

मौसम विज्ञान विभाग समाचार IMD NEWS

INDIA METEOROLOGICAL DEPARTMENT
(Ministry of Earth Sciences)

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Number 2



Important Events / Activities

BRAINSTORMING MEETING ON MODERNISATION OF WEATHER AND CLIMATE SERVICES



1st Brainstorming Meeting on Modernisation of Climate & Weather Services held at Prithvi Bhawan on 13th April

Brainstorming meeting on the project "Modernisation of Weather and Climate Services during the period 2017-2024" was held at Ministry of Earth Sciences (MoES) on 13th April, 2017. The meeting aimed at preparation of detailed Science Plan and Project Report. Experts and Scientists in the field from all over the country participated in the meeting.

VISIT OF PARLIAMENTARY STANDING COMMITTEE



Dr. M. Mohapatra, Scientist 'G' giving a real time demonstration of Weather Forecasting services of IMD to Hon'ble Members of Parliamentary Standing Committee

Parliamentary Standing Committee on Science and Technology, Environment & Forests headed by Shrimati Renuka Chowdhury, MP visited IMD on 24th April, 2017 to have on-the-spot assessment of the functioning of the Weather Forecasting System. Twelve members of this Parliamentary Standing Committee visited Satellite Meteorology Division, National Weather Forecasting Centre and Radar facility in IMD, New Delhi and held detailed discussions with the senior officers of IMD. Dr. M. Mohapatra, Scientist 'G' gave a presentation on "Weather Forecasting Services of IMD" with a real time demonstration of forecasting activities of IMD. The members of the Parliamentary Standing Committee appreciated the functioning of IMD specially the weather forecast and warning services.

- Excerpt of 294th Report of the Department – related parliamentary standing committee on Science & Technology.
- The track record of the Ministry has been above par in the case of cyclone predictions which has been seen in the case of Hudhud and Vardah.



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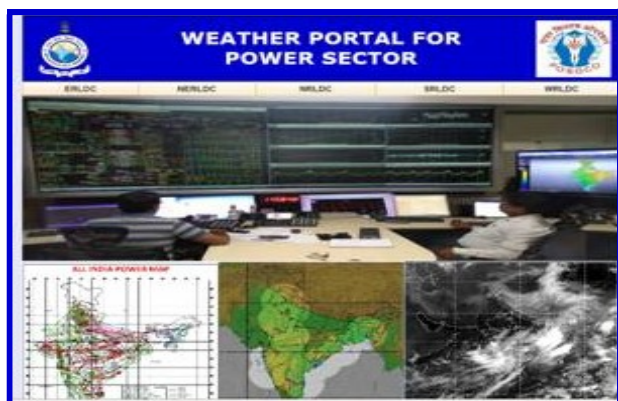
edited by
Dr. D. R. Pattanaik
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Staff of Editorial Office



Important Events

IMD & Himachal State Disaster Management Authority jointly organized Second user's conference on Awareness Program & Challenges in weather forecasting over Western Himalayan Region at Shimla on 15th June, 2017.

POSOCO-IMD weather portal



POSOCO-IMD weather portal

Shri Piyush Goyal, Hon'ble Minister for Power inaugurated POSOCO-IMD weather portal on 23rd June, 2017 for utilization of weather information for power management. This is the joint project of Power System Operation Corporation Limited (POSOCO) and IMD.

BULLETIN ON HEAT WAVE

Dr. Harsh Vardhan, Hon'ble Union Minister of Ministry of Science & Technology and Ministry of Earth Sciences wrote to Hon'ble Chief Ministers of Heat Wave prone states to implement Heat Wave Action Plan. A special daily Bulletin on prevailing Heat Wave conditions and its forecast/warning for next 5 days in different meteorological subdivisions and districts are being issued from the month of April. A special web page has been created in IMD website (<http://imd.gov.in/pages/heatwave.php>).

ANTI TERRORISM PLEDGE

Like previous years this year also the **Anti terrorism day (21 May)** was celebrated by IMD. The day being the Sunday, the pledge was taken on 19th May, 2017 by various offices of IMD. Shri S. M. Metri, Scientist 'E' administered pledge on the occasion of Pledge of anti terrorism day at M. C. Bangalore.



Officers and Staff taking anti terrorism day pledge at M. C. Bangalore

SWACHHTHA PAKHWADA



The team of officials which did the cleaning of a part of the green space opposite RMC Chennai main building

Swachhta Pakhwara : Swachhta Pakhwada was celebrated during 16-30 June, 2017 at HQ and other offices of IMD. Cleaning of office premises and campus, weeding out of files and condemnation of old/obsolete/unserviceable items were undertaken.

A function was organised at RMC Chennai on 30th June, 2017 on the culminating day of the Swachhtha Pakhwada period 16-30th June, 2017. Over 50 officials attended the meeting presided over by Shri S. B. Thampi, DDGM, RMC Chennai. He reiterated upon the commitment that each and every official must have in ensuring cleaner office premises and neighbourhood. Five of the MTS employees (erstwhile Safaiwalas and Gardener) of RMC Chennai who are engaged in regular cleaning of office premises were felicitated in recognition of their services.

A special cleanliness drive during Swachhtha Pakhwara was arranged at RMC Kolkata in which officers and members of staff also participated.



special cleanliness drive during Swachhtha Pakhwara

INTERNATIONAL YOGA DAY

Yoga Day - The 3rd International Yoga day was celebrated on 21st June, 2017 at various offices of India Meteorological Department. A yoga class on this occasion was undertaken by a yoga guru from 'Ministry of AYUSH' in Vrishi Sabhagaar at H.Q. in which officers and members of staff were participated.

RMC Chennai and Meteorological centres at Thiruvananthapuram, Bangalore and Hyderabad also celebrated Yoga Day on 21st June, 2017.

Yoga exercises were practiced with the guidance of Yoga Experts on 21st June, 2017 at Alipore Office which was presided over by the DDGM, RMC Kolkata.



International Yoga day at Kolkata

Important Policy Decisions Taken/ New Projects / Schemes / Programmes Approved / Initiated / Completed

Farmers database of about 1.56 Crore, 18.9 Lakh, 27 lakh 50 thousand, 16 Lakh, 2.5 Lakh, 16880 farmers were arranged from the states of Uttar Pradesh, Kerala, Karnataka, Madhya Pradesh, Telangana and Tripura respectively. Data has been collected by the active coordination between Regional Coordinators and State Agriculture Department. Database of farmer's information will be used for sending Agromet advisories by SMS.

