CYCLONIC STORMS

Three cyclones viz. Laila, Bandu and Phet formed over north Indian Ocean during pre-monsoon season of 2010. While cyclone Laila (17-21 May) developed over the Bay of Bengal, Bandu (19-23 May) and Phet (31May-7 June) developed over the Arabian Sea. The tracks of these cyclones are shown in Fig.

Second cyclonic storm “Bandu” formed over southwest Arabian sea off Somalia coast during 19-23 May, 2010. Initially it moved in northwesterly direction and later in a westerly direction. Due to interaction with land surface and colder sea, it dissipated over Gulf of Aden. It caused heavy rain in Somalia and Yemen.

The “Phet-very severe cyclonic storm” formed over central Arabian sea on 31st May. It crossed Oman coast on 4th June, emerged into northwest Arabian Sea, moved east-northeastwards and crossed Pakistan coast, closed to the south of Karachi on 6th June evening between 1800-1900 hrs IST. It then moved east-northeastwards across south Pakistan and Rajasthan and weakened gradually into a well marked low pressure area over east Rajasthan and adjoining northwest Madhya Pradesh in the evening of 7 June. It was the rarest of the rare track in Arabian Sea as per the recorded history during 1877-2009. It was one of the longest tracks and longest life period in recent years.

The severe cyclonic storm “Laila” formed over southeast Bay of Bengal during 17-21 May 2010 and crossed Andhra Pradesh coast near Bapatla between 1630 and 1730 hrs IST on 20th May 2010. It caused wide spread rainfall with scattered heavy to very heavy falls and isolated extremely heavy falls over coastal Andhra Pradesh leading to flooding in low lying areas. Gale winds speed reaching 90-100 kmph were observed. The storm surge of 2 to 3 meters inundated the low lying areas of Guntur, Prakasam and West & East Godavari districts.

The system has the capability to automatically design, generate and disseminate tailor-made weather products. The Hor’ble Minister also released a Hand Book & CD on “Public Weather Services” of India Meteorological Department. This will help to establish a world class weather service in the country triggering more timely actions by disaster management agencies, public and other users.

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**PUBLICATIONS**

**Climate Diagnostics Bulletin** of India for February, March, April and Winter Season 2010 (Jan-Feb) were brought out.

Research report RR No. 2/2010 entitled “District-wise Drought Climatology of the Southwest Monsoon Season over India Based on Standardized Precipitation Index (SPI)” was published by National Climate Centre.

Crop Yield Forecast for Rabi wheat was prepared for 16 meteorological subdivisions for April & May 2010. Computation of Monthly Aridity anomaly indices for March and April were completed.

Drought Monitoring over India through Normalized Difference Vegetation Index (NDVI) was brought out.

Two Weekly Aridity Anomaly maps for Southwest monsoon 2010 for the period 4th to 10th June and 11th to 17th June were prepared.

Two Drought Outlook maps for the period 4th to 10th June and 11th to 17th June were prepared.

**RESEARCH PUBLICATIONS**

A paper entitled, “A decision support tool for issuing short range aviation weather forecast over Chennai Airport” by R.Suresh, S.Stella and M.N. Santhanam of AMD Chennai has been published in Vatavaran, Vol.33, June 2009.

A paper entitled, “The 2009 Bhutan and Assam Felt Earthquakes (Mw 6.3 and 5.1) in Northeast Himalaya Region and the Active Kopil Fault” by J.L. Gautam, Director as a Co-Principal Investigator (PI) contributed under Integrated Long Term Programme (ILTP).


**OTHER INSTALLATIONS**

A radome, pedestal and antenna system, transmitter, receiver power and power of Doppler weather radar was installed at M.C. Hidayabad and first scanning was successfully done on 17th June 2010.

Eleven AWS were installed in the various district of Uttarakhand during May 2010. Synergy Forecasting workstation were installed at RMC Mumbai and 0/0 DDGM(WF), Pune.

**GLOBAL ATMOSPHERIC WATCH (GAW)**

A team of engineers from M.C.F. Hassan have installed the R.F. and Base Band equipments at Earth Station Unit during the period from 14 to 25 June 2010 and began receiving VHRR, AWS(DRT) data of KALPANA-1 and INSAT-3A.

**INSTALLATIONS**

Radio sounding system

The Vaisala GPS-based radio sounding system for use in venue specific forecasts/NOWCAST during Commonwealth Games 2010, was installed at RMO Ayanagar, and Site Acceptance Test (SAT) was conducted.

AVM (Dr.) Ait Tyagi, DDGM visited the installation site on 6th June and special ascent was arranged during his visit. DGM monitored the performance/utilities of the system thoroughly and highly appreciated the system and the performance. He encouraged the staff to take RS/RW ascents carefully and to provide good quality data for better forecasting.

**GAW, Ranichauri**

Sh.B.Mukhopadhyay, Scientist ‘E’ and Dr. S.D. Attri, Director visited GAW station, Ranichauri during 11-12th June, 2010 and discussed with Dean, G.B. Pant University of Agriculture and Technology, Hill Campus, Ranichauri, regarding installation of new equipment at GAW, Ranichauri and made a presentation on evolving scientific collaboration between the university & IMD.
BRAINSTORMING MEETING
Sat Met Division organized a Brainstorming session on “Users’ need of Satellite data and products” on 23rd April 2010 in Conference Hall of Mamsam Bhawan, New Delhi under the chairmanship of DG (IMD) in which participants from NHAC/NWP/MO’S/RMC Kolkata & Chennai, IITM, IAR and INDEONOM presented their satellite data requirements and views.

