# HEAT WAVE ACTION PLAN 2025-26


## DISTRICT DISASTER MANAGEMENT AUTHORITY(DDMA), DHAULPUR RAJASTHAN

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# FOREWORD

It is with great pride that I introduce the Heat wave Action Plan for Dhaulpur District. This comprehensive strategy underscores our unwavering dedication to safeguarding our community during period of intense heat.

Recognizing the importance of proactive disaster management in an evolving climate, this plan outlines our concerned efforts, organizational framework, and swift response mechanisms under the guidance of the District Administration.

While policy decisions originate from higher echelons, it is our responsibility to translate them into actionable measures. This plan serves a blueprint for mitigating the impact of heat waves, drawing from our collective experiences and striving for rapid restoration of normalcy.

We extend our gratitude for the invaluable support and input from stakeholders, and we welcome further collaboration to enhance our resilience and ensure community safety amidst extreme hear events. Together, let us forge ahead towards a safer, more resilient future.

Sreenidhi BT, IAS
District Magistrate/Chairman DDMA Dholpur,
Rajasthan

April, 2025

## Preface

In an era marked by the escalating challenges of climate change, the increasing incidence of heat waves presents a significant threat to public safety and environmental well-being. This Heat Wave Action Plan is a testament to our commitment to safeguarding our community against the perils of extreme temperatures. Developed with a focus on resilience and preparedness, it outlines a comprehensive strategy designed to protect the district and its residents from the adverse effects of heat waves.

Recognizing the unique vulnerabilities within our community, the plan emphasizes the importance of early warning systems and effective communication to ensure timely and widespread dissemination of heatwave alerts. It advocates for preventive measures against heat-related illnesses and underscores the necessity of a coordinated response that encompasses human, livestock, and agricultural concerns.

Central to the success of this plan is the delineation of clear roles and responsibilities for governmental agencies, local authorities, and the community at large. It calls for a unified approach, leveraging the collective strength and resources of all stakeholders to foster an environment of resilience.

As we navigate the challenges posed by a warming climate, this Heat Wave Action Plan serves as both a guide and a call to action. It underscores our resolve to proactively address the threats posed by heat waves, ensuring that our district is prepared to respond effectively and protect the well-being of all its inhabitants.

Let this document inspire and compel us to act with urgency, dedication, and a shared sense of purpose. Together, we can and will mitigate the impacts of heatwaves, ensuring a safer, more resilient future for our community.

**Heat Wave Action Plan**
**2025-26**
**Issued by: DDMA**
**Dhaulpur**
**April , 2025**

# INDEX

## Chapter-1

## INTRODUCTION TO HEAT WAVE

### 1. Introduction

Heat waves are associated with decreases in general population well-being and with increases in mortality and morbidity, especially in vulnerable population groups. Temperature thresholds for health impacts differ according to the region and season. The impact of heat wave has been considerably enough to threaten human health both directly and indirectly. The number of heat extremes has substantially increased across globe in recent decades. It is virtually certain that the length, frequency and intensity of heat waves will increase in the future. This increase will lead to a substantial increase in mortality over the next decades, especially in vulnerable population groups, unless adaptation measures are taken.

The global mean temperature in 2023 was about 1.45 degree Celsius above the 1850-1900 average. The ocean absorbs approximately 90% of energy in the climate system, warming it to record levels in 2023. Global sea level increased to a new high in 2023, since the beginning of satellite altimetry measurement in 1993.

### 1.1. Definition:

Heat wave is a condition of atmospheric temperature that leads to physiological stress, which sometimes can cause deaths as well. The 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. Different countries define heat wave differently in context of their local conditions. In India, as per IMD classification, heat wave is considered if maximum temperature of a station reaches at least 40°C or more for plains, 37°C or more for coastal stations and at least 30°C or more for hilly regions. Following criteria are used to declare a heat wave:

**a. Based on Departure from Normal**

- Heat Wave: Departure from normal is 4.5°C to 6.4°C
- Severe Heat Wave: Departure from normal is >6.4°C

**b. Based on Actual Maximum Temperature (for plains only)**

a. Heat Wave: When actual maximum temperature ≥ 45°C
b. Severe Heat Wave: When actual maximum temperature ≥47°C

To declare a heat wave, the above criteria should be met at least at two stations in a Meteorological sub-division for at least two consecutive days. A heat wave will be declared on the second day.

The level of heat discomfort is determined by a combination of meteorological (temp, RH, wind, direct sunshine), social/cultural (clothing, occupation, accommodation) and physiological (health, fitness, age, level of acclimatization) factors. 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 as high humidity does not permit loss of heat from human body through perspiration.

### 1.2. Vulnerable Groups of Population

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

i. Young children
ii. Pregnant Women & Nursing mothers
iii. Older people mainly above the age of 60
iv. Below Poverty Line (BPL) families with no or poor housing conditions
v. Infirm, isolated, and destitute
vi. People with preexisting medical conditions (e.g., cardiovascular and respiratory illness, diabetes), people on certain medications
vii. People with limited mobility, impairment of thermo-regulatory capacity and reduced ability to perceive changes in temperature
viii. People engaged in outdoor occupations (MNREGA)

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

### 1.3. Purpose and Aim of Heat Wave Action Plan

Disaster Management, Relief & Civil Defence Department, Government of Rajasthan is the primary agency with responsibility for the hazard of heat wave. The purpose of the Heat Wave Action Plan (this plan) is to outline the arrangements for the management of heat waves in District Dhaulpur across preparedness, response and recovery. The aim of this plan is to enable District Dhaulpur to mitigate the effects of, prepare for, respond to and recover from heat waves.

### 1.4. Necessity of Heat Wave Action Plan

There is a need of a coordinated multi-agency approach to the state's management of heat waves. At present, the problem of heat waves is being managed at an operational level but it needs to be managed at a strategic level. There is the need for clear roles and responsibilities in the management of heat waves, sufficient strategic monitoring, and greater clarity around triggers for activation and sharing of data across multiple systems and mapping or analysis of the extreme heat impacts across the community.

