



In This Issue

Important Events	p1
Significant Events/ Meetings/VC	p2
Meetings/VC	p3-4
Workshop	p5
Training	p6
Lecture/Talk/Webinar	p7
Panel Discussion/Interview	p8
Conference/Presentation/ Foreign Deputation/ Achievements/Awards	p9
Infrastructure Developments/Research Publication	p10
Outreach and Media Interaction/Visitors	p11- 12
Weather Information	p13- 14

IMPORTANT EVENTS

Inauguration of New Building of Meteorological Centre Lucknow

Smt. Anandi Ben Patel, Hon'ble Governor of Uttar Pradesh Inaugurated **New Building of Meteorological Centre Lucknow** on 31st October, 2022 in the gracious presence of **Dr. M. Ravichandran**, Secretary, MoES, **Dr. M. Mohapatra**, DG, IMD, **Shri J P Gupta**, Scientist G and **Shri Khushveer Singh**, Head RMC New Delhi.



Smt. Anandi Ben Patel, Hon'ble Governor of Uttar Pradesh with of **Dr. M. Ravichandran**, Secretary, MoES, **Dr. M. Mohapatra**, DG, IMD

National Conference and exhibition on "Akash for Life"

A National Conference and exhibition on "Akash for Life" was organized from on 4th November to 7th November, 2022 by IIRS, Dehradun at Uttaranchal University, Dehradun and the Meteorological Centre Dehradun also participated in this exhibition. MC Dehradun displayed its surface and upper air observation instruments and gave demonstration of O2 RS/ RW observation. The Honourable Governor Lt. General (Retd.) Gurmit Singh, Govt. of Uttarakhand released the RS/ RW flight on the occasion of inauguration of exhibition on 4th November, 2022 in presence of dignitaries and visitors.



The Hon'ble Governor of Uttarakhand Lt. General (Retd.) Gurmit Singh, releasing the RS/ RW flight



The Secretary, MoES, Govt. of India, visiting stall of IMD, MC Dehradun in "Akash for Life" exhibition on 06.11.2022



India Meteorological Department signed a Memorandum of understanding with Fakir Mohan University, Balasore to enhance research & development activities between the two organizations on 17th October, 2022.

IMD signed a MoU with Sambalpur University on 26th Nov, 2022 to enhance research & development activities between the two organizations. Dr. M. Mohapatra, DG, IMD delivered Keynote address on "Science & Technology in combating climate Change during the 23rd Odisha Bigyan 'O' Paribesh Congress (OBPC) to be organized by Sambalpur University on 26th November, 2022.



Published by

India Meteorological Department,
Mausam Bhawan, Lodi Road,
New Delhi - 110 003

Tel. : 011- 43824298
Telefax : 91-11-24699216 &
91-11- 24623220

<https://mausamjournal.imd.gov.in/>
email : mausamps@gmail.com

Edited by

Dr. S. D. Attri
Mr. Sunny Chug

Compiled by

Staff of Editorial Office



Significant Events

The Officials of IMD attended live telecast of “MISSION LIFE”. on 20th October, 2022 at HQ New Delhi and Field offices in the country and took pledge for the same.



The Secretary, MoES, Govt. of India briefing about the RS/RW flight in “Akash for Life” National conference and exhibition at Uttaranchal University, Dehradun on 6th November, 2022.



National conference and exhibition at Uttaranchal University, Dehradun

Dr. S. D. Attri, Sc. ‘G’ attended COP-27 held in Egypt during 10-18 November, 2022. He also addressed gathering on the release of State of Asia Climate 2021.



Dr. S. D. Attri, Sc. ‘G’ at COP-27 in Egypt during 10-18 Nov, 2022

Human Resource Development Activities

MEETINGS / VIDEO CONFERENCES

Dr. Kuldeep Srivastava, Sc. ‘E’ attended 18th Meeting of Committee XII - 'Geoscience for Sustainable Development' of the CGPB on 4th October, 2022.

Shri P. R. Naskar, Sc. ‘C’ and Dr. Anwesa Bhattacharya Sc. ‘C’ from AMO Kolkata, attended the SSEA SIGMET coordination platform meeting on 7th October, 2022.

Shri Raja Acharya, Met. ‘A’, attended the virtual conference on 1st International Geodiversity Day and 6th International Geo ethics Day organised by the Ministry of Earth Sciences, Govt of India, Society of Earth Scientists and INSA (Indian National Science Academy) New Delhi on 10th and 11th October, 2022.

Shri S. K. Manik, Sc. ‘C’ attended the 6th International Dam Safety Conference from 10-12 October, 2022 at Jaipur, Rajasthan, organized by Indian Committee on Large Dams (INCOLD) in association with Central Board of Irrigation & Power (CBIP), Central Water Commission and DRIP.

Shri B. P. Yadav, Sc. 'F', Shri Rahul Saxena, Sc. 'F', Shri Asok Raja S. K., Sc. ‘C’ and Ms. Hemlatha Bharwani, Sc. ‘C’ attended the WMO meeting on Hydrological Status and Outlook System (HydroSOS) over Ganga-Brahmaputra and Meghna Basins (GBM) on 13th October, 2022.

Dr. H. R. Biswas, Sc. ‘F’, Sri U. Das, Sc. ‘C’ and Dr. S. Dwivedi, Sc. ‘C’ attended the video conference between India Meteorological Department and Odisha Space Application Centre on 13th October, 2022 regarding Geospatial data sharing for Urban Met Services and Impact Based Forecasting.

Dr. S. Bandyopadhyay, Sc. ‘F’ attended Co-Ordination meeting for Cyclonic Circulation over Bay of Bengal called by Chief Secretary, Government of West Bengal on 17th October, 2022.

Dr. S. D. Attri, Sc. ‘G’ attended meeting held under the Chairmanship of Hon’ble Minister for MoEF&CC for discussing India’s strategy in COP 27 17 October, 2022.

Dr. Satyaban B. Ratna, Sc. ‘E’ attended the annual review meeting of MoES Research Fellowship Program (MRFP) organised by IITM, Pune on 20th October, 2022.

Shri U. Das, Sc. ‘C’ and Dr. S. Dwivedi, Sc. ‘C’, attended a meeting in B.P.I. Airport Campus under the chairmanship of Director, B.P.I. Airport on 21st October, 2022 related to Cyclone-SITRANG.

Dr. H. R. Biswas, M. C. Bhubaneswar attended the meeting under the chairmanship of Additional Chief Secretary, Govt. of Odisha to review the status of preparedness for the impending Cyclone in the Bay of Bengal on 21st October, 2022 and also briefed about the system in the meeting. He also briefed key Officials of Govt. of Odisha, Print and Electronic media about the system, its intensification and movement during the period.

Shri Raja Acharya, Met. 'A', attended the online mode the WMO Technical hybrid conference on **"The UN Global Early Warning Initiative for Climate Adaptation : Early Warnings for All"** on 22nd October, 2022.

Dr. S. Dwivedi, Sc. 'C', attended 58th State Level Co-ordination Committee on Crop Insurance (SLCCI) on 28th October, 2022 under the chairmanship of Chief Secretary, Odisha on virtual mode.

Dr. S. D. Attri, Sc. 'G' attended Standing Advisory Committee meeting of Positional Astronomy Centre, Kolkata, IMD, held on 27th October, 2022.

Dr. H. R. Biswas, Sc. 'F' has attended in the flag-off Ceremony at BPI Airport, Bhubaneswar for the 1st flight services to Jeypore from Bhubaneswar, on 31st October, 2022 and also Meteorological services at Jeypore for this flight operation has been started.

Dr. Kripan Ghosh, Sc. 'F', attended the meeting with the delegation from World Bank and officials from IMD, Pune in connection with joint Hydromet Training program for delegates from Bangladesh on 31st October, 2022. He also delivered a presentation on **"Agromet Advisory Services of IMD"**.

Dr. G. N. Raha, Head M. C. Gangtok has attended virtual Press Conference on Monthly Outlook of Rainfall and Temperature for November 2022, on 1st November, 2022. The Meeting was headed by Director General of Meteorology, New Delhi.