List of 100 new Krishi Vigyan Kendras (KVKs) has been identified and finalized for District Agromet Field Unit establishment. Combining the earlier 100 KVKs, total 200 KVK has been identified for DAFU establishment till now.

Shri Rohit Thapliyal, Scientist 'B' inspected site for installation of Doppler Weather Radar at Nainital and Pithoragarh from 1-4 May, 2017.

Sector wise hourly Nowcast and Warnings for Chardham route are being issued for the use by Chardham Yatris and the Disaster Management Authorities, Govt. of Uttarakhand.

Hourly Weather forecast and Warnings were issued during VVIP-1 and VVIP-3 visit to Sri Badrinath ji on 6th May, 2017 and Sri Kedarnath ji on 3rd May, 2017 respectively.

Dr. D. Pradhan, DDGM, Shri K. C. Sai Krishnan, Scientist 'F' and Sh. Bikram Singh, Scientist 'E' inspected site for installation of Doppler Weather Radar at Surkanda Devi on 14th May, 2017 and Mussoorie on 15th May, 2017.

FMO (Kaveri) unit started at AMO KIAL Bengaluru on 1st June, 2017. Dr Geeta Agnihotri, Scientist 'E' is In-charge of newly constituted FMO (Kaveri), Bengaluru unit at AMO Bengaluru.

S/Shri M. M. Saklani, Meteorologist 'B' and **D. K. Verma**, Meteorologist 'B' were on tour to Rudraprayag, Joshimath, Chamoli and Uttarkashi from 2-6 June, 2017 for AWS along Chardham Yatra route were upgraded with new GPRS based data logger and are now working satisfactorily.

Shri Bikram Singh, Scientist 'E' inspected site for installation of Doppler Weather Radar at ARIES, Nainital with IMD team from RMC & IMD, HQ, New Delhi on 8th June, 2017.

Forecast and Sector wise Nowcast/Warning/Advisory for "Mansarovar Yatra-2017" are being issued from 10th June, 2017 onwards for the use of yatris and concerned government officials.

Design storm studies in respect of six (6) Hydraulic projects have been completed during the period April-June, 2017.

Human Resource Development Activities

CONFERENCES

Shri Anand Sharma, Scientist 'F' and Dr. Ranjit Singh Scientist 'F' participated in the National Conference on Agriculture for Kharif Campaign 2017 at Vigyan Bhavan, New Delhi on 25-26 April, 2017 and were one of the panellists for the group discussion on Pradhan Mantri Fasal Bima Yojana. The meeting was chaired by Hon. Minister for Agriculture, Government of India Shri Radha Mohan Singh.

Dr. D. S. Pai, Scientist 'F' participated in the 'International Conference on Climate Change and Adaptation Empowering small holders and ensuring food security' and delivered a lecture on "Improvement over Seasonal Rainfall Prediction: Indian Experience" at Chennai, Tamil Nadu from 11-12 May, 2017.

Dr. K. J. Ramesh, Director General of Meteorology, Dr. K. K. Singh, Scientist 'F' and Shri K. Santosh, Scientist 'E' participated in one day workshop on "Delivery of Agromet Advisory through SMS" workshop was jointly organized by IMD and govt of Karnataka at Vikas Soudha Bangalore on 29th May, 2017 Workshop was inaugurated by Agriculture minister of Karnataka and DGM IMD, gave the keynote address.

Dr. (Mrs.) Surinder Kaur, Scientist 'F' and DDGM (Hydrology) attended France-South Asia Regional Meteorological Conference during 6-7 June, 2017 at Taj Mahal Hotel, Conference Room, New Delhi.

Shri Anand Sharma, Scientist 'F' participated in the 2nd User Conference at Shimla on 15th June, 2017 and made a presentation on "Agro Advisory Services for Western Himalayan Region". The conference was chaired by, Additional Chief Secretary, Himachal Government, Shri Tarun Sridhar. Shri Anand Sharma also chaired the session on Interaction, Discussion and Recommendation.

Dr. N. Chattopadhyay, Scientist 'F' (Agrimet), attended the National Conference on "Developing Climate Services along with weather forecast for Building Climate Smart Farmers" organized by National Council for Climate Change, Sustainable Development and Public Leadership (NCCSD) in cooperation of Government of Gujarat and Anand Agriculture University (AAU) on 30th June, 2017 at AAU Anand.



National Conference on "Developing Climate Services alongwith weather forecast for Building Climate Smart Farmers"

TRAININGS

Mr. V. Vijay Kumar, Meteorologist 'B' was on Ex-India deputation to Turkey to participate in the international training programme on METCAPPLUS VISUALISATION PACKAGE and TAC2BUFR Software during 24-28 April, 2017.

Shri S. B. Thampi, DDGM, attended training programme on Public Procurement at National Institute of Finance Management at Delhi during 5-6 June, 2017.

WORKSHOPS

Shri Rohit Thapliyal, Scientist 'B' attended a Workshop on "State Specific Action Plan" organized by Irrigation Research Institute, Roorkee on 21st April, 2017.

Shri S. B. Thampi, DDGM, Dr. S. Balachandran Scientist 'F' and Ms. B. Amudha, Scientist 'D' participated in the main programme organised by NIOT to commemorate the completion of 20 years of service in ocean observation on 22nd April, 2017 at NIOT, Chennai. Ms. Amudha delivered a talk on "Validation of Quikscat wind data over Bay of Bengal using ocean surface winds from moored buoys during the phases of Indian northeast monsoon, 1999-2008" in the workshop held at NIOT, Chennai on the same day.

Weather forecasting for effective Disaster Management



IMD Officers in the workshop

A workshop on "Weather forecasting for effective Disaster Management" organized by Department of Disaster Management, Govt. of Uttarakhand and IMD on 16th May, 2017 at Hotel Pacific, Subhash Road, Dehradun, which was inaugurated by Hon'ble Chief Secretary Shri S. Ramaswamy, Govt. of Uttarakhand in presence of Shri Amit Singh Negi,

Secretary, Department of Disaster Management, Govt. of Uttarakhand, Dr. D. Pradhan, DDGM, RMC, New Delhi and others senior IMD officers. The following lectures were delivered by IMD Officers in the workshop : Dr. D. Pradhan, DDGM, RMC, New Delhi on "Radar Products and their uses and future planning of IMD for Uttarakhand state", Dr. Sai Krishnan, Scientist 'F', UAID, New Delhi on "Radar Network and Improvement in Radar techniques", Dr. G. Suresh, Scientist 'F', NCS, IMD, New Delhi on "Earthquake monitoring and overview", Shri Bikram Singh, Scientist 'E', IMD, Dehradun on "Operational Meteorological Products generated for the end users by M.C. Dehradun" and Shri Rohit Thapliyal, Scientist 'B', IMD, Dehradun on "NWP products of short range, medium range and now cast range".

