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Important Events / Activities

Dr. K. J. Ramesh an eminent Scientist, has taken over the charge of Director General of Meteorology (DGM)



Dr. K.J. Ramesh, DG, IMD

Dr. K. J. Ramesh an eminent Scientist has taken over the charge of DGM after superannuation of Dr. L. S. Rathore on 31st July, 2016. Dr. Ramesh has got his Ph. D. in Monsoon Dynamics from Indian Institute of Technology, Delhi. His areas of specialization include Numerical Weather Prediction, Weather Forecasting, Hazard and Climate Risk Assessment and Early Warning. Prior to assuming the charge of DGM, Dr. Ramesh was working as an Adviser in Ministry of Earth Sciences since 2007.

Dr. Ramesh has also worked as Group Head in NCMRWF (Department of Science and Technology) and as Technical Head, Disaster Management Unit, Government of Andhra Pradesh. Dr. Ramesh has wide experience in Meteorological Research and has more than fifty reviewed research publications in national and international scientific journals. His scientific visions, leadership qualities and administrative abilities will take the department to new heights.

राजभाषा गौरव पुरस्कार सम्मान

महामहिम राष्ट्रपति श्री प्रणव मुखर्जी ने मौसम - मंजूषा के 22^{वें} संस्करण में प्रकाशित रचनाओं के लिए डॉ एस. के. पेशिन, वैज्ञानिक 'जी' और श्री रामहरि शर्मा, वैज्ञानिक सहायक को दिनांक 14 सितम्बर, 2016 को राष्ट्रपति भवन में राजभाषा गौरव पुरस्कार (तृतीय) प्रदान किए।



डॉ. एस. के. पेशिन वैज्ञानिक 'जी' राष्ट्रपति से राजभाषा गौरव पुरस्कार प्राप्त करते हुए।



श्री रामहरि शर्मा, वैज्ञानिक सहायक महामहिम राष्ट्रपति से राजभाषा गौरव पुरस्कार प्राप्त करते हुए।

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हिन्दी पखवाड़ा, 2016



महानिदेशक महोदय द्वारा मौसम मंजूषा के 23वें संस्करण का विमोचन

भारत मौसम विज्ञान विभाग में हिन्दी पखवाड़ा, 2016 का आयोजन 1 सितम्बर से 15 सितम्बर, 2016 तक किया गया। समारोह की अध्यक्षता महानिदेशक महोदय डॉ. के. जे. रमेश ने की। इस समारोह के मुख्य अतिथि देश के प्रसिद्ध कवि श्री लक्ष्मी शंकर वाजपेयी जी थे। समारोह का शुभारंभ महानिदेशक महोदय डॉ. के. जे. रमेश, डॉ. एम. मोहापात्रा, वैज्ञानिक 'जी', डॉ. एस. के. पेशिन, वैज्ञानिक 'जी', डॉ. एस. के. कुन्दु, वैज्ञानिक 'जी' तथा मुख्य अतिथि प्रसिद्ध कवि श्री लक्ष्मी शंकर वाजपेयी जी ने संयुक्त रूप से दीप प्रज्ज्वलित करके किया। इस अवसर पर माननीय गृह मंत्री श्री राजनाथ सिंह द्वारा भेजे गए संदेश को सुश्री रेवा शर्मा, वरिष्ठ हिन्दी अधिकारी ने समारोह में पढ़कर सुनाया। हिन्दी पत्रिका मौसम मंजूषा के 23वें अंक का विमोचन भी महानिदेशक महोदय द्वारा पर किया गया तथा हिन्दी में सर्वाधिक पत्राचार करने के लिए राजभाषा चलशील्ड श्री आर. सुरेश, वैज्ञानिक 'एफ', सी. ए. एम. डी. को प्रदान की गई। समारोह में पखवाड़ा के दौरान आयोजित हुई हिन्दी प्रतियोगिताओं के विजेताओं को नकद पुरस्कार और प्रमाण पत्र महानिदेशक महोदय ने प्रदान किए। समारोह में कार्मिकों एवं बच्चों द्वारा सांस्कृतिक एवं अन्य कार्यक्रम प्रस्तुत किए गए।



महानिदेशक महोदय द्वारा श्री गौरव दहिया हिन्दी टंकण में प्रथम पुरस्कार प्राप्त करते हुए

हिन्दी पखवाड़ा, 2016



मौसम केन्द्र, अहमदाबाद में हिन्दी पखवाड़ा का आयोजन

मौसम केन्द्र, अहमदाबाद में हिन्दी पखवाड़ा का आयोजन 5 सितम्बर से 15 सितम्बर, 2016 को किया गया। इस अवसर पर राजभाषा हिन्दी के प्रयोग में वृद्धि हेतु विभिन्न प्रतियोगिताओं का आयोजन किया गया तथा 14 सितंबर, 2016 को हिन्दी दिवस मनाया गया।



आर. एम. सी., चेन्नई में हिन्दी पखवाड़ा का आयोजन

क्षेत्रीय मौसम विज्ञान केन्द्र, चेन्नई में हिन्दी पखवाड़ा 15 सितंबर से 29 सितंबर, 2016 तक मनाया गया। इस अवसर पर बेंगलूर, हैदराबाद, तिरुवनंतपुरम, चक्रवात डिटेक्शन क्षेत्र के रडार कार्यालयों में कार्मिकों के लिए विभिन्न प्रतियोगिताएँ आयोजित की गईं। हिन्दी दिवस का समापन समारोह 29 सितंबर, 2016 को आर. एम. सी., चेन्नई में आयोजित किया गया। श्री एस. बी. थम्पी, वैज्ञानिक 'एफ' ने समारोह की अध्यक्षता की। श्री के. मुथुकुमार, अतिरिक्त महानिदेशक, पत्र सूचना कार्यालय, सूचना एवं प्रसारण मंत्रालय, चेन्नई इस समारोह के मुख्य अतिथि थे। श्रीमती चंद्र रंगन, हिन्दी सह-अधिकारी ने सरकारी कामकाज में हिन्दी की प्रगति पर वार्षिक रिपोर्ट पेश की। इस अवसर पर हिन्दी भाषण, हिन्दी गीत आदि प्रतियोगिताओं का आयोजन किया गया। स्टाफ के सदस्यों के साथ स्कूली बच्चों ने भी हिन्दी गीत प्रतियोगिता में भाग लिया। प्रतियोगिता में विजेताओं को पुरस्कार वितरित किए गए।

हिन्दी पखवाड़ा, 2016



मौसम केन्द्र, गुवाहाटी में हिन्दी पखवाड़ा का आयोजन

मौसम केन्द्र, गुवाहाटी में हिन्दी पखवाड़ा का आयोजन 1 सितम्बर से 14 सितम्बर, 2016 तक किया गया।

