

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 3791
TO BE ANSWERED ON WEDNESDAY, 18TH DECEMBER, 2024**

**AI TO IMPROVE WEATHER FORECASTING IN TAMIL NADU AND
KANYAKUMARI**

3791. Thiru Dayanidhi Maran:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) the number of weather forecasting facilities currently operational in Tamil Nadu and the details of these facilities particularly those located along the Tamil Nadu coastline;
- (b) whether there are plans to set up additional weather forecasting facilities along the Tamil Nadu coastline, including regions up to Kanyakumari, if so, the details thereof along with the proposed timeline for new installations;
- (c) whether 56 new Doppler radars are proposed to be installed across the country as announced by the Government, if so, details thereof particularly for Tamil Nadu, along with the number of radars specifically positioned along vulnerable coastal areas from Chennai to Kanyakumari;
- (d) the budgetary allocations made for improving weather forecasting infrastructure in Tamil Nadu;
- (e) whether the projects are under consideration for coastal weather monitoring enhancement in Tamil Nadu, if so, the details thereof; and
- (f) whether new technologies like Artificial Intelligence (AI) are being planned/implemented to improve weather forecasting along Tamil Nadu's coast and if so, the details thereof?

ANSWER
THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR
MINISTRY OF SCIENCE AND TECHNOLOGY
AND EARTH SCIENCES
(DR. JITENDRA SINGH)

- (a) The following weather forecasting facilities are operational along the Tamil Nadu coastline:
 - Regional Weather Forecasting Centre (RWFC)- Area Cyclone Warning Centre (ACWC), State Agro Meteorological Centre (SAMC) & Flood Meteorological Office (FMO) are functional from Regional Meteorological Centre (RMC) Chennai.
 - Aviation meteorological services are rendered from the Meteorological Watch Office (MWO), Chennai Airport Meteorological Office.
 - Other airport stations and Meteorological observatories and AWS/ARG stations operational over these areas given in Annexure 1.

- (b)-(c) Yes, the new Central Sector Scheme “Mission Mausam” has been launched by MoES with the goal of making Bharat a "Weather-ready and Climate-smart" as approved by the Union Cabinet for implementation during 2024-2026. Under the newly launched scheme Mission Mausam, 87 Doppler Weather Radars (DWRs) across the country are planned to be installed to cover the data gap areas and to enhance the accuracy of the weather forecasting system.

IMD is currently operating 03 DWRs across the coastal region of Tamil Nadu, namely Chennai (S-Band), Karaikal (S-Band) & Chennai (X-Band), for continuous weather monitoring and weather forecasting in the region. It is proposed that the existing S-Band DWR at Chennai be replaced with a technologically advanced new S-Band DWR. Additionally, Mission Mausam is intended to augment the Doppler Weather Radar (DWR) network across the country for complete radar coverage and to enhance the accuracy of the weather nowcasting / forecasting system. The exact locations based on need, technical feasibility, data gap are being worked out for installing 87 more DWRs, 15 radiometers and 15 wind profilers across the country, including Tamil Nadu.

- (d)-(e) The Union Cabinet has approved the central sector scheme ‘Mission Mausam’ at an outlay of INR 2,000 crore over two years. Mission Mausam is envisaged to be a multi-faceted and transformative initiative to tremendously boost India’s weather and climate-related science, research, and services, including coastal areas of Tamil Nadu.
- (f) Yes. Artificial Intelligence (AI) is being used to improve weather, climate, and ocean forecasting skills, apart from physics-based numerical models, across the country, including the Tamil Nadu coast. MoES has established a dedicated AI virtual center tasked with developing and testing multiple AI techniques and capacity-building activities by conducting workshops and conferences. A computing environment and virtual workspace for training and deploying AI models have been established at IMD.

Details of observational Network in Tamil Nadu**A) Departmental Surface meteorological observatories: 16**

SN	State	District	Observatory Name	Remarks
1	Tamil Nadu	Thanjavur	MO Adiramapattinam	Coastal
2	Tamil Nadu	Coimbatore	MO COIMBATORE	Inland
3	Tamil Nadu	Chennai	MO MEENAMBAKKAM	Coastal
4	Tamil Nadu	Chennai	MO NUNGAMBAKKAM	Coastal
5	Tamil Nadu	Cuddalore	MO Cuddalore	Coastal
6	Puducherry	Puducherry	DWR KARAIKAL	Coastal
7	Tamil Nadu	Dindigul	MO KODAIKANAL	Inland
8	Tamil Nadu	Kanyakumari	MO KANYAKUMARI	Coastal
9	Tamil Nadu	Madurai	AMS MADURAI	Inland
10	Tamil Nadu	Nagapattinam	MO NAGAPATTINAM	Coastal
11	Tamil Nadu	Ramanathapuram	MO Pamban	Coastal
12	Puducherry	Puducherry	MO Puducherry	Coastal
13	Tamil Nadu	Salem	MO Salem	Inland
14	Tamil Nadu	Tiruchirapalli	AMS Tiruchirapalli AP	Inland
15	Tamil Nadu	Tondi	MO Tondi	Coastal
16	Tamil Nadu	Vellore	MO Vellore	Inland

