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IMD NEWS

INDIA METEOROLOGICAL DEPARTMENT
(Ministry of Earth Sciences)



JAN – MAR 2021

Volume 14

Number 1

Important Events / Activities

146th India Meteorological Department Foundation Day 2021

India Meteorological Department celebrated its 146th Foundation day on 15th January, 2021. **Dr. Harsh Vardhan**, Hon'ble Union Minister for Earth Sciences, Health & Family Welfare and Science & Technology graced the occasion as the Chief Guest, **Shri Trivendra Singh Rawat**, Hon'ble Chief Minister of Uttarakhand and **Shri Jai Ram Thakur**, Hon'ble Chief Minister of Himachal Pradesh participated as the **Guest of Honour**. **Dr. Madhavan Nair Rajeevan**, Secretary, Ministry of Earth Sciences presided over the function. **Dr. M. Mohapatra**, DG, IMD welcomed the distinguished guests and highlighted the achievements of IMD during the year 2020.



Dr. Harsh Vardhan, Hon'ble Union Minister, Shri Trivendra Singh Rawat, Hon'ble Chief Minister of Uttarakhand, Shri Jai Ram Thakur, Hon'ble Chief Minister of Himachal Pradesh, Dr. Madhavan Nair Rajeevan, Secretary, MoES and Dr. M. Mohapatra, DG, IMD, during IMD Foundation Day 2020, New Delhi

Dr. Harsh Vardhan, Hon'ble Union Minister for Earth Sciences, Health & Family Welfare and Science & Technology dedicated two Doppler Weather Radars installed at Mukteshwar, Uttarakhand and Kufri, Shimla, Himachal Pradesh to the nation, released a report on **Cyclone Disturbance during 2020**, Hindi Patrika **Mausam Manjusha** and inaugurated e-launching of **Online Web Portal of IMD Journal MAUSAM** and **Multi Mission Meteorological Data Receiving & Processing System (MMDRPS)** established at Satellite Division, IMD New Delhi



Dr. Harsh Vardhan, Hon'ble Union Minister, Dr. Madhavan Nair Rajeevan, Secretary, MoES, Dr. M. Mohapatra, DG, IMD and Dr. A. K. Sharma, Sc. 'G' during inauguration of Multi Mission Meteorological Data Receiving & Processing System (MMDRPS) and Online Web Portal of IMD Journal MAUSAM

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Important Events / Activities

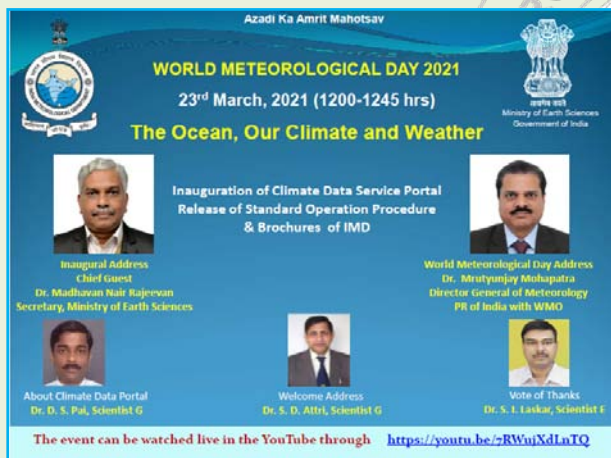
72nd Republic Day of India was celebrated and National Flag was hoisted at H.Q., IMD and all sub-offices of IMD across India on 26th January, 2021. On this occasion, all heads of the offices hoisted National Flag and sang National Anthem and other patriotic songs along with officers and staff members.

Dr. M. Mohapatra, DG, IMD attended celebration of **World Wetlands Day** organized by Wetlands Intl. South Asia on 2nd February, 2021.

Dr. M. Mohapatra, DG, IMD participated in the Foundation Day of National Centre for Coastal Research 19th March, 2021.

WORLD METEOROLOGICAL DAY 2021

India Meteorological Department celebrated **World Meteorological Day** on 23rd March, 2021 which was inaugurated by **Dr. M. Rajeevan**, Secretary, and Ministry of Earth Sciences. **Dr. M. Mohapatra**, DG, IMD delivered World Meteorological Day 2021 Address. On this occasion, **IMD** released Climate Data Service Portal, 21 Standard Operation Procedure Manuals on various forecasting services of IMD and a series of brochures/templates highlighting the services rendered by various divisions and offices of IMD.



Dr. M. Rajeevan, Secretary, Ministry of Earth Sciences inaugurated E-Symposium on **“The Ocean, Our Climate and Weather”** organised by Indian Meteorological Society (IMS) and Ocean Society of India (OSI) on World Meteorological Day on 23rd March, 2021. **Dr. M. Mohapatra**, DG, IMD & President IMS made Opening Remarks and also chaired the Technical Session alongwith **Dr. Ravichandran**, Director, NCPOR & President OSI.

Dr. M. Mohapatra, DG, IMD delivered inaugural talk as Chief Guest in the WM Day celebrations on 23rd March, 2021 organised by JNU.

Dr. M. Mohapatra, DG, IMD participated as Guest of Honour in the Inaugural Session of the HYDRO-2020 organized under the aegis of Indian Society for Hydraulics (ISH), Pune by NIT, ROURKELA on 26th March, 2021.

Memorandum of Understanding

Dr. K. Sathi Devi, Sc. 'F' has attended the thanks giving virtual ceremony of recently signed MoU between National Centre of Meteorology, United Arab Emirates (NCM-UAE) and Ministry of Earth Sciences on 27th January, 2021.

New projects/schemes/programmes approved

The e-office has been implemented in IMD with effect from 1st January, 2021. **Dr. M. Mohapatra**, DG, IMD inaugurated E-Office in IMD on 1st January, 2021.