संसदीय राजभाषा समिति/ हिन्दी कार्यशाला

माननीय संसदीय राजभाषा समिति की दूसरी उपसमिति द्वारा दिनांक 10 सितम्बर, 2016 को मौसम केन्द्र हैदराबाद का निरीक्षण किया गया। इस निरीक्षण में डॉ. देवेन्द्र प्रधान, वैज्ञानिक 'जी', सुश्री रेवा शर्मा, वरिष्ठ हिंदी अधिकारी तथा वरिष्ठ अनुवादक ने भी भाग लिया।

माननीय संसदीय राजभाषा समिति की दूसरी उपसमिति द्वारा दिनांक 16 सितम्बर, 2016 को विमानन मौसम कार्यालय, चेन्नै का निरीक्षण तिरुपति में किया गया जिसमें महानिदेशक महोदय डॉ. के. जे. रमेश ने भाग लिया।

मौसम केन्द्र, अहमदाबाद में हिन्दी कार्यशाला का आयोजन 29 सितम्बर 2016 को सफलतापूर्वक किया गया जिसमें आयकर विभाग, अहमदाबाद से श्री पी. जे. उपाध्याय, वरिष्ठ हिन्दी अनुवादक ने राजभाषा हिंदी के प्रयोग में वृद्धि हेतु व्याख्यान दिया।

Important Events

Dr. Harsh Vardhan, Hon'ble Minister of Earth Sciences, Dr. M. Rajeevan, Secretary MoES, Dr. K. J. Ramesh, Scientist 'G'/Advisor MoES (now DGM) and other officials from MoES & U K Embassy had a short flight on 11th July, 2016 in UK'S BAE-146-301 atmospheric research aircraft under National Monsoon Mission Program.

Developed and issued crop yield forecast for Jute for 3 states (Assam, Bihar, West Bengal) and sugarcane at F1 stage for 5 states (Gujarat, Haryana, Maharashtra, Karnataka and Uttar Pradesh) for Kharif 2016 and communicated to MNCFC on 13th July, 2016.

Dr. L. S. Rathore, the then DGM laid Foundation Stone of the "Museum of Meteorological Instruments" on 20th July, 2016 at IMD Pune Campus.

A film entitled "Glorious Decade (2006-16) of IMD" highlighting the achievements of IMD during last 10 years was produced by Pulse Media Pvt. Ltd. for IMD. The same was screened during MoES Foundation Day and 1st Decadal Celebration Ceremony of MoES on 27th July, 2016.

Weather forecast for Independence Day in Delhi was provided daily commencing from 1st August, 2016. Hourly forecast update was issued from the forenoon of 14th August, 2016 on the weather situation over Red Fort area at Delhi. India Meteorological Department earned accolades from Prime Minister's Office for its accurate predictions in this regard.

IMD made arrangements to provide district-wise rainfall scenario in the country for the districts with negative rainfall departure to the Secretary, Agriculture daily from 2nd August, 2016.

Pre Cyclone Exercise for post monsoon season (October-December) was organised by RSMC New Delhi on 23rd September, 2016 at IMD, New Delhi. It took stock of the preparedness of IMD and other allied organisations for the ensuing cyclone season (October-December, 2016). Experts from IMD, NCMRWF, Indian Air Force, Indian Navy, National Disaster Response Force and Central Water Commission participated in the meeting. Each organisation presented their preparedness. Different organisations including NDRF appreciated the past improvements in the cyclone warning services of IMD. Based on the deliberations a number of recommendations were made to further improve the cyclone warning services.

Important Policy Decisions Taken

Letter of agreement was signed between Dr. M. Mohapatra, Scientist 'G' on behalf of IMD and Air Commodore Shri N. Ravi on behalf of Indian Air Force for exchange of meteorological data and technical collaboration on 16th August, 2016.

A letter of agreement was signed with Maharashtra Airport Development Company Ltd. (MADC) on 26th August, 2016 for providing Aviation Meteorological Services at Shirdi airport.

New Projects / Schemes / Programmes Approved / Initiated / Completed

M/S AECOM Asia Company Ltd., Gurgaon held a discussion with Dr. L. S. Rathore, the then DGM and Dr. M. Mohapatra, Scientist 'G' on the project proposal to develop flood forecast modelling, inundation mapping and early warning system including river and embankment survey in Kosi Basin on 12th July, 2016 at IMD, New Delhi. IMD has agreed to be a knowledge partner for the project.

A special bulletin was commenced by NWFC w. e. f. 1st August, 2016 on observed and heavy rainfall warnings for next 5 days and sent to all concerned authorities including NDMA and MHA etc.



As per the recommendations of 43rd Session of Panel on Tropical Cyclones held at New Delhi during 2-6 May, 2016, Yemen joined WMO/ESCAP Panel member countries. IMD made arrangements to send tropical weather outlook daily and tropical cyclone advisory bulletins every three hourly to Yemen from 9th August, 2016.

IMD has planned to jointly organize a colloquium with IIT, Bhubaneswar on "Recent Development in Prediction of Tropical Cyclones and associated coastal hazards" at IIT Bhubaneswar during 14-16 December, 2016.

The EFC, Detailed Project Report and Executive Summary of the project entitled "Integrated Meteorological Services for Northeast Region" has been submitted to MoES by NWFC, IMD through Dr. Naresh Kumar, Scientist 'D'.

Design storm study

Design storm study in respect of following nine (9) Hydraulic projects have been completed during the period July - Sept 2016. The revenue of Rs 14,49,276/- has been deposited in IMD A/C for providing the design storm estimates to various project authorities : (1) Pong Dam, Himachal Pradesh (2) Pondoh Dam, Himachal Pradesh (3) Bandra Nalla Subsidiary Storage Dam, Maharashtra (4) Bhandora Nalla Subsidiary Storage Dam, Maharashtra (5) Pale Parmar Nalla Subsidiary Storage Dam, Maharashtra (6) Kurung HEP, Arunachal Pradesh (7) Teesta Low Dam-I & II, Sikkim (8) Mallaghatta Dam, Karnataka (9) Vottigedda Project Andhra Pradesh is completed.

Human Resource Development Activities

Conferences

The 2nd Meeting of "Joint Working Group" under NHP held on 9 September, 2016 at IMD under the chairperson Dr. (Smt) Surinder Kaur, Scientist 'F'. Officers of MoWR, CWC and IMD participated in this meeting.

Dr. M. Mohapatra, Scientist 'G' participated as a member of Panel discussion in the United Nation's Economic and Social Commission for Asia and the Pacific (UN-ESCAP)-NIDM regional capacity building workshop on mainstreaming disaster risk reduction in sustainable development and planning on 16th September, 2016 at New Delhi.

