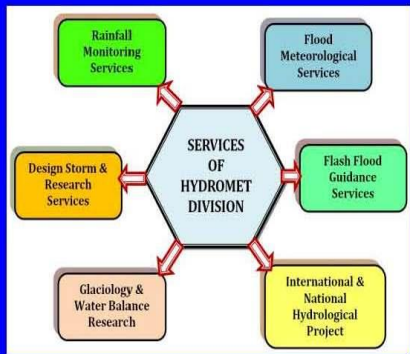


HISTORY OF HYDROMET DIVISION

- (i) Govt. of India adopted "Rainfall Resolution of India of August 1890" to have systematic rainfall record across the country, India Meteorological Department was made sole custodian of rainfall observations in India.
- (ii) Hydromet Unit established in 1949 at Alipore for catering to the needs of Damodar Valley and to develop value added products from the rainfall data archived in IMD.
- (iii) Storm Analysis Unit established at New Delhi in 1966 as per Khosla Committee's recommendations and "Flood Estimation Planning & Co-ordination Committee" formed for the purpose of hydrological design of railway road and bridges etc.
- (iv) Subsequently Hydromet Division established at New Delhi in 1971, for providing technical and operational support to various Central / State Govt. Organizations and other agencies in the field of Hydromet design, flood forecasting, water management and agricultural planning purposes.



INTERNATIONAL & NATIONAL HYDROLOGICAL PROJECT SERVICES

- ❖ Rendering support to International Hydrological Programme (IHP) of UNESCO's.
- ❖ Maintains co-ordination with National Agencies like CWC, NIH, NWDA, Brahmaputra Board, BBMB etc. and participates in International Programmes viz., IHP of UNESCO, RA-II, WMO Chy, AWCI etc..

RECENT ACHIEVEMENTS

- ❖ Implementation of Customised Rainfall Information System (CRIS) for auto-generation of the Rainfall Statistics summary & maps and graphs since 15th Jan 2015.
- ❖ For the 1st time, all the districts represented in the rainfall observational Network of District Rainfall Monitoring scheme. (DRMS)
- ❖ Increased popularity of Customized Rainfall information system (CRIS). Website gets 81 lakhs visitors.
- ❖ New RF Normal (1960-2010) implemented.
- ❖ Increase from 660 to 685 districts & 4359 to 4737 rainfall stations in CRIS.
- ❖ Validity period of QPF is enhanced from 5 days (QPF for 2 days & outlook for 3 days) to 7 days (QPF for 3 days & outlook for 4 days) days.
- ❖ Enhancement of 121 to 153 Sub basins.
- ❖ New FMO activities started at MC, Srinagar(2015); MC Bengaluru (2016) and RMC Chennai (2016)
- ❖ Improvement of operational QPF over NWP guidance by 14% in Day1 and 10% in Day2.
- ❖ Real-time monitoring of QPF & Flood situation and shared with central agencies.
- ❖ Preparation of Standard Operations Procedures for Hydromet Services including Rainfall Monitoring, Design Storm Studies, Flood Meteorological and Flash Flood Guidance Services.

KEY STAKEHOLDERS

PMO, Cabinet Secretary, Secretaries Ministry of Earth Sciences, Agriculture, Water Resources, etc. NDMA, SDMA, Hydro Electric Power Projects, NCFC, MoES Institutions & IMD Sub Offices, Central Water Commission, National Institute of Hydrology, Central Water Commission, Flood Forecasting divisions of CWC, National Security Council, Brahmaputra Water Board, National Water Mission, NWM, TERI, BRTMS, CDAC, NRSC, etc

CENTRAL HYDROMET OBSERVATORY (CHO)

Established for Weather Observations and used as a Model observatory at Headquarter to visitors. Annually about 3000 Students, Teachers, Scientists, Engineers & General Public visit CHO for awareness in meteorology.

