GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION NO. - 2113
ANSWERED ON – 16/12/2021

WEATHER STATIONS IN ANDHRA PRADESH

2113. Shri V. Vijayasai Reddy:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) details of Automatic Weather Stations (AWSs) and Automatic Rain Gauges (ARGs), State-wise;
(b) whether it is a fact that Andhra Pradesh has second longest coastal area and is also prone to natural disasters;
(c) whether the Ministry will consider setting up more AWSs and ARGs in Andhra Pradesh;
(d) if not, the reasons therefor;
(e) range of AWS and ARG and details of technology being used and its comparison with technologies in other countries, particularly European; and
(f) manner in which Artificial Intelligence is being used in weather forecasting in the country, with a particular reference to Andhra Pradesh?

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

(a) State-wise details of Automatic Weather Stations (AWS) and Automatic Rain Gauges (ARG) are given in **Annexure –I**.

(b) Yes Sir. Andhra Pradesh has the second longest coastal area that extends up to 974 Km, and comprises of nine districts. Coastal areas are most vulnerable to tropical cyclones; the disastrous weather event of the world. The storm surges, gale winds and intense precipitation associated with cyclones can cause extreme damage to life and property. As compared to the west coast, the east coast of India is more vulnerable to cyclone related disastrous weather and along the east coast, Andhra Pradesh is more vulnerable to landfalling cyclones.

(c) As per the details in Annexure-I, India Meteorological Department (IMD) has already installed 32 AWS and 61 ARG in Andhra Pradesh, and there is no plan to set up more AWSs and ARGs.

(d)   State Government of Andhra Pradesh also has established AWS/ARG Network in Andhra Pradesh State. Details given in **Annexure -II and Annexure –III**. The departmental network and the State government network together meet the requirements of Andhra Pradesh.

(e)   The sensors used in AWS/ARG are as per guidelines of World Meteorological Organization (WMO).

(f)   Artificial Intelligence (AI) is primarily useful in interpretation, prediction and extrapolation based on learning patterns and trends from prior data sets and images. IMD is exploring methods to augment and enhance forecasting by incorporating new data analysis techniques using Artificial intelligence.

For this purpose, Artificial Intelligence (AI)/ Machine Learning (ML) Application Group has been established in IMD in the recent past. This group is working on Identification of areas for application of AI including weather forecasting, climatological studies, satellite meteorology, radar meteorology, sectorial applications like agriculture, air quality analysis, decision support system, impact based forecast, power, health, transport etc.

Details are AWS and ARG (State-wise)

S NO.	STATE	AWS	ARG
1	ANDAMAN_AND_NICOBAR	2	NIL
2	ANDHRA_PRADESH	32	61
3	ARUNACHAL_PRADESH	18	27
4	ASSAM	34	63
5	BIHAR	43	28
6	CHANDIGARH	2	NIL
7	CHHATTISGARH	28	33
8	DAMAN_AND_DIU	2	1
9	DELHI	12	1
10	GOA	5	5
11	GUJARAT	45	65
12	HARYANA	32	33
13	HIMACHAL_PRADESH	27	71
14	JAMMU_AND_KASHMIR	27	14
15	JHARKHAND	32	28
16	KARNATAKA	39	47
17	KERALA	32	30
18	LADAKH	4	NIL
19	LAKSHADWEEP	1	NIL
20	MADHYA_PRADESH	66	101
21	MAHARASHTRA	63	124
22	MANIPUR	10	8
23	MEGHALAYA	7	10
24	MIZORAM	8	16
25	NAGALAND	10	14
26	ODISHA	47	177
27	PUDUCHERRY	3	1
28	PUNJAB	30	21
29	RAJASTHAN	48	64
30	SIKKIM	5	4
31	TAMIL_NADU	47	80
32	TELANGANA	16	55
33	TRIPURA	5	8
34	UTTARAKHAND	28	21
35	UTTAR_PRADESH	68	132
36	WEST_BENGAL	33	33

