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मौसम विज्ञान विभाग समाचार IMD NEWS

INDIA METEOROLOGICAL DEPARTMENT
(Ministry of Earth Sciences)



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Volume 12

Number 1

Important Events / Activities

144th India Meteorological Department (IMD) Foundation Day 2019



Hon'ble Union Minister Dr. Harsh Vardhan, Dr. M. Rajeevan, Secretary, MoES, Dr. K. J. Ramesh, DG, IMD, Padma Shri Prof. A. S. Kiran Kumar and Dr. S. D. Attri, Sc. 'F' during the Lighting of Lamp



Hon'ble Union Minister Dr. Harsh Vardhan, Dr. M. Rajeevan, Secretary, MoES, Dr. K. J. Ramesh, DG, IMD, Padma Shri Prof. A. S. Kiran Kumar and Dr. S. D. Attri, Sc. 'F' during the prize distribution to the winners

"IMD Foundation Day 2019" was celebrated on 15th January, 2019 at Dr. Ambedkar International Centre (DAIC), Janpath, New Delhi. The event was inaugurated by Dr. Harsh Vardhan, Hon'ble Union Minister of Science & Technology, Earth Sciences and Environment, Forests & Climate Change. Welcome address was delivered by Dr. K. J. Ramesh DG, IMD wherein he highlighted the achievements of IMD during the previous year and future plans. Hon'ble Union Minister Dr. Harsh Vardhan and Padma Shri A. S. Kiran Kumar, distinguished Professor, Vikram Sarabhai Space Centre and Ex. Chairman, ISRO delivered Key Note Addresses on the occasion. Dr. M. Rajeevan, Secretary, MoES presided over the function. Dr. S. D. Attri, Chairman, Organising Committee delivered Vote of Thanks. Inter-school Painting, Speech and Quiz competitions and IMD Exhibition were organized as part of "IMD Foundation Day" celebrations. The awards were given to best RMC, MCs, MOs and RS/RW stations and winner students of the competitions during Foundation Day by the Hon'ble Minister. Latest issue of IMD's Hindi magazine मौसम-मंजूषा was also released. Seven distinguished scientists from different organisations and SAFFGS team from Hydrology were felicitated for their contribution to the services of IMD.

A documentary film titled "Early warning Services of IMD" showcasing achievements of IMD during 2014-18 was telecasted during the Foundation Day ceremony of IMD on 15th January, 2019.



Releasing of IMD's Hindi magazine मौसम-मंजूषा



Foundation Day ceremony of IMD

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Important Events

In connection with VVIP Movement (Visit of Hon'ble Prime Minister of India to Odisha) on 5 - 15 January, 2019 and 8th February, 2019 **Weather Forecasts and Met Briefings** were provided by **M. C. Bhubaneswar**.

Hon'ble Minister of Earth Sciences Dr. Harsh Vardhan inaugurated **IMD's North Karnataka Agro Meteorological Forecasting Centre (NKAFC)** established at University of Agriculture (UAS) Dharwad (Karnataka) on 14th February 2019.

WORLD METEOROLOGICAL DAY, 2019

World Meteorological Day (WM DAY) - 2019 was celebrated on 23rd March, 2019 at IMD HQ and its sub-offices all over India on the theme **"The Sun, the Earth and the Weather"**.

On this occasion of WMO Day on 23rd March, 2019 Vigyan Prasara telecast a programme on **Weather, Climate & Water** at DD Science. **Dr. M. Mohapatra, Sc. 'G'** participated in the programme as an expert from IMD.

World Meteorological Day was celebrated at **RMC Chennai, M. C. Bengaluru, M. C. Hyderabad, M. C. Thiruvananthapuram, M. C. Amravati and DWR Kochi** on 22- 23 March, 2019 with the theme – **"The Sun, The Earth and The Weather"**. On this occasion offices were kept open for general public and students and wide publicity of the event was given to media. Guest lecture was given by **Dr. P. P. Nageswara Rao, retired from ISRO, Dr. Krushna Chandra Gouda, Senior Scientist in CSIR, Bengaluru, Shri. S. Patil, Sc. 'D'** and by **ex-Director-in-charges of M. C. Bengaluru at M. C. Bengaluru**. Many retired officers and staff alongwith general public participated the session. An open house and **"Meteorological Exhibition"** was arranged at **DWR Kochi** on 23rd March, 2019 as

a part of WM day celebration. Exhibition showcased different meteorological instruments including thermometers, barometer, psychrometer, Radar testing equipments like Spectrum analyzer, Signal Generator, Oscilloscope, waveguides etc. Exhibition also included different types of radio sonde instruments, hydrogen filled balloons etc. Posters depicting different working areas of India Meteorological Department. A small video presentation showing the modernization and achievements of IMD and working of the Doppler Weather Radar was also arranged in the exhibition hall using LED TV. More than 75 general public including students visited the open house and exhibition. Local TV channel, **"Cochin Channel"** covered the open house, exhibition and broadcasted the event.

