

**Report on the Training Workshop on Lightning and Extreme Weather Events  
held at IITM, Pune during 4-7 April 2017.**

IITM in collaboration with IMD and IMS organised a Training Workshop on Extreme Weather event with special focus on lightning during 4-7 April 2017 at Indian Institute of Tropical Meteorology, Pune to create awareness about the above natural hazards among the officials involved in disaster managements and to educate about the precautions that may to be taken to decrease the losses. The Workshop was inaugurated by Dr K J Ramesh, Director General of Meteorology, New Delhi.

Invitations were sent to all state governments seeking nominations for the workshop. Many states have positively responded to our invitation and 36 officials of various State Governments dealing with in disaster management attended the workshop. List of the officials who attended the workshop is given in Annexure-I.

Two days of the workshop was held at Mahabaleshwar where the participated where taken around the state of art observatory established by IITM to measure the various parameters that are responsible for formation of rain. Further, the participants were introduced to the Lightning Location Network established over Maharashtra and were given training on how to use the products and interpret data from the network.

Resource persons for the workshop were drawn from IITM, IMD, NCMRWF, NCESS and Savitri Bai Phule University of Pune. List of resource persons and the topic of their lecture is given in Annexure II.

The Participants freely interacted with the resources persons and shared the problems they were facing the steps need to be taken to respond to different to the extreme weather events.

Dr. Ajit Tyagi, President IMS graced the valedictory function. A booklet detailing about the steps to be taken to mitigate lightning losses was released on the occasion.

In their feedback, the participants generally welcomed the idea of conducting such a workshop and appreciated the contents of the programme. They expressed many of the disaster management officials are unaware such huge damage caused by lightning and desired that proper timely warning alert should be made about lightning occurrences. Further, they desired that the terminology used by IMD for various weather events (such as heavy rain, very heavy rain etc) should be made on geographical location rather for whole India.

Based on the feedback received from the participant and Panel discussions the following recommendations are made:

