

Heat Wave Management in Andhra Pradesh and Telangana: Efficacy of Heat Wave Guidelines & Heat Wave Action Plans

(Published Under Section 18 (2) (h) guidelines of Disaster Management Act 2005, for prevention, mitigation, capacity building and preparedness to combat the adverse impact of Heat Waves)

Report Prepared by



Centre for Climate Change and Adaptation
National Institute of Agricultural Extension Management, Hyderabad

Report Submitted by



Centre for Disaster Management
Lal Bahadur Shastri National Academy of Administration, Mussoorie

Report Submitted to



National Disaster Management Authority, New Delhi
August, 2020

Heat Wave Management in Andhra Pradesh and Telangana: Efficacy of Heat Wave Guidelines & Heat Wave Action Plans

(Published Under Section 18 (2) (h) guidelines of Disaster Management Act 2005, for prevention, mitigation, capacity building and preparedness to combat the adverse impact of Heat Waves)

Published by

“Section 18 (2) (h) guidelines of Disaster Management Act 2005, for prevention, mitigation, capacity building and preparedness to combat the adverse impact of Heat Waves”.

© LBSNAA-2020

About the Publication

This research study was sponsored by NDMA, Coordinated by CDM, LBSNAA and the field study was conducted by MANAGE.

Report Prepared by

Centre for Climate Change and Adaptation (CCA), National Institute of Agricultural Extension Management (MANAGE), Hyderabad

Report Submitted by

Centre for Disaster Management (CDM), Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie

Report Submitted to

National Disaster Management Authority (NDMA), Govt. of India, New Delhi

Layout Design

Ms. Niharika Lenka

Photos Credit

Mr. Vincent A

Disclaimer

The views expressed in the research study are the outcome of results obtained from the field study. CDM, LBSNAA encourages the use, reproduction and dissemination of this publication for personal study and non-commercial purposes only with proper acknowledgement of NDMA, LBSNAA & MANAGE.



LBSNAA



Abhiram G. Sankar, IAS
Director,
Centre for Disaster Management

PREFACE

Disasters have adversely affected human civilization ever since the dawn of our existence. Natural disasters have increased both in frequency and fury in the twenty-first century. India has suffered enormously in terms of loss of lives and livelihoods and damage to both public and private property due to the recurrence of major natural and human induced disasters. In response, various strategies have been formulated and implemented with regards to mitigation, prevention, response, rehabilitation and reconstruction during pre-disaster periods. All these efforts have the same goal: disaster management and disaster governance.

No administrator can afford the luxury of waiting for a disaster to happen in his/her jurisdiction to learn from it. It is therefore imperative to be able to convey the experiences of practitioners to each other in an effort to educate about the variety and intensity of challenges faced in this dynamic field. The responses might not have been the best in all cases – but they would certainly be elucidating some aspect of disaster resilience to the discerning eye.

By virtue of the DM Act 2005, the District Magistrate/ Divisional Commissioner plays a pivotal role in the District Disaster Management Authority (DDMA) and hence it is essential that he/she should be well-versed in the various aspects of DM.

It is our pleasure to publish the report “Heat Wave Management in Telangana and Andhra Pradesh - Efficacy of Heat Wave Guidelines & Heat Wave Action Plans” based on a comprehensive study on the silent disaster that is more conspicuous in the states of Andhra Pradesh and Telangana State. The report will be useful to administrators at various levels who are handling disaster management in the current turbulent times of climate change. It can also serve as a good reference material for ATIs and CTIs for their in-house courses.

(Abhiram G. Sankar)



Lal Bahadur Shastri
National Academy of Administration



Sanjeev Chopra
Director

No. LBSNAA/CDM-2020
14th October, 2020
22 Asvina 1942

Message

Given its unique geographical and geological condition, India is vulnerable to various natural disasters. Incidents of flood, drought and other natural disasters pose a tremendous challenge to the society in general and administration in particular. Each disaster heightens the sense of urgency to equip ourselves better in coping and managing them. In this context, the training of civil servants in Disaster Management assumes critical significance. The Disaster Management Act 2005 has made the role of administrators pivotal in disaster management in India. Hence it is essential that the administrators are well-versed and equipped in the various aspects of disaster preparedness and management.