B) Coastal Upper air Observatories: 2

1) Chennai_Meenambakkam 2) Karaikal

C) Doppler Weather Radar (DWR) station: 3

IMD is presently operating 03 Doppler Weather Radars (DWRs) namely: Chennai (S-Band), Karaikal (S-Band) & NIOT Chennai (X-Band) for continuous weather monitoring and weather forecasting in the region. It is proposed to replace the existing S-Band DWR at Chennai with a technologically advanced new S-Band DWR.

D) Automatic Weather Stations in Tamil Nadu : 65**Particular along the Coast line of the Tamil Nadu: 19**

S NO.	STATE	DISTRICT	STATION
1	TAMIL_NADU	CHENGALPATTU	MAHABALIPURAM
2	TAMIL_NADU	CHENGALPATTU	VIT_CHENNAI
3	TAMIL_NADU	CHENNAI	CHENNAI
4	TAMIL_NADU	CHENNAI	ENNORE_PORT
5	TAMIL_NADU	CHENNAI	MEENAMBAKKAM_ISRO
6	TAMIL_NADU	CUDDALORE	CHIDAMBARAM
7	TAMIL_NADU	CUDDALORE	NEYVELI
8	TAMIL_NADU	KANYAKUMARI	NEYYOOR

9	TAMIL_NADU	KANYAKUMARI	THIRUPATHISARAM_AMFU
10	TAMIL_NADU	MAYILADUTHURAI	MAYILADUTHURAI
11	TAMIL_NADU	NAGAPATTINAM	MO_NAGAPATTINAM_CAMPUS
12	TAMIL_NADU	NAGAPATTINAM	VEDARANYAM
13	TAMIL_NADU	CHENGALPATTU	New Chennai Township Private Ltd
14	TAMIL_NADU	SIVAGANGA	SETHU_BHASKARA _AGRI_COLLEGE_KAR
15	TAMIL_NADU	THANJAVUR	ADIRAMAPATTINAM
16	TAMIL_NADU	THOOTHUKUDI	THIRUCHENDUR
17	TAMIL_NADU	THOOTHUKUDI	TUTICORIN_PORT
18	TAMIL_NADU	VILUPPURAM	MAILAM
19	TAMIL_NADU	RAMANATHAPURAM	RAMNADU_KVK

E) Automatic Rain Gauges in Tamil Nadu: 79

Automatic Rain Gauges along the coast line of Tamil Nadu: 16

S NO.	STATE	DISTRICT	STATION
1	TAMIL_NADU	CHENGALPATTU	CHEYYUR
2	TAMIL_NADU	CHENGALPATTU	SAIRAM_INSTITUTION
3	TAMIL_NADU	CHENNAI	ANNA_UNIVERSITY
4	TAMIL_NADU	CHENNAI	TARAMANI
5	TAMIL_NADU	CHENNAI	YMCANANDNAM
6	TAMIL_NADU	KANCHIPURAM	ACS MEDICAL COLLEGE
7	TAMIL_NADU	KANCHIPURAM	HINDUSTAN_UNIVERSITY
8	TAMIL_NADU	KANCHIPURAM	SATHYABAMA__UNIVERSITY
9	TAMIL_NADU	KANYAKUMARI	NAGERCOIL
10	TAMIL_NADU	NAGAPATTINAM	KOLLIDAM
11	TAMIL_NADU	SIVAGANGA	DEVAKOTTAI
12	TAMIL_NADU	THIRUVARUR	MUTHUPETTAI
13	TAMIL_NADU	THOOTHUKUDI	SATTANKULAM
14	TAMIL_NADU	THOOTHUKUDI	TUTICORIN_AIRPORT
15	TAMIL_NADU	THOOTHUKUDI	TUTICORIN_RAILWAY_STATION
16	TAMIL_NADU	TIRUNELVELI	RADHAPURAM

F) High wind speed recorder in Tamil Nadu install along the Coast : 9

S.No	HWSR
1.	Chennai
2.	Puducherry
3.	Cuddalore
4.	Nagapattinam
5.	Tondi
6.	Adiramapattinam
7.	Pamban
8.	Kanyakumari
9.	Karaikal

G) Airport Meteorological offices in Tamil Nadu: 7

Digital current weather instruments systems and wind indicating instruments installed. Real time data/Current weather data is available.

S.No	Airport Met. Facility	Remarks
1.	Chennai Meenambakkam	Coastal
2.	Puducherry	Coastal
3.	Tuticorin	Coastal
4.	Trichy	Inland
5.	Salem	Inland
6.	Madurai	Inland
7.	Coimbatore	Inland
