

HEATWAVE ACTION PLAN 2023

District Emergency Operation Center, Cuttack



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ABBREVIATION

AAO : Assistant Agriculture Officer
ACSO : Assistance Civil Supply Officer
ADMO : Additional District Medical Officer
ADVO : Additional District Veterinary Officer

AIR : All India Radio

BEO

ASHA : Accredited Social Health Activist

: Block Education Officer

CBDM : Community Based Disaster Management

CCI : Child Care Institution

CDAO : Chief District Agriculture Officer
CDMO : Chief District Medical Officer
CDVO : Chief District Veterinary Officer
CHC : Community Health Centre

CSO : Civil Supply Officer
DEO : District Education Officer
DLO : District Labour Officer
DMR : Digital Mobile Radio

DPC-SSA : District Project Coordinator, Sarva Shiksha Abhiyan

DPM : District Programme Manager

DRDA : District Rural Development Agency
DSSO : District Social Security Officer
DSWO : District Social Welfare Officer
EWD : Early warning dissemination

EWDS : Early Warning Dissemination System

HAP
 I & PR
 Information & Public Relation
 IDRN
 India Disaster Resource Network
 IMD
 India Meteorological Department
 Imdia Meteorological Department

LI : Labour Inspector
LI : Livestock Inspector
MI : Marketing Inspector
MO : Medical Officer

MVI : Motor Vehicle Inspector

OSPCB : Odisha State Pollution Control Board

PHC : Primary Health Centre
RTO : Regional Transport Officer
RTU : Remote Terminal Unit

SBMDVT : Satellite Based Mobile Data Voice Terminal

SI : Supply Inspector

VAW : Village Agriculture Worker MPY : Matsya Pokhari Yojana

PMMSY : Pradhan Mantri Matsya Sampada Yojana

VHND : Village Health Nutrition Day
RI : Routine Immunization
RI : Revenue Inspector

ANM : Auxiliary Nurse Midwife
NCLP : National Child Labour Project

MGNREGS: Mahatma Gandhi National Rural Employment

Guarantee Scheme

OPWD : Odisha Public Work Department
PWSS : Pipe Water Supply Scheme
WUA : Water User Association

SNP : Supplementary Nutrition Programme

MOFS : Ministry of Earth Sciences

WRF : Weather Research & Forecasting

GFS : Global Forecast System

GEFS : Global Ensemble Forecast System

NCUM : National Center for Medium Range Weather

Forecasting

GIS : Geographic Information System SRO : Special Relief Organisation

IEC : Information Education Communication

ORS : Oral Rehydration Solutions
ARD : Animal Resources Development

VD : Veterinary Dispensaries
LAC : Livestock Aid Center
NGO : Non-Govt. Organisation

CBO : Community Based Organisation

NGT : National Green Tribunal

FOREWARD

Cuttack district is prone to multiple natural disasters like Cyclone, Flood, Heat Wave, etc. Similarly, human induced disasters such as road accidents, fire accidents, industrial disasters cannot be ruled out in the district. Only option is available to reduce the impact is preparedness, awareness among the community and other stakeholders.

Heatwave caused 254 nos of deaths in the year 1998 in the district which is second highest in the State. But in last 10 yrs the death figures have come down to single digit numbers. To reduce the impact of heatwave the only way out is to educate the pupils, community, PRIs, Administrative officers about the preparedness measures to be taken while they are exposed to day / sun light. So medical preparedness, veterinary preparedness, energy preparedness, provision of drinking water in water scarcity pockets, massive awareness campaigns, proper planning, opening of Paniya Jala Seva Kendra in different community congregation places are required to be done at all levels. So, administration is taking up different actions at all levels to reduce impact of heatwave.

District Emergency Operation Center, Cuttack

<u>CHAPTER – I</u> INTRODUCTION

1.1: Rationale for Preparation of Heat Action Plan (HAP):

Odisha has a history of Heat Waves with soaring temperatures being recorded in several parts of the state. About 2042 people died in the State in the year 1998 due to Heat Wave. Casualties related to Heat Wave were experienced by the state again in 2005 when 236 lives were lost. There could have been many possible reasons including growing urbanization, rising population and industrialization. The problem is further going to be magnified due to climate change. According to the estimates, the situation is likely to worsen in the coming years; the World Meteorological Organization (WMO) predicts heat related fatalities will double in less than 20 years. The situation demands that the policy makers and researchers revisit and strengthen the current HAP. Till date, the Heat Wave measures have been mostly preventive in nature. However, prolonged summers, increased temperature and climatic changes require designing adaptive measures and building resilience in the informal sector (vulnerability assessment and alternate livelihood generation of the vulnerable population) along with the preventive actions. Under these circumstances, adaptation is a key response strategy to minimize potential deaths and other adverse effects on health due to Heat Waves (NDMA Guideline 2019).

1.2: Heat wave Definition:

Heat Wave is defined based on the temperature thresholds over a region in terms of actual temperature or its departure from normal. It is a condition where air temperature becomes fatal to human body when exposed. The World Meteorological Organization (WMO) 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'. Again, depending on the upper deviation from the normal temperature it can be moderate Heat Wave or Severe Heat Wave (www.imd.gov.in)

As per India Meteorological Department (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:

Based on Departure from Normal

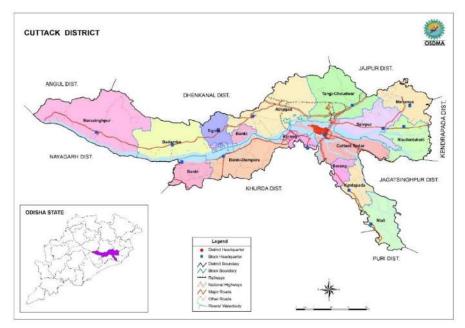
- Heat Wave: Departure from normal is 4.5°C to 6.4°C
- Severe Heat Wave: Departure from normal is >6.4°C

Based on Actual Maximum Temperature (for plains only)

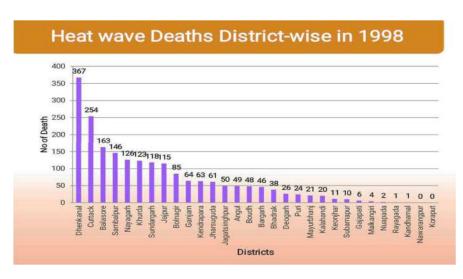
- Heat Wave: When actual maximum temperature ≥ 45°C
- ◆ Severe Heat Wave: When actual maximum temperature ≥47°CTo declare a Heat Wave, the above criteria should be met at least at two stations in a Meteorological sub-division for at least two consecutive days. A Heat Wave will be declared on the second day. Higher peak temperatures daily and longer and acute Heat Waves are becoming increasingly frequent globally due to climate change

1.3: District Scenario:

Cuttack district is located between 84 58 to 86 20 East longitude and 20 3 to 20 40 North latitude. Cuttack District is located at an altitude of about 15 meters above MSL and receives an annual average rainfall of about mm. 1501.3 Its climate is hot and humid. During the



summer, the mercury rises as high as 40 celsius while during the winter, the temperature falls as low as 10 Celsius. Summer starts at the end of March and lasts till June till monsoon sets in. The district is mostly rural in character having 1981 villages with one municipal corporation, one municipality and two NACs. Increasing urbanization has contributed to the fast development in the district falling under fifteen Tahasils.



Odisha had experienced the heat wave condition in the year 1998 in which 2042 human loss has occurred, 254 nos of deaths occurred Cuttack district which is 2nd highest

in the year 1998. Currently, due to prompt actions, proactive measures & massive public awareness the loss has been decreased a lot which has come to single digits.

1.4: Objective of the Heatwave Action Plan:

- 1. Effective warning dissemination
- 2. Effective planning to reduce the impacts

- 3. Effective awareness among the community in all spheres to protect their life and livestock
- 4. Setting of hospital to deal with sunstroke affected patients with adequate beds, medicines, AC/cooler fitted rooms
- 5. Identification of water scarcity pockets and strategic planning to meet the water scarcity
- 6. Ensure departmental preparedness particularly CDM & PHO, CDVO, Rural Water Sanitation Division, Panchayati Raj & Drinking Water Division, WATCO / Public Health Divisions, Tata Power Central Odisha Distribution ltd etc. along with Blocks, Tahasils and Urban Local Bodies to keep close watch on the situation and work accordingly.

CHAPTER -II

DISTRICT PROFILE

2.1: District at a Glance

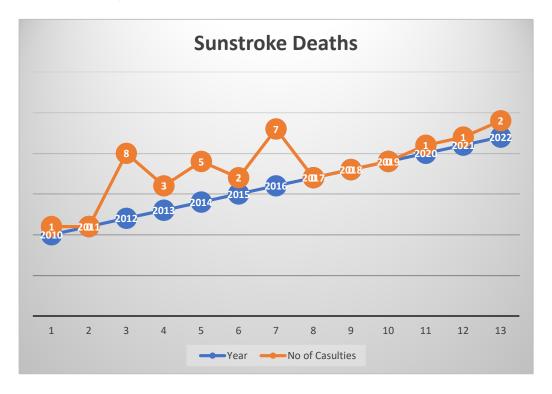
SI. No	Particulars	No.	Remarks
1	No. of villages	1981	
	Total Population	2624470	2011 Census
2	a. Male	1352760	
	b. Female	1271710	
	c. Children		
3	No. of Blocks	14	
4	No. of Gram panchayat	373	
5	No. of Tehsil	15	
6	No. of RI circle	171	
7	No. of Police Stations & Out Post	76	
8	No. of Fire Stations	18	
9	No. of Urban Local Bodies	4	1- CMC
10	No. of Sub-centres	332	
11	No. of PHC	4	
12	No. of CHC	18	
13	No. of Sub-Divisional Hospital	2	
14	No. of Veterinary hospitals	3	
15	No. of Anganwadi Centres	3318	
16	No. of ASHA	1800	
17	No. of Colleges	59	
18	No. of Schools	2497	
19	No. of Odisha Adarsh Vidyalaya	14	
20	No. of Rural Water Supply system		
21	a) No. of Tube Wells	23996	
22	b) No. of tube well	23952	
	Functional/running		
22	c) No. of tube well dysfunctional	44	
23	d) No. of tube well dysfunctional but	26	
	repairable		
24	e) No. of tube well having solar	159	
	power		
25	f) No. of Mega Water Supply	669	
26	No. of Temporary Shelters		
27	No. of Night Shelters		

2.2: Occurrence of Heat wave:

The Heat Waves over District Cuttack generally occur during the summer season which commences in March and stretches until June/July. Cuttack district has encountered 254 deaths in the year 1998, which has taught us to think and take appropriate steps to reduce the deaths. With proper planning, mass awareness trough

posters / miking, prompt actions, community involvement, preparedness at all level, the death figure reduced in last 13 yrs.

