



मौसम विज्ञान विभाग समाचार

IMD NEWS

INDIA METEOROLOGICAL DEPARTMENT
(Ministry of Earth Sciences)

OCT – DEC 2013

Number 4

Volume 6

IMD – A STEP FURTHER AHEAD FOR SERVICES TO FARMERS

Capacity Building for Agrometeorological Services



International workshop on “Capacity Building for Agrometeorological Services” and meeting on “CAgM Implementation/ Coordination Team (ICT)” was organized jointly by the World Meteorological Organisation, Geneva and India Meteorological Department during 28 and 31 October, 2013 at Pune. Dr. Byong-Lyol Lee, President, Commission for Agricultural Meteorology, World Meteorological Organization, Geneva, Mr. Robert Stefanski, Chief, Agricultural Meteorology Division,

WMO, Geneva, Dr. Sue Walker, Research Theme Leader for Agrometeorology and Ecophysiology and Programme & Director, Crop Base and System PLUS Crops for the Future Research Centre, Malaysia attended the workshop. Other international participants of the workshop were Mr. Reinaldo Lúcio Gomide, Brazil, Ms. Svetlana Korsakova, Ukraine, Mr. Zhiqiu Gao, China, Dr. Francesca Orlando, Italy, Mr. Alessandro Morra, Italy. Dr. V. Radhakrishna Murthy, Hyderabad, Dr. K. K. Singh, IMD, New Delhi alongwith other senior scientists of the department also participated in the workshop.

Gramin Krishi Mausam Seva (GKMS)

7th Annual Review Meeting of Gramin Krishi Mausam Seva was held on 20-22 November, 2013 at Maharana Pratap University of Agriculture and Technology (MPUAT), Udaipur, Rajasthan. A number of high level dignitaries Dr. L. S. Rathore, Director General, India Meteorological Department, Dr. O. P. Gill, Hon'ble Vice-Chancellor, MPUAT, Udaipur, Dr. P. L. Maliwal, Director of Research, MPUAT, Udaipur, Dr. K. K. Singh, Head, Agromet Services, IMD, New Delhi, Dr. N. Chattopadhyay, DDGM (Agrimet), IMD, Pune and number of Scientists / Officers from IMD, Principal Nodal Officers, Nodal Officers and Technical Officers of Agrometeorological Field Units (AMFUs) under the project “Gramin Krishi Mausam Sewa (GKMS) in the country, NGOs and private firms especially engaged in dissemination of Agromet Advisories participated in the meeting.



Improvement of Agro Advisory Services

A meeting was organized at Regional Meteorological Centre Kolkata during 4-5 December, 2013 on improvement of District Level Weather Forecast for Agromet Advisory Service under the Chairmanship of Dr. D. Pradhan, DDGM, RMC, Kolkata. Scientists from other offices of IMD attended the meeting. Their advise was very useful to improve the Agromet Advisory Services to Farmers.

Quarterly Newsletter

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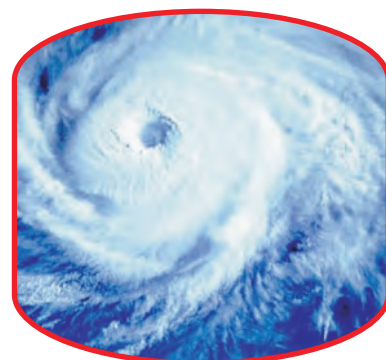
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HUMAN RESOURCES DEVELOPMENT

Training in Agro Meteorology

The training course on “Agrometeorology towards better advisories for serving end users requirements” was conducted from 26th November, 2013 at MTI, Pashan, Pune. Total 18 participants from various Agromet Field Units attended the training.



Trainees & Instructor of IMD Training Centre at Pashan

Training in General Meteorology

The short term training course in general meteorology for DRDO/IDST/MoES and IMD duty officers consisting of 18 participants, commenced w.e.f. 18 November – 7 December, 2013. Training certificates and course materials were distributed to the participants at the end of training course.

Individual Trainees

Shri A. K. Dhotre, A.M-I and **Shri G. P. Singh**, S. A. attended training course on Eddy Covariance System, Eddypro Software, Soil Sequestration and Photosynthesis Research held at IITM, Pune during 11-13 November, 2013.

Shri M. A. Pachankar, S.A. attended the Short term training course on “Crop Micrometeorology” at CAFT, College of Agriculture, MPKV, Pune during 4-24 December, 2013.

Shri S. D. Satav, S. A. & **Shri A. D. Khutwad**, S. A. have been imparted training for 33rd Indian Scientific Expedition to Antarctica.

Dr. V. Vizaya Bhaskar, Sc. D and **Smt. S. M. Lohogaonkar**, S.A. participated in the three day training programme on Ion Chromatography and Chromeleon CDS Software conducted by M/s DIONEX (India), Pvt., Ltd., Mumbai.