Dr. K. K. Singh, chaired the 11th meeting of **"Project Monitoring and Advisory Committee (PMAC)"** of IMD on 1st November, 2022 to monitor the progress of the projects under ACROSS-IMD.

Shri S. K. Manik, Sc. 'C' delivered a talk on Early Warning System on Flash Flood Causing to Landslide in the National conference on Landslide Risk Assessment and Mitigation in India, during 01-02 November 2022, organized by Jamia Millia Islamia University, New Delhi. He also Co-Chaired the Technical Session on **"Landslide Impact on Society and Preparedness"**.

Dr. M. Mohapatra, DGM IMD participated as Chief Guest during the inaugural ceremony of the Scientific Advisory Committee Meeting at NCMRWF, Noida on 2nd November, 2022.



Scientific Advisory Committee Meeting at NCMRWF, Noida

Dr. M. Mohapatra, DG, IMD and **Dr. Kuldeep Srivastava**, Sc. 'E', participated in the Inception meeting of the **"National and sub-national Disaster Risk and Resilience Assessment and Roadmap for Telecommunication Sector Project"** organized by Coalition for Disaster Resilient Infrastructure on 3rd Nov, 2022.

Dr. M. Mohapatra, DG, IMD and **Dr. R. K Jenamani**, Sc. 'F' participated in the **"Weather and Climate Science for Service Partnership India (WCSSP-India)"** Executive Committee Meeting through virtual mode on 3rd November, 2022.

Dr. S. Bandyopadhyay, Sc. 'F' chaired Hindi Inspection meeting in presence of **Shri Manoj Abusaria**, Jt. Director (MoES) at RMC Kolkata On 3rd November, 2022.

Dr. Kuldeep Srivastava, Sc. 'E' attended meeting regarding DRRAF for Telecommunications Sector from Coalition of Disaster Resilient Infrastructure, New Delhi on 3rd November, 2022 at the CDRI secretariat, New Delhi. The purpose of the meeting was to enhance the disaster resilience of the telecommunication sector.

Dr. Pulak Guhathakurta, Sc. 'F', has attended the First face-to-face WMO RA II CP-Hydrology Meeting from 31st October to 1st November, 2022 and First RA II Global Hydrological Status and Outlook System (HydroSOS) Implementation Workshop from 1st to 3rd November, 2022 held at Vientiane, Lao PDR online.

Dr. Rajib Chattopadhyaya, **Dr. Divya Surendran** and **Dr. Ananya Karmakar** attended the meeting at NDC, IMD Pune on 3rd November, 2022 discussing a joint study on **"Seasonal energy efficiency ratio of Pune city for air conditioning systems"** by O/o CRS, Pune, YASHADA and COEP.

Shri B. P. Yadav, Sc. 'G', **Shri Rahul Saxena**, Sc. 'F', **Dr. A. K. Das**, Sc. 'E', **Shri S. K. Manik**, Sc. 'C', **Shri Asok Raj S. K.**, Sc. 'C', **Ms. Hemlata Bharwani**, Sc. 'C' attended the virtual meeting for Enhancement of the SASIAFFGS with Landslide Warning Module on 4th November, 2022 organised by HRC, USA.

Shri Bikram Singh, Sc. 'F' and **Shri Rohit Thapliyal**, Sc. 'C' attended the National Conference and exhibition on **"Akash for Life"** organized from 4th November to 7th November, 2022 by IIRS, Dehradun at Uttaranchal University, Dehradun.

Dr. Kripan Ghosh, Sc. 'F' attended the online meeting to discuss **"Inputs for WG-Services Annual Report on Agriculture Services for 2022-23 and planned activities for 2023-24"** on 9th November, 2022.

Dr. Kripan Ghosh, Sc. 'F', attended the familiarization programme for officials of many national and international insurance companies and meeting with them for discussion on **"the requirement of weather/climate data useful for the insurance sector and data availability about the loss and damage with insurance companies"** under the Chairmanship of Head, CR&S, IMD, Pune on 10th November, 2022.

Dr. M. Mohapatra, DG, IMD participated in the Courtesy meeting with **"SAC-IMD team for Multi-Mission Meteorological Data Receiving and Processing System (MMDRPS)"** on 11th November, 2022.

Dr. M. Mohapatra, DG, IMD attended the meeting on Committee of Parliament on Official Language inspected Meteorological Centre, Raipur 14th November, 2022.

Shri B. P. Yadav, Sc. 'G' attended 17th Meeting of Governing body of the National Water Development Agency on 15th November, 2022.

Dr. M. Mohapatra, DG, IMD attended the **70th Meeting of Governing Body of the National Water Development Agency (NWDA)** under Chairmanship of Secretary, Department of Water Resources, River Development and Ganga rejuvenation, Ministry of Jal Shakti, New Delhi in hybrid mode on 15th November, 2022.

Dr. S. Bandyopadhyay, Sc. 'F' attended Hindi Parliamentary committee meeting at Kolkata On 16th November, 2022.

Shri D. Senthil Pandiyan, Jt. Secretary (MoES) visited RMC, Kolkata. **Dr. S. Bandyopadhyay**, RMC Kolkata briefed him about the activities of RMC Kolkata, on 16th November, 2022.

Dr. H. R. Biswas, Sc. 'F' attended the virtual meeting with Chief Secretary, Odisha and Odisha State Disaster Management Authority (OSDMA) Team on the implementation of SATARK in collaboration with RIMES, Thailand on 16th November, 2022.

Dr. M. Mohapatra, DG, IMD attended Meeting with Major General (Dr.) R. K. Marwaha, Former Addl. Director, INMAS, DRDO and presently Scientific Advisor of International Life Sciences Institute-India (ILSI-India) regarding Project on Climate Change impact on Health on 18th November, 2022.

Dr. M. Mohapatra, DG, IMD attended 1st High Level Meeting of Co-ordination Group for Meteorological Satellites (CGMS): Future Direction 2022 on 21st November, 2022.

Dr. H. R. Biswas, Sc. 'F' attended Crop Weather Watch Group Committee Meeting (CWWGCM) of Kharif Crop through video conferencing via micro soft teams link under the Chairmanship of Agriculture Production Commissioner on 10th October, 2022 and 21st November, 2022.

Dr. O. P. Sreejith, Sc. 'E', **Dr. Satyabhan Bishoy Ratna**, Sc. 'E', **Dr. Sabeerali C. T.**, Sc. 'C', **Mr. Prasad Bhor**, Met. 'A' participated in the online meeting on 24th November for SASCOF-24.

Dr. M. Mohapatra, DG, IMD attended Meeting with **Shri Gaurav Gupta**, IAS, Addl. Chief Secretary, Infrastructure, Development, Ports and Inland Water Transport Department, Govt. of Karnataka and **Dr. M. R. Ravi**, IAS, Managing Director, KSIIDC and Brig. (Retd.) **D. M. Purvimath**, Technical Advisor, KSIIDC regarding operationalization of Shivamogga Airport on 24th November, 2022.

Dr. H. R. Biswas, Sc. 'F' attended the meeting under the chairmanship of Hon'ble Chief Minister of Odisha, on 25th November, 2022 to review the preparation of Cold Wave in the state.

Dr. S. Dwivedi, Sc. 'C', attended a meeting on Crop Contingency Plan 2023-24 under the chairmanship of Director of Agriculture of Food Production, Odisha in Krushi Bhawan, Odisha on 29 November, 2022.

Dr. S. D. Attri, Sc. 'G' attended Meeting of High Powered Committee on "**Global Climate Change & Health**" held on 30 November, 2022 at ICMR, New Delhi.

Dr. S. D. Attri, Sc. 'G' attended meeting on climate vulnerability report organised by UNDP New Delhi on 6th December, 2022.

Dr. K. Sathi Devi, Sc. 'G' attended Internal stakeholders meeting hosted by Ministry of External Affairs regarding **Quad HADR TTX** on 7th December, 2022.

Dr. M. Mohapatra, DG, IMD attended Round Table Conference on "**Building Resilience to Heat Extremes : Opportunities and Way Forward**" during the meeting organized by Coalition for Disaster Resilient Infrastructure (CDRI), New Delhi on 8th December, 2022.