The deaths occurred due to heat wave from the year 2010 is given below: Human casualty due to Heat Wave in the District:



CHAPTER - 3 EARLY WARNING DISSEMINATION

3.1: Forecast and Issuance of Heat Wave Alert by IMD:

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

IMD has a big network of surface observatories covering entire country to measure various metrological parameters like Temperature, Relative humidity, pressure, wind speed & direction etc. Based on daily maximum temperature station data, climatology of maximum temperature is prepared for the period 1981-2010 to find out normal maximum temperature of the day for the particular station. Thereafter, IMD declares Heat Wave over the region as per its definition. IMD issues temperature forecast & warnings in following range:

- a) Short to medium range (lead time/validity of 1 to 5 days)
- b) Extended range (lead time/validity upto 4 weeks)
- c) Seasonal range (lead time/validity upto 3 months)

IMD predicts Heat Wave based on synoptic analysis of various meteorological parameters and from the consensus guidance from various regional & global numerical prediction models like, WRF, GFS, GEFS, NCUM, UMEPS, UM Regional etc. available at Ministry of Earth Sciences (MoES) and other international models accessible under bilateral multi-institutional arrangement

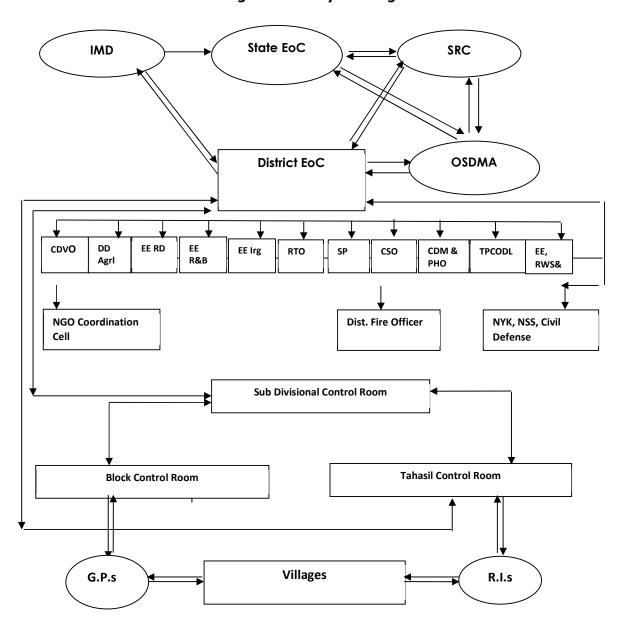
A common man may get Heat Wave information from, All India Weather Forecast Bulletin (https://mausam.imd.gov.in) and special Heat Wave guidance bulletins (http://internal.imd.gov.in/pages/heatwave_mausam.php) every day from 1 April to 30 June.

The Heat Wave information is shared with concerned State Government Authority, Media and other stakeholders like Indian Railway, Health departments, Power Sector etc. The general public is informed through Print & Electronics Media. IMD issues forecasts and warnings for all weather-related hazards in short to medium range (valid for the next five days) every day as a part of its multihazard early warning system. These warnings, updated four times a day, are available at http://www.imd. gov.in/pages/allindiawxfcbulletin.php.

A new system of exclusively heat-related warnings has been introduced with effect from 03 April 2017. These warnings, valid for the next 5(five) days, are issued around 1600 hours IST daily and are provided to all concerned authorities (Departments of

Health, Disaster Management, Indian Red Cross and Indian Medical Association, NDMA etc.) for taking suitable action at their end. A bulletin in extended range with outlook for the next two weeks (for all hazards including Heat Wave) is issued every Thursday (available at http://www.imd.gov.in/ pages/ extended.php).

Information flow chart from District Emergency Operation Center (DEoC) to Villages with early warning



Information Dissemination of Heat Wave Warning: -

- On receipt of warning messages relating to Heat Wave from I.M.D. / SRC / OSDMA and other higher quarters the District Control Room shall make necessary arrangements to alert the subordinate offices connected with management of calamity adopting necessary measures to combat the heat wave situation to keep the people alert.
- The warnings shall be disseminated through e-mail, Phone, District What's app Groups, Special messenger. The report on **Heat Wave casualty** should be reported immediately by the Tahasildar and Medical Officers to the District Emergency Control Room for onward transmission to higher quarters. In case of any causality, it shall be instantly reported to the DEOC by Tahasildars and thereafter joint enquiry report to be submitted within 24 hours and through DAMPs.
- Colour Code for Heat Wave Warning is given below:

Color Code	Alert	Warning	Impact	Suggested Actions
Green (No action)	Normal Day	Nil	Comfortable temperatures	No cautionary action required
Yellow Alert (Be updated)	Heat Alert	Heat wave conditions at district 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 the day	 i. Severe heat wave conditions likely to persist for 2 days. ii. With varied severity, heat wave is likely to persist for 4 daysor more. 	Increased likelihood of heat illness symptoms in people who are either exposed bsun for a prolongedperiod or doing heavywork. High health concernfor vulnerable people e.g. infants, elderly, people with chronic diseases.	Avoid heat exposure— keep cool.Avoid dehydration
Red Alert (Take Action)	Extreme Heat Alert for the day	i. Severe heat wave likely to persist for more than 2 days. ii. Total number of heat/ severe heat wave days likely to exceed 6 days.		Extreme care needed for vulnerable people.

3.2: Monitoring Heat wave by DDMA

Based on IMD observations, heat conditions of District are analyzed on a daily basis by DDMA from March-June every year. Maximum temperature map of the state is prepared on GIS platform. The information is disseminated to the different stakeholders through social media.

- Call for a preparatory meeting in the month of March.
- Issue directions to all line departments to take appropriate action as and when required.
- Overall monitoring of the situation in the district.
- Ensure functioning of Control Rooms in all concerned offices.
- Conduct review meeting with all stakeholders if situation arises.

3.3: Information Dissemination through SATARK Application:

SATARK is a decision support system based on the Web / Smartphone that helps to provide early warning information for different risks. It is an application developed by OSDMA in collaboration with RIMES. Once a person downloads the app and gives the location, he / she shall receive Block level & location specific alerts through Mobile App, E-Mail, SMS and other available sources.

The link is

https://play.google.com/store/apps/details?id=satark.app.io.ionic&hl=en_IN&gl=US.

CHAPTER - IV

PREPAREDNESS MEASURE

4.1 Standard Operating Procedure:

1. Collector -cum- Chairman District Disaster Management Authority (DDMA), Cuttack:

- Call for a preparatory meeting in the month of March.
- Issue directions to all line departments to take actionas and when required.
- Overall monitoring of the situation in the district.
- Ensure functioning of Control Rooms in all concernedoffices.
- Conduct review meeting with all stakeholders if situation arises.

2. CDO-Cum-EO, Zilla Parishad:

- Issue direction to the BDOs for proper provision of water in water scarcity pockets through tanker
- Proper maintenance of tube wells in the rural pockets
- Instruct the BDOs to ensure that technicians are attending the call from the villages to repair the defunct tube wells.

3. Dist. Emergency Operation Center, Cuttack

- Conduct of meeting at district level for review the preparedness by the Line departments.
- Preparation of Heat Action Plan & sharing to the Line Departments.
- Ensure opening of Control Room from 1st April for the summer season in all concerned offices
- Issue of instruction for preparation of Departmental plans to combat the situation and sharing the same with the DEOC
- Functioning of control room round the clock.
- Dissemination of warnings received from IMD / SEOC to the lower quarter.
- Collection of daily situation reports & transmission to higher quarter.
- Create Awareness through posters / leaflets supplied by OSDMA.
- Action for payment of Ex-gratia at the earliest.
- Grievance resolution.
- Over all monitoring of the situation.

4. Chief District Medical & Public Health Officer, Cuttack

- Control Rooms to be opened at DHH, SDH and CHCs
- Create awareness activities
- All CHCs are to be kept in readiness with Air Conditioners / Coolers and power backups and sufficient ORS & IV fluid
- At DHH, special rooms & beds to be kept ready for heat stroke patients.
- Earmark one bed in each CHC for Heat Stroke patients. The room must be attached with A/C or Cooler.

- Capacity building of Doctors, Nurses, Pharmacists & Health Workers etc.
- Training of 108 Ambulance workers and Mobile Health Units for management of heat related cases.
- Display of Do's & Don'ts of Heat waves on Swathya Kantha of Villages / posters in public congregation places
- Orientation of Doctors & medical staffs dealing with heat distress patients.
- Stock piling of sufficient lifesaving medicines, ORS packets, Ice packs & IV fluids at DHH and supply to the PHCs & CHCs.
- Arrangement of cold drinking water in the hospitals.
- Adequate supply of ORS to the ASHAs, Health Workers & Anganwadi Workers.
- Mobile health unit must be kept in ready for the service.
- Keep ambulances ready for transportation & referral of heat stress patients.
- Joint Enquiry report by the Local Revenue Officer & Medical Officer on every death due to sunstroke within 48hrs.