MEETINGS

Dr. (Mrs.) Surinder Kaur, DDGM (H) attended the meeting on 22 October, 2013. with **Shri Pradeep Kumar**, Leader of the Indian side of Indo-Australia JWG, MoWR at Shram Shakti Bhawan, New Delhi for preparation of IWRM Plan for Brahmani-Baitarani River Basin.

Shri Anand Kumar Sharma, Sc. “E”, Meteorological Centre, Dehra Dun attended a disaster management meeting on 14 October, 2013 and provided relevant inputs. The meeting was chaired by **Shri V. K. Duggal**, Member, NDMA.

Shri K. Santhosh, Sc. 'E' along with **Shri S. Sudevan**, Sc. 'D' held a meeting with **Shri Lalit Kumar Dashora**, Senior Consultant, TARU Leading Edge and **Smt. Sandhya Rao**, Executive Director, INRM Consultants at Met. Centre on 23 October, 2013 regarding Early Warning System Component of Geophysical and Hydro meteorological hazard risks of the USAID.

Dr. Y. E. A. Raj, DDGM, RMC Chennai and **Dr. S. R. Ramanan**, Sc. 'E' attended review meet on “Extended Weather for PSLV C25” launch on 5 November, 2013 held at SHAR on 30th October 2013.

Dr. R. Suresh, Sc. 'E' participated as Advisory Committee Member in the first meeting of Centre of Excellence on “Atmospheric Remote Sensing & Advanced Signal Processing” at Sri Venkateswara University Tirupati on 16th November, 2013.

Dr. Jayanta Sarkar, Sc. “E” participated the 7th Annual meeting of Gramin Krishi Mausam Seva (GKMS) at Maharana Pratap University of Agriculture and Technology (MPUAT) during 20-22 November, 2013.

Dr. S. C. Sahu, Director, M. C. Bhubaneswar attended meeting at OSDMA Bhubaneswar for Stakeholders Consultation on “GOI-UNDP project on Enhancing Institutional and Community Resilience to Disasters and Climate Change” on 27 Nov, 2013.

Shri S. B. Tyagi, Sc. 'E' attended the 2nd meeting of the Technical Committee for Organizing India Water Week-2015 (IWW-2015) on 16 December, 2013 at Conference Room of CWC, Sewa Bhawan, R. K. Puram, New Delhi.

Dr. S. R. Ramanan, Sc. 'E', ACWC attended a meeting to evaluate the proposal on measurement and forecasting of weather around Western Ghats of Tamil Nadu convened by the Additional Chief Secretary Government of Tamil Nadu on 19 December 2013.

24th standing advisory committee meeting

24th Standing Advisory Committee meeting of PAC was held at Salt Lake, Kolkata Office on 18 November 2013. **Prof. G. M. Ballabh**, Retd. Prof. of Osmania University, Hyderabad acted as the Chairman of the Committee. Other members of the Committee were also attended the meeting. **Shri S. Sen**, Sc. 'E' was Member Secretary. Number of recommendations were made by the Committee for further advancement of the Centre.

Review meeting of FASAL

Regional Review meeting of FASAL was held at University of Agricultural Sciences, Bangalore during 26-27 November, 2013. Eighteen (18) participants from RMCs/MCs and AMFUs in Tamilnadu, Andhra Pradesh, Kerala and Karnataka participated in the meeting. The meeting was organized to assess the performance of the scheme in the states and improving the accuracy of the yield forecasting.

AWARENESS PROGRAMME

Awareness Programme for users



M. C. Ahmedabad organized One day User meet and awareness programme for state government officials and media on 28th November, 2013 at Circuit House, Ahmedabad.

A colloquium on 'Comets and approaching ISON'



A colloquium entitled 'Comets and approaching ISON' was organized by PAC Kolkata at the seminar hall of Salt Lake, Kolkata Office on 19th November, 2013. There were presentations on different aspects of comets giving emphasis on comet ISON by three guest speakers, viz., Shri Amalendu Bandopadhyay, Senior Scientist of M. P. Birla Planetarium, Kolkata, Dr. (Mrs.) B. S. Shylaja, Director, Jawaharlal Nehru Planetarium, Bangalore and Prof. U. C. Joshi, Retd. Professor, Astronomy and Astrophysics Division, PRL, Ahmedabad. About fifty number of persons from different organizations attended the colloquium. There were good interactions between the audiences and speakers and reply on many scientific queries from the audiences were given by the speakers.

Live TV Programme

Shri Surinder Paul, Director attended a live in show on 12 November 2013 at Prasar Bharti Doordarshan Kendra, Jalandhar, on "Weather updates and Agriculture Advisory of Weather for current fortnight" under the programme "Mera Pind Mera Khet".