Dr. M. Mohapatra, DG, IMD attended meeting with **Ms. Corinne Demenge**, Head Swiss Corporation Office India and Counsellor, Switzerland Embassy regarding interaction on "**Cloudburst and thematic Swiss experience and technical**" presentation by Swiss Meteo on 9th December, 2022.

Dr. M. Mohapatra, DG, IMD attended meeting with States/UTs on various guidelines/SoPs/NDMP-2019 issued by NDMA and other disaster related organized by NDMA on 9th December, 2022.

Dr. M. Mohapatra, DG, IMD attended the inaugural Session of the One day Meeting and brainstorming session under Chairmanship of Secretary, MoES to discuss the on-going MoES-NOAA international agreement on **Tropical cyclones and the way forward** on 12th December, 2022.

Dr. M. Mohapatra, DG, IMD attended meeting under the chairmanship of Member Secretary, NDMA with concerned Ministries and States prone to Cold Wave to review the **preparedness and mitigation measures for cold Wave season 2022-23** through VC on 12th December, 2022.

Dr. M. Mohapatra, DG, IMD and **Dr. Sankar Nath**, Sc. 'F' attended the meeting for implementation of Common Alerting Protocol by the WMO Members of RAIL on 14th December, 2022.

Dr. S. Bandyopadhyay, Sc. 'F' attended Consultation meeting on "**Implementation of Emergency Action Plan for Maithon & Panchet Dam**" of Damodar Valley Corporation at Maithon Dam, Dhanbad, Jharkhand on 14th December, 2022.

Ms. R. B. Gayary, Met. 'B' and **Ms. Doli Haloi**, Met. 'B', attended international, Conference on "**Sustainable Technology or River erosion Alleviation and Management-2022 (STREM-2022)**" on 14-15 December, 2022.



Dr. S. D. Attri, Sc. 'G', addressed the delegates as Panellist in International conference organised by CRIDA Hyderabad during 22-24 December, 2022.



Dr. S. D. Attri, Sc. 'G' and others during the conference

Shri U. Das, Sc. 'C' attended 2nd meeting on progress of the pilot project & Improving food security for small holder farmers in Odisha using Climate Resilient Practices at Krushi Bhawan, Bhubaneswar under the Chairmanship of the Director of Agriculture and Food Production, Odisha on 23rd December, 2022.

Dr. H. R. Biswas, Sc. 'F' attended the First meeting of the Committee for finalisation of technical specifications/details and procurement process/modalities for installation of Automatic Weather Station (AWS) and Telemetric Rain Gauges (TRG), on 23rd December, 2022 at Odisha Computer Application Centre (OCAC), Bhubaneswar under the chairmanship of Secretary, E & IT Department, Odisha.

Shri Harmeet Singh Sawhney, Sc. 'E' attended a meeting to discuss various aspects of new CERC DSM Regulations related to RE generators/RE Rich states held under the chairmanship of Chairperson, Central Electricity Authority on 26th December, 2022 at Sewa Bhawan, New Delhi.

Dr. S. D. Attri, Sc. 'G', IMD attended 32nd meeting of the Joint Hindi Advisory Committee of the MoES and DST on 26th December.

A meeting between **Shri K. S. Hosalikar**, Sc. 'G' and Professor S. T. Ingle Prov VC Kavayitri Bahinabai Chaudhari North Maharashtra University (NMU) held on 26th December, 2022. The objective of the meeting was to increase collaboration between IMD and NMU. Dr. Rajib Chattopadhyay, Sc. 'E' has facilitated the meeting.

Dr. M. Mohapatra, DG, IMD attended meeting under the Chairmanship of Secretary, Ministry of Panchayati Raj regarding installation of met sensors for weather related predictions on Continuous Operating Reference Station (CORS) infrastructure established by Survey of India across the country on 29th December, 2022.

Dr. M. Mohapatra, DGM IMD attended 2nd Meeting of IPSTRA Programme Interphase Committee on 30th December, 2022.

Dr. M. Mohapatra, DGM IMD attended Recording of the special program 'Aapda Ka Samna' on Cold Wave organized by NDMA on 30th December to be telecast on Doordarshan.

WORKSHOP

Shri Raja Acharya, Met. 'A', attended the "Ocean Best Practices Virtual Workshop (OBPS VI)" on 5th and 19th October, 2022 organised by the Intergovernmental Oceanographic Commission (UN).

Dr. Kuldeep Srivastava, Sc. 'E' participated in "Second United Nations World Geospatial Information Congress (UNWGC 2022)" during 10-14 October, 2022 at Hyderabad.

Dr. Satyaban B. Ratna, Sc. 'E', attended "CLIVAR CDP annual workshop : External versus internal variability on decadal and longer time scales" organized by CLIVAR on 12th and 19th October, 2022.

Dr. Kripan Ghosh, Sc. 'F', attended the online workshop on "Agrometeorological Services" from 12 and 13 October, 2022 organised by World Meteorological Organization (WMO) in conjunction with the 4th Meeting of the "Standing Committee on Services to Agriculture".

Dr. Kripan Ghosh, Sc. 'F' and **Dr. Ashutosh Kumar Misra**, Sc. 'D' attended an online consultation workshop on "Climate Change Vulnerability Assessment at Block Level for Districts in the States of Sikkim (West Sikkim) and Uttarakhand (Uttarkashi)" under JSB project organized by UNDP on 17th October, 2022.

Shri Bikram Singh, Sc. 'F', MC Dehradun was invited for a two-day National workshop on "Reducing Risk & Building Resilience: Capacity Building in the Mountain States" from 20-21 October, 2022 organized by Dr. R. S. Tolia Uttarakhand Academy of Administration, Nainital and National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India, Delhi. **Shri Bikram Singh**, Head/Scientist-'F', MC Dehradun attended the two day national workshop as a panelist to contribute the session on "Disaster Risk in the Mountains: Climate Changes".

Dr. Kuldeep Srivastava, Sc. 'E' participated in brainstorming on "Strategies for Adoption of Geospatial Information Standards for data sharing" in hybrid mode on 31 October, 2022.

Dr. M. Mohapatra, DG, IMD participated in the workshop on "People-centred impact based warnings" organized by World Meteorological Organisation (WMO) on 1st November, 2022 through VC.

Dr. Kripan Ghosh, Sc. 'F' and **Dr. Ashutosh Kumar Misra**, Sc. 'D' attended the online second workshop of the WMO WWRP HIWeather impact-based warnings workshop series on "People-centred impact-based forecast and warnings" on 1st November, 2022.

Shri Raja Acharya, Met. 'A', attended the virtually in the "38th session of Data Buoy Cooperation Panel (DBCP-38)" held at Geneva Switzerland through hybrid mode during 1-4 November, 2022 organised by the WMO and Intergovernmental Oceanographic Commission (UN).

Shri B. P. Yadav, Sc. 'G' and **Shri Asok Raja S. K.**, Sc. 'C' attended India Water Week 2022 on Water Security for Sustainable Development with Equity organised by NWDA from 1-5 November, 2022. Shri B. P. Yadav, Sc. 'G' also Co-Chaired the session on Impact of Climate Change and Adaptation Strategies on 2nd November, 2022.

Shri B. P. Yadav, Sc. 'G' attended "Hydromet and Early Warning Joint Learning Exercise Partnership Building" on 3rd November, 2022 organised by World Bank.

Dr. M. Mohapatra, DG, IMD participated virtually in the workshop on "Multi-hazard based warnings" organized by WMO on 10th November, 2022.

Shri Raja Acharya, Met. 'A', Attended the virtual conference "Indian Ocean Tsunami Ready Hybrid Workshop" held at Bali Indonesia through hybrid mode during 22-26 November, 2022 organised by the Intergovernmental Oceanographic Commission.

Shri Raja Acharya, Met. 'A', Attended the webinar "The Use of Autonomous Vehicles and High Technology for Ocean Observation" organised by the GOOS Office, Intergovernmental Oceanographic Commission (UN) on 29th November, 2022.

Dr. Kripan Ghosh, Sc. 'F' attended a symposium on "Building an Environment Conducive to Growth" organised by Government of Maharashtra (GoM) under the Project on Climate Resilient Agriculture (PoCRA) in Maharashtra at Sahyadri State Guest House, Mumbai on 1st December, 2022.

