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148TH FOUNDATION DAY OF INDIA METEOROLOGICAL DEPARTMENT (IMD)

India Meteorological Department (IMD) celebrated its 148th Foundation day on 15th January, 2023 at Vrishti Sabhagaar of IMD. Dr. Jitendra Singh, Hon'ble Minister of State (IC), Ministry of Earth Sciences graced the occasion as the Chief Guest. Shri Pushkar Singh Dhami, Hon'ble Chief Minister, Uttarakhand, Shri Sukhvinder Singh Sukhu, Hon'ble Chief Minister, Himachal Pradesh and Shri Manoj Sinha, Hon'ble Lieutenant Governor, Jammu & Kashmir participated remotely as Guests of Honour. Dr. M Ravichandran, Secretary MoES presided over the function. Dr. Mrutyunjay Mohapatra, DG, IMD delivered welcome address and presented the achievements of IMD during the year and the future plans. The celebrations were screened live (available at <https://www.youtube.com/watch?reload=9&v=S7AxTOcMSSs&feature=youtu.be>).

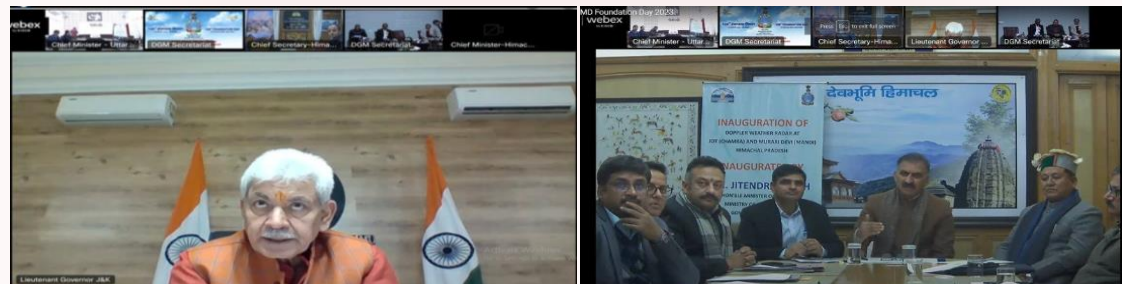


Dr. Jitendra Singh, Hon'ble Minister, Dr. M Ravichandran, Secretary MoES, Dr. Mrutyunjay Mohapatra, DG, IMD and Shri S. C. Bhan, Sc. 'G' during ceremonial lighting of lamp & Hon'ble Minister during his address

THE MAIN ACTIVITIES OF THE PROGRAMME

Honorable minister expressed his obligation towards the vision of Honorable Prime Minister, Shri Narendra Modi, that under his leadership India has made progress in the terms of Radar stations which will enhance the efficiency of IMD. Dr. Mrutyunjay Mohapatra, DG, IMD during his welcome address, highlighted IMD's vision, "No weather Hazard should go undetected and unpredicted". Honorable minister also presented the certificates of Merit, Best employee awards, to IMD employees and Best office award and distributed awards and prizes to the winning school students of various competitions.

Inauguration of observational instruments including radars and Agro-AWS (a) Four (4) Doppler Weather Radars at Banihal in Kashmir, Murari Devi & Jot in Himachal Pradesh and Surkanda Devi in Uttarakhand and (b) Two Hundred (200) no's. Agrometeorological Automatic Weather Stations (Agro-AWS) were dedicated to the nation.



Shri Manoj Sinha, Hon'ble Lt. Governor of J&K & Shri Sukhvinder Singh Sukhu, Hon'ble Chief Minister of H. P. during 148th IMD Foundation Day.

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Significant Events

India Meteorological Department celebrated the 74th Republic Day ceremony on 26th January, 2023. On this occasion Dr. Mrutyunjay Mohapatra, DG, IMD unfurled the National Flag. On this occasion DGM IMD addressed all the colleagues countrywide through VC.



Dr. Mrutyunjay Mohapatra, DG, IMD unfurled the National Flag on Republic Day ceremony on 26th January, 2023

India Meteorological Department signed memorandum of understanding with IIT Patna to enhance collaborative research between IMD and IIT Patna. Dr. Mrutyunjay Mohapatra, DG, IMD signed the MOU with Director IIT Patna on 28th January, 2023. During last year, IMD has signed about 40 such MoUs with various research institutes and universities for improving collaborative research in the field of meteorology.



IMD signed memorandum of understanding with IIT Patna

India Meteorological Department (IMD) signed Memorandum of Understanding (MoU) with Telangana State Load Dispatch Centre (TSSLC) to ensure streamlined and strategic management of power through customized weather forecast on 1st February, 2023.

IMD signed MoU with Chitkara University, Chandigarh with an objective to promote research activities between the two institutions on 4th February, 2023. Dr. Mrutyunjay Mohapatra, DGM IMD graced the occasion as the Chief Guest at the Annual Excellence Awards organized by Chitkara University, Chandigarh.



IMD signed MoU with Chitkara University

India Meteorological Department (IMD) & NIGERIAN METEOROLOGICAL AGENCY (NiMet), Nigeria signed a Memorandum of Understanding (MoU) on 2nd March, 2023 in the WMO Headquarters at Geneva for collaboration between the two agencies for the mutual benefit of cooperation in the conduct of Scientific & Technical Research and the development of practical skills that benefit the International Community. The IMD & NiMet will work together to provide WMO standard services in the field of Numerical Weather Prediction Capability, Meteorological Sensor Designing, Satellite Meteorology, Scientific research on meteorology and its applications in various sectors, Nowcasting, Early warning capabilities and Capacity building activities.



Senator Hadi Sirika, Hon'ble Minister of Aviation, Federal Republic of Nigeria; Dr. Mrutyunjay Mohapatra, Permanent Representative (PR) of India with WMO: Professor Mansur Bako Matazu, PR of Nigeria with WMO & Ms. Barkha Tamrakar, First Secretary, Permanent Mission of India, Geneva

A letter of Agreement is signed between IIT Bombay, Mumbai and India Meteorological Department (CR&S Pune) for joint studies and Projects related to climate.

India Meteorological Department (IMD) celebrated **International Women's Day on 9th March, 2023** at IMD H.Q. and sub-offices of IMD. At headquarters, various competitions were organized to encourage women employees in the organization and awards were distributed to the winners. In addition, special lectures were also organized on physical & mental fitness issues.

WORLD METEOROLOGICAL DAY 2023

IMD and Indian Meteorological Society (IMS) jointly celebrated **World Meteorological Day on 23rd March, 2023** addressing the theme **"The future of weather, climate and water across generations"**. On this occasion, Dr. Anshu Sharma, Co-Founder of Sustainable Environment and Ecological Development Society (SEEDS) delivered the keynote talk and Dr. Mrutyunjay Mohapatra, DGM IMD delivered the thematic talk. Following publications were released during the function:

Special Issue of MAUSAM (Vol. 74, No. 2, 2023) containing the proceedings of 7th WMO International Workshop on Monsoon (IWM-7).

IMD Met Monograph: Northeast Monsoon of South Asia
IMD Annual Report 2022

The event was telecast live on Youtube and is available at following link:

https://youtube.com/live/ce1GYIbw_6U?feature=share

IMD signed Letter of Agreement with Green Alerts Web Portal to provide weather forecast and farm based weather advisories to farmers at block level on 29th March. It would help the farmers prepare and execute strategies to save crops from adverse weather situations.

HUMAN RESOURCE DEVELOPMENT ACTIVITIES

MEETINGS / VIDEO CONFERENCES

Shri Vivek Sinha, Head MC Patna, **Shri Anand Shankar**, Sc. 'C' participated in the meeting of technical committee to finalize PFP for installation of 52 AWS in the State of Bihar by Department of planning & Statistics on dated 3rd January, 2023.

Dr. H.R. Biswas, Sc. 'F' attended the meeting on status of Doppler Weather Radar (DWR) stations at Balasore & Sambalpur under the chairmanship of Additional State Relief Commissioner at Conference hall of State Relief Commissioner office, held on 6th January, 2023.

Dr. S. Dwivedi Sc. 'C' & **S. Patra**, SA, M.C. Bhubaneswar attended online Webex meeting in view of "Technical Demonstration on use of CSC Kiosk for dissemination of Advisory and Weather Forecast" organized by Agromet Service Cell, New Delhi on 9th January, 2023.