### 1.5. Objective of Action Plan on Heat wave

a. The Heat Wave Action plan aims to provide a framework for implementation, coordination and evaluation of extreme heat response activities in cities/ towns/ Panchayat that reduce the negative impact of extreme heat.
b. The Plan's primary objective is to alert those at risk of heat-related illness in places where extreme heat conditions either exist or are imminent, and to take appropriate precautions.
c. The Plan also calls for preparedness measures to protect livestock/animals as extreme heat causes significant stress to them as well.
d. The heat wave action plan is intended to mobilize departments and communities against avoidable health problems during spells of very hot weather.
e. The Plan also intends to help early warning agencies as well as the media. Taking all administrative/preventive actions that need to be taken by multiple agencies.

### 1.6. Goals

**Recurring /Regular Activities**

i. Developing and Display of color heat wave alerts and Do's and Don't s in public domains such as hospital, offices, etc.
ii. Multiple medium of communication (preferably in local languages) like TV, Radio and newspaper for awareness.
iii. Identify and reduce awareness gap through disseminating of information using pamphlets hoardings, LED display on advertisement boards.
iv. Change in timings of school, college, office, markets, workers etc.

**Short-Term:**

a. Installing temporary kiosks for shelter, and distribution of water, medicines, etc
b. Developing mobile application for spreading awareness on heat-related issues and locating shelters, drinking water kiosks, etc.
c. Issuing advisories for locals and tourists.
d. Setting up special cool shelters for "Wage Employment Program" such as Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGA).
e. Providing shade and drinking water for on-duty traffic personnel & other pedestrians.

**Medium Term**

i. LED Display boards installed at District Headquarters displaying the real-time weather data pertaining to Rainfall, Temperature, Humidity and Wind Speed should be incorporated into precautionary measures for Disaster Management.
ii. Involving departments of the Government for collating local coping and adaptation strategies, indigenous technologies such as vernacular building materials, construction of the green building, Energy Conservation Building Code (ECBC) etc. related to heat wave risk mitigation.
iii. New heat wave criteria must be evolved based on gridded data with maximum and minimum temperature, to develop a scientific model to determine all-cause mortality.
iv. Identify "heat hot-Spots" in State through appropriate tracking and modeling of meteorological data and promote the timely development and implementation of local Heat Wave Action Plan with strategic inter-agency co-ordination, and response which targets the most vulnerable groups.

**Long Term**

1. Focused capacity building-Heat wave mitigation management should be added in school curriculum to sensitize school children and local people. Training program in local level/ community level for awareness among people.
2. Integrate climate variability mitigation and adaptation efforts in HAP.
3. Yearly improvisation of heat wave plan through response and feedback data Collection.
4. Operational forecast of maximum temperature over India in short, Medium and extended range timescale is very useful in giving Heat Wave outlook.
5. Up gradation of forecast system and associated equipment to provide heat wave alerts minimum of 2 to 3 weeks prior to the event.
6. Health-harming air pollution apportionment studies, emission inventories, and health impact assessment of ambient and household air pollution through State-wise Clean Air Action Plan and use these findings to inform policies targeted at reducing the main sources of pollution via an inter-ministerial approach.
7. Evaluation of cascading effects of heat waves over flood, drought and hydrological models.
8. Involvement of academia along with collaboration and more participation from higher educational institutes may be developed. The centers for excellence and dedicated research centers may have a pivotal role to play.

### 1.7. Key Strategies

Severe and extended heat waves can also cause disruption to general, social and economic services. Government agencies will have a critical role to play in preparing and responding to heat waves at the local level, working closely with health and related departments on a long-term strategic plan.

**a) Establish early Warning System and Communication System.**
**b) Developing inter- agency response plan and coordination in field**
**c) Preparedness at the local level for health eventualities**
**d) Health care system capacity building**
**e) Public awareness and community outreach**
**f) Collaboration with private, non-government and civil society**
**g) Assessing the impact- feedback for reviewing and updating the plan**

