



**act:onaid**

# Tackling Heat Waves in Odisha





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# Tackling Heat Waves in Odisha

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## About ActionAid

ActionAid India is part of a global federation and a full affiliate of ActionAid International that has presence in over 40 countries of Asia, Africa, Americas, Europe and Asia Pacific with its headquarters in Johannesburg, South Africa. Since 1972, the poor and the excluded have been at the centre of our discourse and actions in India. In 2006, we were registered as an Indian organization called ActionAid Association. We are governed by an independent General Assembly and a Governing Board.

### Our Values

We reiterate our values and stress on 'praxis' in our work, in our effort to deepen our commitment to transform our organizational culture. Solidarity, camaraderie and sisterhood with the poor, the powerless and excluded women, girls, boys and men will be at the core of our struggle against poverty and injustice.

- 'Personal is political': without contradiction in the practice in private and public sphere.
- Courage of conviction, requiring us to be creative and progressive, bold and innovative – without fear of failure.
- Equality, justice and diversity, requiring us to work to ensure equal opportunity to every person, irrespective of caste, class, race, age, gender, sexual orientation, colour, class, ethnicity, disability, location, and religion.
- Humility and modesty in our conduct and behaviour.
- Transparency and accountability.
- Independence and neutrality from any religious or party-

### Our Vision

A world without poverty, patriarchy and injustice in which every person enjoys the right to life with dignity.

### Our Mission

To work in solidarity with the poor and participate in their struggle to eradicate poverty, patriarchy and injustice.

### Overall Goal

A just social order brought about by the dispossessed claiming their right to dignity and identity through enhanced democratic participation and structural transformation

### Our Theory Of Change

We believe that an end to poverty and injustice can be achieved through purposeful individual and collective action, led by the active agency of people living in poverty and supported by solidarity, credible rights-based alternatives and campaigns that address the structural causes and consequences of poverty.

## Foreword

Heat Wave like other disasters need to be dealt much before it arrives. At least people need to be aware of the precautions they need to take in case of heat wave. This preparedness can save a lot of lives. But we need to also generate awareness of the compensation packages in case there is casualties because of heat wave. Special care needs to be taken for the elderly, children, sick and the pregnant women. The daily wage labourers who are doing hard labour also need to take care. The hospitals especially the government ones need to gear up to deal with the heat wave cases.

The linkage between climate change and heat waves is difficult thing to prove but it is well known now that world is becoming a hotter place to live. The excessive burning of fossil fuel and subsequent increase of CO<sub>2</sub> in the atmosphere thickens the 'greenhouse blanket', with the result that too much heat is trapped into the Earth's atmosphere. This causes global warming: global temperatures rise and cause climate change. The Fourth Assessment Report of the UN's Intergovernmental Panel on Climate Change (IPCC) estimates global temperature rises by the end of the century of between 1.1°C and 6.4°C.

We need to work on local solutions and climate adaptation measures to deal with this climate. The protection of the green cover in the area and adapting to the seasonal changes will also help the local communities to protect their livelihoods especially the agriculture.

The present study on heat wave throws light on the issues enlisted above. In addition to this it also captures the voices of the family members of the persons who had succumbed to heat wave in 2015. This can give us insights to deal with heat wave and it's after effects. I thank Ranjan Kumar Panda for carrying out the study and my colleagues from ActionAid Mr. B N Durga, Programme Officer, Ms. Pushpashree Devi, Programme Manager and Ghasiram Panda, Programme Manager for conceptualising it. I also thank our partners Mr N.A. Shah Ansari, President, Young India and Mr. Mangaraj Panda, Secretary, UAA (United Artists Association) for partnering with in this project to combat heat wave covering 50 schools and 2000 families in 60 villages.

**Debabrat Patra**

Regional Manager

ActionAid, Bhubaneswar Regional Office, Odisha

## Preface

In 2015, extreme heat wave conditions prevailed in Odisha, calling for attention of both government and civil society organisations. Looking into the huge impacts such increasing episodes have on human and other lives, and realizing that such events may actually increase in the future, Action Aid thought of doing a study to understand the impacts of heat wave vis a vis the preparedness measures existing in the state.

In preparing this brief, we referred to secondary documents available in the public domain, did eight case studies of victims to understand the effectiveness of government response and prepared a briefing paper that not only talks about the situation that exists but also suggests a broad set of measures that needs to be taken up by the state and others to tackle heat wave related deaths and other menaces.

This being a very short term study, we could only cover eight case studies in two districts. Therefore, we cannot claim this to be a true representation of all heat wave death related cases in the state. Nevertheless, these case studies help us bring to light many dimensions of the issue with clarity.

I am grateful to all the family members of the victims who spared their valuable time and shared their opinion & agonies with us. I am sincerely thankful for Mr. Ajit Kumar Panda for his help during the field visits in Nuapada. My sincere thanks also go to Mr. Debabrat Patra, Regional Manager and other members of ActionAid Mr. B. N. Durga, Programme Officer, Ms. Puspasree Devi, Programme Manager, Mr. Ghasiram Panda, Programme Manager for their support during this study.

Finally, I would like to say that this is just a briefing paper that flags off many issues which need to be studied and pursued further. Hope this report will have its small yet effective contribution to reduce the vulnerabilities of heat wave victims in the state and elsewhere.

**Ranjan K Panda**



# Executive Summary

Odisha's tryst with heat waves got a global attention in 1998 when 2042 people died. Climate change has been the major culprit for this, as experts opine. However, Odisha government has also been fighting heat wave effectively. As a result, the death tolls have decreased drastically. On 5th August 2015, India's Union Minister of Science & Technology and Ministry of Earth Science, informed the Parliament startling figures of death due to heat wave this summer. As per the report 2037 people have died in India and out of which 67 death cases due to heat wave are from Odisha.

As per the media report (English Daily The Indian Express, 31st May 2015) Office of the Special Relief Commissioner's (SRC), Odisha received reports of 108 deaths allegedly due to sun stroke. However, only 21 cases were confirmed by the Office as death due to heat stroke. (<http://indianexpress.com/article/india/india-others/heat-wave-death-toll-crosses-2200/#sthash.sggLLtFH.dpuf>)

In this background ActionAid had undertaken a small study to understand the severity of the situation and the vulnerabilities due to heat wave conditions. Also this study analyzes the efforts of the Government towards tackling the heat wave situations.