5. Chief District Veterinary Officer, Cuttack

- Information Education & Communication (IEC) activities for Animal Care during heat for Livestock farmers
- Activate field staff to create awareness among the Livestock farmers on the Animal Management during Heat Wave conditions.
- Stock piling of required Medicines
- Orientation of veterinary officials on diagnosis and management of heat related illness.
- Ensure creating of water Chahala / VAT
 near the tube wells / water ponds where ever necessary for use of Cattles in
 consultation with concerned BDOs.
- Mobile veterinary Teams to be formed in different blocks to treat the livestock
- Make aware the fish farmers to maintain the water level in the ponds before summer.
- Provision of shed nets over the ponds.

6. District Education Officer / Dist. Welfare Officer / Dist. Child Protection Officer



- Reschedule school timing as per the department direction.
- Instruct all parents to send their child with water bottles and umbrellas to the school
- Ensure that the students are taking water in regular intervals
- Ensure Avoiding physical activities during school hours.
- Promote School Safety Plan in the schools.
- Provision for safe drinking water, ice packs, ORS etc. at schools & examination centers.



- Completion of all examinations by end of March.
- Awareness creation among students how to overcome heat stress disorders
- Ensure provision of drinking water in those schools where water problem persists

7. District Social Welfare Officer:

- Orient the CDPOs & supervisors on heat stress management
- Educate young girls and mothers regarding the dangers of Heat Waves, its related health impacts and the precautionary measures to be taken.
- Display IEC materials at Anganwadis and encourage Integrated Child Development Scheme (ICDS) workers to disseminate Heat Wave related information with special focus on infants, children below five years, pregnant and lactating mothers, and geriatric population to protect them from dehydration.
- Provision of drinking water and first aid kits at all the Anganwadi Centers, old age homes, orphanages.
- Sensitization of community on heat wave at Kishore Swasthya Mela, Village Health & Nutrition Day and other similar community gatherings
- Conduct Awareness campaign & distribute IEC materials for public display and awareness

8. District Panchayat Officer:

• Intimate all Gram Panchayats & Zilla Parishad members to create awareness among PRIs / Ward Members etc.

9. District Fire Officer:

- Remain alert with man and machine to tackle any untoward incidents due to fire in rural as well as urban areas.
- Conduct awareness camps in market places as urban fire is happening now a day
- If required sprinkle water in places where birds congregate in consultation

with Forest officer.

10. RWS&S / WATCO / PHED:

- Identification of water scarcity pockets
- Provision of safe drinking water through water tankers in water scarcity pockets
- Coordination with TPCODL for necessary power supply to the water lifting points.
- Procurement of spare parts for necessary repair of defunct tube wells
- Hiring of Tankers / Storage Tanks to provide water to water scarcity pockets.
- Junior Engineer II along with SEMs need to be in alert to attend the defunct tube wells in Rural Area within 48 hrs.

11. TPCODL

- Create awareness for energy conservation.
- Repair of defunct machines for power supply.
- Uninterrupted supply of electricity during day time.
- Power cut timing should be reduced to evening.
- If more time required for any repair work, the power cut time must be announced one day before.
- Power cut timings must be informed to the people well in advance.
- Line men should obey the guidelines to avoid heat stress.
- Transformers may be kept in readiness for necessary replacement.
- Complaints regarding power supply issues should be attended immediately.
- Accessories or instruments should be kept stocked for any immediate repair.
- Steps should be taken to provide sustained electricity supply to ensure regular water supply.

12. District Labour Officer / Asst. Director (F&B)

- Issue a direction to the implementing agencies, executants of public works and private employers for rescheduling the working hours to avoid exposure of labourers / workmen from 1st April.
- Ensure restriction of working hour from 11.00 AM to 03.00 PM.
- Ensure temporary shades are made at work sites.
- Ensure arrangements like safe drinking water, First Aid & protection from heat exposure etc. are provided at work place.
- Restriction of child labour at worksite.

13. Regional Transport Officer:

Rescheduling of bus timing of the bus running at the peak period.

- Ensure buses are not overcrowded.
- Ensure provision of potable water, ORS packets & First aids have been made available in public transport vehicles.
- Issue of directives for non-transportation of people in the open transport vehicles
- Strictly restrict the bus owners not to ply passengers over the roof top of bus during peak hours.

14. Block Development Officers

- Awareness Campaigning & public announcement about the do's and don'ts issued by the department of Health and family welfare & OSDMA.
- Ensure safe drinking water for all.
- Restrict the MGNREGA workers to work from 11.00 AM to 03.00 PM.
- Issue directions to the contractors to provide shelter at worksites and provide drinking water facility in worksites.
- Encourage for alternative livelihoods.
- A complaint registers to be maintained to receive the complaints regarding the non-functional Tube wells.
- Defunct tube wells need to be repaired at the earliest. Complaints regarding defunct tube wells needs to be attended immediately.
- Opening of Paniya Jala seva Kendra in public gathering places. Involve NGOs in opening the Paniya Jala seva Kendra in different public congregation places.
- Ensure participation of PRIs in creating awareness in their respective jurisdiction.

15. Tahasildars:

- Prompt reporting of the heat wave death cases if any to the DEOC.
- Joint Enquiry report by the Local Revenue Officer & Medical Officer on every death due to sunstroke within 48 hrs.
- In case of confirmed death, the same should be immediately uploaded in DAMPs.

16. Executive Officers, Municipalities and NACs:

- Ensure safe drinking water for all in Municipalities & ULBs.
- Provision of drinking water through tankers in water scarcity pockets.
- Instruct the NGOs / Bus Owners Association to open Paniya Jala seva Kendra in bus stands and market places
- Keep parks open during peak hours to provide cool resting spaces for the public.
- Construction of heat resistant buildings at public places for long run prevention.
- Opening of Paniya Jala seva Kendra in public gathering places. Involve NGOs/CSOs in opening the Paniya Jala Seva Kendras in different public congregation places.
- Defunct tube wells need to be repaired at the earliest. Complaints regarding defunct tube wells needs to be attended immediately.

4.2 Awareness and IEC activities

Table 1. Spectrum of Heat Related Illness

Heat Related Illness	Clinical Presentation	Treatment
Heat edema	 Milds welling of feet, ankle and hands Appears in few day s of exposure to hot environment Does not progress to pre tibial region 	 Usually resolves spontaneously within days to 6 weeks Elevate leg Compressive stocking Diureticsarenoteffective
Prickly Heat	 Pruritic, maculopapular, erythematous rash normally over covered areas of body Itchiness Prolonged or repeated heat exposure may lead to chronic dermatitis 	 Antihistamine Wear clean, light, loosefitting clothing Avoid sweat generating situations Chlorhexidine in a light cream or lotion base Calamine lotion
Hea Cramps	 Painful, involuntary, spasmodic contractions of skeletal muscle (calves, thighs and shoulder) Occur in individuals sweating profusely and only drinking water or hypotonic solutions Limited duration Limited to certain muscle group 	 Fluid and salt replacement (IV or oral) Rest in cool environment
HeatTetany	Hyperventilation Extremity/s and circum oral paresthesia Carpopedal spasm	 Calm the patient to reduce respiratory rate Remove from hot environment
Heat Syncope	 Postural hypotension Commonly in non- acclimatized elderly 	 Rule out other causes ofsyncope Removal from hot environment Rest and IV drip

Heat Exhaustion	 Headache, Nausea, Vomiting Malaise, Dizziness Muscle cramps Temperature < 40°C or normal May progress to heatstroke if fails to improve with treatment No CNS involvement 	 Remove the patient from heatstress area Volume replacement If there is no response to treatment in 30 minutes, then aggressively cool the patient to core temperature of 39°C
Heat Stroke	 Core body temperature >40°C Signs of CNS dysfunction, (Confusion, delirium, ataxia, seizures, coma) Other late findings: anhidrosis, coagulopathy, multiple organ failure 	 Remove the patient from heat stress area Volume replacement If there is no response to treatment in 30 minutes, the aggressively cool the patient to core temperature of 39°C (further details later in document)

Table.2 Heat Related Illnesses: Clinical Manifestation

Clinical Entity	Cardinal Symptoms	Cardinal / Important Signs	Pertinent Negative findings
Heat rash/ Prickly heat/ Miliaria	Itchy Rash with Small Red BUMPS at pores in the skin. Seen in setting of heat exposure, bumps can sometimes be filled with clear or white fluid	Diffused Red Colour Skin Or Vesicular Rash, itching of the skin without visible eruption	Not Focally Distributed like a contact dermatitis
Heat Cramps	Painful Spasms of large and frequently used muscle groups	Uncomfortable appearance, may have Difficulty in Fully Extending Affected Limbs/Joints	No contaminated wounds/tetanus exposure, no seizure activity
Heat Exhaustion	Feeling overheated, lightheadedness, Exhausted And Weak , unsteady, feeling of Vomiting, Sweaty And Thirsty , inability to continue activities	Sweaty/diaphoretic, flushed skin, hot skin, Normal Core Temperature, +/-dazed, +/- generalized weakness, slight disorientation	No coincidental signs and symptoms of infection; no focal weakness; no difficulty in swallowing food or speech; no drug/overdose history
Heat Syncope	Feeling hot and weak; lightheadedness followed by a Brief Loss Of Consciousness	Brief, generalized loss of consciousness in hot setting, short period of disorientation, if any	No Seizure Activity, no loss of bowel or bladder continence, no focal weakness, no difficulties in

			swallowing or speech
Heat Stroke	Severe overheating, profound weakness, Disorientation, Not Fully Alert, Convulsion, Or Other Altered Mental Status	Flushed, Dry Skin (notalways), Core Temp ≥40°C OR 104°F ; altered mental status with disorientation, incoherent behaviour, Coma , Convulsion , tachycardia	No coincidental signs and symptoms of infection; no focal weakness; no difficulties in swallowing or speech, no drug/overdose
		+/-hypotension	history

