



ACTION PLAN

PREVENTION AND MANAGEMENT OF

HEAT WAVES

DISTRICT DISASTER MANAGEMENT AUTHORITY (DDMA)

MEERUT – 2017

ADM F/R, MEERUT

DISTRICT MAGISTRATE, MEERUT

Table of Contents

Preface

Chapters

Page No.

1 Background & Status

1.1 Introduction

1.2 Definition

1.3 Heat Wave in India

1.4 Rationale for Heat Wave Action Plan

2 Preparing a Heat Wave Plan

2.1 Heat Wave and Disaster Management

2.2 Past Experience on Heat Wave Plan Implementation

2.3 Purpose of Heat Wave Action Plan

2.4 Key Strategies

3 Early Warning & Communications

3.1 Early Warning & Indicators of Heat Wave

3.2 Forecast and Issuance of Heat Alert or Heat Warning

4. Dealing with Heat Related Illness

4.1 Identification of Heat Wave Illness and Recording of Casualties

4.2 Prevention of Heat Related Illness

4.3 Acclimatization

5 Roles & Responsibilities for Managing Heat Wave

5.1 Need for Data and Analysis

5.2 Prevention, Preparedness and Mitigation Measures

Annexure 1

Annexure 2

PREFACE

It is expected that extreme heat waves will become more common worldwide because of rising average global temperature. Since the beginning of the 21st century, this has increased by nearly a degree Centigrade. This weather pattern, coupled with the El-Nino effect, is increasing the temperatures in Asia. Further, high humidity compounds the effects of the temperatures being felt by human beings. Extreme heat can lead to dangerous, even deadly, consequences, including heat stress and heatstroke.

India is also vulnerable to the impacts of climate change. Experts have been warning that the rising temperatures will lead to more floods, heat-waves, storms, rising sea levels and unpredictable farm yields. There is evidence that climate change is causing increase in extreme weather events as well as severity and frequency of natural disasters. Deforestation is also adding to the environmental instability and contributing to global warming and climate change.

There has been an increasing trend of heat-wave in India over the past several years whereby several cities in India have been severely affected. Heat wave killed about 3000 people in 1998 and more than 2000 in 2002. Heat wave caused over 2000 deaths in 1998 in Odisha and more than 1200 deaths in 2002 in southern India. More than 2400 people died in the heat wave of 2015. Heat wave also caused death of cattle and wildlife besides affecting animals in various zoos in India.

The increased occurrences and severity of heat-wave is a wake-up call for all agencies to take necessary action for prevention, preparedness and community outreach to save the lives of the general public, livestock and wild life. Heat Wave Guidelines aims to facilitate the stakeholders in preparing a **Heat Wave Management Plan** by providing insight into the heat related illness and the necessary mitigative and response actions to be undertaken. It will also help in mobilization and coordination of various departments, individuals and communities to help and protect their neighbours, friends, relatives, and themselves against avoidable health problems during spells of very hot weather.

1. Background & Status

1.1 Introduction

India, with approximately 1.32 billion people is the second most populous country in the world with considerably high levels of population density. India is among the worst disaster prone countries of the world.

As per 2011 census, 31% of India's population live in urban areas and 69% live in rural areas. The trend shows that the number of persons living in urban areas will continue to grow at a faster rate than the population in the rural areas due to migration and increasing urbanization.

The district of Meerut (which forms part of the revenue division of the same name) is named after its headquarters city and is said to be associated with earliest traditions of the Hindus according to which Maya, the father-in-law of Ravana, founded this place which has, therefore, been called Maidant-ka-Khera. According to another version Maya, a distinguished architect, got from king Yudhishter the land on which the city of Meerut now stands and he called this place Mayrashta, a name which in course of time became shortened to Meerut. Tradition is so that the district formed part of the dominions of Mahipal, king of Indraprastha and the word Meerut is associated with his name.