## Methodology

In the present study we are trying to understand the situation of the people due to heat wave. We have made an attempt to collect information regarding death due to heat wave in Odisha and for this; we have collected case studies from two districts to understand the vulnerability of heat wave affected people and the effectiveness of the measures taken by the government. We have analyzed various circulars, documents and action taken by Government. This report includes six case studies of death due to heat wave in Nuapada District and three case studies from Sambalpur District of Odisha. We have only got information on death due to heat wave from the record of the Government since there was no other means to obtain information regarding the number people suffering due to heat wave like conditions. The above case studies collected from two districts is not a representative sampling hence the findings can't be generalised for the whole state but it certainly throws light on the ground realities faced by the poor, aged and other vulnerable sections of the society who fall prey to heat wave vulnerability of people due to heat wave conditions.

## Issues emerging out of the case studies:

All the case studies collected from two districts of Odisha lead us to the following basic understanding of the issue as dealt with in the state:

1. Only the payment of ex-gratia to the deceased person is ensured as per the provisions of paragraph 254 of the Odisha Relief Code (In case any member(s) of the family dies due to such natural calamities or disasters like flood, cyclone, tornado, thunder squall, hailstorm, sun stroke, lightning, drowning of boat, etc., ex-gratia relief at the rate of Rs.10,000/- for each case of death shall be given to the bereaved family). Further the ex-gratia amount was increased to Rs. 50,000/- from 1st April, 2015.
2. Assessment of heat wave related deaths is a cumbersome and confusing

exercise because it requires joint enquiry with the involvement of multiple officials like local Revenue Officer like Tehsildar or Additional Tehsildar ( in rural areas) or any other Revenue Office in Urban areas ( authorised by Sub-Collector) and the local Medical Officer of a PHC/SHC/CHC/Sub-Divisional or District Headquarters Hospital ( to be nominated by the CDMO/SDMO). And this requires to be arranged by the District Collector.

3. Compensation amount does not suffice to help the victims in a real and humane manner. Earlier the ex-gratia amount provided to the family of the deceased person was Rs. 10,000/- as per the provisions of paragraph 254 of the Odisha Relief Code. But In February 2009, during visit of the 13th Finance Commission of Government of India, the state government had made a demand to include Heat Wave in the list of natural calamity under CRF. On the basis of the recommendations of the 14th Finance Commission on financing of expenditure on immediate relief during natural disasters for the period 2015-20 and the report of the expert group set up by the Ministry of Home Affairs, Disaster Management Department, the Government of India revised the items and norms for assistance from the SDRF/NDRF, which became effective from 1st April 2015. From 1st of April 2015, the state government thus increased ex gratia to the kin of those killed due to sunstroke to 50000 rupees from 10000 rupees.

Heat wave victims seem to have discriminated as other calamity victims get high rates of compensation compared to them. The family of a person who dies due to cold wave is entitled to ex gratia of 4 lakh rupees from State Disaster Response Fund (SDRF) contributed by the Centre, subject to certification regarding the cause of death from appropriate authority; and the provision of ex-gratia for disability between 40% and 60% is 59100 and 2 lakh rupees per person when the disability is more than 60% subject to certification by a doctor from a hospital or dispensary of a government regarding extent and cause of disability.

The compensation for other natural calamity death like lightning and snake bite is also 4 lakh rupees. However, it is only 50000 rupees for heat wave victims. To be eligible for this, a post mortem is required and then a joint inquiry report by the revenue officer and medical officer is required to establish the hit wave death.

4. The heat wave compensations do not cover heat wave related illnesses and other associated problems.
5. Government employees in charge of assessing the death and providing the compensation themselves find it difficult sometimes to be able to provide the support despite having the intentions to do so. It requires arrangement of joint enquiry by collector with the involvement of officials at district level and post mortem to certify the case as death due to heat wave.
6. Sometimes social taboos and belief systems also come as a barrier in providing the official support. Post mortem is required to be done to confirm the cause of death but sometime the family members have a deep aversion for post mortem because it is not in line with local custom to conduct the post mortem. "The process takes more than a day and half. The police have to be informed and they would not arrive on time. The body has to be taken to the town by hiring a vehicle," said a family member of a deceased person. "It becomes difficult for the family members to see the body after the post mortem, while performing the death rituals. The time spent in the process creates a lot of emotional problems" add the family members of a deceased person.

7. Many victims are supported with other schemes such as NFBP (National Family Benefit Scheme) and OAP (Old Age Pension) rather than the one meant for heat wave victims.
8. Many rural and peripheral health facilities are not able to deal with heat wave related cases due to failure of electricity supplies, unavailability of air conditioned room etc;
9. Awareness on the various schemes and compensations have not reached to many places.
10. The aged, daily wage labourers and people from poor communities who work unprotected under the hot sun suffer most deaths due to heat wave.

It is important to consider sun stroke in its larger connotation of heat wave. In the same way we argue that heat wave is not limited to sun stroke deaths alone, we should also discuss the measures taken by government to tackle this disaster bringing in the larger perspective into the issue.

Odisha government has largely been hailed for its effectiveness in reducing heat wave deaths by taking up timely and appropriate preventive measures after the large number of deaths in 1998. However, the debate around heat wave needs to go beyond just this.

The government also approved heatwave and seven other disasters (lightning, whirlwind, tornado, heavy rain, boat accident, drowning and snakebite) as state-specific disasters, a press release of the Government said. People affected by local disasters, except heatwave, will get the same relief assistance as prescribed for 12 other disasters approved by the Centre under the State Disaster Response Fund and National Disaster Response Fund. Such relief assistance includes ex gratia to the next of kin in case of death, assistance in case of permanent incapacitation or injury, food assistance, assistance for clothing and utensils, assistance for replacement of milch and draught animals lost, house building assistance, as applicable.

