterns, including an increase in the frequency, intensity, and duration of cold waves. Cold waves are a significant cause of death and morbidity worldwide, with their impacts expected to intensify due to climate change.

India is also experiencing the consequences of these climatic shifts, with cold waves becoming more frequent and severe, particularly in northern states such as Rajasthan. These extreme weather events pose a grave threat to human health, infrastructure, and livelihoods, leading to increased cases of hypothermia, frostbite, and other cold-related health complications.

Cold waves in Rajasthan have caused widespread disruptions and significant loss of life over the years, ranking among the most dangerous natural disasters for the region. To address these challenges, the Cold Wave Action Plan of Rajasthan for 2024 adopts two primary criteria:

1. **Identifying cold wave-affected areas** based on observed minimum daily temperatures and deviations from normal, as suggested by the India Meteorological Department (IMD).
2. **Using a wind chill index** that combines temperature and wind speed to calculate the perceived cold stress on human bodies, considering thresholds suitable for Rajasthan's climatic conditions.

The increased occurrence of cold wave conditions in recent years has amplified the risks to human life and public health. Providing advance information about possible cold wave conditions can significantly reduce these risks by enabling timely precautionary actions. This will also allow government agencies to stay

vigilant, plan outreach activities, and implement measures to protect public health and safety.

What is a Cold Wave?

A cold wave is defined as a condition of abnormally low atmospheric temperature that induces physiological stress, sometimes leading to fatalities. Quantitatively, a cold wave can be defined based on deviations from normal minimum temperatures. Depending on the degree of deviation, a cold wave can be classified as moderate or severe.

As per the India Meteorological Department (IMD), the following criteria are used to declare cold wave conditions:

i)	**Based on Departure from Normal** ➢ **Cold Wave**: Departure from normal minimum temperature is between -4.5°C to -6.4°C. ➢ **Severe Cold Wave**: Departure from normal minimum temperature is >-6.4°C.
ii)	**Based on Actual Maximum Temperature** ➢ For plains: Cold wave conditions prevail if the minimum temperature is ≤4°C. ➢ For hilly regions: Cold wave conditions prevail if the minimum temperature is ≤0°C.
	Combined Criteria Cold wave is declared if the actual minimum temperature is ≤10°C for plains and the departure from normal minimum temperature is ≥4.5°C.

To declare a cold wave, at least one of the above criteria must be met for at least two consecutive days. A cold wave is officially declared on the second day. The Department of Disaster Management, Relief and Civil Defence (DMRCD), Government of Rajasthan, adheres to the above guidelines to monitor and declare cold wave conditions in the state.

Colour codes for Cold wave Alert: currently follows a single system of issuing warnings for the entire country through colour coded system as given below. The Cold waves are classified into different severity categories bearing on the temperatures with colour codes as given in Table 1:

Colour Code	Alert	Impact
Green **(No action)**	Normal night	Minimum temperatures are near normal
Yellow Alert **(Be updated)**	Cold Alert	Cold wave conditions at isolated pockets persist on 2 nights
Orange Alert **(Be prepared)**	Severe Cold Alert for the night	(i) Severe cold wave conditions persist for 2 days (ii) Though not severe, but cold wave persists for 4 nights or more
RedAlert **(Take Action)**	Extreme cold Alert for the night	(i) Severe cold wave persists for more than 2 nights (ii) (Total number of cold/severe cold wave nights exceeding 6 nights.

Colour Code Signal for Heat Wave Alert and Suggested Actions (NDMA 2019)

1.1 CLIMATE CHANGE AND EXTREME COLD IN RAJASTHAN

Background

Rajasthan, the largest state of India by land area and the eighth most populous, is characterized by extreme climatic conditions that include severe cold waves during the winter months. Over 80% of the state's population depends on agriculture, and 19% relies on animal husbandry, making these livelihoods highly susceptible to adverse climatic changes.

The Aravalli range divides the state into two distinct physiographic regions: the desert-dominated northwest and the agriculturally diverse southeast. While the northwest suffers from desert-like conditions, the southern regions are progressively transitioning into semi-arid and hilly deserts due to climate change. The vulnerability of the rural population is exacerbated by inadequate access to essential services like safe drinking water, nutrition, healthcare, and insulated housing, which are vital for mitigating the effects of extreme cold.

The impacts of cold waves are disproportionately felt by vulnerable groups such as children and the elderly. Children's developing bodies are more sensitive to extreme cold, leading to higher risks of respiratory illnesses, hypothermia, and frostbite. The elderly face increased susceptibility due to higher rates of pre-existing conditions, decreased mobility, and weaker physiological responses to extreme cold.

Cold waves are intensifying globally due to climate change, which leads to more extreme weather events. In Rajasthan, this has resulted in increased morbidity and mortality, disruptions to agricultural productivity, and adverse effects on livestock. Cold waves also place immense pressure on public health systems, highlighting the need for a robust action plan to address these challenges.

Situational analysis:

As per the Census 2011, Rajasthan spans an area of 342,239 sq. km with a total population of 6.86 crores (5.66% of India's population). More than two-thirds of the population resides in rural areas, where access to resources and infrastructure to combat extreme weather events is significantly limited. The Thar Desert, which covers 12 districts and constitutes 60% of the state's area, is home to 40% of the population.

Rajasthan has seen a sharp increase in challenges due to climate change, with cold waves becoming more severe and frequent in recent years. Rural areas are disproportionately affected due to limited awareness, lack of preparedness, and inadequate infrastructure to mitigate the impacts of extreme cold.

A rapid situational analysis was conducted to understand the community's perspective, specific needs, and gaps in addressing cold wave impacts. The study involved a cross-sectional survey of 150 households randomly selected across two blocks, supplemented by 10 key informant interviews (KIIs) and informal discussions.

Key findings include:

- **97%** of respondents reported harsher winters compared to previous years, with colder nights lasting longer.
- **88%** observed an increase in respiratory illnesses and other health issues such as hypothermia and frostbite, especially among children and the elderly.
- **85%** mentioned difficulties in protecting livestock, citing inadequate shelter and increased mortality due to extreme cold.
- Only **12%** of respondents were aware of cold wave warnings or preventive measures.
- **82%** reported that their homes lacked insulation or other basic protective measures against the cold.
- **72%** of respondents noted reduced crop productivity during winters, exacerbating food insecurity.

Local perceptions align with scientific evidence that climate change has led to more intense cold waves and unpredictable weather patterns. Informal discussions revealed that while people were aware of the colder conditions, they lacked the knowledge and resources to adapt effectively. Most respondents associated extreme cold with negative impacts on health, livestock, and livelihoods but did not have access to reliable information or assistance to mitigate these effects.

The dual burden of cold waves in rural Rajasthan stems from a lack of awareness and inadequate resources for prevention and adaptation. Vulnerable groups such as children, the elderly, and the economically disadvantaged are disproportionately affected, highlighting the urgent need for targeted interventions.

These findings underscore the critical importance of raising awareness, improving infrastructure, and strengthening community preparedness to mitigate the adverse impacts of cold waves. A systematic approach to collecting and analyzing data will enable policymakers and stakeholders to develop and implement effective action plans for the state's most vulnerable regions.