Dr. (Smt) Surinder Kaur, Scientist 'F' attended the panel discussion and delivered a presentation on 'Meteorological Studies for Forecasting Rain included Flood' on 27 September, 2016 in 6th SAARC Regional Training Program on Flood Risk Management at NIDM, New Delhi.

Trainings

Dr. K. Ghosh, Scientist 'E' participated in the training entitled "Hands on Practice on modeling cum climate risk management" as a resource person, held at OUAT Bhubaneswar during 23-29 July, 2016.

Shri L. Ramesh Babu, Scientist 'D' and Shri Somashekara Bhatta have given training to the new recruits of Airport Authority of India on the subject "Applications of Meteorology in Aviation" on 16th August, 2016.

AWS and ARG training was conducted by Surface Instrument Division Pune from 29 August to 2 September, 2016 for RMC Chennai.



AWS and ARG training

WMO's Tropical Cyclones Forecasters Training 2016 of 2 weeks duration was inaugurated by Dr. K. J. Ramesh, Director General of Meteorology on 19th September, 2016 at IMD New Delhi. Twenty (20) scientists from Bangladesh, Maldives, India and Pakistan participated in this training programme which was conducted by Regional Specialised Meteorological Centre (RSMC), New Delhi during 19-30 September, 2016 at India Meteorological Department (IMD).

Regional Training Workshop for capacity development in coastal multi hazard early warning system was jointly organised by IMD & Indian National Centre for Ocean Information Services (INCOIS), Hyderabad and sponsored by UN-ESCAP at Hyderabad during 19-23 September, 2016. During the workshop, Dr. M. Mohapatra, Scientist 'G' delivered a lecture on "Cyclone Warning Services of IMD", Dr. D. R. Pattanaik, Scientist 'E' delivered a lecture on Severe Weather Forecast Development Project and Role of RSMC and Dr. Naresh Kumar, Scientist 'D' delivered a lecture on Thunderstorm & Heat Wave Warning on 20th September, 2016.

Shri G. B. Shah, Meteorologist 'A' and Shri Y. D. Bijani, Meteorologist 'A' attended training on WMO's Tropical Cyclone from 19-30 September, 2016 at DGM, New Delhi.

Shri R. N. Saha participated in the training on 'Standardization of RMCs standard instruments/equipments and their calibration with laboratory standard' held at Shivaji Nagar, Pune during 19-23 September, 2016.

Workshops

Dr. Geeta Agnihotri, Scientist 'E' attended Workshop on Performance of Upper Air Observational Network of IMD at DDGM (UI) New Delhi on 12-13 July, 2016.

Shri S. Bagulayan Thampi, Scientist 'F', attended workshop on the performance of Upper air observational network of IMD on 13th July, 2016 and Plan Review meet on 14-15 July, 2016 respectively held at New Delhi.

Ms. Hemlata Bharwani, Scientist 'B' attended one day workshop on 'Strategic Ganga River Basin Planning' on 15 July, 2016 at Conference Room, 4th floor, Mohan Singh Place, Connaught Place, New Delhi.

Shri R. K. Goswami, Scientist 'B' and Shri M. P. Luitel, Meteorologist 'A' attended a workshop on "Hazard Risk and Vulnerability Assessment" at ASDMA conference Hall Dispur on 22nd July, 2016.

Dr. Surinder Kaur, Scientist 'F' and Shri P. K. Gupta, Scientist 'B' attended the workshop on "Design Flood Issues" held on 29th August, 2016 at CWC, New Delhi and made the presentation also.

Dr. A. K. Mitra, Scientist 'D' attended the GSICS Web Meeting on "Lunar Calibration for INSAT-3D through WebEx facility" on 30th August, 2016 at IMD New Delhi. He also presented the presentation on the work done on Lunar Calibration. India Meteorological Department is one of member of Global Space base Inter Satellite Calibration System (GSICS) and He nominated member of GSICS Research Working Group (GRWG) from India Meteorological Department Sat. Met Division New Delhi.

Shri Virendra Singh, Scientist 'E' attended first In Orbit test meeting of INSAT-3DR on 31st August, 2016 at Space Application Centre (SAC) Ahmedabad.

Dr. Kripan Ghosh, Scientist 'E', attended the workshop on "Operational Techniques for combining extended and seasonal Forecast and model in Climate risk management in Agriculture" held at Rajmata Vijaya Raje Scindhia University, Gwalior of Agriculture Gwalior during 19-25 September, 2016.

Shri Bikram Singh, Scientist 'E' attended a workshop on "River morphological analysis etc." called by Secretary, Department of Disaster Management, Government of Uttarakhand on 20th September, 2016.

A **workshop** on "Standardisation of RMC Standard instruments/ equipments and their Calibration with Laboratory Standards" was conducted by Surface Instrument Division Pune from 19-23 September, 2016. 2 participants were familiarised with calibration of Surface Met. Instruments.



Calibrations in surface laboratory

Dr. Siddhartha Singh, Scientist 'D' attended "Multi-sectoral Workshop on Air Pollution - Translating Recommendations of the Steering Committee on Air Pollution and Health Related issues into Action" organized by Ministry of Health & Family Welfare on 28-29 September, 2016 at New Delhi.

Lectures

Shri Somashekhara Bhatta, Meteorologist 'B' gave lecture on "Mathematical Application in Meteorology" at Maharani College, Bengaluru on 1st July, 2016.

Dr. Jayanta Sarkar, Scientist 'F' delivered lecture on "Agrimeteorology of Field Crops, Effect of temperature on crops, Micrometeorology, Crop yield forecasting models" to the trainees of Met. II Training Course Batch No. 22 at Meteorological Training Institute, Pune from 13 - 22 July, 2016.

Shri Arun Kumar V. H., Scientist 'B', delivered lecture to the "Naval Observers" on 1st August, 2016 at Sat. Met. Division.

Dr. (Smt.) Suman Goyal, Scientist 'E' and Shri Rizwan Ahmed, Meteorologist 'A' delivered lectures to the "Pre-Antarctic training of IMD nominees for 36th (ISEA) Indian Scientific Expedition to Antarctica" on 19th August, 2016 at Sat. Met. Division.

Dr. M. Mohapatra, Scientist 'G' delivered a lecture on "Role of IMD in Disaster Management" at National Telecom Institute for Policy Research, Innovation and Training (NTIPRIT), Ministry of Telecom and IT on 14th September, 2016.

Shri M. V. Guhan, Meteorologist 'A' delivered lectures in the "Farmers' Awareness Programme" held at Rice Research Station, Aduthurai on 21st September, 2016.