Shri B. Puttanna, Director-In-Charge participated in live Phone in programme on TV Channels, TV-9, News 9, public TV, Samaya TV, Kasthuri 24 x 7, All India Radio Gulbarga on 17th, 22nd, 23rd and 24th November, 2013.

Dr. M. Mohapatra, Sc. 'E' participated in a live phone in programme in Hindi of All India Radio broadcast on 23 November 2013 on the topic "Science of Cyclone".

FOREIGN ASSIGNMENTS

Dr. L. R. Meena, Sc. 'F', IMD, New Delhi was on tour to Dhaka, Bangladesh during the period 1-3 October, 2013 to attend the 19th Meeting of Governing Board of SMRC, Dhaka during 1-2 October, 2013 followed by the Selection Committee Meeting on 3rd October, 2013.

Dr. P. C. S. Rao, Sc. 'D', IMD, Pune was on tour to Nanjing, China during the period 28 October to 1 November, 2013 to participate in WMO International Training Workshop on Verification of Operational Seasonal Forecast.

Dr. L. S. Rathore, Director General of Meteorology was on tour to Jiju, Republic of Korea during the period 7-9 November, 2013 to attend the Meeting of CAGM Management Group.

Dr. (Ms.) Kamaljit Ray, Sc. 'E', IMD, New Delhi was on tour to Paris, France during the period 12-13 November, 2013 to participate in the Panel of Expert and Group of Programme Coordinators GPC meeting.

Mrs. Suman Goyal, Sc. 'E', IMD, New Delhi was on tour to Geneva, Switzerland during the period 19-22 November, 2013 to attend the 1st Meeting of the Ad-hoc Steering Group of SCOPE- Now casting.

Shri S. Krishnaiah, Sc. 'F' & **Shri S. B. Tyagi**, Sc., 'E' were on tour to Bangkok, Thailand during the period 27-29 November, 2013 to participate in WMO/ESCAP Panel on Tropical Cyclones (PTC) Integrated Workshop for Developing Synergy among PTC Working Group and to finalize Annual Operation Plan.

Dr. O. P. Singh, DDGM (RMC), New Delhi was on tour Macao, China during the period 28 October to 1 November 2013 to attend the 5th International Workshop on Monsoon (IWMS).

Dr. D. S. Pai, Sc. 'E', was on tour to Brasilia, Brazil during the period 25-27 November, 2013 to attend the Workshop on Operational Long-Range Forecasting GPC and RCs in Support of NMHS and RCOFs

Dr. S. D. Attri, Sc. 'E' was on tour to Antalya, Turkey during the period 18-26 November, 2013 to attend the TECO-2013 & 16th Session of CAS.

Shri Rahul Saxena, Sc. 'E', was on tour to Geneva, Switzerland during the period 3-5 December, 2013 to attend the meeting on Steering Group of Severe weather Forecasting Demonstration Project (SWFDP).

SERVICES FOR WMO

Three Acid rain samples received from WMO (GAW) for 49th Laboratory inter comparison, have been analysed for all parameters in Air Pollution laboratory and results sent to WMO.

MISCELLANEOUS

Awarding Ph. D degree

Dr. D. Pradhan, DDGM, has been awarded Ph. D degree in Science by Jadavpur University on 24 December, 2013.

Smt. S. Stella, Sc. 'D', RMC Chennai presented a scientific talk on synopsis of her Ph. D work on "A Diagnostic Study of Severe Convective Storms and Prognostic Tool for Nowcasting and Short Range Forecasting of Weather and Weather Parameters over Southern Peninsular India" which was submitted to University of Madras, Chennai.

Shri Manmohan Singh, Sc. 'E' conducted an interview for the post of Research Associate/Senior Research Fellow under the scheme "Gramin Krishi Mausam Seva" for Kukumusari, at CSKHPKV, Palampur on 23 October 2013.

Services for launch of PSLV-C25

Weather services and briefing were provided to SDSC/ISRO SHAR in connection with launch of PSLV-C25 (Mangalyaan launch) on 5th November, 2013. Uninterrupted supply of DWR products from DWR Chennai were provided to SDSC SHAR for above launches. WRF based forecast on upper air winds over Sriharikota was provided for Met. briefing for rocket launch.

Appreciation for Forecast

Consequent upon the success in monitoring, prediction and early warning services in case of VSCS PHAILIN, IMD received applause from various sectors. A number of appreciations and recommendations have been received from National and International communities. Forecast and warnings provided by IMD-RSMC New Delhi during cyclone Phailin were highly commended by the President of WMO, Geneva, Technical Commissions and Ahmed Abdulla Mahammed, President, Regional Association – II of WMO community. In National Scenario IMD received appreciation National Disaster Management Authority MHA (Disaster management), Crisis Management Committee headed by Cabinet Secretary and Planning Commission. Further inputs were provided to Planning Commission for future improvement in Cyclone Warning Services and Dr. M. Mohapatra was deputed also to discuss the strategy adopted for success and future plan with Dr. K. Kasturirangan, Member (Science).