The state government had been constantly pursuing with the central government, and in its memorandum submitted to the 14th Finance Commission, it had made specific request for inclusion of tornado, thundersquall, heavy rain, drowning of boats, whirlwind, gale, tidal disaster, lightning, heatwave, etc, in the list of disasters enabling the state to incur expenditure from State Disaster Response Fund (SDRF) on relief and restoration measures arising out of the calamities.

The commission accepted the claims and recommended that up to 10% of the funds available under the State Disaster Response Fund (SDRF) could be used by the state governments for natural disasters that they are considered to be disasters' in the state but are not included in the notified list of disasters of the ministry of home affairs.

The increasing impacts of global warming calls for better management of a lot of aspects in state's development planning.

### **Conclusion & Suggestions**

The suggestions includes three sets of recommendations related to Compensation, Preparedness and Other Generic Issues to be tackled to address heat wave:

With ever growing temperatures, the globe is experiencing increasing heat wave conditions. Odisha is at the receiving end due to both global and local

reasons. Odisha government has done well to reduce deaths due to heat wave; however it needs a lot of intervention to reduce all vulnerabilities related to heat wave conditions. We are just giving a few general suggestions in this regard, to conclude this report.

### Compensation -

- The ex-gratia support to heat wave death victims be enhanced at par to Rs. 4 lacs with other calamities.
- The process of assessing heat wave deaths needs to be simplified and without any burden to the victims' families. The frontline service provider like ASHA & Anganwadi may be entrusted with the responsibility to record the death related to heatwave & recommended further for compensation. The Grampanchayat should also be a part of this identification process.
- The scope of considering assistance under Heat Wave compensation schemes should be expanded to include people who suffer various ailments. Compensation amount in such cases should be decided according to the degree of impacts.
- There is no data base available for all affected persons. The state should have a system in place for maintaining complete data of all victims irrespective of who died or not, who was compensated with or not. This will immensely help in future preparedness efforts.
- Benefits under other schemes under which Heat Wave victims are often compensated, if for some reasons they fail to qualify ex-gratia meant for them, should be increased substantially.

### Preparedness

- To reduce the death toll to complete Zero, the preparedness actions need to be augmented and monitored in much better ways - by involving all stakeholders.
- Health facilities in the rural areas need to be improved; health insurance facilities must include one and all.
- Provisions be increased and improved for Kendu Leaf pluckers, Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) wage labourers, construction workers and other people who are more vulnerable to heat waves.

### Other Generic Issues to be tackled to address heat wave

- Effective monitoring of heat wave conditions and deaths of the animals, both near human habitations and inside the forested areas, needs to be introduced.
- Industrialization, mining and urbanization process in the state must consider integrating green policies and practices.
- Forestry, including urban forestry, needs to be promoted and strengthened.
- Desertification and land degradation process needs to be arrested with strategic and strong interventions.
- The state climate change action plan needs to further strengthened and monitored on a regular basis.
- Special arrangement need to be done for the women most specifically pregnant women, children, old aged person to protect them from heat wave.

The latest Intergovernmental Panel on Climate Change (IPCC) report (2014) highlights that mean surface temperature of the globe has risen by  $0.850 \pm 0.180$  C.

## Introduction

2015 has beaten all heat records to become the hottest year in recorded history. Studies by National Oceanic and Atmospheric Administration (NOAA) found out that this year's May was the hottest and the combined average temperature over global land and ocean surfaces for May 2015 was the highest in a 136-year period. Deaths and devastations were reported from all across the world.

The current devastating effects are largely attributed to El Niño. NOAA has said that El Niño is driven by warm surface water in the eastern Pacific Ocean. Such a weather pattern is known for causing extreme droughts, storms and floods could become one of the strongest ever. In the week ending Nov. 16, temperatures in the Nino 3.4 region, the central band of affected ocean running either side of the equator from 5S-5N and 170-120W, were 3 degrees Celsius (5.4 degrees Fahrenheit) above average, the National Oceanic and Atmospheric Administration (NOAA) said in its latest update.

This year's El Niño is the biggest in over 15 years and could strengthen, as has been said by the World Meteorological Organization (WMO). Expert agencies have already warned that this can cause droughts, heatwaves and fires in Southeast Asia and Australia. And it may trigger warmer, wetter weather and flooding in the eastern edge of the Pacific. WMO Secretary-General Michel Jarraud has just said that, "Because of climate change, heatwaves may be hotter and more frequent than usual, and more places may be at risk of flooding."

On 5th August 2015, India's Union Minister for Science & Technology and Ministry of Earth Sciences, informed to the Parliament startling figures of death due to heat wave this summer.

2037 people have died. The details are in the following table. Worrisome is the fact that all India mean temperature has risen nearly around 0.60 C over the last 110 years.

Details of the Heat Wave/Sun Stroke related deaths in India: Summer 2015:

State	Number of deaths
Andhra Pradesh	1,369
Telangana	541
Odisha	67
Uttar Pradesh	22
West Bengal	13
Gujarat	10
Madhya Pradesh	10
Delhi	5

The latest Intergovernmental Panel on Climate Change (IPCC) report (2014) highlights that mean surface temperature of the globe has risen by  $0.850 \pm 0.180$  C.

Using daily maximum temperature data of 103 stations uniformly distributed over the country for the period 1961-2010 from Indian main land during the hot weather season (March to July), it was observed that many areas of the country (north, northwest, central and northeast Peninsula) have experienced more than eight (8) Heat Wave days on an average per season. The recent decade 2001-2010 happens to be the warmest decade for the country as well as for the globe.

The Union Minister informed that upon prediction of the heat wave conditions by the ESSO-IMD, various State Governments have a system of giving wide publicity of Dos and Don'ts through advertisements in Print and audio-visual media and opening up of drinking water camps at identified places in rural and urban areas to mitigate the impact of heat waves. The schedule of National Rural Employment Guarantee Scheme workers is adjusted to avoid exposure to extreme hot weather duration periods.

### What is Heat Wave ?

The National Disaster Management Authority lists out Heat Wave as a natural disaster and the Odisha State Disaster Management Authority define Heat Wave as the following:

Heat wave can be defined as a condition of atmospheric temperature that leads to physiological stress, which sometimes can claim human life.