State Government Network of AWS in Andhra Pradesh

S NO.	STATE	DISTRICT	AWS STATION
1	ANDHRA_PRADESH	ANANTAPUR	ANANTPUR_AMFU
2	ANDHRA_PRADESH	ANANTAPUR	KADIRI
3	ANDHRA_PRADESH	CHITTOOR	PERUMALLAPALLE
4	ANDHRA_PRADESH	CHITTOOR	TIRUMALA
5	ANDHRA_PRADESH	CHITTOOR	TIRUPATI_AMFU
6	ANDHRA_PRADESH	EAST_GODAVARI	KALAVACHARLA_KVK
7	ANDHRA_PRADESH	EAST_GODAVARI	PEDDAPURAM
8	ANDHRA_PRADESH	GUNTUR	BAPATLA
9	ANDHRA_PRADESH	GUNTUR	LAM_AMFU
10	ANDHRA_PRADESH	KADAPA	UCUKURU
11	ANDHRA_PRADESH	KADAPA	UTKUR_KVK
12	ANDHRA_PRADESH	KRISHNA	GARIKAPADU_KVK
13	ANDHRA_PRADESH	KRISHNA	VUYYURU
14	ANDHRA_PRADESH	KURNOOL	BANAVASI_KVK
15	ANDHRA_PRADESH	KURNOOL	NANDYAL
16	ANDHRA_PRADESH	NELLORE	KAVALI
17	ANDHRA_PRADESH	NELLORE	NELLORE
18	ANDHRA_PRADESH	NELLORE	NELLORE_KVK
19	ANDHRA_PRADESH	NELLORE	SHAR
20	ANDHRA_PRADESH	PRAKASAM	DARSI
21	ANDHRA_PRADESH	PRAKASAM	DARSI_KVK
22	ANDHRA_PRADESH	SRIKAKULAM	AMADALAVALASA_AWS
23	ANDHRA_PRADESH	SRIKAKULAM	AMADALAVALASA_KVK
24	ANDHRA_PRADESH	VISAKHAPATNAM	ANKAPALLI_AMFU
25	ANDHRA_PRADESH	VISAKHAPATNAM	BHIMUNIPATTINAM
26	ANDHRA_PRADESH	VISAKHAPATNAM	CHINTAPALLI_AMFU
27	ANDHRA_PRADESH	VISAKHAPATNAM	YELLAMANCHILLI
28	ANDHRA_PRADESH	VIZIANAGARAM	VIZIANAGRAM
29	ANDHRA_PRADESH	VIZIANAGRAM	KVK_VIZIANAGARAM
30	ANDHRA_PRADESH	WEST_GODAVARI	MARUTERU
31	ANDHRA_PRADESH	WEST_GODAVARI	NARSAPUR
32	ANDHRA_PRADESH	WEST_GODAVARI	VENKATARAMANNAGUDEM_KVK