4.3: PREPAREDNESS BY MAJOR STAKEHOLDERS IN THE DISTRICT:

MEDICAL PREPAREDNESS:

No of Hospitals in readiness
Total No of beds available
No of Beds earmarked for sunstroke patients
No of cabins / rooms with cooler facility
No of Cabins / Rooms with AC facility
22
240
23

• Control rooms opened in :17 (Including DDH & SDH)

• Generator / Inverter :22

As intimated by the CDM & PHO, DHH, SDH and CHCs are kept in readiness with the bed, medicines and power backups along with control rooms functioning in different places which are given below:

Control Room numbers in different Hospitals in the District:

1.	DHH, City Hospital, Cuttack –	0671-2523969	
2.	SDH, Athagarh -	9439994802	
3.	SDH Banki –	06723-240269	
4.	Mahidharpada CHC, Baranga –	0671-2356008,	9439995398
5.	Adaspur CHC, Kantapada –	0671-2805857,	9439995210
6.	Niali CHC, Niali -	0671-2803719,	9439995127
7.	Bentkar CHC, Sadar-	0671-2336650,	9439995021
8.	Tangi cHC, tangi -	0671-2595377,	9439995428
9.	Salipur CHC, Salipur -	0671-2351014,	9439995134
10	. Nischintakoili CHC, Nischintakoili	- 0671-2353977,	9439990309
11	.Mahanga CHC, Mahanga -	0671-2767209,	9439996751
12	.Subarnapur CHC, Banki – I -	06723-240269,	9439990285

13. Dompada CHC, Banki -II -	06723-246420,	9439990463
14. Berhampur CHC, Atahgarh -	0671-2871169,	9439994751
15. Bindhanima CHC, Tigiria -	06723 -235874,	9439990426
16. Maniabandha CHC, Badamba -	06723 -238260,	9439990399
17. Kanpur CHC, Narasinghpur -	06721-275332,	9439995241

OFFICE OF CHIEF DISTRICT MEDICAL & PUBLIC HEALTH OFFICER, CUTTACK Heat Wave Disaster Management / Control Room, Cuttack 2023

Name of the Block	Name of Health Institution	Earmark Room	Total no of Beds	No. of Bed for Heat Stress	No of A/C	No of Cooler	ILR & Deep Freezer in working condition	Water Supply	ORS/ IV Fluid	24 x7 electricity Supply	Power Back Up (Generator /Inverter)
	DHH, Cuttack	Yes	130	4	1	1	2	Yes	Yes	Yes	Yes
Cuttack Sadar	LHH,Cuttack	Yes	120	4	1	1	0	Yes	Yes	Yes	Yes
	Bentakar CHC	Yes	6	2	1	1	2	Yes	Yes	Yes	Yes
Kantapada	CHC Adashpur	Yes	16	2	1	0	3	Yes	Yes	Yes	Yes
Mahanga	Mahanga- CHC	Yes	50	1	1	0	2	Yes	Yes	Yes	Yes
Tigiria	Bindhanima -CHC	Yes	6	1	1	1	3	Yes	Yes	Yes	Yes
Tigiria	Tigiria - CHC	Yes	10	1	1	1	3	Yes	Yes	Yes	Yes
Banki	Subarnapur -CHC	Yes	6	1	1	1	3	Yes	Yes	Yes	Yes
Daliki	SDH- Banki	Yes	60	2	1	1	1	Yes	Yes	Yes	Yes
Dompada	Dompada -CHC	Yes	6	1	1	0	3	Yes	Yes	Yes	Yes
Baranga	Mahidharpada-CHC	Yes	6	1	1	0	2	Yes	Yes	Yes	Yes
Badamba	Maniabandh -CHC	Yes	30	2	2	0	2	Yes	Yes	Yes	Yes
DauaiiiDa	Badamba- CHC	Yes	30	2	1	0	2	Yes	Yes	Yes	Yes
Niali	Niali - CHC	Yes	16	2	1	1	2	Yes	Yes	Yes	Yes
Nischintakoili	Nischintakoili-CHC	Yes	6	1	1	1	3	Yes	Yes	Yes	Yes
Salipur	Salipur -CHC	Yes	16	1	1	0	2	Yes	Yes	Yes	Yes
	Kanpur - CHC	Yes	16	2	1	0	2	Yes	Yes	Yes	Yes
Narsinghpur	Narsinghpur -CHC	Yes	50	2	1	0	2	Yes	Yes	Yes	Yes
	Jodum - CHC	Yes	10	1	0	0	2	Yes	Yes	Yes	Yes
Tangi Choudwar	Tangi Choudwar-CHC	Yes	16	4	2	2	2	Yes	Yes	Yes	Yes
Athagast	Berhampur-CHC	Yes	6	1	1	0	2	Yes	Yes	Yes	Yes
Athagarh	SDH- Athagarh	Yes	70	2	1	1	1	Yes	Yes	Yes	Yes

PREPAREDNESS BY RWS&S I & II & GM, WATCO:

BASUDHA Helpline number for complaint registration: **1916**

Control Rooms are WATCO Office:

WATCO Sub Division Office, Mahanadi Vihar: 0671-2440501
WATCO sub-Division Office, Barabati: 0671-2301379

No of Divisions: Cuttack (4) & Athagarh (10) RWS&S Divisions

•	No of Water Scarcity Habitations identified	: 58
•	No of PWS	: 675
•	No of Functional Tube wells	: 23952
•	No of Dysfunctional Tube wells	: 44
•	No of Repairable Tube Wells	: 46
•	No of Teams Earmarked	: 26
•	No of SEMs working	: 717
•	No of Solar Energy Based pumps	: 159
•	No of Tankers Earmarked	: 32

WATCO:

No water Scarcity in CMC Area.

No of wards covered with PWS : 59
No of HP functional Tube Wells : 3182
No of Stand Posts : 2028
PVC storage Tanks : 100

• Water Tankers :07 (10000ltrs – 1, 4000ltrs – 4, 6000ltrs – 2)

Additional Water Tankers for hiring (if Req.) : 15
DG sets : 50 nos

- ❖ SE, RWS&S Ctc and EE, RWS&S, Athagarh, there are 31 & 27 habitations have been identified as water scarcity pockets, and they are fully prepared to provide water to these water scarcity pockets with tankers.
- ❖ EE, RWS&S-II has been in readiness with 6 nos of mobile vans, 20 nos of Tankers, 8 groups of Mobile Teams and 100 bags of Bleaching powders. Also 209 nos of PWS are functional and 84 nos of solar energy based dual pumps installed out of which 79 are functional and 5 are under repairing in different blocks.
- ❖ SE, RWS&S -I has been ready with 18 nos of mobile teams, 8 nos of tankers deployed in scarcity habitations, 494 nos of SEMs engaged and 460 nos of PWS are available to cater safe drinking water in different blocks.
- GM, WATCO has intimated the house that there are no water scarcity pockets in CMC area but they are ready with 100 nos of PVC storage tanks for installation if required along with 7 nos of water tankers available with them. 50 nos of DG sets are kept in readiness to provide uninterrupted water supply.

PREPAREDNESS BY CHIEF DISTRICT VETERINARY OFFICER:

No of Vet dispensaries / Hospital
No of LI centers
Zones Created
27
166
205

• Each Zone Consist of: 2 vet doctors, 2 LIs and 4 attendants with a vehicle

• Mobile Veterinary units : 14

CDVO has divided the cutback district in 5 Zones and each Zone comprises of 2 Vet. Doctors, 2 LIS and 4 attendants with a vehicle having saving drugs & clod water sprayer to tackle the heat wave:

Zone A: Nischintakoili, Mahanga, Salipur Block

Zone B: Cuttack Sadar & Tangi-Choudwar Block

Zone c: Kantapada, Niali & Baranga Block

Zone D: Athatgarh Sub-division

Zone E: Banki Sub-division

Apart from zoning the district into five zones the following activities are being taken up at CDVO level,

- Control rooms have been opened in the office of CDVO bearing number: 0671-3559236 and similar control rooms shall be opened in SDVO office with ADVO(DC) and ADVO AW) in charge of the said control rooms.
- Essential medicines such as Fluid therapy, steroids, antihistamines, anitipyretics, analegesics, multi-vitamin injections, feed supplements, electrolyte powders and other related medicines have been purchased and distributed to block headquarters.
- CDVO is ready with opening with field institutions, supply of drinking water, renovation of water resources, provision of temporary shed and opening of emergency out door facility, health & vaccination camps, involvement of voluntary organisation and also providing necessary veterinary care in cattle markets.

All round efforts are made to combat heat wave situation in the district. All line departments are instructed to strengthen the interdepartmental coordination and cater service to the sun stroke victims irrespective of their jurisdiction or area. Further instructed to ensure zero casualty due to heat wave in this summer season.

TPCODL:

- GM, TPCODL has been instructed to provide uninterrupted power supply to Hospitals / Schools / Colleges on priority basis.
- Announcement must be done a day before the power cut in case of major break down

- Transformers along with mechanics may be kept in readiness to necessary replacement if required.
- Toll free numbers functional for TPCODL: 1912 / 18003457122

4.4: Heat Wave DOs and DON'Ts

DOs

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, you can take the following measures:
- Avoid going out in the sun, especially between 12.00 noon and 3.00 p.m.
- Drink sufficient water and as often as possible, even if not thirsty
- Wear lightweight, light-coloured, loose, and porous cotton clothes. Use protective goggles, umbrella/hat, shoes or chappals while going out in sun.
- Avoid strenuous activities when the outside temperature is high. Avoid working
- outside between 12 noon and 3 p.m.
- While travelling, carry water with you.
- Avoid alcohol, tea, coffee and carbonated soft drinks, which dehydrate the body.
- Avoid high-protein food and do not eat stale food.
- If you work outside, use a hat or an umbrella and also use a damp cloth on your head, neck, face and limbs
- Do not leave children or pets in parked vehicles
- If you feel faint or ill, see a doctor immediately.
- Use ORS, homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. which helps to re-hydrate the body.
- Keep animals in shade and give them plenty of water to drink.
- Keep your home cool, use curtains, shutters or sunshade and open windows at night.
- Use fans, damp clothing and take bath in cold water frequently.

