

GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION No. 1298
ANSWERED ON 28/07/2022

AUTOMATIC WEATHER STATIONS

1298. SHRI JOSE K. MANI:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether Government has noticed an increase in the occurrence of natural disasters in the State of Kerala over the last five years;
- (b) if so, whether Government has any plans to increase the number of automatic weather stations in Kerala to 256 weather stations as recommended by the Bureau of Indian Standards to improve disaster preparedness in the State;
- (c) if so, the details thereof; and
- (d) whether Government has taken any steps to expedite the installation of automatic weather stations in Kerala which are already sanctioned by the India Meteorological Department?

ANSWER

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

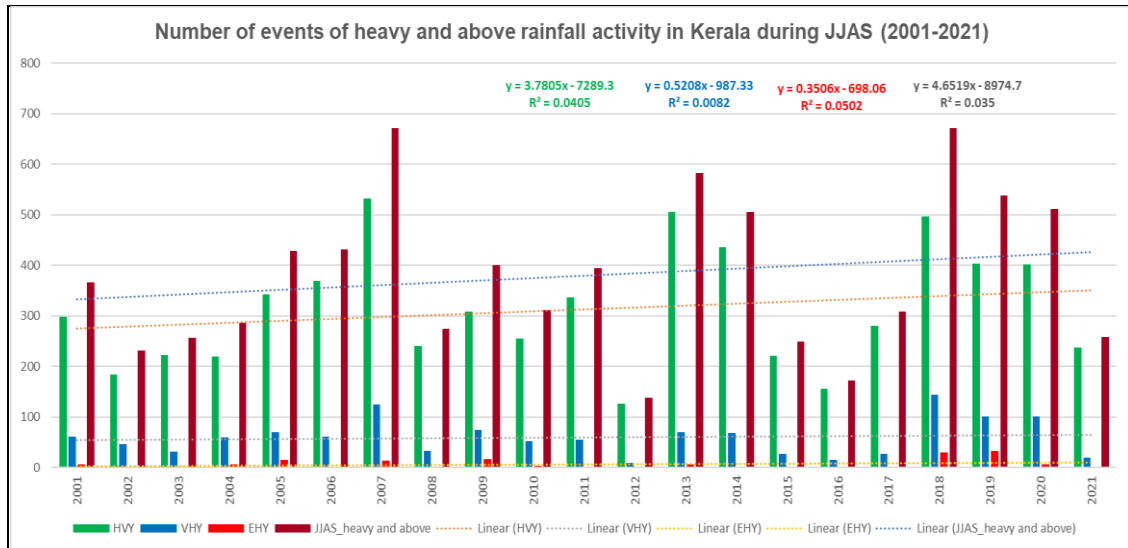
- (a) Yes Sir. There is an increase in occurrence of heavy rainfall activity in Kerala during Southwest Monsoon season (June to September) as per the data for the period 2001-2021. The number of events of heavy rainfall (More than 64.4 and less than 115.5 mm), very heavy rainfall (more than 115.5 and less than 204.4 mm), extremely heavy rainfall (more than 204.4 mm) and heavy rainfall and above taken together during southwest monsoon season during recent years are given in **Annexure I**. From the figure, it is clear that heavy rainfall events are showing an increasing trend over Kerala.
- (b)-(c) Yes, India Meteorological Department (IMD) has plans to increase the network of Automatic Weather Stations in the State of Kerala. As per BIS-1994 standards, Kerala is to have 115 weather stations. **(details given in Annexure-II)**.

IMD planned for 100 Automatic Weather Stations (AWS) in Kerala. The details of recently installed 77 AWS among these are given in **Annexure-III**. The installation of remaining 23 AWS is in progress.

In addition to this, Kerala has 15 AWS stations given in **Annexure-IV** additionally, thus making a total number of 92 Automatic Weather Stations available for Kerala. Apart from these, there are 10 upgraded Automatic Rainfall Measuring stations also in the state.

- (d) As mentioned above, IMD has already expedited the installation of sanctioned Automatic Weather Stations for Kerala.

Annexure I



Number of heavy rainfall events over Kerala during southwest Monsoon season for the period 2001 to 2021.

Requirement of Weather Stations for Kerala as per BIS Standard

It is confirmed from BIS that there is no such document made by BIS for the number of AWS per 100 Sq.KM with respect to different topography. However they confirmed that there is a document on the number of Non recording/ Recording rain Gauges per Sq.KM published in Year 1994.

Considering the 1994 document published by BIS, the Area of Kerala is 38800 Sq KM. Kerala has 80% of Coastal & Plain Land and remaining 20% land with hills.

Approximately, 31040 Sq.Km consists of Coastal +Plain land requiring $31040/500= 63$ Rain stations and 7760SqKM hilly terrain requiring $7760/150\text{Sq.km} = 52$ Rain stations. **Total Rain station as per this BIS-1994 is $63+52 =115$ Rain stations.**