IMD launched its **Crowd Sourcing** mechanism through web interface to collect all observed weather phenomena like rain, thunderstorm, squall etc. from public on 12th January, 2021. The link (https://city.imd.gov.in/citywx/crowd/enter_th_data.php) is available in IMD main website (<https://mausam.imd.gov.in/>) under the heading **‘Public Observation’** with an objective to gather and archive all observed weather phenomena including rain, thunder, snow, hail, squall, strong winds, hail storm etc. to carry out forecast verification and further improve forecast.

Human Resource Development Activities

TRAINING

Shri Sunny Chug, Sc. 'C' (ISSD) attended 5 days online training on **“Cyber Security and threats”** organized by CDAC Hyderabad between 4th January, 2021 to 8th January, 2021.

Shri Shivinder Singh, Sc. 'C' attended free of cost online training on **“Augmented and Virtual Reality (AVR)”** of duration 10 days provided by NIELIT, Chandigarh from 22nd February, 2021 to 5th March, 2021.

A Virtual Training Programme on **“Preparation of Weather Maps using QGIS”** and **“Weather Bulletins Warning Graphics in Local Languages”** under the chairmanship of DG, IMD, New Delhi was held on 24th February, 2021.

A training programme on **“E-Office Product”** for Master trainers for India Meteorological Department (IMD) by NIC was held on 11-12 March, 2021 via video-conferencing.

Online Training program on **“Climate Change Adaptation in Agriculture”** during 23-26 March, 2021 organized by MANAGE, Rajendranagar, Hyderabad, Telengana and given presentation on **“Role of IMD in block level and district level agromet advisory services”**.

One day Training on **“Verification of AWS”** was conducted at M. C. Bhubaneswar on 26th March, 2021 under the chairmanship of Dr. H. R. Biswas, Sc. 'E'. Block Agriculture Officer/AAO from different districts of the Orissa attended the Training Programme.

WEBINAR

Dr. M. Mohapatra, DG, IMD participated as panellist in the Webinar organized by NIDM on **“National level Practices and Approach for ‘Self-reliance’ in Early Warning & Communication”** on 13th January, 2021.

Dr. M. Mohapatra, DG, IMD and **Dr. Naresh Kumar**, Sc. ‘E’, attended National Webinar on **“Heat Wave Risk Reduction - 2021”** organized by NDMA on 19th January, 2021.

Dr. R. K. Jenamani, Sc. ‘F’ presented progress and further Science plan paper on **“Science activities and priorities for WCSSP India WP3 for (2021-23) towards building upon IBF and Risk based warning for various severe weather events over India”** in INDO-UKMO, WCSSP India WP - Planning discussion held on 25th January, 2021.

Shri Raja Acharya attended the webinar **“Developing a Cost Effective Air-Deployed Unmanned Aircraft System (UAS) for Use in Turbulent Environments”** on 28th January, 2021 hosted by the National Oceanic and Atmospheric Administration (NOAA), USA.

Dr. K. K. Singh, Sc. ‘G’ attended two days’ National Seminar on **“A roadmap for NEP implementation in Agriculture education”** organized at NAS Complex Delhi by ICAR-NAHEP during 1-2 February, 2021.

LECTURES/TALK

Shri Surender paul, Sc. ‘F’ delivered an invited online lecture on **“Heavy Rain Forecast and Early Warning System of IMD”** in virtual training programme organized by Haryana Institute of Public Administration (HIPA), Gurugram, Haryana on 12th January, 2021 and 16th March, 2021.

Shri B. P. Yadav, Sc. ‘F’ gave a Scientific talk on **“Riverine Flood Meteorological Support and Flash Flood Guidance”** in the Brain Storming Workshop on Monsoon 2020, held on 18th January, 2021, jointly organized by MoES, IMD, IITM, NCMRWF and IMS.

Dr. M. Mohapatra, DG, IMD attended colloquium and delivered a talk on **“Weather Forecasting: Current Status and Future Plans”** organized by PRL on 20th January, 2021.

Dr. S. D. Attri, Sc. ‘G’ delivered address as Guest of Honour through Video Conference in **“International Conference on Information Technology (IT) for All”** organised by IDCF on 29th January, 2021.

Dr. M. Mohapatra, DG, IMD attended briefing by **Prof. Petteri Taalas**, Secretary General, WMO on 3rd February to Eastern Hemisphere Countries.

Shri B. P. Yadav, Sc. ‘F’ gave an online lecture on **“IMD and Water Resources Management”** at IIPA, New Delhi on 4th February, 2021.

Dr. S. D. Attri, Sc. ‘G’ delivered invited talk in National Webinar on **“Weather and Climate Services for Health”** organized by PGIMER, Chandigarh on 19th March, 2021.

Dr. Kuldeep Srivastava, Sc. ‘E’ delivered a lecture on topic **“Data & IMD product in website”** through e-training course for helicopter operators conducted on 19th March, 2021.

Dr. M. Mohapatra, DG, IMD delivered a talk on **“Weather Forecasting in India: Current Status and Future Scope”** during the Refresher Course on **“Environmental Science”** organized by Utkal University on 20th March, 2021 through VC.

Dr. S. D. Attri, Sc. ‘G’ participated in the Webinar on **“Sustainable Energy and Environment”** organized by Maharshi Dayanand University, Rohtak on 22nd March, 2021.

Shri Surender paul, Sc. ‘F’ delivered an invited online lecture on **“Drought Management and Early Warning System of IMD”** in virtual training programme organized by Haryana Institute of Public Administration (HIPA), Gurugram, Haryana on 26th March, 2021.