An open house Exhibition and Demonstration on Meteorological Instruments and Weather Forecasting Techniques etc. was organized by **M. C. Bhubaneswar** for the public, especially for the students. More than 150 students with their teachers from local Schools and Colleges, general public & media persons visited the Exhibition on the WMO day.



Celebration of W M Day at M. C. Bhubaneswar

Human Resource Development Activities

CONFERENCE/ SYMPOSIUM/ SEMINARS

International Conference on Thunderstorm and Lighting (ICTLT 2019)



Dr. M. Rajeevan, Secretary, MoES, Dr. K. J. Ramesh, DG, IMD, Dr. H.R. Biswas, Sc. 'E' during Conference

Dr. M. N. Rajeevan, Secretary MoES, Dr. K. J. Ramesh, DG, IMD, Dr. H. R. Biswas, Sc. 'E' and other delegates from IMD,



Celebration of W M Day at M. C., Bengaluru



Celebration of W M Day during exhibition and open house at RMC Chennai



attended the **International Conference on Thunderstorm and Lighting (ICTLT 2019) at Siksha 'O' Anusandhan** (Deemed to be University), Bhubaneswar from 17-19 January, 2019 at M.C. Bhubaneswar.

Dr. M. Mohapatra, Sc. 'G', Dr. Shirish Khedikar, Sc. 'B' participated in the **International Symposium on Advances in Agro-meteorology for Managing climate risks of farmers (INAGMET-2019)** at JNU, New Delhi from 11-13 February, 2019. **Dr. M. Mohapatra, Sc. 'G'** presented a Plenary Talk on **"Meteorological Support for Agriculture"** during the symposium.

Dr. S. D. Attri, Sc. 'F' addressed the gathering as Chief Guest in Valedictory function of national seminar **"Global Climate Change: Concerns & Solutions"** on 16th February, 2019 at MDU, Rohtak.

Shri C. S. Patil, Sc. 'D' participated in national seminar on **"Strategies for disaster management: A multi disciplinary approach"** held on 19th February, 2019 at Govt. First Grade College, Madikeri organized by Govt. First Grade college, Madikeri and Department of Collegiate Education, Govt. of Karnataka, Bengaluru jointly.



Shri C. S. Patil, Sc. 'D' during the seminar

Shri C. S. Patil, Sc. 'D' participated in the national seminar on **"Extreme weather events: Drought and floods over Karnataka State"** organized by Govt. First Grade College, Yelburga and Deptt. of Collegiate Education, Govt. of Karnataka, Bengaluru and delivered lectures on "Services of IMD and extreme weather events; Drought and floods over Karnataka State" on 23rd February, 2019.

A local seminar on **"Monsoons-2018"** was organised jointly by RMC Chennai and Indian Meteorological Centre, Chennai Chapter on 25th February, 2019 at RMC Chennai. **Dr. S. Balachandran, Sc. 'F'**, RMC Chennai presented the salient features of Northeast Monsoon-2018 and **Dr. N. Puviarasan, Sc. 'E'**, RWFC Chennai presented the regional aspects of Southwest Monsoon-2018. **Shri B. A. M. Kannan, Sc. 'E'**, DWR Chennai and **Shri R. Bibiraj, Sc. 'B'**, DWR Visakhapatnam reviewed the tracking of cyclones during 2018 by DWRs Chennai and Visakhapatnam. About 100 participants including students, media and the general public attended the programme.

Conference

Dr. D. S. Pai, Sc. 'F', Shri Y. K. Reddy, Sc. 'F', Shri P. Sunil, Sc. 'D', Shri R. Bibiraj, Sc. 'B', Shri Prayek Sandepogu, Sc. 'B', Dr. Shirish Khedikar, Sc. 'B', Shri Elphin T. Andrews, S. A. participated in **"India Conference on Radar Meteorology (IRAD 2019)"** at IITM, Pune during 9-12 January, 2019. Dr. Shirish Khedikar, Sc. 'B' presented a paper in the conference and received 3rd Best presentation Award.