Tips for Treatment of a Person Affected by a Sunstroke:

- Lay the person in a cool place, under a shade. Wipe her/him with a wet cloth/wash the body frequently. Pour normal temperature water on the head. The main thing is to bring down the body temperature.
- Give the person ORS to drink or lemon sarbat/torani or whatever is useful to rehydrate the body.
- Take the person immediately to the nearest health center. The patient needs immediate hospitalization, as heat strokes could be fatal.

Acclimatization

People at risk are those who have come from a cooler climate to a hot climate. You may have such a person(s) visiting your family during the Heat Wave season. They should

not move about in open field 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 a Heat Wave.

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 Rehydration Solution), homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. to keep yourself hydrated.
- Wear lightweight, light-coloured, loose, cotton clothes.
- Cover your head: Use a cloth, hat or umbrella and use protective goggles.
- Avoid caffeine, alcohol or sugared soda because they can dehydrate your

Employers and Workers

- Provide cool drinking water at the 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 given additional attention.

Other Precautions

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

DON'Ts

- 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 dehydrate the body.
- Avoid high-protein food and do not eat stale food.
- Do not leave children, pets or anybody in parked vehicles as they may get affected by heat.
- Don't drink cold drinks with ice as they can cause stomach cramping.

<u>DEPARTMENT WISE SPECIFIC PREPAREDNESS MEASURES: (As per Departmental Circulars)</u>

A. CDM & PHO:

- Capacity building of Health Care Service Providers (Doctor, Nurses, Pharmacist and health workers) on diagnosis and management of heat related illness.
- Maintaining data base and surveillance on heat related morbidity and mortality.
- Provision for Health facility readiness to manage heat affected patients (beds, staff, inventories, ambulance etc.).
- Special attention towards high-risk patients like geriatric/ pediatric /pregnant women etc.
- Training of 108 workers and 'Mobile Health Units (MHU)' for management of
- heat related cases
- Display do's and don'ts of Heat Waves on 'Swasthya Kantha' (village health wall),
- Sensitize community on Heat Wave related issues at Kishori Swasthya Mela (adolescent health meet), and Village Health Nutrition Day (VHND) and Routine Immunization (RI) sessions and distribution of IEC materials
- Strengthen the control rooms for providing heat related information
- Establishment of mobile base alert systems for ASHA/ ANM/ health workers for effective and immediate assessment of heat stroke cases.
- Development of a specific reporting form for heat related events including morbidity and mortality.
- Coordinate with private hospitals to collect heat related morbidity and mortality data.
- Provision for power back up during summer.
- Provision for funds for Heat Wave management.
- Provide annual mortality data from their vital statistics division to OSDMA
- For the year 2023, IEC material must be circulated in print and electronic media with effect from 1st March for public awareness and precautionary measures
- These awareness activities shall not be confined to the summer season only. They have to be done throughout the year for adoption of good practices and to change the general mindset of the people towards heat.
- Take necessary steps for albedo/white painting of roof tops of all hospitals, Community Health Centers (CHCs), Public Health Centers (PHCs) and patient resting areas.
- Instructions to be issued from Health and Family Welfare Department to all health officials to share a copy of the post-mortem report of Heat Wave as well as other disaster related causalities with the Tehsildars to make the payment of ex-gratia smooth.
- Take necessary steps to prevent diarrhea and other health hazards during summer season
- Daily reporting of cases and deaths to be done through the prescribed format. A
 daily report shall be collected from all health institutions by evening. It shall be
 complied and transmitted to the State health control room by Fax or E-mail by 12
 noon of next day. This report must be transmitted by the State Control Room to
 the Revenue Control Room daily.

B. CDO-cum-EO, Zilla Parishad, Cuttack /SE, RWS&S / General Manager, WATCO / EE, PHED /:

- All Gram Panchayats/Panchayat Samities / Zilla Parishads must be instructed to open Jala Chhatras/make arrangements for the supply of drinking water in earthen pots at weekly haats, Road crossings, Bus stops and other places of public gathering
- Deployment of Additional Vehicle and manpower for repair/maintenance by
- Block Development Officers.
- Deployment of tanker for the supply of water in areas of water scarcity, and provisions of water kiosks, tube wells, tankers strategic locations by Block Development Officers in coordination with RWSS authorities.
- Restrict the working hours from 11 AM to 3 PM under MGNREGS.
- Supply of drinking water and shade nets at working sites and construction of ponds, artificial lakes for cooling the environment by evaporation.
- 100% checks of tube wells and PWSSs shall be conducted on a priority basis as
 a part of preventive maintenance by the Nodal Officer of the concerned G.P.
 with the assistance of the Mobile Team followed by a 10% check by the BDO.
- The routine preventive maintenance shall be done in a mission mode and it should be ensured that the Blocks shall procure adequate spare parts, paints, riser pipes etc. by utilizing the Finance Commission Grants taking into consideration the indents of the Gram Panchayat on the recommendation of JE, RWSS-II.
- Nodal Officer (Extension Officer) of the concerned G.P. must review on the drinking water problem in the area on a daily basis and ensure that repair and maintenance of tube wells and PWSs are taken up on a priority basis. They are personally responsible for the availability of drinking water to people.
- Spare parts are to be procured at the Block level through the Purchase Committee inviting tenders as per norms of RWS&S/ OPWD/Odisha Panchayat Samiti Accounting Procedure Rules on the basis of the indent received from the G.Ps. The Purchase Committee will consist of BDO as Chairman, Assistant Executive Engineer/ Jr. Engineer, RWSS as a member and Accounts Officer as Member Convener. The spare parts so purchased shall be kept in the Stock of the Block Register and issued to the sites as per requirement and certificate gave by Junior Engineer-II, RWSS.
- A control room is to be made functional at each Block from 8 A.M. to 8 P.M. to register compliant on tube wells and PWSSs and the Complaint Register to be updated daily basis with remarks
- The water scarcity villages as per experience in the last summer shall be identified and preventive measures shall be taken at the time of necessity for the supply of drinking water through tankers/tractors loaded with water tanks etc.
- The water tanks purchased during the last summer by the Block or G.P. shall be numbered and utilized properly during the water scarcity period in such villages with branding "BASUDHA".
- Any other critical issues regarding the supply of drinking water at the G.P. level shall be brought to the notice of the BDO and unresolved issues at the Block level shall be brought to the notice of the Project Director, DRDA during -summer.
- The GPs can take the assistance of Village Water and Sanitation Committee/ Women SHGs for ensuring proper drinking water supply to the habitations and also a collection of user fee from the household to whom the water connection

- is given.
- The Collector and PD, DRDA shall review weekly progress of preventive maintenance work of tube wells and PWS so that this can be completed in a mission mode.
- Nodal Officers of the PR & DW Department have been allotted to all 30 districts
 to supervise and monitor the supply of drinking water to the annual preparation
 of the State. All possible steps will be taken from villages to district level to meet
 the challenges of the Heat Wave conditions.
- All tube wells and PWC will be checked thoroughly and in case of water depletion rising pipes will be provided and grievances from the call center will be attended to within 48 hrs.
- VAT will be constructed near the tube wells platform for the Drinking purpose of cows.
- Every household Shall have a water pot in front of their home for birds, dogs and cats and water Shall be filled in every two days.

C. Dist. Education Officer / DPC, SSA / DCPO / DWO / DSWO

- Student Shall be advised to wear clean uniform and footwear.
- Schools with electricity shall be advised to ensure functional head fans and schools without electricity shall be advised to ensure availability of hand fans.
- Safe Drinking Water facilities shall be made available at school campuses.
- Adequate ventilation shall be ensured in classrooms.
- Physical Training/ exercise sessions as school periods may be restricted during summer season to avoid any inconvenience.
- Students shall be advised to come to school with umbrellas and water bottles.
- All teachers shall be instructed to sensitize children on Prevention measures in case of occurrence of Heat Wave.
- All schools shall be equipped with First Aid Boxes.
- All the transport services to schools Shall have cold water, ice box and First Aid box.
- Timing of all classes shall be re-fixed/ rescheduled as per the Heat Wave alert (preferably morning time 6.30 AM to 10.30 AM). This process shall be adopted for management of all schools.
- School Examination/ Assessment shall be scheduled in the morning hours.
- All school teachers, SMCs, students and parents Shall follow guidelines of govt. from time to time.
- Capacity building of teachers, Headmasters, education administration and SMC members Shall be made on the different precautionary measures
- Local Health Centers shall be contacted immediately in case of any health hazard or health emergency.

