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मौसम विज्ञान विभाग समाचार
IMD NEWS

INDIA METEOROLOGICAL DEPARTMENT
(Ministry of Earth Sciences)



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Important Events / Activities

“Ahmedabad Heat Action Plan”



Dr. Harsh Vardhan, Minister of Science & Technology and Earth Sciences, Dr. Jayanta Sarkar, Sc. ‘F’, Shri S. C. Bhan, Sc. ‘F’ and other officials during “Ahmedabad Heat Action Plan” programme

“Ahmedabad Heat Action Plan” a joint initiative of IMD Ahmedabad, AMC, IIPHG & NRDC has been selected for Earth care Award-2018 by JSW Times of India group. Award ceremony was held on 17th April, 2018 at New Delhi. Hon’ble Minister of Science & Technology and Earth Sciences Dr. Harsh Vardhan presented the award to Dr. Jayanta Sarkar, Sc. ‘F’ on this occasion at New Delhi.

Inauguration of “Doppler Weather Radar (DWR)” at Goa



Dr. M. Rajeevan, Secretary, MoES, Dr. K. J. Ramesh, DG, IMD and others during inauguration of DWR at Goa

Meteorological Centre, Goa conducted the ceremony of Dedication of Doppler Weather Radar at Goa, Panaji for the service of the nation on 12th June, 2018. The chief guest of the event was Dr. M. Rajeevan, Secretary, MoES, Dr. K. J. Ramesh, DG, IMD, Shri K. S. Hosalikar, Sc. ‘F’ and Shri M.L Sahu, Sc. ‘E’ were present. Dignitaries from different prestigious institutions such as IITM, NIO, Indian Navy etc. attended the ceremony.

At the end of the session a press conference was arranged where the representatives of print and visual media had an interactive session with Dr. M. Rajeevan, Secretary, MoES, Dr. K. J. Ramesh, DG, IMD to introduced the Doppler Weather Radar and shared the operational uses and importance of Doppler weather radar and the future plans for accurate and effective forecasts.



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Important Events

Farmer's database collected from 14 states uploaded on **Farmers Portal** and the number of registered farmers on the portal has increased to 3.86 crore and under Gramin Krishi Mausam Sewa, Block level advisory started on pilot basis with the existing Agromet Field Units for 50 Districts. Dissemination of Agromet Advisories to the users' community through SMS and IVR technology is being continued in the country through Kisan Portal and under PPP mode. At present Agromet Advisories are reaching to 26.1 million farmers in the country through SMS directly.

M. C. Bhubaneswar was awarded the ISO 9001:2015 Certification (Quality Management System) by M/s M. S. Certification Services, Pvt. Ltd., Kolkata on 26th April, 2018.

Mr. Kulwant Singh, O/o Directorate General of Lighthouses and Lightships met Dr. M. Mohapatra, Sc. 'G' and other scientists of IMD on 1st May, 2018 for operationalisation of NAVTEX system and dissemination of coastal weather bulletin through this system.

Pre-cyclone exercise



Pre-cyclone exercise: Interactive session with stakeholders

As a part of pre-cyclone exercise, an interactive session with all stakeholders was organised by ACWC Chennai on 2nd May, 2018. About 15 officials including officials from State Disaster Management Authority, Fisheries department, Tamilnadu maritime board, Tamilnadu Water Resources Management, All India Radio, Southern Railways etc. participated in the meet.

Dr. M. Mohapatra, Sc. 'G' has been nominated as member of the Cauvery Water Regulation Committee constituted by Ministry of Water Resources, Govt. of India vide MoWR, RD & GR Order No. R.19011/1/2018-Pen.Riv. dated 22nd June, 2018.

Dr. M. Mohapatra, Sc. 'G' has been nominated and participated as an Expert member of the Expert Group constituted by National Disaster Management Authority for preparation of National Disaster Management Guidelines for preparation of Action Plan on thunderstorm, lightning, squall and heavy wind on 30th May, 2018.

Ministry of Earth Sciences has commissioned two Global Ensemble Forecasting System (GEFS) on 1st June, 2018. **Dr. M. Rajeevan**, Secretary, MoES and **Dr K. J. Ramesh**, DG, IMD addressed the press in press-conference and a press note was released.

Meteorological Centre, Bhubaneswar represented **IMD, MoES** at the 9th Krishi Fair, 2018 at Puri (A National level Agricultural Exhibition organized by Shree Shrikrishetra Soochana, Puri) under the auspices of Ministry of Agriculture, Govt. of India during 3-7 June, 2018. MoES stall was adjudged as the best stall in the Exhibition. **Dr. H. R. Biswas**, Sc. 'E' received the Memento and Certificate on behalf of MoES in the Closing Ceremony on 7th June, 2018



Certificate of appreciation for participation in Exhibition

Dr. S. D. Attri, Sc. 'F' participated in World Environment Day 2018 at Vigyan Bhawan, New Delhi on 5th June, 2018 inaugurated by Hon'ble Prime Minister of India. **Dr. S. D. Attri**, has been elected as National Vice-President of Indian Association of Air Pollution Control (D).

Odisha State Disaster Management authority (OSDMA) with collaboration with IMD and other departments and district administration coordinated Mock Drill on 19th June, 2018. As part of Mock Drill, Dummy Messages on Cyclones etc. were issued by MC, Bhubaneswar during 17-19 June, 2018.

Shri M. M. Saklani, Met. 'B' gave VVIP briefing to the concerned Aircraft/ Helicopter Pilot during the visit of Hon'ble Prime Minister to Dehradun on 21st June 2018 for celebrating YOGA day. In this connection Weather forecast was also issued to State Government for organizing the event.

Weather forecasts were issued to State Govt. Authorities during the visit of H. E. President of Republic of Seychelles at Dehradun on 26 and 27 June, 2018.

Yoga Day



Officers and staff members during Yoga Day

4th International Yoga Day was celebrated on 21st June, 2018 at IMD H.Q. and most of the sub-offices spread all over India. All officers and staff members participated in Yoga Day celebration for the importance of all season for fitness.



Secretaries, Department of Disaster Management of States/UTs to review the status of preparedness for southwest Monsoon and to discuss other disaster management related issues on 18th May, 2018 at Vigyan Bhawan, New Delhi. Dr. Mohapatra also made a presentation on IMD's preparedness for ensuing monsoon and cyclone season.

Dr. S. D. Attri, Sc. 'F' delivered inaugural talk as Chief Guest in the National Conference on "**Beating the plastic hazard : Challenge and Strategies**" organised by DTU, New Delhi on 4th June, 2018 on the occasion of World Environment Day.