Dr. S. Balachandran, Sc. 'F' participated in the national level conference on **"Flood and Drought Management Practices and Future Challenges"** organized by Department of Geology, Periyar University, Salem during 20-22 February, 2019 and delivered an invited talk on IMD's services in flood and drought management.

TRAININGS

Dr. Suman Goyal, Sc. 'F', Shri H. R. Biswas, Sc. 'E', Officers and Staff members participated in the training programme on **"Interpretation of Satellite Imageries and Products"** was conducted on 21st January, 2019.

Familiarization Training for taking **"Meteorological Observations"** was conducted at M. C., Bhubaneswar during 11-15th February, 2019. Six Observers from AMFU Bhubaneswar, G. Udaygiri, Kirei, Chipilima, Mahisapat and Keonjhar in Odisha attended the Training classes.



Participants in Meteorological Observations training

Shri Elphin T. Andrews, S. A., was deputed for **"ISRO-BEL S-Band Doppler Weather Radar training"** at SDSC, SHAR, Sriharikota during 24 February-2 March, 2019.

WORKSHOPS

Dr. Pulak Guhathakurta, Sc. 'F' participated in the workshop on **"Building an Operational Composite Drought Monitoring Index for India"** at ICAR, Pusa, New Delhi from 22-23 January, 2019.

Shri H. R. Biswas, Sc. 'E' attended the workshop on **"Policy Dialogue on Environment and Climate Change"** conducted by Integrated Research and Action for Development IRAD at Bhubaneswar on 29-30 January, 2019.

M. C., Hyderabad organized a half-day workshop on **"Eco-Weather Watch"** in collaboration with IMS Hyderabad Chapter and Earth Watch Institute, Gurgaon on 30th January, 2019.



Dr. M. Mohapatra, Sc. 'G' participated in the "**Knowledge Workshop on Climate Change and Disaster Management**" organised by Ministry of Environment and Forests at Paryavaran complex, New Delhi on 12th February, 2019.

Smt. S. Stella, Sc. 'E' and Shri V. H. Arun Kumar, Sc. 'B' participated in a "**3-day International Skynet Workshop**" organised by IMD at New Delhi during 13-15 February, 2019.

An international workshop on "**Earth Observations for Agricultural Monitoring**" was jointly organized by International Society of Photogrammetry and Remote Sensing (ISPRS), Group on Earth Observations Global Agricultural Monitoring (GEOGLAM) and Indian Society of Remote Sensing (ISRS) in New Delhi during 18-20 February, 2019.

Dr. M. Mohapatra, Sc. 'G' participated in a scoping workshop to explore collaborative observations and research on "**Northern Arabian Sea aimed to discuss and understand the Ocean Circulation & Air-Sea Interaction process that influences the Asian Monsoon**" was organised at INCOIS, Hyderabad during 25-26 February, 2019. The participants from Ministry of Earth Sciences (MoES), National Oceanographic & Atmospheric Administration (NOAA) and Office of Naval Research, USA. **Dr. M. Mohapatra**, Sc. 'G' chaired the technical session on "**Large scale processes and Ocean dynamics for Arabian Sea**".

Dr. M. Mohapatra, Sc. 'G' participated in a national workshop on "Heat Wave" organized by National Disaster Management Authority at Nagpur during 27-28 February, 2019. **Dr. M. Mohapatra**, Sc. 'G' presented an invited talk on "**Early Warning and Communication Strategy for effective intervention for heat prone areas**" during the technical session on "**Early warning, forecasting and Preparedness for heat wave**". He also chaired a technical session on "**Climate Change impact on heat wave**".

Shri H. R. Biswas, Sc. 'E' attended the State Level DST workshop on "**Emerging Climate Change Scenario of Odisha organized by Forest and Environment department**", Govt. of Odisha on 1st March, 2019 at Hotel Bhubneswar, Odisha.

Dr. K. K. Singh, Sc. 'F' participated in multi stakeholder consultative workshop on "**Food security for Himalayan Farmers-Lesson learnt and best practices**" on 5th March, 2019 at India Habitat Centre, New Delhi.