Dr. (Smt.) Manorama Mohanty, Sc. 'E' virtually attended Post monsoon Inter State meeting on Flood Management & Preparedness for Monsoon 2022 for Lower Narmada, Tapi and Damanganga Basins through VC on 10th January, 2023 organized by CWC Gandhinagar.

Shri Vivek Sinha, Sc. 'G' along with **Shri Anand Shankar**, Sc. 'C' and **Shri. Ashish Kumar**, Sc. 'C' has participated in the virtual meeting with Bihar Status Pollution Control Board regarding Air Quality early warning system on 10th January, 2023.

Dr. G. N. Raha, Sc. 'E' attended a presentation on the scope of "Climatological Normals of RSRW 1991-2020" on 10th January, 2023 arranged by CRS Pune. The meeting had been chaired by the DGM, Mausam Bhawan, New Delhi.

A meeting has been conducted with **Mr. Subha Dutta**, marketing engineer, Cellcom solution Ltd. On 13th January, 2023 in presence of Head RMC Guwahati **Sh. K. N. Mohan**, Sc. 'G', **Dr. S. O' Shaw**, Sc. 'F' regarding problem facing by all the AWS/ARG station under NE Region.

Dr. Kripan Ghosh, Sc. 'F', **Dr. Ashutosh Kumar Misra**, Sc. 'D' and **Dr. Asha Latwal**, Sc. 'C' attended online meeting to plan activities for celebration of 150 years of IMD addressed and chaired by **Dr. M. Mohapatra**, DG, IMD, New Delhi on 23rd January, 2023.

Dr. S. Bandyopadhyay, Sc. 'G' participated in the 161 Quarterly Meeting of HQ Official Language Implementation Committee through Virtual Mode on 25th January, 2023.

Dr. H. R. Biswas, Sc. 'F' attended the 59th meeting of the SLCCCI (State Level Co-ordination Committee on Crop Insurance) on 25th January, 2023 in Conference Hall of Lok Seva Bhawan, Bhubaneswar under the Chairmanship of the Development Commissioner-cum ACS, Odisha.

A meeting with **AAI, Patna and IIT, Patna** has been conducted in the presence of DGM, IMD on 28th January, 2023.

Dr. Mrutyunjay Mohapatra, DG, IMD participated in the WCSSP Executive Council Meeting through webex on 2nd, 9th Feb, 2023.

Shri H. S. Sawhney, Sc. 'E' attended a meeting on 3rd February, 2023 organised by Central Electricity Authority under the Chairmanship of Chairperson, CEA to deliberate the requirement of weather data to arrive at possible solutions for improving RE forecasting for better scheduling.

Dr. Mrutyunjay Mohapatra, DG, IMD had a meeting with Prof. Amit Tandon, USA on 8th February, 2023 about EKAMSAT project over Arabian Sea and role of IMD.

Dr. Mrutyunjay Mohapatra, DG, IMD had a meeting with winning team of Smart India Hackathon - Non - Residential built up deduction on 8th February.

Dr. O. P. Sreejith, Sc. 'E' attended WMO online meeting "Authors' Meeting: State of the Climate in Asia 2022 on 9th February, 2023.

Dr. Ashok Kumar Das, Sc. 'E' attended the 1st meeting of PRSG of "Autonomous Bathymetric Survey Vessel for Advanced Glacier Lake Profiling by CDAC-Thiruvananthapuram" on 10th Feb, 2023 at Sikkim State Council of Science and Technology (SSCST), Gangtok.

Dr. Sankar Nath, Sc. 'F' attended the 2nd Meeting of RA II Expert Team virtually on 15th February, 2023.

Dr. Mrutyunjay Mohapatra, DG, IMD participated in the EU-India brokerage event on "Essential Ocean Variables (EOVs) at MoES on 18th February, 2023.

Dr. Kripan Ghosh, Sc. 'F', attended an online meeting of WMO on 21st February, 2023 to discuss "Work plan for RA II Operating Plan 2021-2024, RA II Implementing Plan 2021-2023 and preparation of the upcoming RA II RECO".

A meeting was held with the representative of office of Principal Scientific Advisor, Government of India on 22 Feb, 2023 regarding the "Manthan"-Digital Platform for Research and Innovation.

Dr. Mrutyunjay Mohapatra, DG, IMD participated in the briefing meeting for Regional Association II, Regional Conference (RECO) through VC on 23rd February.

Dr. Sankar Nath, Sc. 'F' attended the 42th meeting of the Financial Advisory Committee (FINAC-42) virtually on 23rd February, 2023.

Dr. Mrutyunjay Mohapatra, DG, IMD and team of scientists from IMD participated in the meeting with senior delegates from Nuclear Power Corporation of India Ltd. (NPCIL) in virtual mode to discuss about sharing of customized weather forecast with NPCIL for effective management of various power plants during severe weather conditions on 23rd February, 2023.

Dr. Kripan Ghosh, Sc. 'F' attended online meeting on "FDP Storm and Heat Wave Preparedness-2023" chaired by **Dr. M. Mohapatra**, DG, IMD, New Delhi on 24th February, 2023.

Dr. H. R. Biswas, Sc. 'F', **Shri Umashankar Das**, Sc. 'C' & **Dr. S. Dwivedi**, Sc. 'C', M.C. Bhubaneswar, attended the Webex meeting on FDP Storm and Heat Wave Preparedness Meeting 2023 on 24th February, 2023.

Dr. G. N. Raha, Sc. 'E' and other officials of M. C. Gangtok has attended Cisco Webex meeting to discuss preparedness of various participating organizations for the ensuing FDP STORM & Heat Wave Seasons on 24th February, 2023.

Dr. G. N. Raha, Sc. 'E' attended Post budget interaction meet headed by **Smt. Nirmala Sitharaman, Hon'ble Union Minister of Finance & Corporate Affairs** at Chintan Bhawan, Gangtok, Sikkim on 27th February, 2023.

Dr Kuldeep Srivastava Sc. 'F' participated in 9th Meeting of Geospatial Information Sectional Committee of BIS on 1st March, 2023 in Hybrid Mode.

Shri. Asok Raja S K, Sc. 'C' and **Ms. Hemlata Bharwani**, Sc. 'C' attended International virtual meeting with WMO Hydrology Team on 1st March, 2023 to discuss the training activities, support other regions through capacity building, enhance FFGS Moodle platform and prepare new simulator cases.

Dr. Mrutyunjay Mohapatra, DG, IMD led Indian to Geneva to attend the 76th Session of WMO's Executive Council during 26th February to 3rd March, 2023.

Dr. Ashok Kumar Das, Sc. 'E' attended the CWC's First meeting of the Project steering Committee for Assessment of Water Resources Potential of India at Sewa Bhawan, CWC on 6th March, 2023.

Shri S. C. Bhan, Sc. 'G' and **Dr. Ashok Kumar Das**, Sc. 'E' attended the Project Review Committee (PMC) meeting at Seminar Room, 6th Floor and IMD on 7th March, 2023 under the Chairmanship Secretary, MoES.

Shri Radheshyam Sharma, Sc. 'C' participated in the Third Disaster Risk Reduction NDRR meeting organized by NDMA on 10-11 March, 2023 at New Delhi from MC Jaipur.

Shri Anand Shankar, Sc. 'C' and **Shri Ashish Kumar**, Sc. 'C' attended the meeting with Chief Secretary and Disaster Secretary on 14th March, 2023 for the preparation of Heat wave in coming season.

Dr. (Smt) Manorama Mohanty, Sc. 'E' had attended the meeting with Chief Secretary regarding Heat Wave Forecast for summer on 14th March, 2023 and meeting with Collector of all the districts of Gujarat chaired by Commissioner of Relief on 16th March, 2023.

Dr. G. N. Raha, Sc. 'E' has attended Online Quarterly review meeting for AWS & ARG Maintenance with RMC Mumbai/RMC Kolkata/RMC Chennai Region on 14th March, 2023.

Dr. Ashok Kumar Das, Sc. 'E' attended the 5th project monitoring committee meeting of early warning system for flood prediction in the river basins of India under national super-computing mission C-DAC Innovation Park, Pune held on 15th March, 2023.

Shri S. C. Bhan, Sc. 'G' and **Shri H. S. Sawhney**, Sc. 'E' attended the first preliminary meeting for creating an Integrated Digital Platform for One Health on 16th March, 2023 under the chairmanship of **Shri Lav Agrawal, Additional Secretary (Health)**, Ministry of Health and Family Welfare.