Shri Raja Acharya, Met. 'A', attended the virtual workshop "Tenth International Workshop on Tropical Cyclones (IWTC-10)" held at Bali Indonesia through hybrid mode during 5-9 December, 2022 organised by the WMO.

Dr. M. Mohapatra, DG, IMD, **Dr. O. P. Sreejith**, Sc. 'E', **Dr. Satyaban B. Ratna**, Sc. 'E' and other senior officers of IMD attended Scoping workshop on the "WMO recognized entity supporting El Nino/La Nina information" during 6-8 December, 2022. Dr. M. Mohapatra, DGM IMD delivered opening and welcome address during the workshop.

Dr. M. Mohapatra, DG, IMD attended Online workshop on "Fog Monitoring and Forecasting for Aviation Services" organized at Meteorological Watch Office, New Delhi on 10th December, 2022.

Dr. M. Mohapatra, DG, IMD and **Shri B. P. Yadav**, Sc. 'G' attended "5th RA-II Hydrological Advisors Forum" organized by WMO on 15th December, 2022.

Dr. Satyaban B. Ratna, Sc. 'E' attended an online Workshop on the "NFCS South Africa Funding Model Options" on 7th December, 2022.

NWP division in IMD New Delhi organised a training workshop for the field forecasters of IMD about the "Interpretation of NWP products for the Sectoral Applications" during 19-23

December, 2022 in hybrid mode. About 50 scientists from various offices of IMD participated physically along with about equal number of scientists participated through online mode. The event was inaugurated on 19th December, 2022 by **Dr. M. Mohapatra**, DGM who encouraged the participants to take this opportunity seriously and learn many new things during this refresher course. He also emphasized that they should be involved actively in the deliberations. He further emphasized that after the training they should do lot of work in their work place by using NWP data for applications in forecasting.



Training workshop NWP division in IMD New Delhi

TRAININGS

24 officials from Sashastra Seema Bal (SSB) visited Sat. Met. division on 19th October, 2022 as a part of two weeks course on "Advanced Satellite Communication" organized by ALTC. These officials attended the talk entitled "Meteorological Satellites and their Applications" delivered by Shri S. C. Bhan, Sc. 'F' and were given a tour of MMDRPS system.

Sri U. Das, Sc. 'C' and **Dr. S. Dwivedi**, Sc. 'C', M. C. Bhubaneswar attended the Cyclone Web based Dynamic Composite Risk Atlas and Decision Support System (WEB-DCRA & DSS) Application training - online on 28th October, 2022 and 29th October, 2022.

Shri S. C. Bhan, Sc. 'G', **Shri Shibin Balakrishnan**, Sc. 'C', **Dr. (Ms.) Neeti Singh**, Sc. 'C', **Shri Atul Kumar Verma**, Met. 'A', **Shri Vimal Srivastava**, S.A. and **Shri Yogesh Kumar Jha**, S.A. visited Space Application Centre (SAC), Ahmedabad from 1st November, 2022 to 3rd November, 2022 for training on MMDRPS system to be handed over to IMD.

Dr. O. P. Sreejith, Sc. 'E' attended online Mediterranean Climate Outlook Forum (MEdCOF's) training session on 10th November 2022 and gave presentation on "The experience of SASCOF Objective Forecast".

Shri Kunal Kaushik, Met. 'A' & **Shri Pritam Chakraborty**, S.A. MC Gangtok has attended online training workshop program on Environment Instruments during 14th to 17th November, 2022.

Dr. Kuldeep Srivastava, Sc. 'E' and **Dr. Sankar Nath**, Sc. 'E' attended 1-week training programme on Big Data Management & Comprehensive Analysis conducted by Centre for Development of Advanced Computing, Mohali during 14 November to 18 November, 2022 through online mode.

Mrs. Divya Kumari, S.A, ISSD, HQ New Delhi imparted two days (on 24-11-2022 & 25-11-2022) eOffice training to the officials of RMC Guwahati and other offices under its region in physical mode at RMC Guwahati.

Shri Asok Raj S. K., Sc. 'C', Ms. Hemlata Bharwani, Sc. 'C' attended the **"WMO FFGS Training Plan Virtual Meet"** at 2000 Hours IST on 8th December, 2022 organised by WMO. About 30 trained hydro meteorologists from different regional centres across the globe attended this meeting for enhancing the outreach and capacity building activities.

A two day Meteorological Observation Training for Surface Field Observers of Govt. of Uttarakhand was conducted by MC Dehradun, IMD, Government of India and Uttarakhand State Disaster Management Authority, Govt. Of Uttarakhand and organized by Astra Microwave Products Ltd., Hyderabad at Meteorological Centre, Dehradun from 14 December to 15 December, 2022. **Shri Bikram Singh, Sc. 'F', Sh. Rohit Thapliyal, Sc. 'C'** and **Shri Ankit Sharma, S.A.** gave lecture to the trainees. **Shri Bhaumik Indrawal, Met. 'A'** and **Shri Ankit Sharma, S.A.** demonstrated and trained the trainees about meteorological observations



Shri Bikram Singh, Sc. 'F' addressing the trainee participants of Surface Field Observatories of Govt. of Uttarakhand at M. C. Dehradun on 14th December, 2022.

Shri S. K. Manik, Sc. 'C' and **Shri Asok Raja S. K., Sc. 'C'** attended a Refresher Course on **"Interpretation and Application of NWP Products in Weather Forecasting Services"** during 19-23 December, 2022, organized by NWP Division, IMD.

Ms. Komal Srivastava, S.A. successfully completed Online Short term Refresher Course on Met Telecommunication which was held from 19th December to 23rd December, 2022.

Shri Parmod Kumar, Sc. 'C' and METNET Team imparted training to IMD CeASS users & Monitoring Officers from 21st November to 30th November, 2022

Dr. S. D. Attri, Sc. 'G' attended Hindi meeting of Scientific Ministries held under Chairmanship of Hon'ble Minister for Earth Sciences on 26th December, 2022.



5 No's officers / Scientist from Centre for Earth Sciences & Himalayan Studies Dept. of Science & Technology, Govt. of Arunachal Pradesh, visited RMC Guwahati for training for installation / introduction of ARG/AWS instruments, w.e.f 6-7/12/2022.

LECTURES/ TALK/ WEBINAR

Shri Dhaneesh K., Sc. 'C', M. O. Paradeep participated in the training on **"Skill Upgradation & Awareness Programme"** as a speaker to deliver lecture to the trainees (Sagar Mitras), organised by Brackish Water Training Centre, Paradeep under Directorate of Fisheries, Odisha, Cuttack on 6th October, 2022. on Airport Meteorological instruments from 18th October, 2021 to 21st October, 2022.

Shri U. K. Shende, Sc. 'E' has delivered lectures on the subject entitled **"Aviation instrumentation refresher course"** to various trainees commencing from 17th to 21st October, 2022. This training was arranged by ICI Training Centre (ICITC), New Delhi.

Dr. Satyaban B Ratna, Sc. 'E' attended the webinar on **"MSCA Staff Exchanges Call 2022 - How to collaborate with Europe"** organized by EURAXESS India on 18th October, 2022.

Dr. S. D. Attri, Sc. 'G' delivered talk on **"Vigilance Aspects"** on 31st October, 2022 in Vigilance awareness Week organised by MoES.

Dr. Sabeerali, C. T., Sc. 'C' delivered a talk on **"MMCFS verification"** in the Third Pole Regional Climate Centre (TPRCC) meeting held online on 2nd November, 2022.

Shri M. R. Deo, Met. 'B' participated in the program **"Krushidarshan"** on DD Sahyadri (Marathi Channel) on 2nd November, 2022 and delivered talk on **"Impacts of extreme weather events during rabi season and appropriate agromet advisories (रब्बी हंगामातील तीव्र हवामान घटना आणि कृषी सल्ला)"** and the program was broadcasted on 11th November, 2022 between 0600 and 0630 pm on DD Sahyadri.

