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India Meteorological Department,  
Mausam Bhawan, Lodi Road,  
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Tel. : 011- 24344298  
Telefax : 91-11-24699216 &  
91-11-24623220  
<https://mausamjournal.imd.gov.in/>  
email : [mausamps@gmail.com](mailto:mausamps@gmail.com)

### Edited by

Dr. V. K. Soni

Compiled by

Editorial Team

## IMPORTANT EVENTS

### Dr. Jitendra Singh assuming the charge of Minister of State (Independent Charge) of the Ministry of Earth Sciences



Hon'ble Minister Dr. Jitendra Singh assumed the charge of Ministry of Earth Sciences (MoES)

**Dr. Jitendra Singh** assumed the charge of Minister of State (Independent Charge) of the Ministry of Earth Sciences (MoES) on 11<sup>th</sup> June, 2024 at the Prithvi Bhavan HQ in New Delhi. He was welcomed by **Dr. M Ravichandran**, Secretary of MoES, along with senior scientists, officials, and MoES staff. Dr. Jitendra Singh has held this portfolio nearly for two consecutive terms except for a brief period since 2014. He is a member of Parliament from the Udampur Lok Sabha constituency. He is also the Minister of State (Independent Charge) of the Ministry of Science and Technology; Minister of State in the Prime Minister's Office; Minister of State in the Ministry of Personnel, Public Grievances and Pensions; Minister of State in the Department of Atomic Energy; and Minister of State in the Department of Space.

Addressing the media after assuming charge **Dr. Jitendra Singh** thanked the **Honorable Prime Minister Shri Narendra Modi**, for his continued trust, support, and encouragement. "The challenges facing our planet demand bold action and scientific innovation. We must remain committed to harnessing the immense potential of Earth sciences to foster sustainable development, mitigate climate risks, advance data-driven policy and decision making, safeguard our people from risks, and enhance environmental stewardship for future generations." **Dr. Singh**.

### Twenty-eighth (28<sup>th</sup>) Session of South Asian Climate Outlook Forum (SASCOF-28)



Participants of 28<sup>th</sup> Session of South Asian Climate Outlook Forum (SASCOF-28) at Pune, India

**Twenty-eighth (28<sup>th</sup>) Session of South Asian Climate Outlook Forum (SASCOF-28)** for the Summer Season and Climate Services User Forum (CSUF), Pune, India was held in April 29-30 & 1 May, 2024. The aim of the workshop was to prepare a climate outlook for the 2024 summer monsoon season covering the months from June to September. **National Meteorological and Hydrological Services (NMHSs) from SASCOF member countries Afghanistan, Bangladesh, Bhutan, India, Maldives, Myanmar, Nepal, Pakistan and Sri Lanka, as well as several regional and global experts will jointly prepare this consensus outlook.** The CSUF special session focused on interface with users from the Water, Agriculture, Disaster Risk Reduction and Health sector to interpret seasonal climate information and understand their specific needs with a view to further customize climate information.

### Significant Events

**Mr. K.N. Mohan, Sc. 'G', Dr. V.K. Soni Sc. 'F' and Dr. Sankar Nath, Sc. 'F'** participated in third session of the Commission for Observation, Infrastructure and Information System (INF com-3) held at WMO HQs, Geneva during 15-19 April, 2024.

### World Meteorological Organization (WMO) Executive Council-78 (EC-78) meeting at Geneva



Participants of EC-78 meeting at Geneva

During the meeting, **WMO Coordination Mechanism (WCM) for early warning services appreciated India for its role as RSMC Tropical Cyclones New Delhi** for providing tropical cyclone advisories in Bay of Bengal, Arabian Sea and South Asia region especially for **Cyclone Mocha, 2023** and **Cyclone Remal, 2024** in an event organized by WCM on 11 June, 2024 in World Meteorological Organization (WMO) Executive Council-78 (EC-78) meeting at Geneva on 11th June, 2024.

**Dr. M. Mohapatra**, 3rd Vice-President of WMO, chaired a session on Scientific and Technical Programme matters with Long term goals of services for societal needs on 11th June, 2024 in World Meteorological Organization (WMO) Executive Council-78 (EC-78) meeting at Geneva.



Dr. M. Mohapatra, DG IMD Chairing Session

**Dr. M. Mohapatra**, DG, IMD and Co-Chair of WMO-IOC Joint collaborative Board (JCB) made a statement in World Meteorological Organization (WMO) Executive Council-78 (EC-78) meeting at Geneva on 13<sup>th</sup> June, 2024 highlighting that despite significant achievements in managing Ocean and coastal hazards, the hazards such as tropical storms, waves, and coastal storm surges need further strong engagement from ocean observations and prediction systems.



Dr. M. Mohapatra, DG, IMD and Co-Chair of WMO-IOC Joint collaborative Board (JCB)

**Dr. M. Mohapatra**, DG, IMD highlighted the role of India as a peer advisor and support to South Asian countries under Systematic Observations Financing Facility (SOFF) in World Meteorological Organization (WMO) Executive Council-78 (EC-78) meeting at Geneva on 14<sup>th</sup> Jun, 2024.



Dr. M. Mohapatra, DG, IMD World Meteorological Organization (WMO) Executive Council-78 (EC-78) meeting at Geneva on 14 Jun 2024

**Dr. M. Mohapatra**, DG, IMD and **Dr. Petteri Taalas**, DG, IMD held a meeting on 12<sup>th</sup> June at WMO HQs, Geneva to further enhance the collaborative work under the existing co-operative assessment between FMI and IMD.

**Dr. M. Mohapatra**, DG IMD participated in the Understanding Risk (UR)-24 Hydromet/EWS and Inclusive DRM Focus Day Session at Himeji, Japan and delivered a keynote address on 21st June, 2024.

**Dr. V.K. Soni**, Sc. 'F' has been selected as the Co-Vice Chair of the Advisory Group of the Global Cryosphere Watch (AG-GCW) of WMO.



**Dr. V.K. Soni, Scientist- F has been selected as the Co-Vice Chair of the Advisory Group of the Global Cryosphere Watch (AG-GCW) of WMO.**

### Pre-Cyclone Exercise Meeting

India Meteorological Department organized Pre-Cyclone Exercise Meeting on 10<sup>th</sup> April in hybrid mode under the Chairmanship of **Dr. Mrutyunjay Mohapatra**, DG IMD. There were about 230 participants from different organizations including central level disaster management agencies, state level disaster management (DM) agencies, various Ministries & Departments, IMD's sister organizations and research institutes. The national level DM agencies included representatives from National Disaster Management Authority (NDMA), National disaster Response Force (NDRF) (All field units), Ministry of Home Affairs (MHA), Indian Navy (IN), Indian Air Force, Indian Defence Services, Central Water Commission (CWC), Indian Coast Guard (ICG), Port Authority, Indian Navy (IN), Directorate General of hydrocarbons (DGH) and All India Radio, Doordarshan, Press Information Bureau, Indian Railways (Punctuality Cell), Ministry of Petroleum & Natural Gas, Directorate General of Lighthouse & Lightships (DGLL), Ministry of Rural Development, Ministry of Ports, Waterways & Shipping, Department of Fisheries and Airport Authority of India.



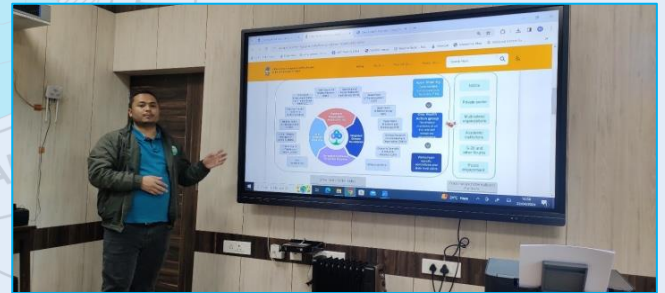
**Participants of Pre-cyclone exercise meeting on 10<sup>th</sup> April, 2024**

The representatives from various sister organizations of IMD included participants from Indian National Centre for Ocean Information & Services (INCOIS), National Centre for Medium Range Weather Forecasting (NCMRWF), Indian Institute of Technology Delhi (IIT Delhi) and delegates from the Govt. of various coastal states along the east coast including Odisha, West Bengal, Andhra Pradesh, Tamil Nadu and along the west coast of India including Kerala, Gujarat and Lakshadweep. The participants also included officers from IMD Headquarters, Area Cyclone Warning Centres (Chennai, Mumbai, Kolkata) and Cyclone Warning Centres (Bhubaneswar, Visakhapatnam, Thiruvananthapuram and Ahmedabad) of IMD.

During the meeting IMD highlighted its role in monitoring and forecasting of cyclone warning and marine weather services, new products introduced on RSMC website, new guidance products especially the customised location specific forecast for various sectors. DG IMD informed the stakeholders that IMD is committed to provide updated services for the safety of life and property. He also requested stakeholders for their suggestions, comments and active participation in improvement of services. Various organisations/ stakeholders appreciated cyclone warning services of IMD and also provided a few suggestions for further improvement in services.