Dr. K. J. Ramesh, Director General of Meteorology presided over a joint User's Workshop organised by IMD and Govt. of Maharashtra on 'Weather Forecasting Services in the State and Emerging New Sectors' at Pune on 26th May, 2017.

AGRO-METEOROLOGICAL ADVISORY SERVICES

As a joint venture with State Government to reach maximum farming households of Karnataka in presence of Hon'ble Minister of Agriculture, Govt. Of Karnataka, Additional Chief Secretary and Development commissioner, Director General of



workshop on Agro-meteorological Advisory Services

Meteorology, IMD, Senior officials of Agriculture of districts in Karnataka and Senior officials of IMD at Vikas Soudha, Bengaluru. A one day workshop on 29th May, 2017 delivery of Agro-meteorological Advisory Services based on crop through SMS to Farmers of Karnataka was conducted as a joint venture with State Government to reach maximum farming households of Karnataka.

DISASTER PREPAREDNESS WORKSHOP



Shri Bikram Singh gave a presentation on "Thunderstorm and its socio economic impacts"

Shri Bikram Singh, Scientist 'E' attended "Disaster Preparedness Workshop" and gave a presentation on "Thunderstorm and its socio economic impacts" on 16th June, 2017 organized by Disaster Management Department, Govt. of Uttarakhand. The event was inaugurated by Shri S. Ramaswamy, Chief Secretary, Govt. of Uttarakhand.

EMERGING APPLICATIONS OF SPACE TECHNOLOGY IN AGRICULTURE AND ALLIED SECTORS

Dr. N. Chattopadhyay, Scientist 'F' (Agrimet) attended the workshop on "Emerging Applications of Space Technology in Agriculture and Allied Sectors" organized by Space Application Centre, ISRO, Ahmedabad from 28-29 June, 2017 at SAC Ahmedabad and delivered a presentation on "Global Scenario and issues of operational ; Agromet Services".



Group photograph of Members

SEMINAR

Dr. Jayanta Sarkar, Scientist 'F' has attended a seminar on "Thunderstorm:Socio economic impacts, early warning and risk management" organized by R.M.C. Kolkata and presented the paper entitled "Analyzing thunderstorm activity of 20th April, 2014 over Gujarat : A detailed study" authored by Jayanta Sarkar, Scientist 'F' and Vigin Lal F. Scientist 'B' at Kolkata during 29th April to 3rd May, 2017.

Shri Bikram Singh, Scientist 'E' made a presentation on "Operational Meteorological Products generated for the end users by M.C. Dehradun and the south-west monsoon forecast-2017" through video conferencing to All District Magistrates and the Senior Superintendents of Police, Govt. of Uttarakhand from Chief Secretary's conference hall on 19th May, 2017 in presence of Additional Chief Secretary, Secretary, Deptt. of Disaster Management and other senior state govt. officers.

Sixth All India Departmental Hindi Seminar 2017



Sixth All India Departmental Hindi Seminar 2017 at MC Thiruvananthapuram

The Sixth All India Departmental Hindi Seminar 2017 was organised by MC Thiruvananthapuram during 1-2 June, 2017 at, Thiruvananthapuram. Retired Prof. Dr. Thankamany Amma, University of Kerala was the Chief guest and Dr. K. J. Ramesh, Director General of Meteorology, was the Chairman. About 50 delegates from all over India participated in the Seminar. Shri S. B. Thampi, DDGM, welcomed the gathering and Shri S. Sudevan, Scientist 'E', MC Thiruvananthapuram proposed the vote of thanks.

LECTURES

Sanjib Bandyopadhyay, Scientist 'F' delivered a lecture on Genesis Evolution, Tracking and Intensity Prediction & Warning dissemination mechanism for Tropical Cyclone at Administrative Training Institute, Salt Lake City, Kolkata on 6th April, 2017.

Shri Anand Sharma, Scientist 'F' and Priyanka Singh Scientist 'B' Participated and Shri Anand Sharma delivered a talk on "Gramin Krishi Mausam Seva: Current Status and Future Plans" at the Stakeholders meeting of Agriculture Officers of Bihar Government at Patna on 15th April, 2017. The Principal Secretary, Agriculture Bihar Government appreciated the presentation and assured support for the project

Dr. S. C. Sahu, Delivered lecture on "The basics of climate change and global warming" and "Climate change, global warming, environmental degradation and social challenges" on 20th April, 2017 at Gopabandhu academy of Administration, Bhubaneswar.

Dr. Jayanta Sarkar, Scientist 'F' delivered a lecture on Hazard detection, Monitoring, Forecasting and Information Dissemination Mechanism in the state at GIDM on 26th April, 2017, at Gandhinagar.

S/Shri R. Raja Mohan, Met. 'B', A. Roiden, Met. 'B', and N. Marikrishnan, Met. 'B' and D. Margatheval, Met. 'A' delivered lectures on "Disaster Management and Mitigation Measures" to 215 State Government Disaster Management officials from Anna Institute of Management on 27th April, 9th, 25th and 30th May, 2017 respectively at RMC Chennai.

Shri H. R. Biswas, Scientist 'D' and Shri Sukumar Roy, Met. 'A' delivered lectures on 'overview of Weather observation & Forecast' at Mitra Institution, Kolkata on 12th May, 2017.

Shri Somashekhara Bhatta, Meteorologist 'B' Delivered lecture to the trainee officers on Weather Forecasting System during floods on 22th May, 2017 at Home Guards & Civil Defence Academy, Bangalore.

Dr. Manorama Mohanty, Scientist 'D', delivered lecture on "Application of Space Technology in Monitoring and Managing Risks" on 24th May, 2017 at GIDM trainees at Gandhinagar.

Shri Bikram Singh, Scientist 'E', Meteorological Centre, Dehra Dun delivered a lecture on 'Weather forecasting for effective disaster management with special reference of Uttarakhand state' at Uttarakhand Administrative Academy, Nainital on 9th June, 2017.

Dr. S. Balachandran, Scientist 'F' delivered a lecture on "Disaster Management and Mitigation Measures" to State Government Disaster Management officials on 20th June, 2017 at Anna Institute of Management, Chennai.

