

Field Survey Report – Locations identified for the deployment of IMD’s AWS in Kerala

Investigated on June-August 2019



Kerala State Disaster Management Authority

Department of Disaster Management, Govt. of Kerala

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Introduction

The recent flood in Kerala pointed out the deficiency of density of the weather observation network in the state. State government has requested Ministry Home Affairs, Government of India to enhance the number of observatories in Kerala through a Letter No. DMA1/447/2018/DMD dated 06.10.2018. With reference to this letter IMD has decided to procure and Install 100 No's of Automated Weather Stations for Kerala state. In order to strengthen the network of rain gauge stations under 'Daily rainfall monitoring scheme', IMD has to increase the number of rain gauge stations in certain districts in Kerala. With this regard IMD has given a letter No D-001/168 dated 24.012019 with list of existing stations and required stations.

A meeting was convened on 13.03.2019 at the chamber of Principal Secretary, Revenue and Disaster Management regarding installation of AWS in Kerala and enhancement of rainfall monitoring stations. Principal Secretary, Revenue and Disaster Management, Director, IMD Thiruvananthapuram and Member secretary, SDMA were present in the meeting. The meeting decided that Hundred Automatic weather stations and 39 manual rain gauges will be established across the state by IMD. In consonance with this suitable land has to be identified and reported to SDMA. IMD Thiruvananthapuram will submit a status report along with the respective photographs and land dimensions of the already existing weather stations and rain gauges in the state to the Kerala State Disaster Management Authority. The procedures to allocate the required land will be initiated once the report is submitted by IMD in a stipulated time frame.

KSDMA has conducted the first phase of the field survey during the month of April and identified 35 locations in which IMD already has its manual rain gauges. The report was submitted to IMD via email dated 30 may 2019. After examining the list IMD has replied through a letter No. SIMC/GEN/0300/1297 dated 18/06/2019 that of the 35 sites suggested by KSDMA only 28 sites can be considered. IMD has informed that they have already installed AWS or ARG's at Nilambur, Konni, Kurudamannil, Alappuzha, and Mananthavady.

After consulting different state departments like KSEBL, Irrigation, KWA and disaster management experts the second phase of field survey were conducted for the remaining 72 locations. From the recommendations of the dam operators and based on the hazard profile of the state we have identified more than 150 locations. Since the total number of AWS allotted is 100, we have to extract 72 sites from this. So the second phase of the field survey was initiated in district with the help of District disaster management Authorities. . KSDMA has decided to allot 100 AWS stations to the 14 districts as follows

| District | No of AWS |
|--------------------|------------------|
| Kasargod | 5 |
| Kannur | 7 |
| Kozhikode | 6 |
| Wayanad | 6 |
| Malappuram | 8 |
| Thrissur | 8 |
| Palakkad | 8 |
| Ernakulam | 8 |
| Idukki | 11 |
| Alappuzha | 5 |
| Kottayam | 7 |
| Pathanamthitta | 8 |
| Kollam | 7 |
| Thiruvananthapuram | 6 |
| Total | 100 |

Terms of reference fixed for the survey

HA's are directed to visit the list of locations prepared by SEOC and other dam operators, and assigned to submit a report about the availability of 10*10 m flat land, with the latitude and longitude including a photo. Details of the custodian of these sites are also collected.

The consolidated report of sites submitted by each Hazard Analyst is shown below

Sites identified for the deployment of IMD AWS

| SI No | Site Name | DISTRICT | TALUK | VILLAGE | OWNER OF THE SITE | CONTACT DETAILS | LAT | LON | AVAIL ABLE SPACE | REMARKS |
|-------|-------------|-----------|---------------|--------------|--|-------------------------------|-----------|-----------|---|--|
| 1 | Kuttampuzha | Ernakulam | Kothamangalm | Kuttampuzha | Irrigation | Village Officer 8547613408 | 10.150528 | 76.735031 | Yes | Near Kerala Water Authority Building, Kuttampuzha Need to cut trees from some area to get open space |
| | Panchayath | | | | Village Officer 8547613408 | 10.153151 | 76.739528 | Yes | Near Primary Health Centre, Kuttampuzha | |
| | KSEB | | | | E E: 9446008426, AEE: 9496011977 | 10.206463 | 76.709969 | Yes | KSEB Suggested Sites, Idamalayar Dam site | |
| 2 | Keerampara | Ernakulam | Kothamangalam | Keerampara | Revenue | Village Officer 8547613404 | 10.108761 | 76.673486 | Yes | Hydrology section already have a rain gauge station in the same place |
| | Pindimedu | | | Pooyamkuttay | KSEB | 9447664572 | 10.129444 | 76.808055 | Yes | Pindimedu |