### MC Shillong observed Earth Day on 22<sup>nd</sup> April, 2024 with the theme "Planet vs Plastics".

Head MC Shillong **Sh. Thangjalal Lhouvum**, Sc. 'D' gave a short talk on Earth Health & One Health: Human, Animals and Environment and office campus cleaning activities was also done.



**Sh. Thangjalal Lhouvum giving talk**

**Dr. Siddhartha Singh**, Sc. 'F' represented India Meteorological Department in the 12<sup>th</sup> meeting of the Ozone Research Managers of the parties to the Vienna Convention for the Protection of the Ozone Layer (ORM12) which is held at World Meteorological Organization (WMO) in Geneva, Switzerland during 24 - 26 April, 2024.



**Participants of 12<sup>th</sup> meeting of the Ozone Research Managers of the parties to the Vienna Convention for the Protection of the Ozone Layer (ORM12) on 25<sup>th</sup> April, 2024**

## Human Resource Development Activities

### WORKSHOP

Regional Meteorological Centre, Chennai organized stakeholders workshop at National Institute of Ocean Technology, Chennai on 25<sup>th</sup> April, 2024. **Dr. M Ravichandran**, Secretary, MoES and **Dr. M. Mohapatra**, DG IMD participated in the event and delivered address. **The Additional Chief Secretary and CRA of Tamil Nadu** addressed the workshop as Chief Guest.

**Dr. M. Mohapatra**, DG IMD, **Dr. D. S. Pai**, Sc. 'G' and **Dr. R. K. Jenamani**, Sc. 'G' participated in the Brainstorming Workshop on decentralizing and enhancing Early Warning Systems (EWS) in the Context of Climate Change at Tapovan, NDMA Bhawan, New Delhi on 2<sup>nd</sup> May, 2024. DGM, IMD presented the current status and future plans of IMD for improvement in early warning system. Member & Head NDMA appreciated the EWS by IMD.

**Dr. M. Mohapatra**, DG, IMD participated in the meeting on Digital Agriculture Strategy for India under the Chairmanship of **Dr. V. K. Saraswat**, Hon'ble Member, Science & Technology, Niti Aayog on 2<sup>nd</sup> May. **Dr. M. Mohapatra**, DG, IMD made a presentation on **"Strengthening Agricultural Decision Making: Collaborative models between Agritech sector and IMD for institutional linkage"** during the meeting.

**Shri Thangjalal Lhouvum**, Sc. 'D', MC Shillong along with Smt. Evakordor K Jyrwa, Project Scientist (GKMS) and **Sh. N Warbah**, SA visited Myrkhan Village on 3<sup>rd</sup> May, 2024 for Farmer's Awareness Programme and Briefing the villagers on IMD weather forecast and warnings. And also delivered Agromet and AWS related information and awareness to farmers.



**Shri Thangjalal Lhouvum during Farmer's Awareness Programme**

**Dr. M. Mohapatra**, DG, IMD participated in the WMO's Bureau meeting to discuss the preparations for Executive Council (EC) - 78 virtually on 16<sup>th</sup> May.

**Dr. M. Mohapatra**, DG, IMD and other scientists from IMD including **Shri K. C. Sai Krishnan**, Sc. 'G', **Shri Gajendra Kumar**, Sc. 'F' and **Dr. Sankar Nath**, Sc. 'F' participated in the meeting with **Air Vice Marshal, J. S. Sihmar**, Assistant Chief of the Air Staff Operations (Meteorology), Indian Air Force, Vayu Bhavan, New Delhi on 21<sup>st</sup> May, 2024.

**Shri H. S. Sawhney**, Sc. 'E' attended a Workshop on RE Modelling and RE generation forecasting organised by GRID-INDIA on 21-22 May, 2024 at SCOPE Complex New Delhi.

**RMC New Delhi** organized a half day program on awareness of weather and climate services in agriculture for Delhi –NCR region on 12<sup>th</sup> June, 2024 at RMO Ayanagar, New Delhi under the chairmanship of DGM, India Meteorological Department. Scientists from RMC New Delhi, AASD Division and AMFU Pusa were the resource persons. 26 Farmers from various parts of Delhi and NCR, In- charges of various section under RMC New Delhi, Scientists from MOES, MWO Palam, MO Safdurjung, officials from RMO Ayanagar and Organizing committee of IMD participated in this program.



**Officers during Awareness Programme**

The main objective of this program was to aware the farmers of Delhi-NCR about the dissemination and source for daily seven day forecasts, bi-weekly agro advisories, impact based forecasts for agriculture as well as Meghdoot app. through which they can easily access day to day weather information and take the better decision for agronomic practices for their farms and crops in timely manner.

Various queries of farmers related to weather and climate, agronomy aspects and utilization of agro advisories were explained during the interactive session.



**Farmers of Delhi-NCR during the interactive session**

**Dr. Shravan Kumar Muppa**, Sc. 'E', Hydromet Division, Attended the International workshop on "Stratosphere-Troposphere Interactions and Prediction of Monsoon Weather Extremes" (STIPMEX) at IITM, Pune during 2 - 7 June 2024 and presented work titled "An Investigation on the Prediction of Extreme Rainfall events over Indian Peninsular region during North-East Monsoon 2023". **B. Sudarsan Patro**, Sc-D, Presented a poster in the workshop.

## MEETINGS / VIDEO CONFERENCES

**Dr. M. Mohapatra**, Director General, India Meteorological Department (DG, IMD) had a meeting with Mr. Vincent Josee AMELIE, PR of Seychelles on 1<sup>st</sup> April, 2024. The delegation led by PR of Seychelles visited IMD for familiarisation of best practices followed by IMD for weather services.

**Dr. M. Mohapatra**, DG, IMD participated in an online meeting with Ministry of Rural Development regarding dissemination of Agromet Advisories using Ministry of Rural Development (MoRD) network was held on 2nd April, 2024. Dr. R Balasubramaniam, Sc. 'F', MC Bhopal also participated in the meeting.

**Dr. Kripan Ghosh**, Sc. 'F' attended an online meeting regarding "collaboration between IMD and Ministry of Rural Development (MoRD), Govt. of India, for dissemination of agromet advisories using MoRD network" under the chairmanship DG, IMD, New Delhi with officials from MoRD, IMD, New Delhi and MC, Bhopal on 2<sup>nd</sup> April, 2024.

**Dr. M. Mohapatra**, DG, IMD and Dr. T. Srinivas, Director INCOIS Chairs WMO & IMO Joint Collaborative Board (JCB), the President of the Commission for Observation, Infrastructure and Information Systems (INFCOM) and the Advisory Groups (AG) Ocean Chairs participated in the WMO Advisory Group meeting on 3<sup>rd</sup> April, 2024 to discuss leveraging mechanism among various governing bodies on Ocean Information Services.

**Dr. Ashutosh Misra**, Sc. 'D', **Dr. Jaya Dhami Parihar**, Sc. 'D' and **Dr. Asha Latwal**, Sc. 'C' attended the following webinars organised by WMO Climate and Energy Team: Online technical webinar on "WMO Energy demonstration products in Costa Rica and Chile" on 4<sup>th</sup> April, 2024.

**Dr. M. Mohapatra**, DG, IMD participated in the meeting under the Chairmanship of **Dr. V. K. Paul**, Hon'ble Member (Health) to review preparedness measures to mitigate the risk of Heat related illness during the summer season on 8<sup>th</sup> April, 2024.

**Dr. Ashok Kumar Das**, Sc. 'F' M.C. Ahmedabad attended 6<sup>th</sup> online meeting of the committee on **Disaster Risk Reduction** on 8<sup>th</sup> April, 2024 organised by NDMA.

**Dr. D.S. Pai**, Sc. 'G', attended meeting of National Executive Committee (NEC) to review the preparedness measure reg ensuing hot weather conditions chaired by Home Secretary on 9<sup>th</sup> April, 2024 at North Block, New Delhi.

IMD team led by **Dr. M. Mohapatra**, DG, IMD participated in the meeting with a delegation led by Additional Secretary, National Centre for Disease Control (NCDC), Ministry of Health on 10<sup>th</sup> April, 2024 at IMD, New Delhi for collaborative research on heat wave and human health.

**Hon'ble Prime Minister** reviewed the preparedness measures for heat wave conditions in the country on 11<sup>th</sup> April, 2024. DGM, IMD participated in the meeting.