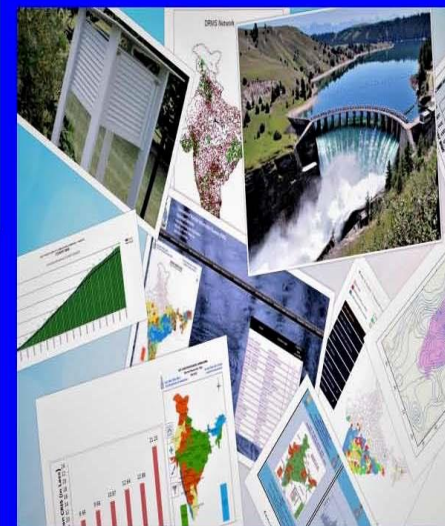
PUBLICATIONS

- ❖ PMP Atlas in coordination with CWC for the 9 major river basins.
- ❖ Indigenously prepared PMP Atlas for rivers Krishna & Indus..
- ❖ State-wise Generalized Isopluvial Atlas Maps of 4 Zones.
- ❖ ESSO Met Monograph on Design Storm Studies for 2018 & 2019.
- ❖ ESSO Met Monograph on Annual Rainfall for last 8 years



INDIA METEOROLOGICAL DEPARTMENT

MINISTRY OF EARTH SCIENCES
GOVERNMENT OF INDIA



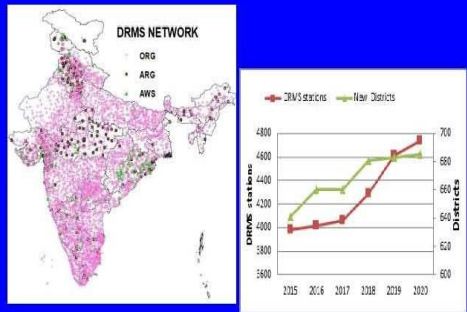
HYDRO METEOROLOGICAL SERVICES

Contact Details:

Hydromet Division, O/o. Director General of Meteorology, IMD (HQ), Mausam Bhawan, Lodhi Road, New Delhi -3
Contact Nos (011-24619167/4382 4365)
Toll Free No. 1800 180 1717
Website: [https:// hydro.imd.gov.in/](https://hydro.imd.gov.in/)

RAINFALL MONITORING SERVICES

- ❖ Auto Monitoring of the rainfall situation over the entire country throughout the year through CRIS.
- ❖ Rainfall observation network of about 4700+ stations used to compile and generate the Rainfall statistics (Maps and Tables).



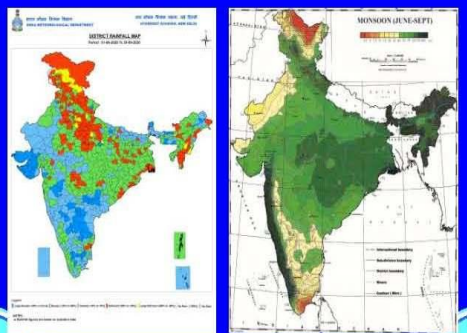
- ❖ Temporal domain includes Daily, weekly, monthly and annual, while spatial domains are district, subdivision, state and All India level.

- ❖ Standard Rainfall Categories adopted.

CATEGORY	% DEPARTURES	Color Code
Large Excess (LE)	≥ 50%	Dark Blue
Excess (E)	≥ 20% and ≤ 50%	Light Blue
Normal (N)	≥ -15% and ≤ +15%	Green
Deficient (D)	≥ -65% and ≤ -20%	Orange
Large Deficient (LD)	≥ -95% and ≤ -60%	Yellow
No Rain (NR)	= -100%	White
No Data (*)	Data Not Available	Grey

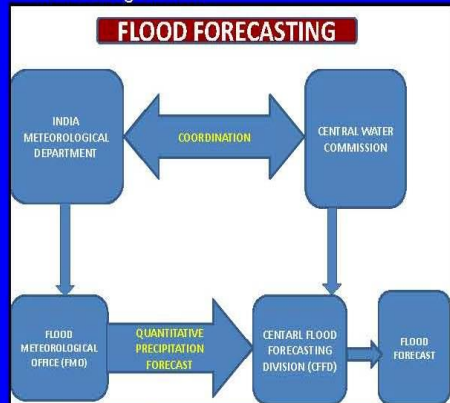
- ❖ Dissemination of rainfall products to both the general public and several other user agencies.

