NATIONAL WORKSHOPON
OPERATIONALIZING FORECASTS FOR STATE LEVEL HEATWAVE PREPAREDNESS

Jointly organised by

Indian Meteorological Society
and
India Meteorological Department

In partnership with

Climate and Development Knowledge Network (CDKN)

Public Health Foundation of India

Natural Resources Defence Council

TARU Leading Edge

Indian Institute of Public Health, Ahmedabad

Indian Red Cross Society

International Federation of Red Cross and Red Crescent Societies

NATIONAL WORKSHOP ON OPERATIONALIZING HEAT FORECASTS FOR PREPAREDNESS IN INDIA

BACKGROUND

Heat wave has emerged as one of the major severe weather hazard in recent years causing more number of deaths than floods and cyclones. Climate change and rising temperatures are going to increase the frequency and severity of extreme heat waves in coming years. Globally, last year (2016) was the hottest year on record, surpassing the record set in 2015. As per assessment done by the World Meteorological Organization (WMO), global temperatures are approximately 1.1° Celsius above pre-industrial levels. The proportion of the earth's surface area witnessing extremely hot summers has increased from one percent over the 1951-80 period to ten percent over the 1981-2010 period and record breaking heat events have been witnessed across the globe in recent years.

India too is feeling the impact of increased intensity and incidence of heatwaves that have a devastating impact on human health - both illness and deaths. A number of monitoring stations broke their previous records of highest maximum temperatures, which include the temperature reported by Phalodi in western part of Rajasthan as 51.0°C on 19th May 2016, the highest recorded temperature in India since 1956. Heatwavesimpact theurban& rural areas, natural habitats like forest as well as water resources, poultry and industries like power, Agriculture, health etc. In 2015, devastating heatwaves in India killed more than 2,300 people, making it the 5th highest in world history in terms of number of deaths. Most of the deaths concentrated in Andhra Pradesh,Telangana,Punjab,Odisha and Bihar.

Early warning of potential heatwave events over a particular area can help disaster managers to take appropriate measures in mitigating the adverse impacts of heat wave. With the improvement in observational & computational capabilities, the India Meteorological Department (IMD) is now capable of generating the forecast of heat wave in different time scale. Recently IMD has also started providing heat wave guidance in extended range time scale (2 to 3 weeks). For summer season of 2016 IMD also provided the seasonal outlook of temperature.

The available technology can support state and local governments in being more prepared for extreme heat. Currently, only a few of the most affected states have selective plans in place to prevent mortality and morbidity associated with heatwaves. Majority of thestate and local governments face considerable challenges in tackling this issue, even when they have recognized the gravity of the situation and work towards it. The Ahmedabad Heat Action Plan (HAP), piloted in 2013 by the Ahmedabad Municipal Corporation in partnership with the Natural Resources Defense Council (NRDC) and the Indian Inistute of Public Health, Gandhinagar (IIPHG), has successfully demonstrated that such an action plan can improve resilience of the citizens and reduce the severe health impacts of heatwave.

The innovative warning system of Ahmedabad worked with nodal officers in regions to issueheat alerts based on locally determined threshold temperatures and preparecommunities and health professionals for the impending heat. Taking cuefrom Ahmedabad, over 10 cities

released their own Heat Action Plans in2016, with active support of IMD.Cities including Surat in Gujarat, the Nagpur in Maharashtra, andBhubaneswar in Odisha, worked with IMD and its state offices to provideearly warnings on extreme heat in India for the first time in 2016.

Recently a roadmap on planning viz., '*Roadmap for Planning Heatwave Management in India'*was released by TARU in partnership with IMS and Understanding Climate and Health Associations in India (UCHAI), supported by Climate and Development Knowledge Network (CDKN) as well as the Rockefeller Foundation. The roadmap was developed under the guidance of eminent national and international experts including those from health, urban planning, environment, disaster and meteorology fields. The specific objectives of the consultation for heatwave management were to identify gaps in the research and policy, initiate a discussion on institutional leadership, integrate long-term planning measures, develop a partnership action plan and learn from the experience of current initiatives in other States. One of the main recommendations of the workshop was to rapidly upscale the operationalization of the heatwave management plan by developing state and city level plans.

The Indian Institute of Public Health, Gandhinagar (IIPH) and the Natural Resources Defence Council(NRDC) convened a discussion at the TROPMET 2016 Summit under the leadership of the Indian Meteorological Society (IMS), to share the success story of Ahmedabad HAP and to review city-level resilience activities and to scale the activities up to leading states across the country. International experts from NRDC and key leadership from India's National Disaster Management Authority (NDMA), state disaster management authorities (SDMAs), health departments and meteorological offices attended the discussion.

NDMA organised a 'Regional workshop on preparation of Heat wave Action Plan' at Hyderabad on 22-23 February, 2017 with the broad themes of (a) Experience sharing on heat wave action plan and mitigation measures; (b) Capacity building for preparation of Heat Action Plan and Risk Reduction and response basedon NDMA guidelines; and (c) Monitoring and review of the implementation of the heat wave plan.