Dr. S. D. Attri, Sc. 'F' during inaugural talk

Important Policy Decisions Taken

Weather forecast was issued to Department of Forest, Govt. of Uttarakhand in connection with forest fire control on biweekly basis till 18th June, 2018.

Weather Forecast and Sector wise Nowcast & Warnings for "Mansarovar Yatra-2018" are being issued from 26th June, 2018 onwards for the use of yatri and concerned government officials.

Issue of **Block Level Agromet Advisories** was started on experimental basis w. e. f. June, 2018 - Thrissur District in Kerala.

New Projects / Schemes / Programmes Approved / Initiated / Completed

Thirty Four (34) more stations (25 in Uttarakhand on "**Char Dham Yatra**" route and 9 stations in J & K on "**Amarnathji Yatra**" route) were added on **All India Nowcast Warning page of IMD website** for issuing three hourly Nowcast.

Human Resource Development Activities

CONFERENCES

Dr. K. V. Balasubramaniam, Met 'B' from RMC Chennai and Smt. C. A. Kameshwary, Met 'A', M. C. Bengaluru participated in the Annual National Technical seminar in Hindi at CSIR-NAL, Bengaluru on 17 and 18 May, 2018.

Dr. K. J. Ramesh, DG, IMD along with Dr. M. Mohapatra, Sc. 'G', Dr. (Ms.) K. Sathi Devi, Sc. 'F' and Shri B. P. Yadav, Sc. 'F' attended Annual Conference of Relief Commissioners/

TRAININGS

Dr. K. Ghosh, Sc. 'E' attended the training of trainer on Forecast Application for Risk Management in Agriculture (FARM) during 23-27 April, 2018 in Bihar Agricultural University, Sabour, Bihar.



Students during the training

The Refresher Training Program on Agri-Business, Agricultural Advisory Services and Market Linkage for Established Agripreneurs under Agri-Clinics and Agri-Business Centers Scheme on 25th May, 2018 at IMD, Pashan, Pune.

Four weeks Summer Placement course for B. Tech (Agri. Engg.) students was conducted from 4-29 June, 2018. Total 28 candidates from different Agricultural Engineering colleges (viz., Parbhani, Rahuri, Saralgaon, Jalgaon, Mandaki Palvan and Karad) participated in the training course. They were evaluated on the basis of Project presentation and Viva-voce examination.

Shri Amit Kumar, Sc. 'B' and **Shri Ramashray Yadav**, Sc. 'B' attended the training Programme on "Remote sensing-An overview for decision makers" at IIRS Dehradun during the period from 12-15 June, 2018.



Familiarization Training Programme



Officials during the training programme

A familiarization training programme was held at AMO Kolkata on 15th June, 2018 for DWR image interpretation to issue Advance Weather Warning for Aviation Purpose.

IMD organized a refresher course on 'Interpretation of satellite imageries and products for weather forecasting at Prithvi Bhavan, MoES, New Delhi during 18-23 June, 2018. There were about 40 trainees from different forecasting offices of IMD and the resource persons from IMD, NCMRWF, ISRO (SAC), IIRS, NRSC, NESAC.

IMD and IIT Bhubaneswar jointly organized training Workshop on "Extreme Weather Events over India-Observations, Assimilation and Modeling with special focus on Tropical Cyclones" during 18-25 June, 2018 at IIT Bhubaneswar. There were four trainees from IMD in this workshop. Dr. M. Mohapatra, Sc. 'G' participated as Guest of Honour in the Workshop on 18th June, 2018.

WORKSHOPS

Dr. K. J. Ramesh, DG, IMD and other officers of IMD participated the work-shop on "Agromet Decision Support System for automation of Agromet Advisory services (AAS)" and Brainstorming meeting on "Preparation of Road Map for successful Implementation of Block Level Advisory Services" during 3-4 May, 2018 in New Delhi organized by Agromet Advisory Service Division (AASD), IMD, New Delhi.



Dr. K. J. Ramesh, DG, IMD and other officers during workshop

Shri N. T. Niyas, Sc. 'D' has been deputed for participation in a workshop on "Climate change and Agriculture in Local self Governments in Kerala" organised by the Kerala Institute of Local Administration, Thrissur, Kerala during 18-19 May, 2018.

Dr. M. Mohapatra, Sc. 'G' participated as a Panellist in the Panel discussion in the National Workshop on "Forging Partnership" Capacity Building for DRR organized by NIDM at its Vijayawada campus, Andhra Pradesh on 21st May, 2018 and delivered a presentation on Capacity building for Early Warning and its Dissemination.

A one day workshop in Hindi was held at RMC Chennai on 21st May, 2018 under the chairmanship of Shri S. Bagulayan Thampi, Sc. 'F'. Dr. C. Annapurna, Prof. & Head of Hindi Department, University of Madras was the Chief Guest and Shri Udaykumar Meghani, Announcer, All India Radio gave a lecture on correct pronunciation of some Hindi words. The following lectures in Hindi were presented in the workshop: Smt. S. Stella, Sc. 'E', on Aviation Meteorological Services; Smt. C. Kameshwary Met. 'A' on Diversity in rainfall over 30 years in Bengaluru City; Shri S. V. J. Kumar, Met. 'A' CWC Visakhapatnam on Hindi implementation in office work and Cyclone warning and Dr. K. V. Balasubramanian, Met. 'B' on Does weather forecast is wrongly given and why?

Dr. D. R. Pattanaik, Sc. 'E' participated in a workshop on awareness program for teachers and stake holders on "preparedness of heat wave and lightning" was held on 24th May, 2018 in association of MoES, Public Health Services, organized by IMS Nagpur chapter.



Dr. D. R. Pattanaik, Sc. 'E' and others during the workshop

Shri R. Balasubramanian, Sc. 'D', Dr. S. Y. Khedekar, Sc. 'B', Smt. K. Malathi, Met. 'A', Shri K. G. Kanade, Met. 'A' and Shri P. S. Pranjali, S. A. attended the two days hands on workshop on "Use of Software for Automated Generation of Agromet Advisories during Kharif season by all the Agromet field Units" organized by Watershed Organization Trust (WOTR), Pune during 28-29 May, 2018 at Pune.

Workshop on "Usefulness of disastrous weather warnings"

Dr. (Ms.) V. K. Mini, Sc. 'E' attended a workshop on "Usefulness of disastrous weather warnings to the fishermen Community" was organised in collaboration with Department of Fisheries, Govt. of Kerala, on 30th May, 2018 at Thycaud, Thiruvananthapuram. Approximately hundred participants from various operational fields - State Fisheries Department, Ports, State Disaster Management Authority and representatives of fishermen community attended the meet.