PLAN REVIEW MEETING
The Plan Review Meeting of IMD was held at Mamsam Bhawan, Lodi Road, New Delhi from 6th May to 8th May, 2010 to review the Plan Schemes during financial year 2009-10, their current status, planning of objectives and realistic targets of the schemes in qualitative and quantitative terms, and requirement of funds during 2010-2011. All the ADGMs & DGDMs have participated in the meeting. Action plan for Modernization of Phase-II was also discussed. DG (IMD) welcomed 21 participants and congratulated all for the successful completion of various Plan activities of the Department during financial year 2009-2010. The elaboration of the various activities of the Modernization Phase-I and advised all DGDMs to act as facilitators than being stumbling blocks. He also advised project Directors to report directly to him about the progress of the project.

VISIT OF DGMM AT MC PATNA
AVM (Dr.) Ajit Tyagi Director General of Meteorology visited MC, Patna on 21st May 2010. He inspected the progress of building construction work for installation of Doppler Radar. He also held a meeting with officers of Meteorological Centre, Patna, and discussed various points pertaining to opening of new observatories, upgradation of communication facilities and matters concerned with Bihar state Govt.

GLOBAL FRAMEWORK CLIMATE SERVICES
EMRC organized Consultative Meeting on “Global Framework Climate Services” on 9th April, 2010 at India Habitat Centre, New Delhi under the Chairmanship of Secretary, MOES which was attended by senior scientists & experts from different Departments & Organizations. DGDM welcomed and Secretary, MOES addressed the delegates. A talk on “WMO initiative for building GFCS” was given by Dr. Avinash Tyagi, Director Climate & Water Department, WMO. At the end of the meeting, the Consultative Group was recommended.

INDO AUSTRALIAN PROJECT
Dr. M. Satya Kumar, Director I/C (Scientist “F”) visited the site at Bairampalli Village of Warangal on 20th April along with Dy. High Commissioner of Australia to India and ANGARU officials. He explained to Dy. High Commissioner of Australia the importance of the Agriculture Advisory Bulletins issued by India Meteorological Department.

MEETINGS
Volume : 3, No. 2, Apr – Jun 2010

GLOBAL FRAMEWORK CLIMATE SERVICES
Dr. A. L. Koppal, DGDM (G) and Shri U. R. Joshi, Director attended Plan review meeting at DGMM office, New Delhi from 6-8 May 2010.

Dr. M. Mohapatra, Director (CW) attended a meeting in Cabinet Secretariat on 20th May 2010 and briefed all participants about severe cyclonic storm “LAILA”.

Dr. A. B. Mazumdar, DGDM (WF) was on tour to New Delhi on 30th June 2010 to attend the 3rd meeting of Scientific Advisory Committee on Aviation Meteorology.

Sri B. Puttanna, Director-in-charge participated in ‘State Level Committee to Monitor Weather, Crop Condition and Drought Relief Measures’ meeting held in the Chamber of the Additional Chief Secretary and Development Commissioner, Vidhan Sabha, Bangalore on 7th June 2010.

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Shri. A. K. Srivastava, Director addressed Sixth Session of the Forum on Regional Climate Monitoring Assessment and Prediction for Asia (FCORA II) at Beijing, China from 6th to 8th April 2010.

Dr. R. S. Dattatreya, Scientist, "F" was deputed to Bandung Ache, Indonesia from 14-16 April 2010 to attend the 7th Session of Inter-Governmental Coordination Group 1 for the Indian Ocean Tsunami Warning and Mitigation System.

Shri. A. K. Jaswal, Director attended first CBS meeting of Inter Panel Expert Team on Metada and Data Interoperability held at Geneva, Switzerland from 27th to 29th April 2010.

Shri. A. D. Tathe, Meteorologist was deputed to participate in the programme ‘ICT for Meteorological Services for SAARC Countries’ during 01-30 May 2010 at Seoul, Korea. The programme was organised by KOICA under Official Development Assistance programme of the Government.

Shri Satish Bhatia, Director was deputed to Kathmandu, Nepal to attend Planning Meeting for site selection for installation of AWS, GPS Sonde and Doppler Weather Radars from 24-25 May 2010.

Dr. Jayanta Sarkar, Director attended the WMO/UNISDR Expert Group Meeting on Agricultural Drought Indices, held at Murcia, Spain from 2-4 June 2010.

Shri S. Krishnaiah, Scientist “F”, was deputed to Geneva, Switzerland to attend 6th Session of Expert Team on requirements and implementation of AWS Platform from 22-25 June 2010.

Three Officers have been deputed to USA to participate in Training Course on INSAT-3D Project at University of Wisconsin, Madison, USA, during 6th June to 5th October 2010.

13 Officers have been deputed for twelve week training under Modernization programs on Operation and Maintenance of Doppler Weather Radar at Beijing, China during period from 21st June to 12th September 2010.

Shri Prabhu Chawla addressing the audience

The Hor’ible Minister of S&T graced the valedictory function as Chief Guest & Secretary MoES presided over the session.

Dr. Aruna Sharma, DG, Doordarshan & Shri Prabhu Chawla, Editor, India Today were the Guests of Honour. They spoke about importance of media and weather during adverse weather situation. Electronic and print media may play very critical role not only in disseminating the weather forecast/warnings to every nook & corner of the country but also in making these understandable to the common people in their language.

Dr. V. R. Rao, Sh. S. K. Mukherjee, Shri Kaushik and Shri Pailwal developed software to generate satellite products on CIPS at ISRO division.

Dr. Shri Anand Kumar Sharma, Dr. R. V. Rao, Dr. K. Ramani, Dr. N. V. S. R. Rao & Dr. S. S. Rathour participated in the seminar held at IME, Gwalior on 14th to 16th April, 2010.