As the present COVID crises has shown there is a need to move from the paradigm of responding to disasters to one of building resilience against disasters in all aspects of governance. A key challenge to administrators is to establish standard operating procedures and protocols for immediate and effective response as well as for better preparedness in the future. It gives me immense pleasure to note that Centre for Disaster Management, LBSNAA is bringing out the report on the causes and administrative responses to Heat Waves, this study "Heat Wave Management in Telangana and Andhra Pradesh - Efficacy of Heat Wave Guidelines & Heat Wave Action Plans" is based on an intensive study into the multiple causes and multi-level administrative responses to the silent disaster called heat waves. It provides insights into the challenges and potentials before the administrators in dealing with such disaster in the times of climate change. The study team also proposes mitigation strategy and preparedness measures for the management of heat waves in India in keeping with the Disaster Management Act 2005 and the Sendai Framework for Disaster Risk Reduction 2015-30.

I hope this volume will enhance the knowledge base and contribute to policy-making in disaster management in the country, and will be a valuable resource for both the trainees and the administrators in the field.


(Sanjeev Chopra)

Acknowledgement



Acknowledgement

I place on record my heartfelt thanks to LBSNAA for sponsoring the research study titled “Heat Wave Management in Andhra Pradesh and Telangana: Efficacy of Heat Wave Guidelines & Heat Wave Action Plans” to MANAGE. Also, I am grateful to Sri C Sridhar, IAS, Sri Anil K Sinha, IAS (Rtd), Dr. Pankaj Kumar Singh and Sri P Eswara Rao for their continuous support and advices throughout the study period.

It is my privilege to thank Smt V. Usha Rani, IAS, former Director General, MANAGE for the support and continuous guidance for initiating the project.

My heartfelt thanks to Smt. G. Jayalakshmi, IAS, Director General, MANAGE for guidance and coordinating with states and district officials for a timely completion of the study.

I am thankful to Dr Jabir Ali, Former Director (ICT), MANAGE for his initial efforts in bringing this project to MANAGE.

It is my privilege to thank the District Collectors and officials of the line departments of Badradri Kothagudem, Komaram Bheem Asifabad, Nalgonda and Wanaparthy of Telangana State as well as Anantapur, East Godavari, Kadapa and Prakasham of Andhra Pradesh state for their support in organising district level meetings, providing necessary information and suggestions. A special thanks to TSDPS and APSDPS for providing relevant information related to the study.

I sincerely thank Dr A Padma Raju, Former VC-ANGRAU, Dr M Singa Rao, Dr N Krishna, Dr P Venkata Rao and Dr Y Eswara Prasad for facilitating the preparation of the interview schedules and report writing. I also appreciate Ms Amand Rajalakshmi for her efforts in analysis of the field data in the shortest time possible and Mr Vincent A, Consultant (CCA), MANAGE for his involvement in conduct of PRA in the field and documentation of cases as part of the research study.

I also appreciate the data collection team Mr Rajesh, Mr Chilakuri Arun, Ms N Mounika, Mr Billa Dhamodara, Mr Jangili Ramesh, Mr K Sathyanarayana, Mr K Ravi, Ms Neethipudi Lilly Pushpa, Mr Sabbathi Vijayakanth, Mr Adelli Babu, Ms Kolapuram Jalaja for their sincere efforts and involvement in the collection and completion of the field data timely. I appreciate Mr J kiran, Data Entry Operator, CCA, MANAGE for entering all the field data in the master sheet within short time for data analysis.

Last but not the least, I immensely thank everyone including all the respondents for their involvement and contribution for the successful completion of the study.

Date: 27.04.2020

Dr N Balasubramani
Director

Centre for Climate Change and Adaptation (CCA)
National Institute of Agricultural Extension Management (MANAGE)

Contents

Executive summary	VI
Introduction	1
Rationale behind the study	5
Objectives of the study	6
Methodology	7
Process adopted for the study	8
Sampling framework	9
Data sources	11
Description of Analytical tools used in the study	12
Scope of the study	
Results and Discussion	13
Evaluation of various components of State Heat Wave Action Plan and its process of implementation across the departments	14
Legal framework of Disaster Management Act, 2005 and its implementation status	14
Revenue/Administrative department	15
Mapping of heat wave vulnerable areas	16
Health department	18
Education department	20
Women and Child Development Department (WCD)	21
Labour department	21
Rural Development Department	22
Municipal Corporation and Rural Water Supply Department	23
Transport department	24
Livestock department	25
Agriculture department	27
Horticulture Department	28
Forest department	28
Fire Department	29
Nature and magnitude of the heat wave risk in terms of mortality and asset loss	30
Telangana	30
Andhra Pradesh	31
Awareness of respondents on heat wave information in Telangana state	32
Effect of heat waves	35
Telangana State	35
Andhra Pradesh	36
Heat wave impact on Agriculture crops	38

