

Ministry of Earth Sciences (MoES)
Govt. of India
Summary of Important Developments – June, 2024

1. Important policy decisions taken and major achievements during the month:

Provided in Annex-I.

2. Important policy matters held up on account of prolonged Inter-Ministerial consultations:

Nil

3. No. of cases of 'sanction for prosecution' pending for more than three months:

Nil

4. Particulars of cases in which there has been a departure from the Transaction of Business Rules or established policy of the Government:

Nil

5. Status of ongoing Swachhta Abhiyan (progress under Special Campaign):

As a part of Special Campaign 3.0, various activities were carried out under Swachhta Abhiyan during the month of April 2024 in MoES and its institutes.

6. Status of Rationalization of Autonomous Bodies:

The Cabinet in its meeting on 13th July 2022 approved the merging of 5 Autonomous Bodies under MoES to one Autonomous Body. An umbrella Autonomous Society 'Earth System Science Council (ESSC)' has been registered in the office of the Registrar of Societies under Govt of NCT of Delhi along with Memorandum of Association and Rules and Regulations of ESSC on 26th December 2023.

7. Information on specific steps taken for utilization of the Space Technology based tools and applications in Governance and Development:

Potential Fishing Zone advisories are generated using the satellite derived parameters viz., Sea Surface Temperature, and Chlorophyll. Further, data from Global satellite data are used on continuous basis for generating short range and medium range weather forecasts.

8. Vacancy position of senior level appointments in the Ministry/ Department, including Autonomous Bodies/ PSUs:

It is confirmed that the incumbency details of all the posts in the Ministry/ Department and its organizations falling under the purview of the Appointments Committee of Cabinet (ACC) have been updated on ACC Vacancy Monitoring System (AVMS) and are placed at Annex-II.

9. List of cases in which ACC directions have not been compiled with:

It is confirmed that the directions of ACC are complied with.

10. Details of Foreign Direct Investment (FDI) Proposals cleared during the month and status of FDI proposals awaiting approval in the Ministry/ Department:

Not Applicable.

Important policy decision taken and major achievements:

- Dr Jitendra Singh assumed the charge of Minister of State (Independent Charge) of the Ministry of Earth Sciences (MoES) on 11th June 2024.
- On June 15, 2024, The Hon'ble Minister of Earth Sciences Dr. Jitendra Singh chaired a meeting in Ministry, focusing on strategic plans spanning 100 days, 5 years and goals upto 2047 of Ministry.
- Air Quality Early Warning & Decision Support System for Jaipur, Rajasthan was launched by Hon'ble Chief Minister of Rajasthan, Shri. Bhajan Lalji Sharma on the occasion of World Environment Day on 5th June 2024.
- National Centre for Coastal Research (NCCR) prepared the Shoreline Management Plan for Tamil Nadu and submitted the draft report to the Department of Environment and Climate Change, Tamil Nadu.
- Indian National Centre for Ocean Information Services (INCOIS) and Reliance Foundation signed an MoU on 27th May 2024 to empower coastal communities with vital oceanographic information and tools. This collaboration aims to enhance the safety, livelihoods, and resilience of those who depend on the ocean.

There was no matter pending before the Cabinet requiring decision/ approval.

Minimum Government, Maximum Governance:

- Dissemination of Agromet Advisories to user communities through SMS and IVR technology is continued in the country through Kisan Portal and under PPP (Public Private Partnership) mode. Presently, about 7.6 million farmers in the country are getting advisories directly.
- Adverse-weather SMS warnings are being sent through mobile to the State Government officials / Disaster-related officials / Central Government organizations/common man.
- Daily forecast along with warning and city forecast for many cities are disseminated through email to all users including state authorities, electronic and print media.