***Source: NDMA Guidelines for Preparation of Action Plan- Prevention and Management of Heat-Wave-2019***

## CHAPTER-2

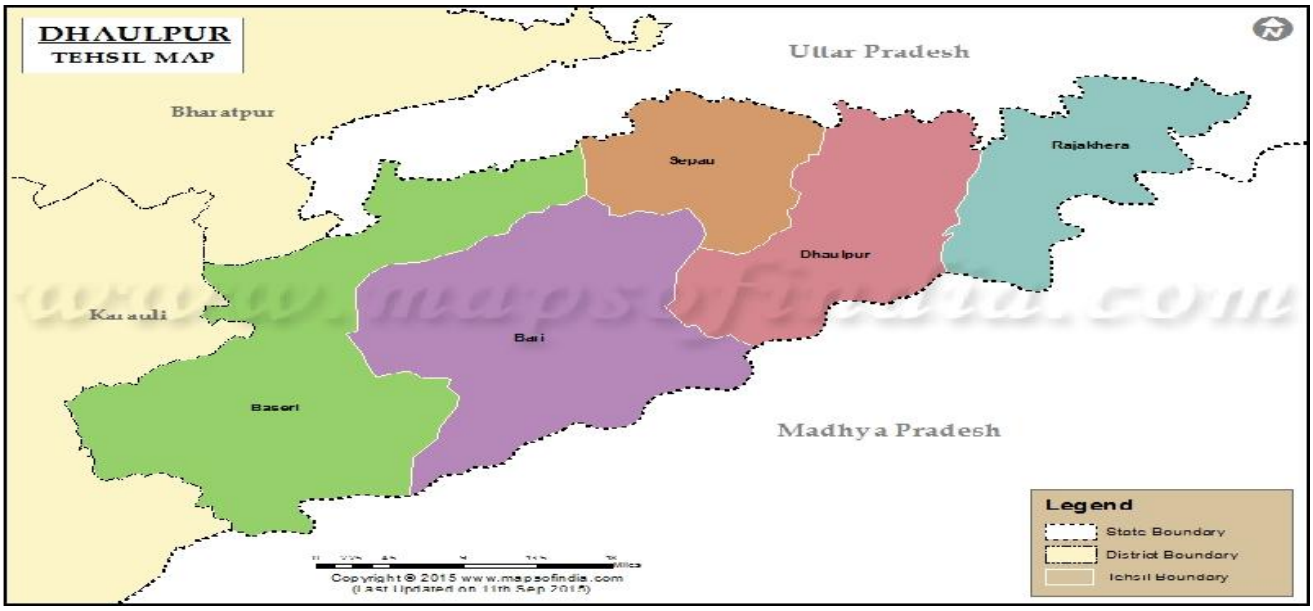
## DISTRICT DHAULPUR- AT A GLANCE

### 2.1 Geography and Climate of Dhaulpur District:

**Dholpur District** is a district of Rajasthan state in Northern India. The town of Dhaulpur is the district headquarters. Dholpur District is a part of Bharatpur Divisional Commissionerate. It was carved out from the erstwhile Bharatpur District on 15 April 1982.[2]

Dholpur District has an area of 3084 km$^2$. The Chambal River forms the southern boundary of the district, across which lies the state of Madhya Pradesh. The district is bounded by the state of Uttar Pradesh on the east and northeast, by Bharatpur District of Rajasthan on the northwest, and Karauli District of Rajasthan on the west. All along the bank of the Chambal River the district is deeply intersected by ravines; low ranges of hills in the western portion of the district supply quarries of fine-grained and easily worked red sandstone.

Administratively the district is divided into four subdivisions, Dholpur, Bari, Rajakhera, and Baseri, and six tehsils, Dholpur, Bari, Rajakhera, Basedi, Sarmathura and Saipau.




As of the 2021 census, Dholpur municipality had a population of 246,489.[2]

As of the 2011 census, Dholpur municipality had a population of 126,142[9] and the urban agglomeration had a population of 133,229.[3] The municipality had a sex ratio of 862 females per 1,000 males and 13.6% of the population were under six years old.[9] Effective literacy was 76.56%; male literacy was 84.22% and female literacy was 67.74%.[9]

The local language is Rajasthani, Hindi, Brajbhasha.

Dholpur is reputed to be the location of the highest recorded temperature in India, at 50 °C on 3 June 2017. The hottest months are May and June, which mark the oppressive summer season. Temperatures in summers are normally higher than 40 °C. Coldest months are December and January where temperatures sometimes reach near-zero and subzero levels. The lowest recorded temperature is -4.3 °C on 29 January 2017.[11] Annual average rainfall is 860 mm..

## 2.2. Related Hazards

Extreme heat can help create the conditions for drought and can exacerbate the impacts of drought by putting additional stress on available water supplies. Extreme heat can also lead to increased storm activity, which is linked to both high wind and flash flood hazards. It can also contribute to the spread of wild fires.

## 2.3. DISTRICT DHAULPUR MINIMUM AND MAXIMUM TEMPERATURES

Minimum and maximum temperatures are the two extreme points of temperature in a given place during a specific period. These temperatures are significant factors in determining the climatic conditions of a particular location. Maximum and minimum temperatures are used to predict heat waves and cold spells, which can have a significant impact on human health. Following table shows the min. and max. temperature of district Dhaulpur (March-June) for the year 2023 and 2024 for the better analysis of Heat Wave conditions.

| Year | Month | Temperature (°C) | |
|---|---|---|---|
| | | Maximum | Minimum |
| 2023 | March | 35 | 12 |
| | April | 41 | 17 |
| | May | 44 | 20 |
| | June | 42 | 23 |
| 2024 | March | 39 | 10 |
| | April | 41 | 18 |

***Source: AccuWeather Weather Forecast***

## 2.4. Vulnerable Hotspots in Dhaulpur District:

Based on analysis of maximum and minimum temperatures of District Dhaulpur for the year 2023 and 2024, Sub Divisions Rajakhera and Bari can be the vulnerable hotspots for the Heat Waves

## Chapter-3

# EARLY WARNING AND COMMUNICATION

### 3.1 INTRODUCTION

A warning system aims to empower individuals and communities to respond promptly and appropriately to hazards, reducing the risk of death, injury, property loss, and damage. To effectively communicate warnings and encourage action, measures should include extending lead time of warning, improving accuracy, increasing demand for probabilistic forecasts, improving communication using new technologies, targeting services to relevant users (right information to right people at right time at the right place) and understanding warning messages.

### 3.2 FORECASTING AND ISSUANCE OF HEAT WAVE ALERT/WARNING

The India Meteorological Department is mandated to meteorological observations and provides current and forecast meteorological information for optimum operation of weather- sensitive activities. It provides 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 Range:** (Lead beyond 10 days) | **Local range:**(Its intensity,frequency and time of occurrence is indicated) |
|---|---|---|---|---|

### 3.3. Identification of Color Signals for Heat Alert:

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

| ColourCode | Alert | Warning | Impact | Suggested Actions |
|---|---|---|---|---|
| Green (No action) | Normal Day | **Nil** | Comfortable temperatures | No cautionary |
| Yellow Alert (Be updated) | Heat Alert | Heat wave conditions atdistrict level, likely to persist for 2 days | Heat is tolerable for general public but moderate health concern for vulnerable people e.g. infants, elderly, people with chronic diseases. | Avoid heat exposure |
| Orange Alert (Be prepared ) | Severe Heat Alert for theday | i. Severe heat wave conditions likely to persist for 2 days.<br>ii. With varied severity, heat wave is likely to persist for 4 days or more. | Increased likelihood of heat illness symptoms in people who are either exposed to sun for a prolonged period or doing heavy work.<br>High health concern for vulnerable people e.g. Infants, elderly, people withchronic diseases. | Avoid heat exposure–keep cool. Avoid dehydration |
| Red Alert (Take Action) | Extre me Heat Alert for the day | I.Severe heat wave likely to persist for more than 2days.<br>I.Total number of heat/ severe heat wave days likely to exceed 6 days. | Very high likelihood of developing heat illness and heat stroke in all ages. | Extreme care needed for vulnerable people. |