Dr. G. N. Raha, Sc. 'E' has attended a meeting on Weather based Crop Insurance scheme for Large Cardamom on 17th March, 2023 at Krishi Bhavan Conference hall organized by Spices Board, Gangtok.

Dr. Ashok Kumar Das, Sc. 'E' and **Shri. Asok Raja S. K.**, Sc. 'C' attended 9th quarterly inter-ministerial virtual meeting regarding the Brahmaputra Real-Time Monitoring System (BRTMS) on 17th March, 2023.

Dr. M. Mohapatra, DG, IMD participated in a review meeting under the chairmanship of Principal Secretary to PM on Review of weather conditions and crop situation on 24th March.

Shri. Asok Raja S. K., Sc. 'C' and **Ms. Hemlata Bharwani**, Sc. 'C' attended in the International virtual meeting with WMO & USAID Training Team on 24 & 30 March, 2023 to discuss and draft the new Training Stream of Operational forecasters and allied WMO training activities to support other regions for sustainability of the Global flash Flood Guidance Project.



Meeting with WMO Hydrology Team

Dr. M. Mohapatra, DG, IMD participated in the first working group meeting of G-20 on Disaster Risk Reduction held on 30th March at Gandhi Nagar.

Shri K. Santhosh, Sc. 'F', had a meeting with Additional Chief Secretary, Revenue & Disaster Management Department, Government of Kerala on 29th March, 2023 in connection with issuing Possession Certificate of land belonging to IMD at Kozhikode.

Dr. Ashok Kumar Das, Sc. 'E' attended a virtual meeting on 30th March, 2023 with Ranjit Sagar Dam authority & NWP Division regarding the requirement of weather forecast data in reference to flood forecasting.

WORKSHOP

Dr. Iyyappan M., Sc. 'D' participated in workshop-cum-stakeholders meeting on **12-14 January, 2023** organized by **Centre for Development of Advanced Computing (C-DAC) Pune** to understand users specific requirements for further improvement of Decision Support System (DSS).

Dr. Mrutyunjay Mohapatra, DG, IMD made an opening address at the "Stakeholders engagement workshop" conducted by IMD and IITM for sub-seasonal forecast on 30th January, 2023. **Dr. Kripan Ghosh**, Sc. 'F', attended the Workshop.

Shri Raja Acharya, Met. 'A' participated in the "WMO OSCAR/Space User Workshop" organized by the WMO during 7-8 Feb, 2023.

Dr. Mrutyunjay Mohapatra, DG, IMD delivered Inaugural Address at the Stakeholder workshop under B-EPICC Project at Magnolia Hall, India Habitat Centre, New Delhi on 9th February organised by TERI, India.

Dr. Sanjib Bandyopadhyay, Sc. 'G' attended workshop and delivered a presentation/lecture on "Weather & climate service provided by India Meteorological Department and its impact on Power System operation". Organized by ERPC at Biswa Bangla Convention Centre, New Town, Kolkata on 15th February, 2023.

Dr. Mrutyunjay Mohapatra, DG, IMD participated as the Chief Guest and delivered Keynote address in the 3rd International Workshop on "Biodiversity and Climate Change - sustainable Development Perspective" organised by IIT, Kharagpur on 16th February, 2023.

Shri Umasankar Das, Sc. 'C', MC Bhubaneswar, attended a Workshop on climate change organized by a Voluntary Integration for Education and Welfare of society (VIEWS), a non-Govt. organization on 16th February, 2023.

Dr. Anwesa Bhattacharya, Sc. 'C', attended The 3rd International workshop on Biodiversity and Climate Change, organized by CORAL, IIT Kharagpur, venue at IIT KGP during 16-19 February, 2023.

Dr. Rajib Chattopadhyay, Sc. 'E' participated in one day stakeholder workshop organized by IIT Bombay on 17th February, 2023. The purpose of the workshop was to discuss the growing needs and requirements in the climate services sector.

Shri Avnish Varshney, Sc. 'D' and **Shri Sunny Chug**, Sc. 'C' have attended WMO workshop session in virtual mode on WRC-23 agenda during 21- 23 February, 2023.

Dr. Mrutyunjay Mohapatra, DG, IMD delivered an invited talk through VC on "Impact Based Forecasting for Cyclones" during Technical Session 2 of the Pre-Event of 3rd Session of National Platform for Disaster Risk Reduction (NPDRR) – 2023, National Workshop on Disaster Risk Reduction and Resilience in Coastal Regions on 23rd February.

Shri Uday K. Shende, Sc. 'E' has delivered a lecture on the subject as observational network of IMD in "Journey of Meteorological Instrumentation Systems (JEMIS) workshop-2023" at SAMEER, Mumbai on 24th February, 2023.

Ms. Suman Gurjar, Sc. 'D' & **Shri Avnish Varshney**, Sc-D (ISSD) participated in 4th WCSSP India Annual Science Workshop during 27th February to 3rd March, 2023 at Delhi and Noida.

A workshop on "Weather forecast and early warnings system in Rajasthan" was organized by Meteorological Centre Jaipur on 25th March, 2023. **Shri Govindram Meghwal**, Hon'ble minister Disaster management & relief, Govt. of Rajasthan addressed as the Chief Guest.



Workshop organized by Meteorological Centre, Jaipur

Shri Sunit Das, Sc. 'F' and **Dr. Himadri Baishya**, Sc. 'C' are participated in the workshop on Hydro-climatological research on Monsoon, hosted by Centre for clouds and climate change research, Cotton University Guwahati on 21st March, 2023.

Dr. Sankar Nath, Sc. 'F' and **Dr. Iyyappan M.** Sc. 'D' (ISSD) have participated in National Workshop on Web based Dynamic Composite Risk Atlas and Decision Support System (Web-DCRA& DSS) on 27th March, 2023.

Dr. Kripan Ghosh, Sc. 'F' attended a brainstorming workshop on "Urban Groundwater Recharge and Management" organized by National Hydrology Project, Groundwater Surveys and Development Agency, Water Supply & Sanitation Department, Bhujal Bhavan, Government of Maharashtra at Bhujal Bhavan, Shivajinagar, Pune on 27th March, 2023.

Dr. Kripan Ghosh, Sc. 'F', delivered a Key note address on "Agricultural Services during monsoon 2022" during Annual Monsoon Workshop (AMW-2022) held at IITM, Pune organized by Indian Meteorological Society, Pune Chapter (IMSP) in association with IITM and IMD, Pune on 28th March, 2023.

Dr. Rajib Chattopadhyay, Sc. 'E', presented the hydrological aspects of 2022 Monsoon on 28th March, 2023 in the Annual Monsoon workshop, Pune.

During the **Annual Monsoon Workshop and National Symposium** on "Challenges in climate services for health sector in the warming environment" held at IITM, Pune organized by Indian Meteorological Society, Pune Chapter (IMSP) during 29-30 March, 2023, **Dr. Ashutosh Kumar Misra**, Sc. 'D' received First Prize in Oral Presentation during Session III (Extreme weather and Crop Health) for presenting the paper "Impact Based Forecast (IBF) for Agriculture for minimizing the production losses in Agriculture" authored by A. K. Misra, M. R. Deo, J. P. Sable, Ravindra G. Patil, Asha Latwal and Kripan Ghosh and **Dr. Asha Latwal**, Sc. 'C' received Second Prize for Oral Presentation during Session III (Extreme weather and Crop Health) for presenting the paper "Impact of high temperatures on wheat growth and yield over north-west India" authored by Asha Latwal, Bhairavi Kurtkoti, Jacob Thampan, A. K. Misra and Kripan Ghosh.

TRAINING

Shri Kanwar Ajay Singh Met. 'A', **Ms. Divya S.A.** and **Ms. Komal Srivastava S.A.** had provided Online e-Office training on e-File to all RMCs/MCs/CRS Pune/Offices of IMD during 9- 17 January, 2023.

Shri Sunny Chug, Sc. 'C' attended 5 days training deep-dive training under Cyber Surakshit Bharat initiative of MeitY as Deputy Chief Information Security Officers (CISO) during 16th - 20th January, 2023 at Haryana Institute of Public Administration, Gurugram.

Training on installation & maintenance of AWS/AWOS PWD-22 (for RBR) instruments & others, held at RMC Guwahati w.e.f 23-24 January, 2023 with participation on 12 no's of Met. Officials from different field station's under RMC Guwahati.