Dr. M. Mohapatra, Scientist 'G' and Head Services delivered a lecture on 'Overview for hazards and determining the possibility for establishing early warning system and institutional mechanism for regional early warning system' in Training Workshop on Short Range Early Warning System for SAARC Member Countries organised by SAARC Disaster Management Centre at Ahmedabad on 21st June, 2017. Dr. M. Mohapatra also participated as a panelist in the panel discussion held in the same evening. Dr. S. K. Roy Bhowmik, Scientist 'F', NWP delivered a lecture on "Severe Weather and Early Warning System for SAARC region" in the workshop.

Dr. D. R. Pattanaik, Scientist 'E' delivered an invited talk on "Extended range forecast and its use during monsoon season" on 23rd June, 2017 in the Department of Agro-meteorology, Indira Gandhi Krishi Vishwavidyalaya (IGKV), Raipur.



Dr. D.R. Pattanaik with officials of IGKV, Raipur before the talk

Shri Sankar Nath, Scientist 'D' was on deputation to Offenbach, Germany during 23-24 May, 2017 to participate in the OSCAR/ Surface Training Course in RA VI.

Dr. Mrutyunjay Mohapatra, Scientist 'G' and Head Services was on deputation to Suva, Fiji during 25-26 May, 2017 as a member of Indian Delegation to participate in Sustainable Development Conference for the Pacific Islands.

Dr. S. K. Peshin, Scientist 'G' and Head Satellite & Telecom Services was on deputation to Jeju Island (Republic of Korea) during 11-16 June, 2017 to attend 45th Session of Co-ordination Group for Meteorological Satellites (CGMS-45) and CGMS Working Group.

Shri Sonam Lotus, Scientist 'D' was on deputation to Seoul, Republic of Korea during 13-23 June, 2017 to participate in the International Training Course on Weather Radar Operation.

Infrastructure Development & Installations

- (i) Two Nos. of Electronic sunshine recorders were installed at Santacruz, Mumbai.
- (ii) Current Weather Instrument System (CWIS) was installed at Gondia airport.
- (iii) Distant Indicating Wind Equipment (DIWE) was installed at Dimapur airport.
- (iv) Hall effect type wind vane was procured.
- (v) Travelling standard kits (50 in number) received in Surface Lab, Surface Instrument Division, Pune.
- (vi) Digital Barometer status as on 31st May, 2017.
- (vii) Total 200 delivered to respective RMCs and 198 installed.
- (viii) Testing of travelling standard kits (50 nos.) (M/s Microstep (MIS) Co., Bangalore) was completed in the lab and found satisfactory.
- (ix) Revival of CWIS system at Rohini Heliport was done (x) Drishti installation at Mangalore airport completed.
- (xi) DIWE installation at Ludhiana airport completed.
- (xii) Radar installation at M.O. Gopalpur is under progress.

FOREIGN VISITS

Dr. Arvind Kumar Srivastava, Scientist 'F' was on foreign deputation to Beijing, China during 17-28 April, 2017 to attend International Training Course on Global Framework for Climate Services (GFCS) & 13th Session of the Forum on Regional Climate Monitoring, Assessment and Prediction for Asia (FOCRAL).

Dr. A. K. Sahai, Head CRS, Dr. D. S. Pai, Scientist 'F', Dr. O. P. Sreejith, Scientist 'D' and Ms. A. B. Bandgar, Scientist 'B' were on deputation in 10th Session of the South Asian Climate Outlook Forum (SASCOF-10) from 24-26 April, 2017 at Thimpu Bhutan.

Dr. K. J. Ramesh, Director General of Meteorology and Dr. R. K. Giri, Scientist 'E' were on deputation to Geneva during 13-17 May, 2017 to participate in 69th Session of Executive Council Meeting of World Meteorological Organisation (WMO).

Inter-Agency Meetings

Marine Section of Climate Research and Services (CRS) organized a meeting on 4th April, 2017 at IMD, Pune with Cmde, Manoj Kumar Singh, Principal Director, Naval Oceanology and Meteorology, New Delhi, Capt. C. S. Panda from Eastern Naval Command, Vizag, Captain, Abhinav D. Barve from Western Naval Command & Senior Vice President Captain S. K. Yadav of Shipping Corporation of India, Mumbai, Captain Som Raj. The meeting was chaired by Dr. K. J. Ramesh, DGM. DGM, (New Delhi) presented the mementos and certificates for the selected ships of Indian Navy for the meritorious work done by them from 1st April, 2015 to 31st March, 2016.

Dr. Sanjib Bandyopadhyay, Scientist 'F' attended the 35th meeting of the State Level Coordination Committee on Crop Insurance (SLCCCI) held on 7th April, 2017 at Conference room Agriculture Department, Nabanna, Howrah. The meeting chaired by the Additional Chief Secretary, Government of West Bengal, Agriculture Department.

Dr. N. Chattopadhyay, Scientist 'F' attended the meeting on "Irrigation Scheduling and mapping for real time implementation for preparation of Agromet advisories" under GKMS projects on 11th April, 2017 at Indian Institute of Tropical Meteorology, Pashan, Pune.

Dr. Jayanta Sarkar, Scientist 'F' and other officers attended a meeting with Director, Airport Authority of India Ahmedabad regarding relocation/construction of Met Centre and DWR building on 11th April, 2017.

Dr. S. C. Sahu, attended final expert committee meeting on certificate course on climate change and sustainable development in collaboration with Xavier University of Bhubaneswar (XUB) and Odisha state Open University (OSOU), Sambalpur, on 12th April, 2017 at Gopabandhu Academy of Administration, Bhubaneswar.

Dr. Kamaljit Ray, Scientist 'F' attended a meeting on strengthening of outreach of districtwise Agromet advisory by dissemination of the message directly through SMS with Principal Secretary to Govt., Dept. of Agriculture & Farmer's Empowerment, Govt. of Odisha on 15th April, 2017 in his Office at Bhubaneswar.

S/Shri Anand Shankar, Scientist 'B' and Sandeep Kumar, Met. 'A' attended meeting with Principal Secretary agriculture and his officials regarding improving the out rich of Agro-Meteorological Advisory to farmers on 15th April, 2017. Also another meeting with Chief Secretary regarding Drought management in Bihar on 24th April, 2017.