**Dr. M. Mohapatra**, DG IMD, **Dr. D. S. Pai**, Sc. 'G', **Dr. K. S. Hosalikar**, Sc. 'G' and **Dr. Seshakumar Goroshi**, Sc.'E' participated in the meeting with JS & CEO, Pradhan Mantri Fasal Bima Yojna (PMFBY) and **Shri Chandrajit Chatterjee**, Director (Crop Insurance), Department of Agriculture & Farmers Welfare and **Dr. C. S. Murty**, Indian Council for Agriculture Research (ICAR) on 10<sup>th</sup> April, 2024.

IMD officials of MC Shillong attended the two days "**One Health Surveillance Conclave**" organized by NHM Meghalaya on 12 & 13 April, 2024. **Shri Thangjalal Lhouvum**, Head MC Shillong presented the IMD surveillance system in Meghalaya. And the follow up meeting was held again on 29<sup>th</sup> May, 2024.



**Shri Thangjalal Lhouvum, presenting the IMD surveillance system**

**Dr. A. Sandeep**, Sc. 'D' attended the online press conference on "**Long Range Forecast of Monsoon**" 2024 on 15<sup>th</sup> April, 2024.

**Sh. K. N. Mohan**, Sc. 'G' Guwahati represented India as leader of Delegation in the third session of the Commission for Observation Infrastructure and Information System (INFCOM-3) held in, Geneva, Switzerland from 15 - 19 April, 2024.

**Dr. D. S. Pai**, Sc. 'G', attended ESSO Review Meeting at IITM, Pune during 22 - 23 April, 2024.

A follow up meeting among the experts from **India Meteorological (IMD) and Reserve Bank of India (RBI)** was held at IMD, New Delhi on 19<sup>th</sup> April, 2024 after the signing of Memorandum of Understanding (MOU) on 21<sup>st</sup> March 2024. The meeting aimed at familiarising IMD and RBI experts with the data available with each of the organisation and it's optimal utilisation for further improvement in warning services by IMD and planning various economic reforms by RBI for the socio-economic improvement of the nation.

**Dr. Praveen Kumar**, Sc. 'C', delivered a talk as Invited Expert Speaker over the topic "**Extreme Weather events and Meteorological Services**" at Department of Civil Engineering, G. H. Rasoni College of Engineering, Nagpur on the occasion of Short Term Training Program on Disaster Management, Nagpur on 22<sup>nd</sup> April, 2024.



**Dr. Praveen Kumar, Sc. 'C' during the event**

**Dr. Madhu Latha Akkiseti, Sc. 'D'** and **Sh. S K Manik, Sc. 'D'** attended the 32<sup>nd</sup> Plenary meeting of ISO/TC 113 Hydrometry and its subcommittees, scheduled to take place from April 22-25<sup>th</sup> April, 2024, at the India Habitat Centre in New Delhi.

**Dr. O. P. Sreejith, Sc. 'F'**, attended (online) on 23 April, 2024 release of WMO state of Climate in Asia 2023 report.

**Dr. M. Mohapatra, DG, IMD** participated in the meeting convened by the Election Commission of India to discuss issues related to heat wave and mitigate the risk during the period of elections on 22<sup>nd</sup> April, 2024.

**Sh. Rohit Thapliyal, Sc. 'D'** participated in 'Orientation & Coordination Conference' on 23<sup>rd</sup> April, 2024 & 'Table Top Exercise' on 30<sup>th</sup> April, 2024 as a part of State Level Mock Exercise conducted at Secretariat, Dehradun by SDMA, Govt. of Uttarakhand & NDMA, Govt. of India prior to start of Char Dham Yatra.

**Dr. Ashok Kumar Das, Sc. 'F'** attended online meeting to discuss the various activities of IMD for Marine Services with Port Officials under the Chairmanship of DGM on 24 April, 2024.

**Dr. M. Mohapatra, DG, IMD** addressed the inaugural session of the 28<sup>th</sup> South Asian Climate Outlook Forum (SASCOF-28) through VC on 29<sup>th</sup> April, 2024.

**Dr. M. Mohapatra, DG, IMD** participated in the "National Conference on Agriculture for Kharif Campaign, 2024" on 30<sup>th</sup> April, 2024 at National Agriculture Science Centre (NASC), ICAR, New Delhi organized by Department of Agriculture and Farmers Welfare on 30<sup>th</sup> April, 2024.

**Dr. Kuldeep Srivastava, Sc. 'F'** and **Dr. Sankar Nath, Sc. 'F'** and **Dr. Kripan Ghosh, Sc. 'F'** participated in seventeenth meeting of the project monitoring & Advisory Committee (PMAC) to monitor the periodic progress of the projects under ACROSS-IMD and to suggest suitable remedial measures for successful implementation of the activities on 3<sup>rd</sup> May, 2024 through online mode.

**Sh. Abhimanyu Chauhan, Sc. 'C'** attended **ASL meeting** at Airport regarding PM visit on 6- 7 May, 2024.

**Dr. Partha Roy, Sc. 'C'** and **Sh. Aditya Raj Verma Sc. 'C'** conducted with NDRF DY. Commander and officials regarding

MC Agartala facilities and information exchange at MC Agartala office on 7<sup>th</sup> May, 2024.

**Shri Thangjalal Lhovum, Sc-D & Head, MC Shillong** attended Monsoon Preparedness meeting with Commissioner & Secretary, Revenue and Disaster Management Department in presence of Executive Director, Meghalaya SDMAs, DDMAs along with other departments at main Secretariat on 10<sup>th</sup> May, 2024 and **Shri Thangjalal Lhovum, Sc. 'D'** presented the summary of Monsoon 2023 and 1<sup>st</sup> LRF for Monsoon 2024.

**Sh. S. K. Manik Sc. 'D'** and **Dr. R. K. Jenamani, Sc. 'G'** attended 3<sup>rd</sup> meeting of the Committee for Joint Flood management of Himachal Pradesh, Uttarakhand and Punjab on 14<sup>th</sup> May, 2024 at CWC.

**Dr. D. S. Pai, Sc. 'G'**, **Dr. Shravan Kumar Muppa, Sc. 'E'**, **Dr. Madhu Latha Akkiseti, Sc. 'D'**, **Shri S. K Manik, Sc. 'D'** attended Virtual Meeting on "Flood preparedness for the ensuing monsoon season 2024" held on 20<sup>th</sup> May 2024 under the chairmanship of DGM.

National Crisis Management Committee (NCMC) meeting was held under the chairmanship of Cabinet Secretary on 24<sup>th</sup> May based on the cyclone warnings issued by IMD to review the preparedness and follow up actions. **Dr. M. Mohapatra, DG, IMD** made the presentation on current status and forecast/Warnings issued as well as damage expected and suggested actions for West Bengal, Odisha and Northeastern states.

Hon'ble Prime Minister **Shri Narendra Modi** reviewed the response and preparedness on 26<sup>th</sup> May, 2024. DG IMD presented the current status and forecast/Warnings issued as well as damage expected and suggested actions for West Bengal, Odisha and Northeastern states.



**Dr. M. Mohapatra, DG, IMD presenting the status before Hon'ble Prime Minister Shri Narendra Modi**

**Dr. Partha Roy Sc. 'C'** and **Mr. Aditya Raj Verma Sc. 'C'** participated in State Executive Committee meeting (SEC) at Tripura Secretariat under Chief Secretary Chairmanship on 26<sup>th</sup> May, 2024.

**Shri Thangjalal Lhovum, Sc. 'D'** MC Shillong attended online meeting with Chief Minister, Dy. Chief Minister and SDMA, Meghalaya on 27<sup>th</sup> May, 2024 for pre-cyclone landfall meeting and preparations (**for Cyclone Remal**).

**Shri Raja Acharya**, Met. 'B' participated virtually in the WMO Hybrid Workshop on the Impact of Various Observing Systems on Numerical Weather Prediction and Earth System Prediction held during 27-30 May, 2024.

**Shri H. S. Sawhney**, Sc. 'E' attended a meeting of Standing Committee of Experts to investigate the failure of various transmission line towers failed during the period from January 2024 to April 2024. This meeting was convened by Central Electricity Authority under the chairmanship of Chief Engineer (PSE&TD) on 30<sup>th</sup> May, 2024 at Sewa Bhawan, New Delhi.

**Dr. M. Mohapatra**, DG, IMD participated in the selection committee meeting for the 69<sup>th</sup> International Meteorological Organisation (IMO) Prize under Chairmanship of Professor D. Karnawati, Chair on 4<sup>th</sup> June, 2024.

**Dr. M. Mohapatra**, DG, IMD participated on line in the Third Pole Climate Forum Meeting in Lijiang, China on 4<sup>th</sup> June, 2024 and addressed the delegates.

**Sh. S. K. Manik** Sc. 'D' attended the 'Webinar on 'Alternate Drinking Water Supply Provision during Crisis — Requirements' on 4<sup>th</sup> June, 2024.