| | | | | | | | | | | |
|---|----------------|-----------|--------------|----------------|-----------------|--------------------------------|-----------|-----------|-----|---|
| 3 | Vellorkkunnamm | Ernakulam | Muvattupuzha | Vellorkkunnamm | Revenue | Deputy Thasildar 9496450338 | 10.001507 | 76.567278 | Yes | the land is available in the mini civil station compound, muvattupuzha and it is a tiled ground. |
| 4 | Ayyampuzha | Ernakulam | Aluva | Ayyampuzha | Revenue | Village Officer 8547613715 | 10.253344 | 76.475964 | Yes | For power supply need to use service wire from the nearby electric post |
| | | | | | Revenue | Village Officer 8547613715 | 10.248511 | 76.473387 | Yes | In the Village Office compound |
| | | | | | Revenue | Village Officer 8547613715 | 10.226344 | 76.460351 | Yes | Ground (near Anganavadi No.50) |
| 5 | Mulanthuruthy | Ernakulam | Kanayannur | Mulanthuruthy | Revenue | Village Officer 8547613814 | 9.90095 | 76.3899 | Yes | The land is available in the Village office compound itself, and it is tiled area. Within six months the village office building will be demolished so any area inside the compound also can be used. |
| 6 | Paravur | Ernakulam | Paravur | Paravur | Water Authority | 0484-2442592 | 10.136459 | 76.220378 | Yes | Near Thaveppu Bridge, Kadamangalam |

| | | | | | | | | | | |
|---|----------------|-----------|-------------|-------------------|-----------------|--|-----------|-----------|-----|--|
| | | | | | Water Authority | 0484-2442593 | 10.149622 | 76.242955 | Yes | Aluva-Paravur PWD Road, Thamarakkulam |
| | | | | | Municipality | 4842442327 | 10.153377 | 76.242168 | Yes | Vedimara muncipal Cemetry |
| 7 | Kalamassery IB | Ernakulam | Kalamassery | | KSEB | 9496009211 | 10.058226 | 76.329966 | Yes | Kalamassery I B |
| 8 | Poringalkuthu | Thrissur | Chalakkudy | | KSEB | AXE 9446143103 | 10.312175 | 76.6347 | Yes | KSEB Proposed sites: 1. Site near monument |
| | Lower Sholayar | | | | | AXE 8281587424 | 10.318778 | 76.735139 | Yes | Site near monument |
| | Lower Sholayar | | | | | | 10.318528 | 76.734306 | Yes | Site in the garden @downstream |
| | Kannamkuzhy | | | | | AXE 9446409830 | 10.287778 | 76.555833 | Yes | |
| 9 | Kodakara | Thrissur | Chalakkudy | Kodakara | Revenue | Village officer, Kodakara 8547614333 | 10.372245 | 76.308186 | Yes | |
| | Kadukutty | | | Kadukutty Village | Revenue | Village officer, Kallur Vadakkumuri 8547614324 | 10.260411 | 76.331522 | Yes | The site seems to be not a flat area. Leveling may be required before installing it. |

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|----|-----------------|--------------------|-------------|---------------------|------------------------|---|-----------|-----------|-----|--|
| 10 | Kaddappuram | Thrissur | Chavakkad | Kaddappuram village | Fisheries Department | Village officer, Kadappuram 8547614520 | 10.575257 | 75.995961 | Yes | |
| 11 | Azheekode | Thrissur | Kodungallur | Azheekode Village | Revenue | Village officer, Azhikode 8547614209 | 10.261213 | 76.148813 | Yes | (It's a small plot of land identified for LIFE Mission house construction scheme. Therefore in future houses may construct there and which will make the maintenance of the AWS difficult)- Can be considered as a last option |
| | Munnakkal Beach | | | | PortTrust | Village officer, Azhikode 8547614209 | 10.262235 | 76.147893 | Yes | |
| | Poyya | | | | Revenue | Village officer, Poyya 8547614213 | 10.261404 | 76.149454 | Yes | Revenue. May be considered if other lands are (Sl.no 2) not available |
| 12 | Thennoor | Thiruvananthapuram | Nedumangad | Thennoor | Ponmudi police station | Thennoor Village Officer (854761031 | 8.7615 | 77.110028 | Yes | Ponmudi police station |