Atmospheric Observation Systems Network

Observation Type	Commissioned so far	Installations during the month	Data Reporting
Automatic Weather Station (AWS)	721*	--	721
Automatic Rain Gauge (ARG)	500**	--	500
Agro AWS	200	--	183
Global Positioning System (GPS) Sonde based Radio-Sonde (RS)/ Radio-Wind (RW) stations	56	--	56
Doppler Weather Radar (DWR)	41***	--	32
Ozone (Ozone Sonde + Total Ozone)	02	--	02
Surface Ozone (Electrochemical Concentration Cell method)	09	--	05
Nephelometer	12	--	09
Sky Radiometer	20	--	13
Black Carbon Monitoring Systems (Aethalometer)	25	--	23
Air Quality Monitoring System (System of Air Quality and Weather Forecasting and Research (SAFAR))	10 (Delhi) 10 (Mumbai) 10 (Ahmedabad)	--	10 (Delhi) NIL (Mumbai)**** NIL (Ahmedabad)
Hydromet. (India Meteorological Department (IMD) & Extra-departmental excluding AWS & ARG)	---	--	4779
Aviation	108	--	108
Radiation Stations	47	---	47

* Out of Total 1008 commissioned, 287 are outlived.

** Out of total 1382 commissioned, 882 are outlived.

*** Including 2 Doppler Weather Radar of Indian Space Research Organization.

**** Contract with the firm is not renewed.

Modelling

Every Thursdays, National Centre for Medium Range Weather Forecasting (NCMRWF) coupled model based Extended Range Prediction (ERP) for four weeks for rainfall, surface temperature and winds (full fields and anomalies) were provided in real-time to (i) Long-range forecast and Agri-Met divisions of IMD, (ii) Indian Institute of Tropical Meteorology (IITM) ERP group, (iii) Space Applications Centre (SAC), (iv) Defence Geo-informatics Research Establishment (DGRE), (v) Indian Air Force (IAF), (vi) Navy, (vii) Geological Survey of India (GSI), (viii) National Institute of Hydrology (NIH), (ix) All regional centers of IMD and (x) Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) countries Met Departments. Additionally, snow forecasts were provided to Defence Research and Development Organisation (DRDO) and IAF for use at their end. On the last Thursday of the month, i.e., on 27th June 2024 the monthly mean forecast valid for July 2024 were also included for the users.

Monthly Weather Summary (June 2024)

a) Important Weather Events during the month

Extremely Heavy rainfall spell observed over northeast India and and Sub-Himalaya West Bengal during 12-20 June 2024 which causes Floods in these areas.

Western Disturbances (WDs):

3 WD was observed across north India (5-10, 19-25 and 26-28 June).

Heat Wave:

10-18 heatwave days observed across north and adjoining central & east India covering areas of West Rajasthan, Himachal, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Jharkhand, East Madhya Pradesh, Bihar and Odisha.

b) Rainfall Scenario:

The rainfall for the country as a whole, for the month of June-2024 has been recorded as 147.2 mm which is 89% of its Long Period Average (LPA) of 165.3 mm.

c) Heavy Rainfall Events:

Warning issued for	No. of Heavy/Very Heavy Rainfall Events (>64.4 mm): 306
	Percentage correct (in %) for Rainfall >64.4mm
Day1 / 24 Hours	80
Day2 / 48 Hours	78
Day3 / 72 Hours	78

d) Temperature Scenario:

All India average temperature during June 2024 was 30.55°C. which was 8th highest since 1901. The maximum temperature of 47.6°C had been recorded at Prayagraj (East Uttar Pradesh) on 16th & 17th June 2024 and the minimum temperature of 19.2°C had been recorded at Balsar (Gujarat Region) on 17th June 2024 over the plains of the country during the month.

e) Thunder Squall & Hailstorm activity:

Thunder squall & Hailstorm activity during the month (till 0830 IST of last date of the month) is given in the table below:

S. No.	Met Sub-Division	Thunderstorms Days	Hail Days	Squall Days	Dust storm
1.	Andaman & Nicobar Islands	6	0	0	0
2.	Arunachal Pradesh	8	0	0	0
3.	Assam & Meghalaya	29	0	0	0
4.	Nagaland, Manipur, Mizoram &	27	0	0	0
5.	Sub-Himalayan West Bengal &	24	0	0	0
6.	Gangetic West Bengal	16	0	0	0
7.	Odisha	24	0	0	0
8.	Jharkhand	16	0	0	0
9.	Bihar	13	0	0	0
10.	East Uttar Pradesh	16	1	0	0
11.	West Uttar Pradesh	18	1	0	0
12.	Uttarakhand	13	4	0	0
13.	Haryana Chandigarh & Delhi	14	0	0	0
14.	Punjab	10	1	0	0