**Dr. Kripan Ghosh**, attended an online meeting regarding "collaboration between IMD and National Commodity and Derivatives Exchange Limited (NCDEX)" under the chairmanship of Dr. M. Mohapatra, DG, IMD, New Delhi with officials from IMD, New Delhi, IMD, Pune and NCDEX on 7<sup>th</sup> June, 2024.

**Sh. T. Lhouvum**, Sc. 'D' attended online METEO IRS 2024, 2<sup>nd</sup> International Symposium on Remote Sensing in Meteorology conducted by Istanbul Technical University during 11-13<sup>th</sup> June, 2024.

**Shri Raja Acharya**, Met. 'B' participated virtually in the UN Conference on Sustainable Lunar Activities organised by the UN Office of the Outer Space Affairs (UNOOSA) held on 18<sup>th</sup> June, 2024.

**Dr. Kuldeep Srivastava**, Sc. 'F' attended Session for National Focal Points on Radio Frequency Matters for Asia-Pacific countries on 20<sup>th</sup> June, 2024 via online mode.

**Sh. Rohit Thapliyal**, Sc. 'D' attended First Half-Yearly meeting of NARAKAS, Dehradun organized by NARAKAS (Office-2), ONGC, Dehradun at Auditorium, ONGC, Dehradun on 20<sup>th</sup> June, 2024.

**Dr. M. Mohapatra**, DG, IMD participated in the meeting of National Executive Committee (NEC) under the Chairmanship of Union Home Secretary to review flood preparedness measures of Govt. of NCT of Delhi on 29<sup>th</sup> June, 2024.

IMD is organizing a series of lecture on during the year 2024-25 as part of "150 years of IMD" celebrations. In the series, IMD organized a lecture on "Advancing Atmospheric Composition Analysis and Predictions and Related Services to Meet the Growing Societal Needs" by Prof. Gregory Carmichael from University of Iowa, USA at Avani Hall, MoES, New Delhi on 31<sup>st</sup> May, 2024.

**Dr. V. K. Soni**, Sc. 'F' attended a meeting convened by Central Electricity Authority regarding key weather parameters required for the development of the Electricity Demand Forecasting and Load Survey Tool under the chairmanship of Member (Planning), CEA on 26<sup>th</sup> June, 2024 at Sewa Bhawan, New Delhi.

WMO Briefing team led by **Mr. Johan** briefed **Dr. M. Mohapatra**, DG IMD & 3<sup>rd</sup> Vice President of WMO on the Session to be chaired by him during the EC-78 meeting at Geneva in June 2024.

**Dr. D. S. Pai**, Sc. 'G', **Dr. Shravan Kumar Muppa**, Sc. 'E', **Dr. Madhu Latha Akkiseti**, Sc. 'D', **Shri S. K Manik**, Sc. 'D' attended meeting of Committee on retrieval of Weather Parameters on 28<sup>th</sup> June, 2024 at Krishi Bhawan, New Delhi.

## TRAININGS

**Dr. Ashutosh Misra**, Sc. 'D', **Dr. Jaya Dhama-Parihar**, Sc. 'D', **Dr. Asha Latwal**, Sc.'C', **Ms. Indu Kumbria**, Met. 'A', **Ms. Twinkle Grover**, S.A. and **Mr. Amit Kumar**, S. A. attended Online meeting regarding "Ithenticate Subscription for MoES Institutes through National Knowledge Resource Consortium (NKRC)" organised by IMD, New Delhi on 15<sup>th</sup> May, 2024.

**Mrs. Suman Gurjar**, Sc. 'D' delivered NWP refresher course lecture on "Use of Mausamgram" during 20 - 24 May, 2024 and coordinated a training program on "Fundamentals of Artificial Intelligence and Machine learning" course held during 27 - 31 May, 2024.

**Sh. Sunny Chug**, Sc. 'D' and **Sh. Prashant Bansal**, Sc. 'D' and other officers from RMC's and Mc's have attended training in System administrator for maintenance of XML BASED AMSS installed at Delhi, Chennai, Mumbai and Kolkata for four weeks through offline mode during 13 May - 7 June, 2024.

**Ms. Anu Bhargava**, Met. 'A' and **Ms. Twinkle Grover**, S. A. attended Claruvate's "Awareness and Engagement Program 2024 - New Delhi edition" on 12<sup>th</sup> June, 2024.

## LECTURES/ TALK/ WEBINAR

**Dr. O. P. Sreejith**, Sc. 'F', delivered a talk on "Large Scale Features of Monsoon and its relationship with Rainfall over India (ENSO & IOD)" at the 2<sup>nd</sup> Southwest Monsoon Training Workshop on 6<sup>th</sup> May, 2024.

An online Training Programme on 2<sup>nd</sup> SW Monsoon Training Workshop attended by Sh. Ramashray Yadav, Sci-D, Sh. Pradeep Sharma, Sci-D, Sh. Abhimanyu Chauhan, Sci-C, Ms. Madhu Sarkar, Met-B and Sh. NS Darji, Met-A during 6 - 11 May, 2024.

**Dr. Satyaban B. Ratna**, Sc. 'E', delivered a talk on "MJO in conjunction with Large Scale Features (IOD, ENSO etc.) and its impact on rainfall over India" at the 2nd Southwest Monsoon Training Workshop on 7<sup>th</sup> May, 2024.

**Dr. O. P. Sreejith**, Sc. 'F', attended (online) the 20<sup>th</sup> Session of the Forum on Regional Climate Monitoring, Assessment and Prediction for Asia (FOCRAll), and delivered talk on "Climate Services Progress in India" during 9 - 11 May, 2024, Qingdao, China.

**Sh. Ramashray Yadav**, Sc. 'D' delivered a lecture under the capacity building of various officials of state departments and organizations organized by the Gujarat Institute of Disaster Management (GIDM), Gandhinagar on 24<sup>th</sup> May, 2024 through a Virtual Classroom based training program on **"Warning and Early Warning System: Services by IMD in India/Gujarat"**.

**Dr. Kuldeep Srivastava**, Sc. 'F' and **Dr. Sankar Nath**, Sc. 'F' participated in Online webinar on moving towards SOFF implementation- Engagement with SOFF peer advisors on WIS 2.0 on 28<sup>th</sup> May, 2024.

**Dr. Ashutosh Misra**, Sc. 'D' participated in Joint Agresco - 2024 and delivered a lecture on "Southwest monsoon 2023 and activities under GKMS in Maharashtra" at PDKV, Akola on 7<sup>th</sup> June, 2024.

### FOREIGN DEPUTATION

**Sh. K. N. Mohan**, Sc. 'G', **Dr. V. K. Soni**, Sc. 'F' and **Dr. Sankar Nath**, Sc. 'F' were on deputation to participate in third session of the Commission for Observation, Infrastructure and Information System (INFCOM-3) at WMO HQrs, Geneva during 15 - 19 April, 2024.

**Dr. Habibur Biswas**, Sc. 'F' was on deputation to NCHM Bhutan for imparting Training during 22 - 26 April, 2024.

**Dr. Neeti Singh**, Sc. 'C' was on deputation to Bangkok, Thailand for ICAO Asia and Pacific (APAC), 13<sup>th</sup> Meeting of the (MET/RWG/13), including (MET/ATM Seminar) during 22-26 April, 2024.

**Dr. Somenath Dutta**, Sc. 'G' was on deputation to Geneva, Switzerland to participate Ninth meeting of the WMO Executive Council Capacity Development Panel (EC-CDP-9) during 22-23 April, 2024.

**Sh. Ramashray Yadav**, Sc. 'D' and **Sh. Shibin Balakrishnan**, Sc. 'D' were on deputation to participate in CGMS working Group meeting at EUMETSAT, Darmstadt, Germany during 22-26 April, 2024.

**Dr. Siddhartha Singh**, Sc. 'F' was on deputation to participate in 12<sup>th</sup> meeting of the Ozone Research Managers of the parties to the Vienna Convention for the Protection of the Ozone Layer during 22-26 April, 2024.

**Dr. Gargi Rakshit**, Sc. 'C' was on deputation to participate in 4<sup>th</sup> URSI Atlantic Radio Science Conference (URSI AT-RASC 2024), Expo Meloneras Convention Centre, Gran Canaria, Canary Islands, Spain during 19-24 May, 2024.

**Dr. Habibur Biswas**, Sc. 'F' was on deputation to participate in 9<sup>th</sup> International verification methods workshop at Cape Town, South Africa during 20-22 May, 2024.

**Dr. K. S. Hosalikar**, Sc. 'G' was on deputation to participate in RA II Working Group on Infrastructure (WG-I) plans to be held in Changsha, China, on 21-23 May 2024.

**Ms. Arpita Rastogi**, Sc. 'D' was on deputation to participate in 8<sup>th</sup> WMO Workshop on the Impact of Various Observing Systems

on NWP and Earth System Prediction in Norrköping, Sweden during 28-30 May, 2024.