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|----|-----------|--------------------|--------------|---------------|-----------------------------|---------------------------------------|-----------|------------|-----|---|
| | | | | | | 5) | | | | |
| 13 | Vazhichal | Thiruvananthapuram | Kattakkada | Vazhichal | Govt UP School, Koottama | Vazhichal Village Office (8129258895) | 8.499611 | 77.170917 | Yes | Govt UP School, Koottama |
| 14 | Vaikom | Kottayam | Vaikom | | Mini Civil station, Revenue | 04829231331 /9446400301 | 9.7490348 | 76.389296 | Yes | Flat land with an Open space with 10X10 areas in the proposed site is available |
| 15 | Erumeli | Kottayam | Kanjirapally | Erumeli South | MES College | 04828 254 393/ 8281830859 | 9.455759 | 76.868663 | Yes | MES GROUND, MES Venkuriji , Erumely, Flat land with an Open space with 10X10 areas in the proposed site is available |
| 16 | Poonjar | Kottayam | Meenachil | Poonjar | Poonjar Engineering College | 04822 271 737 /8606044583 | 9.6767342 | 76.8394716 | Yes | POONJAR ENGINEERING COLLEGE, POONJAR, THEKKEKARA, Flat land with an Open space with 10X10 areas in the proposed site is available |

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|----|---------------|----------|---------------|---------------|----------------------|---------------------------------------|----------|-----------|-----|--|
| 17 | KACHERY RD | Kottayam | Changaneserry | Changaneserry | Government Model HSS | 0481 242 0037 | 9.44795 | 76.537856 | Yes | CHANGANESERRY TALUK GOVERNMENT MODEL HSS, KACHERY RD, CHANGANASSERY, Flat land with an Open space with 10X10 areas in the proposed site is available |
| 18 | Karunagapally | Kollam | Karunagapally | Panmana | Revenue | Village Officer, Chavara - 8547610804 | 8.995111 | 76.5335 | Yes | Revenue land behind Mini Civil Station and Village Office, Chavara. Land belongs to Panmana Village. Block Number 18, Survey Number 323/2 |
| 19 | Pathanapuram | Kollam | Pathanapuram | Punnala | LP School Punnala | Village Officer, Punnala - 8547610723 | 9.0815 | 76.915306 | Yes | Behind LP School Punnala, Flat land with an Open space with 10X10 areas in the proposed site is available |
| | | | | | GVHSS, Punnala | Village Officer, Punnala - 8547610723 | 9.081639 | 76.914056 | Yes | Behind GVHSS, Punnala, Land is available but not totally flat |

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|----|--------------|-----------|--------------|--------------|-------------------|--|-----------|-----------|-----|---|
| 20 | Kottarakkara | Kollam | Kottarakkara | Kottarakkara | KSEB | Village Officer, Kottarakkara - 8547610607 | 8.999056 | 76.769361 | Yes | Flat land with an Open space with 10X10 areas in the proposed site is available |
| 21 | Kollam | Kollam | Kollam | Parippally | Revenue | Village Officer, Parippally - 9961986621 | 8.812194 | 76.740528 | Yes | Flat land with an Open space with 10X10 areas in the proposed site is available |
| 22 | Kunnathur | Kollam | Kunnathur | West Kallada | Revenue | Village Officer, West Kallada - 9446043740 | 9.028694 | 76.628861 | Yes | Flat land with an Open space with 10X10 areas in the proposed site is available |
| 23 | Kallar | Kasaragod | Vellarikkund | Kallar | Revenue | VO 8547617421 | 12.4344 | 75.2702 | Yes | |
| 24 | Vellarikkund | Kasaragod | Vellarikkund | Vellarikkund | Revenue | HQDT 9447730619 | 12.3630 | 75.2877 | Yes | Site is located on the banks of a stream |
| 25 | Badoor | Kasaragod | Manjeshwaram | Badoor | Irrigation | VO 8547617317 | 12.6452 | 75.0325 | Yes | Interior area, Site is covered with the bushes |
| 26 | Muliyar | Kasaragod | Kasaragod | Muliyar | Vetenary Hospital | 8547617332 | 12.5061 | 75.0908 | Yes | |
| 27 | Thirunelly | Wayanad | Mananthavady | Thirunelly | Revenue | 04935210380, 8547616706 (VO) | 11.907222 | 76.032222 | Yes | Thirunelly village office |