Dr. K. V. Balasubramanian, Meteorologist 'B' Shri RM. A. N. Ramanathan, Meteorologist 'A', Shri M. V. Guhan, Meteorologist 'A', Smt. Sumathi, Meteorologist 'A', Dr.(Mrs) B. Geetha, Meteorologist 'A', Shri Johnson, Scientific Assistant and Shri M. Veera Kumar, SRF, RMC Chennai delivered lectures on "Disaster management and Mitigation measures" during July - September, 2016 on 8 occasions at RMC Chennai to 320 trainees comprising district administrators to disaster managers of Tamil Nadu state in a training programme organised by Anna Institute of Management, Chennai.

Awards & Recognitions

नगर राजभाषा कार्यान्वयन समिति, अहमदाबाद के तत्वावधान में 8 जून, 2016 को ऑनलाइन प्रतियोगिता - "शब्द एक, सोच अनेक" का आयोजन किया गया था। उक्त प्रतियोगिता में कुमारी शिप्रा सिंह, वै. स., नगर राजभाषा कार्यान्वयन समिति, अहमदाबाद केंद्र में विजेता हुईं तथा नगर राजभाषा



कार्यान्वयन समिति, अहमदाबाद की 68वीं छमाही बैठक दिनांक 26 जुलाई, 2016 को 15:30 बजे न्यू डिटोरियम, अंतरिक्ष उपयोग केन्द्र (इसरो), आंबावाडी विस्तार, अहमदाबाद – 380015 में आयोजित की गई है और नराकास, अहमदाबाद की इस बैठक में कुमारी शिप्रा सिंह, वै. स. को पुरस्कृत किया गया है।

MoES AWARD 2015-2016

The Ministry of Earth Science celebrated its Foundation Day on 27th July, 2016 at Vigyan Bhawan, New Delhi. On this occasion, Dr. V. K. Soni, Scientist 'E' and Smt. Sunitha Devi S., Scientist 'E' received certificate of merit for their outstanding contributions in the field of "Atmospheric Science & Climate Change" for the year 2015-2016. The awards were also given to the following best employees of the department : Shri Satendra Kumar, Asstt. Met. - II, DGM's Office (NWP), Smt. Preetha A. Menon, Scientific Asstt., ADGM (R) Pune, Shri Awadhesh Prasad, Scientific Asstt., Agromet Services Cell, Smt. Chhaki Eden Bhutia, UDC, M. C. Gangtok and Shri R. Namrath, MTS, M. C. Bengaluru.

WMO-Professor Vilho Vaisala Award - 2016

WMO-Professor Vilho Vaisala Award-2016 for the Development and Implementation of the Instruments and Methods of Observation in Developing Countries is awarded for the work on the technical document WMO – IOM - 117 entitled "Survey on alternatives for dangerous and obsolete instruments : evaluation of the questionnaire and recommendations for alternatives" by Ms. B. Amudha, Scientist 'D', RMC Chennai and Dr. Rabia Merrouchi from Morocco. The work was done during her tenure as member of the WMO - Expert Team of Regional Instrument Centres 2010-14. Ms. B. Amudha, Scientist 'D', RMC Chennai was awarded the coveted prize in the TECO - 2016 conference held at Madrid, Spain on 28th September, 2016. She is the first from India Meteorological Department and the second Indian to receive the Vaisala award from WMO.



Ms. B. Amudha, Scientist 'D' receiving the WMO-Professor Vilho Vaisala Award-2016 in TECO-2016 conference at Madrid, Spain

Career Advancement

Ms B. Amudha, Scientist 'D', RMC Chennai and Research Scholar of RMC Chennai (Recognised Research Institute for Ph.D in atmospheric Sciences under University of Madras) presented synopsis of her Ph. D work on "Characteristics of Indian northeast monsoon and cyclonic storms of North Indian Ocean observed through modern meteorological observing systems" on 21st July, 2016 at RMC Chennai and submitted to University of Madras, Chennai.

Infrastructure Development & Installations

Installation and commissioning of Drishti system at Guwahati, Dehradun, Patna, and Ahmedabad airport. Reinstallation of Drishti system at Jaipur airport. Installation of DIWE at Surat airport.



Commissioning of Drishti System at Dehradun airport



Installation of Diffuse shading ring assembly, UV-B Radiometer, data logger and GPRS Modem at Shimla.



Installation of Diffuse shading ring assembly, UV-B Radiometer, data logger and GPRS Modem at Shimla.

Inter-Agency Meetings

Dr. M. Mohapatra, Scientist 'G' participated in the meeting under the chairmanship of Shri R. K. Jain, Member, NDMA on 1st July, 2016 at NDMA Bhawan, New Delhi to discuss the preparations for the 2nd Meeting of the BRICS Ministers for Disaster Management in August, 2016.

Shri S. M. Metri, Scientist 'E', Shri L. Ramesh Babu, Scientist 'D', Shri N. Ramdoss, Meteorologist 'B' and Shri S. N. R. Gopal attended meeting at KIAL Bengaluru regarding New South Parallel Runway on 4th July, 2016.

Shri L. Ramesh Babu, Scientist 'D', attended meeting regarding Emerging Technologies and Development in Air Traffic Management-Industry Perspective organized by ATC Association, Bengaluru on 9th July, 2016.

Dr. L. S. Rathore, the then DGM, **Shri S. B. Tyagi**, Scientist 'E' and **Dr. A. K. Das**, Scientist 'D' participated in the meeting under National Hydrology Project on 13th July, 2016 at MoWR, Shram Shakti Bhawan, New Delhi.

Agromet Advisory Services under GKMS



Meeting of the "Working Groups in implementation of Agromet Advisory Services" under Gramin Krishi Mausam Sewa (GKMS)" on 19th July, 2016

Meeting of the "Working Groups in implementation of Agromet Advisory Services" under Gramin Krishi Mausam Sewa (GKMS)" on 19th July, 2016. The main objectives of the meeting was to apprise the present status of mandated works and plans for implementation of various activities under GKMS project.

Shri B. Mukhopadhyay, Scientist 'G', IMD, Pune; **Dr. S. Pasupalak**, Hon'ble Vice Chancellor, OUAT, Bhubaneswar; **Dr. K. K. Singh**, Scientist 'F', IMD, New Delhi; **Shri S. C. Bhan**, Scientist 'F', IMD, New Delhi; **Dr. N. Chattopadhyay**, Scientist 'F' IMD, Pune; DDGMs, Officer-In-Charges of State Agromet Centre (SAMC), Scientists from RMCs, MCs, Principal Nodal Officers, Nodal Officers and Technical Officers of Agrometeorological Field Units (AMFUs) participated in the meeting.

Shri S. Bagulayan Thampi, Scientist 'F' and **Shri K. Santhosh**, Scientist 'E', attended the meeting of working groups in implementation of Agromet Advisory Services Under GKMS and operationalisation of block level weather forecast and Agromet Advisories during 19- 20 July, 2016 at Pune.