M. C., Hyderabad conducted a workshop on "**Extreme Weather Events with reference to Heat Wave over Telangana State**" organized by Telangana State Disaster Management, TSDPS, UNICEF Hyderabad, India Meteorological Department (IMD) & IMS, Hyderabad Chapter on 6th March, 2019.

A media Workshop on "**IMD's Role and Technological Advances made by the Department**" was organized at RMC, Kolkata on 8th March, 2019.

Dr. S. D. Attri, Sc. 'F' participated and served as Chair of Working Group in "**India-Denmark Workshop**" on "**Digital agriculture for accelerated climate risk management in India**" held during 12-13 March, 2019 at ICRISAT, Hyderabad.

Dr. Kripan Ghosh, Sc. 'E' and Shri R. Balasubramanian, Sc. 'D', attended one day workshop on "**Dissemination of weather based agricultural advisories to the farmers under Mahavedh Project**" organized by Commissioner of Agriculture, Pune on 19th March, 2019 at Agricultural College, Pune.

Shri H. R. Biswas, Sc. 'E', attended the Media Workshop on "**Nowcast and Weather Services**" was organized at M.C., Bhubaneswar on 14th March, 2019 under the chairmanship of various electronic and print media personnel from Odisha and officers and staff members of IMD.

Dr. M. Mohapatra, Sc. 'G' participated in the Brainstorming workshop on "Climate Services: Stake holder perspectives" organised by IMS on 23-24 March, 2019. He presented a talk on "**Early warning and impact based forecast**" during the session on "**Climate Services for Disaster Risk Reduction**".

Dr. D. S. Pai, Sc. 'F' and Senior Officers of IMD attended "**Annual Monsoon Workshop (AMW-2018)**" and Prof. D. R. Sikka Memorial National Symposium on "**Role of Weather and Climate Observation and Forecasting on Increasing Agricultural Productivity and Risk Management**" from 28- 30 March, 2019 at IITM, Pune.

Shri C. S. Patil, Sc. 'D' participated in two days workshop on "**State Disaster Management Plan**" on 29-30 March, 2019 at Administrative Training Institute, Mysore.

LECTURES

Dr. S. Balachandran, Sc. 'F' delivered lectures on "Synoptic Meteorology in Advanced Meteorological training course (AMTC) at IMD Pune, during 6 - 7 February, 2019.

Shri C. S. Patil, Sc. 'D' delivered lectures on "**Services of IMD and extreme weather events; drought and floods over Karnataka State**" at the National seminar held at Govt. First Grade Degree College, Yelburga on 23rd February, 2019. The seminar was jointly organized by Govt. First Grade College, Yelburga and Department of Collegiate education, Govt. of Karnataka, Bengaluru.

Awards & Recognitions

Hon'ble Union Minister Dr. Harsh Vardhan presented **IMD awards** for Most Performed Regional Meteorological centre (RMC, Kolkata), Most Performed Meteorological centre (MC, Agartala), Most Performed Meteorological Observatory (MO, Kurnool; MO, Jammu; MO, Sagar; AMO, Chennai; AMO, Lucknow; AMO, Mumbai), Best Performed RS/RW Station (Gorakhpur), Best Performed DWR Station (Gopalpur).

Infrastructure Development & Installations

AWOS Bhubaneswar was declared operational on 11th January, 2019. AWOS Data are being utilized for preparation of **MET REPORT & METAR** with immediate effect after declaration of operational of AWOS.

Shri Anand Shankar, Sc. 'B' and **Shri Sandeep Kumar**, Met 'A' met with the Principal Secretary Bihar tourism, Govt. of Bihar on 17th January, 2019 and explain about the "Plan of India Meteorological Department (IMD), Ministry of Earth Sciences, Govt. of India, proposal to install **Automatic Weather Station**".

Shri Shyam Sagar Yadav, S. A. installed a "**Single Stevenson Screen**" at MO, Daltonganj on 10th February, 2019.

"**Drishti Transmissometer and Laser Ceilometer**" were installed at Aerodrome Meteorological Office (AMO), Thiruvananthapuram during 26-28 February, 2019. A **Laser Ceilometer system** has also been installed at Kochi on 25th February, 2019.