S. No.	Met Sub-Division	Thunderstorms Days	Hail Days	Squall Days	Dust storm
15.	Himachal Pradesh	20	3	0	0
16.	Jammu & Kashmir and Ladakh	27	5	0	0
17.	West Rajasthan	18	0	0	2
18.	East Rajasthan	21	0	0	1
19.	West Madhya Pradesh	28	2	0	0
20.	East Madhya Pradesh	29	3	0	0
21.	Gujarat Region	13	0	0	0
22.	Saurashtra & Kutch	12	0	0	0
23.	Konkan & Goa	21	0	0	0
24.	Madhya Maharashtra	20	0	0	0
25.	Marathwada	11	0	0	0
26.	Vidarbha	24	0	0	0
27.	Chhattisgarh	30	0	0	0
28.	Coastal Andhra Pradesh & Yanam	28	0	0	0
29.	Telangana	25	0	0	0
30.	Rayalaseema	23	0	0	0
31.	Tamil Nadu Puducherry & Karaikal	21	0	0	0
32.	Coastal Karnataka	19	0	0	0
33.	North Interior Karnataka	19	0	0	0
34.	South Interior Karnataka	17	0	0	0
35.	Kerala & Mahe	23	0	0	0
36.	Lakshadweep	1	0	0	0

Bulletins/Warnings/Press Releases Issued:

All India Weather Bulletins: 120, All India inference and severe weather warnings: 120, All India Weekly Weather Reports: 4, Daily Tropical Weather Outlook with cyclogenesis forecast for next 5 days: 30, Weekly Extended Range Outlook for Cyclogenesis for next 2 weeks: 4, Daily Warnings for Fishermen in North Indian Ocean: 60, Fleet Forecast for Indian Navy for next 12 hours: 60, Bulletins for ships in deep sea under Global Maritime Distress Safety System (GMDSS) for next 36 hours: 60, Severe Weather Advisory Bulletins for nowcast guidance: 30, FDP STORM Bulletins: 30, Mountain weather bulletins issued for western and central Himalayan region: 60, Expedition Forecast bulletins issued for Fachu Kandi Peak expedition by Indian Army:

1, Expedition Forecast bulletins issued for Mt. Manirang Peak Expedition by NDRF: 11, All India Multi-hazard winter weather warnings bulletin issued for North India: 30, Current Temperature Status and Heatwave warning bulletins: 30, Press Releases issued during the month: 36.

Publications & Operational Reports:

1. ENSO bulletin for the month of June 2024 and Seasonal Climate Outlook for South Asia for the period of June to September 2024 were issued.

Quicklink:

https://imdpune.gov.in/cmpg/Product/ENSO_Bulletin/ENSO_IOD_Update_Bulletin_06_24.pdf

2. Climate Summary for the month of May- 2024 issued.
3. Drishti Transmissometer, DCWIS and PWD systems were installed at Raipur airport (RWY 24) during 20.05.2024 to 17.06.2024
4. 'Climate Diagnostic Bulletin for the month March and April 2024 has been published and uploaded on the website
5. 200 AWS have been installed under 400 AWS project.

Seismological Observational Network:

Observation Type	Commissioned so far	Data reporting during the month
Seismic stations	156	132

Earthquake and Tsunami monitoring

Earthquake:

92 earthquakes were monitored in the Indian region out of which 5 events were greater than the magnitude (M) of 5.0.

Tsunami:

No seabed earthquakes (M>6) with a potential to generate tsunami has occurred during the month.