Indicators	Year	Unit	Rajasthan	India
Geographical Area	2011	Lakh sq.km	3.42	32.87
Population	2011	Crore	6.85	121.09
Decadal Growth Rate	2011	%	21.3	17.7
Population Density	2011	Population/sq.km	200	382
Urban Population to total population	2011	%	24.9	31.2
Scheduled caste Population	2011	%	17.8	16.6
Scheduled Tribe Population	2011	%	13.5	8.6
Sex Ration	2011	Females/1000 males	928	943
Child Sex Ratio (0-6 Years)	2011	Females Children per 1000 male children	888	919
Literacy Rate	2011	%	66.1	73.0
Literacy Rate (male)	2011	%	79.2	80.9
Literacy Rate (Female)	2011	%	52.1	64.6
Work Participation Rate	2011	%	43.6	39.8
Crude Birth Rate	2020*	Per 1000 midyear population	23.5	19.5
Crude Death Rate	2020*	Per 1000 midyear population	5.6	6.0
Infant Mortality Rate	2020*	Per 1000 live births	32	28
Maternal Mortality Ratio	2018-20*	Per Lakh Live Births	113	97
Life Expectancy Birth	2016-20*	Year	69.4	70.0

** SRS bulletin: Office of Registrar General of India*

1.2 HISTORY OF COLD WAVE IN RAJASTHAN'S DISTRICTS

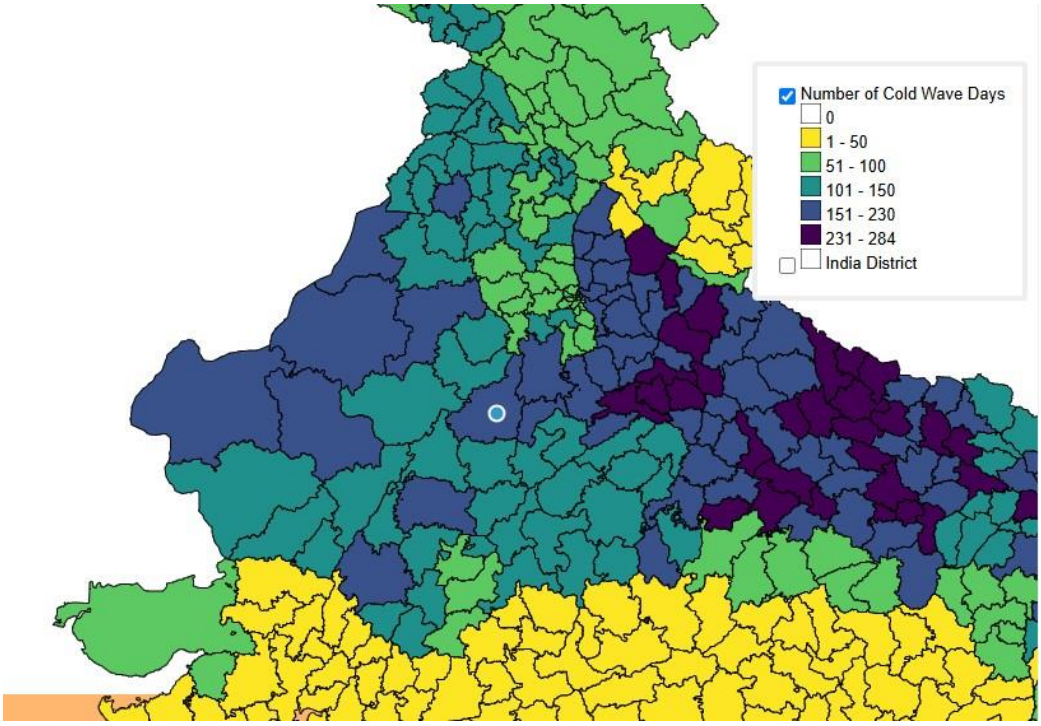
December and January are typically the coldest months in Rajasthan, with temperatures in certain areas dropping below freezing. Cold waves in Rajasthan often result in severe consequences for human health, livestock, agriculture, and infrastructure. Vulnerable populations such as children, the elderly, and those living in inadequately insulated housing, especially in rural and slum areas, face heightened risks of cold-related illnesses like hypothermia, frostbite, and respiratory diseases.

The impact of climate change has exacerbated the frequency and intensity of cold waves, necessitating a coordinated action plan to mitigate their effects. On January 13, 2020, Churu in Rajasthan recorded a minimum temperature of -4.9°C, one of the lowest in recent decades. This extreme event highlighted the growing intensity of cold waves in the state.

Cold waves in Rajasthan have historically led to increased hospital admissions due to cold-related illnesses and livestock mortality. Significant disruptions in agriculture due to frost and a decline in crop productivity have also been reported.

Analysis of historical data from 1969 to 2022 reveals the following trends in cold wave occurrences:

- The highest mean cold wave (CW) frequency is observed in January, with temperatures often plummeting below 5°C in districts like Churu, Sikar, and Ganganagar.
- December exhibits a moderate frequency of CW days, affecting western Rajasthan regions like Barmer and Jaisalmer.
- Districts such as Churu and Sikar frequently record sub-zero temperatures during peak winter months, causing widespread damage to crops like mustard and wheat, which are crucial for local economies.
- Rural areas are more severely impacted due to a lack of adequate infrastructure for heating and insufficient access to health facilities.



DATE	Station	Weather	Date	Station	Weather
20-DEC-23	Sikar	CW	3-Jan-24	Churu	SCD
22-DEC-23	Sikar	CW	4-Jan-24	Churu	SCD
20-DEC-23	Churu	CW	7-Jan-24	Churu	SCD
21-DEC-23	Churu	CW	8-Jan-24	Churu	SCD
30-DEC-23	Ganganagar	SCD	11-Jan-24	Churu	SCW SCD
31-DEC-23	Ganganagar	SCD	12-Jan-24	Churu	CW
3-JAN-24	Pilani	SCD	15-Jan-24	Churu	CW
5-JAN-24	Pilani	SCD	21-Jan-24	Churu	CW
7-JAN-24	Pilani	SCD	22-Jan-24	Churu	CW CD
9-JAN-24	Pilani	SCD	26-Jan-24	Churu	CW
10-JAN-24	Pilani	SCD	9-Feb-24	Churu	CW
11-JAN-24	Pilani	CW	1-Jan-24	Ganganagar	SCD
12-JAN-24	Pilani	CW	2-Jan-24	Ganganagar	SCD
14-JAN-24	Pilani	CW	3-Jan-24	Ganganagar	SCD
15-JAN-24	Pilani	CW	4-Jan-24	Ganganagar	SCD
19-JAN-24	Pilani	SCD	5-Jan-24	Ganganagar	SCD
21-JAN-24	Pilani	CW SCD	8-Jan-24	Ganganagar	SCD
22-JAN-24	Pilani	CW CD	9-Jan-24	Ganganagar	SCD
25-JAN-24	Pilani	CW CD	10-Jan-24	Ganganagar	SCD
3-JAN-24	Sikar	CW CD	11-Jan-24	Ganganagar	SCD
4-JAN-24	Sikar	SCW SCD	13-Jan-24	Ganganagar	SCD
5-JAN-24	Sikar	CW SCD	15-Jan-24	Ganganagar	SCD
6-JAN-24	Sikar	SCW SCD	18-Jan-24	Ganganagar	SCD
8-JAN-24	Sikar	CW CD	19-Jan-24	Ganganagar	SCD
10-JAN-24	Sikar	CW CD	21-Jan-24	Ganganagar	SCD
11-JAN-24	Sikar	CW	22-Jan-24	Ganganagar	SCD
12-JAN-24	Sikar	CW	23-Jan-24	Ganganagar	SCD
15-JAN-24	Sikar	CW	24-Jan-24	Ganganagar	SCD
21-JAN-24	Sikar	CW	25-Jan-24	Ganganagar	SCD
25-JAN-24	Sikar	CW	26-Jan-24	Ganganagar	SCD
8-FEB-24	Sikar	CW CD	3-Jan-24	Bikaner	SCD
9-FEB-24	Sikar	CW	4-Jan-24	Bikaner	SCD
11-FEB-24	Sikar	SCW	5-Jan-24	Bikaner	CW CD
15-FEB-24	Sikar	CW	7-Jan-24	Bikaner	SCD
23-FEB-24	Sikar	CW	8-Jan-24	Bikaner	SCD
29-FEB-24	Sikar	CW	9-Jan-24	Bikaner	SCD
			19-Jan-24	Bikaner	CW CD

CD- cold Day / SCD- Severe Cold Day

CW: Cold Wave / SCW: Severe Cold Wave

No. of cold Wave days measured in various IMD stations of Rajasthan in year 2023-2024

1.3 NECESSITY OF COLD WAVE ACTION PLAN

A coordinated multi-agency approach is crucial for effective management of cold waves in Rajasthan. Currently, the issue of cold waves is being addressed at an operational level, but it requires strategic intervention. Clear roles and responsibilities, strategic monitoring, and robust communication systems are necessary to ensure efficient cold wave management. Triggers for activation, data sharing across multiple agencies, and comprehensive mapping of cold wave impacts on vulnerable populations must be streamlined.

Previous efforts by the State Government to mitigate the adverse effects of cold waves—such as early warning systems and public awareness campaigns—have been significant but insufficient. The lack of a comprehensive action plan has led to recurring issues, including an increase in cold-related illnesses, crop damage, and livestock fatalities.

