



**Government of India  
Ministry of Earth Sciences  
India Meteorological Department**

**Dr. M. Mohapatra**

Director General of Meteorology

&

3<sup>rd</sup> Vice President of World Meteorological Organisation

Cordially invites you to the Inaugural Function of

**Severe Weather Forecasting Programme (SWFP)  
Regional Training Workshop on**

**Multi-Hazard Early Warning Services (MHEWS)  
Interoperability Implementation**

On Monday, the 9th December, 2024 at 0930 hours IST  
at **Arnav Hall, Prithvi Bhawan,**  
Ministry of Earth Sciences  
New Delhi-110003

**Dr. M. Ravichandran**

Secretary,

Ministry of Earth Sciences

has kindly consented to be the Chief Guest

R.S.V.P.

**Dr. D R Pattanaik**

Head

RSMC New Delhi

India Meteorological Department, New Delhi

Mobile: 91-9868554029

**Severe Weather Forecasting Programme (SWFP)  
Regional Training Workshop**

**on**

**Multi-Hazard Early Warning Services (MHEWS)  
Interoperability Implementation**

**Inaugural Ceremony**

**Date: 9<sup>th</sup> December, 2024**

**Time: 0930-1030 IST**

**Venue: Arnav Hall, Prithvi Bhawan,  
Ministry of Earth Sciences, New Delhi-110003**

<b>Time (IST)</b>	<b>Time (UTC)</b>	<b>Minute to Minute</b>
<b>0930-0935</b>	<b>0400-0405</b>	<b>Welcome of dignitaries</b>
<b>0935-0940</b>	<b>0405-0410</b>	<b>Lighting of Lamp</b>
<b>0940-0945</b>	<b>0410-0415</b>	<b>IMD Theme Song</b>
<b>0945-0950</b>	<b>0415-0420</b>	<b>Welcome Address by Dr. D.R. Pattanaik, Scientist-F &amp; Head (RSMC), IMD</b>
<b>0950-1000</b>	<b>0420-0430</b>	<b>Address by Dr. M. Mohapatra, DGM IMD, PR of India and 3<sup>rd</sup> Vice President of WMO</b>
<b>1000-1010</b>	<b>0430-0440</b>	<b>Address by WMO representative</b>
<b>1010-1020</b>	<b>0440-0450</b>	<b>Address by Dr. M. Ravichandran, Secretary, Ministry of Earth Sciences</b>
<b>1020-1025</b>	<b>0450-0455</b>	<b>Vote of Thanks by Dr. Ananda Kumar Das, Scientist-F &amp; Head (CWD), IMD</b>
<b>1025-1030</b>	<b>0455-0500</b>	<b>Group Photo</b>

**Followed by High Tea**

**Severe Weather Forecasting Programme (SWFP)**  
**Regional Training Workshop on**  
**Multi Hazard Early Warning Interoperability Implementation System**  
**(New Delhi, India, 9-13 December 2024)**

**Provisional Programme**

**Objective:**

- **To maximize available resources (Computing and Manpower)**
- **Develop synergized standard operating procedure**
- **Integrate various services into one package**
- **Minimization of number of bulletins and development of consolidated bulletin as per user requirement**

<b>Day 1: Monday, 9<sup>th</sup> December 2024</b>		
09:00-09:30	<b>Registration</b>	All
09:30-10:30	<b>Opening</b> <ul style="list-style-type: none"> <li>● Welcome Address by DG IMD, PR of India and 3<sup>rd</sup> Vice President of WMO</li> <li>● Address by WMO representative</li> <li>● Address by Secretary Ministry of Earth Sciences</li> <li>● Address by Honorable Minister of Earth Sciences</li> <li>● Vote of thanks by Dr. D.R. Pattanaik</li> <li>● Group Photo</li> </ul>	<i>All</i>
10:30-11:30	<i>Coffee/ Tea Break</i>	
11:30-13:30	<b>Country Presentation by the participants highlighting major hazards in their country, utility of guidance by RSMC New Delhi (SWFP, Tropical Cyclone Advisories, Storm surge and flash flood guidance) and their expectations?</b> (Bhutan, Bangladesh, India, Maldives, Myanmar, Nepal, Pakistan, Sri Lanka and Thailand)	20 minutes each  Representatives from all countries  (180 min) <i>Dr D R Pattanaik ,Sc F- Country prestation: India (Others we will add on receipt of information)</i>
13:30-14:30	<i>Lunch Break</i>	
14:30-15:30	<b>Country Presentation by the participants highlighting major hazards in their country, utility of SWFP guidance and their expectations? (Contd)</b>	
	<b>Technical Session-1: Interoperability of heavy rainfall monitoring &amp; forecasting -Demonstration with a Case Study</b>	
15:30-16:30	Heavy Rainfall Monitoring and Forecasting: Standard Operation Procedure	Dr. M. Mohapatra
16:30-16:45	<i>Coffee/ Tea Break</i>	
16:45-17:30	Monitoring and analysis of Heavy rainfall with a case study (Based on Rainguage, Satellite, Radar)	❖ Dr. Kuldeep Srivastava, ISSD ❖ Dr. AK Mitra, Sat Met