Shri U. K. Shende, Sc. 'E' has delivered lecture on practical of Airport Meteorological Instrument (AMI) for FTC Batch No.194 on 4th November, 2022.

Dr. O. P. Sreejith, Sc. 'E' "IITM Monsoon Discussing seminar on 10th November 2022" at IITM and delivered talk on "Seasonal forecast 2022 Southwest Monsoon".

Dr. Satyaban B. Ratna, Sc. 'E', attended a webinar on "The Climate Classroom @ COP27 : Climate Change Communication" organized by WMO on 11th November, 2022.

Dr. M. Mohapatra, DG, IMD delivered Plenary Lecture on Climate change and extreme weather at the 3rd Federation of Indian Geoscience Association (FIGA) at Wadia Institute of Himalayan Geology (WIHG), Dehradun on "Floods : Past and Present" on 16th November, 2022.

Shri Nahush Kulkarni, Sc. 'C', M. C. Agartala invited to deliver lecture on "Early Warning importance and Meteorological Service of M. C. Agartala" at Central Training Institute (CTI) on 16th November, 2022.

Dr. M. Mohapatra, DG, IMD attended the IITM Diamond Jubilee Foundation Day at IITM, Pune on 17th November, 2022.

Shri U. K. Shende, Sc. 'E' has delivered lectures to fifteen Airforce officers on Surface Instruments who were on training at SID, Pune from 19th to 23rd December, 2022.

Dr. Satyaban B. Ratna, Sc. 'E', attended a webinar "Explaining and Predicting Earth System Change Webinar series - The Triple La Niña" organized by WMO, WCRP on 22nd November, 2022.

Shri Sukumar Roy, Met. 'A', gave lecture on Agromet instruments to the students of SAMETI, Narendrapur Ramkrshna Mission on 23rd November, 2022.

Dr. S. Bandyopadhyay, RMC Kolkata delivered a lecture on "Weather and Disaster Management" to the newly recruited officers of Block Disaster management, Government of West Bengal at RMC Kolkata on 29th November, 2022.

Shri Raja Acharya, Met. 'A' attended the webinar "The Use of Autonomous Vehicles and High Technology for Ocean Observation" organised by the GOOS Office, Intergovernmental Oceanographic Commission (UN) on 29th November, 2022.

Dr. Rajib Chattopadhyay, Sc. 'E', **Dr. Ananya Karmakar**, Sc. 'C', **Ms. Lekshmi S**, JRF and **Mr. Nilesh Wagh**, Project Sc. 'C' participated in the National symposium TROPMET-2022 held at IISER Bhopal from 29th November to 2nd December, 2022.

Dr. M. Mohapatra, DG, IMD delivered a lecture on "Meteorological Science: Recent Advances" in the DST-NIAS Training programme on 1st December, 2022.

Dr. Divya Surendran, Sc. 'C', delivered a lecture on "Meteorological Instruments and measurements for climate stations" on 12th December, 2022 as a part of Induction Training Program for newly recruited Junior Engineers of Central Water Commission, Central Water Commission National Water Academy, Pune.

Dr. Kripan Ghosh, Sc. 'F', delivered an Invited Lecture on "Recent advances in Agromet Advisory Services in India" in National Training Programme on "Recent Advances in Agricultural Meteorology" organised by Centre of Advanced Faculty Training in Agril. Meteorology (CAFT), College of Agriculture, Pune on 15th December, 2022.

Dr. Ashutosh Kumar Misra, Sc. 'D' delivered a lecture on "IMD services for the farming community of the country" to the B.Tech. (Agri. Engg.) students and faculty members of Navsari Agricultural University, Gujarat on 15th December, 2022.

Shri Rahul Saxena, Sc. 'F' and **Dr. Ashok Kumar Das**, Sc. 'E' delivered several resourceful lectures on the Use of NWP Modelling in Hydromet Services and FFGS Application in the NWP Refresher Course on "Interpretation and Application of NWP Products in Weather Forecasting Services" during 19-23 December, 2022, organized by NWP Division, IMD.

Dr. H. R. Biswas, Sc. 'F', M. C. Bhubaneswar delivered lecture on Heavy Rainfall on 23rd December, 2022 for the refresher course on "Interpretation and Application of NWP Products in Weather Forecasting services" conducted by NWP Division, IMD, New Delhi held during 19-23 December, 2022.

Dr. M. Mohapatra, DG, IMD delivered a lecture on "Monitoring and Forecasting of cyclone mandous : A case study" during the NWP Refresher Course on 20th December, 2022.

Ms. Monica Sharma, Sc. 'D' delivered a lecture on "SOP for Monitoring and Forecasting of cyclone mandous : A case study" during the NWP Refresher Course on 20th December, 2022.

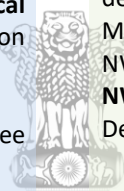
PANEL DISCUSSION/ INTERVIEW

Shri Himanshu Gupta, S.A. from M. C. Gangtok attended "Second Regional Conclave of State Disaster Management Authorities" on 14th October, 2022 & 15th October, 2022. He participated on "Moderated panel discussion on setting up early warning systems for cascading disasters in mountains".

Dr. O. P Sreejith, Sc. 'E' and **Dr. Satyaban B.**, Sc. 'E' Ratna attended the "Hydromet Joint Learning Exercise" with the teams from World Bank and Bangladesh on 31st October, 2022.

Dr. M. Mohapatra, DG, IMD participated as Panellist for the episode on "Aapdaka Samna" for Doordarshan on "Urban Flood" to be hosted by NDMA on 3rd December, 2022.

Dr. H. R. Biswas, Sc. 'F', M. C. Bhubaneswar attended and gave a presentation in the pre-cyclone exercise meeting under the chairmanship of the Chief Secretary, Odisha on 10th October, 2022 in Lok Seva Bhawan of Odisha.



Dr. M. Mohapatra, DG, IMD participated in a Panel discussion on India-2047 organised by South Asian Institute for Advanced Research and Development (SAIARD), Academic cum Research Institute, Kolkata on 16th October, 2022. The SAIARD conferred Pride of India Award to Dr. M. Mohapatra on this occasion.



CONFERENCE/PRESENTATIONS

Shikha Verma, S.A. Presented Paper titled “**Analysis of urban area extracted from NDBI and classification approach by using satellite data**” at the 8th International Conference on Engineering and Emerging Technologies - ICEET 2022, scheduled, during 27-28 October, 2022 at Kuala Lumpur, Malaysia.

Dr. Iyyappan M., Sc. ‘D’ presented on Heavy Rainfall Vulnerability Assessment and participated as a Co-Chair National Conference on “**Landslide Risk Assessment and Mitigation in India**” organized by Department of Geography, Jamia Millia Islamia on 2nd of November, 2022.

Dr. (Smt.) Manorama Mohanty, Sc. ‘E’, M. C. Ahmedabad made presentation on Early Warning System in 20th National Maritime Search and Rescue (NMSAR) scheduled on 18th November, 2022 at Tent City-2, Ekta Nagar (Kevadia), Gujarat.

Dr. Sabeerali C. T., Sc. ‘C’ delivered the country forecast presentation during the 24-SASCOF on 24th November, 2022.

Shri Shubhendu Karmakar, Met. ‘A’ presented a paper titled “**Glacier Mass Budget and Associated influence of the Climate during 2000-2020 in Alaknanda Basin, Uttarakhand**” and presented a poster on 1st December, 2022 at TROPMET-2022 Conference held from 29 Nov - 2 Dec, 2022 at IISER, Bhopal.

Ms. Laxmi Pathak, S. A. presented a paper titled “**Nowcasting of Thunderstorm events using Indian GNSS IPWV and Insat 3D and 3DR DATA**” and presented a poster on 30th November, 2022 at TROPMET-2022 Conference held from 29 November- 2 December, 2022 at IISER, Bhopal.

Dr. Satyaban B Ratna, Sc. ‘E’, presented a talk on “**Study of Indian Summer Monsoon Variability over Gujarat (West Coast India) and Associated Large Scale Dynamics**” and **Ms. Tanu Sharma**, JRF, presented a talk on “**Reinvestigating the changing relationship between the Indian Summer Monsoon and ENSO in the recent decades**” at TROPMET-2022 in IISER, Bhopal from 29th November to 2nd December, 2022.