Data from past years illustrates the urgency of the situation:

- In **January 2020**, Rajasthan recorded one of its coldest winters, with temperatures in Churu dropping to -4.9°C, leading to multiple hospitalizations due to hypothermia and respiratory complications.
- In **2019**, several districts reported severe crop losses and livestock deaths, primarily in rural areas where access to preventive measures and healthcare is limited.

Cold waves significantly affect public health, agriculture, and livestock in Rajasthan, with rural populations being the most vulnerable due to inadequate infrastructure, limited access to resources, and poor awareness about cold wave preparedness. The impacts extend to:

- **Public Health**: Increased cases of hypothermia, frostbite, and respiratory diseases.
- **Agriculture**: Loss of winter crops like mustard and wheat, leading to economic instability.
- **Livestock**: Elevated mortality rates due to exposure to freezing temperatures.

After studying Cold Wave Action Plans from other states and incorporating best practices, Rajasthan has identified the urgent need for a comprehensive "Rajasthan Cold Wave Action Plan." This plan will focus on:

1. **Strategic Preparedness**: Establishing a multi-agency coordination framework with clear roles and responsibilities.
2. **Early Warning Systems**: Strengthening forecasting mechanisms and ensuring timely communication to the public.
3. **Public Awareness Campaigns**: Educating vulnerable populations about preventive measures.
4. **Resource Allocation**: Ensuring adequate availability of blankets, heating systems, and medical supplies in high-risk areas.

1.4 IMPACT OF COLD WAVE

Impact of Cold Wave on Life and Livelihood

Cold waves pose a significant threat to human life and livelihoods, particularly in a state like Rajasthan, where extreme temperature variations are common. Exposure to prolonged cold can lead to hypothermia, frostbite, and other cold-related illnesses, especially among vulnerable populations such as the elderly, children, and those living in poorly insulated or open housing. The rural and slum populations, who often lack adequate heating and protective clothing, are particularly susceptible.

When the human body is exposed to low temperatures for extended periods, its ability to maintain a stable internal temperature is compromised, leading to life-threatening conditions. Preventive measures, such as wearing multiple layers, consuming warm food, and staying in insulated spaces, are essential. However, access to these measures is often limited in rural and economically weaker sections of Rajasthan.

Cold waves also exacerbate respiratory ailments and increase the risk of cardiovascular diseases, particularly among those with pre-existing conditions. The impact is further intensified when extreme cold events persist for weeks, as a cessation of daily activities is not a feasible option for most of the population.

Impact of Cold Wave on Agriculture

Cold waves significantly affect agricultural productivity in Rajasthan, particularly during the rabi season. Prolonged exposure to cold temperatures damages crops, reduces yields, and affects crop quality.

- Frost Damage: Sensitive crops like mustard, wheat, and pulses are particularly vulnerable, as frost can lead to flower drop, reduced pollination, and eventual yield loss.
- Delayed Growth: Low temperatures slow the germination and growth of crops, disrupting the planting and harvesting cycles.
- Horticultural Losses: Fruits and vegetables are severely impacted, leading to economic losses for farmers dependent on these high-value crops.

The cumulative impact of these factors undermines the livelihoods of farmers, pushing many into debt cycles. Livestock-dependent communities also face challenges, as cold stress reduces milk production and increases animal mortality.

Loss of Human and Animal Life Due to Cold Waves

Cold waves have a profound impact on human and animal health in Rajasthan:

- Human Fatalities: Cold stress can lead to hypothermia and an increased incidence of respiratory diseases. Fatalities are most common among the elderly, homeless, and those with pre-existing health conditions.
- Animal Losses: Livestock are highly vulnerable to cold stress, with increased mortality rates due to frostbite, respiratory infections, and malnutrition. This leads to a significant economic burden on rural households dependent on animal husbandry.

Economic Impact

The cumulative impact of cold waves on health, agriculture, and labour hours results in significant economic losses for Rajasthan:

1. Increased healthcare costs due to cold-related illnesses.
2. Reduced agricultural output, leading to food insecurity and financial instability.
3. Loss of income among informal sector workers and farmers.

1.5 KEY STRATEGIES- RAJASTHAN COLD WAVE ACTION PLAN

1. **Monitoring Weather Conditions and Early Warning System**
   Establishing a reliable system to monitor cold weather conditions and initiating an Early Warning System (EWS) to alert stakeholders about predicted cold waves. This will ensure timely dissemination of information to all concerned agencies and the public.

2. **Public Awareness and Community Outreach**
   Building public awareness regarding the health risks of cold waves and promoting adaptive behaviors to prevent cold-related illnesses and fatalities. Special efforts will be made to reach vulnerable populations through door-to-door campaigns, posters, pamphlets, and mass media campaigns, including radio and digital platforms.

3. **Identifying Vulnerable Populations**
   Recognizing the vulnerable groups such as the elderly, children, outdoor workers, slum dwellers, and homeless individuals, and understanding the specific risks faced by each group. This will guide tailored interventions to reduce their susceptibility to cold waves.

4. **Developing Response Plans**
   Formulating agency-specific strategies and ensuring effective inter-agency coordination to address the health risks posed by cold waves. This will include operational planning for quick response during extreme cold events.

5. **Cold Wave Health Surveillance System**
   Establishing a Cold Wave Health Surveillance System to monitor and assess the impact of cold waves on public health, enabling prompt and targeted interventions during such events.

6. **Capacity Building of Health Professionals**
   Training healthcare professionals to identify and treat cold-related illnesses such as hypothermia and frostbite effectively. Enhancing their capacity to handle increased patient inflow during cold wave events.

7. **Reducing Cold Exposure and Promoting Adaptive Measures**
   Launching initiatives to reduce cold exposure by:

- Setting up temporary shelters and heating facilities in high-risk areas.
- Distributing blankets, warm clothing, and other essential supplies to vulnerable communities.
- Encouraging the use of weather-appropriate clothing and accessories.
- Providing access to warm food and beverages.

8. **Collaboration with Non-Governmental Organizations**
   Partnering with NGOs to expand outreach efforts, improve communication, and ensure assistance to the most affected communities. Collaborative efforts will amplify the impact of government initiatives.

9. **Evaluating and Updating the Cold Wave Action Plan**
   Regularly reviewing and updating the Cold Wave Action Plan based on

the assessment of past events and emerging challenges to improve preparedness and response mechanisms.

1.6 Purpose of Rajasthan Cold Wave Action Plan

The Rajasthan Cold Wave Action Plan aims to provide a comprehensive framework for the implementation, coordination, and evaluation of cold wave response activities in the state to reduce the adverse impacts of extreme cold events. The primary goal of the plan is to develop and disseminate cold wave health communication strategies targeted at vulnerable populations, including children, the elderly, outdoor workers, and the homeless, who are most at risk of cold-related illnesses.

This plan also focuses on fostering interdepartmental coordination to enhance collaboration among line departments for the effective implementation of the State Cold Wave Action Plan. The Rajasthan State Disaster Management Authority (RSDMA) has outlined Standard Operating Procedures for the prevention and management of cold-related illnesses to guide all stakeholders.

Key Components of the Cold Wave Action Plan

1. **Establishment of Early Warning Systems and Inter-Agency Coordination**
    - Developing a reliable Early Warning System to forecast and disseminate timely alerts about upcoming cold waves.
    - Defining clear roles and responsibilities for key departments, including health, social welfare, disaster management, and municipal authorities, ensuring coordinated action during cold wave events.
2. **Capacity Building and Training Programs**
    - Conducting specialized training programs for healthcare workers to recognize and manage cold-related illnesses such as hypothermia, frostbite, and respiratory disorders.

- Training first responders, community volunteers, and municipal staff to provide initial aid and manage emergency situations.
- Enhancing awareness among medical personnel about stabilizing patients suffering from severe cold exposure before referral to higher care centers.

3. **Public Awareness and Community Outreach**
    - Disseminating information on cold wave protection measures through print, electronic, and social media platforms.
    - Preparing and distributing Information, Education, and Communication (IEC) materials such as pamphlets, posters, and advertisements.
    - Broadcasting short films, public service announcements, and TV commercials on precautionary measures and treatment for cold-related illnesses.
4. **Collaboration with Non-Governmental Organizations and Civil Society**
    - Partnering with NGOs and community organizations to establish temporary shelters equipped with heating facilities, warm bedding, and blankets in high-risk areas.
    - Facilitating the distribution of warm clothing and food to vulnerable populations, particularly the homeless and daily wage workers.
    - Improving access to essential services, including enhanced water delivery systems and transportation for individuals in remote areas.
5. **Infrastructure Readiness and Resource Allocation**
    - Identifying and equipping public buildings, such as schools, community halls, and health centers, to serve as cold shelters during extreme events.
    - Allocating resources for emergency heating systems, blankets, and medical supplies to ensure timely response.