Workshop on "Usefulness of disastrous weather warnings to the fishermen community"

The Annual Zonal Review Workshop of KVKs at Swami Keshwanand Rajasthan Agricultural University (SKRAU), Bikaner, Rajasthan on 11th June, 2018 for sensitization of Scientists of Krishi Vigyan Kendras (KVKs) on establishment of District Agromet Unit under Gramin Krishi Mausam Seva.

M. C. Bangalurau has organised a workshop on Fisheries warning in association with Department of Fisheries, Govt. of Karnataka and Fisheries College, Mangalore on 27th June, 2018 at Mangalore.



Officials during the workshop

Smt. N. G. Vijayalaxmi, Met. 'A', participated in an international workshop on Urban Flood organised by the Divecha Centre for Climate Change and the Interdisciplinary Centre for Water Research at the IISc, Bengaluru on 27th and 28th June, 2018.

Dr. Sanjib Bandyopadhyay, Sc. 'F' attended media workshop organized by Meteorological Centre, Ranchi at Ranchi for sensitizing the media to climatological changes on 29th June, 2018.

Smt. P. R. Sailaja devi, Met. 'A' participated in the National Workshop on technology Trends in Cyber security (WORTICS 2018) organised by the Society for Electronic Transactions and security (SETS) in association with IEEE Computer Society, Madras Chapter, Computer Society of India, Chennai Chapter and ISACA, Chennai Chapter during 29-30 June, 2018.

LECTURES

Dr. Jayanta Sarkar, Sc. 'F' delivered a lecture at GIDM, Gandhinagar on "Climate change Scenario: Future Impacts" on 12th April, 2018.

Shri S. C. Bhan, Sc. 'F' delivered lecture in the Training Programme on Management of Heat Wave on the topic "National Heat Wave Guideline: Salient Feature & Operationalization of Heat Wave Action Plan: Cooperation and Dissemination issue" on 19th April, 2018 at Haryana Institute of Public Administration, Gurugram, Haryana.

Dr. Jayanta Sarkar, Sc. 'F' delivered two lectures at SRTC, WALMI, Gandhinagar on "Weather Forecasting and Early warning" on 23rd and 26th April, 2018.

Shri Anand Sharma, Sc. 'F', delivered key note lecture on climate variability/Change, Weather forecast and Agro Advisory at the National Seminar organized by Y. S. Parmar University of Horticulture and Forestry, Solan on 7th May, 2018.



Shri Anand Sharma, Sc. 'F', during the lecture

Dr. S. C. Sahu, Sc. 'F', attended the National Technology Day Celebration at IIT, Bhubaneswar as Guest of Honour on 11th May, 2018 and delivered lecture on "Technological advancement in IMD in connection with climate change".

Shri C. S. Patil, Sc. 'D' gave a lecture on 'Weather Forecasting System During Floods' to the trainee officers of Home Guards and Civil Defence Academy on 25th May, 2018.

Dr. (Smt.) Manorama Mohanty, Sc. 'D' delivered an online lecture on "Flood forecasting systems in Gujarat state" at Gujarat Institute of Disaster Management on 2nd and 6th June, 2018.

Dr. M. Mohapatra, Sc. 'G' delivered an invited talk on "Past, Present Status and Future challenges in prediction of TCs over Indian Seas and R & D Opportunities" during the inaugural session of Training Workshop on "Extreme Weather Events over India - Observations, Assimilation and Modelling with special focus on Tropical Cyclones" on 18th June, 2018 at IIT, Bhubaneswar.



Shri Anand Sharma, Sc. 'F' delivered an invited lecture on "Occurrence of Hail storms and strategies to minimize its effects on crops" on 29th June, 2018 at the National Workshop on Management of Hailstorms for Sustainable Crop Production in Himachal Pradesh. The workshop was organised by Department of Environmental Sciences, Y S Parmar University of Horticulture and Forestry, Nauni, Solan, Himachal Pradesh. About 50 apple farmers were registered on the Kisan Portal for dissemination of weather and weather based advisories.

Awards & Recognitions

Appreciation from WMO

WMO appreciated IMD through a letter issued by Secretary General of WMO for "Tropical cyclone advisory services by Regional Specialised Meteorological Centre (RSMC), New Delhi" during Cyclonic Storm, Sagar (16-20 May) and Extremely severe cyclonic storm (ECS), Mekunu (21-27 May) for round the clock monitoring and providing advisories to WMO and affected countries including Oman, Yemen and Somalia.



APPRECIATION FROM WORLD METEOROLOGICAL ORGANISATION

RSMC New Delhi Advisory Bulletins for SAGAR and MEKUNU were essential in WMO coordination with UN and Members, therefore very much appreciated by all in the loop. Therefore, RSMC New Delhi is kindly requested to provide the same level of information and coordination under tropical cyclone circumstances in future.

Taoyong Peng
Chief, Tropical Cyclone Programme
World Meteorological Organisation



DRISTI-AWOS at BPI Airport Bhubaneswar

Met. Report Display system was installed and commissioned at AMS Tuticorin on 10th May, 2018 by S/Shri M Augustine Sunder Singh, Met. 'B' and L. K. Rangarajan, Met. 'A'.

Dr. Jayanta Sarkar, Sc. 'F' was felicitated by Mayor Ahmedabad Municipal Corporation on 11th April, 2018 for his contribution in Heat Action Plan Ahmedabad.



Dr. Jayanta Sarkar, Sc. 'F' felicitated by the Mayor, AMC

Dr. S. C. Sahu, Sc. 'F' participated as Guest of Honour on the occasion of Inauguration of RobotiX-Digital Micro AWS at Pipli in Puri District on 19th May, 2018.

Infrastructure Development & Installations

DRISTI-AWOS at BPI Airport Bhubaneswar was installed during 9-16 April, 2018 under the supervision of CSIR-NAL team and Dr. K. N Mohan, Sc. 'F', Shri Rakesh Kumar Sc. 'B' of CRS, IMD Pune and data has been tested at CWx, DO(WS) of M. C. Bhubaneswar and ATC of AAI.

Inter-Agency Meetings

Dr. K. K. Singh, Sc. 'F' attended meeting on "High Level Monitoring Committee (HLMC) of National Innovations in Climate Resilience Agriculture (NICRA)" held on 4th April, 2018 under the Chairmanship of Secretary, DARE & DG, ICAR in NASC Complex, New Delhi.

Shri I. J. Verma, Sc. 'E' and **Shri Ved Prakash Singh, Sc. 'B'** participated in "16th Regional Coordination Committee" meeting at Central India Hydrology Regional Centre, Bhopal, National Institute of Hydrology on 6th April, 2018.