Basic & Advanced lectures on Hydrometeorology were delivered by **Dr. A. K. Das**, Sc. ‘E’, **Sh. S. K. Manik**, Sc. ‘C’ & on GIS by **Sh. Asok Raja S. K.**, Sc. ‘C’ to the candidates of AMTC Batch-181 during first week of February 2021 and Multiple lectures on Hydrometeorology to FTC Batch-190 delivered by **Sh. Rahul Saxena**, Sc. ‘F’, **Dr. A. K. Das**, Sc. ‘E’, **Sh. S. K. Manik**, Sc. ‘C’, **Sh. S. K. Asok Raja**, Sc. ‘C’ as per the schedule of MTI, Pune during February - March 2021.

Dr. M. Mohapatra, DG, IMD participated in the Inaugural Ceremony of International Conference on the **“Future Directions of Sub-Seasonal to Seasonal Prediction over South Asia”** organised by IITM Pune on 29th March, 2021 and delivered an Invited Talk on **“Societal applications of S2S predictions in India: Current status and Future scope”**.

WORKSHOP / SYMPOSIUM

Dr. K. K. Singh, Sc. ‘G’ delivered an online talk on **“Use of extended/ seasonal climate forecast for risk management in agriculture”** on 4th January, 2021 to scientists and students in Agriculture during online three days training programme on **“Climate change, impact, assessment and mitigation in Agriculture”** organized by School of Climate Change and Agromet, PAU, Ludhiana.

Dr. M. Mohapatra, DG, IMD and other concerned officers attended demonstration on **“Fully operational Web based dynamic composite Risk Atlas (Web-DCRA & Decision Support system (DSS) Tool and DCRA App., Offline Desktop version of Web-CRA, and offline Exposure Management”** organized by NDMA on 13th January, 2021.

Dr. M. Mohapatra, DG, IMD and other senior officers attended **“Brain Storming Workshop on Monsoon 2020”** jointly organized by MoES, IMD, IITM and NCMRWF on 18th January, 2021.



Dr. K. K. Singh, Sc. 'G' and **Dr. Ashok Kumar Das**, Sc. 'E' attended online NCMRWF workshop on **"Use of Extended Prediction System (EPS) Products"** and delivered a talk on **"Use of Numerical Model Forecast for Agriculture Sector: Handling Uncertainty"** on 20-22 January, 2021.

Dr. M. Mohapatra, DG, IMD chaired two technical sessions in **"Weather and Climate Science for Services Partnership (WCSSP) India"** Science Workshop organized by U. K. Met. Office on 25th January, 2021.

Dr. K. K. Singh, Sc. 'G' delivered an online talk on **"Agromet Advisory Service: Challenges and Opportunity"** on 27th January, 2021 for PG & Ph.D. students of GBPUAT Pantnagar during 3 days training on **"Novel Application of Weather Forecasting and Agromet Advisory in Agriculture"**.

Dr. M. Mohapatra, DG, IMD attended e-Conclave **"Fostering cyclone Resilience in Industries, Infrastructure and Communities"** organized by FICCI and delivered special address on 28th January, 2021.

Dr. M. Mohapatra, DG, IMD delivered the inaugural address in the **"Familiarization Workshop"** for officials of Central and State Pollution Control Boards organized by IMD and IITM, Pune in collaboration with CPCB on 1st February, 2021.

Dr. M. Mohapatra, DG, IMD attended **"Weather and Climate Science for Services Partnership (WCSSP) India"** - 2nd Annual Workshop organized by UK Met Office on 1st February, 2021. **Dr. M. Mohapatra**, DGM also chaired the Indo-UK WCSSP Meeting on 1st and 3rd February, 2021.

Shri Raja Acharya Participated in the Sixth International Workshop of **"Port Meteorological Officers"** through Virtual Mode, from 16-18 March, 2021 organized by WMO and Intergovernmental Oceanographic Commission, UN.

MEETINGS / VIDEO CONFERENCES

Dr. M. Mohapatra, DG, IMD Chaired the meeting to explore the possibility to help African region on generating met services: Dealing with **"Famine Early Warning and cyclone/climate Phenomena"** on 2nd January, 2021.

Dr. S. D. Attri, Sc. 'G' chaired Session and delivered address through VC on **"Climate change scenarios in Indian context"** in Training programme organized by Punjab Agricultural University, Ludhiana during 4-6 January, 2021.

Dr. M. Mohapatra, DG, IMD attended meeting with **Dr. Anantha Ramakrishna**, Director, CSIR-CSIO regarding **"Possibilities of Instrumentation projects with IMD"** on 12th January, 2021.

A virtual meeting was organized by **Hydromet Division** under the Chairmanship of DGM with officials of Hydromet, FMOs, MCs, RMCs, NWFC, NWP and CRS, Pune on 21st January, 2021 to discuss the **"Various activities of Hydromet Services"**.

Dr. M. Mohapatra, DG, IMD meeting on Web-based Dynamic Composite Risk Atlas through VC on 25th January, 2021.

Shri Raja Acharya, Met. 'A' attended the **"Virtual Global Conference Climate Adaptation Summit (CAS) 2021"** on 25th January, 2021, hosted by the Netherlands Government in collaboration with WMO and other UN agencies.

27 जनवरी, 2021 तथा 23 फ़रवरी, 2021 को महानिदेशक महोदय की अध्यक्षता में **"राजभाषा अनुभाग की समीक्षा बैठक"** आयोजित की गई जिसमें **श्रीमती सरिता जोशी**, सहायक निदेशक (रा.भा.) तथा **श्रीमती कल्पना श्रीवास्तव**, वरिष्ठ अनुवाद अधिकारी ने भाग लिया ।

Dr. M. Mohapatra, DG, IMD chaired **"4th National Council Meeting"** of Indian Meteorological Society (IMS) National Council on 28th January, 2021 as President of IMS.