Observational System Installed as on 31st December

Automatic Weather Stations 679	Sky Radiometers 12
Automatic Raingauges Stations 1098	GPS Sonde 16
Automatic Weather Radar 15	UV Radiometer 23
Surface Ozone UV Photometer 14	

Parliamentary questionnaire replied

Question Dy. No. 4418, regarding 'Areas that run risk of Global Warming'.

Question Dy. No. Nil regarding 'Effect of climate change'.

Question Dy. No. 8066 regarding 'Impact of global warming on climate change in India'.

Question Dy. No. 361 regarding 'Research on Climate Change'

Question Dy. No. 111 regarding 'Function of IMD'.

Launching of Website

A website www.emausam.hau.gov.in developed by department of Agromet HAU, Hissar under "Gramin Krishi Mausam Sewa" was launched on 18 December 2013 Shri Surender Paul, Sc. "E" attended launching ceremony of website.

Vigilance Awareness

Shri B. Puttanna, Director I/C administering pledge at M.C. Bangaluru

Vigilance Awareness week-2013 was observed from 28 October, 2013 to 2 November, 2013 and pledge was taken on 28 October, 2013, at 1100 hrs (IST) by the officers and staff of IMD at H.Q., New Delhi and other Sub-offices.

Design Storm Studies

Design Storm Studies for 8 projects related to hydro electric dam and barrage were completed. The revenue of Rs.2,64,271/- only was generated for supplying of Design storm values and Rs 42,472/- only for supplying of Intensity Duration Frequency (IDF) Curve for Supaul and Madhepura stations in Bihar.

Antarctic Scientific Programme

IMD team members of 32nd Shri Vilas Jogdand, Shri Subhash Chander and have completed their expedition for Antarctic (Maitri) and returned India safely during December. They were leave by IMD team members 33rd ISEA Team members.

SEMINARS/WORKSHOPS

Hindi Seminar on Dimensions of Meteorology



A seminar in Hindi was conducted at RMC Chennai on 27 November, 2013 on "Dimensions of Meteorology" for school students. Dr. Y. E. A. Raj, Sc. 'E' gave the inaugural address and Shri K. V. Balasubramanian gave the welcome speech. Students and teachers from three schools participated in the seminar. Ms. Reva Sharma, Senior Hindi Officer and Smt. Saritha Joshi, Hindi Officer, IMD New Delhi were special Guests for the seminar. A presentation in Hindi was given on 'Economic benefits of Forecasting in Meteorology'. Smt. Santosh Arora, retired Hindi Officer and Smt. Sharada, Admin. Officers were the judges. Special presentations on 'History of Meteorology' by Shri K. V. Balasubramanian, and 'The use of modern techniques in India Meteorological Department' by Ms. B. Amudha, were made presentation on topics such Tornado, Tropical Cyclones, Importance of weather forecasting for aviation etc. were made by the students. Prizes and certificates were given to students who participated in the power point presentation and special cash prize was given to all prize winners by chief guests.

Seminar on High Impact Weather Events



Released of Report on Thunderstorms over India'

International Seminar On 'High Impact Weather Events and their Prediction over the SAARC Region' was jointly organised by IMD and SMRC, Dhaka at Habitat Centre, New Delhi from 2-4 December, 2013. The Chief guest of the Inaugural ceremony Dr. Shailesh Nayak, Secretary, MoES and Chairman ESSO released Report on 'Pre-monsoon season 2013 Thunderstorms over India' (SAARC STORM Project-2013), Volume of Abstract Proceedings of Seminar 'High Impact Weather Events and their Prediction over the SAARC Region'.

Individual Participation

Dr. D. S. Pai, Sc. 'E' attended the Brainstorming Seminar on "Monsoon Research and Prediction" organized by Indo French Centre for promotion of Advanced Research from 3-5 October, at IMD, New Delhi.

Dr. A. K. Srivastava, Sc. 'E' participated in the workshop on, 'Climate Science Recent Research' from 4-5 October, held at DGM, New Delhi and delivered a lecture on, 'Regional Climate Services'.

Shri O. P. Sreejith, Met. I and Shri S. D. Raskar, S.A. attended second NKN Annual Workshop organized by NIC and IISc, Centre for Development of Advanced Computing, Bangalore from 17-20 October, held at J. N. Tata Auditorium, IISc, Bangalore.

Smt. Latha Sridhar, S.A. attended the Third National Conference OSICON-13 on 'Role of Oceans in Earth System' held at IITM, Pune from 26-28 November, and presented a paper.