Quantitatively heat wave can be defined as follows:

The normal temperature is  $< 40^{\circ}$  C. Any increase from the above normal temperature is called heat wave.

+ (5 or 6)  $^{\circ}$  C – Moderate heat wave

$7^{\circ}$  C. or more – Severe heat wave

The normal temperature is  $> 40^{\circ}$  C. Any increase from the above normal temperature is called heat wave.

+ (5 or 6)  $^{\circ}$  C – Moderate heat wave

$7^{\circ}$  C. or more – Severe heat wave

If the maximum temperature of any place continues to be  $45^{\circ}$  C, consecutively for two days, it is called a heat wave condition.

The government agencies say that there will be no harm to the human body if the environmental temperature remains at  $37^{\circ}$  C. Whenever the environmental temperature increases above  $37^{\circ}$  C., the human body starts gaining heat from the atmosphere. In the case of humidity being high along with high temperature, a person can suffer from heat stress disorders even with the temperature at  $37^{\circ}$  or  $38^{\circ}$  C.

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<http://www.osdma.org/ViewDetails.aspx?vchglinkid=GL002&vchplinkid=PL008>

The Intergovernmental Panel on Climate Change (IPCC) says, "Heat wave (also referred to as extreme heat event) is a period of abnormally hot weather". It also says, "Heat waves and warm spells have various and in some cases overlapping definitions".

To understand simply, Heat Wave is a prolonged period of excessive heat often combined with excessive humidity. It leads to heat cramps, heat exhaustion and sunstroke which are life threatening.

In fact, Heat Wave is a grossly underestimated and underreported disaster. Which kills and affects more people than disasters which strike suddenly and the devastation is visible. Many heat related deaths go unreported because they are taken to be the consequences of the existing ailments.

Heat wave proves dangerous, even fatal, mostly for the aged, children and all those who have diseases that prevent their bodies from regulating heat. It can affect women more than men because they get dehydrated quicker than men do. Under normal conditions, the body's internal thermostat produces perspiration that evaporates and cools the body. However, in extreme heat and high humidity, evaporation is slowed. This invites the problem. Then, it can be more disastrous for people with cardiac, respiratory, diabetic, asthmatic, and seizure problems. Such ailments aggravate the problems and even cause death.

Animals and plants too get affected by heatwave.

### **The Odisha Scenario**

Odisha's tryst with heat waves got a global attention in 1998 when 2042 people died and for the first time also covering the coastal region. Climate change has been the major culprit for this, as experts opine. However, Odisha government has also been fighting the effects effectively. As a result, the death tolls have decreased drastically.

The following table shows the reduced death toll from 1998 onwards.

Year	Number of Deaths
1998	2042
1999	91
2000	29
2001	25
2002	41
2003	67
2004	43
2005	237
2006	21
2007	48
2008	71
2009	93
2010	109
2011	23
2012	97
2013	08
2014	32
2015	67

The table says it all. Heat wave deaths have reduced but not completely zero yet.

Odisha has been at the receiving end of climate change vagaries and increasing heat is a greater menace. While we only get records of some deaths due to heat wave, we really have no way to receive information on the exact number of people who are suffering due to heat wave like conditions.

In this study, we are trying to understand the plight of the state – especially the poor – due to increased heat and climate change, with heat wave being taken as an indicator.

We are also trying to analyse the efforts of Odisha government through analysis of various government actions, circulars and other documents.

We have collected case studies from two districts to understand the plight of heatwave affected people and the effectiveness of the measures taken by the government.

To understand the scenario of victims and related assistance, let's first discuss a few case studies.



## Case Studies of Heatwave affected people in Odisha

### Damodar Mund

Damodar, resident of Bargaon village in Nuapada district, was working as a clerk in the Divisional Forest Office at Khariar. In May 2009, he had been to the Range Office located at Padmapur on some official works. He returned to his village at about 5 pm, complained of having head reeling at 11 pm and subsequently vomited. He was admitted to the government hospital at Khariar, but died at 12 pm.

Post Mortem of the body was done and hit wave death was confirmed. He did not get any support from the government. His wife was rehabilitated as a clerk in the DFO office. He is also survived by two children.

### Hemanta Majhi

Hemanta Majhi, a tribal man of Lachhipur village of Nuapada district, was a rickshaw puller. He was landless and earned his livelihood by pulling his rickshaw in Khariar town located three kilometres away from his village. He died at the age of 47 at Khariar while pulling his rickshaw in February 2013.

The dead body was brought to the village by family members. No post mortem was done. His wife Para has not yet received any financial supports from the government, not even the support of rupees twenty thousand under the National Family Benefit Scheme (NFBS). What she receives is only the widow pension.

Hemanta is now survived by his wife, two sons and two daughters.

### Dhaniram Sagar

Dhaniram, a resident of Kharlakot village in Nuapada District, was a daily wage labourer. He was the lead bread earner of a family of seven.

One day in June 2014 he had been to the nearby forests for collecting firewood and did not return. He was found dead under a tree on the embankment of a water harvesting structure located near the forest by one villager, who informed Dhaniram's daughter working nearby. The daughter saw the dead body and informed her mother. The fire wood bundle was lying near the dead body. "He might have gone to the tank to drink water. The day was very hot and he died due to scorching hit" says Dhaniram's wife.

As per the local tradition, the dead body was cremated on the same day after observation of rituals. Someone from the village informed the media and both electronics and print media arrived in the village in the evening. The police also reached to the spot and conducted an inquiry. The police officials abused the family members and the villagers for creating hue and cry out of a normal death.

However, after two days, due to pressure that built up owing to media reports, the police had to dig out the dead body from the graveyard. The post mortem was conducted to ascertain the cause of death, but the doctor's report did not attribute the death to sun stroke.

As a result, no support was provided to the family members of the deceased from natural calamity fund. However, Dhaniram's wife was provided benefit under National Family Benefit Scheme (NFBS) and Old Age Pension (OAP).

A note that is important to share here: Dhaniram's wife did not agree to pose before the camera when we visited her. She feared this to be an inquiry and maintained that such inquiries create problems for the family rather than bringing any benefit, "Reporting in papers is followed by police inquiry and other problems," she said.