Dr. Kuldeep Srivastava, Sc. 'E' participated in **"NSDI Nodall Officers"** Virtual Meeting on 28th January, 2021.

Dr. M. Mohapatra, DG, IMD chaired meeting on Severe Weather Reporting through Digital MMR and Cloud Sourcing through VC on 1st February, 2021.

Shri Y. K. Reddy, Sc. 'F' and **Dr. Kuldeep Srivastava**, Sc. 'E' attended VC meeting of **The Task Team Global Information Systems Centre (TT-GISC)** on 1st February, 2021.

Shri B. P. Yadav, Sc. 'F' along with all officials of Hydromet division attended the virtual meeting of **"2nd Weather and Climate Science for Service Partnership (WCSSP) Annual Workshop"** held on 1-5 February, 2021 organized jointly by MoES-UKMO.

Dr. M. Mohapatra, DG, IMD attended first meeting of the Working Group for formulation of Guidelines on preparation of Action Plan for prevention and management of cold wave under chairmanship of Member Secretary, NDMA on 2nd February, 2021.

Dr. M. Mohapatra, DG, IMD and other concerned officers attended meeting with DG, ICAR and other senior officers of ICAR regarding physical and financial performance of District Agromet Units (DMUs) under Gramin Krishi Mausam Seva (GKMS) on 2nd February, 2021.

Shri B. P. Yadav, Sc. 'F' attended the virtual meeting on **"World Wetland Day"** on 2nd February, 2021 organized by Wetlands International South Asia.

Dr. S. D. Attri, Sc. 'G' chaired the **"CST Committee on AMSS"** on 2nd February, 2021 and finalised the report.

Dr. M. Mohapatra, DG, IMD, **Dr K K Singh**, Sc. 'G' and **Dr. S. D. Attri**, Sc. 'G' attended meeting with **"Representative and Country Director, World Food Programme, New Delhi"** on 3rd February, 2021.

Dr. M. Mohapatra, DG, IMD participated as a Member of National Decade Coordination Committee (NDCC) in the NDCC Kick-off Meeting and the INCOIS Foundation Day and delivered lecture on **“United Nations Decade of Ocean Science for sustainable Development”** on 3rd February, 2021.

Dr. M. Mohapatra, DG, IMD attended meeting with co-founder of the digital creative agency Emotional Fulls regarding **“Preparation of a documentary film on cyclone Fani”** on 4th February, 2021.

Dr. M. Mohapatra, DG, IMD attended meeting with Col. Sanjay Srivastava, Chairman, Climate Resilient Observing-Systems Promotion Council (CROPC) to discuss about **“Lightning Resilient India Campaign 2021”** on 4th February, 2021.

Dr. M. Mohapatra, DG, IMD attended meeting through VC under the Chairmanship of Union Home Secretary to review the progress of search and rescue operation in Chamoli district of Uttarakhand as well as to discuss **“DRDO report on artificial lake formation in Rishiganga river, Uttarakhand”** on 7th, 17th and 20th February, 2021.

Shri B. P. Yadav, Sc. ‘F’ and **Sh. A. K. Das**, Sc.’E’ attended the meeting of Operational and NWP Research Committee for **“Rainfall Forecasts over major river basins for flood management”** on 8th February, 2021.

Dr. S. D. Attri, Sc. ‘G’ participated in Meeting on **“Automation of Agromet. Advisory”** organised by WoTR on 9th February, 2021.

Dr. S. D. Attri, Sc. ‘G’ chaired the Committee Meetings on **“AWS and on Citizen Charter”** in IMD on 17th February, 2021.

Dr. M. Mohapatra, DG, IMD attended meeting of the Department related Parliamentary Standing Committee on **“Science and Technology, Environment & Forests”** at Parliament House, New Delhi on 18th February, 2021.

Dr. M. Mohapatra, DG, IMD attended meeting with **“South Asia Disaster Management Advisor of Forest Service International Program Office”** on 18th February, 2021.

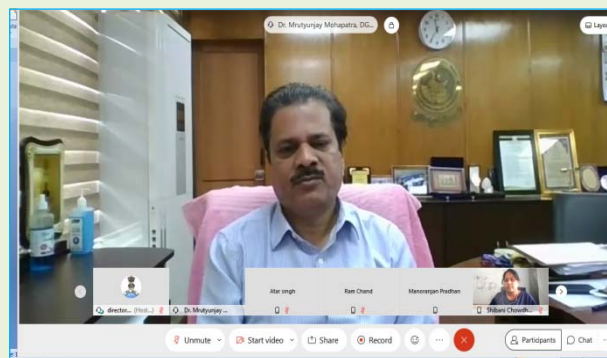
Shri B. P. Yadav, Sc. ‘F’ and **Sh. A. K. Das**, Sc.’E’ and **Sh. S. K. Manik**, Sc. ‘C’ attended the virtual meeting on 18th February, 2021 on **“Guidelines for acquiring and producing Geospatial Data and Geospatial Data Services including Maps”**.

Dr. M. Mohapatra, DG, IMD chaired meeting of Expert Committee constituted by Indian National Academy of Engineering (INAE) on **“Weather and Climate related Disasters”** for Technological Preparedness to deal with National Disruptions on 19th February, 2021.

Shri Surender Paul, Sc. ‘F’ took an online review meeting through Video Conferencing with all the DAMUs & AMFUs of Haryana & Punjab regarding **“Preparation and dissemination of block level Agro Met advisories”** on 19th February, 2021.

Dr. M. Mohapatra, DG, IMD attended meeting under chairmanship of Secretary, MoES through VC regarding **“Commemoration of 75 years of India’s Independence (Bharat Ka Amrit Mahotsav)”** on 23rd February, 2021.