Dr. G. K. Das, Sc. 'E' attended the training programme for Early Warning System for Village Disaster Response Force (VDRF) members in Gosaba Block during 29-31 January, 2023.

Shri Avnish Varshney, Sc. 'D' and **Ms. Suman Gurjar**, Sc-D attended CDAC training on Artificial Intelligence for Government official in batch-10 in virtual mode during 01- 14 February, 2023.

One day on-line "**Refresher Training Course in Aviation Meteorology**" with special emphasis on Aviation Meteorological Observations & Reports and Aviation Forecast and Warning related issues was arranged by CAMD and inaugurated by DGM, IMD on 7th February, 2023 to all MWOs/AMOs/AMSSs including DGCA officials.

Dr. Kripan Ghosh, Sc. 'F' delivered an invited lecture on "Management of Agricultural Risks using Climate Information" during training programme on "**Climate smart viticultural technologies for sustainable quality grape production**" conducted by ICAR - National Centre for Grapes (NRCG) Pune from 8-10 February, 2023.

Dr. G. N. Raha, Sc. 'E' has attended one day Farmers' Awareness Programme on 13th March, 2023 at Chopra-KVK, Uttar Dinajpur under "**Gramin Krishi Mousam Sewa**" organised by AMFU-Pundibari.

METNET Team have imparted training to trainees Advance Training in Meteorological Instrumentation and Information System, Batch No.11 from 13- 15 March, 2023.

A Joint IMD-WMO group fellowship Training on "Numerical Weather Prediction" "Hands on Practical aspects of NWP" commenced from 27th March and will continue till 7th April, 2023 at Meteorological Training Institute

LECTURES/ TALK/ WEBINAR

Dr. Partha roy Sc. 'C' invited to deliver lecture on "Early warning importance and Meteorological Service of MC Agartala at Central Training Institute on 3rd January, 2023.

Dr. S. Bandyopadhyay, Sc. 'G', delivered a lecture on cyclone and disaster management in a workshop at Vivekananda University, Belurmath on 6th January, 2023.

Shri Raja Acharya Met. 'A' participated in the webinar "Looking ahead: New technology for the Ocean Decade" organized by the Global Ocean Observing System (GOOS), Marine Technology Society (MTS), and the National Oceanic and Atmospheric Administration (NOAA), on 11th January, 2023.

Dr. S. Bandyopadhyay, Sc. 'G' delivered a lecture in a Training Program on 'Early Warning System' in Gosaba Block of Sunderbans, West Bengal on 30th January, 2023.

Mrs. Monica Sharma, Sc. 'D', CWD delivered a lecture on "Cyclogenesis and Cyclone Forecasting Systems" during the 18th training course on "Space Enabled Geo Information for Disaster Management" conducted by NRSC-ISRO on 1st February and participated in the meeting of Expert Team on Operational Weather Forecasting System (ET-OWFS), World Meteorological Organization during 31st January to 2nd February. She presented on the subject "Support to Severe Weather Forecasting Programme (SWFP)" on 1st February as Vice Chair of Advisory Group on Severe Weather Forecasting (AG-SWF) and a talk on "Improved TC Science for better Decision making" during the 4th WCSSP India Annual Science Workshop on 28th February, 2023.

IMD and Indian Meteorological Society (IMS) hosted the talk on Two types of critical transitions to monsoon: Universal definition of local monsoon onset by Prof. Elena Surovyatkina at DGM's Conference Room, IMD New Delhi on 7th February, 2023.

Shri Radheshyam Sharma, Sc. 'C' delivered an invited lecture on "**Weather Observational Network and Early Warning System in Rajasthan**" in a workshop "**Industry-Academia Connect in Atmospheric Science**" at Central University of Rajasthan, Kishangarh during 10-11 February, 2023.

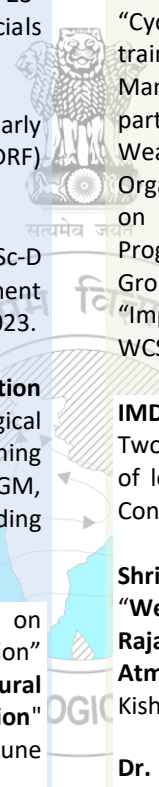
Dr. Mrutyunjay Mohapatra, DG, IMD participated in the 15th Foundation Day of IIT Bhubaneswar as Chief Guest on 12th February, 2023 and delivered the Foundation Day lecture on Role of science and technology in combating climate change.

Shri Vivek Sinha, Head M.C. Patna along with **Shri. Ashish Kumar**, Sc. 'C' & **Shri Anand Shankar**, Sc. 'C', visited Bihar Animal and Science University and delivered the lecture on 15th February, 2023.

Dr. A. K. Mitra, Sc. 'F' delivered Guest Lecture at Air Force Academy, Dundigal, Hyderabad on 17th February, 2023 on the topic "**Utilization of Satellite Products in Weather Forecasting**".

Dr. S.O' Shaw Sc. 'F' attended pre event of 3rd session of National Platform for Disaster Risk reduction (NPDRR) 2023 and delivered a lecture at Administrative Staff College Khanapara Guwahati on 18th February, 2023.

Dr. Anwesa Bhattacharya, Sc. 'C' delivered a lecture on "Recent Climate Change" at Krishnachandrapur High School, Mathurapur on 27th February, 2023.



Dr. K. Sathi Devi, Sc. 'F' participated in National Meet on "Disaster Management- Trends and Technologies" during 27-28 February, 2023 at Hyderabad International Convention Center, Hyderabad and delivered a talk on "Cyclogenesis and Cyclone Forecasting".

Dr. H. R. Biswas, Sc. 'F', attended National Science Day Program to deliver a talk, related to the theme "Global Science for Global well -being" at Sri University Cuttack on 28th February, 2023.

Dr. S. Bandyopadhyay, Sc. 'G' delivered a lecture on Hazards and Disaster Management to the Participants in the Department of Geology, University of Calcutta on 1st March, 2023.

Dr. S.O' Shaw, Sc. 'F' delivered invited lecture at NESAC (north east space Application centre) on 14th March, 2023.

Ms. Suman Gurjar Sc. 'D', **Shri Parmod Kumar**, Sc. 'C' and **Shri Sunny Chug**, Sc. 'C' delivered lectures for Short Term Refresher Course on Topic - CYBER SECURITY during 20-24 March, 2023.

Dr. S. Bandyopadhyay, Sc. 'G' delivered a lecture during celebration of WMO day by School of Agriculture and Allied Sciences, Neotia University on 22nd March, 2023.

Dr. Kripan Ghosh, Sc. 'F' delivered an invited lecture on "Management of Agricultural Risks using Climate Information" as a Distinguished Speaker on the occasion of WMO Day at University of Agricultural Sciences (UAS), Dharwad, Karnataka on 23rd March, 2023.

Dr. (Smt) Manorama Mohanty, Sc. 'E' had attended the lecture at Space Applications Centre (SAC) organized by IMSA on 24th March, 2023 in view of World Meteorological Day, 2023 celebration.

Mr. Radheshyam Sharma, Sc. 'C' and **Mr. Himanshu Sharma**, Sc. 'C' delivered a lecture in a workshop on "Climate change and human health" on 29th March, 2023 at Health Department, Rajasthan govt.

CONFERENCE/PRESENTATIONS

Dr. Mrutyunjay Mohapatra, DG, IMD participated as Chief Guest in the inaugural function of the National Conference on "Land-Atmosphere Interactions Controlling Weather & Climate: Applications of Numerical Models and Observations" organized by Department of Earth and Atmospheric Sciences, NIT Rourkela on 9th January, 2023.

Dr. S. D. Attri, Sc. 'G' participated in the 14th High Level Monitoring Committee Meeting with National Innovations in Climate Resilient Agriculture chaired by the Secretary DARE and DG, ICAR on 13th January, 2023.

Dr. M. Mohapatra, DG, IMD participated as Guest of Honour during the first networking event of C-20 on "Towards Sustainability & Resilience – Dialogues on Climate,

Environment & Net Zero Targets" on 30th January organised by Amrita Vishwa Vidyapeetham, Kerala.

Dr. Ashok Kumar Das, Sc. 'E' and **Shri Asok Raja S. K.**, Sc. 'C' delivered presentations in the Brain-storming Session on Urban Flood Management at IISc Bangalore on 3 February, 2023.