Dr. Ananya Karmakar, Sc. ‘C’ had given Oral presentation on the topic “**Modulation of Climate Zones of Subdivisions of India in The Historical Records**”, **Mr. Nilesh Wagh**, Project Scientist ‘C’ had given Oral presentation on the topic “**Analysis of Drought in Southwest Indian Ocean Countries Using SPI and SPEI and their Relationship with Global SST**” and **Lekshmi S.**, Research Fellow (MRFP) presented a lightning talk (a short talk + poster presentation) on the topic “**Intraseasonal Modes of Summer Temperature Variability and Long-term trends of Heatwaves over India**” in TROPMET-2022 held at IISER Bhopal from 29th November to 2nd December, 2022.

Dr. O. P. Sreejith, Sc. ‘E’, participated and gave presentation for the SAMA & SAFOAM Workshop “**Monsoon 2022: Impact of Monsoon Variability on Agriculture**” organized by South Asia Meteorological Association (SAMA) & South Asia Forum on Agricultural Meteorology (SAFOAM) on 3rd December, 2022.

FOREIGN DEPUTATION

Shri K. C. Sai Krishnan, Sc. ‘G’ attended INFCOM-2 from 24th October, 2022 to 28th October, 2022 at Switzerland to present India’s development and progress on various action points and future plan services in India and over various member countries in this region.

Mr. Mohd. Imran Ansari, Sc. ‘E’ & **Mr. Rohit Shukla**, Sc. ‘C’, IMD, New Delhi to conduct factory acceptance test (FAT) at the factory site of original equipment manufacturer (OEM) to be held at WEATEHEX Co. Ltd. 1-4 10, 25, Obongsandan 3-ro Ulwang-si, Gyeonggi-Do, 16079, in Republic of Korea from 24-26 November, 2022.

Dr. M. Mohapatra, DGM, and **Dr. K. S. Hosalikar**, Sc. ‘G’, IMD attended Eighteenth Session of the RA II Management Group, at Abu Dhabi, UAE 28 to 29 November, 2022.

Dr. M. Mohapatra, DG, IMD has been on Ex-India deputation to United Arab Emirates to participate in the Eighteenth Session of the RA II Management Group during 28th - 29th November, 2022.

ACHIEVEMENTS / APPRECIATIONS / AWARDS RECEIVED

Dr. Mrutyunjay Mohapatra, DG, IMD was conferred the Most Inspirational Personality Award by the Interview Times, Bhubaneswar on 2nd October, 2022. He participated in the rapid fire round interview programme conducted by the Interview Times (<https://youtu.be/l1CNx4t7VP8>).

Dr. Mrutyunjay Mohapatra, DG, IMD participated as Guest of Honour in the World Environment Summit 2022 at Vallabhbai Patel Chest Institute, Delhi University on 15th October. He was conferred the Environment & Societal Development Association (ESDA) environmental Excellence award-2022 during the event.



Shri Raja Acharya, Met. 'A' received appreciation from WMO in connection with participation through online mode as an observer in the 25th annual Ocean Observation Physics and Climate Panel (OOPC) meeting organised by the WMO on 20-21 October, 2022 in hybrid mode.

AWARD

Shri Mohit, S.A., a recognized sportsman in IMD won the Inter Ministry Tournament and got selected for 41st National Shooting Ball Championship held on 25 to 27 December, 2022.



Dr. Saniay O'Neill Shaw, Sc. 'F', awarded Certificate of excellence for working as Official Nodal Officer for official language during the year 2021-22 on 17.10.22 by the Ministry of Earth Sciences.

Infrastructure Development & Installations

AWS at NIT Rourkela has been commissioned on 23rd December, 2022.

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



DCWIS system was installed at Khushinagar, Madurai and Rourkela airport (SAIL) in October, November and December 2022 respectively.

Rourkela- DCWIS

DCWIS system integrated with PWD was installed at Indore, Amritsar and Ahmedabad airport in November and December 2022.

Ahmedabad DCWIS+ PWD



Research & Publications

Anoop Kumar Mishra, A. K. Mitra and S. C. Bhan, 2022, "On the Changes in Precipitation Spectrum Over India Using High-Resolution Precipitation Estimates from Remote Sensing Observations", Journal of India Society of Remote Sensing (Springer), November, 2022 DOI: <https://doi.org/10.1007/s12524-022-01622-8>.

Anoop Kumar Mishra, A. K. Mitra and S. C. Bhan, "Towards development of Storm Index using Satellite observation for near-real time monitoring of thunderstorm over India", Weather (Royal Meteorological Society), October, 2022, DOI No. 10.1002/wea.4314.

Sourish Bondyapadhyay, "Determination of suitable thermodynamic indices and prediction of thunderstorm events for Eastern India", 2023, 135, 4 Meteorology and Atmospheric Physics.

Dr. Anwesa Bhattacharya, "Evaluation of the simulated aerosol optical properties over India: COALESCE model inter-comparison of three GCMs with ground and satellite observations", 852,2022; Science of The Total Environment.

Pattanaik, D. R., Chattopadhyay, R. and Sahai, A.K. (2023). Book Chapter published, "Operational Extended Range Forecast of Weather and Climate over India and the Applications". In: Gahalaut, V.K., Rajeevan, M. (eds) Social and Economic Impact of Earth Sciences. Springer, Singapore. https://doi.org/10.1007/978-981-19-6929-4_8.

O. P. Sreejith, Divya Surendran, Arti Bandgar and D. S. Pai, published a chapter "Operational Seasonal Forecasting of the Southwest Monsoon Rainfall" in the book Social and Economic Impact of Earth Sciences published by Springer on 17th December, 2022.

ENSO bulletin for the month of October, November & December 2022 and Seasonal Climate Outlook for South Asia for the period of October to March 2023 were issued by CRS, Pune. (Quick Link: www.imdpune.gov.in/Clim_Pred_LRF_New/Products.html)

Provisional annual climate summary 2022 prepared and submitted to WMO by CRS, Pune.

Issued monthly climate summary for October, November and December 2022 prepared NWP division in IMD New Delhi.

Enhanced Seasonal Climate Outlook Statement (SCOS) has been prepared NWP division in IMD New Delhi.

Outreach and Media Interaction

IMD issued daily weather forecasting video of about 5 minutes duration in English & Hindi through YouTube, Facebook, Twitter and IMD website.

Weekly Video on extended range forecast (upto two weeks) were issued every Thursday through website and socialmedia (Facebook, Twitter, YouTube etc.).

Bulletins and Warnings along with graphics were communicated through Social Media including Facebook, Twitter, Instagram, YouTube and IMD Blog page.

India Meteorological Department (IMD) organized Press Conference on "Outlook for rainfall and temperature for the month of November, 2022" on 1st November, 2022. Dr. M. Mohapatra, DG, IMD addressed the press conference online.

Dr. M. Mohapatra, DG, IMD attended Recording of the special program 'Aapda Ka Samna' on Cold Wave organized by NDMA on 30th December to be telecast on Doordarshan.

Dr. Mrutyunjay Mohapatra, DGM IMD addressed Press Conference regarding Seasonal Outlook for Winter Temperatures and Rainfall Forecast for December, 2022 on 1st December, 2022.

Special Interviews on prevailing weather and monsoon were given by Shri K. S. Hosalikar, Sc. 'G', CR&S Pune and Head SID Pune to different media and stake holders.

During the quarter 184 Farmers awareness programmes (FAPs) were organized by AMFUs and DAMUs across the country by Agromet Division.

24 Success stories regarding agromet advisory services rendered under GKMS were collected from AMFUs and DAMUs during the quarter.

Visitors

Dr. Vijay Tallapragada, Senior Scientist, Environment Modelling Center, NOAA USA visited IMD on 29th December and held discussion with Dr. M. Mohapatra, DGM IMD and other officers on various modeling developments that can be shared with IMD under international agreement with India.

The delegation from defence department of United Arab Emirates visited IMD, New Delhi on 13th December to have an overview of cyclone warning services and weather forecasting services of Regional Specialised Meteorological Centre (RSMC), New Delhi/ IMD.