Dr. S. K. Peshin, Sc. 'G' attended the project appraisal and monitoring committee meeting for Atmospheric chemistry (PAMC-AC) at Pune during the period from 10-11 April, 2018.

Shri Arun Kumar V H, Sc. 'B', attended the "National Hydrology Project EC" Meeting held at the O/o Irrigation Design and Research Board, Thiruvananthapuram on 16th April, 2018.

Shri S. C. Bhan, Sc. 'F', participated in meeting with Director, NDRI and Principal Scientists, at NDRI Karnal on 16th April, regarding the forecast/weather advisory for livestock owners for better comfort of livestock species and enhancing the farmers/farms income.

Shri Shashi Kant, Sc. 'B' and **Shri P. K. Nath, Met. 'A'** attended the 1st meeting for the year 2018-19 of the State Executive

Committee constituted under the Disaster Management Act, 2005 at Odisha Secretariat, Bhubaneswar on 16th April, 2018.

Dr. K. J. Ramesh, DG, IMD, **Dr. S. D. Attri**, Sc. 'F', **Dr. Y. K. Reddy**, Sc. 'F' and **Shri Srikanth Dashetty**, Sc. 'B', participated in "2nd Meeting on Automation on Agromet Advisory Services" held on 18th April, 2018 at ICAR-CRIDA, Hyderabad. Dr Attri also made presentation on "Agromet DSS for automation of Agromet Advisory Services".



Dr. K. J. Ramesh, DG, IMD, Dr. S. D. Attri, Sc. 'F' during the meeting



Dr. S. Bandyopadhyay, Sc. 'F' and others during meeting

of Disaster managers to minimize loss of life and property of the people from any approaching Cyclone. **Dr. G. K. Das**, Sc. 'D' delivered lectures on Cyclone Warning Preparedness and dissemination during the meeting.

Shri Virendra Singh, Sc. 'F' attended the Payload operation committee meeting of ISRO on 19th April, 2018 through video conferencing.

Dr. G. N. Raha, Sc. 'D' attended a meeting in connection with Flood Preparedness related to ensuring Monsoon 2018 held at Irrigation & Water Ways Directorate, Jalpaiguri, West Bengal on 18th April, 2018.

Dr. G. K. Das, Sc. 'D' attended a co-ordination meeting to ensure "Safety of fishermen of West Bengal Coast" on 24th April, 2018 organised by the Disaster Management Deptt., Govt. of West Bengal at WB Secretariat, NABANNA.

Dr. K. J. Ramesh, DG, IMD and other scientists of IMD attended the 12th Session of the South Asian Climate Outlook Forum (SASCOF-12) of main forum meeting hosted by IMD and IITM, Pune with support of World Meteorological Organization and RIMES held at IITM, Pune on 19 and 20 April, 2018. On this occasion, **Dr. N. Chattopadhyay**, Sc. 'F' delivered lecture on "Application of Seasonal Weather Forecast for Agriculture".

Dr. K. J. Ramesh, DG, IMD and **Dr. M. Mohapatra**, Sc. 'G' participated in the meeting of 'Inter-organizational Expert Committee' constituted by ISRO under the chairmanship of **Dr R. R. Navalgund**, Distinguished Scientist, ISRO to deliberate and to consolidate the requirements for future Earth Observation Sensor Systems during 20-21 April, 2018 at Bengaluru and on 25th April, 2018 in Delhi.



Dr. K. J. Ramesh, DG, IMD and other participants

Pre-Cyclone Exercise meet

Dr. Sanjib Bandyopadhyay, Sc. 'F' presided over Pre-Cyclone Exercise meet on 19th April, 2018 at RMC Kolkata, Alipore. High level Central and State govt. concerned authorities like Coast Guard, All India Radio, Doordarshan, Eastern & South-Eastern Railways, Disaster Management Department and Deptt. of Fisheries, Govt. of West Bengal, DVC, representatives from office of the DMs and SPs of the Coastal Districts. HAM Radio, Fishermen Associations, Kolkata Municipal Corporation, CESC, & others took part in the exercise with interactive discussions. **Dr. Bandyopadhyay**, Sc. 'F' highlighted the importance of such meet to extend better co-ordination among the stake holders

Shri Y. K. Reddy, Sc. 'F', held the Technical Evaluation Committee meeting for procurement of Ten Nos. X-Band Dual polarized Doppler Weather Radar Systems for IMD on 1st May, 2018.

Dr. Geeta Agnihotri, Sc. 'E' and **Shri C. S. Patil**, Sc. 'D' and **Smt C. A. Kameshwary**, Met 'A', attended a meeting at KSNDMC Bengaluru on 8th May, 2018 to explore the "Possibility to expand the outreach of Agro Advisory Bulletins to farmers in Karnataka" using the call centre facility at KSNDMC and to increase the rain gauge network for calculating rainfall statistics.

Dr. S. C. Sahu, Sc. 'F' participated in the Brainstorm Meeting on "Future strategies for the need and scope of ERFS products for robust agriculture adversaries" at IIT, Bhubaneswar during 9-10 May, 2018.

Shri K. Santhosh, Sc. 'F' attended the "Pre monsoon Meeting convened by Kerala State Disaster Management Authority" at Govt. Secretariat, Thiruvananthapuram on 14th May, 2018.

Shri R. Balasubramanian, Sc. 'D' and **Shri J. P. Sabale**, Met. 'A' attended the State Level Joint AGRESO-18 meeting hosted by

Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Ratnagiri on 24th May, 2018 and gave a presentation on "South west monsoon in 2018 and activities under Gramin Krishi Mausam Seva in Maharashtra".

Dr. N. Puviarasan, Sc. 'D' and Shri Rm. A. N. Ramanathan, Met. 'B' attended the meeting of stakeholders under the chairmanship of Superintendent Engineer, Central water commission, Chennai for the flood forecasting activities for the monsoon season 2018 on 25th May, 2018.

Dr. H. R. Biswas, Sc. 'E' and Shri K. Murmu, Met. 'B' attended the meeting on "Preparedness during Flood Season 2018" at Central Water Commission, Mahanadi Bhawan, Bhubaneswar on 25th May, 2018.

Dr. Sanjib Bandyopadhyay, Sc. 'F' attended meeting on "Early Warning-Interpretation and Dissemination" at Kolkata organized by Directorate of Disaster Management, Govt. of West Bengal on 30th May, 2018.

Dr. Jayanta Sarkar, Sc. 'F' attended "Weather Watch Group meeting" with group of ministers, Gujarat state government at Gandhinagar on 5th, 12th, 19th and 26th June, 2018.