**Dr. V. K. Soni**, Sc. 'F' and **Dr. O. P. Sreejith**, Sc. 'F' were on deputation to participate in Inaugural Session of the Third Pole Climate Forum (TPCF 1) and Third Pole Regional Climate Centre Network (TPRCC-Network) Task Team to be held in Lijiang, China during 4-6 June, 2024.

**Dr. M. Mohapatra**, DGM and **Sh. Anikender**, Sc. 'C' were on deputation to participate in WMO Executive Council Meeting (EC-78) during 10-14 June, 2024.

**Dr. M. Mohapatra**, DGM was on deputation to participate in Invite for DGM for Keynote address at UR24 Hydromet/EWS and Inclusive DRM Focus Day session at Himeji, Japan on 21<sup>st</sup> June 2024.

### MEMORANDUM OF UNDERSTANDING (MoU)

Vikram University, Ujjain celebrated its 28th Convocation ceremony on 9th April 2024. Hon'ble Governor of Madhya Pradesh and Chancellor of Vikram University, **Shri Mangu Bhai Patel Ji** presided over the function. Chief Guest, **Dr. Mrutyunjay Mohapatra**, Director General of Meteorology delivered the convocation address during the ceremony. Padmashri **Dr. Bhagwatilal Rajpurohit**, Hon'ble Senior Educationist & Litterateur graced the ceremony as Guest of Honour. On this occasion, **India Meteorological Department and Vikram University signed an MOU** for collaboration in research and development on weather and climate science & services.



**Convocation Ceremony Photograph (L to R): Padmashri Dr. Bhagwatilal Rajpurohit, Hon'ble Senior Educationist and Litterateur, Prof. Akhilesh Kumar Pandey, VC Vikram University, Hon'ble Governor of MP Shri Mangu Bhai Dr. M Mohapatra, DG IMD and Prof. Anil Kumar Sharma, Registrar Vikram University**



**Dr. M. Mohapatra, DG IMD and Prof. Akhilesh Kumar Pandey, VC Vikram University**



**Dr. M. Mohapatra**, DG, IMD and **Mr. Biraj Patnaik**, Executive Director, National Foundation of India signed an MoU on 6<sup>th</sup> May, 2024 to enhance collaboration between the two organisations aimed at raising awareness on extreme weather events.



**IMD and NFI Join Forces for Weather Awareness**

India Meteorological Department (IMD) and National Foundation for India (NFI) sign ground breaking Memorandum of Understanding on May 06, 2024. Dr. Mrutyunjay Mohapatra (Director General of Meteorology, IMD) and Mr. Biraj Patnaik (Executive Director, National Foundation for India) lead mission to raise awareness on extreme weather. Promising a diverse multimedia content, they equip communities with insights and mitigation strategies for heat stress, floods, droughts, cyclones and more.

**Dr. M Mohapatra, DGM IMD and Mr. Biraj Patnaik, Executive Director, National Foundation of India signing an MoU**

IMD signed an MoU with **Motilal Nehru National Institute of Technology (MNNIT)**, Allahabad on 9<sup>th</sup> May, 2024 to enhance collaborative research and development activities between the two institutes.



**IMD & MNNIT signs MoU**

The India Meteorological Department (IMD) and Motilal Nehru National Institute of Technology, Allahabad, (MNNIT) have signed a Memorandum of Understanding on May 09th, 2024. This partnership focuses on pioneering research in weather forecasting, AI solutions and

**MoU between IMD and MNNIT**

IMD signed an MoU with **BITS, Mesra, Ranchi** on 10<sup>th</sup> May to enhance collaborative research and development activities between the two institutes with a focus on thunderstorms.



**MoU between IMD and BITS Mesra**

A Memorandum of Understanding signed between **India Meteorological Department and Renew Pvt. Ltd.** on 19<sup>th</sup> June, 2024 at IMD, HQ for Technical Collaboration to improve optimization in electricity distribution and generation sector and to support further integration of Renewable Energy in Indian Grid.

### NOMINATIONS

**Sh. Bikram Singh**, Sc. 'F' was nominated to participate in 28<sup>th</sup> session of South Asian Climate Outlook Forum and Climate Services User Forum (SASCOF-28 and CSUF) organized from 29<sup>th</sup> April, 2024 to 1<sup>st</sup> May, 2024.

**Sh. Bikram Singh**, Sc. 'F' was nominated to participate in "NDMA symposium cum Table Top Exercise (TTE)" at Indian Army's HQ Central Command, Lucknow on 16<sup>th</sup> May, 2024. He was on a tour to Lucknow from 15 – 17 May, 2024 to participate in the said meeting & gave a presentation on IMD's role and preparation for Disaster management.

### ACHIEVEMENTS / APPRECIATIONS / AWARDS RECEIVED

**RMC Nagpur** got first prize from "Nagar Rajbhasha karyanwahan samiti" for Rajbhasha Karyanwahan. Additionally "Protsahan Prize" for Riturang Magazine.

### Infrastructure Development & Installations

#### NEW PROJECTS/SCHEMES INITIATED

**DCWIS and PWD Systems** were installed at Keshod airport (RWY 23) in May 2024.



**DCWIS & PWD at Keshod Airport**



**DCWIS & PWD at Keshod Airport**

**Drishti transmissometer, DCWIS and PWD Systems** were installed at Raipur airport (RWY 24) in June 2024.



**Drishti Transmissometer at Raipur Airport**



**DCWIS & PWD**

## CELEBRATIONS

International Yoga Day was celebrated at HQrs and other offices of IMD.



**Officers & staff of MC Dehradun doing Yoga asanas during celebration of International Yoga Day**



**Officials of M. C. Ahmedabad during Yoga Day**

## राजभाषा अनुभाग

### राजभाषायी निरीक्षण

मुख्यालय की उपनिदेशक (राजभाषा) श्रीमती सरिता जोशी द्वारा दिनांक 25.04.2024 को 04 उपकार्यालयों नामतः- मौसम केंद्र- बेंगलूरु, मौसम केंद्र- तिरुवनंतपुरम, मौसम केंद्र- हैदराबाद और मौसम केंद्र- अमरावती का राजभाषायी ई-निरीक्षण किया गया।

मुख्यालय की उपनिदेशक (रा.भा.) श्रीमती सरिता जोशी द्वारा दिनांक 22.05.2024 को 02 उपकार्यालयों प्रादेशिक मौसम केंद्र- चेन्नै और खगोल विज्ञान केंद्र- कोलकाता का राजभाषायी ई-निरीक्षण किया गया।

दिनांक 25.06.2024 को प्रादेशिक मौसम केंद्र, नागपुर द्वारा 03 अधीनस्थ उपकार्यालयों मौसम कार्यालय, इंदौर, मौसम कार्यालय, जगदलपुर और मौसम कार्यालय जबलपुर तथा दिनांक 19.06.2024 को प्रादेशिक मौसम केंद्र, कोलकाता द्वारा 04 अधीनस्थ उपकार्यालयों मौसम केंद्र, पोर्टब्लेयर, मौसम कार्यालय, जमशेदपुर, मौसम कार्यालय, भागलपुर और मौसम कार्यालय, गया राजभाषायी ई-निरीक्षण किया गया। निरीक्षण के दौरान मुख्यालय से उपनिदेशक (राजभाषा) श्रीमती सरिता जोशी उपस्थित रहीं और आवश्यक दिशानिर्देश दिए।

### राजभाषा नीति का कार्यान्वयन

राजभाषा विभाग, गृह मंत्रालय की 'राजभाषा कीर्ति पुरस्कार योजना' के लिए वर्ष 2023-2024 में प्रकाशित 'मौसम मंजूषा' के 37वें और 38वें संस्करण की पाँच-पाँच प्रतियाँ संबंधित प्रपत्र सहित राजभाषा विभाग में हाथों हाथ जमा कराई गईं।

31 मार्च 2024 को समाप्त राजभाषा हिंदी के प्रगामी प्रयोग से संबंधित तिमाही प्रगति रिपोर्ट दिनांक 30.04.2024 को राजभाषा विभाग, गृह मंत्रालय को भेजी गई और उसकी हार्ड कॉपी पृथ्वी विज्ञान मंत्रालय को भेजी गई।

### कार्यशाला/व्याख्यान

मुख्यालय, नई दिल्ली द्वारा दिनांक 27.06.2024 को पूर्ण एक दिवसीय ई-हिंदी कार्यशाला का आयोजन किया गया। इस कार्यशाला में मुख्यालय तथा उपकार्यालयों के लगभग 160 कार्मिकों ने भाग लिया। श्रीमती सरिता जोशी, उपनिदेशक (रा.भा.) और सुश्री रेवा शर्मा, सेवानिवृत्त उपनिदेशक (रा.भा.) ने व्याख्यान दिए।

## Research & Publications

Twenty three (23) research articles have been published in **MAUSAM** (Vol. 75, No. 2), April, 2024 issue.