Shri K. C. Sai Krishnan, Sc. 'G', **Dr. Kuldeep Srivastava**, Sc. 'F', **Dr. Sankar Nath**, Sc. 'F', **Dr. Iyyappan M**, Sc. 'D' & **Shri Sunny Chug** Sc. 'C' attended a presentation on Cloud Server which was given by Hewlett Packard Enterprises (HPE) on 7th February, 2023.

A VC meeting convened by CAMD on 08th February, 2023 regarding raising the Airport-wise GST invoices at MWOs/AMOs/AMSS towards the Aviation Meteorological services rendered at all AAI Airports.

Dr. Mrutyunjay Mohapatra, DG, IMD participated as Chief Guest in the one day international Conference on "Global Food Security" on 11th February, 2023 organised by GB Pant University of Agriculture and Technology, Pant Nagar, Uttarakhand.

Dr. Kuldeep Srivastava, Sc. 'F', **Dr. Iyyappan M**, Sc. 'D', **Shri Avnish Varshney**, Sc. 'D', **Ms. Suman Gurjar**, Sc. 'D' and **Shri S. K. Manik**, Sc. 'C' attended conference on "Geospatial Policy for National Development" at Dr. Ambedkar International Center, Janpath, New Delhi on 21-22 February, 2023 to deliberate on the strategies for the implementation of the National Geo-spatial Policy-2022.

Dr. Mrutyunjay Mohapatra, DG, IMD DGM participated as Guest of Honour in the National Seminar on Recent Trends in Physical Science at Department of Physics, Bhadrak Autonomous College, Bhadrak, Odisha and addressed the students and other invitees on weather and climate services on 24th, February.

Shri Radheshya Sharma, Sc. 'C' presented a paper on "A methodology for district wise heavy rainfall impact score for Rajasthan" in WCSSP workshop at NCMRWF, Noida during 28 Feb-04 March, 2023.

Sri Sukumar Roy, Met. 'A', gave demonstration of the met. instruments to the visitors of 30th West Bengal State Science & Technology Congress held on 28th February & 1st March, 2023 at Science City Kolkata.

Shri Anand Shankar, Sc. 'C', presented a research work on the title Assessment of Flood Risk and Enhanced Resilience for Frequent Floods Impacted by High River Discharges in the Upper Catchments and Associated Heavy Rainfall in North Bihar, India at the 4th WCSSP (Weather and Climate Science for Service Partnership India) organized at New Delhi /Noida on dated 1st March, 2023.

Dr. Ananya Karmakar, Sc. 'C', presented an oral presentation on 1st March, 2023 in scientific presentation of Women's day week celebration entitled "Indian summer monsoon rainfall 2022

patterns; special emphasis on AGRO-CLIMATIC zones of Northern India".

Shri S. K. Manik, Sc. 'C', attended the 9th meeting of Geospatial Information Sectional Committee virtually on 1st March, 2023.

Dr. M. Mohapatra, DG, IMD participated in the 3rd Session of National Platform of Disaster Risk Reduction (NPDRR) and made a presentation on lightning management in India on 11th March, 2023 at Vigyan Bhawan, New Delhi.



Dr. M. Mohapatra, DG, IMD in the 3rd Session of NPDRR at Vigyan Bhawan, New Delhi

Dr. M. Mohapatra, DG, IMD led the delegation from India to Abu Dhabi to attend Regional Conference (RECO) of Asian countries on the theme "Early Warning for all initiative of United Nations Organisation (UNO) and World Meteorological Organisation (WMO)". During 13-16 March, 2023. Dr. Mohapatra held discussion with Prof Petteri Taalas, Secretary General of WMO regarding capacity building in the region for further improvement of weather and climate services, especially for improvement of impact based forecast and early warnings. While participating as a panellist and chairing another panel discussion, he highlighted the important challenges and gap areas in the region, short term or immediate actions required for implementation of the initiative early warning for all. He also presented the guidelines to leverage the global initiatives for local actions to implement the early warning for all enabling early action for disaster risk reduction.



Dr. M. Mohapatra, DG, IMD in Abu Dhabi at Regional Conference (RECO) of Asian countries

Dr. M. Mohapatra, DG, IMD made an online presentation on Cyclone Warning System in India in the working group meeting of NPDRR held in Bhubaneswar on 13th March, 2023.

Dr. K. Sathi Devi, Sc. 'F' attended WMO Regional Conference (REC) in Regional Association-II (RA-II) held in Abu Dhabi from 13-16 March, 2023.

Dr. Ananya Karmakar, Sc. 'C' presented an oral presentation in the National Symposium of IMSP 2023 entitled "Indian Extreme Rainfall Events frequency and its effect in the health aspect during last Century" on 30th March, 2023.

FOREIGN DEPUTATION

Shri Asok Raja S. K., Sc. 'C' and **Ms. Hemlata Bharwani**, Sc. 'C' conducted SAOFFGS Step 5 training at Philippines during 16 & 17 February, 2023 for providing training on Flash Flood Services to South East Asia Oceania participants from Brunei Darussalam, Indonesia, Timor Leste, Philippines, Malaysia and Papua New Guinea on the invitation of WMO.



SAOFFGS Step 5 training at Philippines on 16 & 17 February, 2023

ACHIEVEMENTS / APPRECIATIONS / AWARDS RECEIVED

Dr. Sabuj Sahoo Memorial Lifetime Achievement Award was conferred upon **Dr. Mrutyunjay Mohapatra**, DG, IMD on 29th January, 2023 by the Society for Agricultural Research and Management (SARM) during the International Conference, Agri-Vision, 2023 on Agriculture and Rural Development organized by Centurion University and SARM at Centurion University, Bhubaneswar Campus, Odisha.



Dr. Sabuj Sahoo Memorial Lifetime Achievement Award, conferred to Dr. Mrutyunjay Mohapatra, DG, IMD

Utkal University Physics Alumni Association felicitated **Dr. Mrutyunjay Mohapatra**, DG, IMD on the occasion of Golden Jubilee celebration of the Physics Department of the university on 4th January, 2023.

IMD Foundation Day Awards for the year 2022-23

S. No.	Name of Award	Station / Persons
1.	Best RMC/MC	M.C. RanchI, RMC Kolkata
2.	Best AMO/MWO/AMS	AMS Bajpe, RMC Chennai
3.	Best M.O.	M.O. Barmer, RMC New Delhi
4.	Best DWR	DWR Patiala
5.	Raj Bhasha Shield	RMC Nagpur
6.	Best Employee Group 'A' (Scientific Staff)	Shri R. Balasubramanian, Sc-E, MC Bhopal, RMC Nagpur
7.	Best Employee Group 'B' (Gaze.) (Scientific)	Shri Surjay Lama, Met.-B, M.C. Gangtok, RMC Kolkata Dr. Rizwan Ahmed, Met.-B, NWFC, DGM Office, New Delhi
8.	Best Employee Group 'B' (Gaze.) (Non-Scientific)	Shri P.S. Sengupta, AO-II, Establishment-I Section DGM Office New Delhi
9.	Best Employee Group 'B' (Non-Gaze.) (Scientific)	Ms Anamika Sarma, S.A, RMC Guwahati Shri Pankaj Kumar, S.A RMC Chennai
10.	Best Employee Group 'B' (Non-Gaze.) (Non-Scientific)	Ms Poonam P Korpade, Assistant, RMC Mumbai
11.	Best Employee Group 'C' (Non-MTS)	Shri N. Thirumalai, Radio Mechanic RMC Chennai
12.	Best Employee Group 'C' (MTS)	Shri Arjun Singh, MTS, DGM Secretariat, New Delhi Shri Manjit, MTS, M.O Bhuntar, RMC New Delhi

WMO had issued an appreciation letter to **Shri Raja Acharya**, Met. 'A' in connection with his participation through virtual mode in the 10th International Workshop on Tropical Cyclones (IWTC-10) organised by the WMO during 5-9 December 2022 in hybrid mode on 13th February, 2023.

NEW PROJECTS/SCHEMES/PROGRAMMES/INFRASTRUCTURE DEVELOPMENT

A prototype of a novel rain gauge, an in-house developed snow gauge, and four pollutant detector semiconductor chips on a **wafer level developed and demonstrated to the Hon. Secretary MoES** on 13th March, 2023.

Dr. S. Bandyopadhyay, Sc. 'G' visited Science City, to take update of the new installation of ARG and to discuss with director, Science City regarding their upcoming climate gallery at Science City, Kolkata on 6th January, 2023.

Three (03) AWS is installed in Kerala, Manipur and Meghalaya State under 400 AWS Project.

