A large number of people in India currently suffer from high burden of vector borne diseases, heat stress-related diseases, and malnutrition. These health problems are all sensitive to seasonal variations in temperatures and precipitation patterns. These short-term variations in temperature and precipitation as well as extreme storms have been observed to be increasing in intensity due to global climate change.

Consequently, a wide number of institutes are addressing these increasing health concerns in a number of different ways. This upcoming workshop in October aims to:

- Showcase global and national efforts of quantifying climate and health risks
- Discuss innovative strategies to reduce human suffering
- Present and show case tools being developed to help predict malaria using meteorology data
- Share efforts in the hill state and plains to combat heat stress linked effects on health

This workshop is part of the broader U.S.-India Partnership for Climate Resilience and the Understanding Climate Health Associations in India (UCHAI) initiative and is partially supported by the U.S. National Institute of Environmental Health Sciences (NIEHS) and NOAA. UCHAI assists with building capacity for climate resilience of the human health sector in India. UCHAI initiative and this workshop offers a platform which brings together professionals, experts, organizations, and knowledge systems which address climate change and health issues in India.

Goals:

- Discuss and share impacts of climate change on health, and how India State Action Planners can gain information and knowledge on best practices
- Foster collaboration between climate and health professionals and experts
- Understand technical aspects of future climate projections, and how they can demonstrate future climate impacts on health
Day 1 (October 23rd)

9:30 AM - 10:30 AM  **Inaugural Messages**
- Dr. Ajay Mathur, Director General, TERI
- Dr. Balram Bhargava, Secretary (Health Research), MoH&FW
- Dr. John M Balbus, Senior Advisor for Public Health, NIEHS
- Dr. Sujeet Kumar Singh, Director, NCDC

10:30 AM - 10:45 AM  **BREAK**

**SESSION 1 – Climate and Health - A Broad Overview**
*Session Chair: Dr. John M Balbus, Senior Advisor for Public Health, NIEHS*

10:45 AM - 11:00 AM  **Future Climate Change and Implications in the context of the health and diseases**
- Dr. Kenneth Kunkel, NOAA (speak remotely)

11:00 AM - 12:00 PM  **Current State of Health Impacts in India**
- Ms. Sujata Saunik, Former Principal Secretary, Government of Maharashtra (TBC)
- State Action Plan on Climate Change and Health- Dr. Ravindra Aggarwal, Addl. Director, DGHS, Delhi
- Dengue Cell in Delhi- Dr. S M Raheja, Addl. Director General (Public Health), DGHS, Delhi

12:00 PM - 12:30 PM  **Discussion, Questions and Answers**

12:30 PM - 1:45 PM  **Lunch**
SESSION 2 – Climate and Vector Borne Disease

Session Chair: Dr. Anand Krishnan, Professor, Centre for Community Medicine, AIIMS

1:45 PM – 3:00 PM  Relation of Vector Borne Disease to Temperature Changes
- Ecology for Malaria Distribution – Dr. R C Dhiman, Senior Consultant & Former Scientist 'G', NIMR & ICMR
- Can Meteorology Parameters Help Predict Malaria for developing an Early Warning System- Ms. Meena Sehgal, Fellow, TERI
- Climate Based Community Level Models for Prediction of VBDs - A retrospective data analysis of Delhi NCR - Dr. Harshal K Salve, Assistant Professor, Centre for Community Medicine, AIIMS
- Zika and Climate Change in India – WHO (TBC)
- Prediction of Dengue with Climate Change over Delhi: A statistical analysis and development of warning system- Mr. Rohit Magotra, Asst. Director, IRADe (TBC)

3:00 PM - 3:30 PM  Discussion, Questions and Answers

3:30 PM - 3:45 PM  Tea Break

SESSION 3 – Climate and Urban Heat

Session Chair: Dr. Ajit Tyagi, Former Director General, IMD

3:45 PM – 4:45 PM  Health Impacts from Urban Heat
- Climate Change and State Action Plan - Mr Shwetal Shah, Technical Advisor – Climate Change, Government of Gujarat
- Dr Hem H Dholakia, Senior Research Associate, CEEW (TBC)
- Focus on Hill State and Plains and Intervention – Ms Suruchi Bhadwal, Senior Fellow, TERI
- Heat Index – Dr Gulrez Shah Azhar, Assistant Policy Researcher, RAND (speak remotely)

4:45 PM - 5:15 PM  Discussion, Questions and Answers
SESSION 4 - Role of Health System in Building Resilience

Session Chair: Dr Sanjiv Kumar, Chair of UCHAI, IIHMR

5:00 PM – 6:00 PM

**Examples of Building Resilience**

- Vulnerability Assessments - Dr. Nitish Dogra, Associate Professor, IIHMR
- Heat Action Plan for Cities of India. Prof. Dileep Mavalankar, Director, IIPH-G (TBC)
- Update of Government of India Initiatives in Area of Climate Change and Health - Dr. Aakash Shrivastava, Director, NCDC

Day 2 (October 24th)

9:00 AM - 9:30 AM

**Opening remarks: Addressing climate change through strategic actions designed to develop institutional and human resource capacity in India**

- Dr Akhilesh Gupta, Head, National Mission on Strategic Knowledge for Climate Change (NMSKCC)

**Introduction to Climate Projection Exercise**

- Ms. Jenny Dissen, and Mr. Andrew Ballinger, Postdoctoral Scholar, NOAA
- Dr. Ashwini Kulkarni, Scientist, IITM
- Dr Sesha Srinivas, EPTRI

9:30 AM – 10:30 AM

**Work in Groups**

10:30 AM - 10:45 AM

**BREAK**

10:45 AM - 12:00 PM

**Continue Exercise**

12:00 PM - 12:30 PM

**Discussion, Questions and Answers**

12:30 PM - 1:00 PM

**Lunch**

2:00 PM - 3:00 PM

**Tools for citizen science: Malaria Mapper**

- Dr John M Balbus, Senior Advisor for Public Health, NIEHS
- Ms Meena Sehgal, Fellow, TERI

*TBC – to be confirmed*