		❖ Mrs Arpita Rastogi, Radar (15 Minute each)
17:30-18:15	Deterministic NWP Models and Multi-model ensemble technique for Rainfall Forecast	Dr MT Bushair
<b>Day 2: Tuesday, 10<sup>th</sup> December 2024</b>		
<b>Technical Session-1 (contd) Interoperability of monitoring &amp; forecasting of heavy rainfall-Demonstration with a Case Study</b>		
09:30-10:15	QPF for catchments	Dr.Ashok K Das
10:15-11:00	EPS Models and Indices for heavy rainfall prediction	Dr. R G Ashrit
11:00-11:15	<i>Coffee/ Tea Break</i>	
11:15-12:00	Flash Flood Guidance System for South Asia	Sh. Rahul Saxena
12:00-13:00	DSS for IBF & RBW of Heavy Rainfall by IMD	❖ Sh. Anshul Chauhan ❖ Mrs Suman Gurjar
13:00-14:00	<i>Lunch Break</i>	
14:00-14:45	Heavy rainfall Guidance through SWFP	Ms. Monica Sharma
14:45-15:30	Integrated impact-based heavy rainfall forecast and warning at sub-division & district level	❖ Dr R K Jenamani ❖ Dr H R Biswas
15:30-16:15	<b>Guest Lecture IBF of heavy rainfall by UK Met Office (Dr Ata to arrange)</b>	UK Met Office
16:15-16:30	<i>Tea Break</i>	
16:30-18:00	Preparation of interoperable multi-hazard IBF & RBW of heavy rainfall Group Exercise	All
<b>Day 3: Wednesday, 11<sup>th</sup> December 2024</b>		
09:30-10:30	<b>Guest Lecture on IBF by BMKG (Dr Ata to arrange)</b>	BMKG
10:30-11:15	Thunderstorm Monitoring, Forecasting and Warning Services: Standard operation procedure	Dr Soma Senroy
11:15-11:30	<i>Coffee/ Tea break</i>	
11:30-12:30	Observational data for thunderstorm monitoring (surface, upper air, wind profiler, lightning detection network etc., satellite, radar, current weather observations) with a case study	❖ Dr Trisanu Banik- Lightning ❖ Mr Chinmaya-Satellite ❖ Mr Amit Kumar-Upper Air ❖ Dr Shashikant- Surface Observations (15 min. each)
12:30-13:15	Deterministic NWP & MME model guidance for TS forecast	Dr K Gayatri

