

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 1192
TO BE ANSWERED ON WEDNESDAY, 14TH DECEMBER, 2022**

AUTOMATIC WEATHER STATION

1192. SHRIMATI RAKSHA NIKHIL KHADSE:
SHRI MANOJ KOTAK:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether cloudbursts have been reported frequently worldwide and even in the country;
- (b) if so, the details thereof;
- (c) whether the climate change signal is conspicuous and the country do not have long-term (20 years or more) hourly data to arrest it, if so, the details thereof and the reasons therefor;
- (d) whether the Government proposes to install more and more automatic weather stations through India Meteorological Department (IMD) which can record the hourly data and can map cloudburst-prone area;
- (e) if so, the details thereof;
- (f) whether the Government proposes to install more Multiple Doppler Radars for monitoring moving cloud droplets and help to provide 'nowcasts' i.e. forecasts for the next three hours; and
- (g) 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) - (b) Yes Sir. The cloud bursts events are getting reported frequently all over the world and even in the country.

Cloud burst is considered when the rainfall occurs at the rate of 10 cm/ hour or more over a geographical area of approximately 20-30 square km. The occurrence of the cloud burst is not predictable worldwide. Moreover, the information about cloud burst incidents is very limited. The cloud burst events occur within a short duration & are highly localized. Many such events are not observed in conventional observatory premises.

Mini Cloud Burst (MCB), in which rainfall in two consecutive rainhours is 5 cm or more is recorded, also do occur during the monsoon season. MCB occur over Western Ghats and Central India during the months of June and over the foot hills of Himalayas during the months of July and August. These events generally occur in the early morning hours along west coast and foot hills of Himalayas whereas over interior land mass it occurs in the afternoon & in South Peninsula it occurs during night hours. Cloud-bursts can lead to Flash floods, Land slides etc. affecting the public at large.

- (c) No Sir. IMD is having autographic rainfall data records since 1969 for about 185 stations across the country.
- (d)-(e) IMD is already having well established AWS Network (including Agro AWS) & ARG network and has plan to enhance the same further across the country. The details of the same are given in **Annexure-I** and **Annexure-II** respectively.
- (f)-(g) There are various ongoing projects pertaining to the installation of Doppler Weather RADARs (DWRs) across the country. Details of the same follow:
- Under Integrated Himalayan Meteorological Programme (IHMP), 10 X-Band DWRs are being installed in the Himalayan and Sub-Himalayan region Leh, Banihal Top, Kufri, Surkanda Devi, Murari Devi, Jot, Lansdowne, Mukteshwar, Jammu and Ayanagar (Delhi).
 - 03 C-Band DWRs are proposed to be installed in Bangalore, Sambalpur and Raipur.
 - Existing 04 S-Band coastal region DWRs at Visakhapatnam, Chennai, Machilipatnam and Kolkata are being upgraded to dual polarized S-Band DWRs.
 - 08 C-Band DWRs are proposed to be installed in Auranagabad, Port Blair, Ranchi, Ahmedabad, Mangalore, Balasore, Malda and Agatti (Lakshadweep).
 - 08 X-Band DWRs are planned to be installed in the North Eastern region in Guwahati, Jorhat, Tezpur, Silchar, Imphal, Aizawl, Dimapur and Dhubri.
 - 05 X-Band DWRs are proposed to be installed in various cities under 'Urban Meteorology' scheme in Pune, Varanasi, Kolkata, Bhubaneswar and Kozhikode.

Annexure - I**List of AWS, AGRO AWS and ARG installed all over India**

S NO.	STATE	AWS	AGRO AWS	ARG
1	ANDAMAN_AND_NICOBAR	1	NIL	NIL
2	ANDHRA_PRADESH	39	9	61
3	ARUNACHAL_PRADESH	16	3	25
4	ASSAM	36	8	58
5	BIHAR	43	14	29
6	CHANDIGARH	2	NIL	NIL
7	CHHATTISGARH	26	9	31
8	DAMAN_AND_DIU	2	NIL	1
9	DELHI	12	1	1
10	GOA	4	2	5
11	GUJARAT	45	9	65
12	HARYANA	32	6	33
13	HIMACHAL_PRADESH	28	4	66
14	JAMMU_AND_KASHMIR	30	4	14
15	JHARKHAND	32	17	28
16	KARNATAKA	36	12	45
17	KERALA	101	3	30
18	LADAKH	12	NIL	NIL
19	LAKSHADWEEP	2	1	NIL
20	MADHYA_PRADESH	66	14	101
21	MAHARASHTRA	64	10	122
22	MANIPUR	12	1	8
23	MEGHALAYA	11	2	15
24	MIZORAM	12	1	16
25	NAGALAND	12	2	13
26	ODISHA	40	10	177
27	PUDUCHERRY	3	1	1
28	PUNJAB	30	5	31
29	RAJASTHAN	50	9	64
30	SIKKIM	5	2	4
31	TAMIL_NADU	47	10	79
32	TELANGANA	14	4	54
33	TRIPURA	10	1	14
34	UTTARAKHAND	28	3	22
35	UTTAR_PRADESH	70	17	132
36	WEST_BENGAL	33	6	37
	TOTAL	1006	200	1382

Annexure –II

New Proposal of AWS, AGRO AWS and ARG Installation under PLAN projects

No	Under 400 AWS project	Under 330 Agro- AWS project	Under 50 AWS in School Project	Under 200 AWS/ARG in Urban city project	
	AWS	AGRO AWS	AWS with Computer and External Display	AWS	ARG
	400	330	50	40	160