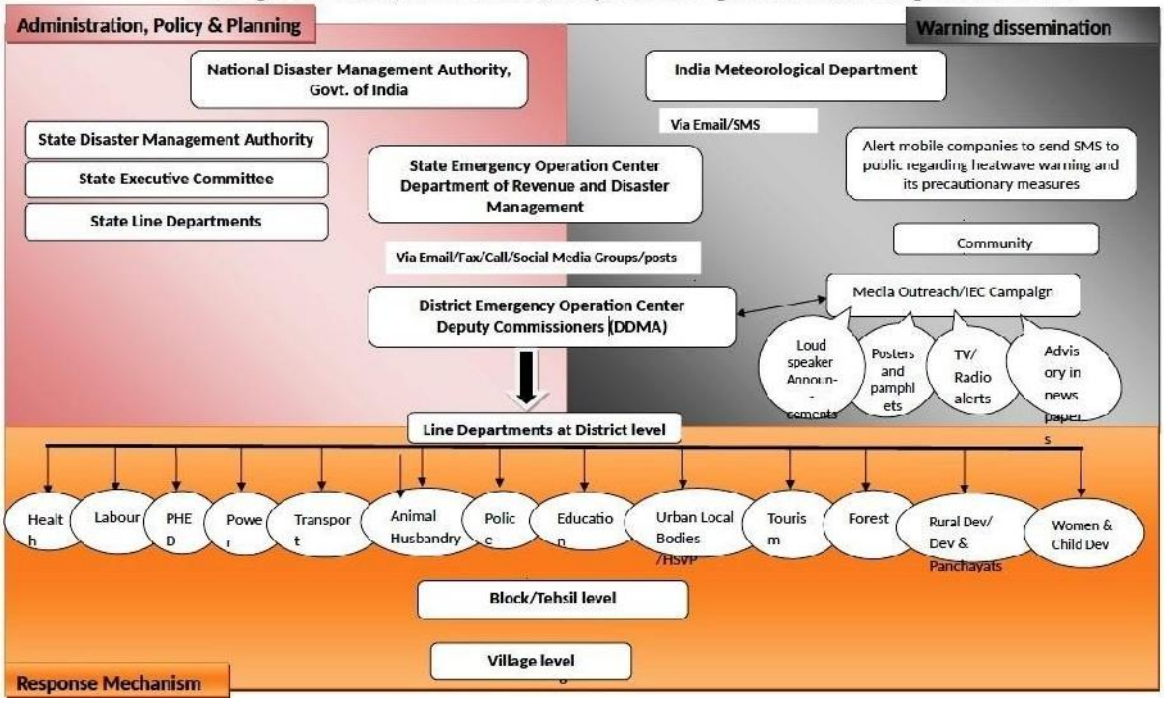
***Impact & action suggested by NDMA Guideline on heat wave-2019***

### 3.4. Heat Alert Warning System

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. Accurate and timely alert systems are essential. Collaboration with India Meteorological Department (IMD) is needed to develop heat warning systems (HWS), trigger a warning, determine the threshold for action and communicate the risks. It also provides real-time data and weather prediction of maximum temperature. The IMD issues a weekly bulletin with the Current Temperature Status and Warning for next five days. The Jammu & Kashmir State Disaster Management Authority and State Emergency Operation Centre instantly share this info to the District Disaster Management Authority and District Emergency Operation Centre. The District Administration communicates this in multiple channels to the public.

- Heat wave forecast is transmitted to all other concerned authorities through email by Jammu & Kashmir State Disaster Management Authority and State Emergency Operation Centre. The warning is sent to District Emergency Operation Centre which is further transmitted to DC, SP, ADC/ADM, ASP, SDMs and Tehsildars and all the heads of line departments through mass text and image message in the WhatsApp group to all.
- Issue of heat alert when extreme heat events are forecast by IMD to all key Departments / Agencies through SEOC.
- Department of Public and Relation Dissemination of heat alerts/advisories, Do's and Don't s in various district level as well local Hindi/ English Daily newspapers and other electronic social media.
- Activation of the DEOCs with inter-departmental personnel with vide publicity of Toll-Free No: 1077.

**Warning Dissemination; Administration, Policy and Planning Mechanism; and Response Mechanism**



# Chapter-4

## 4.1 Dealing with Heat Related Illness, Mitigation and Preparedness:

Heat illness results when the body is out of heat balance. Heat balance means that the heat the body produces equals the heat it loses. When the body is out of heat balance, it produces and retains more heat than it loses causing heat illness. Heat illnesses range from heat rash and heat cramps to heat exhaustion and heat stroke. Heat stroke can result in death and requires immediate medical attention. Heat building-up inside the body from moving muscles during physical work activities is the major source of heat build- up in the body. The more strenuous the physical activity, the more internal heat the body produces. Performing physical work activities when risk factors for heat illness are present increases the internal heat the body produces.

Added to this internal heat is the external heat load on the body which comes from working where environmental risk factors (e.g., hot air, direct sunlight or lack of effective shading) are present. A major danger from warm and hot weather, high relative humidity and lack of air movement is that these factors greatly slow the body's natural processes of releasing heat to the surrounding environment. All of these and other risk factors can increase the risk of heat illness.