Block Level Weather Forecast and Agromet Advisories

Meeting on "Operationalisation of Block Level Weather Forecast and Agromet Advisories" on 20th July, 2016. The main objective of this meeting was to devise roadmap for "Implementation of Block Level Forecast & Advisories. **Dr. L. S. Rathore**, the then DG, IMD, New Delhi; **Shri B. Mukhopadhyay**, Scientist 'G', IMD, Pune; **Dr. K. K. Singh**, Scientist 'F', IMD, New Delhi; **Shri S. C. Bhan**, Scientist 'F', IMD, New Delhi; **Dr. N. Chattopadhyay**, Scientist 'F', IMD, Pune; **Dr. S. Pasupalak**,



Block level weather Forecast and Agromet advisories" on 20th July

Vice Chancellor, Odisha University of Agriculture and Technology, Odisha, **Dr. M. Datta**, Former Joint Director, ICAR, Lembucherra, Tripura, **Dr. Padmakar Tripathi**, Former Registrar & Dean, Indian Institute of Technology (IIT), Roorkee, Uttarkhand, **Dr. Swati P. Sardesai**, Deputy Director General (DDG), National Informatic Centre (NIC), Pune and **Shri V. H. Deshpande**, Scientist E, NIC, Pune and **Shri C. S. Lobo**, Director, Watershed Organisation Trust (WOTR), Pune Scientists from RMC/MCs, Principal Nodal Officers, Nodal Officers and Technical Officers of Agrometeorological Field Units (AMFUs) participated in the meeting.

Shri D. Saha, Scientist 'F' and **Dr. K. Ghosh** Scientist 'E', participated in the meeting of working Groups in "Implementation of Agromet Advisory Service under GKMS & Operationalisation of block level weather forecast and Agromet Advisories", during 19-20 July, 2016 held at JCADA Pune.

Shri Sunit Das, Scientist 'D', attended an emergency meeting called by the Chief Minister of Assam at Brahmaputra Guest house on 24th July, 2016 to "Review Flood situation in Assam".

Dr. N. Chattopadhyay, Scientist 'F', attended meeting of High level Project Advisory and Monitoring Committee (PAMC) to evaluate and monitor the progress of plan scheme Gramin Krishi Mausam Sewa (GKMS) of IMD to improve the quality of Agromet Advisory Services for the farming community in the country was held on 29th July, 2016 at Mausam Bhawan, IMD New Delhi.

Shri Bikram Singh, Scientist 'E' attended a meeting under the chairmanship of Chief Secretary, Government of Uttarakhand on 8th August, 2016 where a presentation on setting up of Hydro-meteorological network in Uttarakhand was made by In-charge, Karnataka state natural disaster monitoring center (KSNDMC) and a MOU was signed by the state government with KSNDMC.

Dr. M. Rajeevan, Secretary, Ministry of Earth Sciences and **Dr. M. Mohapatra**, Scientist 'G' participated in the Interactive Session of Heads of various Departments with Assistant Secretaries of Central Government in different Ministries at New Delhi on 12th August, 2016.



Dr. K. J. Ramesh, Director General of Meteorology, IMD and Dr. M. Mohapatra, Scientist 'G' participated in the meeting for "Identification and finalization of various programs beyond XII Plan" at MoES on 16th August, 2016.

Dr. Geeta Agnihotri, Scientist 'E' and Shri L. Ramesh Babu, Scientist 'D' attended meeting regarding "Construction of RETs to enhance Runway capacity" at Kempegowda International Airport, Bengaluru (KIAB) at Taj Bengaluru, opposite to Kempegowda International Airport (KIA) passenger Terminal Building, Bengaluru on 16th August, 2016.

Dr. S. Balachandran, Scientist 'F', attended Technical Committee meeting on "Coastal Disaster Risk Reduction project "(CDRRP) under World Bank Project held at Chennai on 22nd August, 2016.

Dr. S. O. Shaw, Scientist 'E', attended the "61st (Adjourned) meeting of Brahmaputra Board" at Guwahati held on 22nd August, 2016.

A meeting amongst the scientist of IMD, SAC (ISRO) and NCMRWF under the chairmanship of Scientist - SG, SAC (ISRO) was held on 2nd September, 2016 at the conference Hall, Mausam Bhawan to finalize the additional data products from INSAT-3DR.

Dr. Manorama Mohanty, Scientist 'D', attended meetings organised by Principal Sec., Agriculture Department regarding "Monsoon status 2016" on 2nd July, 2016 and "Crop cutting experiments in agricultural field" on 8th September, 2016.

Dr. (Smt) Surinder Kaur, Scientist 'F', attended "6th and 7th meeting of the Supervisory Committee on Cauvery" on 12 September, 2016 in New Delhi to discuss water related issues on Cauvery basin.

Shri G. Raja Ramesh, Meteorologist 'B', attended as a member from IMD in the Selection committee regarding appointment of Met. Observer on temporary basis at Krishi Vigyan Kendra, Sirsi", organized by University of Agriculture Sciences, Dharwad on 15th September, 2016.

Dr. Jayanta Sarkar, Scientist 'F', attended a meeting on "Artificial rainfall experiment in Gujarat" chaired by Hon. Revenue Minister of Gujarat government Shri Bhupendrasinh Chudasma at Gandhinagar on 21st September, 2016.

Research & Publications

The book entitled "Tropical Cyclone Activity over the North Indian Ocean" on the proceedings of National Workshop on Tropical Cyclones during July, 2014, published by Capital Publishing Company, New Delhi and Springer was distributed to various Regional Meteorological Centres & Meteorological Centres of IMD, WMO/ESCAP Panel member countries and WMO. The book was edited by Dr. M. Mohapatra, Shri B. K. Bandyopadhyay and Dr. L. S. Rathore.

A research paper entitled Influence of North Atlantic Oscillation on Indian Summer Monsoon Rainfall in relation to Quasi-Biennial Oscillation by R. Bhatla, A. K. Singh, B. Mandal, S. Ghose, S. N. Pandey and Abhijit Sarkar published in the Journal Pure and Applied Geophysics (PAGEOPH), Vol. 173.

Enso bulletin and Seasonal Climate Outlook for South Asia for the month from July to September were issued. (Quick Link : www.imdpune.gov.in/Clim_Pred_LRF_New/Products.html).

Weekly and Cumulative Standardized Precipitation Index (SPI) maps were prepared for the months from July to September and supplied for use in Agromet Advisory Services Bulletin.

Fourteen Drought Outlook Maps for the period 25th June, 2016 to 30th September, 2016 were prepared and uploaded on IMD Pune website.

Fourteen weekly aridity anomaly reports and maps for the period 18th June, 2016 to 30th September, 2016 were prepared and uploaded on IMD Pune website.