Following are the research articles published in **Mausam** and other extra departmental journals which are authored by **IMD officials**:

B. L. SUDEEP KUMAR, R. PHUKAN, R. BORAGAPU, C. B. NALAGE, A. D. TATHE, and K. S. HOSALIKAR, "Understanding the climatology and long-term trends in solar radiation using ground based in-situ observations in India", **MAUSAM**, vol. 75, no. 2, pp. 349–372, Apr. 2024, <https://doi.org/10.54302/mausam.v75i2.6238>.

S. BONDYOPADHYAY and M. S. JANA, "Precursors of hazard due to super cyclone AMPHAN for Kolkata, India from surface observations", **MAUSAM**, vol. 75, no. 2, pp. 373–380, Apr. 2024, <https://doi.org/10.54302/mausam.v75i2.6259>.

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G. P. SINGH, M. KHOLE, A. SHINDE, and S. BHANDARI, "A study of extreme rainfall events and urban flooding over Hyderabad, October 2020", **MAUSAM**, vol. 75, no. 2, pp. 443–460, Apr. 2024, <https://doi.org/10.54302/mausam.v75i2.6047>.

L. SRIDHAR and D. S. PAI, "Analysis of long-term trends of rainfall and extreme rainfall events over Andaman & Nicobar and Lakshadweep Islands of India", **MAUSAM**, vol. 75, no. 2, pp. 479–500, Apr. 2024, <https://doi.org/10.54302/mausam.v75i2.6271>.

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region", **INTERNATIONAL JOURNAL OF CLIMATOLOGY**, **44**, 8, 2607-2635, DOI: 10.1002/joc.8471.

Singh, Jyoti; Sahany, Sandeep; Singh, K. K.; Robock, Alan; Xia, Lili, "Future Climate Change Impacts on Rice in Uttar Pradesh, India's Most Populous Agrarian State", **EARTHS FUTURE**, **12**, 5, DOI: 10.1029/2023EF004009.

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A report is published on 1<sup>st</sup> April, 2024 regarding collaborative research study done by IMD & M/s MAL on validation of WRF simulated Low Cloud Cover (LCC) and Wind speed data. WRF LCC was validated against the ground-based measurements by correlation heat maps and contingency tables. As part of this study validation of satellite-observed data against the ground observation was also done.

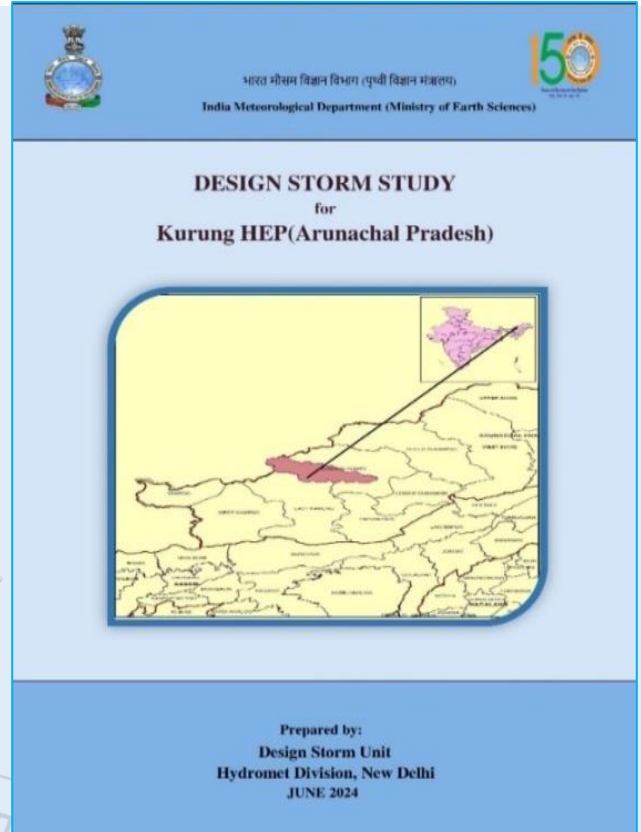
## SERVICES

Detailed Project Report for the following projects has been completed and sent to concern Project Authorities:

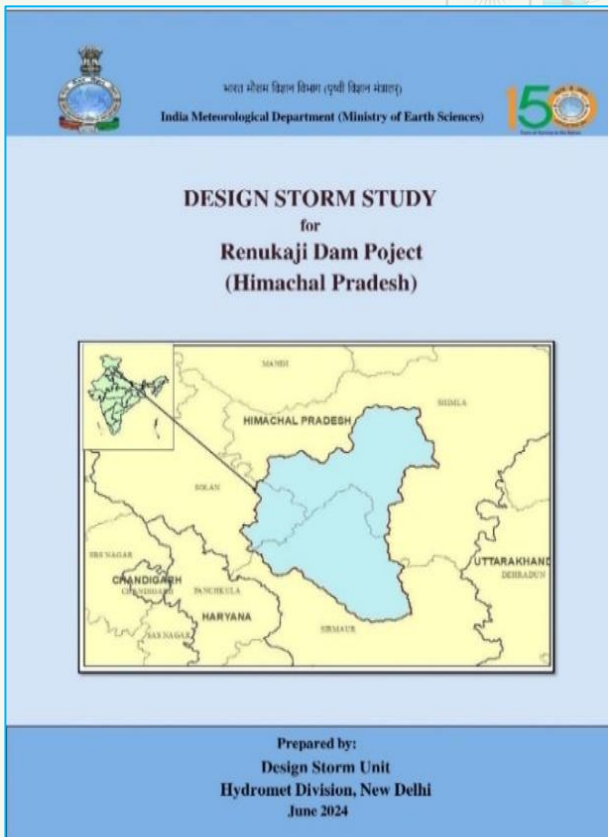
- i) Poshir Project and Shilar Medium Irrigation Project Maharashtra.
- ii) Renukaji Dam Project, Himachal Pradesh.
- iii) Kurung Hydro Electric Project Arunachal Pradesh.
- iv) PhukotKarnali HEP Nepal.



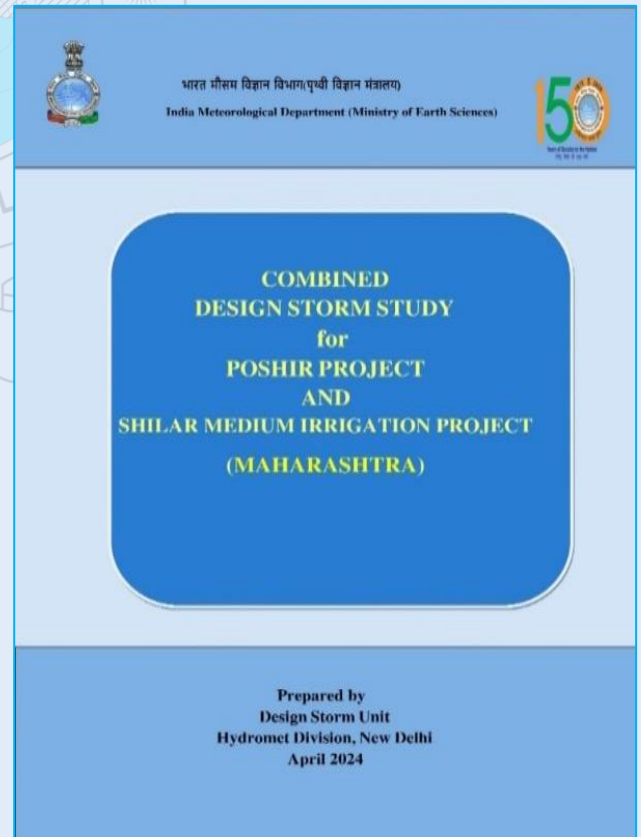
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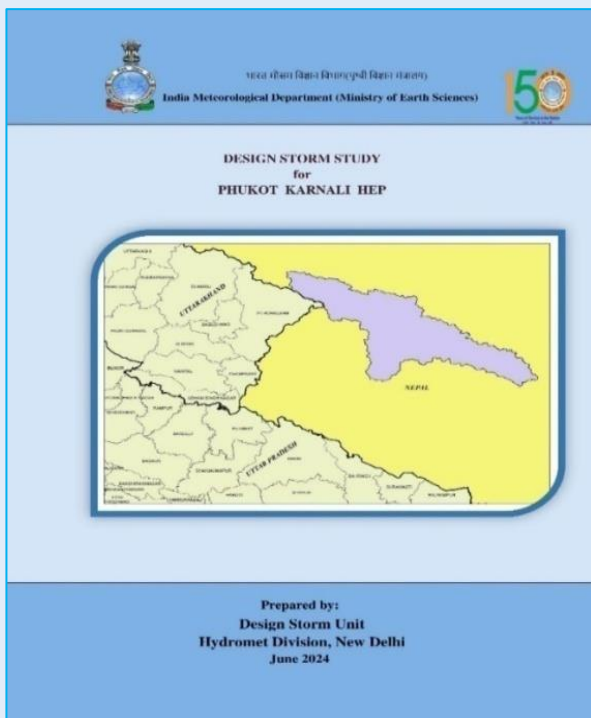
**Kurung Hydro Electric Project Arunachal Pradesh**