D. CDO-cum-EO, Zilla Parishad, Cuttack / Dist. Labour Officer:

- All the executive agencies of different Departments of the state Government •
 All the executive agencies of different Departments of the State Government as
 well as those of Government of India and private employers would be advised
 to reschedule working hours so that no work is executed during the peak heat
 hours from 11.00 AM to 3.30 PM from 1st April, 2023 to 15th June 2023.
- Rescheduling of work in progress would be made as far as is practical, so that
 the works are done during morning and late afternoon hours without hampering
 the quantum of production or work done and without reduction of wages. Such

- arrangements may be made keeping in view the local requirements and weather conditions.
- Where the nature of work is such that, the rescheduling of working hours is not
 possible or where the work is of emergent nature or connected with
 maintenance of essential services, the concerned employers, contractors and
 executants Shall be asked to ensure all appropriate precautionary measures
 such as provision of O.R.S. packets and rest sheds for workers at worksite.
- The C.D.M.Os, S.D.M.Os, medical officers of the PHCS / CHCs and dispensaries Shall be sensitized and kept alert during the Heat Wave conditions. The ESI dispensaries, which are meant to cater to the health needs of workers/ labourers have a special role to play.. They Shall remain alert and ready to treat the patients suffering from heatstroke and other similar problems.
- The Project Directors of all NCLPs Shall be instructed to reschedule the school timing for all Special Schools run under NCLP in accordance with the timings prescribed by the Government in School & Mass Education Department
- Awareness programmes will be conducted in all industrial units and construction projects etc. to sensitize the labourers and workers on risks, signs and symptoms of heat stress.

E. Chief Dist. Veterinary Officer

- In each district as well as Sub-division level, a Control Room for Heat Wave Shall be opened with adequate staff to attend any eventualities arising due to Heat Wave.
- The livestock holders need to be educated regarding the management practices to be followed while rearing of animals and birds during scorching heat of Summer.
- The scrolling news on Heat Wave needs to be telecast in different TV channels.
 The publications of advertisements on Heat Wave in different Odia newspapers needs to be made for the awareness of public.
- Leaflets, Pamphlets and hand-outs will be circulated for wide publicity among the farmers and field functionaries.
- Livestock and poultry are prone to heat stress due to herd system of management resulting in summer diarrhea, dehydration and subsequent shock. Hence, they are to be treated immediately with fluid therapy and essential lifesaving drugs.
- There is also a need for supplementary post Heat Wave treatment to the affected animals and birds for which the veterinary Institutions (VDs &LACs) are to be equipped with sufficient stock of medicines.
- General Public would be advised to keep wide-mouthed water pots outside their houses for animals and birds.
- Temporary shallow water vats will be constructed for stray animals in strategic locations and in cattle markets through PR & DW Department. Accordingly, the detailed list with locations will be given to the respective DRDAs.
- The tube wells and animal vats Shall be constructed/ repaired in Veterinary Hospitals, Dispensaries and Livestock Aid Centers through PR&DW Department.
- The Mobile Veterinary Units in each block shall be utilized for monitoring the Heat Wave situation and for providing emergency veterinary service care.
- The farmers would be educated regarding the management of heat stress in animals and birds either during village meetings / trainings on Animal Husbandry

- activities or through different media.
- The successful management of heat stress includes the following:
- In order to treat or provide necessary first-aids to heat affected animals, all the Veterinary Dispensaries/ Livestock Aid Centers need to be properly assessed with regard to availability of cold drinking water, stock of essential medicines and technical personnel.
- All subordinate Staff / Officers are to be instructed to render selfless services to the affected livestock and poultry population in face of possible Heat Wave situations. Steps may be taken to open the field institutions beyond the prefixed schedule in case of necessity to cater the need of farmers.
- The NGO/ CBOs of the district may be requested to extend hands of cooperation to mitigate the sufferings of animals due to heat. Temporary arrangements for drinking water may be made with the help of District Administration, line Departments and voluntary organizations to overcome heat stress of susceptible animals.
- Care of affected animals Shall be taken immediately.

F. Dist. Information and Public Relation Officer:

- All the DIPROS /SDIPROs would be instructed to be vigilant for prompt dissemination of any message alerts at the District /Sub-Division level relating to Heat Wave publicity campaigns etc. They must also be ready for release of any emergency messages and disseminate information through social media updates.
- Round the clock Control Room will be opened and will operate under the supervision of the concerned District Collector/Sub Collector.
- Publicity campaign and stepping up of IEC activities through public announcements, news releases, advertisements in print media, Leaflets and pamphlets, hoardings, radio jingles, TV slots, social media uploads i.e., facebook, twitter, You Tube etc. to sensitize public and create mass awareness in a mission mode is to be done under the direction of the District Administration.
- The Information Officers of Groups of Departments will be in constant touch with the respective departments for quick sharing of information regarding the decision taken at the higher level with the approval of the concerned department.
- Control room at the State level will also be opened and a designated team of
 officials and staff of 1& PR Department function for the purpose and supervise the
 smooth functioning and dissemination of updated information relating to Heat
 Waves.
- Media briefings on updated information as and when necessary, must be shared under the supervision of higher authorities at Sub-Division/District &State level.

G. Chief District Agriculture officer:

- Popularizing crops needing less water like Maize, Ragi, Pulses etc. and short duration varieties of crops.
- Improving Water Use Efficiency by advocating use of Micro Irrigation (Drip, Sprinkler irrigation)
- Popularizing PUSA Hydrogel especially in crops like Mung, Biri to retain the soil
 moisture by preventing evaporation from soil and releasing water in slow
 phases based on the need of the crop.
- Promoting adoption of Mulching technique for soil moisture conservation.
- The water holding capacity would be improved by applying coir pith before

- sowing.
- Irrigate the crops in critical stages of crop growth period.
- Repairing of bunds and closing of holes to stop water loss.
- Timely weeding, inter-cultural operation and application of herbicides.
- Spraying of need-based pesticides during morning or afternoon hours.
- Taking appropriate control measures for incidence of Stem borer in Paddy, Thrips infestation in Pulses, Groundnut and Sunflower.
- Risk Coverage under crop insurance scheme for mid-season adversity, localized calamity & post-harvest loss.
- Creation of awareness to farming community on effects of Heat Waves.
- Provision of Drinking water supply, first-aid facility and temporary shed in the work site would be ensured.
- The labourers would be engaged up to 11 PM and there will be interval from 11 AM to 3 PM
- Morning office for the districts officials would be held from April, as per the decision of Govt.

H. Dist. Fishery Officer

- During the excavation/ renovation of MPY, PMMSY or Departmental farms, labourers Shall not be engaged from 11 am to 3 pm. The Fishers must not go out during noon other than for exigency works.
- On the work site, temporary shed and drinking water facilities Shall be ensured by the beneficiaries.
- All field level officers AFO/SFTA/JFTAs Shall sensitize the Fishers about it.
- When temperature rises, dissolve oxygen decreases in the pond, pH level also decrease and fish start to get sluggish. Water tank level Shall be to minimum 1.0-1.5 mt. depth. The dissolved oxygen levels can be maintained by using aerators.
- Farmers must be sensitized on extreme heat in aquaculture practices through adequate awareness programs.

I. Municipal Corporation / Executive Officer, ULB / NAC

- Regular and adequate drinking water supply Shall be ensured by the PHEOULB
 to all the urban areas. For this, water supply pipe lines Shall be kept in good
 condition and any leakage or break down Shall be repaired within 24 hours on
 war footing.
- For emergency measures to ensure drinking water supply, water tankers Shall be deployed in different scarcity pockets to provide drinking water. Additional number of tankers, if required, may be arranged on hiring basis.
- Control Rooms are to be opened as usual and responsible officials Shall manage and attend to the complaints received on water scarcity.
- The ULBs Shall start opening more no. of water kiosks- PANIYA JAL BITARAN KENDRA i.e. drinking water distribution centers at strategic places i.e. on road sides, cross roads, public offices, bus stand, railway station, market places etc. keeping in view the sanitation and hygiene of water distribution points. Support of NGOs may be taken for this purpose, if necessary.
- All the Tube Wells/ Hand Pumps must be kept in running condition and spare parts Shall be kept ready for repairing of Hand Pumps/Tube Wells immediately in case of any complaint.
- Banning of burning of municipal solid waste, garden/tree residual Shall be

- ensured.
- To handle the emergency situation arising out of excessive Heat Wave, Health Care centers and hospitals under ULBs Shall be kept ready.
- Adequate awareness may be created among the urban inhabitants to keep one
 pot of water in front of households for stray birds and animals. The water must
 be changed on alternate days for better hygienic purposes.
- City-Afforestation/ Adequate sustainable avenue plantations /plantations on vacant places like educational institutions, parks, official complexes need to be taken up by the Development Authorities/ Regional Improvement Trusts/ Urban Local Bodies.
- Roadside dust of urban areas is a major cause for temperature rise and excessive heat and almost all the urban areas are now suffering from the hazards of dust particles. Necessary precautions must be taken to check and arrest the flying dust.
- All the Environmental Acts/Rules, NGT guidelines concerning improvement of urban area environment must be followed strictly and authorities concerned like Police, Forest, OPCB etc. handling their respective portion of jobs may be requested accordingly.
- All the water bodies in and around urban areas Shall be renovated, restored and repaired and these Shall be made free from pollution to make them usable and increase access to general public.
- Urban Local Bodies/Development Authorities/RITs are also required to
- Display Heat Wave alerts and precautionary measures at strategic points.
- Provide shelter and shades in open and high congregation places.
- Open public parks during peak hours to provide cool resting spaces for the public.
- Water supply to slums through tankers if required.
- Public announcements through public address system as per requirement.
- Make provisions for water sprinkling to settle down the suspended particles on roads.
- Implement building code that entail passive cooling practices such as increased reflectivity of building roofs, Green roofs, increased natural ventilation and rain water harvesting. Incentive mechanism (e.g. reduced taxes) can be used to accelerate green infrastructure development.
- Increase access to public parks, water bodies, public libraries for general public and create small, accessible green spaces by using vacant spaces such as side lots, parking medians, spaces between buildings and roads.
- Promote green energy technology, energy efficient building promotion, restricted use of heat producing equipment and increase use of renewable energy.
- Treated water coming out from the FSTPs and STPs may be reused for sprinkling
 of water on the road to keep the dust particles settled and the environment cool.

J. Asst. Director, (F&B) / GM, DIC

- Avoid work time between 11 AM to 3 PM for workers, particularly for outdoor activities.
- Special provisions for health facility for heat stroke patients in the hospitals of respective industries
- Provision for safe drinking water, ice pack, ORS water facility to be ensured at

- the industry/mining site.
- Provisions for water sprinkling to be made to settle down the suspended dust particles.
- Spreading awareness among employees/workers regarding the Heat Wave.