A graphic table below shows the temperature and humidity Index followed by NOAA, USA for assessing the level of Heat wave is as under:

| **Relative Humidity** | **Temperature °C** | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 54 | 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 | 45 | 48 | 51 | 55 | 59 | | | | |
| 65 | 28 | 30 | 32 | 35 | 36 | 39 | 41 | 44 | 48 | 51 | 54 | 59 | | | | | |
| 70 | 29 | 31 | 33 | 35 | 38 | 40 | 43 | 47 | 50 | 54 | 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 | | | | | | | | | | | |
| | | Caution | | | | Extreme Caution | | | | | Danger | | | | Extreme Danger | | |

## 4.2. Prevention of Heat Related Illness:

Heat waves characterized by long duration and high intensity have the highest impact on morbidity and mortality. The impact of extreme summer heat on humanhealth may be exacerbated by an increase in humidity. There is growing evidence that the effect of heat wave on mortality is greater on days with high levels of ozone and fine particulate matter. Global climate change is projected to further increase the frequency, intensity and duration of heat waves and attributable death(WHO).

Heat related illness is avoidable. It can be best prevented if the vulnerable populations/communities are made aware of prevention tips, basic Do's and Don't s through effective use of various media. 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 to best mitigate the effects of heat illnesses.

**Symptom and First Aid Of Various Heat Disorders:**

| Heat Disorder | Symptoms | First Aid |
|---|---|---|
| Heat rash | 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 seek 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 gently massage to relieve spasm. Give sips of water. If nausea occurs, discontinue |
| Heat Exhaustion | Heavy sweating, weakness, Skin cold, pale, headache and clammy extremities. 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; call 108 and 102 for ambulance. |
| Heat Stroke (Sun Stroke) | High body temperature. Hot, dry skin. Rapid, strong pulse. Possible unconsciousness or altered mental status. 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 extremecaution. Remove clothing. Use fans and/or air conditioners. DO NOT GIVE FLUIDS ORALLY if the person is not conscious |

### 4.3. Hospital Preparedness Measures for Managing Heat related Illness

Director/In-charge of Hospitals in State/Districts should ensure that thefollowing measures are in place:

a. Detailed action plan to tackle heat-related illnesses well in advance of hottermonths.
b. Standard Operating Procedures to tackle all levels of heat-related illnesses. Capacity building measures for doctors, nurses and others staff should be undertaken.
c. Cases with suspected heat stroke should be rapidly assessed using standardTreatment Protocols.
d. Identify surge capacities and mark the beds dedicated to treat heat stroke victims and enhance emergency department preparedness to handle more patients.
e. RRT (Rapid Response Teams) to respond to any exigency call outside thehospitals.
f. Ensure adequate arrangements of Staff, Beds, IV fluids, ORS, essential medicines and equipment to cater to management of volume depletion andelectrolyte imbalance.
g. May try to establish outreach clinics at various locations easily accessible to the vulnerable population to reduce the number of cases affected. Health Centres must undertake awareness campaigns for neighborhood communities using different means of information dissemination.
h. Primary centers must refer the patients to the higher facility only after ensuring adequate stabilization and basic definitive care.
i. Hospitals must ensure proper networking with nearby facilities and medical centers to share the patient load which exceeds their surge capacities.
j. All cases of heat-related illnesses should be reported to IDSP (Integrated Disease Surveillance Programme) unit of the district.

### 4.4. Acclimatization:

Those who come from a cooler climate to a hotter climate, especially during the heat wave season, are at risk. They should be advised not to move out in open for a period of one week. This helps the body get acclimatized to heat. They should also be advised to drink plenty of water. Acclimatization is achieved by gradual exposure to the hot environment during a heat wave.

### 4.5. Heat Illness Treatment Protocol:

Recognizing that treatment protocols may vary slightly according to the setting (EMS, health centre, clinic, hospital emergency department, etc.), the following should apply generally to any setting and to all patients with heat related illnesses:

1. Initial patient assessment primary survey (airway, breathing, circulation, disability, exposure), vital signs including temperature
2. Consider heat illness in differential diagnosis if:

- Presented with suggestive symptoms and signs
- Patient has one or more of the following risk factors:
  - Extremes of age (infants, elderly)
  - Debilitation/physical deconditioning, overweight or obese

3. Lack of acclimatization to environmental heat (recent arrival, early insummer season).
4. Any significant underlying chronic disease, including psychiatric, cardiovascular, neurological, hematologic, obesity, pulmonary, renal,and respiratory disease
5. Taking one or more of the following:

- Sympathomimetic drugs
- Anticholinergic drugs
- Barbiturates
- Diuretics
- Alcohol

6. Remove from environmental heat exposure and stop physical activity.
7. Initiate passive cooling procedures

- Cool wet towels or ice packs to axillae, groin, and around neck; if patient is stable, may take a cool shower, but evaluate risk of such activity against gain and availability of other cooling measures.
- Spray cool water or blot cool water onto the skin
- Use fan to blow cool air onto moist skin

8. If temperature lower than 40°C, repeat assessment every 5 minutes; if improving, attempt to orally hydrate (clear liquids, ORS can be used but not necessary; cool liquids better than cold drinks. If temperature is 40°C or above, initiate re-hydration and immediately transport to emergency department for stabilization.

### 4.6. Livestock Preparedness during Hot Weather:

Extreme heat causes significant stress to livestock. There is a need to plan well for reducing the impacts of high temperatures on livestock. Keeping an eye on the weather forecasts, and developing a mitigation plan for high to extreme temperature can be effective in ensuring that the livestock has sufficient shade and water on hot days.

# Chapter-5

## Role and Responsibilities and Implementation Plan

### 5.1. Role of District Administration:

The DDMAs have the responsibility for overall management of disasters in the district. The Chairman cum District Magistrate has the authority to mobilize the response machinery and has been given financial powers to draw money under the provisions of the General Financial Rules/ Treasury Codes. All departments of the State Government, including the police, fire services, public works, irrigation etc., in accordance with NDMA Guidelines on Heatwave-2019 work in a coordinated manner under the leadership of the Deputy Commissioner during a disaster, except in Municipal Corporations/Council areas where the municipal body plays a major role. DDMAs/District administration should also focus on capacity building, participation and empowerment of these stakeholders in disaster management at local level.