Shri Y. K. Reddy, Sc. 'F', attended High Power meeting convened by Chief Secretary, Andhra Pradesh Government in view of "Commencement of monsoon season" on 7th June, 2018 at A. P. Secretariat at Vijayawada.

Dr. G. K. Das, Sc. 'D' attended a "Monsoon preparedness meeting" organized by South 24 Parganas District Disaster Management Authorities at Alipore, Kolkata on 7th June, 2018

A meeting on monsoon preparedness was held on 8th June, 2018 at RMC Kolkata Alipore, under the chairmanship of **Dr. S. Bandyopadhyay**, Sc. 'F'. Senior delegates of central and state Govt. concerned authorities like Coast Guard, All India Radio, Doordarshan, Eastern & South-eastern railways, Disaster Management Department and Dept of Fisheries, Govt of WB; DVC, representatives from office of the DMs and SPs of the coastal districts, HAM Radio, Kolkata Municipal Corporation, CESC and others took part in the exercise with interactive discussions. The DDGM highlighted the importance of such meet to extend better co-ordination among the stakeholders of disaster managers to serve better for the cause of common people. Dr. G. K. Das, Sc. 'D' delivered lectures on major weather system causing heavy rainfall/flood over the region of eastern India during monsoon season with special emphasis on how to interpret impact based warnings issued by IMD for taking appropriate action by disaster managers.

Dr. K. K. Singh, Sc. 'F' and Shri Anand Sharma, Sc. 'F' attended meeting with Shri K. S. Srinivas Joint Secretary (IT), DAC&FW on 8th June, 2018 at Krishi Bhawan, New Delhi to discuss about the limitations faced during dissemination of SMS to farmers through m Kisan portal and future strategy of outreach. JS (IT)

discussed about the increased SMS quota allocated to IMD from 20% to 35 % (Out of total 54.17 Crore SMS capacity) and also it was discussed to make provision to upload the additional farmers database of about 3.32 crore farmers on m Kisan portal to enhance the dissemination.

Special Agro-Advisory Committee Meeting was held on 12th June, 2018 in Agrim Division, Pune under the Chairmanship of Shri S. P. Singh, Commissioner of Agriculture, Government of Maharashtra to discuss Long Range Forecast and Extended Range Rainfall Forecast issued by IMD and medium Range District level value added forecast issued by RMC Mumbai and Nagpur. **Dr. N. Chattopadhyay**, Sc. 'F', Dr. K. Ghosh, Sc. 'E', Shri R. Balasubramanian, Sc. 'D' along with AAS Maharashtra Unit Staff and State Govt. Agriculture officers attended the meeting. Based on this district level Agromet advisory prepared by 9 AMFUs State composite Agro-advisory bulletins prepared by Agrimet Division in both English and Marathi was appreciated by the commissioner of Agriculture. He also appreciated the system of sending messages to the farmers through kisan portal by 9 AMFUs in Maharashtra and assured to reach maximum number of farmers through SMS in which State Agriculture Department has to take initiative for increasing the number of registered farmers on kisan portal. Video conferencing started from this day with RMC-Mumbai and Nagpur and 9 AMFUs in Maharashtra.

Dr. K. J. Ramesh, DG, IMD, Dr. K. K. Singh, Sc. 'F' and Dr. D. R. Pattnaik, Sc. 'E' attended "6th meeting of Scientific & Technical Committee (STC) on the Project Extended Range Forecast System (ERFS) Phase-II" held on 13th June 2018 at Krishi Bhawan, New Delhi.

Dr. Shashi Kant, Sc. 'B' attended the Meeting of the State Level Technical Committee (SLTC) for Implementation of Pradhan Mantri Fasal Bima Yojana at Directorate of Agriculture and Food Production, Govt of Odisha, Bhubaneswar on 11th June, 2018 and also attended 10th State Level Monitoring Committee (SLMC) on Pradhan Mantri Fasal Bima Yojana at IMAGE, Directorate of Agriculture and Food Production, Govt of Odisha, Bhubaneswar on 13th June, 2018.

Shri S. S. Mairal, Met. 'B' and Shri K. G. Kanade, Met. 'A' attended "July-September, 2018 quarterly rural program advisory committee meeting" of All India Radio (AIR), Pune on 13th June, 2018 held at Agriculture College, Pune.

Dr. M. Mohapatra, Sc. 'G' and Dr. D. R. Pattanaik, Sc. 'E' participated "4th Meeting of National Information System for Climate and Environment Studies (NICES) - Programme Management Council" on 14th June, 2018 at ISRO Dwarka Guest House, New Delhi.

Shri Bikram Singh, Sc. 'E' attended a meeting under the chairmanship of Chief Minister, Uttarakhand on "Monsoon Preparedness" at Secretariat, Uttarakhand on 14th June, 2018 and briefed about the South West Monsoon seasonal forecast.

Airports Authority of India (AAI) conducted the GAGAN Message Service (GMS) prototype testing successfully on 24th May, 2018. To brief the GMS prototype test status, demonstrate the messaging capability and finalize the requirements from message originators in respect of priority fixing, Zone indicators, App Development etc. as a way forward to final operational phase, the 3rd Stake holder's meeting was organized by AAI on 21st June, 2018 at AAI CHQ, New Delhi. Experts from IMD participated in this meeting.

Shri Bikram Singh, Sc. 'E' held a meeting with Principal Chief Conservator of Forest Uttarakhand on 25th June, 2018 in connection with "Installation of Hydro-Met Network on Forest Department lands".

Research & Publications

Fifteen (15) research papers published in quarterly research journal **MAUSAM** Vol. 69 No. 2 (April, 2018).

A story on "What's behind the intense storms battering North West India?" with expert opinions by K. J. Ramesh and M. Mohapatra, was published by India Climate Dialogue. The same is available at the link <http://indiaclimatedialogue.net/2018/05/23/analysing-recent-high-impact-storms-in-india/>.

An article "Endeavours in seismic monitoring of oceans through drifting network with development of a New Generation Mobile Earthquake Recorder in Marine Areas by Independent Divers – The Son-O-Mermaid", by Raja Acharya, published in, *Journal of Indian Geophysical Union*, **22**, 3, 363-365.

NDMA published an article on "Thunderstorms" by M. Mohapatra, in their June issue Aapda Samvaad available at <https://drive.google.com/file/d/1Nj8aJMt8rLIC-Pif5QbgBdxMgicfS2BT/view?usp=sharing>.

Fog occurrence and associated meteorological factors over Kempegowda International Airport - Saumya G Kutty, G. Agnihotri, A. P. Dimri, I. Gullepe - Published in Pure and applied Geophysics. <https://link.springer.com/article/10.1007/s00024-018-1882-1>.