Virtual interaction meeting held between IMD and AMFU officials under the chairmanship of **Dr. M. Mohapatra**, DG, IMD on 4th March, 2021 at 11:00 to 13:00 hours to discuss **“Various activities performed by AMFUs for strengthening of weather-based agromet advisory services to farmers”**.



Dr. M. Mohapatra during Virtual meeting between IMD and AMFU

Dr. S. D. Attri, Sc. ‘G’ chaired the **“Assessment Committee of Project Scientist, RA/JRF/SRF”** on 3-4 March, 2021.

Dr. S. D. Attri, Sc. ‘G’ chaired meeting on **“Dynamic Crop Weather Calendar”** on 4th March, 2021.

Dr. M. Mohapatra, DG, IMD participated in the meeting for **“Review of heat wave preparedness and mitigation measures”** through VC on 5th March, 2021.

Dr. S. D. Attri, Sc. ‘G’ Chaired the **“RFP Committee for Ozone”** on 5th March, 2021.

Dr. K. K. Singh, Sc. ‘G’ participated in Convention **‘AGRIVISION-2021’** which was organized by **VIDYARTHI KALYAN NYAS**, Bhopal in collaboration with ICAR, New Delhi at National Agriculture Science Complex, ICAR, New Delhi held during 6-7 March, 2021 on **“KRISHI EVAM ATMANIRBHAR BHARAT”**. Hon’ble Agriculture Minister Shri Narendra Singh Tomar Ji inaugurated the convention on 6th March, 2021.

Dr. M. Mohapatra, DG, IMD participated in the Meeting with **“GMR Hyderabad International Airport Limited (GHIAL) officials”** on 9th March, 2021.

Dr. S. D. Attri, Sc. ‘G’ attended the Meeting of High Powered Committee on **“Global Environment Change and Health”** organized by ICMR, New Delhi on 15th March, 2021.

Shri Surender Paul, Sc. ‘F’, took an online review meeting through Video Conferencing with all the KVKs & AMFUs of Haryana & Punjab to review the **“Various GKMS activities”** on 15th March, 2021.



Dr. M. Mohapatra, DG, IMD participated in the Meeting for “**Virtual Launch of the Asia and the Pacific SDG Progress Report 2021**” on 16th March, 2021.

Dr. M. Rajeevan, Secretary, MoES and **Dr. M. Mohapatra** DG, IMD participated in a meeting about “**Lightning Resilient India Campaign**” with **Col. Sanjay Srivastava**, Head of Climate Resilient Observing-Systems Promotion Council on 18th March, 2021. **Dr. Soma Sen Roy**, Sc. ‘F’, IMD also attended the meeting.

Dr. M. Mohapatra, DG, IMD participated in the 2nd Project Monitoring Committee Meeting for National Super Computing Project (NSM) “**Urban Modelling**” for development of Multi-Sectoral Simulation Lab and Science based decision support framework to address Urban Environment Issues on 18th March, 2021.

Dr. M. Mohapatra, DG, IMD participated in the “**102nd Governing Council Meeting**” of Indian Institute of Tropical Meteorology (IITM), Pune on 22nd March, 2021.

Dr. Kuldeep Srivastava, Sc. ‘E’ attended “**14th NSDI Executive Committee Virtual Meeting**” held on 22nd March, 2021 to review the progress of NSDI and decide the future course of action.

Dr. S. D. Attri, Sc. ‘G’ participated in the Meeting of Task Force on “**Climate change on Vector Borne diseases**” organized by OCDD, Indian Council of Medical Research, New Delhi on 23rd March, 2021.

Dr. M. Mohapatra, DG, IMD participated in the “**3rd Steering Meeting for Common Alerting Protocol Project**” on 26th March, 2021.

Shri B. P. Yadav, Sc. ‘F’ and **Sh. A. K. Das**, Sc. ‘E’ participated in the second virtual “**WMO RA-II Hydrological Advisers Forum**” on 26th March 2021.

Dr. M. Mohapatra, DG, IMD participated in the “**3rd Meeting of Gaganyan Advisory Council**” on 30th March, 2021.

Dr. S. D. Attri, Sc. ‘G’ and **Dr R K Giri**, Sc E participated in Meeting of “**Regional Association - II**” organized by World Meteorological Organization on 30th March, 2021.

Sh. Asok Raja S. K., Sc. ‘C’ did virtual Poster presentation on “**Impact Based Flash Flood Guidance System**” during the 2nd WCSSP India Annual Workshop hosted by UK Met Office in collaboration with MoES on 4th February, 2021.

OUTREACH PROGRAMME

Half-Day Familiarization Workshop on “**Air Quality Early Warning System**” for officials of Central and State Pollution Control Boards was organized through virtual platform on 1st February, 2021 by EMRC, India Meteorological Department in collaboration with IITM and CPCB. **Dr. M. Mohapatra**, DG, IMD delivered the welcome and inaugural address. Total 69 officials attended the workshop.

328 Farmers’ Awareness Programs have been conducted by Agromet Advisory Services Division during the quarter ending on 31st March, 2021 under the **GKMS Scheme**.