मेरठ की कुल जनसंख्या 3447405 उत्तर प्रदेश में जनगणना संचालन निदेशालय द्वारा जारी नवीनतम आंकड़ों के अनुसार है। यह 2001 की जनगणना के आंकड़ों की तुलना में 2011 में 15.01 प्रतिशत की वृद्धि दर्शाता है। डेटा के प्रारंभिक आंकड़ों से पता चलता है कि पुरुष और महिला 1829192 और 1618213 क्रमशः थे। उत्तर प्रदेश के मेरठ जिले 2,569 वर्ग कि.मी. का एक क्षेत्र शामिल है प्रति वर्ष 2011 की जनगणना के रूप में, वर्ग किमी प्रति मेरठ जिले के घनत्व 1,342 1,167 2001 के sq.km प्रति की तुलना में है।

लड़कियों के प्रति 1000 लड़कों मेरठ जिले में लिंग अनुपात 885 अर्थात् एक 2001 की जनगणना के जो इसे 872 पर डालता है के आंकड़े से 13 अंक की वृद्धि दर्ज की गई।

2011 की जनगणना में, 0-6 आयु के बच्चों के बारे में मेरठ जिले के आंकड़े भी एकत्र किए गए थे। वहाँ 2001 की जनगणना के 517960 के खिलाफ 0-6 साल की उम्र के तहत कुल 488271 बच्चे थे। कुल में से 488271 पुरुष और महिला 263961 और 224310 क्रमशः थे। प्रति वर्ष 2011 की जनगणना के रूप में बाल लिंग अनुपात 857 की जनगणना के 857 की तुलना में था कुल जनसंख्या 2001 में बच्चों के अनुपात के आसपास 1.73 प्रतिशत थी। यह आंकड़ा 2001 की जनगणना के रूप में 1.80 प्रतिशत के आसपास थी।

शिक्षा के क्षेत्र में, मेरठ जिला 74.80 प्रतिशत की औसत साक्षरता दर रही है। पुरुष साक्षरता और महिला साक्षरता 82.91 और 65.69 प्रतिशत क्रमशः थे। सभी में, वहाँ 2001 की जनगणना के 1606469 साक्षरों की तुलना में कुल 2213483 साक्षरों थे।

1.15 तहसील की संख्या -3

मेरठ, मवाना, सरधना

ब्लाकों की संख्या -12

1. मेरठ 2. राजपुरा 3. जानी खुर्द 4. Rohta 5. Sarurpur 6. सरधना 7. दौराला

1.16 गेल गैस - इंडिया लिमिटेड के गैस अथॉरिटी की सहायक परिवारों को पाइप गैस की आपूर्ति के लिए शहर के क्षेत्रों में पाइप लाइन बिछाई गई है।

The World Meteorological Organization (WMO) statements on global climate during 2011 and 2012 indicate that the global temperatures are continuing to increase. Heat-waves are projected to increase in number, intensity and duration over the most land area in the 21st century. This is directly affecting the communities, undermining their livelihoods through gradual, insidious changes in temperature and rainfall patterns, and resulting in increased frequency and intensity of hazards such as floods, cyclones, droughts, unseasonal rains and hailstorms, causing extensive damage to crops and agro-rural economy.

Heat wave is a period of abnormally high temperatures, more than the normal maximum temperature that occurs during the pre-monsoon (April to June) summer season. Heat -waves typically occur between March to June, and in some rare cases even extend till July.

Heat waves are more frequent over the Indo-Gangetic plains of India. On an average, 5-6 heat wave events occur every year over the northern parts of the country. The most notable amongst the recent ones are Hyderabad (Andhra Pradesh) 46 °C, Khammam 48 °C , Jharsuguda (Odisha) 45.4°C, Bhubaneshwar (Odisha) 44°C, Allahabad (Uttar Pradesh) 47.8°C , Delhi 46.4°C, Jashpur (Chhattisgarh) 44.5°C, Kolkatta (West Bengal) 44.5°C, Gaya (Bihar) 46.3°C, Nagpur (Vidarbha region in Maharashtra) 47.1°C, Kalburgi (Karnataka) 44.1°C and Churu (Rajasthan) 48.0°C in 2015.

The extreme temperatures combined with high humidity and resultant atmospheric conditions adversely affect people living in these regions leading to physiological stress, sometimes even death. This unusual and uncomfortable hot weather can impact human and animal health and also cause major disruption in community infrastructure such as power supply, public transport and other essential services.

Heat wave is also called a “silent disaster” as it develops slowly and kills and injures humans and animals nationwide. Higher daily peak temperatures of longer duration and more intense heat waves are becoming increasingly frequent globally due to climate change. India too is feeling the impact of climate change in terms of increased instances of heat wave with each passing year. Importantly, the adverse impact of heat wave are preventable by educating the public on the preventive actions, following the Do’s and Don’ts (Annexure 1), reporting early to health facilities and timely diagnosis and treatment.