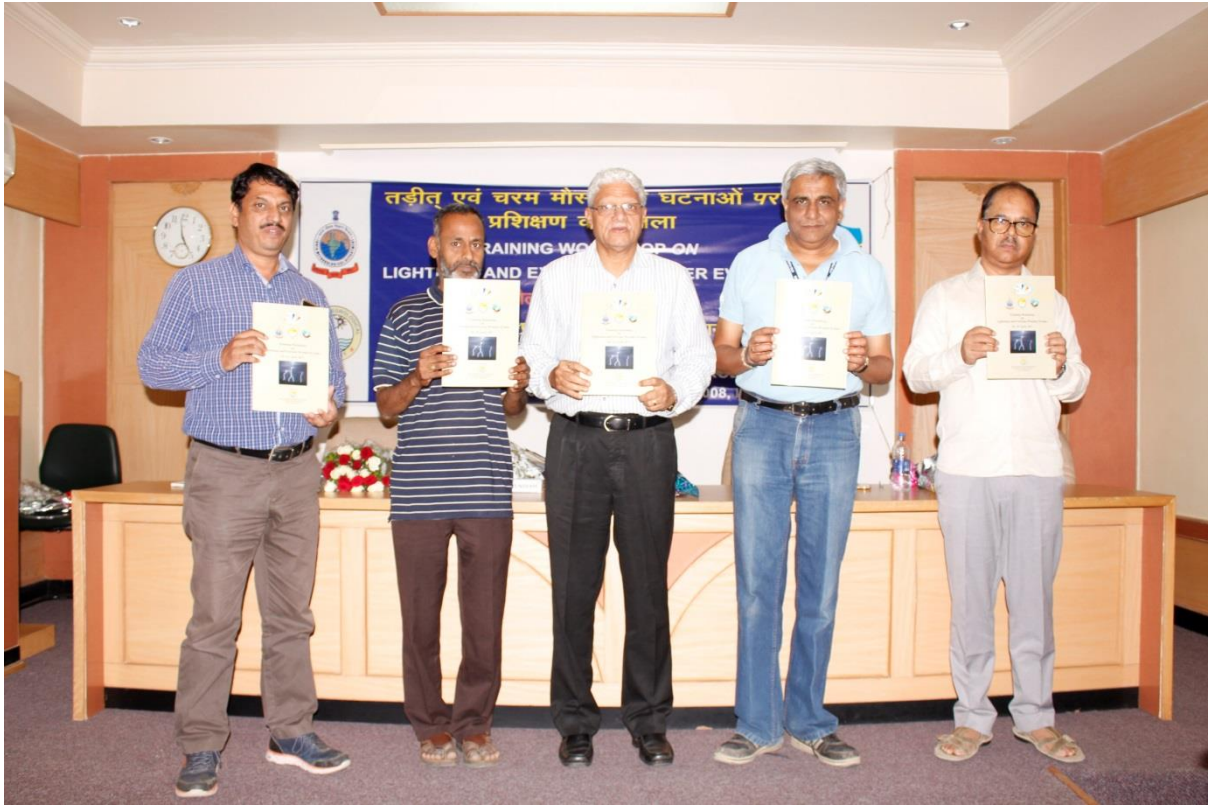
## **RECOMMENDATIONS**

1. Such workshops should be conducted at regular intervals to facilitate interaction between forecasters and disaster management officials. Workshop may also be conducted at State capitals to enable participation of more officials who directly deal with end-users.
2. IITM, Pune in collaboration with MoES, Govt. of India should initiate urgent steps to expand the Lightning Location Network to other parts of the country at the earliest.
3. Scientists from IITM and IMD should work together to devise a procedure using products from Lightning Location Network, Radar, satellite and numerical models and formulate a timely warning system lightning alerts.

4. These alerts should be immediately transmitted to the disaster managers of the State who in-turn can disseminate the same to end-users using modern techniques such as SMS.
5. As lightning kills more people than any other natural disaster, MoES may ask Ministry of Home Affairs to declare Lightning as a natural disaster.







## LIST OF PARTICIPANTS

Sr.No	Name	State
1	SMT. KHROLOU K LOHE	NSDMA, NAGALAND
2.	Sh.RENDEMO SHITIO	NSDMA, NAGALAND
3	Sh. BUBU P GOLMEI	NSDMA, NAGALAND
4	Sh BRIJENDRA SINGH	RAJASTAN
5	Ms. ANUPAMA N	KERALA
6	Sh. PRATIK K BANDOPADYAY	W BENGAL
7	Sh. AKILENDU PATRA	W BENGAL
8	Dr. K L MISHRA	OSDMA
9	Sh.BIKRAM BARIK	OSDMA
10	Sh. B N MISHRA	OSDMA
11	Dr.PAVAN SINGH	NDMA
12	Sh. HITESH CHANDANA	NDMA
13	Sh. K CHANDRASEKAR IAS	T NADU
14	Sh.JOHN VARGHESE IAS	T NADU
15	Sh. S PRASANNA RAMASAMY	T NADU
16	Sh. SENGOTTIAN	T NADU
17	Sh. PARTHEEBAN	T NADU
18	Sh. BIJENDAR SINGH	RAJASTHAN
19	Ms P MUTHU MEENA	PONDICHERRY
20	Sh. DAYALAN J	PONDICHERRY
21	Sh. MATHEW FRANCIS	PONDICHERRY
22	Sh. JIGNESH JADAV	DADRA NAGAR
23	Sh. THOMSON FERNADEZ	DADRA NAGAR
24	Sh. DATTARAJ K DESAI	GOA
25	Sh. MANOJ P KORGAONKAR	GOA
26	SH. SAIESH S NAIK	GOA
27	Sh. RANJEET SALGAONKAR	GOA
28	Sh. SWAPNIL SARDAR	MAHARASHTRA
29	Sh. ARJUN JARUPLA	MAHARASHTRA
30	Sh. HARSH KUMAR	MAHARASHTRA
31	Sh. JITENDRA SONAWANE	MAHARASHTRA
32	Sh. PRASHANT WAGHMARE	MAHARASHTRA
33	Sh. SREEKANTH T S	NCESS,

## RESOURCE PERSONS

Dr. S D PAWAR	IITM, PUNE	GENERAL FEATURES OF LIGHTNING
Prof. PRADEEPKUMAR	SPPU, PUNE	LIGHTNING CLIMATOLOGY: Global Scenario and Cloud Electrification
Dr. A K KAMRA	Hon. Sci. INSA	PROTECTION FROM LIGHTNING
Dr. SUSHMITA JOSEPH	IITM, PUNE	HEATWAVE
SH. M RANALKAR	IMD, PUNE	LIGHTNING INCIDENCES DURING CYCLONE
Dr B S THAMPI	IMD, CHENNAI	USE OF RADAR PRODUCTS
Dr S C SAHU	IMD.BHUBANESHWAR	HEATWAVE OVER ORISSA
Dr MURALI DASS	NCESS (Retd.)	LIGHTNING HAZARD WITH SPECIAL REFERENCE TO KERALA LIGHTNING-PERSONAL SAFETY AND ACCIDENT ANALYSIS
Dr P MUKHOPADHYAY	IITM, PUNE	SHORT TERM WEATHER FORECASTING
Dr A K MITRA	IMD, DELHI	THUNDERSTORM NOWCASTING
Dr SOMA SENROY	IMD, DELHI	THUNDERSTORM CLIMATOLOGY
Sh.V GOPALAKRISHNAN	IITM, PUNE	LIGHTNING LOCATION NETWORK OVER MAHARASHTRA
Dr M MOHAPATRA	IMD, DELHI	CYCLONES
Dr R ASHRIT	NCMRWF, DELHI	EXTREME RAINFALL