Media Interaction

Dr. S. Y. Khedikar, Sc. 'B' gave radio talk on 17th April, 2018 at All India Radio, Pune for the program "Best planning for Kharif crops based on monsoon" and "Water planning for summer crop based weather".

Dr. Sanjib Bandyopadhyay, Sc. 'F' delivered a talk on Doordarshan on Norwester (Kalbaishakhi) related aspects on 5th May, 2018.

Dr. S. C. Sahu, Sc. 'F' participated in a discussion on "Kalabaisakhi and Agriculture" at Doordarshan Bhubaneswar on 8th May, 2018.

Dr. S. Bandyopadhyay, Sc. 'F' delivered a lecture at Media workshop on climate change and Himalayas organized by Centre by Media Studies, New Delhi under the Indian Himalayas Climate Adaptation Programme of the Govt. of India at Darjeeling on 10th May, 2018.

A story on thunderstorm activity in northwest India was telecast on 12th May, 2018 at Rajya Sabha TV with Dr. M. Mohapatra, Sc. 'G' as guest expert.

The International Collective in Support of Fishermen (ICSF) Trust is preparing a documentary film, titled "IN OCKHI'S WAKE: Disaster Preparedness at Sea" to thread through the collective learnings from Ockhi and seek solutions for the marine fisheries sector. The production team visited IMD and interviewed Dr. M. Mohapatra, Sc. 'G' about the unique features of cyclone Ockhi and future strategy to combat such disasters on 17th May, 2018.

Dr. N. Chattopadhyay, Sc. 'F' participated in 'Aamchi Mati, Aamchi Manse' a programme on "Weather information and Agricultural Advisories" on 22nd June, 2018 jointly organized by India Meteorological Department, Pune, State Department of Agricultural and State Agricultural Universities in Maharashtra.



Dr. N. Chattopadhyay, Sc. 'F' during th programme

Dr. M. Mohapatra, Sc. 'G' participated in live discussion on Monsoon at Lok Sabha TV on 27th June, 2018.

Team from Stories Asia visited IMD and interviewed Dr. M. Moapatra, Sc. 'G' for a story related to "Thunderstorms" on 28th June, 2018.

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

Dr. Geeta Agnihotri, Sc. 'E', Shri S. M. Metri, Sc. 'E', Shri L. Ramesh Babu, Sc. 'E', Shri. C. S. Patil, Sc. 'D' answered for Weather Enquiries by Electronic and Print Media during the period about their respective regions.

Dr. Sanjib Bandyopadhyay, Sc. 'F' participated in a programme on Doordarshan on 7th June, 2018.

Dr. Sanjib Bandyopadhyay, Sc. 'F' participated in a program on Doordarshan and delivered a talk on monsoon on 23rd June, 2018.

MoU/

A MoU was signed between IMD and Indian Council for Agricultural Research (ICAR) on 12th April, 2018 for establishment and operation of District Agromet Units in the country, collocated within Krishi Vigyan Kendra's at various districts.

Visitors

DGCA team visited AMO Kolkata on 5-6 April, 2018 to carry out the inspection of MET facility at MWO Kolkata.

45 students from GMERS Medical College, Gandhinagar visited Met. Centre, Ahmedabad on 20th April, 2018. They were briefed about functions of various units and weather forecasting procedure.

80 students of College of Veterinary Science and Animal Husbandry, O.U.A.T., Bhubaneswar along with their teachers on Field Study Tour visited Meteorological Centre, Bhubaneswar on 7th and 21st April, 2018.

40 students (class IX & X) of Cambridge School Greater Noida visited **Satellite Meteorology Division** at H.Q., New Delhi on 22nd April, 2018 for familiarization with the activity of Satellite Meteorology Division.

40 students along with 2 teachers from Anand Niketan school, Ahmedabad visited Met. Centre, Ahmedabad on 28th June, 2018. They were briefed about forecasting procedure and taking surface and upper air observation.



Students along with teachers during the visit

A group of 8 Students along with 1 faculty member from Rishikesh Public School visited M. C. Dehradun on 10th May, 2018. Student's alongwith faculty members were briefed about different instruments of Meteorological observatory and a general lecture on weather and climate was given.

71 students (class XII, IX & X) of Green field Public School, Delhi visited **Satellite Meteorology Division** at H.Q., New Delhi on 10-11 May, 2018 for familiarization with the activity of Satellite Meteorology.

10 students of water harvesting and Management visited **Satellite Meteorology Division** at H.Q., New Delhi on 17th May, 2018 for familiarization with the activity of Satellite Meteorology.

45 children of Rashtriya BAL Bhawan, Delhi, visited **Satellite Meteorology Division** at H.Q., New Delhi on 30th May, 2018 for familiarization with the activity of Satellite Meteorology.

A group of 20 Students alongwith 1 faculty member from Ramchandra Uniyal Govt. PG College, Uttarkashi visited M.C. Dehradun on 2nd May, 2018. Student's alongwith faculty members were briefed about different instruments of Meteorological observatory and a general lecture on weather and climate was given by the staff members of M.C. Dehradun.

Eleven (11) Trainees Met. Officers from Indian Air Force Academy visited Met. Centre, Hyderabad for familiarization with the activities, especially with Doppler Weather Radar and RS/RW systems during April, 2018.

Team from Jamsedji Tata School of Disaster Studies, Tata Institute of Social Sciences (TISS), Mumbai visited India Meteorological Department (IMD) on 28th June, 2018 and interviewed Dr. M. Mohapatra, Sc. 'G' for development of a case study of Early Warning System for Tropical Cyclone with respect to a project under taken by them on "**Leadership for Disaster Resilience : A Study of Current Practices and Gaps in the Indian Context**".

Tour

Dr. S. C. Sahu, Sc. 'F', was on tour to Seismological Observatories at Rayagada and Jharsguda to check the working performance, inspection and maintenance of digital Seismic Equipment during 9-12 April, 2018, alongwith the Touring Party from NCS, New Delhi.

Shri B. K. Mandal, Sc. 'F', Shri R. S. Sharma, Sc. 'B' and Shri Sukumar Mitra, Met. 'A' visited office of the Ex. Engineer, CPWD (Civil) Ranchi on 17th April, 2018 in connection with repairing and maintenance work of forecast room.

Shri Bikram Singh, Sc. 'E' along with a team from IMD, H.Q. inspected site for installation of Doppler Weather Radar at Nainital, Mukteshwar and Pithoragarh from 26-30 April, 2018.