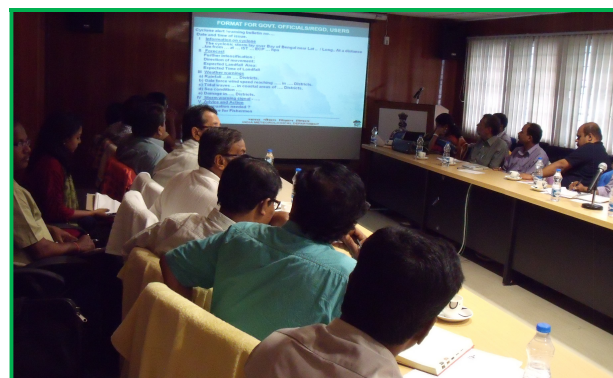
S/Shri Anand Shankar, Scientist 'B' and Shri Sandeep Kumar, Met. 'A' attended meeting with Director, Statistics development regarding Bias in Uniformity in rainfall data of Bihar on 27th April, 2017. Shri Anand Shankar, Scientist 'B' attended Crisis Management Group meeting with State Govt. dignitary regarding review of preparation of Pre-Monsoon season.

Dr. A. K. Srivastava, Scientist 'F' attended a briefing meeting on "United Nations Framework Convention on Climate Change Conference (UNFCCC)" on 17th April, 2017 at MoEF, New Delhi. Pre-cyclone Exercise to share the latest advances in Cyclone Warning Services of IMD for the ensuing cyclone season was held at IMD, New Delhi on 17th April, 2017. Experts from Ministry of Home Affairs (MHA), National Disaster Management Agency (NDMA), National Institute of Disaster Management, Central Water Commission, Indian Air Force, Indian Navy, Indian Institute of Technology, Delhi, National Centre for Medium Range Weather Forecasting Centre and

various divisions of India Meteorological Department (IMD) participated in the meeting.

Shri K. Santosh, Scientist 'E' attended a meeting under the chairmanship of Additional Chief Secretary, Govt of Karnataka at Bangalore on 17th April, 2017 regarding sharing of database of farmers to IMD and utilising meteorological data under Karnataka State network of observatories and raingauge stations for issue of block level Agromet Advisories.

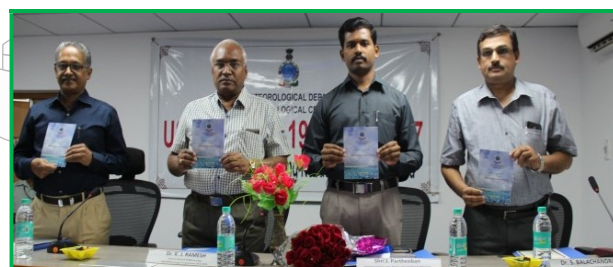
Pre-monsoon Meeting was presided by Dr. Sanjib Bandyopadhyay, Scientist 'F' & DDGM, RMC Kolkata at RMC Kolkata on 19th April, 2017 regarding Cyclone Warning Preparedness and Dissemination. Officers from different organizations of Govt. of WB & Govt. of India along with Public Sector like CESC, BSNL etc. attended the meeting.



Pre-monsoon Meeting at Kolkata

Shri A. Chanda, Scientist 'E', Shri H. R. Biswas Scientist 'D', Shri G. K. Das, Scientist 'D' delivered lecture on Cyclone related topics.

USER MEET ON "WEATHER SERVICES: EMERGING NEEDS AND WAY FORWARD"



Dr. K. J. Ramesh, DG, IMD, Shri S. B. Thampi, DDGM participated in the IITM/IMD "Lightning and Extreme Weather Events Workshop"

A User Meet on "Weather Services: Emerging Needs and Way Forward" was organized by Regional Meteorological Centre, IMD Chennai on 19th April, 2017 at Health and Family Welfare Training Centre, Chennai. Dr. K. J. Ramesh, DG, IMD presided over the meet. 61 delegates from around 45 organizations including representatives from the State and Central Government offices who directly benefit from the weather services provided by IMD participated in the meet. A booklet on Weather Forecast Terminologies in Tamil was released during the inaugural session of the meet.



Review meeting of the programme and plan of activities during 2017-18 was held at NIOT, Pallikaranai, Chennai during 20-21 April, 2017. Dr. M. Rajeevan, Secretary to Government of India, MoES, Dr. K. J. Ramesh, DG, IMD New Delhi and Shri S. B. Thampi, DDGM, RMC Chennai attended the meeting.

Shri S. B. Thampi, DDGM, participated as an Expert Committee Member in the meeting convened by the Additional Chief Secretary and Development Commissioner, Government of Karnataka on 24th April, 2017 to discuss about providing technical assistance for taking up of Cloud Seeding Operation in Karnataka during Monsoon 2017.

Meeting of the Task Group constituted by MoES and ISRO to prepare a proposal for inclusion of meteorological payloads in the 4th generation INSAT satellites and continuation of program beyond 2024 was held at SAC, ISRO, Ahmedabad under the chairmanship of Dr. M. Mohapatra, Scientist 'G' and Head Services on 25th April, 2017. Dr. A. K. Mitra, Scientist 'D', NWFC also participated in the meeting.

Smt. Manorama Mohanty, Scientist 'D' attended meeting regarding Inter State Pre Monsoon meeting "Flood Management and Preparedness for Monsoon 2017" at CWC Gandhinagar held on 27th April, 2017.

Dr. K. J. Ramesh, Director General of Meteorology, Dr. M. Mohapatra, Scientist 'G' and Head (Services) participated in preparedness meeting organised by NDMA on the ensuing Monsoon season on 28th April, 2017.

National Seminar on "Thunderstorms: Socio-Economic Impacts, Early Warning and Risk Management"



Dr. Ajit Tyagi, Ex. DGM of IMD presented a memento to the Chief Guest



IMD and Indian Meteorological Society, Kolkata Chapter jointly organized the National Seminar on "Thunderstorms: Socio-Economic Impacts, Early Warning and Risk Management" under the auspices of Department of Disaster Management & Civil Defense, Govt. of West Bengal in association with CESC Ltd., RP-Sanjib Goenka Group at International Management Institute, Kolkata on 29th April, 2017. Mr. Javed Ahmed Khan, Minister of Disaster Management & Civil Defense, Govt. of West Bengal was present as Chief Guest of the seminar. Dr. Ajit Tyagi, Ex. DGM of IMD had presented a memento to the Chief Guest.

SAFAR Ahmedabad was inaugurated on 12th May, 2017 by **Honourable minister of earth sciences Dr. Harsh Vardhan** at

AMC Community hall, Bodakdev, Ahmedabad. Director I/C, many officers and staff of this office attended the function. Dr. Jayanta Sarkar, Director I/C proposed vote of thanks on the occasion. Dr. Manorama Mohanty, Scientist 'D' was honoured for her contribution in implementation of the SAFAR project.