Dr. Y. E. A. Raj, DDGM attended the inaugural function of the programme on 'Strategic Workshop on Communication Needs of Marine Fishermen' held during 9-10 November, 2013 at Chennai organised by Deptt. of Fisheries and inaugural function of 'VIIIth Asia Pacific Conference on wind Engineering' organised by CSIR-SERC, Chennai on 11 December, 2013. He also chaired a technical session of this proceedings.

Shri Anand Sharma, Sc. 'E' attended the "Asia Pacific Workshop on Sustainable Livelihoods and Economic Recovery" on 11 November, 2013 and 12 November, 2013 at Chennai and Pondicherry respectively and was Co-panelists for session 4th on the Uttakhand floods and case study. The workshop was organized by UNDP India, Asia Pacific Regional Centre, Bangkok Bureau of Crisis Prevention and Recovery, UNDP India.

Dr. M. Mohapatra, Sc. 'E' Participated as a panelist in panel discussion in the workshop on 'Getting Climate Smart for Disasters' held at New Delhi on 10 December, 2013.

Dr. P. Guhathakurta, Sc. 'E' attended SAARC Seminar on, 'High impact weather events and their prediction over the SAARC Region' held at New Delhi from 2nd to 4th December and he presented a paper.

A workshop on design flood

A workshop on 'Design Flood Issues', was organized by Central Water Commission, New Delhi from 19-20 November, 2013. Dr. Surinder Kaur, DDGM (H) and Shri P. K. Gupta, AMI attended this workshop Dr. L. S. Rathore, Director General of Meteorology addressed the inaugural session of the workshop.

LECTURES

Dr. Y. E. A. Raj, DDGM, RMC Chennai delivered an invited talk in the 9th Kerala Environment Congress on “Culture and Heritage of Environment Management” held at Thiruvananthapuram on 11 October, 2013.

Dr. R. K. Jenamani, Sc. 'E' has presented Fog preparedness of MET for IGI Airport New Delhi at DIAL Fog Media Workshop held on 21 November, 2013. He has also participated in the AAI-DIAL-AIR INDIA FOG preparedness meeting held on 1st November and presented the new IMD Plan for Fog monitoring and forecasting for IGI airport.

Shri B. Puttanna, Sc. 'E' has given professional presentation to Gr 'A', 'B' officers of Government of Karnataka on 'Weather System and forecasting and Disaster Risk Reduction' at District training Institute, Banashankari, Bangalore on 21 November, 2013.

Dr. Somenath Dutta, Sc. 'E' and Dr. P. Khare, Sc. 'E' delivered lectures in Synoptic Meteorology to the student of CAT - B. No. 3 at IITM Pune.

Shri S. B. Thampi, Sc. 'E', DWR Chennai delivered an invited-talk on 'Weather Radar Systems' in the 9th international Radar Symposium India IRSI-2013 Organised by Electronics & Radar Development Establishment, Bangalore, at Bangalore on 13 December, 2013.

Dr. Medha Khole, DDGM(WF) delivered a lecture on “The Monsoon and its forecasting” at training course on 'Agrometeorology towards better advisories for serving end users requirement' organized by Office of Agricultural Meteorology, Pune on 6 December, 2013.

Smt. S. Stella, Sc. 'D', Shri P. S. Kannan, Sc. 'D' and Ms. B. Amudha, Sc. 'D' RMC Chennai delivered lectures on the topic “Cyclone Disaster Management” for the trainees of Anna Institute of Management, Chennai as part of the training programme on 'Cyclone, Flood and Tsunami Disaster Risk Mitigation and Management'.

Dr. A. K. Srivastava, Sc. 'E' delivered a lecture in the Training Programme on, 'Climate Modelling : Simulations and Analysis' at IIT Delhi on 12 December 2013.

Dr. M. Mohapatra, Sc. 'E' delivered an invited talk on mathematical application for tropical cyclone monitoring and forecasting on 14 December 2013 at National Science Centre, New Delhi.

Dr. S. C. Sahu, Sc. 'E' M. C. Bhubaneswar Delivered lecture at National Seminar organized by Biotic and Environmental Resource Foundation on 'Impact of Climate change on Biodiversity and Food Security' on 27 December, 2013.

Publications

A booklet on “Climate of M. C. Bengaluru”, “Climate of Srinagar” and a report titled “updated rainfall statistics-2012” published.

An updated Quantitative Crop Yield Forecast for Kharif Rice was prepared for 26 Meteorological Sub-divisions for October - December 2013 and Climate Diagnostics Bulletin of India for September, October, November and December, 2013 and June to September (Monsoon Season) 2013 were brought out.

During this quarter Vol. No.64 No. 4 (October, 2013) consists 12 Research papers were published.

A Scientific Article on 'Relation between Moon and Earth' by M. V. Kamble was published in Vol. No. 18, MAUSAM MANJUSHA.