**Renukaji Dam Project, Himachal Pradesh.**



**Poshir Project and Shilar Medium Irrigation Project Maharashtra.**



Phukot Karnali HEP Nepal

## Outreach and Media Interaction

IMD organized Press Conference on release of 2<sup>nd</sup> stage of forecast of Southwest Monsoon 2024 on 27<sup>th</sup> May. Dr. M. Mohapatra, DG IMD addressed the Press Conference. The highlights of the Press Release are given below:

- Quantitatively, the southwest monsoon seasonal rainfall over the country as a whole is likely to be 106% of the long period average (LPA) with a model error of  $\pm 4\%$ . Thus Above Normal rainfall is most likely over the country as a whole during the monsoon season (June to September), 2024.
- The southwest monsoon seasonal (June to September, 2024) rainfall is most likely to be above normal over Central India and South Peninsular India (>106% of LPA), normal over Northwest India (92-108% of LPA) and below normal over Northeast India (106% of LPA).

Dr. M. Mohapatra, DG, IMD participated as Expert Speaker in the Idea Exchange Programme of The Indian Express with Mr. Amitabh Sinha, Editor on 10th June. The interview is available at <https://indianexpress.com/article/idea-exchange/heatwaves-will-now-become-more-frequent-durable-and-intense-9382334/>

Dr. Ashutosh Kumar Misra, Sc. 'D', Dr. Jaya Dhami Parihar, Sc. 'D' and Dr. Asha Latwal, Sc. 'C' gave bi-weekly TV Bytes for the Programme 'Mausam Khabar' of DD Kisan Channel during the quarter.

Heavy rainfall warning was issued by India Meteorological Department due to Cyclonic Storm "Remal" over Bay of Bengal during May 2024. During the period 14486563 SMSs have been sent to the farmers in the States of Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Tripura and West Bengal. Special Agromet Bulletins have also been prepared and uploaded in the website of Agricultural Meteorology Division.

Krishi Darshan aaniAamchi Mati Amchi Mansa' Programme Telecasted on 'Doordarshan Sahyadri' on 15-05-2024 6PM on the occasion of 'Climate Change Day'. Participation by Shri PS Chinchole Meteorologist-B RMC Nagpur.



Krishi Darshan aaniAamchi Mati Amchi Mansa' Programme being telecasted

## Visitors

22 students and 02 teachers from JawaharLal Nehru Degree College, Etah, Uttar Pradesh were allowed to visit Meteorological Centre Dehradun premises on 10.04.2024. Sh. Rohit Thapliyal, Sc., 'D' delivered a lecture on "Different Weather Forecasting Products and Climate Services" being provided by MC Dehradun. Sh. BhaumikIndrawal, Met-A showed the students the activities of weather forecasting section and Sh. Akash Chandra, Met-A briefed them about RS/RW observation & surface met. observatory.



Students of Jawahar Lal Nehru Degree College, Etah, Uttar Pradesh

35 trainees from GIDM visited M.C. Ahmedabad on 12<sup>th</sup> June 2024 A/N.



Trainees from GIDM visited M.C. Ahmedabad

JumdaPadu and Vikram Singh from Centre of Earth Sciences and Himalayan Studies visited MC Shillong on 14<sup>th</sup> June, 2024.



Visitors at MC Shillong

About **307** visitors including students of Swami Shradhdhanand College Delhi University, B.H.U. Varanasi, Somerville School Delhi, National Bal Bhawan, New Delhi visited the Central Hydromet Observatory from 1<sup>st</sup> April to 30<sup>th</sup> June 2024.



Students of Swami Shradhdhanand College at Central Hydromet Observatory

### Significant Weather Features

**In the month of April**, over the country the mean temperature was 29.06 °C with an anomaly of 0.76 °C and 8<sup>th</sup> highest since 1901. Among the four homogeneous regions, over South Peninsular India maximum temperature was the 2<sup>nd</sup> highest (37.25 °C with an anomaly of 1.35 °C) after the year 2016 (37.57 °C) and minimum temperature was also the 2<sup>nd</sup> highest (25.53 °C with an anomaly of 1.09 °C) after the year 2016 (25.80 °C) since 1901. The mean temperature over South Peninsular India was the 2<sup>nd</sup> highest (31.39 °C with an anomaly of 1.22 °C) after the year 2016 (31.68 °C) since 1901. Over East & Northeast India minimum temperature was the highest (22.19 °C with an anomaly of 1.78 °C) since 1901. The mean temperature over East & Northeast India was the highest (28.12 °C with an anomaly of 2.01 °C) since 1901. Rainfall realized over the country as a whole was 80% of its LPA during the month. Rainfall over the homogeneous region of south peninsular India (12.6 mm) was 4<sup>th</sup> lowest since 1901. Prior lowest rainfall years were 1983 (4.6 mm), 1906 and 2016 (7.3 mm), 1950 (10.7 mm).

**In the month of May**, over the country the mean temperature was 31.08 °C with an anomaly of 0.69 °C & the 4<sup>th</sup> highest after the years 1921 (31.92 °C), 1906 (31.22 °C), 1978 (31.09 °C) since 1901. Among the four homogeneous regions, over Northwest India maximum temperature was the 3<sup>rd</sup> highest (38.36 °C with an anomaly of 1.81 °C) after the years 1921 (39.86 °C), 1978 (38.62 °C) since 1901. Over East & Northeast India minimum temperature was the 4<sup>th</sup> highest (23.63 °C with an anomaly of 0.83 °C) after the years 1956 (23.80 °C), 1960 (23.69 °C), 1921 (23.64 °C) & the mean temperature was the 3<sup>rd</sup> highest (28.67 °C with an anomaly of 0.98 °C) after the years 1960 (28.90 °C), 1966 (28.80 °C) since

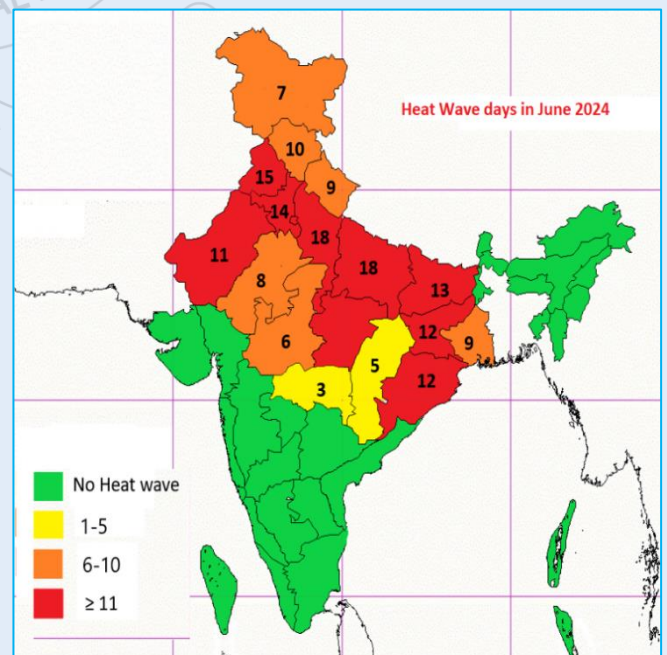
1901. Rainfall realized over the country as a whole was 108% of its LPA during the month. Rainfall over homogeneous region of Northwest India (11.8 mm) was 11<sup>th</sup> lowest since 1901 and lowest since 2001.

**In the month of June**, over the country the mean temperature was 30.82 °C with an anomaly of 1.18 °C and the 4<sup>th</sup> highest after the years 1926 (31.07 °C), 1958 (31.00 °C), 1923 (30.90 °C) since 1901. The maximum temperature was the 4<sup>th</sup> highest (36.10 °C with an anomaly of 1.50 °C) after the years 1926 (36.64 °C), 1958 (36.42 °C), 1923 (36.25 °C) since 1901. The minimum temperature was the 3<sup>rd</sup> highest (25.53 °C with an anomaly of 0.87 °C) after the years 1958 (25.58 °C), 1923 (25.56 °C) since 1901.