Awards & Recognition/Appreciation

India Meteorological Department (IMD) presented following awards on IMD foundation day on 15th January, 2021 for the year 2020-21:

Best MC – MC, Lucknow; **Best MWO/AMO/AMS** – AMO, Palam; **Best RS-RW/ PBO** - Hyderabad; **Best DWR** - DWR, Mohanbari; **Rajbhasha Shield** - RMC, Guwahati;

Best Group ‘A’ Officers - (i) Dr. G. N. Raha, Sc. ‘E’, MC, Gangtok, (ii) Shri R. Bibraj, Sc. ‘C’, CWC, Vishakhapatnam;

Best Group ‘B’ Officials - (i) Shri N. Chandrahas, Met. ‘A’, CWC, Vishakhapatnam (ii) Dr. Hari singh Sisodia, Met. ‘A’, RS/ RW, Jodhpur, (iii) Shri Rajesh Kumar, MACP, DGM (iv) Shri Awadhesh Kumar, S. A., MC Patna, (v) Shri Sharoj singh, S. A., DGM;

Best Group ‘C’ Officials : (i) Ms. Shaik Akhtar, U. D. C., RMC Chennai, (ii) Shri S. S. Rengade, Mech. Gr.I, CRS, Pune, (iii) Shri Pandurang N. Jhalake, MTS, RMC, Nagpur.

Infrastructure Development and Installation

AWS/ARG network in the states of Haryana and Punjab is being restored.

Development of Web GIS portal to provide District and Block level Agromet Advisory has been initiated.

Agro-AWS stations have been installed and Commissioned at 37 DAMUs.

Inter-agency meeting

Dr. Ashok Kumar Das, Sc. ‘E’ attended 2nd PMC meeting online on the 12th January, 2021 (1000-1300 hrs) of the project, “**Early Warning System for Flood Prediction in River Basins of India**”.

Dr. K. K. Singh, Sc. ‘G’ attended Annual Review meeting of **FASAL & CHAMAN Projects** of Ministry of Agriculture and Farmers' Welfare (MOAFW) organized by Mahalanobis National Crop Forecast Centre (MNCFC) on 15th January, 2021 and presentation on “**Improvement in Yield Models using Agromet techniques**” was made.

Shri Surender Paul, Sc. ‘F’ attended 52nd Meeting of **Haryana State Drought Relief & Flood Control Board** on 16th January, 2021 under the chairmanship of Hon’ble Chief Minister, Haryana and briefed the gathering about “**Winter weather forecast**” and requested Hon’ble CM, Haryana kindly to provide State Govt. gateway for dissemination of weather forecast/advisories under GKMS Scheme to the farmers of Haryana.

Dr. S. D. Attri, Sc. ‘G’ participated in “**World Sustainable Development Summit**” at TERI on 10th February, 2021.

Dr. S. D. Attri, Sc. 'G' attended the meeting of NAC Material Mission on **"Sustainable Agriculture"** under the Chairmanship of Secretary, Ministry of Agriculture and Farmers' Welfare on 12th February, 2021.

Dr. K. K. Singh, Sc. 'G' chaired 4th meeting of **"Project Monitoring & Advisory Committee (PMAC)"** organized on 12th February, 2021 to monitor the periodic progress of the projects under ACROSS-IMD and to suggest suitable remedial measures for successful implementation of the activities.

Dr. S. D. Attri, Sc. 'G' participated in meeting of **"Watershed Organisation Trust (WOTR) (EBA)"** on 16th February, 2021.

Shri B. P. Yadav, Sc. 'F' and **Shri Asok Raja S. K.**, Sc. 'C' attended an online meeting hosted by NDMA on **"Flash Flood in River Rishiganga and Dhauliganga in Raini & Tapovan, Joshimath, Chamoli, Uttarakhand"** held on 16th February, 2021.

Shri B. P. Yadav, Sc. 'F' attended an online meeting on **"Formation of artificial lakes in Chamoli District"** on 17th February, 2021 organized by National Disaster Management Authority.

Shri B. P. Yadav, Sc. 'F', **Shri S. K. Raja**, Sc. 'C' attended the 3rd Meeting of the National Level Steering Committee(NLSC) under National Hydrology Project(NHP) hosted by MoWR virtually on 19th February, 2021 for **"Synergizing the activities of IMD with NHP"**.

Dr. S. D. Attri, Sc. 'G' represented India as **Principal Delegate** in Meeting of the **"Commission for Weather, Climate, Water and Related Environmental Services & Applications (Services Commission or SERCOM)"** organized by WMO during 22-26 February, 2021. The meeting was also attended by Dr. Ashish Mitra, Sc-G & Head NCMRWF, R.K. Giri, Sc-E and other IMD Officers.



WMO SERCOM meeting

Shri Y. K. Reddy, Sc. 'F' and **Dr. Kuldeep Srivastava**, Sc. 'E' attended a Video Conference meeting with Shri Nimit Mehrotra, Senior Business Analyst, National e-Governance Division (Team DigiLocker) on 23rd February to discuss the **"Adoption of Digi locker service in India Meteorological Department"**.

Dr. S. D. Attri, Sc. 'G' participated in the meeting organized by **"National Council for Climate Change Sustainable Development"** on 23rd February, 2021.

Shri Y. K. Reddy, Sc. 'F' along with **Dr. Sankarnath**, Sc. 'E' attended meeting on 2nd March, 2021 with PDNOM, Indian Navy in the chambers of DGM, to discuss issues related to **"Sharing of IMD data to Navy"**.

Dr. K. K. Singh, Sc. 'G' attended one day Virtual Meeting on 3rd March, 2021 to review & deliberate on the **"Study regarding challenges in the ongoing crop insurance schemes and suggestive recommendations"** under the Chairmanship of CEO National Rainfed Area Authority (NRAA) organised by NRAA, Ministry of Agriculture & Farmers Welfare.

Dr. K. K. Singh, Sc. 'G' attended a Virtual meeting of the FAI Advisory Committee on Agriculture Sciences held on 12th March, 2021 at FAI and made a presentation on **"Rainfed situation during Monsoon 2021: Model based guidance"**.

Shri Y. K. Reddy, Sc. 'F' along with **Dr. Sankarnath**, Sc. 'E' attended meeting on 23rd March, 2021 with **Lt. Col. Digvijay Singh** and 2 other Officers of Indian Navy to resolve the issues related to **"Sharing of IMD data to Navy"**.