A **webpage, web application and mobile application** have been developed for providing customized weather forecast services for **Kumbh Mela, 2019**. For this purpose, three (3) new **Automatic Weather Station (AWS)** installed at G. B. Pant University Prayagraj, Delhi Public School, Prayagraj and Allahabad University, Prayagraj for providing current weather information during Kumbh Mela.

Swirl application Nowcasting software has been installed at DWR Patna in March, 2019 in coordination with NWFC, New Delhi.

CWIS system has been installed at Gaya, Nagpur and Vijayawada in March, 2019



Installation of CWIS system at Gaya



Installation of CWIS system at Nagpur and Vijayawada

Inter-Agency Meetings

Dr. V. K. Mini, Sc. 'E' attended meeting on "**State Level core committee**" convened by EARAS, Thiruvananthapuram on 1st January, 2019 in the Chamber of Principal Secretary (Planning), Government of Kerala.

Shri Bikram Singh, Sc. 'F' attended a meeting under the chairmanship of Honourable Governor, Uttarakhand on 10th January, 2019 in connection with "**Basantotsav 2019**" and provided climatological information of temperature and rainfall for the event.

Shri C. S. Patil, Sc. 'D' attended the "**20th Executive committee**" meeting of Karnataka state NDMC on 11th January, 2019.

Dr. M. Mohapatra, Sc. 'G' participated in the 1st quarterly meeting chaired by Secretary, MoES to "**Evaluate and monitor the progress of implementation of programmes of IMD**" on 21st January, 2019.

Dr. S. Balachandran, Sc. 'F' participated in the committee meeting constituted by Secretary, MoES to accomplish various programmes of IMD under the Umbrella Scheme '**ACROSS**' on 21st January, 2019 at New Delhi.

Shri. B. Arul Malar Kannan, Sc. 'E' participated in the Critical Design Review meeting held at M/s. Astra Microwave Products Ltd, Hyderabad from 22-23 January, 2019 in connection with "**Supply/development of 10 nos. of X-band radars**" for IMD.

Dr. M. Mohapatra, Sc. 'G' participated in the review meeting to study "**Development of Web-DCRA & DSS Tool for cyclone and associated impacts**" under NCRMP (Ph. II) at NDMA on 28th January, 2019.

Dr. S. D. Attri, Sc. 'F' attended a meeting of Committee for preparation on "**Agriculture Disaster Management Plan under Disaster Management Act 2005**" at MoAg New Delhi on 28th January, 2019.

Shri Y. K. Reddy, Sc. 'F' and **Shri Vivek Sinha**, Sc. 'F' attended a meeting on 29th January, 2019 with M/s GHIAL and AAI, Hyderabad for deciding the "**MET equipment required for converting the Secondary Runway to Cat-1 capability**".

Dr. M. Mohapatra, Sc. 'G' participated in the 6th Meeting of "**Cauvery Water Regulation Committee**" at Bengaluru on 31st January, 2019.

Dr. N. Puviarasan, Sc. 'E' and **Dr. B. Geetha** Met. 'A' attended 42nd meeting of "**State level co-ordination committee on crop Insurance (SLCCCI) finalization and floating of tender, for the implementation of Pradhan Mantri Fasal Bima Yojana in Tamilnadu for the period 2019-2020 and 2021-2022**" on 31st January, 2019 at Agriculture Department, Secretariat, Chennai.



Dr. S. Balachandran, Sc. 'F' participated in the first meeting of the **"Committee for preparation of RFP for a comprehensive visualization platform and Decision Support System for weather forecasting & Dissemination"** on 1st February, 2019 at IMD New Delhi.

Dr. M. Mohapatra, Sc. 'G' participated in the meeting of the **"Committee constituted for preparing Protocol, Work Plan and Press Release"** on 4th February, 2019 at MHA, New Delhi for the 10th Meeting of Heads of departments of disaster prevention of SCO states.

Shri L. Ramesh Babu, Sc. 'E' participated in the meeting of **"Fog Management MOU between BIAL & JNCASR"** held at JNCASR, Bengaluru on 4th February, 2019.

Shri H. R. Biswas, Sc. 'E' attended 4th meeting for the year 2018-19 of the **"State Executive Committee constituted under the Disaster Management Act, 2005"** at Secretariat, Bhubaneswar on 5th February, 2019.

Dr. M. Mohapatra, Sc. 'G' participated in the 13th Research Advisory Committee (RAC) meeting of **"Indian National centre for Ocean Information & Services (INCOIS)"** held at INCOIS, Hyderabad on 15th February, 2019.