**Among the four homogeneous regions, over Northwest India maximum temperature was the highest (38.61 °C with an anomaly of 2.55 °C) since 1901.** The minimum temperature was the 2<sup>nd</sup> highest (25.49 °C with an anomaly of 1.39 °C) after the year 1947 (25.54 °C) since 1901. The mean temperature was the highest (32.05 °C with an anomaly of 1.97 °C) since 1901. Over East & Northeast India minimum temperature was the highest (25.10 °C with an anomaly of 0.91 °C) since 1901. The mean temperature was the 5<sup>th</sup> highest (29.13 °C with an anomaly of 1.07 °C) after the years 1958 (29.44 °C), 1979 (29.33 °C), 2019 (29.26 °C), 2023 (29.22 °C) since 1901. Rainfall realized over the country as a whole was 81% of its LPA during the month (Till 26<sup>th</sup> June 2024).

### Heat Wave

Total number of Heat wave days and severe heat wave days as observed over India during June 2024 in terms of Meteorological sub-division-wise, given in Fig. 4. It shows in June 2024, around 10-18 heatwave days against normal of 2-5 days observed across north and adjoining central & east India covering areas of West Rajasthan Himachal Punjab, Haryana-Chandigarh-Delhi, HP, Uttar Pradesh, Bihar, Jharkhand, GWB, East Madhya Pradesh, Bihar and Odisha



Distribution of Number of heat wave to severe heat wave days (in terms of Meteorological Sub-division-wise) over India in June 2024

The rainfall statistics was prepared for the month of Pre-Monsoon-2024. The rainfall for the country as a whole, for the month of Pre-Monsoon-2024 has been recorded as 125.9 mm which is 96% of its Long Period Average (LPA) of 130.6 mm. In all, category wise, 07 Met sub-divisions in LARGE EXCESS, 05 Met sub-divisions in EXCESS, 14 Met sub-divisions in NORMAL, 09 in DEFICIENT, 01 in LARGE DEFICIENT and no any Met sub-divisions in "NO RAIN" category of rainfall.



Sub-division-wise Rainfall Map

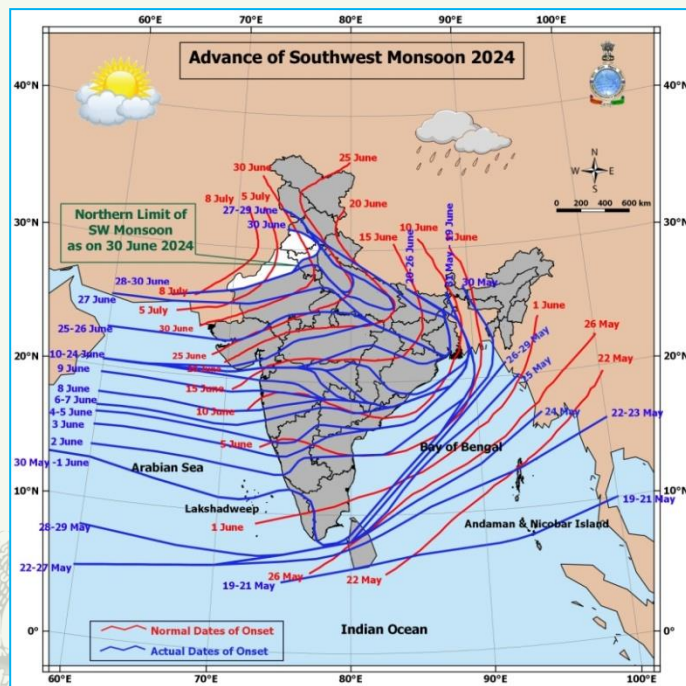
### Significant weather systems and associated extremely heavy rainfall spell:

Extremely Heavy rainfall spell observed over northeast India and Sub-Himalaya West Bengal during 12-20 June 2024 which causes Floods in these areas. Exceptionally heavy rainfall was also observed over Meghalaya on 15th and 18th June with Mawsynram-64cms, Cherrapunji IMD-51cm and Shella-40 cm on 15th June and Mawsynram-78, Cherrapunji (Rkm)-43, Cherrapunji-39, Mawkyrwat-30, Mawkyrwat- -28 reported on 18th June.

### Features of Monsoon 2024

#### Advance of the Southwest Monsoon 2024:

Southwest Monsoon has set in over Kerala on 30th May 2024 against the normal date of 1<sup>st</sup> June. Southwest Monsoon has advanced into most parts of country during the month and as was on 30 June 2024, the Northern Limit of Monsoon (NLM) passed through passed through 26° N/65° E, Jaisalmer, Churu, Hissar, Karnal, Jalandhar, Tarn Taran and 31.5° N/74.5° E.



Advance of Southwest Monsoon (as on 30th June 2024)

### Severe Cyclonic Storm "Remal" over the BoB during (22<sup>nd</sup> - 29<sup>th</sup> May, 2024)

#### Life History of "REMAL"

Under the influence of a cyclonic circulation over the southwest Bay of Bengal (BoB) a low-pressure area (L) formed over southwest and adjoining west central BoB in the early morning (0530 hours IST) of 22<sup>nd</sup> May, 2024.

It concentrated into a depression (D) over central BoB in the early morning (0530 hours IST) of the 24<sup>th</sup> May.

It intensified into a cyclonic storm (CS) "REMAL" {pronounced as RE-MAL} over the north and adjoining east central BoB in the same evening (1730 hours IST) of 25<sup>th</sup> May.

It intensified further into a severe cyclonic storm (SCS) over the North BoB in the early morning (0530 hours IST) of 26<sup>th</sup> May.

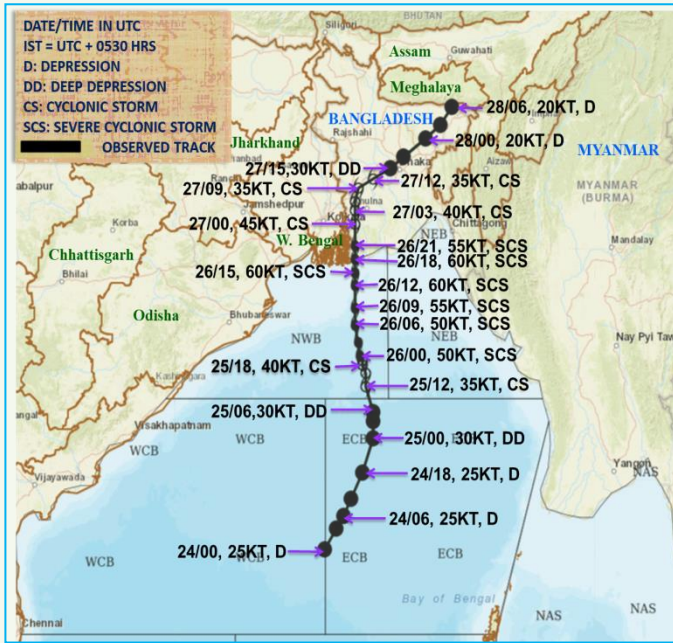
Moving in the same direction, it crossed Bangladesh and adjoining West Bengal coasts between Sagar Islands and Khepupara close to southwest of Mongla near latitude 21.75° N and longitude 89.2° E between 2230 hrs IST of 26<sup>th</sup> May and 0030 hrs IST of 27<sup>th</sup> May 2024 (1700-1900 UTC of 26<sup>th</sup> May) as an SCS with wind speed of 110 to 120 kmph gusting to 135 kmph (60 gusting to 70 knots).

Continuing to move northwards, it weakened into a CS over coastal Bangladesh and adjoining coastal West Bengal in the early morning (0530 hours IST) of 27<sup>th</sup> May, 2024.

It gradually recurved northeastwards and weakened into a deep depression during the night (2030 hours IST) of 27<sup>th</sup> May over central Bangladesh, into a D over northeast Bangladesh in the early morning (0530 hours IST) and into a well-marked low pressure area over south Assam and neighbourhood in the evening (1730 hours IST) of 28<sup>th</sup> May, 2024.



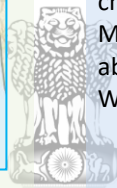
The observed track of the system is given below:



Observed track of the Severe Cyclonic Storm "REMAL" over Bay of Bengal

### Adverse Weather associated with the cyclone:

The cyclone "REMAL" caused, torrential rains (heavy to extremely heavy rainfall) and gale-force winds over coastal districts of Bangladesh and West Bengal on 26th and 27th May. While moving northeastwards, outer rain bands reached the northeastern states and caused squally wind and heavy to extremely heavy rainfall activity over Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura on 27th and 28th May. Some of the states like Assam, Meghalaya, Mizoram and Tripura reported extremely heavy rainfall leading to floods and landslides, especially over Mizoram, Tripura and South Assam and also in Bangladesh. Extremely heavy rainfall of 66 cm was reported at Mawsynram & Cherrapunji in 24 hours ending at 0830 hrs IST of 30th May & 59 cm was reported at Sohra (Meghalaya) in 24 hours ending at 0830 hrs IST 28th May and 30 cm over West Bengal in 24 hours ending at 0830 IST of 27th May. Maximum storm surge of 3.8 meters over Bangladesh and about one metre over south and north 24 Pargana districts of West Bengal was reported at the time of landfall.



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