6. **Monitoring and Evaluation**
    - Regularly assessing the effectiveness of the Cold Wave Action Plan and incorporating lessons learned to improve preparedness and response mechanisms.
    - Monitoring cold wave trends and their impacts to update strategies for reducing risks and enhancing resilience among affected communities.

1.7 OBJECTIVES OF RAJASTHAN COLD WAVE ACTION PLAN

- Formulate and execute comprehensive strategies to address and mitigate the impacts of cold waves on human health, livestock, agriculture, and livelihoods.
- Collaborate with the India Meteorological Department (IMD) to establish an efficient early warning system, ensuring timely alerts to populations at risk and activating responsive actions by relevant departments.
- Promote health interventions and infrastructural adjustments to reduce cold-related illnesses such as hypothermia, frostbite, and respiratory issues.
- Conduct training sessions for officials across various departments to ensure effective coordination and implementation of the Cold Wave Action Plan.
- Enhance infrastructure, such as temporary shelters and heating systems, while promoting adaptive measures to mitigate the adverse effects of cold waves on health, livelihoods, and the economy.

- Map regions and communities most vulnerable to cold wave impacts to focus preventive and responsive actions on these areas.
- Implement health awareness campaigns and provide essential resources such as warm clothing, heating systems, and medical aid to decrease cold-related health risks.
- Strengthen community-level preparedness by fostering awareness, improving infrastructure, and ensuring the availability of essential services during cold waves.
- Build long-term resilience through policy interventions, sustainable development practices, and technological innovations aimed at minimizing the adverse effects of cold waves on the state.

1.8 RAJASTHAN COLD WAVE ALERT WARNING SYSTEMS

An effective early warning system for cold waves can significantly improve preparedness, reduce vulnerability, and save lives and livelihoods. These systems must be built on accurate scientific knowledge, robust forecasting methods, and strong coordination mechanisms.

The IMD plays a crucial role in providing cold wave warnings based on weather parameters such as temperature drops, wind speeds, and humidity levels. These warnings enable authorities to determine thresholds for action and communicate potential risks to stakeholders.

IMD issues warnings for cold wave conditions, specifying regions and populations likely to be affected.

Alerts are shared with key authorities, including Joint Secretaries, District Magistrates, and emergency operation centers.

Information is disseminated through emails, mass SMS alerts, and faxes to all Divisional Commissioners, District Collectors, and concerned officials.

IMD alerts are communicated to the public via mass media platforms such as All India Radio (AIR), Doordarshan, and private television channels.

Department of Information publishes “Do’s and Don’ts” in local and state newspapers and digital media to educate the population on precautions and measures during cold waves.

Upon receiving IMD warnings, the state and district EOCs activate cold wave response mechanisms.

Directives are issued to Health, Education, Labour, Animal Husbandry, and other departments to implement mitigation strategies and emergency measures.

The Joint Secretary Office coordinates the establishment of a cold wave-related mortality recording system to monitor the impact and ensure timely interventions.

Essential services such as temporary shelters, blankets, and heating equipment are mobilized to vulnerable areas.

Departments are instructed to activate response plans, focusing on schools, hospitals, and workplaces where populations may be particularly exposed.

IMD provides short-to-medium-range forecasts (valid for the next five days), updated four times daily.

Forecasts include temperature predictions, frost warnings, and potential impacts on health, agriculture, and livestock.

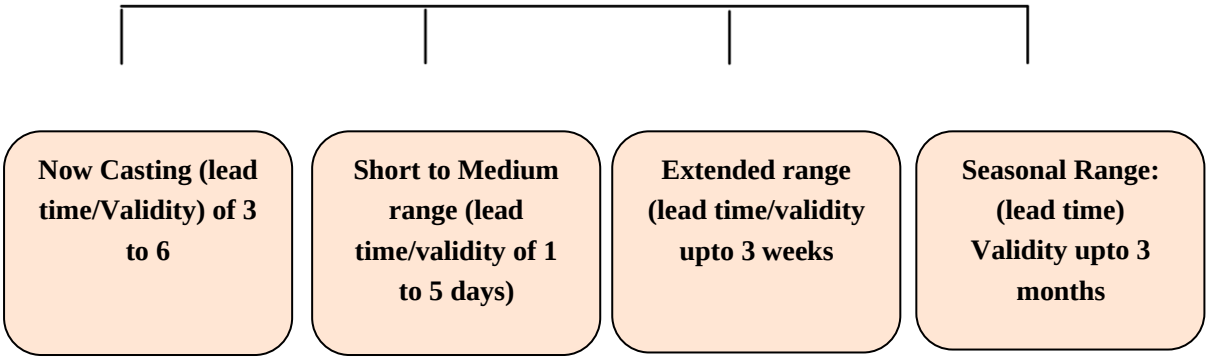
Cold wave warnings are supplemented with public awareness campaigns through print and electronic media, emphasizing preparedness and survival measures.

Training programs are conducted for frontline workers, such as healthcare professionals, to manage cold wave-related illnesses.

Mass SMS alerts are sent to key officials, including District Magistrates, Additional District Magistrates, and Sub-Divisional Magistrates, using Closed User Group (CUG) phones to ensure prompt communication.

The operational system of weather forecasts and warning is summarized in the chart below:

Temperature Forecast: Specific Range, Time Duration and Area



1.9 Declaring Cold wave for the Rajasthan During 2024

To declare a cold wave in Rajasthan, specific criteria must be met, as defined by the India Meteorological Department (IMD). These criteria involve consistent drops in minimum temperatures and their deviation from normal levels across designated meteorological sub-divisions.

Cold wave conditions are declared when the minimum temperature falls below 4°C or is significantly lower than the normal range by 4.5°C to 6.4°C.

A severe cold wave is declared if the minimum temperature falls below 2°C or deviates by 6.5°C or more.

Cold wave conditions must persist for at least two consecutive days in at least two stations within a meteorological sub-division. A cold wave will be declared on the second day.

Government of India
Ministry of Earth Sciences
India Meteorological Department
Meteorological Centre Jaipur

भारत सरकार
पृथ्वी विज्ञान मंत्रालय
भारत मौसम विज्ञान विभाग
मौसम विज्ञान केंद्र जयपुर

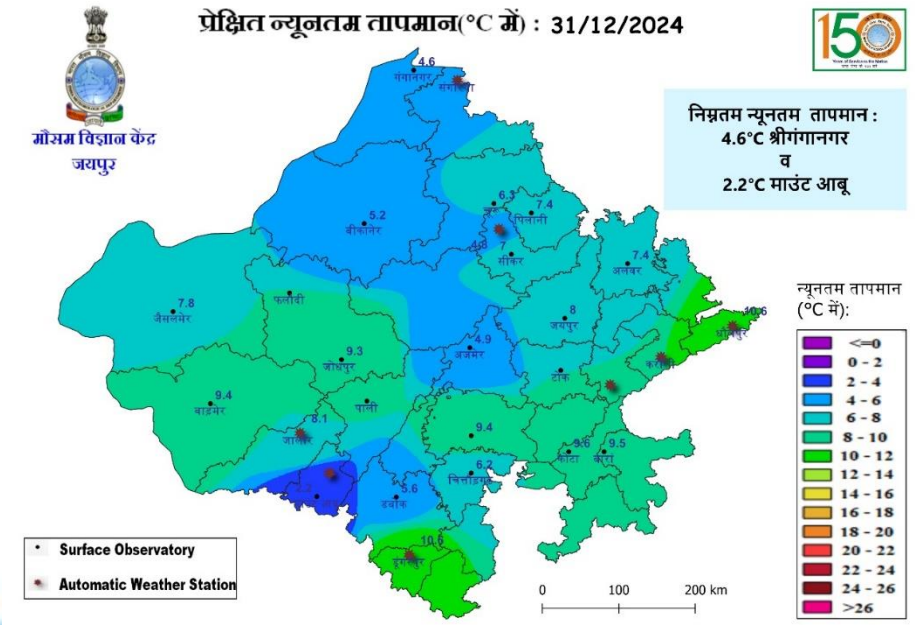
दिनांक : 31-12-2024
समय : 1330 बजे

शीत लहर / कोहरा पूर्वानुमान एवं चेतावनी

वर्तमान मौसम परिस्थितियां / Current weather conditions :