13:15-14:00	<b>Lunch Break</b>	
14:00-14:30	DSS for Thunderstorm forecast	❖ Mr Anshul ❖ Mrs Suman Gurjar
14:30-15:00	Short to medium range forecast of Thunderstorm Potential	Mr Pradeep Sharma
15:00-15:30	Nowcast for Thunderstorm	Mr Ved Prakash
15:30-16:00	Aviation forecast and warnings for Thunderstorm	Mr Suresh Ram
16:00-16:30	District Level and location specific Warnings and IBF for Thunderstorm	Mr Shobhit Katiyar
16:30-16:45	<b>Tea Break</b>	
16:45-18:00	<b>Interoperability of Thunderstorm Warning: Preparation of various bulletins and products with case study</b>	All
	<b>Guest Lecture by Expert from USA on TS monitoring and prediction (Dr. Ata)</b>	
<b>Day 4: Thursday: 12<sup>th</sup> December</b>		
09:30-10:15	Tropical Cyclones Monitoring and Forecasting: Standard Operating Procedure	Dr M Mohapatra
10:15-11:00	Monitoring of TCs ((Satellite, Radar and Synop Observations)	Synop: Mrs Monica Satellite: Mr Chinmaya Radar: Mr Rohit Shukla (15 min. each)
11:00-11:30	<b>Tea/Coffee Break</b>	
11:30-12:15	Multimodal Ensemble & single model ensemble Guidance for Forecasting track, intensity and wind	Dr. T Arulalan
12:15-13:00	TC Hazards (Heavy rainfall, wind, storm surge) Monitoring and Prediction	Dr AK Das-Rainfall Mrs Monica-Wind Dr PLN Murty-Storm Surge Dr Amit Bhardwaj-Waves
13:00-14:00	<b>Lunch</b>	
14:00-15:30	Different types of Bulletins (National, GMDSS, Sea Area, Coastal Weather, Port Warning, Fisherman Warning, Offshore-Onshore warning, Flash Flood, QPF)	Dr AK Das, Dr PLN Murty, Mrs Monica, Dr Amit Bhardwaj, Mr Asok Raja, Dr SK Manik
15:30- 16:30	Interoperability of Cyclone Warning and preparation of bulletin & products	All
16:30-16:45	<b>Tea/Coffee Break</b>	
16:45-18:00	Interoperability of Cyclone Warning and preparation of bulletin & products (contd)	All
<b>Day 5: Friday: 13<sup>th</sup> December</b>		
09:30-10:30	Heat wave Monitoring and Forecasting & IBF	Mr Akhil Srivastava

	10:30-11:30	Fog Monitoring and Forecasting	Dr RK Jenamani
	11:30-12:00	<i>Tea/Coffee Break</i>	
	12:00-13:30	<b>Visit to IMD</b>	
	13:30-14:30	<i>Lunch</i>	
	14:30 onwards	<b>Technical Visit</b>	

# LIST OF PARTICIPANTS ATTENDING

## Regional Training Workshop on Multi-Hazard Early Warning Services (MHEWS) Interoperability Implementation 9<sup>th</sup> – 13<sup>th</sup> Dec 2024

### International Participants joining in-person

1. Achmad Rifani, Indonesia
2. Ahmed Shabin, Maldives
3. Binod Parajuli, Nepal
4. Muhammad Aleem Ul Hassan Ramay, Pakistan
5. Preethika Madhawe Jayakody, Sri Lanka
6. Qingliang Zhou, China
7. Sangay Tenzin, Bhutan
8. Tanik Chokkuea, Thailand
9. Thet Htoo Naing, Myanmar

### National Participants joining in-person

1. Dr. R K Jenamani
2. Dr. D R Pattanaik
3. Dr. A K Das
4. Dr. P L N Murty
5. Dr. S K Manik
6. Mr. S K Asok Raja
7. Ms. Monica Sharma
8. Mr.s Suman Gurjar
9. Mr. Anshul Chauhan
10. Dr. Trisanu Banik
11. Mr. Akhil Srivastava
12. Dr. Shashi Kant
13. Dr. T Arulalan
14. Dr. Amit Bhardwaj
15. Dr. M T Bushair
16. Dr. Umasankar Das
17. Dr. Suprit Kumar
18. Mr. Krishna Mishra
19. Mr. Ramashray Yadav
20. Dr. Sourish Bondyopadhyay
21. Dr. Sanjeev Dwivedi
22. Mr. Thangjalal Lhouvum

23. Mr. Partha Roy
24. Mr. Ambethkar Kukkathotti
25. Mr. Nalnish Kumar Chaudhary
26. Dr. A Sandeep
27. Dr. Ananad Shankar
28. Mr. Vijaya Pal Singh
29. Mr. Arun Kumar Vh
30. Ms. Alanka Sravani
31. Dr. Karunasagar Sagili
32. Mr. Mohammad Danish
33. Mr. Radheshyan Sharma
34. Mr. Rohit Thapliyal
35. Ms. Jismy Poulouse
36. Mr. C S Patil
37. Dr. Satya Prakash
38. Dr. Syam Sankar
39. Ms. Swarnali Majumde
40. Mr. Ashish Rawat
41. Mr. Gaurav Kumar Srivastav
42. Mr. Mohd Gulvez
43. Mr. Vijay Kumar Singh
44. Mr. Mukesh Kumar
45. Ms. Neelam Meena
46. Ms. Neeru Barak
47. Ms. Harsha Rajesh Soni
48. Mr. Santosh Singh
49. Ms. Vineeta Bhardwaj
50. Mr. Vishal Maurya
51. Mr. Yashasvi