Thirteen Weekly and seven biweekly aridity anomaly maps and reports for the period 23rd June, 2016 to 28th September, 2016 and 18th June, 2016 to 23rd September, 2016 respectively have been issued to DGM New Delhi, IITM Pune and Ministry of Agriculture, New Delhi.

A chapter on "Spatial and Temporal Scales of SPI for Better Drought Monitoring" by R. Balasubramanian and P. Guhathakurta has been published in the book "Natural Resource Management in Arid and Semi-Arid Ecosystems for Climate Resilient Agriculture" by Soil Conservation Society of India, New Delhi.

Nineteen research papers were published in quarterly research journal MAUSAM, Vol.67, No. 3 (July, 2016).

Media Interaction

Dr. G. C. Debnath, Scientist 'F' attended a talk show at Doordarshan kendra Kolkata on 2nd August 2016 conducted by Disaster Management named "Durjog Mokabila".

Shri B. P. Yadav, Scientist 'F', participated in a one hour Panel discussion for DD Kishan "VaadSamvaad" on "Improvements in weather & monsoon forecasting and its applications in agriculture sector" on 5th August, 2016.

Dr. S. C. Sahu, Director-in-Charge, M.C. Bhubaneswar participated in live broadcast on Bajrapat Biparjyay (Lightning Hazard) in Doordarshan, Bhubaneswar on 6 August 2016.

Dr. Jayanta Sarkar, Scientist 'F' attended a discussion on 'Science Serial on understanding and managing disaster' held at All India Radio, Ahmedabad on 11th August, 2016.

Dr. Geeta Agnihotri, Scientist 'E', attended Mass Media Meeting at Doordarshan Kendra on 5th September, 2016.

Shri G. K. Das, Scientist 'D', participated as expert for the talk show "Durjog Mokabila on Flood" a live TV programme on DD Bangla held on 13th September, 2016.

Archana Kapoor Productions carried out video shooting at IMD for production of a film by NDMA to showcase "Disaster management in India" on 29th September, 2016. The film will be screened on the occasion of Asian Ministerial Conference on Disaster Risk Reduction to be held at New Delhi during November, 2016.

A documentary film by Vigyan Prasar on life and work of Late Dr. (Ms.) Anna Mani, former Deputy Director General of IMD, the production team conducted interview with Dr. K. J. Ramesh, Director General of Meteorology; Dr. M. Mohapatra, Scientist 'G'; Dr. D. Pradhan Scientist 'G' and Shri B. P. Yadav, Scientist 'F' on 19th September, 2016.

Dr. K .V. Balasubramanian, A. M. Gr. I gave five talk lets on "different aspects of Science and Technology and on Hiroshima Day" and broadcasted in Tamil in AIR Chennai for duration of 5 minutes during 1-8 August, 2016.

One Hundred Eighty Seven (187) students from different educational institutes/schools visited IMD HQ for familiarisations of meteorological observational & forecasting systems during July, 2016.

Thirteen (13) trainees from School of Naval Oceanology and Meteorology (SNOM) Naval Base, Kochi was on OJT during 31st July, 2016 to 6th August, 2016 at IMD HQ, New Delhi.

One hundred eighty one (181) students in two batches from VIBGYOR High School, NIBM, Pune visited Surface Lab on 2nd & 4 August, 2016.

Twenty two (22) participants representing 13 countries visited DWR Visakhapatnam on 29 July, 2016 as a part of their International Training program sponsored by MOEA under ITEC-SCAAP on "Community based disaster management". Shri R. Bibraj, Scientist 'B' explained to them about the role and preparedness of Doppler Weather Radar stations during Disasters following which they had an interactive session with the staff.

Visitors

Visit of Nepalese Delegates



Exposure visit for Nepalese Delegates was organized at Agrimet Division on 11th July and 12th July 2016

Exposure visit for Nepalese Delegates (for two days) was organized at Agrimet Division from 11-12 July, 2016. Thirteen trainees from Nepal visited the Agrimet Division. Lectures were delivered, visit was organized at Central Agromet Observatory and National Informatics Centre, Pune. Participants interacted with the Scientists.

Eleven number of students from (NTTES) Institute of Technology and Science, Mirza completed four weeks practical training during their summer break at RMC Guwahati office on 20th July, 2016.

Dr. L. S. Rathore (then DGM) and Dr. S. O. Shaw, Scientist 'E' visited M.O Cherrapunjee which was recently shifted from rented house to the existing site of ISRO Radar building, during 23-24 July, 2016.



Participants of International Training program

Fifty (50) students from Angel High school and Junior college, Loni Kalbhor, Pune visited Surface Lab on 10th August, 2016.

Two (2) faculty members and 35 students of Central Institute of Technology, Kokrajhar visited RMC Guwahati on 12th August, 2016.

Fifty (50) students and 2 Faculties of J. J. International school, Ahmedabad visited M. C. Ahmedabad on 19 August, 2016.

Sixty (60) students (T.Y.B.E.) (Civil Engineering) from Vishvakarma Institute of Information Technology Pune visited Surface Lab on 19 August, 2016 and Forty (40) students (S.Y.B.E.) (Instrumentation) from AISSMS, Institute of Information Technology, Pune visited Surface Lab on 22nd August, 2016.

Three thousand two hundred (3200) students including staff members from various universities / colleges / schools visited RMC, Chennai as a part of their academic schedule during July-August 2016. A brief presentation about the functions / various activities of IMD was given.



One hundred thirty (130) students B.E. (E & TC) from ISPM Rajashri Shahu College of Engineering , Pune visited Surface Lab on 23 and 24 August, 2016.

Sixty (6) students (T.Y.B.E.) Civil Engg. from Vishwakarma Institute of Information Technology, Pune visited Surface Lab on 2 September, 2016 and 80 students (T.Y.B.E.) from Pimpri Chinchwad college of Engineering, Nigdi, Pune visited Surface Lab on 6th September, 2016.

Shri Bikram Singh, Scientist 'E' delivered a lecture to 35 students of B. Arch. with 2 faculty members of school of Architecture & Planning, Graphic Era Hill University, Dehradun who visited Met. Centre Dehradun on 6th September, 2016.



**Trainees from Architecture & Planning,
Graphic Era Hill University, Dehradun**

One hundred twenty (120) students (T.Y.B.E.) (Civil Engineering) from Dr. D. Y. Patil school of Engineering and Technology, Pune visited Surface Lab on 8 and 9 September, 2016 and Thirty two (32) students of Prof. Waghare, Pune visited Seismo lab on 9 September, 2016.

A group of Experts from Indian Institute of Public Administration (IIPA) visited NWFC on 9th September, 2016. Shri Charan Singh, Scientist 'E' made a presentation on various activities of IMD. Dr. Naresh Kumar, Scientist 'D' explained the operational forecasting system.