- पूर्वी राजस्थान में कहीं-कहीं पर शीत दिन तथा पश्चिमी राजस्थान में कहीं-कहीं पर शीत दिन से अति शीत दिन दर्ज किया गया | पश्चिम राजस्थान में कहीं-कहीं पर शीत लहर भी दर्ज की गयी |
- राज्य में कुछ स्थानों पर घने से अति घना कोहरा दर्ज किया गया |
- राज्य में सर्वाधिक अधिकतम तापमान बाड़मेर में 25.4 डिग्री सेल्सियस दर्ज किया गया |
- राज्य में निम्नतम न्यूनतम तापमान गंगानगर में 4.6 डिग्री सेल्सियस दर्ज किया गया |
- आज 0830 IST पर दर्ज प्रेक्षण के अनुसार राज्य के अधिकांश भागों में हवा में आर्द्रता की औसत मात्रा 70 से 100 प्रतिशत के मध्य दर्ज की गयी |
- राज्य में न्यूनतम तापमान 4.6° सेल्सियस से 11.0° सेल्सियस के मध्य दर्ज किये गये |

Minimum Temp. Departure from normal	संभाग
Markedly Below normal (-5.0°C or more)	NIL
Appreciably Below normal (-3.1°C to -5.0°C)	NIL
Below normal (-1.6°C to -3.0°C)	कोटा, उदयपुर,
Normal (-1.5 °C to +1.5°C)	जयपुर, जोधपुर, बीकानेर
Above normal (+1.6°C to +3.0°C)	NIL
Appreciably Above normal (+3.1°C to +5.0°C)	NIL
Markedly Above normal (+3.1°C to +5.0°C)	NIL

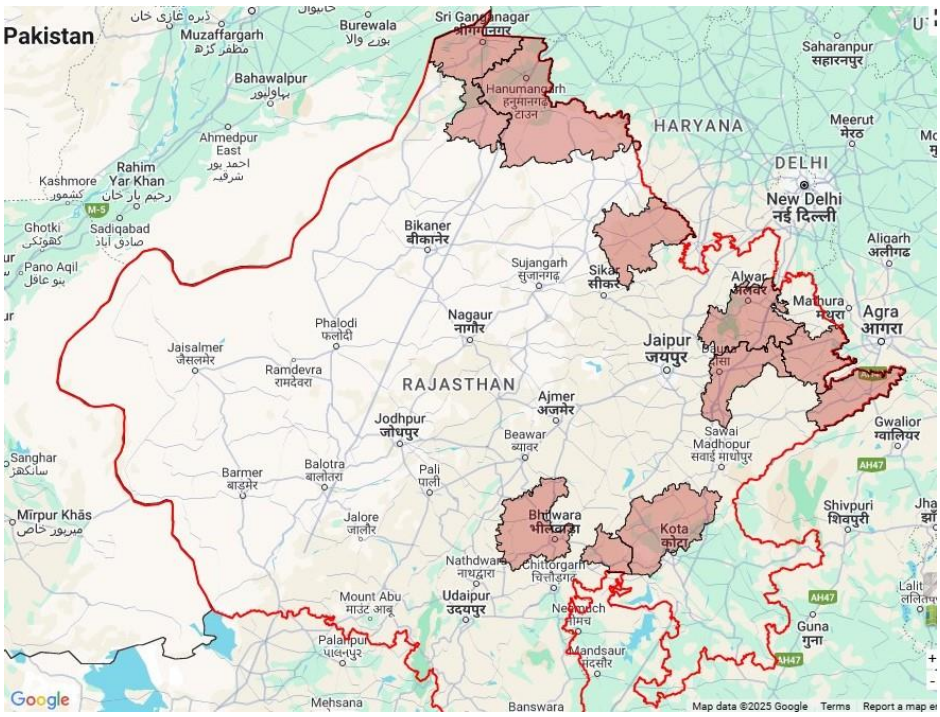


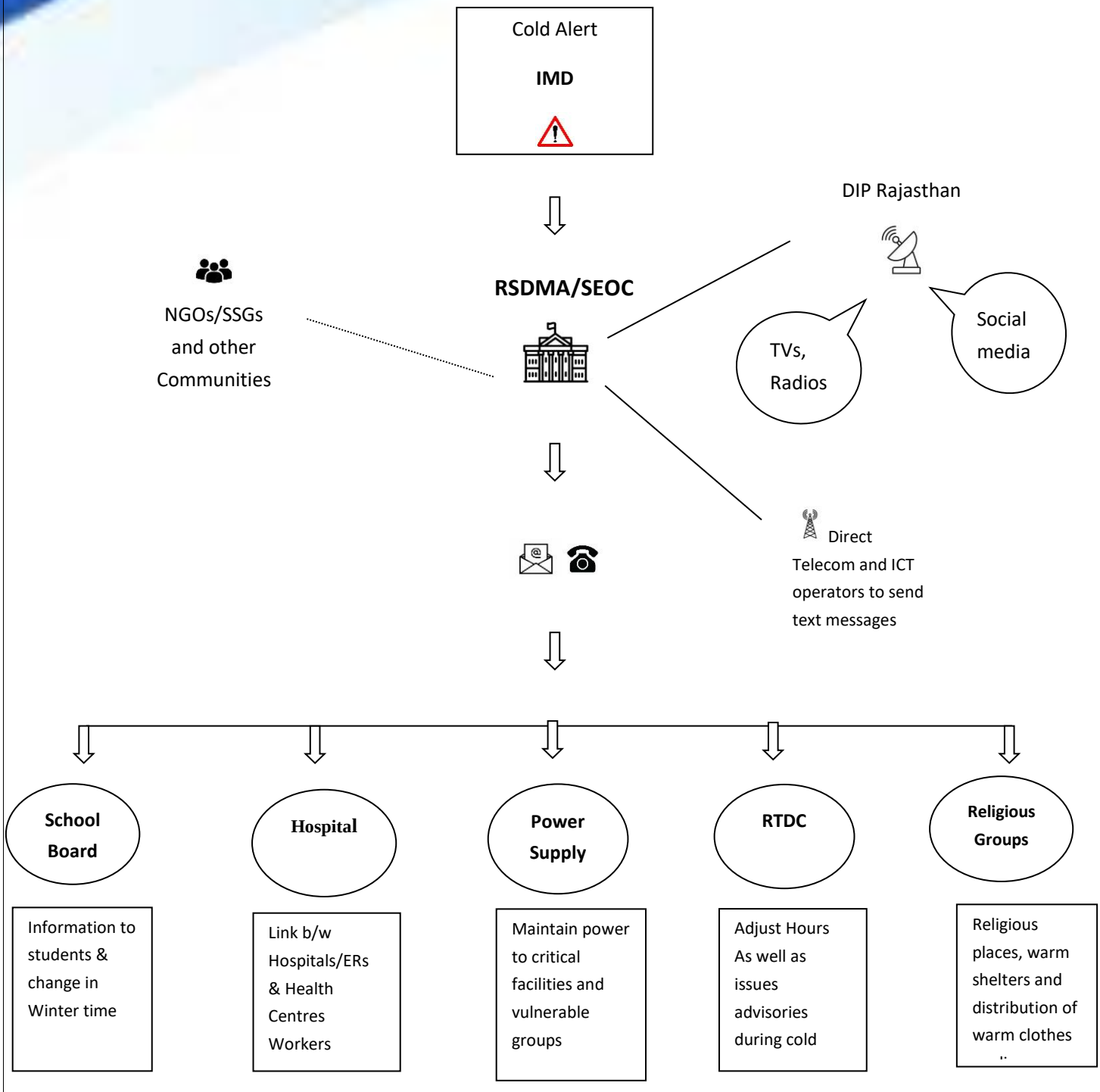
Generated by:	IMD Jaipur	**Entry Date & Time:**	25 Dec 2023, 11:20 AM
Effective Date & Time:	25 Dec 2023, 11:30 AM	**Expiry Date & Time:**	26 Dec 2023, 11:30 AM
Area Description:	Alwar, Bharatpur, Bhilwara, Bundi, Dausa, Dhaulpur, Ganganagar, Hanumangarh, Jhunjhunun districts of Rajasthan	**Area covered:**	79880.29 Sq. Km (approx.)
Additional Warning Details:	VIEW		
Event Description:	Very Dense Fog	**Urgency:**	Expected
Severity:	ALERT	**Certainty:**	Very Likely