Telangana state	38
Adoption of mitigation measures suggested by the Agriculture department	39
Andhra Pradesh	41
Adoption of mitigation measures offered by the Agriculture department	42
Heat wave impact on Horticulture crops	43
Telangana State	43
Status of risk mitigation measures taken by the Horticulture department	44
Andhra Pradesh	45
Risk mitigation measures offered by the Horticulture department	46
Heat wave impact on Livestock	47
Telangana	47
Status of risk mitigation measures offered by the Livestock department	49
Heat wave impact on livestock in Andhra Pradesh	49
Status of risk mitigation measures offered by the Livestock department in Andhra Pradesh	51
Poultry in Telangana and Andhra Pradesh	52
Mapping the risk mitigation strategy being adopted by the population	52
Level of awareness of the respondents on risk mitigation strategies of heat wave	54
Andhra Pradesh	56
Perception of the respondents on preparedness measures taken by the government to mitigate the risk of heat wave effect.	58
Telangana state	58
Andhra Pradesh	62
Major concerns in effective implementation of the heat wave guidelines and action plan in the study area	67
Respondents suggestions for effective implementation of the heat wave guidelines and action plan in the study area	68
Death Cases due to Heat Wave – an analysis	71
A proactive senior citizen's life-An end	71
Death case of an MGNREGA worker – a loss of a livelihood provider	72
Loneliness – A lasting impact due to heat waves	72
A Case of Mr Jajula Veeranna – Achudhapuram village, Gokkavaram taluk, East Godavari	73
Inference from the case studies	73
Major findings of the study	74
Telangana	75
Heat wave impact on agriculture crops	75
Heat wave impact on horticulture crops and livestock	76
Andhra Pradesh	77
Heat wave impact on agriculture crops	77
Heat wave impact on horticulture crops	78

Heat wave impact on livestock	78
Conclusion	79
Action points for future	81
References	85

Tables

List of state and district level Workshops conducted at MANAGE and in selected districts in Telangana and Andhra Pradesh	8
Details of selected districts / mandals / villages in Telangana	10
Details of selected districts / mandals / villages in Andhra Pradesh	11
Opinion of the respondents on heat wave (Temperature) in the study area	30
Opinion of the respondents on Heat Wave performance in the study area	31
Awareness and major source of information on heat wave condition among the sample respondents – Telangana State	33
Awareness and major source of information on heat wave condition among the sample respondents –Andhra Pradesh	34
Impact of the Heat Wave in selected districts and in Telangana state	36
Impact of the heat wave in selected districts and in Andhra Pradesh state	37
Heat wave impact on agriculture crops in Telangana state	38
Adoption of mitigation measures suggested by the Agriculture department	40
Heat wave impact on agriculture crops in selected Districts and in Andhra Pradesh state	42
Status of adoption of mitigation measures offered by the Agriculture department	43
Heat wave impact on Horticulture crops in the study areas in Telangana State.	44
Status of risk mitigation measures taken by the Horticulture department	45
Heat wave impact on Horticulture crops in Andhra Pradesh	45
Status of risk mitigation measures offered by the Horticulture department	46
Heat wave impact on livestock in Telangana state	47
Status of risk mitigation measures offered by the Livestock department	49
Heat wave impact on livestock in Andhra Pradesh	50
Status of risk mitigation measures offered by the Livestock department in Andhra Pradesh	51
Risk mitigation/ strategies being adopted by the respondents during heat wave period	53
Respondents awareness on preparedness measures taken by the government to mitigate the risk of heat wave effect in Telangana state	54
Respondents awareness on preparedness measures taken by the government to mitigate the risk of heat wave in rural areas	57
Perceptions of the respondents on measures taken by the different departments to mitigate the heat wave effects in study area of Telangana	60
Perceptions of the respondents on measures taken by the different department to mitigate the heat wave affects in study area	63

Figures

Year wise Deaths Recorded due to Heat Wave in India from 1992-2018	4
Percentage of the death recorded due to heat wave in India between 2015-2018	5
Impact of heat wave in Telangana and Andhra pradesh	37
Awareness of the respondents on preparedness measures of heat wave-Telangana (%)	55
Awareness of respondents on preparedness measures of heat wave-Andhra pradesh (%)	57
Respondents suggestions using Garret value ranking	71





Centre for Disaster Management
Lal Bahadur Shastri National Academy of Administration, Mussoorie
&
National Disaster Management Authority, Govt. of India
August, 2020
www.lbsnaa.gov.in