Dhaniram is survived by his wife, three daughters and two sons. His elder son is a seasonal migrant labour, goes every year to south Indian cities to work in brick kilns.

### **Hema Sunani**

Hema Sunani from Maniuda village in Nuapada district was aged 65 years when she collapsed due to excessive heat in March 2015.

Hema had been to Tahasil office to collect her Adhaar card. She collapsed while waiting outside the office for her turn to get the card. Komna Police was informed about the death. A post mortem was conducted but sun stroke death was not confirmed. No financial assistance was provided to her family members.

Hema was about 65-year-old at the time of her death. She was a migrant labour till she was capable of working. She was regularly going to different brick kilns with her husband and the only mentally retarded daughter-Rajkumari. The daughter was married to a man of a nearby village, who died after a year. Hema's husband also died after a few days, probably of Tuberculosis (The villagers say that he was vomiting blood). After the death of her husband, she stayed in the village with the daughter in a small hut which the villagers made for them. The daughter also died a few days after the death of Hema.

Hema was not getting any support from the government; neither a pension, nor support under National Family Benefit Scheme (NFBS).

### **Kamalsing Sabar**

Kamalsing, marginal farmer from Kashipala village in Nuapada district, died in May 2015.

A marginal farmer with total holding of about three acres of land, Kamalsing was a poor man. He went to his farm land early in a morning to till the land. At about 10.30 am he collapsed while ploughing the field. The matter was neither reported to the police nor the Tahasil office.

However, when the R.I. of Komna Tahasil came to know about the death, he rushed to the spot for conducting an inquiry. He pursued the family members to inform the matter to the police, so that a post mortem could be done.

But the family members did not agree, saying that it was not in line with local custom to conduct the post mortem. He then rang up the Tahasildar and informed about the situation. The Tahasildar tried to convince Kamal's brother over phone about the importance of getting the post mortem done, however failed to convince him. The body had to be cremated without the post mortem being done.

Despite of that, the Revenue Inspector did report to the Tahasildar assuming it to be a 'sun stroke death.' The Tahasildar has forwarded the application of Sabar's wife to the district authority for financial support from Natural Calamity Fund.

### **Swadbudha Hans**

Swadbudha, an 80-year old man of Ganiari village in Nuapada district, died of heat wave in May 2015.

It was too hot at 3 pm that day when Swadbudha went out of home to see the cattle in the forest. Another old man of the village Mani Hans also went with his cattle to the forest. Swadbudha was found dead by the villagers near the forest.

The family members as well villagers inform that, even at the age of 80, Swadbudha was active like a young man. He was cleaning the cowshed early in the morning and taking the cattle to the forest every day. No post mortem was done to confirm the cause of death, but villagers guessed that it was a hit wave death.

The family members have a deep aversion for post mortem. "The process takes more than a day and half. The police have to be informed and they would not arrive on time. The body has to be taken to the town by hiring a vehicle," said a family member.

"It becomes difficult for the family members to see the body after the post mortem, while performing the death rituals. The time spent in the process creates a lot of emotional problems" add the family members. Despite being told that no financial assistance can be granted from the government without the post mortem, the family refused.

No benefit whatsoever was available for Swadbudha.

### **Surubabu Pradhan**

Surubabu of Naksapali village in Maneswar Block (now coming under Sambapur Mahanagar Nigam) of the Sambalpur district was a mason. He died of sunstroke in May 2015.

That fateful day, he came from work, had lunch and then had some water; slept at about 2/2.30 pm. Later in the evening, the family realized he was dead and took him to the Sambalpur hospital. There, he was declared dead. The dead body was then sent to Burla for post mortem.

The funeral and related rituals cost the family about 7000 rupees. Later, after about a month or two, 50000 rupees was deposited in the joint account the couple already had for years. A lady, whom Surubabu's wife identifies as a government servant, helped in getting this compensation that was directly credited into her account.

Tapaswini Pradhan, Surubabu's wife, is about 50 years old and lives with three children now. Two of her daughters have already got married, the youngest one was married off this month. Out of the three children who stay with her, the elder daughter shunned education after Surubabu died. She did pass matriculation examination. Rest of the two children, one daughter and one son, are studying standard 6th and 2nd respectively, in the village school. The younger one, a boy, is differently abled. He is dumb since birth.

Surubabu is a housewife, who now has to fend for her livelihood. They stay in a IAY house constructed by her brother. Her brother used to support their family from time to time but he died a year and half ago. This month only she had visited the district collector's office to apply for widow pension and a PwD certificate for her son.

The family had been receiving 10 kilograms of wheat and 4 liters of kerosene each month. However, for the last three months they have been given a new card under which they used to get 30 kilograms of rice for two months. This amount has further been reduced to 20 kilograms of rice only, from this month. The Mid Day Meal scheme is very beneficial, she says.

### **Kunduru Mirdha**

Kunduru Mirdha of Rasanpur village in Maneswar Block of Sambalpur district died of sun stroke in May 2012. A daily wage labourer and fuelwood gatherer, he was about 45 then.

Kunduru had gone out to work and fell down somewhere in the field. They got to know about it very late and by when the body was found and rushed to hospital, he was declared dead. After they got the post mortem report and death certificate, they kept on trying - with help of some village youths - to get compensation. But it was a two and half year struggle to get ten thousand rupees from the district authorities.

Satyabhama, his wife, is about 42 years old and stays with three children (all sons) in a dilapidated hut that was made several years ago under some government scheme. She is also a daily wage labour but have been facing a severe arthritic problem for the last one year or so. That, she says, has made her life all so more difficult.

A year ago, the elder son left school after appearing class 9th exam. He is doing wage labour on and off to help the family economy. The other two sons are reading in class 6th and 4th respectively. The Mid Day Meal scheme is a great relief, according to Satyabhama. They have a BPL card and were receiving 25 kilograms of rice earlier. However, from this month onwards, the amount has been reduced to 20 kgs only.

The landless wage labourer has applied for Wideo Pension several times but in vain.

### Arjun Majhi

Arjun Majhi of Kabrapali village (Turipada hamlet) in Maneswar Block (now under Sambalpur Mahanagar Nigam) died of sun stroke in June 2015. He was about 65 then.