Dr. S. D. Attri, Sc. 'F' attended a meeting of **"NATCOM Workshop"** held at Ministry of Environment, Forests and Climate Change on 15th February, 2019.

Shri H. R. Biswas, Sc. 'E' attended a meeting of the sub-committee for preparation of **"Heat Wave Action Plan-2019"** on 25th February, 2019 at OSDMA, Bhubaneswar.

Shri Y. K. Reddy, Sc. 'F' conducted OLIC meeting on 27th February, 2019 at MC Hyderabad and discussed to **"Improve the usage of Rajbhasha in all official correspondence"**.

Smt. N. G. Vijayalaxmi, Met. 'A' attended a **"TOLIC"** meeting on 14th March, 2019 at Indian Institute of Science, Bangalore.

Dr. M. Mohapatra, Sc. 'G', Shri R. Bibiraj, Sc. 'B' participated in the **"Brainstorm Meeting on application of Artificial Intelligence and Machine Learning"** on 25-27 March, 2019 at IITM Pune.

Dr. V. K. Mini, Sc. 'E' attended a State Level Core Committee meeting for preparing advanced estimate of **"Chief crops and their yield"** during 2017-18 at the chamber of Additional Secretary on 28th March, 2019.

observational programme of ESSO (Earth System Science Organization), Ministry of Earth Sciences, Govt. of India" by Raja Acharya and Suman Chattopadhyay has been published in Journal of Indian Geophysical Union Vol. 23, No. 1 January, 2019, 101-105 as a Technical Note.

Media Interaction

Shri Anand Sharma, Sc. 'F' was interviewed by Lok Sabha TV & Rajya Sabha TV on **"Global warming & Weather forecast & Weather base agro advisory"** on 24th January, 2019

Dr. Geeta Agnihotri, Sc. 'E' answered about **"24 Weather Enquiries by Electronic & Print Media"** during Jan-Mar, 2019.

Shri C. S. Patil, Sc. 'D' answered about **"110 Weather Enquiries by Electronic and Print Media"** during Jan-Mar, 2019.

Dr. S. Bandyopadhyay, Sc. 'F' attended a telecast of Live Program on **"Tornado"** under Hello DD Basundhara. (Environmental Program) on 16th February, 2019.

Shri Anand Sharma, Sc. 'F' was interviewed by All India Radio, Dehra Dun on 27th February, 2019 on **"Disaster management and National Science day"**.

Dr. D. Pradhan, Sc. 'G' and **Dr. S. D. Kotal, Sc. 'E'** briefed media in a press conference in connection with installation of **"C-band DWR radar at Ranchi & preparedness for severe weather warning"** on 14th March, 2019.

Dr. S. D. Attri, Sc. 'F' participated in programme on **"Climate Change and Agriculture"** at AIR New Delhi on 14th March, 2019.

Shri Bikram Singh, Sc. 'F' interviewed by Aaj Tak, India news, ETV, Sahara TV, Samachar Plus, Network 10, Mandakini ki Awaz, etc. on 22nd March, 2019.



Shri Bikram Singh, Sc. 'F', during interacting with media

Research & Publications

Six (6) review articles and Seven (7) research papers were published in quarterly research journal **MAUSAM Vol. 70, No. 1 (January, 2019)** on the occasion of 70th years publication.

An article - "OMNI (Ocean Moored buoy Network for northern Indian Ocean) Buoy System - A critical component of ocean

Visitors

Forty two (42) students & teachers attending **"Environment cum Mineral awareness Programme"** conducted by Society of Geoscientists and allied Technologists (SGAT), Bhubaneswar had a field visit to M.C., Bhubaneswar on 12th January, 2019.

Two (2) **Russian scientists** visited **MC, Bengaluru** on 16th January, 2019.

A group of **15 Students** of B. A. Third Year (Geography) alongwith 3 faculty member from Shri Haripal Shastri Smarak, Feena, District Bijnor, Uttar Pradesh visited **MC, Dehradun** on 20th January, 2019. Students were shown Met-Observatory and briefed about functioning of the observatory.



Students visiting at MC, Dehradun

Twenty five (25) students from Muktangan Engineering College have visited the **Air Pollution Laboratory, CRS, Pune** on 24th January, 2019. They were explained about the activities of APS.