Visit of Senior Officials



Shri L. S. Rathore Director General of Meteorology was on tour to Goa during 3-6 December, 2013. He had discussion with officers & staff members and also meeting with Ex. Engineer CPWD on 6 December, 2013 in connection with remaining work of DWR building at Goa.

Dr. Y. E. A. Raj, DDGM visited Kodayar Upper Camp, Kanyakumari District and inspected potential site for installation of ARG on 14 October, 2013. He also inspected ARG installed by IMD at Lower Kodayar and Manimuthar Dam. Dr. Y. E. A. Raj, DDGM inspected DWR Sriharikota on 30 October, 2013.

Shri Anand Singh Khati, Joint Secretary, Ministry of Earth Sciences visited, Meteorological Centre, Dehra Dun on 11 October, 2013 and also visited the site where new building of Meteorological Centre, Dehra Dun is coming up and had a discussion with CPWD engineers.

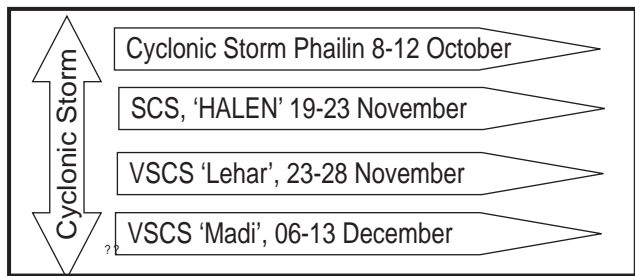
Inauguration of Guest House at M.O., Port Blair



Dr. D. Pradhan, DDGM, was on tour to Port Blair from 19- 22 December, 2013 in connection with the inspection tour of Shri Anand S. Khati, Joint Secretary, MOES. Shri Khati, J.S., inaugurated newly constructed Guest House at M.O. Port Blair and also visited office. He inspected all activities of M.O., PBL including Surface Observatory, AWS, RS/RW and Seismo unit.

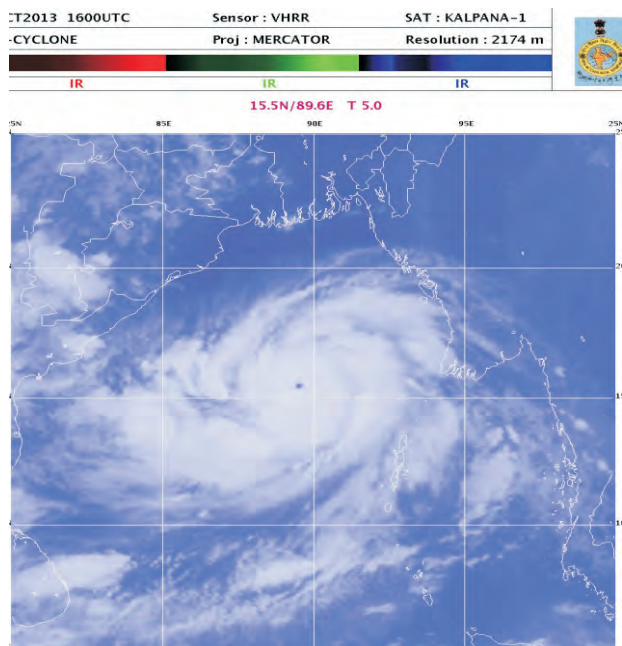
CYCLONIC STORMS DURING THE PERIOD

Four cyclonic storms developed over India Bay during the period. These are :



a. A low pressure area developed over Gulf of Siam & neighbourhood, intensified into a depression over north Andaman Sea on 8th and into a cyclonic storm, **PHAILIN** over east central Bay of Bengal on 9th October 2013. It intensified into a very severe cyclonic storm over westcentral and adjoining northwest Bay of Bengal on 12th and crossed the coast near Gopalpur (Odisha) between 2030 to 2130 hours (IST) of 12th October 2013. It caused vigorous rainfall activity over east and adjoining central & peninsular India.

b. Under the influence of active ITCZ, a depression formed over the west central Bay of Bengal in the early morning of 19 Nov, 2013. It moved west-northwestwards and itself intensified into a deep depression in the night of 19th Nov, and further into a **cyclonic storm, 'HELEN'** in the morning of 20 Nov at about 330 km east-southeast of Machilipatnam. It continued to move west-northwestwards and intensified into a severe cyclonic storm in the early morning of 21 Nov at a distance of 260 km east-southeast of Machilipatnam. On 22 Nov, It moved initially westwards and then west-southwestwards and crossed Andhra Pradesh coast close to south of Machilipatnam between 1330-1430 hrs (IST) of 22nd Nov as a cyclonic storm. It then weakened gradually while moving west-southwestwards across Andhra Pradesh and lay as a low pressure area over coastal Andhra Pradesh and neighborhood in the early morning of 23 November 2013.