Arjun, a daily wage labourer, had gone to work outside. After returning home in the evening, as he felt uneasy, the family members realized he was affected by sun stroke. So, they gave him water and also burnt mango carnal etc. But by about 10 pm in the night, when he was almost out of sense, they took him to the Sambalpur hospital. Arjun died in the hospital on the third day of admission.

The family members, on advise of some people who were present in the hospital, asked for the post mortem of the body. However, the hospital authorities said to them that no post mortem was required as it was a clear case of sun stroke death. The family then brought the body and completed all funeral rituals. Three days after the death, the Sarpanch and an official visited them and handed over a cash of 1500 rupees rupees. "They said, it was a government support for cremation purpose," informed the family member.

The family has not received any other support so far. They have BPL card and were receiving 30 kilograms of rice till recently. For three months now, they are receiving only 15 kgs of rice.

Arjun is survived by his wife Sari and two sons. The elder son has left to work in Andhra Pradesh in a puffed rice factory after his father's death and the younger son and his wife stay in the villager with Sari. He is a daily wage labourer too and the family owns no agricultural land. They have been trying for a house under IAY but of no fruit till date.

All these above case studies lead us to the following basic understanding of the issue as dealt with in the state:

1. Only the payment of ex-gratia to the deceased person is ensured as per the provisions of paragraph 254 of the Odisha Relief Code (In case any member(s) of the family dies due to such natural calamities or disasters like flood, cyclone, tornado, thunder squall, hailstorm, sun stroke, lightning, drowning of boat, etc., ex-gratia relief at the rate of Rs.10,000/- for each case of death shall be given to the bereaved family). Further the ex-gratia amount was increased to Rs. 50,000/- from 1st April, 2015.
2. Assessment of heat wave related deaths is a cumbersome and confusing exercise because it requires joint enquiry with the involvement of multiple officials like local Revenue Officer like Tehsildar or Additional Tehsildar ( in rural areas) or any other Revenue Office in Urban areas ( authorised by Sub-Collector) and the local Medical Officer of a PHC/SHC/CHC/Sub-Divisional or District Headquarters Hospital ( to be nominated by the CDMO/SDMO). And this requires to be arranged by the District Collector.
3. Compensation amount does not suffice to help the victims in a real and humane manner. Earlier the ex-gratia amount provided to the family of the deceased person was Rs. 10,000/- as per the provisions of paragraph 254 of the Odisha Relief Code. But In February 2009, during visit of the 13th Finance Commission of Government of India, the state government had made a demand to include Heat Wave in the list of natural calamity under CRF. On the basis of the recommendations of the 14th Finance Commission on financing of expenditure on immediate relief during natural disasters for the period 2015-20 and the report of the expert group set up by the Ministry of Home Affairs, Disaster Management Department, the Government of India revised the items and norms for assistance from the SDRF/NDRF, which became effective from 1st April 2015. From 1st of April 2015, the state government thus increased ex gratia to the kin of those killed due to sunstroke to 50000 rupees from 10000 rupees.

Heat wave victims seem to have discriminated as other calamity victims get high rates of compensation compared to them. The family of a person who dies due to cold wave is entitled to ex gratia of 4 lakh rupees from State Disaster Response Fund (SDRF) contributed by the

Centre, subject to certification regarding the cause of death from appropriate authority; and the provision of ex-gratia for disability between 40% and 60% is 59100 and 2 lakh rupees per person when the disability is more than 60% subject to certification by a doctor from a hospital or dispensary of a government regarding extent and cause of disability.

The compensation for other natural calamity death like lightning and snake bite is also 4 lakh rupees. However, it is only 50000 rupees for heat wave victims. To be eligible for this, a post mortem is required and then a joint inquiry report by the revenue officer and medical officer is required to establish the hit wave death.

4. The heat wave compensations do not cover heat wave related illnesses and other associated problems.
5. Government employees in charge of assessing the death and providing the compensation themselves find it difficult sometimes to be able to provide the support despite having the intentions to do so. It requires arrangement of joint enquiry by collector with the involvement of officials at district level and post mortem to certify the case as death due to heat wave.
6. Sometimes social taboos and belief systems also come as a barrier in providing the official support. Post mortem is required to be done to confirm the cause of death but sometime the family members have a deep aversion for post mortem because it is not in line with local custom to conduct the post mortem. "The process takes more than a day and half. The police have to be informed and they would not arrive on time. The body has to be taken to the town by hiring a vehicle," said a family member of a deceased person. "It becomes difficult for the family members to see the body after the post mortem, while performing the death rituals. The time spent in the process creates a lot of emotional problems" add the family members of a deceased person.
7. Many victims are supported with other schemes such as NFBP (National Family Benefit Scheme) and OAP (Old Age Pension) rather than the one meant for heat wave victims.
8. Many rural and peripheral health facilities are not able to deal with heat wave related cases due to failure of electricity supplies, unavailability of air conditioned room etc;
9. Awareness on the various schemes and compensations have not reached to many places.
10. The aged, daily wage labourers and people from poor communities who work unprotected under the hot sun suffer most deaths due to heat wave.

While the number of case studies covered under this study does not really lets us in a position to analyse all these in any way as to be called any representative sampling, it is nevertheless important to know some of the ground realities faced by the poor, aged and other vulnerable sections of the society who fall prey to heat wave.

It is important to consider sun stroke in its larger connotation of heat wave. In the same way we argue that heat wave is not limited to sun stroke deaths alone, we should also discuss the measures taken by government to tackle this disaster bringing in the larger perspective into the issue.

Odisha government has largely been hailed for its effectiveness in reducing heat wave deaths by taking up timely and appropriate preventive measures after the large number of deaths in 1998. However, the debate around heat wave needs to go beyond just this.

The increasing impacts of global warming calls for better management of a lot of aspects in state's development planning. We will try to discuss a few points at the end of this report after going through - in the next paragraphs - the measures being taken at the moment, to tackle the heat wave related problems.