Thirteen (13) students from seven countries in the Asia-Pacific region, doing a nine month PG course in **“Satellite Meteorology and Global climate”** at Centre for Space Science and Technology Education in Asia Pacific (CSSTEAP), a United Nations recognized organization under SAC, Ahmedabad, ISRO visited **DWR, Chennai** on 25th January, 2019.

Twenty (20) mid career Indian Civil Service Officials under Govt. of India visited India Meteorological Department (IMD), New Delhi on 6th February, 2019. The team familiarized with various observational/forecasting/dissemination work/services of IMD.

Dr. Chhaya Shukla, Member, Uttarakhand Public Service Commission and Member Managing Committee, Indian Red Cross Society, State Branch of Uttarakhand alongwith 15 volunteers of Red Cross Society visited **Met. Centre Dehradun** on 16th February, 2019.



Shri Bikram Singh, Sc. 'F', alongwith volunteers

Ms. Manal Alhashmi, research scholar from Oman visited **IMD H.Q., New Delhi** during 21-28 February, 2019 to consult with Dr. M. Mohapatra, Sc. 'G' Services on her research project, entitled El Nino and Southern Oscillation (ENSO), Indian Ocean Dipole (IOD) on Tropical Cyclone activity over Arabian Sea with special emphasis on Oman.

19 Indian sailors and 2 Indian coast Guard Naviks and 1 instructor from School of Naval Oceanology and Meteorology (SNOM), Naval base, Kochi visited **Meteorological Training Institute (MTI), Pune** on 26th February, 2019.

An educational tour group comprising **10 students** of M. Sc. Agricultural Meteorology and M. Sc. Environmental Sciences with one faculty member from Department of Environmental Sciences and NRM, SHUATS, Allahabad visited **MC, Bhubaneswar** on 26th February, 2019.

Twenty eight (28) M.B.B.S. (6th Semester) students alongwith 2 faculty members from Govt. Doon Medical College, Dehradun visited **MC, Dehradun** on 26th March, 2019.



Shri Bikram alongwith M.B.B.S. students at MC, Dehradun

Twenty five (25) M.Sc (II year) students from Wadia college and 30 students from Tolani Institute, Talegaon have visited the **Air Pollution Section, CRS, Pune** on 28th February, 2019.

Sh. Jothiraman Vivekanandan, a renowned Radar Scientist from NCAR, USA visited **DWR, Chennai** on 14th March, 2019 and shared his presentation with DWR team on the recent advancements in Airborne wind profilers and LIDARs and rainfall correction techniques.

Tour

Shri P. S. Biju, Sc. 'E' was on tour for the period from 3-7 January, 2019 to participate in **“106th Indian Science Congress”** held in Jalandhar Punjab and received the first prize for the MoES-IMD stall.

Shri K. N. Mohan, Sc. 'F' was on tour and upgraded three nos of **“Drishti Systems at RWY 28-Mid-10 of Delhi airport”** from 5 -10 February, 2019.

Shri Ravindra Kamble, Met. 'A' and Shri Pramod Mehtre, S. A. were on tour to Guwahati for installation of **“Drishti AWOS system and Laser Ceilometer”** from 7-15 February, 2019.



Shri B. Arul Malar Kannan, Sc. 'E' was on tour to H.Q., New Delhi from 18-20 March, 2019 to participate in **"TEC in connection with purchase of Radars for IMD"**.

Shri K. N. Mohan, Sc. 'F' and **Shri Manish Ranalkar, Sc. 'E'** were on tour to New Delhi from 26-27 March, 2019 in connection with the assessment of the present status of **"Aviation Meteorological Services and recommendations for its up gradation under the Umbrella Scheme, ACROSS"**.

Foreign Visits

Dr. Ambikapathy Ammani, Sc. 'B' (National Centre for Seismology) is on Ex-India deputation to Japan from 14 January, 2019 to 9 March, 2019 to participate in knowledge co-creation program on **"Global Seismological Observation"**.

Shri Charan Singh, Sc. 'F' was on Ex-India deputation to Kathmandu, Nepal during 29-31 January, 2019 to participate in the workshop on **"Future Climate Projection and their Application in South Asia"**.

Dr. D. S. Pai, Sc. 'F' and **Dr. Divya E. Surendran, Sc. 'B'** participated in training workshop on **"Operational Seasonal Prediction for South Asia Region"** from 25-28 February, 2019 at Regional Integrated Multi-Hazard Early Warning System (RIMES), Bangkok, Thailand.