Hon'ble Minister, Dr. Harsh Vardhan and officers and staff of IMD

Dr. D. Pradhan, DDGM, RMC, New Delhi, Sh. K. C. Sai Krishnan, Scientist 'F' and Sh. Bikram Singh, Director/Scientist 'E' attended a meeting with Shri S. Ramaswamy, Chief Secretary, Govt. of Uttarakhand & Shri Amit Negi, Secretary, Department of Disaster Management, Govt. of Uttarakhand in connection with Installation of Radars and the Chardham Weather forecast on 15th May, 2017 at Secretariat, Uttarakhand.

Shri Vigin Lal F., Scientist 'B', attended meetings at Directorate of Agriculture, Krishibhavan, Gandhinagar on tender for crop area estimation & loss assessment using remote sensing and Geo spatial techniques for Gujarat state on 16th and 18th May, 2017.

Dr. Ranjit Singh, Scientist 'F' participated in the GKMS meeting with Director Agriculture Dr Gyan Singh, Uttar Pradesh government on 18th May, 2017.

Shri S. K. Manik, Scientist 'B' attended 2nd Meeting of 'Negotiation Committee w. r. t. complaint of State of Odisha under Section 3 of ISRWD Act, 1956' on 22nd May, 2017 at O/o CWC, Sewa Bhawan, New Delhi to discuss and decide future course of action.

Shri Anand Sharma, Scientist 'F' participated in the meeting at Krishi Bhavan on 24th May, 2017 for Drought management / Monitoring. The meeting was chaired by Shri Srinivas, Joint Secretary, Agriculture, Cooperation and Farmers Welfare Ministry of Agriculture.

Joint Agresco-2017

Dr. N. Chattopadhyay, Scientist 'F' attended Joint Agricultural Research and Development Meeting (Joint Agresco-2017) from 29-31 May, 2017 at Vasantnao Naik Maharashtra Krishi Vidyapeeth, Parbhani and gave presentation on Monsoon 2017 and Agriculture in Maharashtra.



Dr. N. Chattopadhyay gave presentation

Dr. Jayanta Sarkar, Scientist 'F' attended "Environmental Researchers' Meet" on 5th June, 2017 organized by Gujarat Pollution Control Board and GEMI at Mahatma Mandir, Gandhinagar.

Dr. S. D. Attri, Scientist 'F', AASD participated in the meeting at Krishi Bhavan on 7th June, 2017 for Drought management / Monitoring chaired by, Additional Secretary, Agriculture, Cooperation and Farmers Welfare Ministry of Agriculture.

All the officers of the Agromet Division attended review meeting taken by Secretary, MOES on 13th June, 2017 in the Meghdoot Hall, Prithvi Bhavan, Ministry of Earth Sciences (MoES). A brief presentation was made on the current status of agromet observations, outreach to farmers, plans/roadmap for the procurement of new AWS for DAMU and generation of soil moisture at 0.25 degree resolutions using gridded rainfall data.

Dr. K. K. Singh, Scientist 'F' and Head AASD and **Dr. S. D. Attri**, Scientist 'F' attended the Meeting on Implementation of GAMES for dissemination of weather forecast and crop advisory to farmers organized on 13th June, 2017 at Rajiv Bhawan, New Delhi.

Shri Bikram Singh, Scientist 'E' and **Shri Rohit Thapliyal**, Scientist 'B' attended a meeting under the chairmanship of Hon'ble Chief Minister **Shri Trivendra Singh Rawat**, Uttarakhand on "Monsoon Preparation" at Secretariat, Uttarakhand on 15th June, 2017.



Hon'ble Chief Minister Shri Trivendra Singh Rawat, chairing a meeting in State secretariat about the preparedness on disaster management prior to the monsoon season through video conferencing

Shri Bikram Singh, Scientist 'E' attended a meeting under the chairmanship of Chief Secretary, Uttarakhand on "Monsoon Preparation" at Secretariat, Uttarakhand on 30th June, 2017 and brief them regarding Advance of Monsoon in Uttarakhand.



Shri Bikram Singh, briefing advance of monsoon in Uttarakhand

Research & Publications

Eighteen (18) research papers were published in quarterly research journal "MAUSAM" Vol. 68, No. 2 (April, 2017).

Dr. S. Balachandran, Scientist 'F' appointed as one of the members of Doctoral Committee for a Research Scholar from SRM University.

Pattanaik, D. R. and Mohapatra, M., 2017, "Active northeast monsoon over India during 2015 – "An assessment of real-time extended range forecast", *Current Science*, **112**, 11, 2253-2262.

Pattanaik, D. R., 2017, "Hybrid (dynamical - empirical) forecast of Indian monsoon rainfall during 2016", *Current Science*, **112**, 12, 2367-2369.

An article entitled "Mercury - The Final Countdown" with reference to WMO-IOM-117" by Ms. B. Amudha, Scientist 'D', RMC Chennai was published in "Meteorological Technology International" magazine, United Kingdom, April, 2017 edition



Article published in Meteorological Technology International magazine, April 2017

Attri, S. D., 2017, Global and Regional Climate Change Perspective, In: "Climate Change, Resource Conservation and Sustainability Strategies", A. Kaushik *et al.* (eds.), DBH Publishers and Distributors, New Delhi, ISBN: 9789384871086, 1-9.

Abstract paper entitled of a "Analyzing thunderstorm activity of 20th April, 2014 over Gujarat : A detailed study" authored by Jayanta Sarkar, Scientist 'F' and ViginLal F. Scientist 'B' has been accepted for oral presentation at the Kolkata symposium held during 29th April to 3rd May, 2017.



ENSO bulletin and Seasonal Climate Outlook for South Asia for the month of March to May and Hot Weather Season (MAM) Outlook 2017 were issued. (Quick Link: www.imdpune.gov.in/Clim_Pred_LRF_New/Products.html)

The publication "Extremes of Temperatures and Rainfall for Indian Stations (upto 2012)", was published.

Weekly and cumulative Standardized Precipitation Index (SPI) maps were prepared for the months April to June and supplied for use in Agromet Advisory Services Bulletin.

Drought outlook maps for the months April to June have been prepared and uploaded on IMD Web-site.

Weekly Aridity anomaly maps & reports for the months April to June have been prepared and uploaded on IMD Web-site.