143 students of B.Sc (Agriculture) of B.A College of Agriculture, Anand Agricultural University, Anand visited MC Ahmedabad on 10 and 11 November 2022.

Shri Ashok Chandra Panda, Hon'ble Minister of Science & Technology, Govt. of Odisha visited IMD on 12th November, 2022.

30 students of class 7th standard from Jamaaly English Medium School have visited on our weather department to have knowledge regarding weather forecast on 26/11/2022.

6 visitors from Public Health Foundation of India (PHFI) visited on 29th December, 2022 at M.C. Ahmedabad.

36 MBBS Students from Himalayan Institute of Medical Sciences, Dehradun with 2 faculties, visited Meteorological Centre Dehradun premises on 28 October, 2022 and 18 October, 2022 and 16 MBBS Students from Govt. Doon Medical College, Dehradun with 02 faculties on 28th October, 2022.



Students of various colleges visiting MC Dehradun

300 Nos. of students along with teachers from Delhi Public School, Joka visited RMC Kolkata in three phases during November'22 as their educational tour.



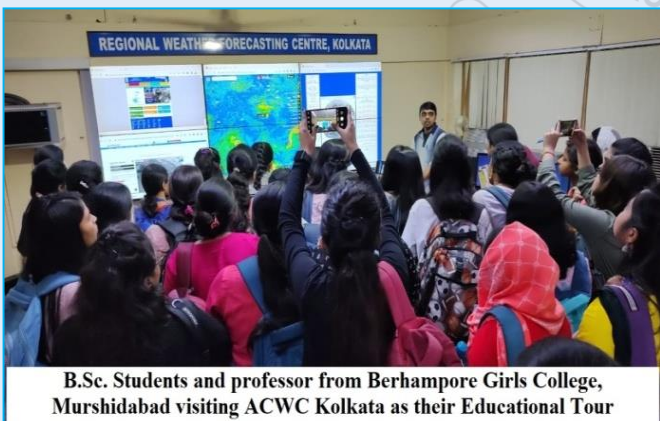
The students and teachers from Delhi Public School, Joka visiting RMC Kolkata as their educational tour

27 Nos. of Geography Honors students and professors from Prasanta Chandra Mahalanobis Mahavidyalaya, Kolkata visited RMC Kolkata as their educational tour on 7th December, 2022.



Geography honors students of P.C. Mhalonabish Mahavidyalaya, Kolkata visiting Alipore Observatory on 07.12.22 as an educational tour

45 Nos. of B.Sc. Students and professors from Berhampore Girls' College, Murshidabad came to RMC Kolkata as educational visit on 15th December, 2022.



B.Sc. Students and professor from Berhampore Girls College, Murshidabad visiting ACWC Kolkata as their Educational Tour

RMC Kolkata participated in "17th Science Exhibition cum Environmental Awareness Fair" at Netaji Subhas Maidan, Madhyamgram Chowmatha, 24 Parganas (N), WB, from 23rd December, 22 to 27 December, 22. The exhibition team from RMC Kolkata had displayed various display-items and Met. Instruments and made familiar about its implications and importance of use in weather forecasting to the visitors. **Dr. S. Bandyopadhyay**, DDGM, RMC Kolkata delivered lecture before the visitors in the exhibition.



Students with their parents visiting IMD Stall, arranged by the officials of RMC Kolkata at Science Exhibition, Madhyamgram during 23rd-27th December 2022

About 267 visitors including member of IIT Delhi, Namai Gange Project from Jal Shakti Mantralaya, Govt of India, Kirorimal College, Delhi University, Greater Noida Institute of Technology, Laxman Public School, DPS Mathura Road, Cambridge School Srinivaspuri visited the Central Hydromet Observatory from October to December, 2022.



Students of Kirorimal College, Delhi University

Eighteen numbers of 1st & 3rd semester of Master Students of Sikkim Government College, Namchi along with their teachers have visited M. O. Gangtok on 17th December, 2022 Shri Abhishek Patel, S.A. attended the visitors.

160 Students of Mothers Public school, Bhubaneswar in two groups-one on 20 October, 2022 and the other on 21 October, 2022 - along with their teachers visited M.C. Bhubaneswar on study tour.

105 numbers of Students of Modern Seniority Secondary School, Gangtok along with their teachers / staff visited at M.O. Gangtok as educational tour, on 14th October, 2022.

Student interaction and lab visit were conducted for the students and faculties of Somaiya College of science and commerce, Mumbai on 23rd November, 2022.

Approx. 1318 visitors visited this office were briefed on various activities of the Climate, Agrimet and Instruments division which includes 33 teachers and 133 Cadets visited CAGMo, Pune during the period.

30 numbers of "Foreign delegates from International Reinsurers" visited O/o Head CRS, Pune on 10th November, 2022.

Weather Information

The rainfall for the country as a whole, for the Annual (Jan-Dec)-2022 has been recorded as 1257.0 mm which is 108% of its Long Period Average (LPA) of 1160.0 mm. In all, category wise, 13 Met sub-divisions in EXCESS, 20 in NORMAL, 03 in DEFICIENT and no any Met. sub-divisions remained in LARGE EXCESS, LARGE DEFICIENT, "NO RAIN" category of rainfall.



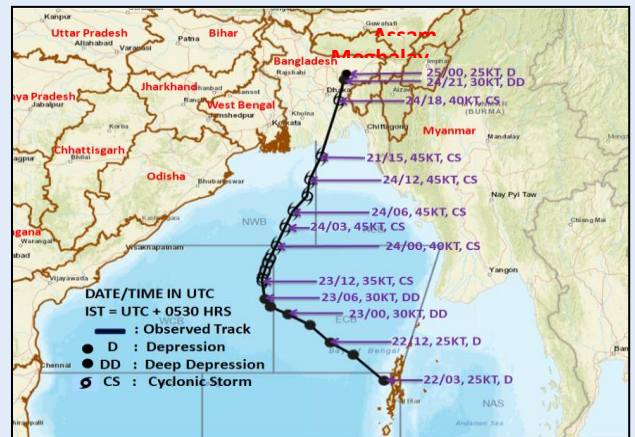
The sub-division-wise rainfall maps and statistics for the Annual (Jan-Dec)-2022

Withdrawal of Southwest Monsoon

Southwest Monsoon has withdrawn from the entire country on 23rd October, 2022.

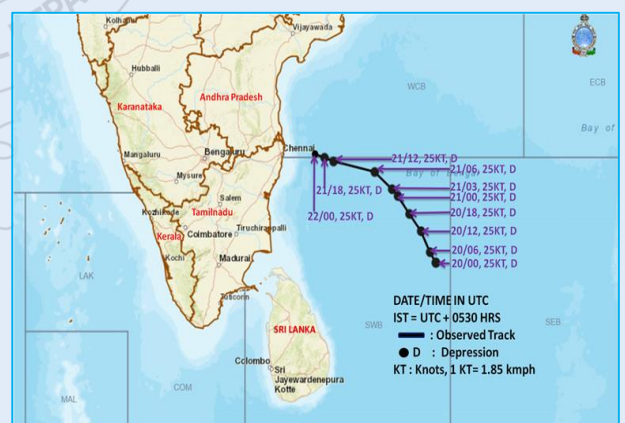
Cyclonic Storm "SITRANG"

Considering the development of cyclonic storm over westcentral BoB, IMD issued first Special Message and Press Release at 1400 hours IST of 20th October on formation of low pressure area over North Andaman Sea and neighbourhood. It was also indicated that the system would intensify into a depression and cyclonic storm by 22nd and 24th October respectively. The movement of the system towards West Bengal-Bangladesh coasts was also predicted. The landfall of the cyclone with a wind speed of 90-100 kmph gusting to 110 kmph was predicted by IMD when the system was a low pressure area over Andaman Sea and three and a half days in advance of landfall time of the cyclone.