Heat Action Plans need to be based on robust scientific research, build public awareness of the risks of extreme heat, training of medical and community workers to prevent and to respond to heat-related illnesses, and coordinate an interagency emergency response effort when heat waves hit.

In the backdrop of these developments, a consultative workshop is proposed to be held on 28-29 March, 2017 at New Delhi to address the heat wave issues cutting across various sectors and institutions and guide the states in planning for the actions to minimize the impacts.

SPECIFIC GOALS AND OBJECTIVES OF THE WORKSHOP

The overall goal of the workshop is to guide states in the operationalizing of heat action plans in their respective states to protect communities from extreme heat and save lives.

SPECIFIC OBJECTIVES OF THE WORKSHOP

- Sensitise states about rising temperatures and extreme heat.

- Establish the connection between extreme heat and health
- Learn from the experience of current initiative in various states.
- Discuss operational issues related to the heat forecasts and explore to have a decision support system
- Highlight the key elements of heat preparedness/Heat Wave Management: Organisation, Capacity Building, Awareness
- Develop template for preparing State/City level Heat Action Plan
- Action Plan for Summer of 2017

EXPECTED OUTCOME/TAKEAWAYS OF THE WORKSHOP

- Vulnerability Assessment and Establishing Heat-Health Threshold Temperatures:
- Developing the Early Warning System
- Developing Interagency Emergency Response Plan
- Building State-wide Capacity
- Identifying Nodal Officers at State and city levels
- Implementation and Monitoring

DATE, DURATION, PLACE

The event will be organized on 28th & 29th March, 2017 at New Delhi. The workshop was preceded by a National Consultation on Roadmap for Planning Heatwave Management in India in September 2016 and Meeting on Scaling of Heat Action Plan held in December 2016.

WORKSHOP DESIGN

The approach of workshop will be to facilitate creative and insightful sharing and learning process, engaging participants through presentations, films, open house, group work and the like. The workshop will ensure improved understanding on top down requirements (e.g. policies, institutions) as well as bottom up requirements (researched evidence, good practices, partnerships, etc.).

PROPOSED DISCUSSION PLAN

- **Introduction to Heat Waves: Seasonality & Severity**
- **Monitoring and Early Warning of Heat Waves**
- **Current initiatives related to Heat Action Plans in various states (IIPH, Gandhinagar, IIPH, Bhubaneshwar & Director of Health Services, Maharashtra, Telangana and Andhra Pradesh)**
- **Brief from previous National Consultations on Scaling Heat Action Plans in states**
- **Managing the Heat Waves**
- **Scaling to State Level Heat Action Plans: NRDC**
- **Need for determining Regional Thresholds (IMD & IIPH)**

- Session with State and Local Level Program Managers **: Discuss Management issues**
- Template for preparing Heat Action Plan for States/Cities
- Action Plan for Summer of 2017&Recommendations

PARTICIPATION

The workshop will gather about 100 participants from the following sectors including around 30-40 participants from outside Delhi.

SECTOR	ORGANIZATION
Health	MoH&FW, Various DHS, WHO, NHSRC, AIIMS, PHFI, IIPH
Disaster	NDMA, NIDM, SDMAs
Climate	MoES, IMD, DST, IIT-D
Environment	MoEF, TERI
Urban Development	MoUD, NIUA, SPA
Water	MoWR, RD&GR, MDWS
Industry	VVGNLI, ILO, CII, FICCI, ASSOCHAM

In addition, other stakeholders will also be represented such as

- **UN/Bilateral agencies**: WHO, UNDP, UNICEF, USAID, DFID, GIZ, SIDA
- **States:** Delhi, Haryana, Punjab, Rajasthan,Uttar Pradesh, Bihar, Jharkhand, West Bengal, Odisha, Maharashtra, Gujarat, Telanagana, Andhra Pradesh, Madhya Pradesh, Chhattisgarh, Karnataka
- Cities: Chandigarh, Delhi, Jaipur, Lucknow, Varanasi, Patna, Ranchi, Kolkata, Bhubaneshwar,Nagpur, Ahmedabad, Surat, Hyderabad, Vijayawada, Bhopal, Raipur and Bangaluru
- Civil Society Organizations: IWP, NRDC, CDKN

PARTNERS

Indian Meteorological Society will organize the workshop in partnership with Ministry of Earth Sciences,MoH&FW, NDMA, IIPH,Institute for Global Change and Sustainable Health Institute of Taru Leading Edge (TARU), Understanding Climate and Health Associations in India (UCHAI)initiative, CDKN, NRDC and others.

Indian Meteorological Society
Room No. 605, Satmet Building, MausamBhawan
Lodhi Road, New Delhi-110 003
Phone: 011-24653728
Website
www.imetsociety.org
email: imetsociety@gmail.com