Research paper entitled "WMO Assessment of Weather and Climate Mortality Extremes: Lightning, Tropical Cyclones, Tornadoes, and Hail" by Randall Cerveny; Pierre Bessemoulin; Christopher C. Burt; Mary Ann Cooper; Zhang Cunjie; Ashraf Dewan; Jonathan Finch; Ronald L. Holle; Laurence Kalkstein; Andries Kruger; Tsz-cheung Lee; Rodney Martinez; M. Mohapatra; D. R. Pattanaik; Thomas C. Peterson; Scott Sheridan; Blair Trewin; Andrew Tait; M. M. Abdel Wahab has been accepted for publication in international journal Weather Climate and Society published by American Meteorological Society.



Shri S. M. Metri, Scientist 'E' attended Mass Media Meeting on 2nd June, 2017 at Doordarshan Kendra, Bengaluru.

Shri Bikram Singh, Scientist 'E', Meteorological Centre, Dehra Dun was interviewed by Aaj Tak, India news, ETV, Sahara TV, Samachar Plus, Network 10, Mandakini ki Awaz, etc.

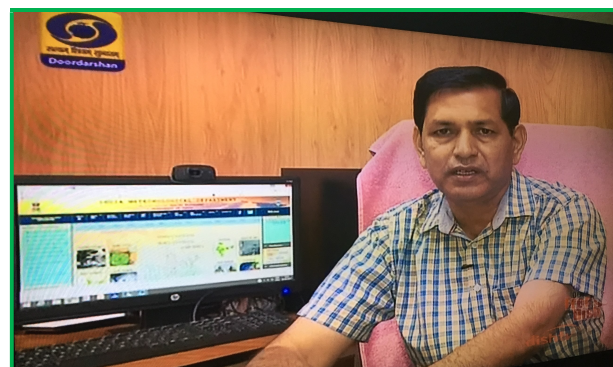
Dr. K. J. Ramesh, DG, IMD and Shri Anand Sharma, Scientist 'F' were interviewed by Lok Sabha TV on weather based agro advisories on 6th June, 2017 and by DD Kisan TV on weather and weather based agro advisories on 12th June, 2017.



Dr. K. J. Ramesh, DG, IMD and Shri Anand Sharma, was interviewed by DD Kisan TV on weather and weather based agro advisories on 12th June, 2017

Shri Anand Sharma, Scientist 'F' was interviewed by Doordarshan TV and AIR Shimla on weather based agro advisories on 15th June, 2017.

Dr. S. D. Attri, Scientist 'F' participated in one-hour programme on "Monsoon and Agriculture" at Doordarshan, New Delhi on 1st June, 2017.



Dr. S. D. Attri, delivered talk on "Monsoon and Agriculture"

Media Interaction

IMD arranged a Press Conference on "First Stage Forecast of Southwest Monsoon Season-2017 Rainfall" on 18th April, 2017. All print and electronic media persons were invited to participate in the meeting. The long range forecast issued is as below:

(a) Quantitatively, the monsoon seasonal rainfall is likely to be 96% of the Long Period Average (LPA) with an error of $\pm 5\%$.

(b) Forecast assessment suggests 38% of probability for near normal monsoon rainfall.

Dr. M. Mohapatra, Scientist 'G' and Head (Services) had an interactive talk in Hindi on the theme "गर्मी की लहर: पूर्वानुमान और सावधानियाँ" highlighting the formation, development, prediction, precautions, etc. related to Heat Wave in India. The programme was broadcast by All India Radio on 20th April, 2017.

Panel discussion "Sustainable development: Life must go on"

Dr. K. J. Ramesh, DG, IMD and Shri Anand Sharma, Scientist 'F' were invited and participated in the panel discussion on "Sustainable development: Life must go on" by All India Radio on 27th May, 2017. The programme was recorded both in Hindi and English for the broadcast on 4th June, 2017.

Visitors

Dr. K. J. Ramesh, Director General of Meteorology visited CRS office Pune on 4th April, 2017 and addressed the staff and officers.

Dr. G. N. Raha, Scientist 'D' along with Shri Sourav Adhikary, Scientist 'D' from AMO Kolkata have visited AMS Pakyong, Sikkim for selection of site for AWOS and Visibility landmark on 16-17 May, 2017.

Shri H. R. Biswas, Scientist 'D' went on Inspection for minimum requirement of commencement of Aviation Met. Service at Burnpur Airport under UDAN Scheme of Govt.

of India on 5th April, 2017. He delivered lectures on 'Early Warnings' at Administrative Training Institute, Kolkata, Govt. of West Bengal on 24th May, 2017.

A team from United Nations Development Programme (UNDP) visited various units of IMD, New Delhi on 17th April, 2017 in connection with the preparation of a documentary film on Weather Events and their forecast.

Dr. K. J. Ramesh, Director General of Meteorology visited at RMC Chennai on 19th April, 2017 and delivered a special address to Scientists, officers and staff of RMC Chennai.



Dr. K. J. Ramesh, DG, IMD addressing officers and staff on 19th April, 2017

Team from **United Nations Development Programme** visited various work stations of IMD for the documentary film on weather events on 17th April, 2017.

Approximately 38 students from GIDM, Gandhinagar visited Met. Centre on 19th April, 2017. They visited observatory upper air section and were familiarized with the procedure of weather forecasting.

Approximately 40 students from GMERS, Medical college, Gandhinagar visited Met. Centre on 21st April, 2017. They visited observatory upper air section and were familiarized with the procedure of weather forecasting.

Sh. Rohit Thapliyal, Scientist 'B' delivered a lecture on "Weather forecasting" to a group of 16 Students alongwith 01 faculty member from Govt. (PG) college, Uttarkashi during their visit to M. C. Dehradun on 8th May, 2017.

Hon'ble Minister Visit at Agartala



Hon'ble Minister Dr. Harsh Vardhan during his visit to Agartala

Dr. Harsh Vardhan, Hon'ble Minister for Science & Technology & Earth Sciences visited Meteorological Centre and Doppler Weather Radar, Agratala on 3rd June, 2017.

Visit of Shri A. S. Khati, Joint Secretary, MoES to RMC Kolkata

Shri A. S. Khati, Joint Secretary MoES had visited RMC Kolkata (Alipore) for the meeting with DDGM, RMC Kolkata and officers & staffs, regarding administrative issues and services, on 24th June, 2017.



Shri A.S. Khati, Joint Secretary, MoES during his visit at Kolkata

Eighty Two (82) students of Engineering/ Science of different educational institutes have undergone industrial training/ summer internship during June 2017 at Delhi HQ and eighteen (18) at other stations in India. **354 visitors** visited IMD, Pune during this quarter.