### 5.2. Role of Local Self-Governments:

Local self-governments, both rural and urban, have emerged as important tiers ofgovernance, after the 73rd and 74th Amendments to the Constitution. These units can play an important role in Heat wave management under the overall leadershipof the District Administration.

### 5.3. Role of Public/NGO/Civil Society/Media:

The local community is both victim and usually the first responder in case of a disaster. Local community also carries traditional knowledge and relevant counter measures regarding disaster management. So the role of local community must be utilized with the help of NGOs and media. Mobilization of community action supported by local NGOs, along with government machinery is a must forquick, efficient and effective response. For this, healthy coordination must exist between Local administration and local community/NGOs. Local NGOs and civil society must work on developing a deep culture of safety and prevention in society.

NGOs, civil society and media also play an active role as pressure groups in a democracy so that any laxity on part of the government can be traced and fixed. So, the public and the NGOs should keep a close vigil over the functioning of the government regarding disaster management and render their services as a watchdog.

The IAG network created at State & District level should be utilized. The servicesof trained volunteers should also be utilized for the management of heat wave inthe State.

### 5.4. Departmental Responsibilities and Implementation Plan for Heat wavemanagement.

Heat wave mitigation measure involve a multi-sectoral and multi-dimensional administrative approach involving activities such as provision for drinking water, temporary shelter, rescheduling the working hours, providing better emergency medical services/ public health and so on. This Action plan provides a framework for implementation, coordination and evaluation of activities undertaken by Departments/Authorities in their respective area to reduce the negative impact of extreme heat wave. In view of above, some of the departments have been identified and their responsibilities are fixed for the proper management of Heat wave in the State:

| Sr. No. | District Agencies and their Role/Responsibilities | |
|---|---|---|
| | **Agencies** | **Role/Responsibilities** |
| 1. | District Admin./DDMA/ ULBs/PRIs | • Real-time surveillance and evaluation of weather situations.<br>• To disseminate the information received from IMD to the public at large.<br>• Disseminate the heat-health warning, determine the threshold for action and communicate the risks.<br>• Prepare SoP for heat wave response based on forecast andWeather Prediction<br>• Coordination among all stakeholders with clearly defined roles and responsibilities.<br>• Flexible opening hours of market and offices.<br>• Collaboration with non-government and civil society.<br>• Special care for vulnerable groups- children, disabled, women and old aged. |
| 2. | PRIs/ULBs | • Appointment of Nodal Officer at each level (district, tehsil and block, department etc.)<br>• Implementation of Heat Wave Action Plan.<br>• Heat waves should be included in the annual disastertraining calendar.<br>• Open parks/open areas during daytime for providing spaces with shade.<br>• Sprinkling of water on roads.<br>• Construct shelters, sheds at public places, provide access to public parks during heat wave season.<br>• Promote cool roofs initiative such as painting roof white,create green roofs and walls, and plant trees in neighborhood to keep them cool.<br>• Inter district collaboration for sharing experiences and data.<br>• Reviewing preparedness & mitigation measures. |
| 3. | Department of Health | • Prepare hospital preparedness plans.<br>• Dissemination of heat wave health plan by organizing awareness campaigns.<br>• Undertake orientation/training and issue alerts to village level functionaries.<br>• Adopt heat focused examination procedures at local hospitals.<br>• Deploy additional staff to take care of persons affected due to sunstroke.<br>• Activate Emergency services and keep sufficient stock of ORS and glucose etc. in all hospitals or dispensaries.<br>• Adopt a uniform process for registration of causalities or deaths due to heat wave. |
| 4. | Police Department | • Ensure shade for on duty traffic police, as they are more exposed to heat wave and distribution of cool jackets for traffic police personals. |

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| 5. | Department of PHE | • Ensure drinking water facilities at all common places.<br>• Identify vulnerable places and ensure drinking water facilities.<br>• Repair/maintenance of mechanical faults of tube wells, ponds at priority basis to ensure water storage.<br>• Suitable arrangement for drinking water supply and promptly respond to water scarcity. |
| 6. | Department of School Education/Higher Education | • Rescheduling of school timing and vacation as per heat wave situation.<br>• Ensuring cool places for all educational institutions, and availability of water facilities.<br>• Ensure that students avoid outdoor physical activities during the summer in schools.<br>• Heat wave management should be added to the school curriculum to sensitize school children and local people.<br>• Encourage research on heat wave related issue through universities/colleges. |
| 7. | Department of PWD/ Roads & Building | • Long term planning for heat resilience infrastructure.<br>• Promote cool roofs technology and use other similar heat reducing technology.<br>• Ensure implementation of mixed- use planning adopted in heat wave affected cities/towns.<br>• Heat appropriate planning of new buildings (consideration, e.g., in architecture, width/height ratio, street development, orientation and site) in urban and rural areas.<br>• Ensure capacity building of structural engineers, civil engineers, and architects for construction of green buildings, maintenance, and fire safety of the structures.<br>• Ensure construction of green buildings, environment and building code related to heat wave risk mitigation.<br>• Ensure implementations of latest Building Code for the construction. |
| 8. | Department of Information and Public Relation | • IEC Campaign to create awareness through print media,electronic media, social media, etc.<br>• Display board with color coding for heat wave alert.<br>• Display Do's and Don't s in the Public Areas, Hospitals, Parks, etc.<br>• Develop of mobile application for faster spread of heat related issues, alertness, space for shelters and drinking water. |
| 9. | Department of Forest | • Ensure proper afforestation at public places.<br>• Continuous watch in the forest area to avoid forest fires. and shade in forest areas.<br>• Maintain water bodies/ponds in the forest area for wild animals and birds. |