One hundred thirty (130) students B.E. (E and TC) from ISPM Rajashri Shahu college of Engineering, Pune visited Surface Lab on 13 and 14 September, 2016.

Seventy (70) students of Prof. Kulkarni, Pune visited Seismo lab on 14 September, 2016, Sixty five (65) students from Nowrosji Wadia College, Pune visited Seismo lab on 19th September, 2016 and Seventy (70) students of Prof. Danole, Pune visited Seismo lab on 20th September, 2016.

One hundred fifty (150) students T.Y.B.E. (Civil) from Rajashri Shahu College of Engineering , Pune visited Surface Lab on 19 and 20th September, 2016.

Thirty nine (39) students from ICCM engineering College, Aurangabad visited Seismo lab on 21 September, 2016 and Forty (40) students B.E. (E and TC) from International Centre of Excellence in Engineering and Management Aurangabad visited Surface Lab on 21st September, 2016.

Twenty (20) students from Womens College Agartala alongwith one Lecturer visited M. C Agartala on 23rd September, 2016.

Forty nine (49) students from JSPM Engineering College, Pune visited Seismo lab on 28th September, 2016.

A delegation of trainees from South Asian association for Regional Cooperation (SAARC) member countries undertaking training at NIDM visited IMD on 28th September, 2016.

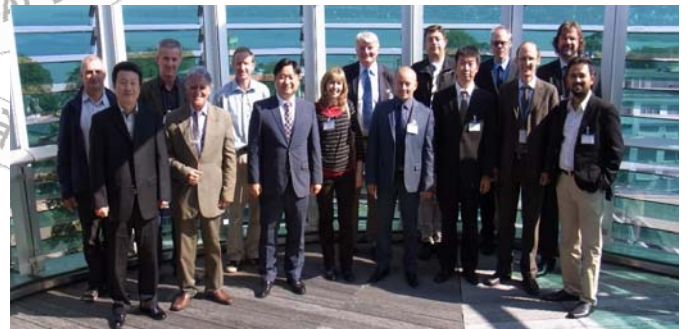
Additional Secretary, Home, Government of India visited NWFC on 28th September, 2016. Dr. M. Mohapatra, Scientist 'G' briefed him about the weather forecasting services of IMD and dissemination mechanism.

National / International Collaboration

Under INDO-UK joint project on monsoon dynamics under MONSOON MISSION PROGRAMME M.C. Ahmedabad started extra RS/RW ascent on special days from 16th May to October, 2016.

Dr. (Mrs.) Kamaljit Ray, Scientist 'F' was on foreign deputation to Hong Kong during 25-29 July, 2016 to participate in "4th International Symposium on Nowcasting and Very Short Range Forecast 2016 (WSN 16)". She presented a paper on 'Nowcast Services in India'.

Dr. Ashim Kumar Mitra, Scientist 'D' was on foreign deputation to Geneva, Switzerland during 20-22 September, 2016 to participate in the "2nd Meeting of the Coordination Group for the Direct Broadcast Network for Real-time Relay of Low Orbit Satellite Data (DBNet)".



Dr. A. K. Mitra, Sc. 'D' during the meeting at Geneva, Switzerland

Dr. S. Balachandran, Scientist 'F' was on foreign deputation to Myanmar during 27-29 September, 2016 to participate in South Asian Climate Outlook Forum (SASCOF-9).

WMO-TECO 2016 conference at Madrid, Spain

World Meteorological Organization (WMO) organized WMO Technical Conference on Instruments and Methods of Observations (TECO-2016) during 27th September, 2016 to 30th September, 2016 at Madrid, Spain. The research work entitled "Global climate observation system upper air

network (GUAN) standard - compatible network of India Meteorological Department (IMD)" authored by M. I. Ansari, Ranju Madan and D. Pradhan, was accepted by the international programme committee of TECO-2016 under the topic "Traceability, uncertainty and standardization of meteorological and environmental measurements".

Shri M. I. Ansari, Scientist 'D' was deputed by the office to attend the conference and present the paper. The paper was well appreciated by WMO members. Mr. Bertrand Calpini, President CIMO specially appreciated the research work. Mr. Tim Oakley, Implementing officer GCOS secretariat was very glad to hear that IMD have 6 radio sounding stations of WMO-GUAN standard. He assured to process the inclusion of these stations into the WMO GUAN network as soon as the formal request is received at GUAN secretariat, from IMD.



Shri M. I. Ansari, Sc. 'D' during the conference

Dr. R. K. Jenamani, Scientist 'F' was on foreign deputation to Hong Kong during 22-23 July, 2016 to participate in Meeting of the "Aviation Research and Development Projects (AvRDP) Scientific Steering Committee (SSC)".

Her Excellency Ms Melba Pria, Ambassador of Mexico in India visited IMD New Delhi on 5th August, 2106 to discuss with DGM about collaboration between Meteorological Services of both the countries.

Dr. Ananda Kumar Das, Scientist 'D' was on foreign deputation to Nay Pyi Taw, Myanmar during 6-9 September, 2016 to participate in the Workshop on 'Implementation of New Numerical Weather Prediction(NWP) and Impact Base Forecast and Warring Techniques'.

Dr. Pulak Guhathakurta, Scientist 'F' was on foreign deputation to Seychelles during 19-23 September, 2016 to participate in South West Indian Ocean Climate Outlook Forum (SWIOCOF-5).

Dr. D. S. Pai, Scientist 'F' was on foreign deputation to Bangkok during 25-26 September 2016 to attend meeting at "The Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES) Office Bangkok and to Myanmar" during 27-29 September 2016 to attend South Asian Climate Outlook Forum (SASCOF-9).

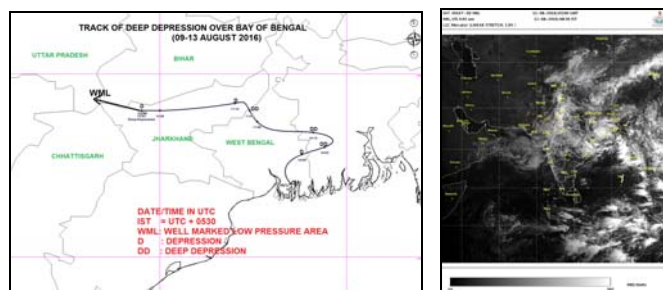
Weather Summary

The southwest monsoon covered entire country on 13th July, 2016.