Uttar Pradesh is bounded Uttarakhand on the north-west, Haryana and Delhi on the west, Rajasthan on the south-west, Madhya Pradesh on the south, Chhattisgarh and Jharkhand on south-east and Bihar on the east. Situated between 23°52'N and 31°28'N latitudes and 77°3' and

84°39'E longitudes, this is the fourth largest state in the country in terms of area, and the first in terms of population. Uttar Pradesh can be divided into three distinct hypsographical regions:

1. The Shivalik foothills and Terai in the North
2. The Gangetic Plain in the centre - Highly fertile alluvial soils; flat topography broken by numerous ponds, lakes and rivers; slope 2 m/km
3. The Vindhya Hills and plateau in the south - Hard rock Strata; varied topography of hills, plains, valleys and plateau; limited water availability.

The climate of the state is tropical monsoon. The average temperature varies in the plains from 3 to 4 °C in January to 43 to 45 °C in May and June. There are three distinct seasons - winter from October to February, summer from March to mid-June, and the rainy season from June to September. Heat-Waves is directly affecting the communities, undermining their livelihoods through gradual, insidious changes in temperature and rainfall patterns, and resulting in increased frequency and intensity of hazards such as floods, cyclones, droughts, unseasonal rains and hailstorms, causing extensive damage to crops and agro-rural economy. Heat wave is a period of abnormally high temperatures, more than the normal maximum temperature that occurs during the pre-monsoon (April to June) summer season. Heat -waves typically occur between March to June, and in some rare cases even extend till July. Heat waves are more frequent over the Gangetic plains. On an average, 3-4 heat wave events occur every year over the all parts of the state. The most notable amongst the recent ones Allahabad (Uttar Pradesh) 47.8°C , in 2015. 1.8.2 Tropical monsoon climate marked by three distinct seasons:

1. Summer (March–June): Hot & dry (temperatures rise to 45 °C, sometimes 47-48 °C); low relative humidity (20%); dust laden winds.
2. Monsoon (June–September): 85% of average annual rainfall of 990 mm. Fall in temperature 40-45° on rainy days.
3. Winter (October–February): Cold (temperatures drop to 3-4 °C, sometimes below -1 °C); clear skies; foggy conditions in some tracts.

1.2 Definition

Heat wave: Heat-wave is a condition of atmospheric temperature that leads to physiological stress, which sometimes can claim human life. Heat-wave is defined as the condition where maximum temperature at a grid point is 3°C or more than the normal temperature, consecutively for 3 days or more.

World Meteorological Organization defines a **heat wave** as five or more consecutive days during which the daily maximum temperature exceeds the average maximum temperature by five degrees Celsius. If the maximum temperature of any place continues to be more than 45° C

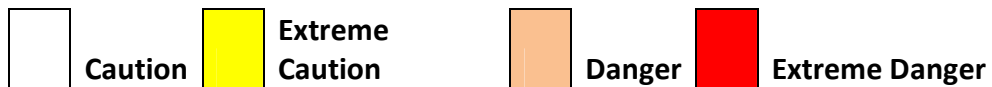
consecutively for two days, it is called a **heat wave condition**. There will be no harm to the human body if the environmental temperature remains at 37° C. Whenever the environmental temperature increases above 37° C, the human body starts gaining heat from the atmosphere.

If humidity is high, a person can suffer from heat stress disorders even with the temperature at 37°C or 38°C. To calculate the effect of humidity we can use **Heat Index Values**.

The temperature vs humidity chart is placed and the temperature actually felt is placed below:

Table 1 : Temperature/Humidity Index

Relative Humidity %	Temperature Degree Centigrade																
	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
40	27	28	29	30	31	32	34	35	37	39	41	43	46	48	51	54	57
45	27	28	29	30	32	33	35	37	39	41	43	46	49	51	54	57	
50	27	28	30	31	33	35	36	38	41	43	46	49	52	55	58		
55	28	29	30	32	34	36	38	40	43	46	48	52	54	58			
60	28	29	31	33	35	37	40	42	46	48	51	55	59				
65	28	30	32	34	36	39	41	44	48	51	55	59					
70	29	31	33	35	38	40	43	47	50	55	58						
75	29	31	34	36	39	42	46	49	53	58							
80	30	32	35	38	41	44	48	52	57								
85	30	33	36	39	43	47	51	55									
90	31	34	37	41	45	49	54										
95	31	35	38	42	47	51	57										
100	32	36	40	44	49	56											



The Heat Index is a measure of how hot it really feels when relative humidity is factored in with the actual air temperature. As an example, if the air temperature is 34°C and the relative humidity is 75%, the heat index--how hot it feels--is 49°C. The same effect is reached at just 31°C when the relative humidity is 100 %.