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| 10. | Department of Tourism | • Ensure proper registration of tourists who are visiting the State/UT/District.<br>• Publicize advisories for tourists on Heat Wave conditions in the State/UT/District.<br>• Build temporary shaded areas and ensure availability of safe drinking water for pilgrims at religious places. |
| 11. | Department of Railways | • Repair/maintenance of mechanical/electrical system on Priority basis including fan and cooling system.<br>• Ensure drinking water facilities in trains and railway stations. |
| 12. | Department of Transportation | • To ensure shelter/sheds at bus stops, drinking water Facilities at bus stops.<br>• Enable better emergency transport system for affected people to health care facilities with adequate essential equipment's. |
| 13. | Department of PWD | • Ensure repair & maintenance work for uninterrupted power supply before and during the summer.<br>• Re-scheduling load shedding. |
| 14. | Department of Animal Husbandry | • Follow the advisory on heat wave.<br>• Shelter for livestock and animal husbandry should be maintained.<br>• Pre positioning of adequate veterinary medicines and supplies.<br>• Update contingency plan regarding provision of drinking water for animals.<br>• Awareness on the impact of heat on animals and coping mechanisms. |
| 15. | Department of Labour/Social Welfare | • Training with construction/industries/commercial entities regarding Heat Wave related illness.<br>• Implement the directions for heat wave season.<br>• Re-scheduling of working hours for employees in different sectors.<br>• Ensure drinking water facilities at workplaces.<br>• Coordinate with the Health Department and ensure regular health check-ups of the workers and provide emergency ice packs and heat illness prevention material to construction workers. |
| 16. | District Electoral Officer | • Coordination with relevant departments and stakeholders to integrate heat wave management into election preparations.<br>• Ensure that polling stations have adequate shading and water facilities for voters and polling staff.<br>• Coordinate with local authorities to adjust polling hours if necessary to mitigate the impact of extreme heat on voters and election staff.<br>• Collaborate with the Department of Information and Public Relations to disseminate information about voting procedures and safety measures during the heat wave.<br>• Monitor the health and well-being of election officials and workers, providing necessary support and resources |

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| | | to prevent heat-related illnesses.<br>• Implement contingency plans to address any disruptions caused by the heat wave on Election Day. |

## 5.5. NOMINATED NODAL OFFICERS FOR THE IMPLEMENTATION OF HEAT WAVE ACTION PLAN 2024-25:

| S No | Officer Name | Designation | STD Code | Office | मोबाईल नं. |
|---|---|---|---|---|---|
| 1. | Dr. Amit Yadav | Divisional Commissioner Bharatpur | 05644 | 234891फै. 227977 | 9682321208 9996237788 |
| | Kamal Singh Yadav | ADC Bharatpur | 05644 | 234894 | 9413044400 |
| 2. | Sreenidhi B T | Collector & District Magistrate | 05642 IP - 28108 | 220254/ 220871 | 9449725585 |
| 3. | Hariram Meena | ADM | 05642 IP - 54003 | 221355 | 9414334790 |

# CHAPTER 6

## PROPOSED TRAINING PROGRAMME - EXTREME HEAT PREVENTION & MANAGEMENT

### 6.1. IMPORTANCE OF TRAINING PROGRAMMES:

The first and very foremost important learning of the training is making the participants clearly understand the distinction between extreme heat and Heat Wave. Both of these terminologies are often used very lucidly and interchangeably but in reality, they are not the same. While all the Heat Wave events are extreme heat events, not all extreme heat events need to be a Heat Wave. It is very much possible that an event of very high-temperature day/s during summer may not satisfy the criteria for Heat Wave (if any) and can still be an extreme heat event...! What is that distinction? Why it is important? This will be explained to participants during the training programme.

The proposed training programme will also draw the attention of participants to the most important climatology and weather-related global and regional phenomenon's which are climate change and global warming. The way they are linked with each other and how they are related to extreme heat will be described. Lastly, the training programme will end with examples of some of the extreme heat and Heat Wave events of the past in India and in Rajasthan that made a major impact in the field of extreme heat prevention and management.

**Proposed Training Programme Dealing with Extreme Heat Prevention & Management**

| Sr. No. | Training Module | Participants | Purpose of Training | Methodology | Time frame |
|---|---|---|---|---|---|
| 1. | Institutional Mechanisms to deal with extreme heat and Heat Waves. | Appointed Nodal Officers and Line Departments | (i) To illustrate institutional mechanisms Heat Wave prevention and management measures at district and block levels. | The trainer may narrate the topic through a PowerPoint presentation and then engage with participants on the question given above at the end of this session. | March-June |
| 2. | Awareness about Heat Wave Risks and Prevention | Students, Labour Class, Farmers, Aanganwadi Centers, Vulnerable Groups | (i) To illustrate the understanding of Heat Wave Risks and Prevention.<br>(ii) To enable them understanding the early warning alerts and community action | (i) Interactive presentations tailored for student engagement.<br>(ii) Group discussions and Q&A sessions.<br>(iii) Distribution of educational materials and resources. | March-June |

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| | | | | (iv) Performing mock exercises or "Nukkad Nataks" engaging Civil Defence Volunteers/ Aapda Mitra Volunteers. | |

**6.2 POST TRAINING EVALUATION**

The Nodal Officers appointed at district and block levels shall assess the overall effectiveness of the training. The difference between participants understanding of the subject during pre-training evaluation and during the post- training evaluation will give a fair idea about the aptness of topics covered in the training and the trainer's ability to efficiently delivering the subject. This will also be useful in improving the training module in the future.

**A. Objectives of the Evaluation**

- Assess changes in participants understanding of various topics of the training.
- Check whether the topics covered are aligned with the needs of participants.
- To get feedback from participants and trainees on changes required in future.

**Annexure's-I**

**Heat Wave Do's and Don't s**

**Must for All:**

- Listen to Radio; watch TV; read Newspaper and other sources for local weather news/heat advisories.
- Drink sufficient water - even if not thirsty.
- Use ORS (Oral Re-hydration Solution), homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. to keep yourself hydrated.
- Wear lightweight, light-colored, loose, cotton clothes.
- Cover your head: Use a cloth, hat or umbrella and uses protective goggles.
- Avoid caffeine, alcohol or sugared soda because they kind make fluid leaveyour body.