## Government measures

Heat wave conditions prevail in the state mainly in the months of April, May and June. Annual reports of activities of Revenue and Disaster Management department states that the state undertakes a number of preparedness / preventive activities for management of the heat wave situation like IEC activities through mass media for general awareness of the public, mitigating water scarcity problems, special arrangement of treatment of heat-stroke patients in Government Hospitals at different levels, rescheduling of working hour for labourers, provision of drinking water at works site, restriction on plying of buses during peak hours, re-scheduling of time table of the school, closer of schools in advance for summer vacation, etc. (Annexure I comes with a Revenue Department circular that speaks more about government measures.)

Government's heat wave preparedness has been done with the major objective of 'no human casualty.' As February comes to an end, the government starts jumping into action. Schools, colleges and government offices are asked to open only in the morning hours. Instructions are given for shunning public transport during peak heat hours of the day, between 12 noon and 3.30 pm. Construction and other workers and colleges shift to early morning sessions. They open at 6.30am and end by 12 noon.

Construction works that involve working out during the day time are also restricted. Under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS) the working hours for wage labourers are shut from 11.30 am to 3.30 pm.

Many private organisations also follow the morning office hours. Construction works do shift to evening and night shifts.

Public health facilities take special measures to treat heat wave patients. Hospitals and dispensaries keep ice slabs ready to treat stroke patients. Panchayats across the state open water booths. Water booths are also opened at several places in cities, on highways and many places. Several charitable organisations, youth clubs, private organisations and others also open water booths.

Awareness on heat wave problems and preparedness has certainly increased a lot in the state and one can see that reflecting in everyday life. However, the death of people continues. And then, there is not much information about how many animals die and are affected.

## Compensating Death

People who died due to sunstroke were, till April 2015, being provided with an ex-gratia assistance of ten thousand rupees. The family members of the victims get this amount. This provision was made in the Orissa Relief Code.

Earlier - prior to April 2015 – the Calamity Relief Fund (CRF) had no provision to provide relief to the heat wave victims. Even the National Calamity Contingency Fund (NCCF) had no such provisions. So, the support of ten thousand rupees was being met from the Chief Minister's Relief Fund (CMRF). support

It is reported that the state did not have sufficient funds with it to manage all the cost required, including the cost borne in preparedness for heat wave conditions. The issue had been raised before the Government of India and Finance Commissions for consideration.

In February 2009, during visit of the 13th Finance Commission of Govt.of India, the state government had made a demand to include Heat Wave in the list of natural calamity under CRF. On the basis of the recommendations of the 14th Finance Commission on financing of expenditure on immediate relief during natural disasters for the period 2015-20 and the report of the expert group set up by the Ministry of Home Affairs, Disaster Management Department, the Government of India revised the items and norms for assistance from the SDRF/NDRF, which became effective from 1st April 2015.

From 1st of April 2015, the state government thus increased ex gratia to the kin of those killed due to sunstroke to 50000 rupees from 10000 rupees.

The government also approved heatwave and seven other disasters (lightning, whirlwind, tornado, heavy rain, boat accident, drowning and snakebite) as state-specific disasters, a press release of the govt. said. People affected by local disasters, except heatwave, will get the same relief assistance as prescribed for 12 other disasters approved by the Centre under the State Disaster Response Fund and National Disaster Response Fund. Such relief assistance includes ex gratia to the next of kin in case of death, assistance in case of permanent incapacitation or injury, food assistance, assistance for clothing and utensils, assistance for replacement of milch and draught animals lost, house building assistance, as applicable.

The state government had been constantly pursuing with the central government, and in its memorandum submitted to the 14th Finance Commission, it had made specific request for inclusion of tornado, thundersquall, heavy rain, drowning of boats, whirlwind, gale, tidal disaster, lightning, heatwave, etc, in the list of disasters enabling the state to incur expenditure from SDRF on relief and restoration measures arising out of the calamities.

The commission accepted the claims and recommended that up to 10% of the funds available under the SDRF could be used by the state governments for natural disasters that they are considered to be disasters' in the state but are not included in the notified list of disasters of the ministry of home affairs.

Heat wave victims seem to have discriminated as other calamity victims get high rates of compensation compared to them. The family of a person who dies due to cold wave is entitled to ex gratia of 4 lakh rupees from State Disaster Response Fund (SDRF) contributed by the Centre, subject to certification regarding the cause of death from appropriate authority; and the provision of ex-gratia for disability between 40% and 60% is 59100 and 2 lakh rupees per person when the disability is more than 60% subject to certification by a doctor from a hospital or dispensary of a government regarding extent and cause of disability.

The compensation for other natural calamity death like lightning and snake bite is also 4 lakh rupees. However, it is only 50000 rupees for heat wave victims. To be eligible for this, a post mortem is required and then a joint inquiry report by the revenue officer and medical officer is required to establish the hit wave death.

## Conclusion & Suggestions

With ever growing temperatures, the globe is experiencing increasing heat wave conditions. Odisha is at the receiving end due to both global and local reasons. Odisha government has done well to reduce deaths due to heat wave, however it needs a lot of intervention to reduce all vulnerabilities related to heat wave conditions. We are just giving a few general suggestions in this regard, to conclude this report.

### Compensation -

- The ex-gratia support to heat wave death victims be enhanced at par to Rs. 4 lacs with other calamities.
- The process of assessing heat wave deaths needs to be simplified and without any burden to the victims' families. The frontline service provider like ASHA & Anganwadi may be entrusted with the responsibility to record the death related to heatwave & recommended further for compensation. The Grampanchayat should also be a part of this identification process.
- The scope of considering assistance under Heat Wave compensation schemes should be expanded to include people who suffer various ailments. Compensation amount in such cases should be decided according to the degree of impacts.
- There is no data base available for all affected persons. The state should have a system in place for maintaining complete data of all victims irrespective of who died or not, who was compensated with or not. This will immensely help in future preparedness efforts.
- Benefits under other schemes under which Heat Wave victims are often compensated, if for some reasons they fail to qualify ex-gratia meant for them, should be increased substantially.

### Preparedness -

- To reduce the death toll to complete Zero, the preparedness actions need to be augmented and monitored in much better ways - by involving all stakeholders.
- Health facilities in the rural areas need to be improved; health insurance facilities must include one and all.
- Provisions be increased and improved for Kendu Leaf pluckers, Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) wage labourers, construction workers and other people who are more vulnerable to heat waves.