K. Executive Engineer, R&B / PWD / RD:

- Departmental State & district level Nodal officers would be identified for the Heat Wave management.
- Orientation programme for all the field staffs by the Nodal Officers would be conducted.
- Building public awareness and increasing community outreach to communicate the risks of Heat Waves and implement practices to prevent heat related death and illness must be done.
- Supply of Cold Water, ORS, emergency medicines & construction of cooling spaces like shades during extreme heat periods must be ensured at work sites by the agency.
- Outdoor work site from 11A.M to 3 P.M. would be restricted.
- Issue instruction for workers to keep their body covered with long sleeved shirts, caps & clothes for protection of ears and necks.
- Instruction management of the construction site (s) to provide transportation facility for shifting labours to health facility centre, in case of an emergency.
- Instruction management of the construction sites to display contact details of nearest health centre.
- Schedule strenuous jobs to cooler times of the day.
- Increase the frequency and length of rest breaks for outdoor activity.

L. Regional Transport Officer:

- Timing of public transport services will be rescheduled so that plying of buses during peak Heat Wave hours i.e. between 11.00 AM to 3.00 PM is restricted.
- Provisions for safe drinking water ice pack, ORS in buses and provision of cool resting spaces at bus stops.
- Over-crowding of passengers in the public transport vehicles must be avoided.
- Jalachhatras to be opened at bus stands and bus stops for the passengers.
- Temporary Passenger sheds are to be erected near the bus stops with provisions of drinking water.
- Provision of water kiosk on highways.
- Proper checking will have to be made by the enforcement wing of this Department and penalty be imposed against the earning transporters/ operators
- The control rooms at district level Shall function around the clock during the period of Heat Wave
- The bus/truck associations of the district and the local NGOs Shall suitably be instructed to involve themselves in public awareness campaigns on Heat Wave.
- Regular meetings must be held to sort out different issues

M. TPCODL

- Supply will not be affected during Summer-2023 except in any emergency situation such as under frequency, tripping of power transformers, feeder faults, planned shutdown for execution of Govt. work with prior announcement etc.
- TPCODL will abide with the guidance issued to it by SLDC from time to time.
- In case of any emergency maintenance work, the same will be done only during

- morning hours when the effect of heat is less.
- In case of power interruption, the same will be intimated to the public through Urja Mitra Scheme and also will be intimated via electronic media such as TV scrolling, twitter and public announcements etc.
- Lift irrigation points that are inoperative will be provided with power supply.
- TPCODL has taken steps for the operation of Control rooms at Division level, Circle level and corporate level through PSCC (Power System Control Centre).
- District Headquarter Hospitals are being provided with uninterrupted power supply through dedicated feeders.
- All PHD and RD water supply points will be ensured steady power supply.
- Early replacement of failed PTRs/DTRs will be taken up. Outage, if required for rectification of faults or any urgent reason, will be done for the minimum possible time.
- All the contractors/ agencies working under TPCODL have been geared up to meet any exigency such as repair, maintenance work etc.
- Preventive maintenance works have been planned during March to April to rectify jumpers, tilted poles, low ground sagging and tree branch cutting with respect to all 33KV and 11KV feeders.

N. Dist. Forest Officer:

- Ensure proper afforestation (greenery) under public place.
- Continuous watch in the forest area to avoid forest fires.
- Directive for making water available for animals in reserved/ protected forests and make necessary provisions, where necessary.
- Issue directives to the Zoo Authorities for special arrangements for the animals in zoo to protect them from the effect of Heat Wave.
- Directive for provision of water to human habitations facing water scarcity inside reserved forests
- Provision of funds for Heat Wave management.
- Prior to the hot weather season, village level meetings Shall be conducted through NGOs who can make them aware regarding extinguish or not setting forest fire.
- Monitoring, prevention and management of Forest Fire Shall be made during summer season.

O. District Tourist Officer:

- Mapping of high-risk zones (e.g. Dhenkanal, Angul, Sundergarh, Cuttack, Khordha, Ganjam) under the guidance of Indian Meteorological Dept. (IMD) conducting workshops for the District Tourist Office staff covering the high-risk zones, including the use of SATARK platform for enabling greater responsiveness.
- Advisories on Do's & Don'ts and special provisions will be compiled for and disseminated to: Tourists - Digitally on Website, social media and physically at all Tourist Centers, Hotels, other hospitality accommodations, eateries and their employees, etc.
- Dept of Tourism in coordination with Health Department and district administration will review the responsiveness of links between tourist centers and nearest clinical care establishments (hospitals, clinics, etc.)
- Dept of Tourism & OTDC will encourage employees to exercise adequate precaution and positive habits by provisioning caps and water bottles

- Dept. of Tourism will work with concerned authorities and departments to alter employee shift schedules to reduce heat exposure risks.
- Ensure proper registration of tourists who are visiting the State.
- Ensure availability of heat relief measures at tourist places
- Display of Heat Wave precautionary measures for tourists during summer at tourist points and related information in website of department of tourism.
- Ensure the availability of drinking water and cool resting sheds.
- Restrict the timing of the visit of tourist places during peak summer days.

P. Executive Engineer, Irrigation / MI / LI / Barrage:

Short Term Measures:

- Sufficient storage of water at reservoir to meet the Heat Wave.
- Release and storage of water in all the canals during summer.
- Release of canal water to the affected areas for public use, to increase the underground water level, reduce the atmospheric temperature and also improve the green areas.
- Canal water to be fed to nearby ponds, tanks, low lands for secondary storage of water during summer.
- The working hours for daily labourers to be re-scheduled i.e. from 6 a.m. to 11 a.m. and 3.30 pm to 6 pm. Orders / instruction to be given to make provision of drinking water and rest shade at the work sites.
- Construction of small temporary earthen check dams at Rivers / streams to instantly store surface water for cooling the environment by evaporation.
- Regularly evaluate the availability of water in Reservoirs, rivers, ponds and lakes.
- Promote rotation of canal water supply.
- Create awareness among the community about Heat Wave through Water Users Associations (WUA)/ Pani panchayat.

Long Term Measures:

- Construction of check dams at small streams for in-stream storage and greater recharge.
- Periodically evaluate the availability of water in Reservoirs, rivers, ponds and lakes.
- Conservation of rain & stream water.
- Create awareness among the people on Water conservation and effective use.
- Steps have been initiated for Plantation at road side, Dam site, Office & Colony Campus, Canal & Flood Embankment etc. from 2018.

Long Term Measures:

- Display of Heat Wave precautionary measures for tourists during summer at tourist points and related information in website of department of tourism.
- Ensure the availability of drinking water and cool resting sheds.
- Restrict the timing of the visit of tourist places during peak summer days.

Q. Dist. Social Security Officer / Dist. Social Welfare Officer

- Rescheduling the time of pension disbursement i.e from morning 7.30 A.M to 10.30 A.M.
- Ensure availability of drinking water, ORS packets etc. and shed at the site of pension disbursement.
- Ensure precautionary measures for field staff of SSEPD Department i.e, carrying drinking water, ORS packets and umbrella or use cap or while stepping out side

- on duty.
- Restrict visit of Senior Citizens and PwDs to outside during the peak hours especially from 11.00 A.M to 3.00 P.M during summers.
- Ensure availability of drinking water, ORS packets etc. in the Office of DSSO and other field Offices under SSEPD Department.
- Ensure availability of drinking water, ORS Packets and medicines of emergency nature in the Residential Schools and Old Age Homes under SSEPD Department.
- To keep the mobile number of BSSOs/SSSOs and emergency numbers in the Residential Schools, OAHs for immediate contact in case of any emergency.
- Weekly visit by Field Officers of SSEPD Department to OAHs and Residential Schools under SSEPD Department.

R. Dist. Welfare Officer:

- PA ITDAs and DWOs Shall ensure adequate and safe drinking water in all these residential schools and hostels.
- All toilets and bathrooms Shall have piped water supply provisions.
- Sufficient packs of ORS, ice packs and other first aid kits in schools / hostels to manage Heat Wave related illness, shall be stacked in the residential schools.
- All HMs, teachers, ANMs, Matrons, CCAs/LCCAs and Students Shall briefed and trained on Heat Wave Management. They shall ensure that all necessary precautions are taken up in these schools and hostels.
- Awareness generation among students Shall be conducted by teachers through IEC materials, displays and activities. DWOs to plan with prior consultation with CDMO and concerned Health Officers
- Awareness generation among students Shall be conducted by teachers through IEC materials, displays and activities. DWOs to plan with prior consultation with CDMO and concerned Health Officers.
- If any student boarder has any sign and symptoms of sunstroke, instant first aid shall be provided and he/she Shall be hospitalized immediately.
- Daily monitoring Shall be ensured and all DWOs Shall submit the daily Disease Surveillance Report to Department's Control Room. All PA ITDAs and DWOs shall review the school-wise Heat Wave preparedness with the respective HMs time to time and inform the Department's Control Room in regular basis.