1.3 Heat wave in India:

Extreme positive departures from the normal maximum temperature result in a heat wave during the summer season. The rising maximum temperature during the pre-monsoon months continues till June and in rare cases till July, over the northwestern parts of the country. In recent years, heat wave casualties have increased. Abnormally high temperatures were observed during April –June during 2010 to 2015 across the country. In India the heat wave took 3028 lives in 1998 and more than 2000 lives in 2002. In

Odisha, heat wave caused 2042 deaths in 1998 and more than 1200 deaths in 2002 in southern India. In India heat-wave caused 22562 deaths since 1992 to 2015 at various states (Table 2). Heat wave also caused death of wildlife, birds, poultry in states and most of the zoos in India.

Table 2

Year	No. of Deaths	Year	No. of Deaths	Year	No. of Deaths
1992	612	2001	505	2010	1274
1993	631	2002	720	2011	793
1994	773	2003	807	2012	1247
1995	1677	2004	756	2013	1216
1996	434	2005	1075	2014	1677
1997	393	2006	754	2015	2422
1998	1016	2007	932	2016	Data NA
1999	628	2008	616	2017	Data NA
2000	534	2009	1071		

1.4 Rational for Heat wave Action Plan (HAP)

Many states are affected during the Heat wave season, such as State of Andhra Pradesh, Telangana, Odisha, Gujarat, Rajasthan, Madhya Pradesh, Uttar Pradesh, Vidarbha region of Maharashtra, Bihar, Jharkhand and Delhi. In 2015, daily maximum temperature exceeded the average maximum temperature by more than 6°C to 8°C, which resulted in death of 2422 people in India due to heat-wave. A comparative data of highest maximum temperature and daily maximum temperature is shown in Table 3.

Table 3: In year 2015 reported heat wave (April to May) in Uttar Pradesh

Month	Mean Daily Maximum Temperature(degree C)	Recorded Maximum Temperature (Degree C)
24 May, 2015 Allahabad	41.8	47.7
08 June, 2015 Allahabad	39.8	47.8

However, it is likely that the death figure is much higher as heat related illness is often recorded inaccurately and figures from rural areas are hard to attain. The combination of exceptional heat stress and a predominantly rural population makes India, vulnerable to heat waves. Vegetable vendors, auto repair mechanics, cab drivers, construction workers, police personnel, road side kiosk operators and mostly weaker sections of the society have to work in the extreme heat to make their ends meet and are extremely vulnerable to the adverse impacts of heat waves such as dehydration, heat and sun strokes. Therefore, it is not surprising that these workers, homeless people and the elderly constitute the majority of heat wave casualties in India. It is time to devise a national level strategy and plan to combat this disaster. A comprehensive heat preparedness and response requires involvement from not only government authorities but also non-governmental organizations and civil society. The local authorities should carry out a vulnerability assessment in order to identify these areas.

2. Preparing a Heat Wave Plan

2.1 Heat-wave and Disaster Management

Section 2 (d) of the Disaster Management Act 2005 defines “disaster” as a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man-made causes, and is of such a magnitude to be beyond the coping capacity of the affected area. Heat-wave has not been notified as a disaster by Government of India yet. But the data of the casualties it has been causing suggests that it is time that the various stakeholders realize the damaging repercussions that heat wave can cause to the health of humans and animals. Heat wave is not notified in the list of twelve disasters eligible for relief under National/ State Disaster Response Fund norms. However, a State Government may use up to 10 per cent of the funds available under the SDRF for providing immediate relief to the victims of natural disasters that they consider to be „disasters“ within the local context in the State and which are not included in the notified list of disasters of the Ministry of Home Affairs subject to the condition that the State Government has listed the State specific natural disasters and notified clear and transparent norms and guidelines for such disasters with the approval of the State Authority.

2.2 Past experience on Heat-wave plan implementation

This plan provides a framework for other Indian cities to emulate and help protect their citizens from the extreme heat.