State Government Network of ARGs in ANDHRA PRADESH

S NO.	STATE	DISTRICT	ARG STATION
1	ANDHRA_PRADESH	ANANTAPUR	CHILAMATHUR
2	ANDHRA_PRADESH	ANANTAPUR	GUNTHAKAL
3	ANDHRA_PRADESH	ANANTAPUR	KALYANDURG
4	ANDHRA_PRADESH	ANANTAPUR	MADAKASIRA
5	ANDHRA_PRADESH	ANANTAPUR	PATTAPARTHI
6	ANDHRA_PRADESH	ANANTAPUR	PEDDAVADUGUR
7	ANDHRA_PRADESH	ANANTAPUR	TADIPATRI
8	ANDHRA_PRADESH	ANANTAPUR	URAVAKONDA
9	ANDHRA_PRADESH	CHITTOOR	AROGYAVARAM
10	ANDHRA_PRADESH	CHITTOOR	CHITTOOR
11	ANDHRA_PRADESH	CHITTOOR	KUPPAM
12	ANDHRA_PRADESH	EAST_GODAVARI	AMBAJIPETA
13	ANDHRA_PRADESH	EAST_GODAVARI	KAKINADA
14	ANDHRA_PRADESH	EAST_GODAVARI	PANDIRIMAMIDI_HRS
15	ANDHRA_PRADESH	EAST_GODAVARI	PRATHIPADU
16	ANDHRA_PRADESH	EAST_GODAVARI	RAJAHMUNDRY
17	ANDHRA_PRADESH	GUNTUR	JANGAMESHWARAPURAM
18	ANDHRA_PRADESH	GUNTUR	NARASARAOPET
19	ANDHRA_PRADESH	GUNTUR	PIDUGURALLA
20	ANDHRA_PRADESH	GUNTUR	PRATTIPADU
21	ANDHRA_PRADESH	GUNTUR	RENTACHINTALA
22	ANDHRA_PRADESH	GUNTUR	REPALLE
23	ANDHRA_PRADESH	GUNTUR	VINUKONDA
24	ANDHRA_PRADESH	KADAPA	ANANTHRAJPETA
25	ANDHRA_PRADESH	KADAPA	KADAPA_AIRPORT
26	ANDHRA_PRADESH	KADAPA	PULIVENDULU
27	ANDHRA_PRADESH	KADAPA	YVU_KADAPA
28	ANDHRA_PRADESH	KRISHNA	GARIKAPADU
29	ANDHRA_PRADESH	KRISHNA	NANDIGAMA
30	ANDHRA_PRADESH	KRISHNA	NUZVID
31	ANDHRA_PRADESH	KRISHNA	TIRUVURU
32	ANDHRA_PRADESH	KRISHNA	VIJAYAWADA
33	ANDHRA_PRADESH	KURNOOL	ADONI
34	ANDHRA_PRADESH	KURNOOL	ALVAGONDA
35	ANDHRA_PRADESH	KURNOOL	BANAGANAPALLI

36	ANDHRA_PRADESH	KURNOOL	BETAMCHARLA
37	ANDHRA_PRADESH	KURNOOL	MAHANANDI
38	ANDHRA_PRADESH	KURNOOL	MANTRALAYAM
39	ANDHRA_PRADESH	KURNOOL	SRISAILAM_DAM
40	ANDHRA_PRADESH	KURNOOL	YEMMIGANUR
41	ANDHRA_PRADESH	NELLORE	PETLURU_HRS
42	ANDHRA_PRADESH	NELLORE	PODALAKUR
43	ANDHRA_PRADESH	PRAKASAM	CHINNA_GANJAM
44	ANDHRA_PRADESH	PRAKASAM	GIDDALUR
45	ANDHRA_PRADESH	PRAKASAM	KANDUKUR
46	ANDHRA_PRADESH	PRAKASAM	YERRAGONDAPALEM
47	ANDHRA_PRADESH	SRIKAKULAM	GOTTABARRIEGE
48	ANDHRA_PRADESH	SRIKAKULAM	PALAKONDA
49	ANDHRA_PRADESH	SRIKAKULAM	PALASA_MANDAL
50	ANDHRA_PRADESH	SRIKAKULAM	TEKKALI
51	ANDHRA_PRADESH	VISAKHAPATNAM	ANANDAPURAM_ARG
52	ANDHRA_PRADESH	VISAKHAPATNAM	ARAKU_VALLEY
53	ANDHRA_PRADESH	VISAKHAPATNAM	CDR_DOLPHINS_NOSE
54	ANDHRA_PRADESH	VISAKHAPATNAM	KAILASHGIRI
55	ANDHRA_PRADESH	VISAKHAPATNAM	MEHADRIGADDA_DAM
56	ANDHRA_PRADESH	VISAKHAPATNAM	SAIL_VISAKHAPATINAM
57	ANDHRA_PRADESH	VIZIANAGARAM	BOBBILI
58	ANDHRA_PRADESH	VIZIANAGARAM	KOMARADA
59	ANDHRA_PRADESH	VIZIANAGARAM	RAJAM
60	ANDHRA_PRADESH	WEST_GODAVARI	VENKATRAMANNAGUDEM

******