Ocean Observation System

Type of Platform	Commissioned till during the month	Data received during the month
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Argo Floats	118	75
Moored Buoys	19	11
Tide Gauges	36	32
High Frequency (HF) Radars	10	7
Acoustic Doppler Current Profiler (ADCP)	20	17
Tsunami Buoys	7	4
Wave Rider Buoy	16	9

Ocean Science Services

S. No.	Types of forecasts	No. of advisories issued during the month
1.	Integrated Potential Fishing Zone (PFZ) advisories	16
2.	Tuna Fishing Advisories	1
3.	Ocean State Forecast (OSF)-Wave, Wind, Currents, SST (Sea Surface Temperature), MLD (Mixed Layer Depth) and D20 forecasts	31
4.	Real time global ocean analysis (daily)	31
5.	Coral Bleaching Alert System	11

Outreach and Awareness

- The draft Shoreline Management Plan for Tamil Nadu has been submitted to the Department of Environment and Climate Change, Tamil Nadu by NCCR, Chennai.
- National Centre for Coastal Research (NCCR) and the National Institute of Water Research (NIVA), Norway conducted a Hybrid workshop on "Seagrass Restoration" on 21st June 2024.
- International Workshop on Stratosphere-Troposphere Interactions and Prediction of Monsoon weather EXtremes (STIPMEX) was held at Indian Institute of Tropical Meteorology, Pune, India during 02-07 June 2024.
- National Training Workshop on Climate impacts of carbonaceous Aerosols and Modeling (NT_CCAM-2) was conducted at IITM, Pune during 25-27 June 2024.
- IMD issued daily weather forecasting video of about 5 minutes duration in English & Hindi through YouTube, Facebook, Twitter and IMD website.

- Weekly Video on extended range forecast (up to two weeks) were issued every Thursday through website and social media (Facebook, Twitter, YouTube etc.).
- Daily interviewed was provided by the forecasters within the country.
- The forecast videos in regional language were issued by regional offices of IMD regularly.
- Bulletins and Warnings along with graphics were also communicated through social media including Facebook, Twitter, Instagram, YouTube and IMD Blog page.
- People-centered Early Warning for the Indian Coastlines (PCTWIN) Kick-off and First Stakeholder Meeting concluded successfully on 28-30 May 2024 at INCOIS. This is a joint initiative by INCOIS-MoES and the University College of London (UCL), UK to focus on enhancing tsunami early warning systems for India's coastlines.
- International Yoga Day has been celebrated in MoES and its Institutes.
- The 5-day training on "Customization of Ocean Forecast Products" was hosted at ITCOO/INCOIS (20-24 May 2024) as part of RIMES- South Asia Hydromet Forum. Eleven (11) participants attended to learn advanced ocean forecasting tools & techniques, ensuring coastal safety from ocean disasters. The trainees also gained knowledge of advanced ocean forecasting techniques at INCOIS and learned about the crucial role played by the Institute in safeguarding coastal communities from disasters.
- As part of the Indian Ocean Tsunami Warning and Mitigation System INCOIS participated in the 27th ICG/IOTWMS Communication Test on 12th June 2024 and issued test bulletins to 26 Indian Ocean rim countries as a Tsunami Service Provider (TSP).
- INCOIS issued the followings:
 - Monthly El Niño Southern Oscillation (ENSO) outlook bulletin from 05 June 2024 based on a new probabilistic machine learning model developed by INCOIS. Prediction from El Niño to La Niña in the next 1-2 months was announced. (https://incois.gov.in/documents/climateindices/ENSO_Outlook2024_May24IC.pdf). It forecasted a high chance (70-90%) of La Niña by July, likely to last till Feb 2025 (50-70%) impacting the global weather.