Shri K. N. Mohan, Sc. 'F' Pune was on Ex-India deputation to Tokyo, Japan during from 6-9 March, 2019 to participate in the **"RA-II WIGOS Workshop - Regional WIGOS Centre (RWCs) and its Services"**.

Dr. S. L. Singh, Sc. 'F', was on Ex-India deputation to Beijing, China during 12-15 March, 2019 to participate in joint meeting of **"CBS Expert Team on WIS Centres (ET-WISC) and Task Team on WIS Data Centres (TT-DC)"**.

Shri Rahil Akram, S. A. was on Ex-India deputation to Germany for the period 31 March - 13 April, 2019 to participate in the **"36th Training Session at Global Atmosphere Watch Training and Education Centre (GAWTEC-36)"**.

WEATHER SUMMARY

Significant Weather System during January 2019

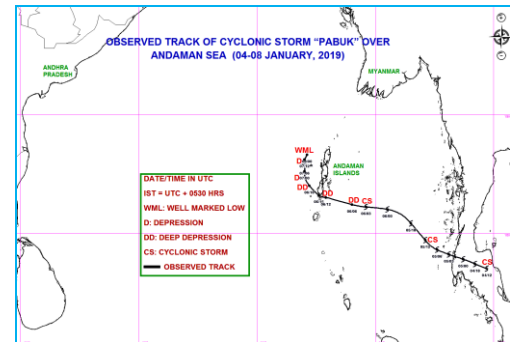
Main features of the month (Jan, 2019) : Over Northeast homogeneous region, maximum temperature (24.86 °C) was above normal by 1.8 °C, which is third highest for the region since 1901 (first and second highest were in the year 2017 (25.20 °C) & 1982(24.92 °C) respectively. Severe cold wave and cold wave conditions prevailed over parts of central India and at a few places over peninsular India during last week of the month.

(Cyclonic Storm Pabuk over Andaman Sea during 4-8 Jan, 2019

Life History: Cyclonic Storm (CS) Pabuk originated from a low pressure area (LPA) which formed over south China Sea on 28th

December. At 0600 UTC of 1st January, it intensified into a tropical storm "Pabuk" over Gulf of Thailand and moving west-northwestwards, it emerged into the north Indian Ocean region over Andaman Sea in the morning (0300 UTC) of 5th January, 2019. Moving further west-northwestwards, it gradually weakened into a deep depression around noon (0600 UTC) and crossed Andaman Islands near 11.6° N/92.7° E, close to south of Port Blair during night (between 1300 and 1500 UTC) of 6th January, 2018 with maximum sustained wind speed of 55-65 kmph gusting to 75 kmph.

It weakened into a depression in the early morning (0000 UTC) of 7th and into a well marked low pressure area in the early morning (0000 UTC) of 8th January over eastcentral BoB and adjoining areas. The observed track of the system during 4-8 January is presented in Figure given below :



Observed track of CS "Pabuk" over Andaman Sea

Main features of the month (Feb, 2019) : Maximum temperature over northwest India was fifth lowest since 1971. All India rainfall was fifth highest since 2001.

During the month, rainfall realized over the country as a whole was 148% of its long period average. Subdivisions from north/northeast, Gujarat State, south interior Karnataka and Lakshadweep received large excess/excess or normal rainfall. Out of 36 meteorological subdivisions, 11 subdivisions received large excess rainfall, 3 received excess rainfall, 7 received normal rainfall, 4 received deficient rainfall, 9 subdivisions received large deficient rainfall and two subdivisions received no rain.

Main features of the month (Mar, 2019) : Maximum temperature over south peninsular region was third highest since 1901.

Heat wave conditions prevailed for few days over few places in Tamilnadu and Rayalaseema during second week of the month and over Saurashtra & Kutch during last week of the month. Meteorological subdivisions Sub-Himalayan West Bengal & Sikkim, Gangetic West Bengal, Odisha, Jharkhand, Chhattisgarh, east Madhya Pradesh, coastal Karnataka and north interior Karnataka received excess/normal rainfall, while remaining subdivisions received deficient/scanty/no rainfall.

Appreciation

"The Secretary to President of India" appreciated the **weather forecast issued by IMD for 26th January, 2019.**