A joint inspection was carried out on 2nd May, 2018 by the OIC, ATM Pakyong and Dr. G. N. Raha, Sc. 'D' of MC, Gangtok to update the Visibility Landmarks for the upcoming Green field Pakyong Airport.

Shri R. N. Behera, Met. 'B' was on Aviation Tour to Cuttack to support Meteorological Services in connection with VVIP-3 Movement (Visit of Hon'ble Prime Minister of India to Odisha) on 26th May, 2018.

Foreign Visit

Dr. O. P. Sreejith, Sc. 'F' was on foreign deputation during 24-26 April, 2018 to participate in the 14th Session of Forum on Regional Climate Monitoring, Assessment and Prediction of Asia (FOCRAll) held at Nanjing, China.

Shri Rakesh Kumar, Sc 'B' was on foreign deputation to Zugspitze, Germany to participate in the 34th Global Atmosphere Watch Training & Education Centre (GAWTEC) Training course on UV Radiation during 13-26 May, 2018.

Mr. Habibur Rahaman Biswas, Sc. 'E' was on foreign deputation to Bangkok, Thailand to participate in the Seventh meeting of the Asia/Pacific Meteorological Requirements Working Group (MET/R /WG-7) during 21-23 May, 2018.

Shri Sourav Adhikary, Sc. 'D' was on foreign deputation to Hong Kong, China to participate in the Regional Workshop on Aircraft Meteorological Data Relay (AMDAR) during 29-30 May, 2018.

Dr. A. K. Sahai, Sc. 'F' and **Dr. D. S. Pai**, Sc. 'F' were on foreign deputation to Barcelona, Spain to participate in the "Second WMO Workshop on Operational Climate Prediction (OCP-2)" during 30 May - 1 June, 2018.

Dr. K. J. Ramesh, DG, IMD and **Dr. R. K. Giri**, Sc. 'E' were on foreign deputation to Geneva, Switzerland to participate in the 70th Session of World Meteorological Organisation (WMO) Executive Council and 37th Meeting of FINAC during 18-29 June, 2018.

and Arabian Sea issued on daily basis by Regional Specialised **Meteorological Centre (RSMC), New Delhi** has been increased from existing 3 days to five days w. e. f. 22nd April, 2018. This bulletin is uploaded in the website of RSMC, New Delhi (www.rsmcnewdelhi.imd.gov.in).

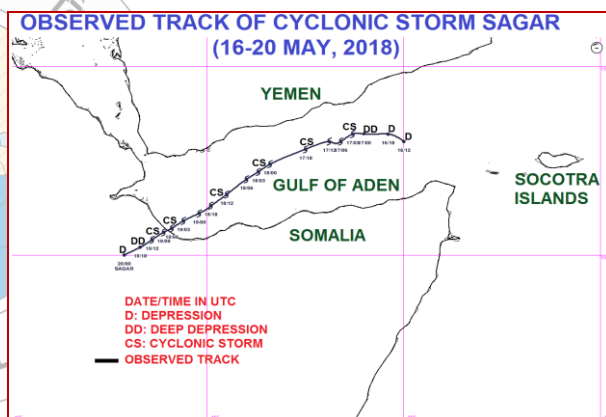
Cyclonic Storm "Sagar" (16-21 May, 2018) over Arabian Sea

Cyclonic Storm (CS) Sagar originated from a low pressure area which formed over southwest Arabian Sea in the morning (0300 UTC) of 14th May, 2018. Under favourable environmental conditions, the low pressure area concentrated into a Depression (D) over Gulf of Aden in the evening (1200 UTC) of 16th May. Moving west-northwestwards, it intensified into a deep depression (DD) in the early morning (0000 UTC) and further into a cyclonic storm (CS) "Sagar" in the morning (0300 UTC) of 17th May over Gulf of Aden. Thereafter, it moved west-southwestwards and crossed Somalia coast near latitude 10.65° N and longitude 44.0° E as a cyclonic storm with wind speed of 70-80 kmph gusting to 90 kmph between 1330 and 1430 IST of 19th May. Moving further west-southwestwards, it weakened into a DD in the mid night (1800 UTC) of 19th, D in the early morning (0000 UTC) of 20th and well marked low pressure area (WML) over Ethiopia and adjoining Somalia in the morning (0300 UTC) of 20th.

WEATHER SUMMARY

IMPROVEMENT IN CYCLONE WARNING SERVICES

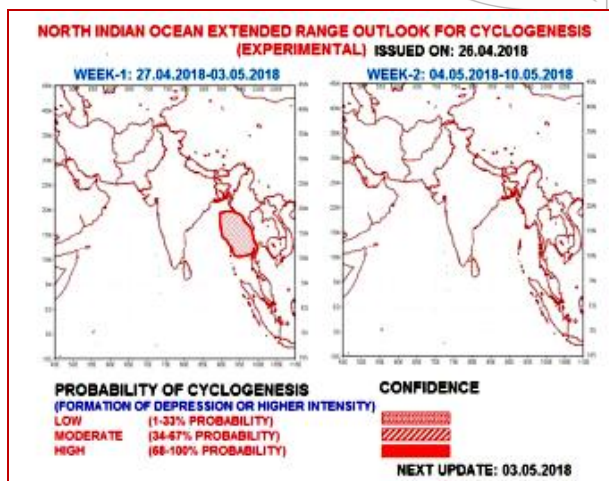
India Meteorological Department (IMD) commenced issue of Extended Range Outlook for Cyclogenesis forecast experimentally from 22nd April, 2018. The Outlook will be issued every Thursday with validity for next 2 weeks. It gives graphically the probability of cyclogenesis (formation of depression and higher intensity) during next two weeks as **LOW**: 1-33%, **MODERATE**: 34-67% and **HIGH**: 68-100% with detailed prognostic and diagnostic features. The report is available on RSMC website at <http://rsmcnewdelhi.imd.gov.in/images/bulletin/eroc.pdf>.