Depression over Bay of Bengal, 19-22 November, 2022

A cyclonic circulation formed over south Andaman Sea and adjoining southeast Bay of Bengal (BoB) in the morning (0530 hours IST/0000 UTC) of 15th November. It lay over south Andaman Sea on 16th November. Under its influence, a low pressure area formed over Southeast BoB & adjoining Andaman Sea in the morning (0530 hours IST/0000 UTC) of 17th November, 2022. It moved west-northwestwards and lay as a well-marked low pressure area (WML) over central parts of south BoB in the morning (0530 hours IST/0000 UTC) of 19th. Continuing to move further west-northwestwards, it concentrated into a depression over southwest and adjoining southeast BoB in the morning (0530 hours IST/0000 UTC) of 20th and then moved northwestwards till noon (around 1130 hrs IST/0600 UTC) of 21st November. Thereafter, it moved west-northwestwards and weakened into a WML over westcentral and adjoining southwest Bay of Bengal off South Andhra Pradesh-North Tamil Nadu coasts in the morning (0830 hours IST/0300 hours UTC) of 22nd November.

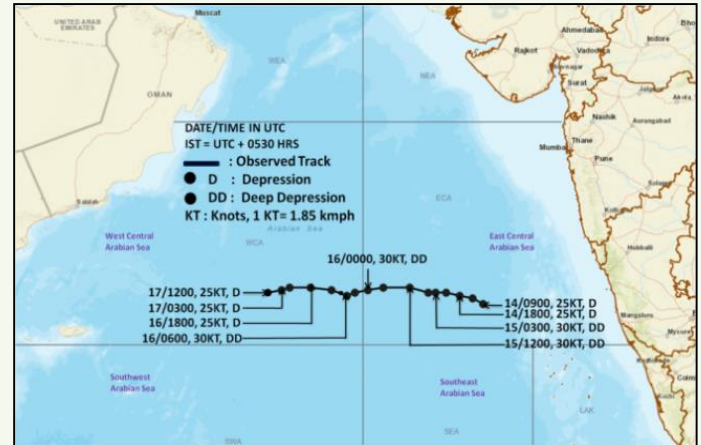


Observed track of the depression over southwest & adjoining southeast BoB (20-22 November, 2022)

Severe Cyclonic Storm Mandous

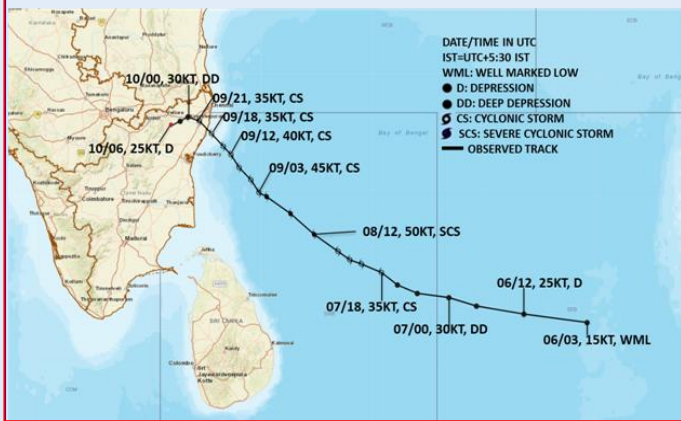
Cyclone Mandous developed from a low pressure area (LPA) that formed over South Andaman Sea & neighbourhood in the morning (0530 hours IST) of 5th December, 2022. It concentrated into a depression over Southeast BoB in the evening (1730 hours IST) of 6th December. It moved west-northwestwards and intensified further into a deep depression (DD) over southeast &

adjoining southwest BoB in the morning (0530 hours IST) of 7th. Continuing to move west-northwestwards, it further intensified into the cyclonic storm (CS) "Mandous" pronounced as "Man-Dous" over southwest BoB around midnight (2330 hours IST) of 7th December and into a severe cyclonic storm (SCS) in the evening (1730 hours IST) of 8th December. It maintained the intensity of SCS till early hours of 9th December. The peak intensity of the storm was 85-95 kmph gusting to 95 kmph during this period. It then moved nearly northwestwards, weakened gradually and crossed north Tamil Nadu, Puducherry and adjoining south Andhra Pradesh coasts between Puducherry and Sriharikota, near latitude 12.60° N and longitude 80.15° E, close to Mamallapuram (Mahabalipuram). After the landfall, it moved west-northwestwards and weakened into a DD over North Tamil Nadu in the early morning (0530 hours IST) of 10th December.



Observed track of deep depression over eastcentral Bay of Bengal (14-17 December)

OBSERVED TRACK OF SEVERE CYCLONIC STORM 'MANDOUS' OVER BAY OF BENGAL DURING 06-10 DEC 2022

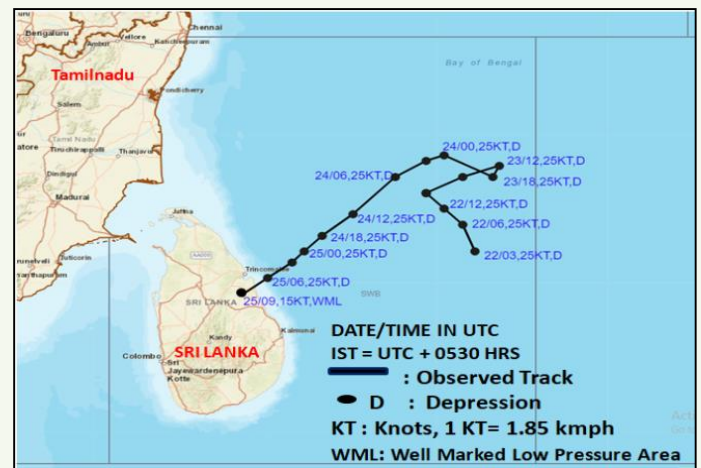


Deep Depression over eastcentral Arabian Sea (15-17 December, 2022)

The remnant of Mandous cyclone entered eastcentral Arabian Sea as an upper air cyclonic circulation. Under its influence, a Low Pressure Area (LPA) formed over eastcentral and adjoining southeast Arabian Sea off north Kerala-Karnataka coasts during early morning of 13th December, 2022 and it became a well marked low pressure area (WML) over the same region around 1730 IST of the same day. It moved further northwestwards and lay as a well marked low pressure area over Eastcentral and adjoining Southeast Arabian Sea at 0830 hours IST of 14th December, 2022. It concentrated into a depression over the same region and lay centered at 1430 hours IST of the 14th December, 2022 near latitude 13.5° N and longitude 69.6° E. It then moved west-northwestwards and intensified into a deep depression at 0530 hours IST of 15th December, 2022 over eastcentral and adjoining southeast Arabian Sea. It then moved nearly westwards as a deep depression till noon of 16th. It then moved west-northwestwards and weakened into depression over westcentral & adjoining eastcentral Arabian Sea. While moving westwards over westcentral Arabian Sea, it maintained the intensity of depression till noon of 17th and weakened into a well marked low pressure area over westcentral Arabian Sea in the evening (1730 IST) of 17th.

Depression over southwest Bay of Bengal (22-25 December)

A low pressure area formed over southeast Bay of Bengal and adjoining equatorial India Ocean on 14th December, 2022 afternoon. It persisted over the same region during 15 to 17 December, 2022. It moved slowly westwards and lay over central parts of South Bay of Bengal & adjoining East Equatorial Indian Ocean during 18 to 20 December, 2022. It became a Well-Marked Low-Pressure area over Southwest Bay of Bengal & adjoining East Equatorial Indian Ocean on 21st early morning. It concentrated into a depression at 0830 hours IST of 22nd December over southwest and adjoining southeast Bay of Bengal near latitude 9.0° N and longitude 85.0° E. The depression maintained its intensity, initially moved north-northwestwards and then northwestwards and southwest Bay of Bengal near latitude 10.1° N and longitude 84.2° E at 2330 hours IST of 22nd December. Thereafter, the depression moved slowly and recurved east-northeastwards, made a clockwise loop and then moved west-northwestwards. Thereafter, the depression moved nearly west-southwestwards during next 24 hours and reached over Southwest Bay of Bengal and adjoining Sri Lanka coast at 0830 hours IST of 25th December. Thereafter, the system continued to move west-southwestwards and weakened into a well-marked low pressure area over Sri Lanka at 1430 hrs IST of today, the 25th.



Observed track of Depression over southwest Bay of Bengal during 22-25 December, 2022