### Other Generic Issues to be tackled to address heat wave -

- Effective monitoring of heat wave conditions and deaths of the animals, both near human habitations and inside the forested areas, needs to be introduced.
- Industrialization, mining and urbanization process in the state must consider integrating green policies and practices.
- Forestry, including urban forestry, needs to be promoted and strengthened.
- Desertification and land degradation process needs to be arrested with strategic and strong interventions.
- The state climate change action plan needs to further strengthened and monitored on a regular basis.
- Special arrangement need to be done for the women most specifically pregnant women, children, old aged person to protect them from heat wave.

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## Annexure

IP  
PT  
at  
4/3/11

By Fax  
Heat Wave Urgent

GOVERNMENT OF ORISSA,  
REVENUE & DISASTER MANAGEMENT DEPARTMENT

No. IIF- 45/11 - 10137 /R&DM, dated 4/3/2011

From Sri R.K. Sharma, IAS  
Commissioner-cum-Secretary to Government.

To All Collectors.

**Sub: Preparedness and precautionary measures to be taken to tackle Heat Wave situation during Summer, 2011.**

Sir,

I am directed to say that appropriate action for being in a state of preparedness for the heatwave during the ensuing summer season should be initiated immediately. You are requested to take following measures :

1. Instructions issued to you in the past on managing heat wave situation may be referred to for general guidance.
2. Public Awareness Campaign through electronic and print media be undertaken. Civil Society Organisations may be associated with awareness campaign and other measures to tackle the situation arising out of heatwave. Necessary co-ordination meetings may be held immediately for this purpose.
3. Life saving medicines, ORS as well as Ice cubes be stored in dispensaries, PHCs, CHCs and District Headquarters Hospitals sufficiently to meet the crises.
4. Defective tube wells should be revived. Arrangements for supply of drinking water through tankers at water scarcity pockets should be made.
5. "Jala Chhatras" are required to be opened by Urban Local Bodies/ Gram Panchayats at market places, Bus stands and other congregation points. Construction/ repair of vats may be ensured for roaming livestock.
6. During severe heat wave conditions timing of public transport services should be rescheduled. The public transport vehicles must invariably provide ORS packets in the first aid boxes.
7. The timing for engagement of labourers/ workmen at worksites is required to be rescheduled. No work should be executed during heat wave during the peak hours from 11.00 AM to 3.30 PM. The employers should make necessary arrangements for supply of drinking water, ORS packets and provision of rest shed at the worksite.
8. The ESI Dispensaries may be asked to treat the general public as an additional measures.
9. The timing of classes and examinations during heat wave in Schools & Colleges be rescheduled. Wherever necessary examinations are to be conducted between 6.30 AM to 10.30 AM and all examinations in schools should be over by April and it should be ensured that students are not exposed to heatwave.
10. Provision of drinking water in all Schools and Colleges are to be ensured.
11. On receipt of message of warning, local media should be used to keep the public alert.
12. Health & Family Welfare Department will issue a set of 'Do's and Don'ts' through print media and electronic media to alert the general public.
13. The Energy Department will issue instructions to the energy distribution companies to maintain uninterrupted power supply during summer months.
14. Panchyati Raj Institutions may be impressed to remain alert to meet exigencies.

15. Besides, the control rooms at the State level and at the district level shall function round the clock during the period of heat wave. A Calamity Management group under the leadership of the Collector should review the situation as well as relief measures every day. A daily situation report should be sent by the Collector to the S.R.C./ Revenue & Disaster Management Department.

16. A meeting of the District Natural Calamity Committee is to be held to review the preparedness of the district administration to manage the contingency of heat wave.

17. All efforts should be made to see that no human casualty takes place due to heat wave. However, if any information on casualty is received or news report published in newspapers, it should be immediately enquired into and the veracity of such reports should be reported to this Department. Where reports regarding death of a person due to sunstroke either at work place or any other area are received, the Collector should arrange to conduct immediately joint enquiry of the case by the local Revenue Officer like Tehsildar or Addl. Tehsildar (in rural areas) or any other Revenue Office in Urban areas (authorized by Sub-Collector) and the local Medical Officer of a PHC/ SHC/ CHC/ Sub-Divisional or District Headquarters Hospital (to be nominated by the CDMO / SDMO)

18. Further the payment of ex-gratia (in genuine cases) to the bereaved family of the deceased person should be ensured as per the provisions of paragraph 254 of the Orissa Relief Code.

You are, therefore, requested to look scrupulously into the arrangements personally and ensure precautionary measures as stated in foregoing paragraphs.

Yours faithfully,

Commissioner-cum-Secretary to Government.

Memo No. 10138 /R & D.M. Dated : 4/3/2011

Copy forwarded to the H & U.D. Deptt./ Industries Deptt./ F & E (Env.) Deptt./ Deptt. of Public Enterprises/ Panchayati Raj Deptt./ W & C.D. Deptt./ R.D. Deptt./ H & F.W. Deptt./ Higher Education Deptt./ School & Mass Education Deptt./ Director, Technical Education & Training, BBSR/ Labour & Employment Deptt./ Fisheries & A.R.D. Deptt./ Commerce & Transport (Transport) Deptt./ I & P.R. Deptt./ Energy Department/ Works Deptt. for information and necessary action. It is requested to issue suitable instruction to their field functionaries for taking appropriate precautionary measures in order to tackle heat wave situation and action taken report may please be reported to this Department immediately.

Commissioner-cum-Secretary to Government.

FAX 10139 /R & D.M. Dated : 4/3/2011

Copy forwarded to Special Relief Commissioner, Orissa, Bhubaneswar/ Managing Director, OSDMA, Bhubaneswar for information and necessary action.

Commissioner-cum-Secretary to Government.

Memo No. 10140 /R & D.M. Dated : 4/3/2011

Copy forwarded to All Revenue Divisional Commissioners / the Director, IMD, Bhubaneswar/ OSD, Control Room/OIC (IMU), Revenue & Disaster Management Department for information and necessary action.

Commissioner-cum-Secretary to Government.

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