GPS Based RS Instrument Installed by M/s SGS Weather & Environment Systems Pvt. Ltd. Under Observation of UAL Touring Party on 19th January, 2023.

Shri K. C. Sai Krishnan, Sc. 'G', visited Chennai for site evaluation for installation of Radar by Tamilnadu state Government during 19- 22 February, 2023.

Dr. S. Bandyopadhyay, Sc. 'G' toured to Kalyani for Radar site selection along with two other Group A officers on 14th March, 2023.

Ms. Lekshmi S, J.R.F, received the Best Paper for Dr. S.K. Ghosh Memorial Young Scientist Award - 2023 by the IMS, Kolkata Chapter. The award ceremony was held on 23rd March, 2023 at RMC, Kolkata.

RESEARCH & PUBLICATION

Rahul Kashyap, Radheshyam Sharma, Shyam Das Kotal "Distribution of variability of bc aerosol & its response to specific met occurrence for ranchI". Aerosol Science and Engineering, SPRINGER. <https://doi.org/10.1007/s41810-023-00174-9>.

K. Chandu, **A. Dharmaraju, S. . Kumar, G. . Satyanarayana**, and M. Dasari, "Determinants and Impact of Fog, Mist and Haze phenomena: The case of Rajiv Gandhi International Airport, Hyderabad", MAUSAM, vol. 74, no. 1, 19–28, Jan. 2023. DOI: <https://doi.org/10.54302/mausam.v74i1.1519>.

Siddhartha Singh, P. Saroj, C. Ghosh, and P. Sinha, "Calibration of Indian Dobson Spectrophotometer Nos. D112 and D036 during WMO Dobson Intercomparison Campaigns ", MAUSAM, vol. 74, no. 1, 73–82, Jan. 2023. DOI: <https://doi.org/10.54302/mausam.v74i1.5910>

Raghu Nandimpalli, S. Nekkali, K. Osuri, S. Sil, and A. Das, "Study of the impact of high resolution ROMS-SST on the simulation of two intense tropical cyclones over Bay of Bengal using ARW modeling system", MAUSAM, vol. 74, no. 1, 105–118, Jan. 2023. DOI: <https://doi.org/10.54302/mausam.v74i1.5766>

H. BISHT, S. LOO, T. SUNA, **L. VISHNOI**, S. GAUTAM and D. SINGH, "Drought assessment and trend analysis using SPI and SPEI during southwest monsoon season over Bundelkhand region of Uttar Pradesh, India", MAUSAM, vol. 74, no. 1, 119–128, Jan. 2023. DOI: <https://doi.org/10.54302/mausam.v74i1.3519>

R. Thapliyal and B. Singh, "Heavy rainfall forecasting for Dehradun capital city during monsoon season 2020", MAUSAM, vol. 74, no. 1, 141–150, Jan. 2023. DOI: <https://doi.org/10.54302/mausam.v74i1.4951>

S. Kant, S. Manik, and R. Ram, "Study of Southwest Monsoon Rainfall over Uttar Pradesh during last two decades (2001-2020)", MAUSAM, vol. 74, no. 1, 161–168, Jan. 2023. DOI: <https://doi.org/10.54302/mausam.v74i1.2254>

Asok Raja et. al, "Probable Maximum Precipitation analysis of High Rainfall Regions in India", International Journal on Groundwater for Sustainable Development. (<https://doi.org/10.1016/j.gsd.2022.100893>).

Publications released on the occasion of IMD Foundation Day 15th January, 2023

Mausam Manjusha

Mausam Quaterly Journal, Vol.74, Issue No.1

RSMC Report on **Cyclonic Disturbances over the North Indian Ocean during 2022**.

Report on **"Multi-Model Ensemble (MME) based district level rainfall forecast during the southwest monsoon 2022"**.

Report on **"Pre-Monsoon Thunderstorms During 2022"**.

Report on **"Climatological Normals of upper air weather parameters 1991-2020"**.

Report on **"Daily Climatological Normals based on 1991-2020"**.

Report on **"Instructions to Observers at the Surface Observatories"**.

The publication entitled **"Pentad Normals of Observatories in India 1991-2020"**.

A report titled **"Verification of River Sub-Basin-Wise Quantitative Precipitation Forecast during SW Monsoon 2022"** is published by Dr. A. K Das, Sc E and several authors of hydromet division with reference to Met Monograph number - MOES/ IMD/ H.S./ Basin Hydrology/ 01(2023)/15.

Outreach and Media Interaction

Impact based forecast (IBF) for Agriculture (Heavy Rainfall/Thunderstorm with Gusty winds/Cold Wave/Hailstorm) and Agromet advisories based on the IBF have been issued for different districts of various States and UTs across the country in co-ordination with NWFC, New Delhi, RMCs/MCs, AMFUs and DAMUs.

Dr. Kripan Ghosh, Sc. 'F' & Head Agrimet Division, **Dr. Ashutosh Kumar Misra**, Sc- D and **Dr. Asha Latwal**, Sc- C attended the Technical Demonstration on "Use of Common Service Centre (CSC) Kiosk for dissemination of Advisory and Weather Forecast" with officers from IMD New Delhi, IMD Pune, Nodal Officers & Technical Officers of AMFUs and SMS-Agromet of DAMUs organized by AASD, IMD, New Delhi on 9th January, 2023.

Shri J. P. Sabale, Met. 'A' participated in the program "Krushidarshan" on DD Sahyadri (Marathi Channel) on 20th January, 2023 and delivered talk on "Importance of accurate weather forecasting to improve agricultural practices". The program was broadcasted on 20th January, 2023 at 06:00 to 06:30 pm on DD Sahyadri.



Krushi Darshan programme by Shri J. P. Sabale, Met. 'A'

During the quarter, 327 Farmers awareness programmes (FAPs) were organized by AMFUs and DAMUs across the country.



FAP conducted by DAMU, Bulandshahr at Rahampur Wali Village, Lakhaothi Block, Bulandshahr District, Uttar Pradesh on 17th Feb, 2023



FAP conducted by AMFU Pune at Shelkewadi village, Tal- Haveli, Dist- Pune, Maharashtra on 29th March, 2023

Dr. G. N. Raha, Sc. 'E' has attended Virtual Press Conference on **"Winter Season 2023 Rainfall outlook and Monthly outlook for rainfall and temperature for February 2023"** on 30th January, 2023.

Dr. G. N. Raha, Sc. 'E' has attended Virtual Press Conference on **"Rainfall and Temperature forecast for February, 2023"** on 1st February, 2023.

Dr. Mrutyunjay Mohapatra, DG, IMD addressed live Press Conference on **"Rainfall and Temperature Outlook for the month of February, 2023"** on 1st February.

Dr. Mrutyunjay Mohapatra, DG, IMD participated in the 23rd Rashtra Katha Shivir at Pansla, Tehsil Upleta, district Rajkot, Gujarat and addressed students across the country on the **"Role of Science & Technology in combating weather hazards"** on 18th February, 2023.



Dr. Mrutyunjay Mohapatra, DG, IMD in the 23rd Rashtra Katha Shivir at Pansla

Dr. Mrutyunjay Mohapatra, DG, IMD participated in the Panel Discussion on El Nino and its impact on Indian Summer Monsoon organized by Moneycontrol.com on 24th February, 2023.



Long Range Forecast Issued in February 2023: IMD issued the Seasonal outlook for the Hot weather Season (March to May) 2023 and Monthly Outlook for March 2023 for Rainfall and Temperature through a press conference held in virtual mode on 28th February, 2023.

A press conference was organized on 16th March, 2023 (25 Phalguna 1944 Saka Era) by Positional Astronomy Centre Kolkata (IMD) to Publish Rashtriya Panchang for the Saka Era 1945.

Dr. Sanjib Bandyopadhyay, Sc. 'G', **Dr. Ganesh Kumar Das**, Sc. 'E' and **Shri Debapriya Roy**, Sc. 'C' were present there and released the Rashtriya Panchang for the Saka Era 1945. On that Occasion several media houses were also present there. Approximately 28 media persons attended the press conference. Media
Link: <https://epaper.telegraphindia.com/imageview/427784/20404869/71.html>



Press conference at PAC, Kolkata

Dr. S. Bandyopadhyay, Sc. 'G' delivered a talk in Bengali on All India Radio on the importance of weather forecasting in our day to day life on 21st March, 2023.