Annexure III

The details of list of 77 AWS installed over Kerala

100 AWS PROJECT (77 AWS INSTALLED)			
S.N.	STATE	DISTRICT	AWS STATION
1	KERALA	ALAPPUZHA	CHERTHALA
2	KERALA	ALAPUZHA	KAYAMKULAM
3	KERALA	ALAPUZHA	NOORANAD
4	KERALA	ALAPUZHA	THYCATTUSSERY
5	KERALA	ERNAKULAM	ADAMALAYAR DAM
6	KERALA	ERNAKULAM	ALUVA
7	KERALA	ERNAKULAM	CHOONDY
8	KERALA	ERNAKULAM	KALAMASERRY
9	KERALA	ERNAKULAM	MATTANCHERRY
10	KERALA	ERNAKULAM	NORTH_PARAVUR
11	KERALA	ERNAKULAM	ODAKKAI
12	KERALA	IDUKKI	ANARIYANKAL DAM
13	KERALA	IDUKKI	AYYAPPAKOVIL
14	KERALA	IDUKKI	KOVILKADAVU
15	KERALA	IDUKKI	KUNDALA DAM
16	KERALA	IDUKKI	MEENCUT
17	KERALA	IDUKKI	PEERMADE
18	KERALA	IDUKKI	PAMPADUMPARA
19	KERALA	IDUKKI	SENGULAM DAM
20	KERALA	IDUKKI	UPPER PERINJAMKUTTY
21	KERALA	IDUKKI	UDAMBANNOOR
22	KERALA	IDUKKI	VELLATHOOVAL
23	KERALA	KANNUR	ARALAM
24	KERALA	KANNUR	AYYANKUNNU
25	KERALA	KANNUR	CHEMPERI
26	KERALA	KANNUR	CHERUVANCHERY
27	KERALA	KANNUR	IRIKKUR
28	KERALA	KANNUR	KANNUR SUGARCANE RESEARCH
29	KERALA	KANNUR	PERINGOME
30	KERALA	KASARGOD	PADANNAKKAD
31	KERALA	KASARGOD	MULIYAR
32	KERALA	KASARGOD	MADIKAI
33	KERALA	KASARGOD	BAYAR
34	KERALA	KASARGOD	VELLARIKKUNDU
35	KERALA	KOTTAYAM	POONJAR
36	KERALA	KOTTAYAM	VADAVATHOOR
37	KERALA	KOTTAYAM	VAIKKOM

38	KERALA	KOZHIKODE	KAKKAYAM
39	KERALA	KOZHIKODE	URIMI
40	KERALA	KOZHIKODE	KUNNAMANGALAM
41	KERALA	KOZHIKODE	VADAKARA
42	KERALA	KOLLAM	WEST KALLADA
43	KERALA	MALAPPURAM	VAKKAD
44	KERALA	MALLAPURAM	PERUMALLA
45	KERALA	PALAKKAD	ADAKKAPUTHUR
46	KERALA	PALAKKAD	OTTAPALAM
47	KERALA	PALAKKAD	VANNAMADA
48	KERALA	PALAKKAD	MANGALAM DAM
49	KERALA	PALAKKAD	MANNARKAD
50	KERALA	PALAKKAD	KOLLENGODE
51	KERALA	PALAKKAD	POTHUNDY DAM
52	KERALA	PALAKKAD	PaTTAMBI
53	KERALA	PATHANAMTHITTA	THIRUVALLA
54	KERALA	PATHANAMTHITTA	RANNI
55	KERALA	PATHANAMTHITTA	LAHA
56	KERALA	PATHANAMTHITTA	KUNNAMTHANAM
57	KERALA	PATHANAMTHITTA	SEETHATHODE
58	KERALA	PATHANAMTHITTA	ULANADU
59	KERALA	THRISSUR	CHALAKKUDY
60	KERALA	THRISSUR	PERINGALKUTHU
61	KERALA	THRISSUR	PEECHI
62	KERALA	THRISSUR	KUNNAMKULAM
63	KERALA	THRISSUR	KANNAMKUZHY
64	KERALA	THRISSUR	MONAKAL BEACH
65	KERALA	THIRUVANANTHAPURAM	PALODE
66	KERALA	THIRUVANANTHAPURAM	ARUVIKKARA
67	KERALA	THIRUVANANTHAPURAM	NEYATTINKARA
68	KERALA	THIRUVANANTHAPURAM	VARKALA
69	KERALA	THIRUVANANTHAPURAM	THIRUVANANTHAPURAM
70	KERALA	THIRUVANANTHAPURAM	THATTATUMALA
71	KERALA	THIRUVANANTHAPURAM	PIRAPPCODE
72	KERALA	WAYANAD	KUPPADI
73	KERALA	WAYANAD	KABANIGERI
74	KERALA	WAYANAD	KARAPUZHA
75	KERALA	WAYANAD	KALAPETA
76	KERALA	WAYANAD	PADAMALA
77	KERALA	WAYANAD	PADINJARATHARA_DAM

Annexure IV

List of already existing AWS stations in Kerala.

S.N.	STATE	DISTRICT	AWS STATION
1	KERALA	ALAPPUZHA	KAYAMKULAM
2	KERALA	IDUKKI	CHERUTHONI
3	KERALA	IDUKKI	MUNNAR
4	KERALA	KASARAGOD	KUDLU
5	KERALA	KASARAGOD	PILICODE
6	KERALA	KANNUR	KANNUR AIRPORT
7	KERALA	KOLLAM	KOTTARAKKARA
8	KERALA	KOTTAYAM	KUMARAKOM
9	KERALA	KOZHIKODE	KOZHIKODE
10	KERALA	MALAPPURAM	NILAMBUR
11	KERALA	MALAPPURAM	THAVANUR
12	KERALA	PALAKKAD	MANKARA
13	KERALA	THIRUVANANTHAPURAM	VELLAYANI
14	KERALA	THRISSUR	VELLANIKKARA
15	KERALA	WAYANAD	AMBALAVAYAL