Dissemination Status:

Media Category	Media Name	Status	Message(Language)
Internet Users	Web Browser	CAP XML Sent Successfully	अगले 24 घंटों में अ ल... (Hindi)
	Mobile App	CAP XML Sent Successfully	अगले 24 घंटों में अ ल... (Hindi)

Message Body:	*Message in English:*	Very Dense Fog is very likely to occur at few places over Alwar, Bharatpur, Bhilwara, Bundi, Dausa, Dhaulpur, Ganganagar, Hanumangarh, Jhunjhunun in next 24 hours.
	Message in Hindi:	अगले 24 घंटों में अलवर, भरतपुर, भीलवाड़ा, बूंदी, दौसा, धौलपुर, गंगानगर, हनुमानगढ़, झुंझुनूं जिलों में कुछ स्थानों पर बहुत घना कोहरा छाने की संभावना है।





Cold Wave and Early Warning System Coordination Plan

2.PREVENTION AND MANAGEMENT OF COLD RELATED ILLNESS

2.1 Introduction

Cold waves, characterized by prolonged periods of low temperatures and freezing conditions, significantly impact human health, agriculture, and livestock. The health effects of extreme cold weather can be severe, ranging from hypothermia and frostbite to exacerbation of pre-existing conditions such as cardiac and respiratory diseases. The combined effect of low temperatures, wind chill, and limited access to warm environments increases the risk of cold-related illnesses and mortality, especially among vulnerable populations.

The human body maintains core temperature through thermoregulation, controlled by the hypothalamus. During extreme cold, the body reduces heat loss by constricting blood vessels and generating heat through shivering. However, prolonged exposure to cold can overwhelm these mechanisms, leading to a drop in core temperature and cold-related illnesses.

The risk of cold-related illnesses depends on various factors:

1. **Cold Exposure:** Includes ambient temperatures, wind chill, and duration of exposure.
2. **Individual Vulnerability:** Influenced by age, medical conditions, clothing, and nutritional status.
3. **Socio-Economic Factors:** Includes poverty, inadequate housing, lack of access to healthcare, and outdoor occupations.

Cold-related illnesses such as frostbite, hypothermia, and chilblains are preventable through public awareness campaigns, community preparedness, and prompt medical response. Effective use of media, targeted outreach to

vulnerable populations, and professional training for healthcare providers are crucial components of prevention.

Acclimatization

People transitioning from warmer climates to cold environments are at higher risk of cold-related illnesses. Gradual acclimatization over a few days, combined with proper clothing, diet, and reduced exposure to extreme conditions, helps the body adapt. Encouraging hydration and consumption of warm, nutrient-rich foods is also vital.

2.2 Livestock Preparedness During Cold Weather

Cold waves can lead to severe stress and health issues in livestock, affecting their productivity and survival. Preparedness strategies for livestock include:

- Providing insulated shelters to protect animals from freezing temperatures and cold winds.
- Ensuring an adequate supply of dry bedding materials to conserve body heat.
- Increasing caloric intake to meet the higher energy demands of cold weather.
- Ensuring access to unfrozen drinking water and monitoring for signs of frostbite or hypothermia.

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2.3 Vulnerable Population:

Cold waves disproportionately affect certain groups, making them more susceptible to cold-related illnesses and complications:

1. **Children and Elderly Individuals:** Have reduced thermoregulation capacity and are more prone to hypothermia.

2. **Homeless People:** Lack access to proper shelter and warm clothing.
3. **Persons with Pre-Existing Ailments:** Conditions such as cardiovascular or respiratory diseases can worsen due to cold exposure.
4. **Outdoor Workers and Laborers:** Prolonged exposure to low temperatures increases their risk.
5. **Low-Income Communities:** Often lack insulated housing, heating, and proper clothing.
6. **Pregnant Women:** Are at risk of additional complications due to cold stress.
7. **Athletes and Emergency Responders:** High physical exertion in cold conditions increases vulnerability to frostbite and hypothermia.

VULNERABLE POPULATION: EXTREME COLD

INFANTS AND CHILDREN

Infants and young children are among the most vulnerable to cold-related illnesses due to their underdeveloped thermoregulation systems. Their bodies lose heat faster than adults, making them more prone to hypothermia and frostbite. Additionally, they rely on caregivers for adequate clothing and shelter, increasing their dependency during extreme cold events.

PREGNANT WOMAN

Pregnant women face increased risk during extreme cold due to physiological changes that make them more susceptible to cold stress. Exposure to cold can lead to complications such as reduced blood circulation and lower

core body temperature, which can impact both the mother and the developing baby.

OUTDOOR WORKERS

Many professions, such as farming, construction, and security, require employees to work outdoors even in freezing temperatures. Without adequate protection like layered clothing and proper breaks in warm environments, outdoor workers are at heightened risk of hypothermia, frostbite, and cold stress..

THE ELDERLY

Elderly individuals, particularly those with pre-existing health conditions, are highly vulnerable to extreme cold. Their reduced metabolic rate, diminished ability to generate and retain body heat, and often limited mobility make it harder for them to cope with cold stress. The elderly living alone or in poorly insulated homes are especially at risk.

HOMELESS INDIVIDUALS

People without permanent shelter face direct exposure to freezing temperatures, increasing their risk of cold-related illnesses. Limited access to warm clothing, heating, and nutritious food exacerbates their vulnerability during cold waves.

LOW-INCOME COMMUNITIES

Individuals and families from low-income backgrounds are less likely to have access to proper heating systems, insulated homes, or warm clothing. Financial constraints often prevent them from adequately preparing for extreme cold, leaving them more susceptible to its effects.

PATIENTS WITH CHRONIC ILLNESSES

People suffering from chronic illnesses like cardiovascular or respiratory diseases are at higher risk during cold waves. The cold exacerbates these conditions by constricting blood vessels and increasing respiratory strain, potentially leading to severe complications.

ATHLETES AND EMERGENCY RESPONDERS

Individuals engaged in strenuous physical activities during cold weather, such as athletes and emergency responders, are at risk of frostbite and hypothermia. Continuous exposure to cold environments without adequate protective measures makes them highly susceptible.

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2.4 Hospital Preparedness Measures for Managing Cold related Illness

- Develop detailed action plan to address cold-related illnesses.
- Create health adaptation plans and response protocols for cold-sensitive diseases.
- issue advisories for hospital preparedness and surveillance.
- Promote insulated roofing and green spaces in hospitals.
- Ensure heating systems and insulated wards to combat cold.
- Develop SOPs for managing cold-related illnesses (hypothermia, frostbite).
- Train doctors, nurses, and staff on cold-related conditions.
- Rapidly assess cold-related illnesses using standard treatment protocols.

- Designate beds for cold wave victims, especially in emergency departments.
- Create Rapid Response Teams (RRT) for emergencies.
- Ensure availability of staff, beds, warm clothing, heaters, IV fluids, thermal blankets, and medications.
- Stock essential cold-related medical supplies (e.g., saline warmers).
- Establish outreach clinics for vulnerable populations.
- Conduct awareness campaigns in local neighbourhoods about cold-related illnesses.
- Stabilize patients at PHCs and refer to higher facilities if needed.
- Network with nearby hospitals to share patient loads during extreme cold waves.
- Use regional language media to spread cold wave-related health awareness.