Dr. Mrutyunjay Mohapatra, DG, IMD joined discussion with Mr. Nitish Arora, All India Radio on the theme "Future of Weather, Climate and Water across Generations" on 23rd March, 2023, the WMO Day. The programme was broadcast by All India Radio.

A Door Darshan programme on coastal hazards and special interview by AIR FM Gold with **Dr M Mohapatra DG**, IMD was held on 23rd March, 2023 on the occasion of WMO Day.



A special documentary on weather forecast, observation & daily activities of the Meteorological Centre, Jaipur was broadcasted by DD Rajasthan on WMO Day 23rd March, 2023.

The officials of the division have actively participated and provided information to the students, farmers and common public during **National Science Day** (8th February, 2023) and **WMO day celebration** (23rd March, 2022) at CR&S Pune.

Dr. G. N. Raha, Sc. 'E' has attended the inauguration events and act as resource person of the Farmers' Awareness Programme of AMFU, Majhian on 24th March, 2023.

Mr. Charan Singh, Sc. 'F' inspected the Meteorological Center, Jaipur on 24-25 March, 2023 and addressed the media workshop.

IMD signed Letter of Agreement with Wingify foundation on 29th March to reach out to people with weather and air quality information.

All India Radio released an interview with **Dr. Mrutyunjay Mohapatra** as the expert speaker during the programme "**Abhyaas**" on the subject '**Climate Change & Winter**'. The programme is available at the link https://youtu.be/h6la8j_Ylxs

Under the "**Idea Exchange Programme**", the Indian Express published the interview of **Dr. Mrutyunjay Mohapatra**, DG, IMD on the on the extreme weather conditions, rising temperatures and climate change. The interview is available at the link <https://indianexpress.com/article/idea-exchange/director-general-of-meteorology-indian-meteorological-department-mrutyunjay-mohapatra-at-idea-exchange-8411675/>

VISITORS

Officer's of NDRF Ist. Bn. Guwahati, visited RMC Guwahati on 12th January, 2023 for demonstration on "Disaster Risk reduction Activities". Also an interactive session related to weather services provided by IMD on disaster Risk reduction.

अहमदाबाद की Gems Genesis International स्कूल से दो science teachers एवं 56 students ने दिनांक- 20th January 2023 को मौसम केंद्र अहमदाबाद का दौरा किया एवं सभी को निरीक्षण अनुभाग द्वारा सिनोप्टिक और ऑटोमैटिक वेधर सिस्टम के बारे में बताया गया।

A group of Technicians from **Royal Government of Bhutan (RGOB)** with a co-ordinator from **North Eastern Regional institute of Water and Land Management (NERIWALM)** Assam,

visited IMD station at Cherapunji (Sohra) on 11th February, 2023, Shri Arun Kr. VH Sc.c & Shri Sainen Saikia Met-B, from RMC Guwahati attended at Cherapunjee for demonstration to the team of officers.

Prof. (Dr) Pavel Kabat, Secretary General of the International Human Frontier Science Program Organization (HFSP/O) visited Climate Research and Services (CRS), IMD, Pune office on 16th February, 2023 and gave presentation on “Can predictive skills of our weather and climate models be enhanced by better inclusion of land surface and biological processes?.”



Prof. (Dr) Pavel Kabat, Secretary General of the International HFSP/O

Sh Manish Kumar Verma, Member Bihar State Disaster Management Authority visited Meteorological Centre, Patna and interacted with Officials on various aspects of Meteorological services given by Met Centre, Patna on 5th March, 2022.

WMO Day 23/03/2023 के अवसर पर मौसम केंद्र अहमदाबाद द्वारा आयोजित exhibition/प्रदर्शनी में आए हुये, 300 विद्यार्थियों को AWS/ARG/AIRPORT, MET instruments एवं Weather Forecast के बारे में विस्तृत जानकारी प्रदान की गयी।

RMC Office, Alipore, Kolkata had celebrated WMO Day 2023. On that day, RMC Kolkata was open for all the visitors from various institutions and for common people. The visitors were familiarized/briefed about Met. Instruments and Observational Technique, AWS, ARG, HWSR, RS/RW, PBO, AMI, ARS instruments, role of IMD for preparing Agromet Advisories, forecasting for DVC area, making ephemeris by Positional Astronomical Centre (PAC) Kolkata, weather forecasting at ACWC Kolkata. A scientific talk on this year WMO theme and Quiz Programme, video/ lecture with PPT and Documentary show were also organized. On record, 325 numbers of visitors visited this office on WMO Day 2023. They were explained all the things in a precise manner. The students and their teachers and general people expressed their keen interest in acquiring knowledge in Meteorological events and latest development of IMD.



The visitors familiarized/briefed about Met. Instruments



Shri Suman Chatterjee, Met.-B briefing the Student about digital pressure measuring instrument



Shri Alog Dasgupta Ex.AM-I lecturing on the WMO Theme 2023

About 214 visitors including students of Sarvodya Bal Vidhyalaya, Gokhle Marg, New Delhi, Green Fields School Safdurjung Enclave New Delhi, Indira Gandhi Technical University Kashmiri Gate Delhi, Department of Environmental Studies Delhi University Delhi, MVN University Palwal, Amity University Noida visited the Central Hydromet Observatory from 1st Jan, 2023 to 31st March, 2023.



Students of Amity University, Noida

On occasion of “World Meteorological Day” 2023 an exhibition was organized. **Shri Anupam Phukan**, Senior Geologist, Directorate of Geology and Mining, govt. of Assam, was invited as chief guest of the function.

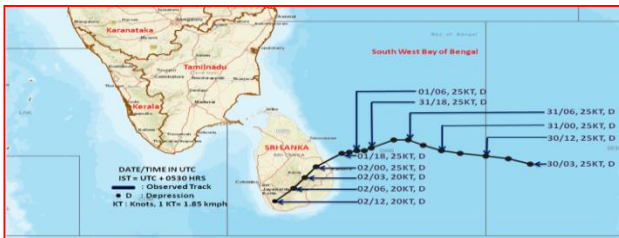
Shri Tana Tage, Director Centre for Earth Sciences and Himalayan Studies, Govt. of Arunachal Pradesh with his officials visited RMC Guwahati office on 30th March, 2023 to discuss about enhancement of Meteorological Service in the State.

Weather Information

January

Depression Over Bay of Bengal : Under the influence of a cyclonic circulation over east Equatorial Indian Ocean and adjoining Southeast Bay of Bengal in the lower tropospheric levels, a **Low-Pressure Area** formed over the same region in the morning (0530 hrs IST/0000 UTC of 27th January, 2023. It lay over Southeast Bay of Bengal and adjoining east Equatorial Indian Ocean in the remaining parts of that day and on the next day. It concentrated into a well-marked low-pressure area over Southeast BoB adjoining east EIO at 0300 UTC of 29th January, 2023. Under favourable environmental conditions, it concentrated into a depression over Southeast and adjoining Southwest BoB at 0300 UTC of 30th January, 2023 at about 670 km east-southeast of Trincomalee (Sri Lanka), 810 km east-northeast of Colombo (Sri Lanka) and 880 km east-southeast of Karaikal (India). It moved west-northwestwards till noon (1130 hrs IST/0600 UTC) of 31st January. Thereafter, it recurved southwestwards and crossed Sri Lanka coast between Batticaloa and Trincomalee near latitude 7.8° N and longitude 81.6° E during 0330 to 0430 hours IST of 2nd February, 2023.

Continuing to move further southwestwards, it weakened into a well-marked low pressure area over Comorin and adjoining Gulf of Mannar and west coast of Sri Lanka during midnight (around 2330 hrs IST/1800 UTC) of 2nd February, 2023. The track of the Depression is given in the Figure below:



Salient features of the system : The system exhibited recurving track. It moved west-northwestwards till 1200 UTC of 30th January and thereafter recurved west-southwestwards. The system was mainly steered west-northwestwards by the east-southeasterly winds prevailing in the periphery of upper tropospheric ridge near 15° N. Thereafter, the system showed slight weakening and thus the steering level changed to middle tropospheric levels. The system was thus steered west-southwestwards under the influence of east-northeasterly winds in the lower-middle tropospheric levels. The system exhibited very slow movement prior to landfall, as there was a phase lock between the westerly trough with axis near 82° E & extension upto 15° N and another trough in easterly across the centre of depression with axis near 82° E & extension upto 13° N. The life period of the system was 3 days and 15 hours.