- ❖ On demand, supply of rainfall data to various government organizations / Ministries, etc



FLOOD METEOROLOGICAL SERVICES

- ❖ Flood Forecasting Centres established in all flood prone basins recommended by Committee on Floods & Flood Relief (1972).
- ❖ Flood Meteorological Offices established by IMD to work in close co-operation with Flood Forecasting Centres

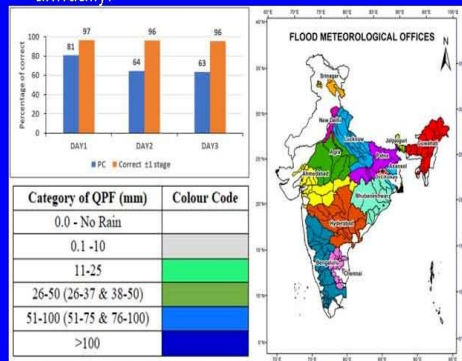


- ❖ Real time monitoring of Flood and Rainfall situation over 153 sub-basins with central agencies.

- ❖ During Flood Season, Hydromet bulletin with QPF & heavy rainfall warnings and lead time of 72 hours provided to CWC by 14 flood Meteorological Offices.

- ❖ Special Quantitative Precipitation Forecast (QPF) is issued during Cyclone or Heavy Rainfall Spells during non-flood season.

- ❖ Verification of QPF during the flood season annually.



- ❖ New dynamical models based QPF using GFS, NCUJ and for PQPF using GEFS & NEPS.

FLASH FLOOD GUIDANCE SERVICES

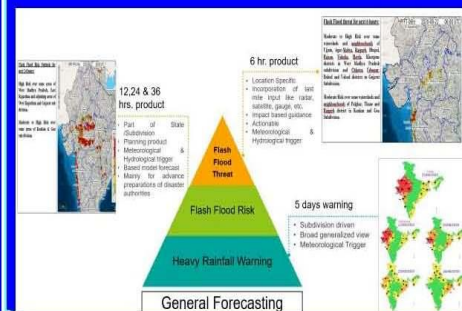
- ❖ A Flash Flood is a short duration hydro meteorological event with a relatively high peak, discharge usually having less than 6 hours between the occurrence of the rainfall and the peak flood.

- ❖ WMO recognized India as Regional Centre to cater to flash flood guidance services at local watersheds level to CWC, NDMA and NHMS's of India & member countries viz. Nepal, Bhutan, Bangladesh & Sri Lanka.

- ❖ This System is designed to provide every six hours support to South Asian Region for the development of guidance alerts of flash floods from heavy rainfall events.



- ❖ An impact based flash flood threat & risk at local level (6 – 24 hours in advance) with the integration of general rainfall warnings implemented with the dynamic GIS interface.



- ❖ FFGS services via social media.



- ❖ Milestones of SAsiaFFGS



- ❖ Dedicated to the nations of south Asia region on 23rd Oct 2020 by Dr. M. Rajeevan, Secretary & Chairman ESSO, MoES.



DESIGN STORM & RESEARCH SERVICES

- ❖ Design Storm Studies to evaluate the design storm estimates (rainfall magnitude and time distribution) for the design engineers in estimating design flood for hydraulic structures, irrigation projects, dams etc. on various rivers.

- ❖ IMD provides estimates of short duration Return Period rainfall values, isopleth maps, intensity duration frequency (IDF) curve for any construction of minor structures like bridge construction, railway & hydro projects etc.