National / International Collaboration

(1) **Dr. M. Mohapatra**, Scientist 'G' submitted a report in connection with his Ex-India deputation to Ushuaia, Argentina (21-24 March, 2017) for participation in WMO conference on Executive Council Panel of Experts on Polar and High Mountain Observations, Research and Services (EC-PHORS-7). (2) Inputs were provided to **Ministry of Commerce & Industry, Department of Commerce, Government of India** for 73rd Session of UN-ESCAP to be held at Bangkok from 15-19 May, 2017 on 11th April, 2017. (3) **Dr. Mrutyunjay Mohapatra**, Scientist 'G' was on deputation to Suva, Fiji during 25-26 May, 2017 as a member of Indian Delegation to participate in Sustainable Development Conference for the Pacific Islands.

Miscellaneous

Dr. K. J. Ramesh, Director General of Meteorology released the Annual Hindi Magazine of RMC Chennai "Pavandooth" Vol. 8 on 19th April, 2017.

WEATHER SUMMARY

Cyclonic Storm - Maarutha : A depression (D) developed over southeast Bay of Bengal (BOB) in the morning of 15th April. Moving northeastwards, it intensified into a deep depression (DD) over eastcentral BOB in the afternoon of 15th and into a cyclonic storm (CS) "MAARUTHA" over eastcentral BOB in the midnight of 15th. Moving northeastwards, it reached its peak intensity in the early hours of 16th. The peak maximum sustained surface wind speed (MSW) of the cyclone was

70-80 kmph gusting to 90 kmph. The system maintained its peak intensity till evening of 16th and moving nearly northeastwards crossed Myanmar coast near Sandoway (Thandwe) in the midnight. After landfall, the system continued to move northeastwards and weaken gradually. The observed track of the system during 15-17 April and a typical satellite imagery of the cyclone are shown in Fig. 1.

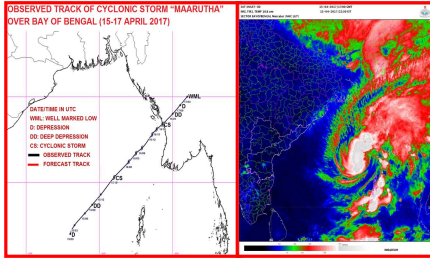


Fig. 1. Observed track during 15-17 April, 2017 and typical satellite imagery of cyclonic storm Maarutha over Bay of Bengal

Cyclonic Storm - "Mora" over Bay of Bengal (28-31 May 2017): A depression (D) developed over southeast and adjoining eastcentral Bay of Bengal (BOB) in the early morning of 28th May, 2017. Moving northeastwards, it intensified into a deep depression (DD) in the afternoon and into a cyclonic storm (CS) "MORA" over eastcentral BOB in the late evening of 28th. Moving north-northeastwards, it further intensified into a severe cyclonic storm (SCS) in the evening of 29th. The system reached its peak intensity in the early hours of 30th. It continued to move nearly north-northeastwards and crossed Bangladesh coast close to south of Chittagong in the forenoon (between 0930 and 1030 hrs IST) of 30th. After landfall, the system weakened into a CS in the afternoon of 30th, into a DD in the evening and D in the same night.

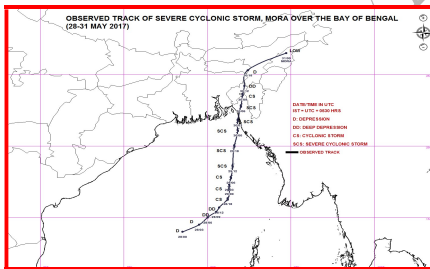


Fig. 2. Observed track of SCS Mora (28-31 May, 2017) over Bay of Bengal

It further weakened into a well marked low pressure area over Nagaland and neighbourhood in the early morning of 31st, into a low pressure area in the forenoon and became less marked in the same afternoon. The observed track of the system during 28-31 May is presented in Fig. 2. Typical satellite imagery and radar imagery of the system from DWR Khepupara are presented in Fig. 3.

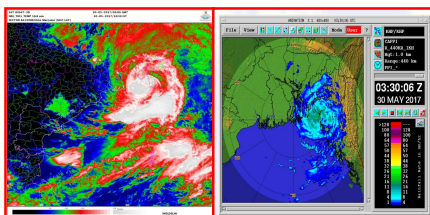


Fig. 3. Typical INSAT 3D and Doppler Weather Radar (DWR), Khepupara, Bangladesh imagery of SCS Mora at the time of landfall

Deep Depression over the Bay of Bengal (11-13 June 2017)

A depression formed over North Bay of Bengal in the evening of 11th June, 2017 in association with advance of southwest monsoon over the region. It moved north-northeastwards, intensified into a deep depression and crossed Bangladesh coast near Khepupara between 0430 & 0530 IST of 12th June, 2017. It lay as a deep depression over coastal Bangladesh, close to Northeast of Khepupara at 0530 IST of 12th June, 2017. It then moved northeastwards across Bangladesh and weakened gradually. It weakened into a depression around mid night of 12th June 2017 and further into a well marked Low pressure area over Nagaland and neighborhood in early morning of 13th June 2017. It caused heavy rainfall activity over northeastern states. The typical satellite imagery of the system is shown in Fig. 4.

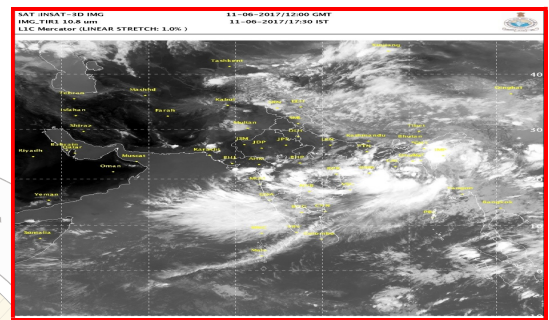


Fig. 4. INSAT-3D infrared imagery based on 1730 hrs IST of 11th June, 2017

Real time rainfall statistics for the Pre-monsoon season

Real time rainfall statistics for the Pre-monsoon season (March to May) 2017 was prepared by Hydromet Division, New Delhi. The rainfall received during this period over India has been 128.4 mm which is 98% of its Long Period Average (LPA) of 131.5 mm. In all, 2 Met subdivisions remained in Large Excess category, 3 Met subdivisions in Excess, 13 Met subdivisions in Normal, 15 met subdivisions in Deficient, 3 met subdivisions in Large Deficient and none of the Met sub divisions remained in No Rain category of rainfall. The subdivision-wise real time rainfall map for the Pre-monsoon season - 2017 is shown in Fig. 5 :



Fig. 5. The subdivision-wise real time rainfall map for the pre-monsoon season - 2017