A depression formed over northeast Madhya Pradesh & neighbourhood with its centre about 30 km east of Satna on 6 July. It remained over the same area and weakened into a well marked low pressure area on 7th July, 2016. Under its influence widespread rainfall with heavy to very heavy falls occurred over Madhya Pradesh, Chhattisgarh and Maharashtra during 5-10 July, 2016. Heavy to very heavy rain occurred at a few places with isolated extremely heavy falls over northeastern states and central India on few days during the weeks from 7-13 and 21-27 July, 2016.

Depression over West Bengal (9-14 August, 2016)

A low pressure area formed over northwest Bay of Bengal and adjoining areas of West Bengal on 8th morning. It concentrated into a depression over coastal areas of West Bengal and areas on 9th afternoon and into a deep depression over south Bangladesh and neighbourhood on 10th morning. It then moved west-northwestwards and lay over Gangetic West Bengal and adjoining Jharkhand on 11th morning as a deep depression. It weakened into a depression over north Jharkhand and neighbourhood in the afternoon of 11th. It lay over southwest Jharkhand on 12th and weakened into a wellmarked low pressure area over southwest Bihar and neighbourhood in the morning of 13th. It further weakened into a low pressure area over southeast Uttar Pradesh and neighbourhood in the morning of 14th. It persisted over the same region on 15th and became less marked on 16th. Under its influence, southwest monsoon was active/ vigorous over Gangetic West Bengal and Jharkhand on 11th & 12th and over Uttar Pradesh during 15th - 17th. Heavy to Very Heavy rainfall occurred over Gangetic West Bengal and Jharkhand regions on 11th & 12th, Uttar Pradesh and Bihar during 15th -17th August. Track and typical satellite imagery of the system are presented in Figure. Bulletins were issued regularly and concerned state governments were informed about the rainfall situation.



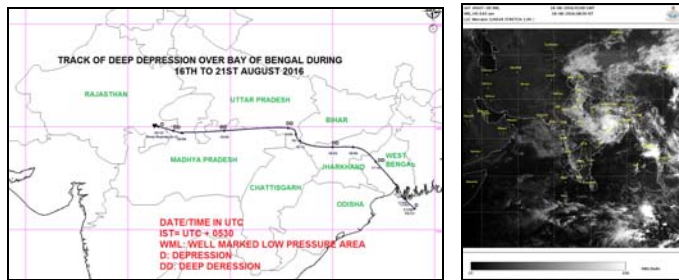
Track of deep depression (9-14 August, 2016) and typical satellite imagery based on 0300 UTC of 11th August, 2016

Deep Depression over Bay of Bengal (16-21 August, 2016)

A low pressure area formed over northeast BoB and neighbourhood in the morning of 15th August, 2016. It concentrated into a well marked low pressure area over



northwest BoB and neighbourhood in the morning of 16th and into a depression over north BoB in the evening of 16th. Moving northwestwards it concentrated into a deep depression over northwest BoB in the afternoon of 17th and crossed West Bengal coast between Digha and Diamond Harbour around 1700 hours IST of 17th. Continuing its northwest to west-northwest journey it weakened into a depression in the night of 20th and into a well marked low pressure area over east Rajasthan and adjoining west Madhya Pradesh in the morning of 21st August. Track of the system and typical satellite imagery are presented in Figure. Under its influence southwest monsoon was active/vigorous over Odisha on 17th, Gangetic West Bengal and Jharkhand on 18th, Chhattisgarh and east Madhya Pradesh on 19th & 20th, west Madhya Pradesh on 20th & 21st, east Rajasthan during 20th-24th and Gujarat during 23rd & 24th August. Under its influence, heavy to very heavy rainfall occurred over Gangetic West Bengal & Odisha on 18th, Chhattisgarh & east Madhya Pradesh on 19th & 20th and west Madhya Pradesh on 20th & 21st and east Rajasthan during 20th to 24th with extremely heavy rainfall over Jharkhand on 18th, east Madhya Pradesh on 19th, west Madhya Pradesh and east Rajasthan on 20th & 21st. Bulletins were issued regularly and concerned state governments were informed about the rainfall situation.



Track of deep depression over Bay of Bengal (16 to 21 August, 2016) and INSAT-3D imagery based on 0300 UTC of 17th August, 2016.

TABLE 1

The percentage correct of heavy rainfall warnings issued by IMD, New Delhi

| | Rainfall | | |
|---------|-----------------------------------|--------------------------------|---------|
| | Heavy Rainfall (64.5 to 115.5 mm) | Very Heavy Rainfall (> 115 mm) | Overall |
| 24 Hour | 73 | 91 | 78 |
| 48 Hour | 71 | 89 | 74 |
| 72 Hour | 73 | 90 | 74 |

During the month of September, three low pressure areas formed over Bay of Bengal and moved nearly west-northwestwards and caused normal to excesses rainfall activity over north peninsula and adjoining east & central India. The formation of these low pressure systems were predicted 2-3 days in advance. Extremely heavy rain occurred at a few places over Konkan & Goa, Coastal Andhra and Madhya Maharashtra; at isolated places over Bihar, Arunachal Pradesh, Assam & Meghalaya and Andaman & Nicobar Islands one or two days in

during 1st, 3rd and 4th week of September. The percentage correct of heavy rainfall warnings issued by IMD, New Delhi for 24, 48 and 72 hrs lead period during the month of September is given in Table 1.

The southwest monsoon withdrew from some parts of West Rajasthan on 15th September and further more parts of Punjab; some parts of Jammu & Kashmir and Haryana and some more parts of West Rajasthan on 28th September 2016.

TABLE 2

Rainfall during Southwest Monsoon season (June to September) 2016

| | Rainfall during SW Monsoon Period 2016 | | | LRF 2 nd Stage issued on 02 June 2016 |
|---------------------------|--|--------------|-----------|--|
| | Actual | Normal | Departure | |
| June | 145.4 | 163.6 | -11 | |
| July | 299.2 | 280.2 | +7 | 107 of LPA ±9% |
| August | 228.3 | 254.6 | -10 | 104 of LPA ±9% |
| September | 167.7 | 173.4 | -3 | |
| Country as a whole | 862.0 | 887.5 | -3 | 106 of LPA |

Twenty (20) number of western disturbances affected western Himalayan region and adjoining plains during July, August and September, 2016.

Real time r/f statistics for the monsoon season - 2016



Real time rainfall statistics for the monsoon season – 2016 was prepared based on daily statistics. The rainfall for the country as a whole for the period of 01-06-2016 to 30-09-2016 has been recorded as 862.0 mm, i.e., 97% of its Long Period Average (LPA) of 887.5 mm. for the monsoon season- 2016. In all, 04 Met sub-divisions recorded Excess rainfall, 23 Met subdivisions recorded Normal rainfall, 09 met subdivisions remained in Deficient and no Met subdivision recorded scanty category of rainfall. The subdivision-wise real time rainfall map for the Monsoon season-2016 is also given in the above figure.