Heat Wave Action Plan:

- Recognize Heat Wave as a major Health Risk.
- Map out the 'High Risk' Communities.
- Setting up of 'Public Cooling Places'.
- Issue Heat wave alerts through different media.
- **Early warning systems:** Temperature and humidity levels, considered together, will determine the threshold for heat wave alerts.
- **Public outreach:** Temperature forecasts and heat alerts will be sent as bulk messages on mobile phones, including to the media for wider broadcast and Electronic screens at busy traffic intersections and market places will also display the information. It is also developing a website and a mobile phone app that would not only provide heat alerts but also help users identify, via maps, heat shelters and drinking water availability along 6 highways through the state.
- **Medical upgradation and administrative measures-** Heat treatment wings also are planned in hospitals, and heat alerts would trigger early morning shifts for schools and offices.

2.3 Purpose of Heat-wave Action Plan

The Heat-Wave Action plan aims to provide a framework for implementation, coordination and evaluation of extreme heat response activities in cities/town in India that reduces the negative impact of extreme heat. The Plan’s primary objective is to alert those populations at risk of heat-related illness in places where extreme heat conditions either exist or are imminent, and to take appropriate

precautions, which are at high risk. Preventive heat management and the administrative action need to be taken by the concerned ministries/departments are enumerated in Table 5. All cities can learn from their experience and develop a plan to deal with Heat wave in their specific cities/town and thus reduce the negative health impacts of extreme Heat. In addition the State Governments should also prepare a comprehensive plan to combat Heat wave.

2.4 Key strategies

The heat-wave action plan is intended to mobilize individuals and communities to help protect their neighbours, friends, relatives, and themselves against avoidable health problems during spells of very hot weather. Broadcast media and alerting agencies may also find this plan useful. Severe and extended heat-waves can also cause disruption to general, social and economic services. For this reason, Government agencies will have a critical role to play in preparing and responding to heat-waves at a local level, working closely with health and other related departments on long term strategic plan.

- Establish Early Warning System and Inter-Agency Coordination to alert residents on predicted high and extreme temperatures. Who will do what, when, and how is made clear to individuals and units of key departments, especially for health.
- Capacity building / training programme for health care professionals at local level to recognize and respond to heat-related illnesses, particularly during extreme heat events. These training programmes should focus on medical officers, paramedical staff and community health staff so that they can effectively prevent and manage heat-related medical issues to reduce mortality and morbidity.
- Public Awareness and community outreach Disseminating public awareness messages on how to protect against the extreme heat-wave through print, electronic and social media and Information, Education and Communication (IEC) materials such as pamphlets, posters and advertisements and Television Commercials (TVCs) on Do's and Don'ts and treatment measures for heat related illnesses.
- Collaboration with non government and civil society: Collaboration with non-governmental organizations and civil society organizations to improve bus stands, building temporary shelters, wherever necessary, improved water delivery systems in public areas and other innovative measures to tackle Heat wave conditions.

3. Early Warning & Communications

3.1 Early Warning and Indicators of heat-wave

Early warning systems can enhance the preparedness of decision-makers and their readiness to harness favorable weather conditions. Early warning systems for natural hazards is based both on sound scientific and technical knowledge. In response to the devastating mortality and morbidity of recent heat-wave events, many countries have introduced heat-wave early warning systems. Heat-wave early warnings are designed to reduce the avoidable human health consequences from heat-waves through timely notification of prevention measures to vulnerable populations.

3.2 Forecast and Issuance of Heat Alert or Heat Warning India Meteorological Department (IMD):

The IMD is mandated to meteorological observations and provides current and forecast meteorological information for optimum operation of weather-sensitive activities. It provides warning against severe weather phenomena like tropical cyclones, dust storms, heavy rains and snow, cold and heat waves etc. It also provide real time data and weather prediction of maximum temperature, Heat-wave warning, Heat-alert for the vulnerable cities/rural area of the severity and frequency. IMD provides following range and validity of time forecast:

Temperature Forecast: Specific Range, Time duration and area

Now casting: (Lead time /validity of 3 to 6 hours)	Short range: (Lead time/ validity of 1 to 3 days)	Medium range: (Lead time/validity of 4 to 10 days)	Long/Extended range: (Lead beyond 10 days)	Local range: (Its intensity, frequency and time of occurrence is indicated)
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3.3 Identification of Color Signals for Heat Alert :

Red Alert (Severe Condition)	Extreme Heat Alert for the Day	Normal Maximum Temp increase 6° C to more
Orange Alert (Moderate Condition)	Heat Alert Day	Normal Maximum Temp increase 4° C to 5° C
Yellow Alert (Heat-wave Warning)	Hot Day Nearby	Normal Maximum Temp.
White (Normal)	Normal Day	Below Normal Maximum Temp.