1600 UTC, VHRR, KALPANA-1 Cyclone Storm Phailin

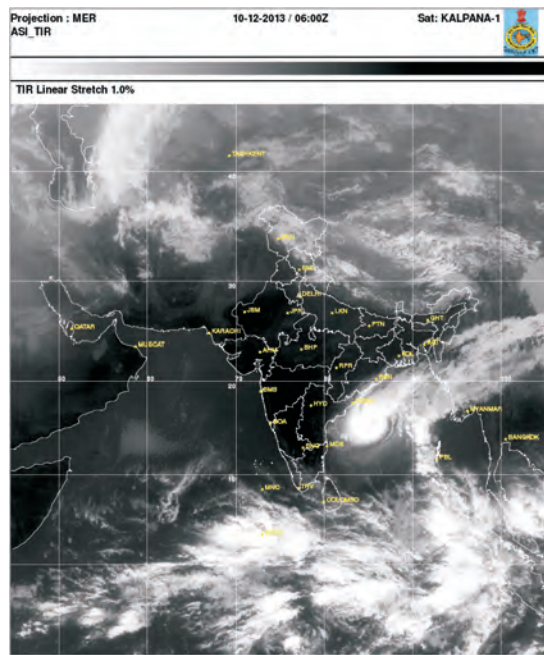
c. The **very severe cyclonic storm, Lehar** developed over south Andaman Sea from a remnant cyclonic circulation from South China Sea on 23rd Nov 2013 evening when it lay as depression located about 550 km south-southeast of Port Blair. It intensified into a deep depression in the same night and into cyclonic a storm in the early morning of 24 November, 2013 while moving northwestward towards Andaman & Nicobar Islands.

On 25th it emerged into southeast Bay of Bengal and moved west-northwestward, intensified into a very severe cyclonic storm in the early hours of 26 November near southeast Bay of Bengal. It came under the influence of colder Sea, high vertical wind shear and entrainment of dry & cold air into the cyclone field on 27th as a result it rapidly weakened into a deep depression by early morning of 28th and crossed Andhra Pradesh coast close to south of Machilipatnam around 1400 hrs IST of 28 November, 2013. Annual track forecast error (kms) and forecast skill (%) of cyclone is given in Table.

Annual Average track forecast error (km) and skill (%) during 2013

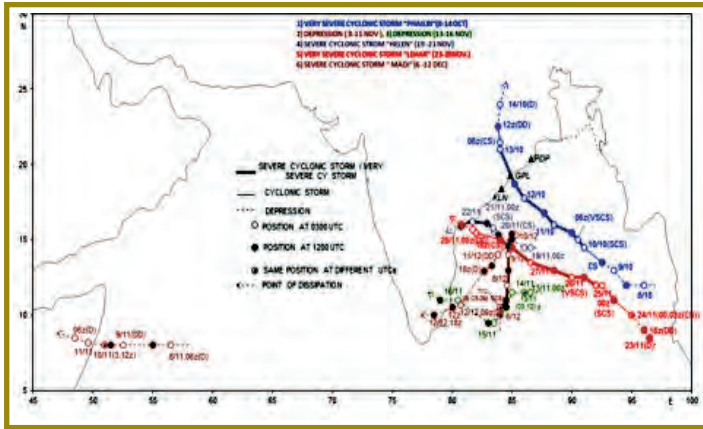
Lead Period (Hours)	Annual Track Forecast Error (km)	Annual Track Forecast Skill (%)	No. of Forecasts Verified
12	63.7	39.1	94
24	109.0	41.6	84
36	135.1	53.5	72
48	156.9	62.5	65
60	175.0	67.3	55
72	194.7	70.9	44
84	205.1	72.7	34
96	251.3	71.7	26
108	304.9	67.8	18
120	296.4	73.4	11

Therefore in case of 12 hrs lead time, the error in track prediction will be less.