**Employers and Workers:**

- Provide cool drinking water near work place.
- Caution workers to avoid direct sunlight.
- Schedule strenuous jobs to cooler times of the day.
- Increasing the frequency and length of rest breaks for outdoor activities.
- Pregnant workers and workers with a medical condition should be givenadditional attention.

**Other Precautions:**

- Stay indoors as much as possible.
- Keep your home cool, use curtains, shutters or sunshade and open windowsat night.
- Try to remain on lower floors.
- Use fans, damp clothing and take bath in cold water frequently.
- If you feel faint or ill, consult a doctor immediately.
- Keep animals in shade and give them plenty of water to drink.
- Carry water with you.

**DONT's**

- Avoid going out in the sun, especially between 11.00 noon and 3.00 p.m.
- Avoid strenuous activities when outside in the afternoon.
- Do not go out barefoot.
- Avoid cooking during peak hours. Open doors and windows to ventilate cooking area adequately.
- Avoid alcohol, tea, coffee and carbonated soft drinks, which dehydrates thebody.
- Avoid high-protein food and do not eat stale food.
- Do not leave children, pets or anybody in parked vehicles - as they may getaffected by Heat.
- Don't drink ice-cold drinks as they can cause stomach cramping.

**Annexure's-II**

# TASK FORCE

## LIST OF IMPORTANT CONTACT DETAILS

| S No | Officer Name | Designation | STD Code | Office | मोबाईल नं. |
|---|---|---|---|---|---|
| 1. | Dr. Amit Yadav | Divisional Commissioner Bharatpur | 05644 | 234891फै. 227977 | 9682321208 9996237788 |
| | Kamal Singh Yadav | ADC Bharatpur | 05644 | 234894 | 9413044400 |
| 2. | Sreenidhi B T | Collector & District Magistrate | 05642 IP - 28108 | 220254/ 220871 | 9449725585 |
| 3. | Hariram Meena | ADM | 05642 IP - 54003 | 221355 | 9414334790 |
| 4. | Dr. Shadhna Sharma | SDO Dholpur | 05642 | 220834 | 9414445802 |
| 5. | Varsha Meena | SDO Rajakhera | 05642 | 233649 | 8285053671 |
| 6. | Bhagwat Sharan Tyagi | SDO Bari | 05647 | 273801 | 9414583463 |
| 7. | Sudha Rani Meena | SDO Baseri | 05646 | 276741 | 7240615787 |
| 8. | Hemant Kumar Ghanghor (A.C.) | SDO Saipau | 05642 | 266276 | 9414401612 |
| 9. | Sudha Rani Meena (A.C.) | SDO Sarmathura | - | - | 7240615787 |
| 10. | Dr. Shadhna Sharma (A.C.) | ACEM | - | - | 9414445802 |
| 11. | AVHAD NIVRUTTI SOMNATH (A.C.) | Addl. Director, Public services | - | - | 9834976317 |
| 12. | R. Satish Bainsla | Treasury Officer Dholpur | 05642 | 220894/ | 9530000844 |
| | Laxman Singh Parmar(A.C.) | STO Baseri | | 220994 | 9460114908 |
| | Santosh Mangal (A.C.) | Acct. Officer Collectorate | | - | 9414344034 |
| | Uttam Goyal | STO Bari | | | 9414583118 |
| | Rajkapoor Soni | STO Rajakhera | 05647 | 273313 | 8387996458 8003837017 |
| | Laxman Singh Parmar (A.C.) | STO Saipau | | | 9460114908 |
| | Santosh Mangal | ATO Dholpur | | | 9414344034 |
| 13. | Balbhadra Singh | Joint Director (SA)DOIT&C | 05642 | 221044 | 9810507186 |
| | Prahalad Agrawal | Programmer | IP -28216 | | 9335120846 |
| 14. | Kalyan Sahay Karaul | DSO | 05642 | 220814 | 9521754458 |
| | Gajendra Babu Sharma | EO | | | 9413040209 |
| | Samiksha Dinkar | EO Dholpur | | | 8949926281 9799213902 |
| | Jagdish Sharma | EO | | | 9414472651 |
| | Lokesh Chand Dwivedi | Manager Civil supply | | | 9660224725 |
| | Jagram Meena | Manager FCI Dholpur | | | 9888878521 |
| 15. | Alka Srivastav | Sub Registrar | - | - | 9079242005 |
| 16. | Alka Srivastav (A.C.) | TDR Dholpur | 05642 | 220879 | 9079242005 |
| 17. | Deepti (A.C.) | TDR Rajakhera | 05642 | 233012 | 7891369029 |
| 18. | Nahar Singh (A.C.) | TDR Saipau | 05642 | 266276 | 9413593199 |
| 19. | Uttamchand Bansal (A.C.) | TDR Bari | 05647 | 273505 | 9414375875 |

**Annexure's-II**

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|---|---|---|---|---|---|
| 20. | Brajesh Kumar Singh | TDR Baseri | 05646 | 276107 | 8114466539 |
| 21 | AVHAD NIVRUTTI SOMNATH | CEO Zila Parishad | 05642 | 220776 | 9834976317 |
| 22 | Sumit Mehrada I.P.S. | S.P. Dholpur | 05642 | 220267<br>F-221873 | 9414344367<br>8764511201 |
| 23 | Gaurav Yadav | DTO | 05642 | 240028 | 9950094872 |
| 24 | Dr. Dharm Singh Meena<br>Dr. Chetram Meena<br>Dr. Gaurav Meena | CM&HO Dholpur<br>Dy. CM&HO Dholpur<br>Add. CM&HO Dholpur | 05642 | 220733 | 9414459342<br>9414315222<br>8005870718 |

- **Control Room Dhaulpur District Contact No.**

1. **Land Line No:- 05642-220033**