4. Dealing with Heat Related Illness

4.1 Identification of Heat-Wave illness and recordings of casualties:

In the past, when the Government declared ex-gratia compensation for heat-wave affected families, it was observed that some people who were aware of the provision of direct cash relief reported natural deaths as the heat wave deaths. In the event of false reporting, the following procedures can be used for verifying and ascertaining the real cause of death.

- Recorded maximum temperature on the particular time periods and place.
- Recording incidents, panchnama or others witnesses, evidence or verbal – autopsy.
- Postmortem/medical checkup report with causes.
- Local authority or Local body enquiry/verification report.

4.2 Prevention of Heat Related Illness:

Heat-related illness is largely avoidable. The most crucial point of intervention concerns the use of appropriate prevention strategies by susceptible individuals. Knowledge of effective prevention and

first-aid treatment, besides an awareness of potential side-effects of prescription drugs during hot weather is crucial for physicians and pharmacists.

4.3 Acclimatization:

People at risk are those who have come from a cooler climate to a hot climate. When such visitors arrive during the heat wave season, they should be advised not to move out in open for a period of one week till the body is acclimatized to heat and should drink plenty of water. Acclimatization is achieved by gradual exposure to the hot environment during heat wave.

Table 4: Symptoms and First Aid for various Heat Disorders

Heat Disorder	Symptoms	First Aid
Sunburn	Skin redness and pain, possible swelling, blisters, fever, headaches.	Take a shower, using soap, to remove oils that may block pores preventing the body from cooling naturally. If blisters occur, apply dry, sterile dressings and get medical attention.
Heat Cramps	Painful spasms usually in leg and abdominal muscles or extremities. Heavy sweating.	Move to cool or shaded place. Apply firm pressure on cramping muscles or gentle massage to relieve spasm. Give sips of water. If nausea occurs, discontinue.
Heat Exhaustion	Heavy sweating, weakness, skin cold, pale, headache and clammy. Weak pulse. Normal temperature possible. Fainting, vomiting.	Get victim to lie down in a cool place. Loosen clothing. Apply cool, wet cloth. Fan or move victim to air-conditioned place. Give sips of water slowly and If nausea occurs, discontinue. If vomiting occurs, seek immediate medical attention. Or call 108 and 102 for Ambulance
Heat Stroke (Sun Stroke)	High body temperature (106°F). Hot, dry skin. Rapid, strong pulse. Possible unconsciousness. Victim will likely not sweat.	Heat stroke is a severe medical emergency. Call 108 and 102 for Ambulance for emergency medical services or take the victim to a hospital immediately. Delay can be fatal. Move victim to a cooler environment. Try a cool bath or sponging to reduce body temperature. Use extreme caution. Remove clothing. Use fans and/or air conditioners. DO NOT GIVE FLUIDS.

5. Roles and Responsibilities for Managing Heat Wave

5.1 Need for Data and Analysis

As Heat Wave is not a notified disaster at the National level, accurate information and data related to heat wave deaths and illnesses are not available. In order to prepare, and take necessary mitigative action we need data on the age group, sex and occupation of those who die of heat wave. We also need to collect data on whether the deaths occurred indoor or outdoor, and also about the economic status of the people who died. Hence, a format for collecting data is provided at Annexure 2. The DDMA and SDMA should collect data in the format suggested.

5.2 Prevention, Preparedness and Mitigation Measures:

Prevention, preparedness and mitigation measures for various stakeholders are enumerated in the following Table.