Average Temperature during January-2023

The mean temperature for the month of January-2023 for the country as a whole was 19.87 °C which was above normal by +0.23 °C. The normal temperature for the month is 19.64 °C. The highest maximum temperature of 36.5 °C had been recorded at Kannur (Kerala & Mahe) on 29th January, 2023 and

the lowest minimum temperature of -2.7 °C had been recorded at Churu (West Rajasthan) on 17th January, 2023 over the plains of the country during the month.

February

Western Disturbances during February 2023 : Six Western Disturbances and four induced cyclonic circulations had affected Northwest India during the month. Under their influence, rainfall/snowfall/ thunderstorm activity had been reported over Western Himalayan Region whereas isolated rainfall/thunderstorms had been reported over the adjacent plains on a few days during the month; isolated heavy rainfall/snowfall and isolated hailstorm also had been reported over Western Himalayan Region on one or two days during the month.

Remnants of Western Disturbances had caused rainfall/snowfall/thunderstorm activity over parts of Northeast India and adjoining Sub Himalayan West Bengal & Sikkim on a few days during the month. Under their influence, isolated heavy rainfall/snowfall had been reported over Arunachal Pradesh and isolated heavy rainfall reported over Assam & Meghalaya on one or two days; Isolated hailstorm also had been reported over the same areas on one or two days during the month.

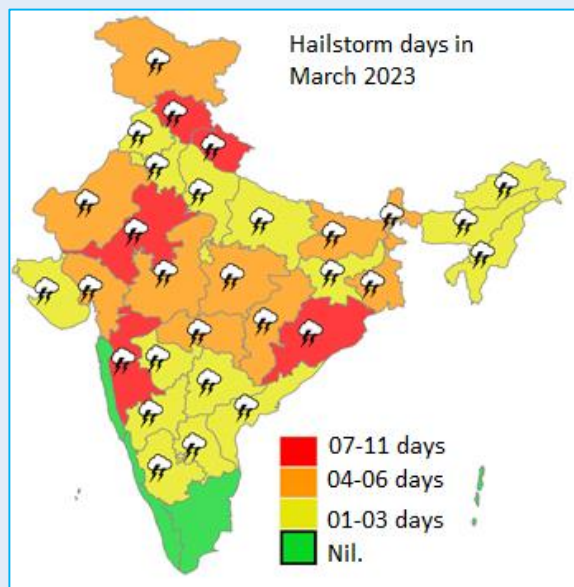
Rainfall : Monthly rainfall for the country as a whole had been Large Deficient (-68%) for February 2023. Among the four homogeneous regions, Central India and Northwest India rainfall had been Large Deficient (-100% and -75% respectively) whereas rainfall for East & Northeast India and South Peninsula had been Deficient (-34% and -54% respectively).

March

Significant Weather Features : About seven Western Disturbances and six induced cyclonic circulations had affected Northwest and adjoining areas of West and Central India during the month; during their course movement east-northeastwards, remnants of these Western Disturbances had affected East and Northeast India also; in addition to that, a north-south trough/wind discontinuity in the lower tropospheric levels lay extending from East India/eastern parts of Central India to South Peninsula across northern parts of Peninsular India on many days during the month; Also, there had been an east-west trough in the lower tropospheric levels which lay extending from Northwest India to East/Northeast India on a few days; troughs/cyclonic circulations in the lower tropospheric levels affecting East India and eastern parts of Central India were also there on a few days; these synoptic situations supported by favourable positioning of anticyclones in the Bay of Bengal and Arabian Sea supporting enhanced moisture incursion had caused normal to above normal rainfall activity over most part of the country during the month; during the second half of the month, most parts of the country experienced severe thunderstorm (TS) activities occurring simultaneously across the country along with isolated hailstorms, lightning and gusty winds; in addition to the synoptic situations mentioned above, strong upper level divergence associated with Sub Tropical Jetstream supporting formation of severe thunderstorm cells as well as lowering of the freezing level had caused simultaneous occurrence of

hailstorm activity across the country on many days during the second half of the month; isolated heavy rainfall activity also had occurred over parts of Northwest, East & Northeast, eastern parts of Central India and parts of Peninsular India during the month.

The frequency of hailstorm days observed across the country during March, 2023



Summary of state of climate during the period January to March 2023

In the month of January, over the country as a whole, the mean temperature was 19.93 °C with an anomaly of 0.29°C. Over South Peninsular India, the maximum temperature was the eighth highest (30.59 °C with an anomaly of 0.59 °C) since 1901. Over the country as a whole both the maximum and minimum temperature was above normal during January 2023. During the January 2023, rainfall realized over the country as a whole was 86% of its LPA. Most of the subdivisions received deficient/large deficient rainfall except some subdivisions from north and northwest India and Kerala & Mahe and Lakshdweep. Rainfall over homogeneous region of east & northeast India (1.9 mm) was fourth lowest since 1901. Prior lowest rainfall years were 1946 (0.3 mm), 2010 (0.7 mm), 2006 (1.4 mm) & 1923 (1.9 mm).

In the month of February, over the country as a whole, the mean temperature was the 2nd highest (23.01 °C with an anomaly of 1.36 °C) after the year 2016 (23.15 °C) since 1901. The maximum temperature was the highest (29.66 °C with an anomaly of 1.86 °C) and the minimum temperature was the 5th highest (16.37 °C with an anomaly of 0.87 °C) since 1901.

During the month of February, over Northwest India the maximum temperature was the highest (25.04 °C with an anomaly of 3.58 °C) and the minimum temperature was the 2nd highest (10.16 °C with an anomaly of 1.99 °C) after the year 2006(10.82 °C) since 1901. The mean temperature was the highest (17.60 °C with an anomaly of 2.78 °C) since 1901. Over East & Northeast India, the maximum temperature was the 9th highest (27.52 °C with an anomaly of 1.51 °C) and the minimum temperature was the 2nd highest (14.04 °C with an anomaly of

1.72 °C) after the year 2016 (14.06 °C) since 1901. The mean temperature was the 3rd highest (20.778 °C with an anomaly of 1.616 °C) after the years 1946(20.92 °C), 2016(20.781 °C) since 1901. Over Central India, the maximum temperature was the 2nd highest (32.04 °C with an anomaly of 2.16 °C) after the year 2006(32.13 °C) since 1901. The mean temperature was the 3rd highest (24.08 °C with an anomaly of 1.32 °C) after the years 2006(24.42 °C), 2016(24.38 °C) since 1901. Over South Peninsular India, the maximum temperature was the 6th highest (32.04 °C with an anomaly of 0.68 °C) since 1901. During February 2023, rainfall realized over the country as a whole was 32 % of its LPA. Except Tamilnadu, Puducherry & Karaikal, Arunachal Pradesh and Sub Himalayan West Bengal & Sikkim all the remaining subdivisions received deficient/large deficient or no rainfall. Rainfall over all India (7.2 mm) was sixth lowest since 1901. Prior lowest rainfall years were 1960 (2.7mm), 1902 (4.1mm), 1918 (4.3mm), 1955 (4.4mm) and 1911 (5.5 mm).

In the month of March, over the country as a whole, the mean temperature (25.41 °C with an anomaly of 0.36 °C), maximum temperature (31.37 °C with anomaly of 0.13 °C) and minimum temperature (19.46 °C with anomaly of 0.59 °C).

During March 2023, rainfall realized over the country as a whole was 126% of its Long Period Average (LPA) value. Rainfall over homogeneous region of south peninsular India (32.1 mm) was 7th highest since 1901 after the years 2008 (122.2 mm), 1944 (69.7 mm), 1915(46.9 mm), 1984 (43.3 mm), 2006 (40.9 mm) and 1967 (33.5 mm).

Rainfall over homogeneous region of central India (23.9 mm) was 11th highest since 1901 after the years 1944 (48.9 mm), 1967 (48.4mm), 1951 (35.8 mm), 1926 (33.6 mm),1915 (31.8 mm), 2015 (31.8 mm), 2006 (28.7 mm),1957 (27.7 mm),2020 (26.3 mm) and 1950 (24.8 mm).

The rainfall for the country as a whole, for the March -2023 has been recorded as 37.6 mm which is 126% of its Long Period Average (LPA) of 29.9 mm. In all, category wise, 22 Met subdivisions in LARGE EXCESS, 02 Met sub-divisions in EXCESS, 05 Met sub-divisions in NORMAL, 04 in DEFICIENT, 03 in LARGE DEFICIENT and no any Met. Sub-divisions in NO RAIN category of rainfall.