2.5 Case Definitions of Various Cold Related Illness

Cold wave Disorder Symptoms First Aid	Disorder Symptoms	First Aid
Hypothermia	Early Symptoms • Shivering • Fatigue • Loss of coordination • Confusion and disorientation Late Symptoms • No shivering • Blue skin • Dilated pupils • Slowed pulse and breathing • Loss of consciousness	Take the following steps to treat a worker with hypothermia: • Alert the supervisor and request medical assistance. • Move the victim into a warm room or shelter. • Remove their wet clothing. • Warm the centre of their body first-chest, neck, head, and groin-using an electric blanket, if available; or use skin-to-skin contact under

		loose, dry layers of blankets, clothing, towels, or sheets. • Warm beverages may help increase the body temperature, but do not give alcoholic beverages. Do not try to give beverages to an unconscious person. • After their body temperature has increased, keeps the victim dry and wrapped in a warm blanket, including the head and neck. • If victim has no pulse, begin cardiopulmonary resuscitation (CPR)
Frostbite	• Reduced blood flow to hands and feet (fingers or toes can freeze) • Numbness • Tingling or stinging • Aching • Bluish or pail, waxy skin	• Get into a warm room as soon as possible. • Unless absolutely necessary, do not walk on frostbitten feet or toes-this increases the damage. • Immerse the affected area in warm-not hotwater (the temperature should be comfortable to the touch for unaffected parts of the body). • Warm the affected area using body heat; for example, the heat of an armpit can be used to warm frostbitten fingers. • Do not rub or massage the frostbitten

		area; doing so may cause more damage. • Do not use a heating pad, heat lamp, or the heat of a stove, fireplace, or radiator for warming. Affected areas are numb and can be easily burned.
Trench Foot	• Reddening of the skin • Numbness • Leg cramps • Swelling • Tingling pain • Blisters or ulcers • Bleeding under the skin • Gangrene (the foot may turn dark purple, blue, or grey)	• Remove shoes/boots and wet socks. • Dry their feet. • Avoid walking on feet, as this may cause tissue damage.
Chilblains	• Redness • Itching • Possible blistering • Inflammation • Possible ulceration in severe cases	• Avoid scratching • Slowly warm the skin • Use corticosteroid creams to relieve itching and swelling • Keep blisters and ulcers clean and covered

Identification and first-aid of Cold disorders in animals

Some cold wave illness includes: - Hypothermia - Frostbite - Loss of appetite - Arthritis in heavy animals - Kennel cough in pet dogs - Respiratory illness

Cold wave Disorder	Symptoms	First Aid
Hypothermia	Low body temperature (by extended exposure to cold), shivering, lethargy, listlessness	• Limited the time spent outside during the winter months • Swaddle animals in warm blankets.
Frostbite	Pale hard skin, blisters on skin with further darkening of skin and possibility of gangrene	• Limited the time spent outside during the winter months • Swaddle animals in warm blankets. • Apply Warm water to the affected area
Kennel Cough	Symptoms of respiration infection	• Vaccination and approach for veterinary care as soon as possible
Shock	Irregular heat rate, weak pulse, low temperature, pale gums	• Prevent loss of body heat and cover the animal with blankets. • approach for veterinary care as soon as possible

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

• Deployment of adequate number of veterinarians and paravets in cold prone area.

• An arrangement of mineral, lifesaving drugs, fluids and other medicines and equipment's in veterinary hospitals at all the times.

• Activation of mobile veterinary units

• Conducting awareness programmes in respect of clod management of animals.

• Identifying disposal sites for dead animals

- Liaison with stakeholder/agencies whenever required

3.INTER-DEPARTMENT CORDINATION FRAMEWORK WITH ROLES AND RESPONSIBILITIES OF LINE DEPARTMENTS

3.1 Introduction

Inter-department coordination is very essential for successful implementation of Heat Action Plan. As Heat Action plan strategies and activities are multi-dimensional in nature, therefore, active participation of various line departments is essential for effective implementation of heat action plan.

Every department is equally important and have some role to play in order to save loss of lives, livelihood and economy due to extreme heat events.

In this chapter, the roles and responsibilities of key line departments have been enlisted.

3.2 Phases of Cold Wave Action Plan Implementation

Phase-I: Pre-Cold Season (September to November)

- **Preparation & Early Warning System Development:**
    - Develop early warning systems for cold wave alerts.

- Create communication plans for notifying the general public, healthcare professionals, and caregivers about cold wave risks.
- Focus on training and capacity-building initiatives for relevant groups, including healthcare workers, emergency responders, and volunteers.
- Strengthen infrastructure preparedness (e.g., heating systems, warm clothing supplies).

Phase-II: During the Cold Season (December to February)

- **High Alert & Monitoring:**
  - Maintain continuous monitoring of weather conditions and cold wave alerts.
  - Focus on high alert status for local and state-level authorities.
  - Ensure coordination among all relevant departments (health, disaster management, municipal bodies) and ensure proper communication with the public through media.
  - Implement direct action measures such as providing warmth to vulnerable populations, ensuring adequate shelter, and mobilizing outreach clinics.

Phase-III: Post-Cold Season (March to May)

- **Evaluation & Plan Update:**
  - Evaluate the effectiveness of the Cold Wave Action Plan, reviewing the response and outcomes of the past winter.
  - Assess the impact of the cold wave on public health and ensure timely updates to the plan.
  - Adjust the plan based on lessons learned and ongoing climate change projections, considering the increased frequency and severity of cold waves in the future.
  - Continue improving public health strategies for preventing cold-related illnesses and adapt to changing climatic conditions.

3.3 Roles and Responsibilities of the Departments

1. Block Nodal Officer / Sub-Divisional Officer

Pre-Cold Wave (September-November):

- Organize inter-departmental meetings to develop and update the cold wave action plan, ensuring all stakeholders are prepared.
- Evaluate the availability of resources such as shelters, blankets, and heating equipment; coordinate procurement if necessary.
- Initiate public awareness programs about cold wave preparedness, including distribution of informational materials.

During Cold Wave (December-February):

- Oversee the execution of the cold wave action plan, ensuring timely response to emergencies.
- Continuously monitor the situation, coordinate with relevant departments, and address any arising issues promptly.
- Maintain records of incidents and responses; report to higher authorities as required.

3. Media Press and Communication Officer

Pre-Cold Wave (September-November):

- Develop communication strategies to educate the public about cold wave risks and preventive measures.

- Establish partnerships with local media outlets to ensure widespread dissemination of information.

During Cold Wave (December-February):

- Disseminate timely weather advisories and safety instructions to the public through various media channels.

- Provide information on available shelters, medical facilities, and emergency contact numbers.

3. Block Chief Medical Officer (BCMO) / Chief Medical and Health Officer (CMHO), Health Department

Pre-Cold Wave (September-November):

- Ensure healthcare facilities are equipped with necessary supplies and staff trained to handle cold-related illnesses.

- Conduct health camps to educate vulnerable populations about cold wave health risks and preventive measures.

During Cold Wave (December-February):

- Monitor and manage cases of cold-related illnesses; ensure adequate medical care is available.

- Track health data to identify trends and respond to outbreaks of cold-related health issues.

4. **Block Education Officer (BEO), Community Groups, and Individuals**

Pre-Cold Wave (September-November):

- Integrate cold wave preparedness into school curricular; organize workshops for students and teachers.
- Mobilize community groups to assist in disseminating information and identifying vulnerable individuals.

During Cold Wave (December-February):

- Implement measures to protect students, such as adjusting school hours or temporary closures during severe cold.
- Coordinate assistance for vulnerable populations, including distribution of warm clothing and blankets.

5. **Executive Engineer, Block Public Health Engineering Department**

Pre-Cold Wave (September-November):

- Inspect and reinforce water supply and sanitation infrastructure to withstand cold conditions.
- Ensure availability of safe drinking water and proper sanitation facilities in anticipation of increased demand.

During Cold Wave (December-February):

- Maintain uninterrupted water supply and sanitation services; address any disruptions promptly.

- Respond to infrastructure damages caused by cold weather, ensuring quick restoration of services.

6. Tourism Department

Pre-Cold Wave (September-November):

- Develop guidelines for tourists regarding cold wave preparedness; ensure dissemination through travel agencies and online platforms.
- Ensure tourist accommodations are equipped with adequate heating and emergency supplies.

During Cold Wave (December-February):

- Provide real-time information on weather conditions and safety measures to tourists.
- Coordinate with local authorities to assist tourists affected by severe cold conditions.

7. Agriculture Department

Pre-Cold Wave (September-November):

- Issue advisories to farmers regarding cold wave preparedness, including recommendations for protecting crops and irrigation systems.
- Promote cold-resistant crop varieties and assist farmers in adopting crop insurance schemes.

- Conduct workshops on cold wave mitigation strategies, such as frost protection and sustainable farming practices.

- Ensure availability of materials like crop covers and frost-protection equipment.

During Cold Wave (December-February):

- Provide farmers with timely weather forecasts and guidance through field officers and digital platforms.

- Monitor and document crop losses to facilitate compensation and recovery support.

- Coordinate with local bodies to address irrigation system issues caused by freezing temperatures.

8. Tourism Department

Pre-Cold Wave (September-November):

- Develop and disseminate guidelines for tourists, focusing on personal safety, cold wave risks, and emergency contacts.