Table 5: Roles and Responsibilities for Managing Heat Wave

SN	Task/Activities	Central/State Agencies and their Responsibilities			
		Centre	Responsibility	State	Responsibility
1	Preparation of Heat Wave Action Plan	NDMA	Guidelines on preparing Heat Wave Action Plan	SDMA/DDMA/ Nagar Nigam/ Local Bodies	Preparing Heat Wave Action Plan and Implementation
2	Early Warning	IMD	Issue Heat Wave alerts and Weather Forecasts-Long and Short Term	State government/ District Officials	Disseminate Information to Public
3	Mitigating Heat Wave	Ministry of Urban/ Rural Development ; Drinking Water; Surface Transport	To construct Shelter/Sheds, Bus Stands, Provide Drinking Water at Worksites	Public Health and Engineering Department	To construct Shelter/Sheds, Bus Stands, Provide Drinking Water at Worksites
		Ministry of Health and Public Welfare	Stockpile ORS, Training Human Resource, Create Medical Posts at places of Mass Gathering.	Department of Health	Stockpile ORS, Create Medical Posts at places of Mass Gathering.
4	Monitoring and Response	Ministry of Health and Family Welfare	<ul style="list-style-type: none"> • Surveillance • Deployment of Rapid Response Teams • Specific care for Vulnerable Groups 	Health Department	<ul style="list-style-type: none"> • Surveillance • Deployment of Rapid Response Teams Specific care for Vulnerable Groups
5	Occupational Support and Advisories	All Ministries/ Departments	Take necessary measures as suggested in Annexure 1, wherever applicable	All Departments	Take necessary measures as suggested in Annexure 1, wherever applicable
6	Media campaign and IEC activities	Ministry of Information and Broadcasting	Extensive IEC campaigns to create awareness through print electronic and social media	Department of Information and Broadcasting/ SDMAs/ Commissioners of Relief/ State Govt/ Health Department	Extensive IEC campaigns to create awareness through print
7	Documentation	Ministry of Health & Family Welfare through IDSP	Collecting Data from States as per Annexure 2 and maintaining national level data base.	Revenue Departments/ SDMAs/ DDMA's/ Health Deptt.	Collecting Data and Information as per Annexure 2
8	Long Term Measures	Ministry of Urban	Improving the forest coverage and green	Department/ SDMAs and	Improving the forest coverage and green

		Development , Ministry of Environment Forests and Climate Change	areas Forest	other concerned Department	areas
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Annexure-1

Do's and Dont's

Heat Wave conditions can result in physiological strain, which could even result in death. To minimize the impact during the heat wave and to prevent serious ailment or death because of heat stroke, the following measures are useful:

DO's

1. Listen to Radio, watch TV, read News paper for local weather forecast to know if a heat wave is on the way
2. Drink sufficient water and as often as possible, even if not thirsty
3. Wear lightweight, light-coloured, loose, and porous cotton clothes. Use protective goggles, umbrella/hat, shoes or chappals while going out in sun.
4. While travelling, carry water with you.
5. If you work outside, use a hat or an umbrella and also use a damp cloth on your head, neck, face and limbs.
6. Use ORS, homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. which help to re-hydrate the body.
7. Recognize the signs of heat stroke, heat rash or heat cramps such as weakness, dizziness, headache, nausea, sweating and seizures. If you feel faint or ill, see a doctor immediately.
8. Keep animals in shade and give them plenty of water to drink.
9. Keep your home cool, use curtains, shutters or sunshade and open windows at night.
10. Use fans, damp clothing and take bath in cold water frequently.
11. Provide cool drinking water near work place.
12. Caution workers to avoid direct sunlight.
13. Schedule strenuous jobs to cooler times of the day.
14. Increasing the frequency and length of rest breaks for outdoor activities.
15. Pregnant workers and workers with a medical condition should be given additional attention.

DONT's

1. Do not leave children or pets in parked vehicles.
2. Avoid going out in the sun, especially between 12.00 noon and 3.00 p.m.
3. Avoid wearing dark, heavy or tight clothing.

4. Avoid strenuous activities when the outside temperature is high. Avoid working outside between 12 noon and 3 p.m.
5. Avoid cooking during peak hours. Open doors and windows to ventilate cooking area adequately.
6. Avoid alcohol, tea, coffee and carbonated soft drinks, which dehydrates the body.
7. Avoid high-protein food and do not eat stale food.

Annexure 2

District	Detailed Death Reported in 2017-18										
Meerut	Age Group	Urban		Rural		Economic Status		Location of Death		Occupation of Deceased	Remarks
		Male	Female	Male	Female	APL	BPL	Outdoor	Indoor		
Tehsil/ Block/ Pargan a	< 1 Year										
	1-4 Years										
	5-9 Years										
	10-14 Years										
	15-24 Years										
	25-34 Years										
	35-44 Years										
	45-54 Years										
	55-64 Years										
	65-74 Years										
	75-84 Years										
85 +											
District											
State											

End