Kalpana -1 Sat. imagery of VSCS 'Madi' at 100600 UTC



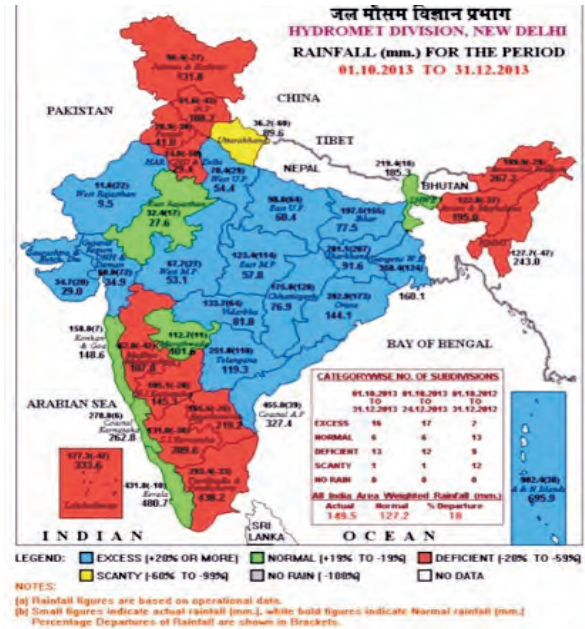


Observed tropical cyclone tracks during the post monsoon season, 2013

Weather Feature Post-monsoon season 2013

IMD operational forecast for the 2013 North-east monsoon season is that the Northeast monsoon season rainfall over South Peninsula (Tamil Nadu, Coastal Andhra Pradesh, Rayalaseema, Kerala and South Interior Karnataka) is most likely to be normal (89 - 111% of long period average). The long period average (LPA) of the North-east monsoon season rainfall over the south Peninsula for the base period 1951-2000 is 332.1 mm. The long period average (LPA) of the North-east monsoon season rainfall over the Tamil Nadu for the base period 1951-2000 is 438.2 mm. Under its influence, most of the sub-divisions of south Peninsular India received excess rainfall activity. IMD operational forecast for the 2013 North-east monsoon season is that the Northeast monsoon season rainfall over South Peninsula (Tamil Nadu, Coastal Andhra Pradesh, Rayalaseema, Kerala and South Interior Karnataka) is most likely to be normal (89 - 111% of long period average).

d. A well marked low pressure area lay over southwest Bay of Bengal on 3-5 December, 2013. It concentrated into a depression in the morning of 6 December and deep depression in the same midnight. It moved very slowly northward and intensified into a cyclonic storm, 'Madi' in the morning of 7 December. It continued to move slowly and intensified into a severe cyclonic storm in the afternoon of 7 December and into a very severe cyclonic storm in the forenoon of 8 December. The very severe cyclonic storm weakened into severe cyclonic storm in the evening of 9 December. Due to weakening, the system moved southwestward after reaching the latitude of 15.7° N under the influence of lower and middle tropospheric steering ridge. It further weakened into cyclonic storm on 11 December, into deep depression in the morning of 11th, depression in night of 11th. It crossed Tamil Nadu coast near Vedaranniyam around 1900 hrs IST of 12th December, emerged into Palk strait around 2030 hrs IST and again crossed Tamil Nadu coast near Tondi around 2230 hrs IST. It then emerged into south east Arabian Sea as a well marked low pressure area on 13 October.



राजभाषा का कार्यान्वयन

नगर राजभाषा कार्यान्वयन समिति (दिल्ली मध्य) की वर्ष 2013 की दिनांक 24 अक्टूबर, 2013 को आयोजित दूसरी बैठक में वरिष्ठ हिन्दी अधिकारी सुश्री रेवा शर्मा तथा हिन्दी अधिकारी श्रीमती सरिता जोशी ने भाग लिया।

प्रादेशिक मौसम केन्द्र, नई दिल्ली द्वारा चलाए जा रहे मौसम प्रशिक्षण कार्यक्रम में दिनांक 14 नवम्बर, 2013 को इंटरमीडिएट प्रशिक्षण के प्रशिक्षणार्थियों को और दिनांक 19 नवम्बर 2013 को एलीमेंट्री प्रशिक्षण के प्रशिक्षणार्थियों को तथा प्रादेशिक मौसम केन्द्र चेन्नै द्वारा चलाए जा रहे एलीमेंट्री मौसम प्रशिक्षण कार्यक्रम में दिनांक 25 नवम्बर, 2013 को वरिष्ठ हिन्दी अधिकारी सुश्री रेवा शर्मा ने राजभाषा हिन्दी विषय पर व्याख्यान दिया तथा हिन्दी अधिकारी श्रीमती सरिता जोशी ने कम्प्यूटर और हिन्दी-सुविधाएँ व उपयोग विषय पर प्रेजेंटेशन दिया और कम्प्यूटर पर यूनिकोड में कार्य करना सिखाया।

विज्ञान और प्रौद्योगिकी मंत्रालय तथा पृथ्वी विज्ञान मंत्रालय की संयुक्त हिन्दी सलाहकार समिति के सदस्य डॉ. दुर्गादत्त औझा का पर्यावरण में व्याप्त अदृश्य प्रदूषण विषय पर दिनांक 17 दिसम्बर, 2013 को वृष्टि सभागार में व्याख्यान कार्यक्रम आयोजित किया गया। इस व्याख्यान कार्यक्रम की अध्यक्षता विभाग के उपमहानिदेशक डॉ. एल. आर. मीणा, वैज्ञानिक एफ ने की।

राजभाषा विभाग द्वारा प्रायोजित केन्द्रीय हिन्दी प्रशिक्षण संस्थान के माध्यम से कम्प्यूटर पर हिन्दी में काम करने के लिए बेसिक प्रशिक्षण कार्यक्रम के तहत मुख्यालय के 6 कर्मचारियों को प्रशिक्षण के लिए भेजा।

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