Shri B. P. Yadav, Sc. 'F' along with other officers of the Hydromet division attended two virtual meetings with RMSI Pvt. Ltd. on 3rd March, 2021 and 24th March, 2021 for discussing the **"Feasibility of flash flood guidance products into the Integrated Operational Forecasting System of J&K and Ladakh"**.

Research & Publication

Nineteen (19) research papers were published in quarterly research journal **MAUSAM Vol. 72, No. 1 (January, 2021)**.

Mrutyunjay Mohapatra, Monica Sharma, S. V. J. Kumar, Sunitha S. Devi, and Bharati S. Sabade, **"Frequency Of Genesis And fall Of Different Categories Of Tropical Cyclones Over The North Indian Ocean"**, Mausam, 72, 1 (January, 2021), 1-26.

D. R. Pattanaik and M. Mohapatra, **"Evolution of IMD's operational extended range forecast system of tropical cyclogenesis over North Indian Ocean during 2010-2020"**, Mausam, 72, 1 (January, 2021), 35-56.

S. Saranya Ganesh, S. Abhilash, S. Joseph, Manpreet Kaur, A. Dey, R. Mandal, R. Phani, R. Chattopadhyay, D. R. Pattanaik and A. K. Sahai, **"A review of the development and implementation of a tropical cyclone prediction system for North Indian Ocean in a multi-model ensemble framework"**, Mausam, 72, 1 (January, 2021), 57-76.

S. D. Kotal and S. K. Bhattacharya, **"Evolution of tropical cyclone forecasts of dynamical - Statistical Cyclone Prediction System (CPS) over the North Indian Ocean during the decade (2010-2019)"**, Mausam, 72, 1 (January, 2021), 87-106.



Medha Deshpande, Radhika Kanase, R. Phani Murali Krishna, Snehlata Turkey, P. Mukhopadhyay, V. S. Prasad, C. J. Johny, V. R. Durai, Sunitha Devi And M. Mohapatra, "Global Ensemble Forecast System (GEFS T1534) evaluation for tropical cyclone prediction over the North Indian Ocean", Mausam, 72, 1 (January, 2021), 119-128.

Ananda Kumar Das, Arun Sharma, Sudhir Joseph, Akhil Srivastava And D. R. Pattanaik, "Comparative performance of HWRF model coupled with POM and HYCOM for tropical cyclones over North Indian Ocean", Mausam, 72, 1 (January, 2021), 147-166.

M. Sateesh, Chinmay Khadke, V. S. Prasad And Suman Goyal, "Validation of satellite estimated convective rainfall products: A case study for the summer cyclone season of 2020", Mausam, 72, 1 (January, 2021), 229-236.

Pravat Rabi Naskar and Somnath Naskar, "Synoptic and dynamical characteristics of super cyclone Amphan", Mausam, 72, 1 (January, 2021), 237-252.

Amit Kumar, Anil Kumar Singh, R. K. Giri and J. N. Tripathi, "Inundation mapping using SENTINEL-1 data in the aftermath of super cyclone Amphan: A case study", Mausam, 72, 1 (January, 2021), 253-264.

Met Monograph titled "Verification of Quantitative Precipitation Forecast (QPF) Over River Sub basins of India during 2020 SW Monsoon Season" No.MoES/IMD/HS/Basin Hydrology/01(2021)/13 has been published.

A paper titled "Diagnostic analysis of two dos-à-dos extreme northeast monsoon seasons with dipolar rainfall performance" by B. Geetha and S. Balachandran, RMC Chennai has been accepted for publication in January 2021 in the Journal Theoretical and Applied Climatology published by Springer Nature.

Visitors

Shri (Prof.) S. A. Ramakrishna, Director, CSOI-CSIR, Chandigarh along with a delegation of six (6) Scientists visited Meteorological Centre, Chandigarh on 17th February, 2021.

National/International collaboration

राजभाषायी निरीक्षण

22 जनवरी, 2021 को मौसम केंद्र-लखनऊ, मौसम केंद्र- शिमला, मौसम केंद्र- चंडीगढ़ तथा मौसम केंद्र- श्रीनगर का राजभाषायी ई निरीक्षण किया गया। श्री मनोज आबूसरिया, संयुक्त निदेशक (रा.भा.), पृथ्वी विज्ञान मंत्रालय तथा डॉ. के. के. सिंह, वैज्ञानिक 'जी' और श्रीमती सरिता जोशी, सहायक निदेशक (राजभाषा) द्वारा ई-निरीक्षण किया गया तथा आवश्यक दिशानिर्देश दिए गए।

श्रीमती सरिता जोशी, सहायक निदेशक (रा.भा.) द्वारा 3 मार्च, 2021 को केंद्रीय क्रय एकक का राजभाषायी निरीक्षण किया गया तथा आवश्यक दिशानिर्देश दिए गए। निरीक्षण में श्रीमती कल्पिना श्रीवास्तव, वरिष्ठ अनुवाद अधिकारी तथा श्री बीरेन्द्र कुमार भी उपस्थित रहे।

ई- हिंदी कार्यशाला

दिनांक 19 मार्च, 2021 को एक दिवसीय ई हिंदी कार्यशाला का आयोजन किया गया जिसमें विभाग के दिल्ली सहित विभिन्न उपकार्यालयों के लगभग 125 कर्मिकों ने भाग लिया। कार्यशाला का शुभारंभ डॉ. मृत्युंजय महापात्र, महानिदेशक महोदय के संबोधन से हुआ। कार्यशाला में श्री मनोज आबूसरिया, संयुक्त निदेशक (रा.भा.), पृथ्वी विज्ञान मंत्रालय, श्री राम सकल सिंह, सहायक निदेशक, केंद्रीय हिंदी प्रशिक्षण संस्थाकन, श्रीमती सरिता जोशी, सहायक निदेशक (रा.भा.) तथा श्रीमती कल्पिना श्रीवास्तव, वरिष्ठ अनुवाद अधिकारी ने व्याख्यान दिए।