- Eighty-nine (89) High wave/Swell Surge Alert/ Rough Sea Alert were issued to the West and East Coast of India, Andaman & Nicobar Islands.
 - Twirty-one (31) days forecasts were issued as Regional Specialized Meteorological Centre (RSMC) for (i) Numerical Ocean Wave Prediction (wave and swells) and (ii) Global Numerical Ocean Prediction (currents, conservative temperature, MLD, absolute salinity) for the Indian Ocean.
 - Thirty-one (31) days ocean state forecasts were issued to Pacific Islands Countries (PIC)and Colombo Security Conclave (CSC).
 - Provided weekly updates, including past week briefing and upcoming week forecast of Ocean State Forecast information (Wave, Wind, Current, Swell, Sea Surface Temperature) for Indian Ocean to South Asia Hydromet Forum (SAHF) which is administrated by RIMES.
 - Thirty-one (31) days Algal Bloom Information Service was issued, but no alert was generated.
 - On the INCOIS website, there is an option to register and use the online applications for forecasts along the shipping route and Search and Rescue Aid Tool (SARAT) advisories. This month, No. of registered users for Forecast along the ship route- Three(3) and SARAT (27).
 - Provided OSF consultancy services of wind and wave parameters at their rig location to M/s McDermott, a firm supporting ONGC for exploration services.
- On 10 June 2024, The UN Ocean Decade Vision 2030 Challenge 6 White Paper 'Increase Community Resilience to Ocean Hazards' prepared by the working group that is co-chaired by Dr. Srinivasa Kumar T (Director, INCOIS) was published:
<https://unesdoc.unesco.org/ark:/48223/pf0000390122/PDF/390122eng.pdf.mu>
[ltj](#).
 - On the eve of World Environment Day (5 June 2024) twenty (20) young students from Care & Love Orphanage, Hyderabad, visited INCOIS and explored Ocean Science at our cutting-edge laboratories. Acquired knowledge on how INCOIS aids coastal communities through ocean services and early warnings of ocean disasters. These young minds were incredibly engaging with thought-provoking questions to scientists. This shows the inspiring youth curiosity in learning science.

- Thirty (30) Trainee Officers from NIRDPR (Official of LGA of the Republic of Maldives) visited INCOIS on 11 June 2024 and witnessed state-of-the-art R&D and technology used in delivering Ocean services and engaged in valuable knowledge exchange.
- Over twenty (20) trainees from the Geological Survey of India Training Institute (GSTI), Hyderabad, visited INCOIS on 19 June 2024 and witnessed cutting-edge research facilities. They also learned how INCOIS aids coastal communities by providing oceanographic services and early warnings of ocean disasters.
- Three-days (3) training course on 'Ocean Observation System and Ocean Data Utilisation', organized by ITCOO, INCOIS during 19-21 June 2024. Students from CAS, Indian Institute of Technology Delhi, participated to learn various ocean observation systems & ensure an enriched learning experience on ocean data management. The course also provided students with exposure to oceanic services provided by INCOIS, visits to SynOPS, ground stations & practical training on the Digital Ocean platform, enriching their understanding and skills in oceanographic data utilization.

Publications

Subject	Publications			Ph.Ds.		
	Apr – May 2024	June 2024	Total	Apr – May 2024	June 2024	Total
Atmospheric Sciences	22	13	35	2	0	2
Ocean Science and Technology	19	6	25	0	1	1
Polar Sciences	9	5	14	0	0	0
Geosciences and resources	7	4	11	1	3	4
Total	57	28	85	3	4	7

Patents: 1

Utilization of Ocean Research Vessels during the month

Vessel	Days at Sea/ Utilization	Maintenance/ Inspection/ Scientific Logistics/ Cruise Preparation	No. of Cruises
Sagar Nidhi	18	12	1
Sagar Manjusha	20	10	3
Sagar Tara	16	14	4
Sagar Anveshika	15	15	2
Sagar Kanya	0	30	0
Sagar Sampada	15	15	1

No.MoES/20/01/2017-Estt.
Government of India
Ministry of Earth Sciences

Prithvi Bhavan, Lodhi Road
New Delhi-110 003
Dated, the 8 July, 2024

**CERTIFICATE
(FOR THE MONTH OF JUNE, 2024)**

It is certified that the detailed status regarding all the posts pertaining to Ministry of Earth Sciences have been updated on AVMS as on last day of the month of June, 2024. A summary of the status is given below:-

a. The total number of posts required to be entered on AVMS	–	13
b. Number of posts filled as on date	–	11
c. Number of posts totally vacant as on date	–	01
d. Number of posts under additional charge arrangement	–	01
e. Number of posts that would fall vacant during the next 6 months	–	01**


(Dharkat R Luikang)
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** Appointments Committee of the Cabinet vide its communication No. 22/7/2019-EO(SM.II) dated 24.06.2024 has approved the extension in tenure of Dr. Mrutyunjay Mohapatra as Director General of Meteorology, IMD beyond 31.07.2024 till his attaining the age of superannuation, i.e. 31.08.2025, or until further orders whichever is earlier.