S. Dist. Social Welfare Officer:

- Non-functional tube wells, if any, at AWCs may immediately be repaired by coordinating with concerned BDOs.
- Provision for sufficient safe drinking water may be made in all AWCs and Mini-AWCs. Parents may be advised to ensure that children use umbrellas and carry water bottles on opening of the AWCs.
- Adequate public awareness may be created in the community with special focus on children and pregnant and nursing women to take measures for protection from dehydration.
- IEC materials may be displayed at Anganwadi Centres and ICDS functionaries sensitized to disseminate Heat Wave related information.
- Village Health Sanitation Nutrition Day (VHSND) and Routine Immunization (RI) session platforms may be used to educate the children, adolescent girls, mothers and guardians on Heat Wave related hazards and precautionary measures to mitigate/prevent the same.
- ORS packets may be kept at all AWCs and AWWs sensitized to use them as and

- when required. AWW/ AWHs to also be suitably sensitized about Heat Wave related hazards &precautionary measures to mitigate/prevent the same.
- Ensure that all Swadhar Homes/ Ujjawala Homes and all CCls have adequate safe drinking water which are suitable to meet the Heat Wave conditions.
- Further, on opening of AWCs throughout the State (likely to be opened shortly), the Pre-School activities in all AWCs and Mini-AWCs may be conducted from 7.30 A.M. to 9.30 A.M... Hot cooked Meals under Supplementary Nutrition Programme (SNP) may be served at 9.00 A.M. and Home visits may be completed by 10.00 A.M. This schedule may continue till end of the Heat Wave condition. However, these are subjected to specific instruction at the time of opening of AWCs

Annexure -II

Name of The Officer	Designation	Telephone Number With STD Code		Mobile Number	Fax No.	E-Mail
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IEC Materials







ଗ୍ରୀଷ୍ମ ପ୍ରବାହ (Heat Wave)

ଗ୍ରୀଷ୍ମ ପ୍ରବାହ କ'ଣ ?

ଯତି କୌଶସି ସ୍ଥାନର ତାପମାତ୍ରା ୪୦° ସେଲ୍ସିଅସ ପାଖାପାଖି ଥାଏ ଏବଂ ଏହା ସେହି ସ୍ଥାନର ସାଧାରଣ ତାପମାତ୍ରା ଠାରୁ ୫°–୬° ସେଲ୍ସିଅସ ବୃଦ୍ଧି ହୋଇଥାଏ, ତାହାତୁ ଗ୍ରୀଷ୍ମ ପ୍ରବାହ ଓ ୭° ସେଲ୍ସିଅସରୁ ଅଧିକ ବୃଦ୍ଧି ହୋଇଥିଲେ, ପ୍ରବଳ ଗ୍ରୀଷ୍ମପ୍ରବାହ କ୍ରସାଯାଏ ।

ଯଦି କୌଣସି ସ୍ଥାନର ସର୍ବୋଚ୍ଚ ତାପମାତ୍ରା ୪୦° ସେଲ୍ସିୟସରୁ ଉର୍ଦ୍ଧ ଥାଏ ଏବଂ ଏହା ସାଧାରଣ ତାପମାତ୍ରା ଠାରୁ ୪–୫° ସେଲ୍ସିୟସ ତୃଦ୍ଧି ପାଇଥାଏ ତେବେ ତାହାକୁ ଗ୍ରୀନ୍ସ ପ୍ରବାହ ଓ ୬° ସେଲ୍ସିୟସରୁ ଉର୍ବ୍ଧ ଚୃଦ୍ଧିକୁ ପ୍ରବନ ଗ୍ରୀନ୍ସପ୍ରବାହ କୁନ୍ଧଯାଏ ।

ଯବି କୌଣସି ସ୍ଥାନର ତାପମାତ୍ରା ୪୫° ସେଲ୍ସିଅସ ବା ଡଦୁର୍ଜ୍ଜ ହୁଏ, ତେତେ ସେ କ୍ଷାନରେ ସାଧାରଣ ତାପମାତ୍ରା ଯାହା ହେଲେବି ଏହାକୁ ଗ୍ରୀଷ୍ମପ୍ରକାହ କୁହାଯାଏ ।

ବେଳେବେଳେ ଅତ୍ୟଧିକ ଗ୍ରୀଷ୍ପପ୍ରବାହ ହେତୁ ମଣିଷ ମୃତ୍ୟୁମୁଖରେ ପଡିଥାଏ । ୧୯୯୮ ମସିହା ଏପ୍ରିକ୍ରୁ କୁଡ଼ ମାସ ମଧ୍ୟରେ ଗ୍ରୀଷ୍ପପ୍ରବାହ ହେତୁ ଓଡ଼ିଶାରେ ୨୦୪୨ ଜଣକର ମୃତ୍ୟୁ ଘଟିଥିଲା । ଏହାକୁ ଅଂଶୁଘାତ ଜନିତ ମୃତ୍ୟୁ ବୋଲି କୁହାଯାଏ ।

ସ୍ତରକ୍ଷା ଉପାୟ -

ଗ୍ରୀଷ୍ମ ପ୍ରକାହ ଓ ଅଂଶୁଗାତର ପ୍ରରାବ ଜମ୍ କରିବା ପାଇଁ ନିମ୍ବଲିଖିତ ସୁରକ୍ଷା ବ୍ୟବସା ଗ୍ରହଣ କରିବା ଉଚିତ ।



- ୧. ବାଶ ଖରାଗତ ନାସାରକୁ ବାସ୍ଟାଣ୍ଡ ଗହିଁ । ଶାକୁଣା, ଫିବା, ଦ୍ୱିରା ସ୍ୱତ କୁଲ ବ୍ୟବସାର ବରକୁ । ଅଟେ ପରଣ ବାଷକୁ । ଆଲିଆ ବାରକ ଖୋଲା ଜଣ୍ଡ, ଫବରେ ପଟ ଅଶ ଓଡ଼ିବ । ସେହେଅନ ଅଟେ ଅଣ ପଞ୍ଚିତ ଗାରକୁ ।
- ଗେଞ ନମ୍ପରର ମଧ୍ୟ ପ୍ରହର ପାଉଁ ପିଅନ୍ତ । ଓ.ଅଲ୍. ଏହା ପାରତର ବିହା ଘଟେ ନମ୍ପରର ପାନୀୟ ଯଥା । ଏହି, ମେଟ ଚହିଁ, ବେଲାଉଁ, ବେଳ୍ ପାଉଁ, ହୁଧ ନମ୍ପଦି ପୁରୁକ ପରିମଣରେ ପିଅନ୍ତ । ଓରିବ ବାହ୍ୟ ଆଧାନ୍ତ ନହିଁ ।
- ୩. ବା, କହି, ମହକ୍ତବା ଓ କାର୍ବମହୁଳ ଥଣା ଥାମାୟ ବ୍ୟବହାର କରବୁ ନାହିଁ ।
- ୪. ଓଡ଼ି ବାହାରକୁ ହିଳାକୁ ଓଡ଼େ, ନିଜକୁ ଗଣ କରିବା ଜଳି ଉପକରଣ ଯଥା : ଜଳା ବଖଣୀ, ଜେନା ବା ନପଣ ବଟଂ ଧଳାଇବା ବା ନୋପି ବାବନାର ବଣକୁ । ବାହାରେ ପାଣି ନେବାକୁ କୁଣକୁ ନାହିଁ ।
- ହ. ଲାଖିଶ ଖଲାଗେ ବିଶେଷରଥି ଦିନ ୧୬ଗ ଠାତ୍ ଏହା ପର୍ଯାନ କଷ୍ଟନର ଶାର୍ଥାକ ପରିଶ୍ରମ କରନ୍ତୁ ଜାହିଁ ।

- ବଳ୍ପରେ ଭଟ ବହୁଣ୍ଡର, ହଳା ବା ନୋହି ବାବଳର ବଳିବା ବନ ବଳା ଉମ୍ମୁଖରେ ବୃଷ୍ଟ, ବେଶଅବି ଶଳାଳର ବିଳିନ ଅଂଶକୁ ହୋବାଳ ବଳକୁ ।
- ୭. ଅବୃଷ୍ଣ ଅନୁଗଟ ଜଣେ ବୁଲକ ଜାଉନଙ ପରାମଣ ନିଅନୁ ।
- ୮. ବହ ସାହି ଭିତରେ ଲୋକ ପିକାକୁ ଲହି ଆସକୁ ନହିଁ ।
- है. କ୍ରମନିତ ପଶୁମାନଙ୍କୁ ମଧ ଅଭଗେ ଶ୍ରେ ପ୍ରତୁର ପାଣି ପିଇତାକୁ ହିଅନୁ ।

ଅଂଶ୍ୱରାତରେ ପାହିତ ବାଲିର ଚିତିହା

- ୧. ସାହିତ ବାହିର ହେହ ଉଲାପଡୁ କମାକରା ପହାଁ ଥଣା ଓ ଲାଇ ହାନରେ ଶୂଆଲ ରଷ୍ଟ ପ୍ରଥମେ ଓଡ଼ା ତହା ବା ଶାମୁଖାରେ ଜାଙ୍କୁ ଯେହି ହିଅନୁ । ଅବଶାଳ ହେଳେ ମୁହରେ ଥିଶା ପଣି ହାନ୍ତୁ ।
- ଶ.ଅର୍.ଏସ୍, ପରରେ ପାଣି, ମେରାଣି ବିଶା ରେଣୁ, ବହି ବରିତ ହେଏହି ପିଅର ମହର ଜନୀଯଥାଏ ପରିବାଶକୁ ତିକ ବହମକୁ ତେଷ କରକୁ ।
- ହୁଳର ନୁକ୍ଷଣ ବାହନ୍ତଚିତ୍ର ପରଜତାନ ଜନ୍ୟତମ ଅନ୍ତି । ଶ୍ରଂ ପ୍ରଶ୍ୱର ହେଳରେଟେ ପରିଜ ବାହନ୍ତ ଆଗରାଏ । ହାରତାର ବିଜ୍ଞତି

PERCOR :

ଅଂକ୍ରାତରେ ପାହିତ ବ୍ୟକ୍ତି ଏକଟେବରେ ଅନଧୂକ ରାଜୀର ପିଲକରୁ ହିଅନୁ ଜଳି । ଦୁଇ ଶନ୍ଦା ଅର୍ଥରେ ପ୍ରତି ଅଧ ଅଞ୍ଚରେ ଅଧା ସ୍ୱାସ ସାମୟ ଦେଶ ଉଚିତ ।