- Ensure tourist destinations and accommodations are equipped with heating facilities, blankets, and medical kits.

- Work with travel agencies to include cold wave safety measures in itineraries.

- Adjust schedules of winter tourism events based on cold wave forecasts to ensure safety.

During Cold Wave (December-February):

- Set up help desks at key tourist locations to assist travellers during emergencies.
- Provide evacuation support and temporary shelters for tourists affected by extreme cold.
- Regularly update tourists about weather conditions and suggest precautionary measures.

9. Animal Husbandry Department

Pre-Cold Wave (September-November):

- Identify and prepare shelters for livestock and stray animals, ensuring adequate protection against cold.
- Stockpile fodder and ensure water supplies are accessible and insulated against freezing temperatures.
- Conduct outreach programs for farmers on safeguarding livestock, including vaccination and nutritional supplementation.
- Equip veterinary centers with necessary supplies and train staff for managing cold-related animal health issues.

During Cold Wave (December-February):

- Deploy field officers to monitor animal health and provide on-site treatment for cold-related illnesses.
- Operate mobile veterinary units to reach remote areas quickly.

- Ensure timely distribution of fodder, warm coverings, and other essential supplies to farmers.

- Collaborate with local NGOs to manage shelters and provide emergency support for stray animals.

4.INFORMATION, EDUCATION AND COMMUNICATION

4.1 INTRODUCTION

Information Education and Communication (IEC) is an important tool in health promotion for creating supportive environment and strengthening community action. The IEC in health programmes aims to increase awareness, change attitude and bring about behaviour change.

IEC provides a platform for the discussion of important health issues to foster an understanding of concepts, underlying principles, and benefits of health initiatives. IEC is essential to achieving better health outcomes in all public health interventions.

It is recognised as a viable and cost-effective approach to addressing broader determinants of health, risk factors, building trust and commitment, fostering community participation, and empowerment towards development and implementation of health initiatives.

Recognising importance of IEC, IEC pamphlet has been developed under Rajasthan Cold Wave Action Plan for creating awareness regarding prevention and management of heat related illnesses.

It is important to note that these are preventable deaths. Informing the public on the preventive actions to be taken, reporting early to health facility, timely diagnosis and treatment, would reduce the deaths attributable to cold waves. IEC can play an important role in preventing mortality and morbidity due to heat related illnesses.

The IEC- posters can be used in crowded places Bus Station, Railway Station, Schools, Cinemas and for larger awareness. Health advisories can also be circulated through social media- Facebook, WhatsApp, Mass emails etc.

FOLLOW SIMPLE PRECAUTIONS

- Have adequate winter clothing
- Stay indoors as much as possible
- Prefer mittens over gloves; mittens provide more warmth and insulation from cold
- Listen to radio, watch TV, read newspapers for weather updates Drink hot drinks regularly
- Take care of elderly people and children
- Store adequate water as pipes may freeze
- Have emergency supplies ready

DISASTER MANAGEMENT ,RELIEF AND CIVIL DEFENSE DEPARTMENT

Avoid Cold Wave

Follow these simple steps

- Have adequate winter clothing
- Stay indoors as much as possible
- Prefer mittens over gloves; mittens provide more warmth and insulation from cold
- Listen to radio, watch TV, read newspapers for weather updates
- Drink hot drinks regularly
- Take care of elderly people and children
- Store adequate water as pipes may freeze
- Have emergency supplies ready

DISASTER MANAGEMENT RELIEF AND CIVIL DEFENSE DEPARTMENT

4.2 NEWS AND ARTICALS

Rajasthan Weather: राजस्थान में अब पड़ेगी कंपकंपाती ठंड, इन जिलों में होगी बारिश! प्रशासन ने कर दी स्कूलों की छुट्टी

> Rajasthan Weather Update: राजस्थान में कड़ाके की ठंड और शीतलहर को देखते हुए 24 जिलों में स्कूलों की छुट्टियां बढ़ा दी गई हैं। मौसम विभाग ने अगले कुछ दिनों में बारिश का अलर्ट जारी कर दिया है।

जयपुर • Jan 07, 2025 /

Hindi News ▸ राजस्थान न्यूज़ ▸ Rajasthan Weather Update News Cold wave warning for 3 days in Rajasthan

राजस्थान में 11 जनवरी को बारिश के आसार, 3 दिन सर्द हवा का रहेगा असर

बीकानेर, जयपुर और भरतपुर संभाग के जिलों में उत्तरी हवा के असर से शीतलहर (कोल्ड-डे) की स्थिति बनी रहेगी। इन संभाग के जिलों के तापमान में 2-3 डिग्री सेल्सियस तक की गिरावट हो सकती है। आज प्रदेश के 6 जिलों में अलर्ट जारी किया है।

Rajasthan Weather: राजस्थान में अब पड़ेगी कंपकंपाती ठंड, इन जिलों में होगी बारिश! प्रशासन ने कर दी स्कूलों की छुट्टी

> Rajasthan Weather Update: राजस्थान में कड़ाके की ठंड और शीतलहर को देखते हुए 24 जिलों में स्कूलों की छुट्टियां बढ़ा दी गई हैं। मौसम विभाग ने अगले कुछ दिनों में बारिश का अलर्ट जारी कर दिया है।

जयपुर • Jan 07, 2025 /

Rajasthan Cold: पेड़ों पर झूमर की तरह लटकी बर्फ, माइनस 5.2 डिग्री पारा, फतेहपुर में सर्दी ने तोड़ा 20 साल का रिकॉर्ड

aajtak.in
जयपुर, 20 दिसंबर 2021, अपडेटेड 11:39 AM IST

4.3 DO'S AND DON'TS

Cold wave conditions can lead to severe health impacts, including frostbite, hypothermia, and even fatalities. To minimize the risks and protect against cold-related illnesses, the following measures should be followed:

DO's

- Listen to the radio, watch TV, or read newspapers for local weather forecasts to know if a cold wave is approaching.
- Wear multiple layers of warm, lightweight, and comfortable clothing to retain body heat. Ensure extremities are covered with gloves, scarves, and thermal socks.
- Keep your head covered with a cap or woollen hat to prevent heat loss.
- Use warm blankets or quilts and keep yourself insulated when sleeping.
- Drink warm fluids like soups, herbal teas, or hot water to maintain body temperature.
- Use heaters, but ensure proper ventilation to avoid carbon monoxide poisoning.
- Keep your home warm by sealing windows and doors to avoid drafts and retaining heat.
- Ensure children and the elderly remain indoors and warm during extreme cold conditions.
- Provide shelter to pets and livestock, ensuring they have access to warm bedding and drinking water.
- Keep emergency supplies like extra blankets, warm clothing, food, and water handy.
- Stay active indoors to generate body heat but avoid overexertion.
- Check on family, neighbours, and vulnerable groups, especially the elderly, children, and those living alone.

DON'T's

- Do not go outside without proper winter clothing. Avoid exposure during the coldest hours, usually early mornings and late evenings.
- Avoid wearing tight or single-layer clothing, as it reduces insulation.
- Do not sit or sleep directly on the ground or cold surfaces. Use insulated materials like rugs or mats.

- Avoid consuming alcohol as it can lower your body temperature.
- Avoid bathing in cold water or exposure to unheated environments for prolonged periods.
- Do not use kerosene heaters or charcoal-based heaters in poorly ventilated spaces to prevent asphyxiation.
- Do not leave children, the elderly, or pets in unheated or inadequately heated areas.
- Avoid overloading electrical systems with heating devices, as it can lead to fire hazards.
- Do not ignore early signs of cold-related illnesses like shivering, numbness, or confusion. Seek medical help immediately if symptoms worsen.
- Avoid traveling during extreme cold unless absolutely necessary. Carry warm clothing and emergency supplies if you must travel.

The best defence against extreme heat is to be prepared, and remember:

- **Get Ready:** Prepare your home and workplace by ensuring proper insulation, stocking up on winter essentials, and having backup heating solutions.

- **Get Set:** Familiarize yourself with symptoms of cold-related illnesses, such as hypothermia and frostbite, and understand first-aid measures.

- **Go:** Check on vulnerable groups in your community to ensure they are safe, warm, and well-supported during extreme cold conditions.

5.SHELTER AND NEEDS

Shelter, Blankets and wood provided by the government of Rajasthan during Cold