Observed track of CS Sagar over Arabian Sea

Extremely Severe Cyclonic Storm (ESCS) "Mekunu" (21-27, May, 2018) over Arabian Sea

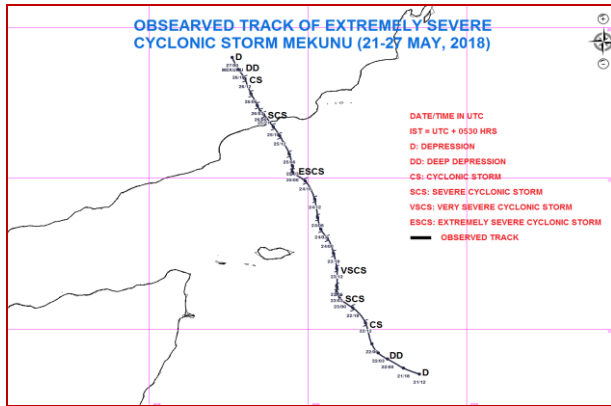
Extremely Severe Cyclonic Storm (ESCS) Mekunu originated from a low pressure area which formed over southeast Arabian Sea (AS) in the morning (0300 UTC) of 20th May, 2018. Under favourable environmental conditions, the low pressure area concentrated into a Depression (D) over southwest AS in the evening (1200 UTC) of 21st May. Moving west-northwestwards it intensified into a deep depression (DD) in the morning (0300 UTC) of 22nd May. It then moved north-northwestwards and intensified into a cyclonic storm (CS) "Mekunu" in the evening (1200 UTC) of same day over southwest AS. It further continued to move north-northwestwards, intensified into a Severe Cyclonic Storm (SCS) in the morning (0300 UTC) and into a Very Severe Cyclonic Storm (VSCS) in the afternoon (0900 UTC) of 23rd May. Moving further north-northwestwards, it intensified into an Extremely Severe Cyclonic Storm (ESCS) in



The lead period of Tropical Weather Outlook (TWO) for genesis of depression or higher intensity storms over the Bay of Bengal



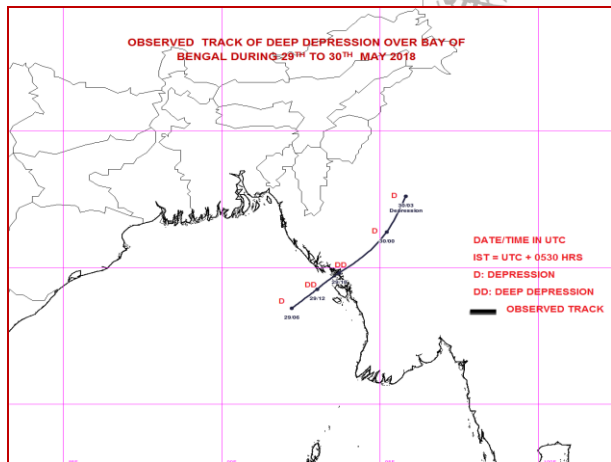
the morning (0300 UTC) of 25th and crossed south Oman coast near 16.85°N/53.75°E around midnight (between 1830-1930 UTC) of 25th May as an ESCS with an estimated wind speed of 170-180 kmph gusting to 200 kmph. It further moved northwestwards and weakened into a VSCS over Oman in the early hours (2100 UTC of 25th May) of 26th May. Continuing to move north-northwestwards, it weakened into an SCS in the early morning (0000 UTC), into a CS in the afternoon (0900 UTC) and into a DD around midnight (1800 UTC) of 26th May. It further weakened into a D in the early morning.



Observed track of ESCS Mekunu over Arabian Sea

Deep Depression (DD) over east central and adjoining northeast Bay of Bengal (29-30 May)

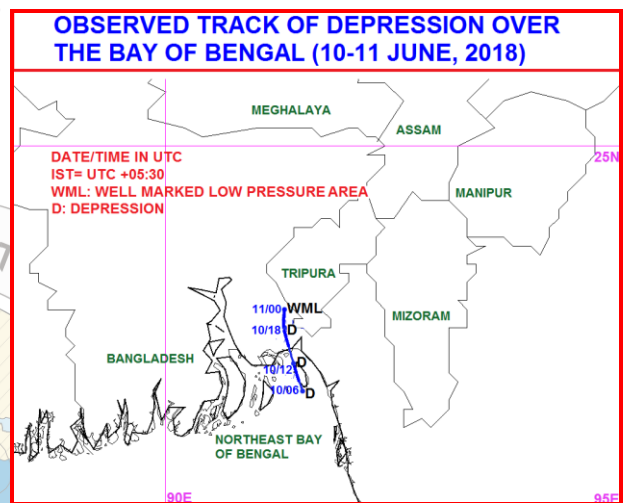
A depression formed over eastcentral and adjoining northeast Bay of Bengal around noon (0600 UTC) of 29th May. It moved northeastwards, intensified into DD in the same evening and crossed Myanmar coast to the north of Kyakpyu between 1700 and 1800 UTC of same night. It continued to move northeastwards and weakened gradually into a depression in the early morning of 30th May over Myanmar & into a well marked low pressure area over Myanmar around noon (0600 UTC) of same day.



Observed track of deep depression (29-30 May) Depression over northeast Bay of Bengal and adjoining Bangladesh (10-11 June, 2018)

In association with active monsoon conditions, a low pressure area formed over north Bay of Bengal (BoB) and

neighbourhood in the evening (1730 IST) of 8th June. It lay as a well marked low pressure area (WML) over northeast BoB and adjoining Bangladesh in the morning (0830 IST) of 10th June. It concentrated into a depression (D) around noon (1130 IST) of 10th June over northeast BoB and adjoining Bangladesh near Lat. 22.3° N/Long. 91.5° E. Moving nearly north-north-westwards, it crossed Bangladesh coast near latitude 23.1° N / longitude 91.2° E, south of Feni at night (around 2030 IST) of 10th June and weakened into a WML over Bangladesh and neighbourhood in the early morning (0000 UTC) of 11th June. The system caused heavy rainfall at isolated places over West Bengal, Odisha and Jharkhand on 9th and 10th and over Assam & Meghalaya, Nagaland, Manipur, Mizoram and Tripura on 11th to 13th, over Arunachal Pradesh on 13th and over Bihar on 12th.



Observed track of Depression

2nd Stage Long range forecast of SW monsoon rainfall 2018

India Meteorological Department (IMD) issued 2nd stage Long Range Forecast for 2018 Southwest Monsoon Seasonal Rainfall (June-September) in a press release on 30th May, 2018.

The summary of the F/c for SW monsoon Rainfall is as below:

- Rainfall over the country as a whole for the 2018 southwest monsoon season (June to September) is most likely to be NORMAL [96% to 104% of long period average (LPA)].
- Quantitatively, monsoon season (June to September) rainfall for the country as a whole is likely to be 97% of the LPA with a model error of ±4%.
- Region wise, the season rainfall is likely to be 100% of LPA over North-West India, 99% of LPA over Central India, 95% of LPA over South Peninsula and 93% of LPA over North-East India all with a model error of ± 8 %.
- The monthly rainfall over the country as whole is likely to be 101% of its LPA during July and 94% of LPA during August both with a model error of ± 9 %.

The detailed Press Release is available at IMD website at the link:

- http://www.imd.gov.in/pages/press_release_view.php?ff=20180530_pr_264.