भारत मौसम विज्ञान विभाग (मुख्यालय) की राजभाषा कार्यान्वयन समिति की वर्ष 2021 की पहली तिमाही बैठक डॉ. एस. डी. अत्री, वैज्ञानिक 'जी' की अध्यक्षता में दिनांक 24 मार्च, 2021 को आयोजित की गई। इस बैठक में श्री मनोज आबूसरिया, संयुक्त निदेशक (रा.भा.), पृथ्वी विज्ञान मंत्रालय उपस्थित रहे तथा उपकार्यालयों के प्रमुख / प्रतिनिधि वी. सी. के माध्यम से जुड़े। इस बैठक में मुख्यालय तथा उपकार्यालयों की तिमाही प्रगति रिपोर्ट की समीक्षा की गई।

Weather Summary

SIGNIFICANT WEATHER FEATURES

Four Western Disturbances and two induced cyclonic circulations have affected Northwest India during the month of January 2021. Among these, an active Western Disturbance and its induced cyclonic circulation which started affecting Northwest India from 2nd January, 2021 onwards have caused a wet spell of about 5 days over the region with rainfall/snowfall/thunderstorms/hailstorms over Western Himalayan Region and rainfall/thunderstorms/hailstorms over the plains of Northwest and adjoining Central India during 2-6 January 2021.

About six Western Disturbances (including three feeble WDs) and four induced cyclonic circulations affected Northwest India during the month of February. Among these, two systems have caused scattered to fairly widespread rainfall/snowfall activity over Western Himalayan Region and isolated to scattered rainfall/thunderstorm activity over adjoining plains of Northwest India.

About twelve Western Disturbances in quick succession had affected Northwest India during the month of March among which about six had been feeble and influenced the weather of Jammu Kashmir & Ladakh only. About four to five induced cyclonic circulations also had formed during the month along with the passage of Western Disturbances.

FOG

During the month of January, Dense to very dense fog had occurred. At most places over Punjab and East Uttar Pradesh on two days each and over Haryana, Chandigarh & Delhi and West Uttar Pradesh on one day each.

During the month of February, Dense to Very Dense fog occurred at most places over Haryana, Chandigarh & Delhi and Punjab on one day each; at many places over Punjab on nine days, over Haryana, Chandigarh & Delhi on two days and over East Uttar Pradesh on one day.

COLD DAY/ COLD WAVE

During the month of January, Cold day to severe cold day conditions had occurred at most places over Haryana, Chandigarh & Delhi, Punjab and East Uttar Pradesh on one day each. Cold wave conditions had occurred at many places over Haryana, Chandigarh & Delhi and Punjab on four days each; over East & West Uttar Pradesh and Jharkhand on one day each.

During the month of February, Cold wave to Severe Cold wave conditions had occurred at a few places over East Madhya Pradesh, Bihar and West Bengal and Sikkim on one day each at isolated places over Odisha on two days and over Punjab and East Uttar Pradesh on one day each.

HEAT WAVE

Heat wave to Severe heat wave conditions had occurred at some parts over Saurashtra & Kutch, Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikkal, Gangetic West Bengal and

Odisha on one day each; at isolated places over Saurashtra & Kutch on two days and over Konkan & Goa on one day during the month of March. Heat wave conditions at most places with severe heatwave conditions at isolated places had occurred over West Rajasthan on two days during the month of March.

RAINFALL SCENARIO

January 2021

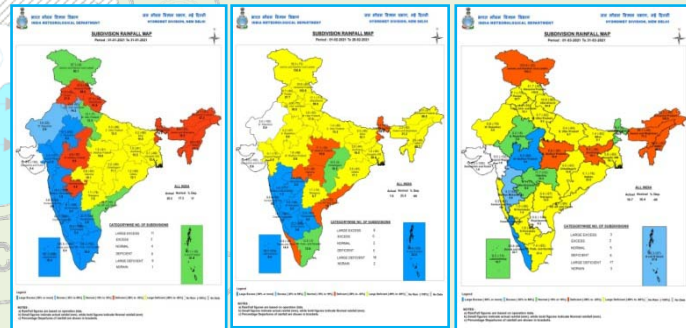
The rainfall for the country as a whole for the month of January 2021 has recorded as 20.2mm which is 17% higher than its Long Period Average (LPA) of 17.3mm.

February 2021

The rainfall for the country as a whole for the month of February 2021 was 7.6 mm which was 68% lower than its Long Period Average (LPA) of 23.5 mm. For the winter season (Jan. & Feb 2021) the rainfall for the country as a whole for the month of February 2021 was 27.8 mm which was 32% lower than its Long Period Average (LPA) of 40.8 mm.

March-2021

The rainfall for the country as a whole, for the month of March-2021 has been recorded as 16.7 mm, which is 55% of its Long Period Average (LPA) of 30.4 mm



The Subdivision-Wise Real-Time Rainfall Map for the month of January, February and March 2021

Seasonal Outlook for the Temperatures during April to June, 2021

- During the upcoming hot weather season (April to June), above normal seasonal maximum temperatures are likely over most of the subdivisions of north, northwest and few subdivisions of east central India. However, below normal seasonal maximum temperatures are likely over most of the subdivisions of south peninsular India and few subdivisions of east, northeast and extreme north India.
- Above normal seasonal minimum temperatures are likely over few subdivisions along the west coast and west India. However, below normal season averaged minimum temperatures are likely over few subdivisions of northwest, central, east and extreme north India.