| | | | | | | | | | | |
|----|-----------------------------|-----------|----------------|-----------------------------|---------|--|-----------|-----------|-----|--|
| 28 | Padichira | Wayanad | Sultan Bathery | Padichira | KWA | 974511790 3- Senior Pump operator | 11.844722 | 76.188611 | Yes | Kabanigiri Water Treatment Plant |
| 29 | Muttill | Wayanad | Vythiri | Muttill | KWA | 960535137 8- Senior Pump Operator | 11.646667 | 76.177222 | Yes | Swargam Kunnu Water treatment Plant |
| | Kalpetta | | | Kalpetta | Revenue | 807809770 - DEOC Wayanad | 11.626667 | 76.088889 | Yes | Wayanad Collectorate |
| 30 | Padinjarathar a Dam Site | Wayanad | Vythiri | Padinjarath ara Villegge | KSEB | 944730040 6 - AEE Banasura Dam | 11.649167 | 75.941389 | Yes | |
| | Kuttiyamvaya I | | | | | 944730040 6 - AEE Banasura Dam | 11.656111 | 75.945556 | Yes | |
| | Banasura Dam Site | | | | | 944730040 6 - AEE Banasura Dam | 11.669726 | 75.9661 | Yes | Near to the main stream of Karamanathodu |
| 31 | Kakkayam | Kozhikode | Quilandy | Koorachund Villegge | KSEB | 949600377 2- AEE, Dam Safety, Kakkayam | 11.55 | 75.9166 | Yes | open space of 10*10 area and flat land available |
| 32 | Vilangad | Kozhikode | Vatakara | Vilangad | KSEB | 953912092 7 - AEE, Civil Maintenanc e sub Division, | 11.756015 | 75.743528 | Yes | open space of 10*10 area and flat land available |

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|----|---------------|------------|--------------|-------------|---------------------------------|-------------------------------------|---------|---------|-----|---|
| | | | | | | Kakkayam | | | | |
| 33 | Chembukkadavu | Kozhikode | Thamarassery | Kodancheri | KSEB | 9496009920- AE, SHEP, Chembukkadavu | | | Yes | open space of 10*10 area available but ue to thick vegetation and some levelling is required. Rain gauge is there in this site but no maintenance an needs to be renovated. |
| 34 | Urumi | Kozhikode | Kozhikode | Koodaranji | KSEB | 9496009920- AE, SHEP, Urumi | | | Yes | open space of 10*10 area and flat land available |
| 35 | Vettilapara | Malappuram | Eranad | Vettilapara | Vettilappara - Oakkayam G.U.P.S | VO 8547615506 | 11.2713 | 76.125 | Yes | Vettilappara - Oakkayam G.U.P.S, Site is located on the banks of a stream |
| 36 | Paravvana | Malappuram | Tirur | Vettam | Paravvana - TMG College | VO 8547615506 | 10.8838 | 75.8952 | Yes | Paravvana - TMG College |
| 37 | Perumanna | Malappuram | Thirurangadi | Thennala | Revenue | VO 8547615612 | 11.0022 | 75.8952 | Yes | Perumanna (proposed Vilage Office Site), Survey No 196/4, Site is near to the Vetinary Hospital, Peruvanna |

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|----|---------------------------------|----------|----------|----------------------|-------------------|----------------------------------|-----------|-----------|-----|---|
| 38 | Mangalam Dam Site | Palakkad | Alathur | Mangalam Dam Village | KSEB | VO mangalam dam ph 8547614819 | 10.517067 | 76.535517 | Yes | Flat land but needs minimum levelling. Power supply available within 20m. Manual rain gauge is located very close to the site. Kadappara school compound is not very convenient due to contenting sports an games activities. |
| 39 | State Forest Training Institute | Palakkad | Palakkad | Puthussery East | Forest Department | VO Puthussery East ph 8547614926 | 10.947411 | 76.40861 | Yes | Flat land but needs minimum levelling. Power supply available within 20m. Manual rain gauge is located very close to the site. Kadappara school compound is not very convenient due to contenting sports an games activities. Site is in front of mess hall and ladies hostel. it is an open space with no influence of roofwater and trees. Located very |

| | | | | | | | | | | |
|----|---------------------------|----------------|------------|--------------|-------------------------------|---------------------------------|-----------|-----------|-----|---|
| | | | | | | | | | | close to Walayar Dam. |
| 40 | Karimpuzha | Palakkad | Ottapalam | Karimpuzha | Govt A.L.P School, Karimpuzha | VO Karimpuzha 8547615116 | 10.947411 | 76.408861 | Yes | Flat land, Power supply available within 25m. The suggested space contains small and ordinary trees and management is ready to clear it for this purpose. |
| 41 | Kunnamthanam PHC | Pathanamthitta | Mallapally | Kunnamthanam | Kunnamthanam Gram Panchayat | Panchayath President 9946663567 | 9.441272 | 76.612908 | Yes | |
| | Kinfra Park, Kunnamthanam | | | | Kinfra | Site manager, Ph 9207711854 | 9.432566 | 76.597495 | Yes | |

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|----|-----------------------------|----------------|-----------|---------------|-------------|------------------------------|----------|-----------|-----|--|
| | Krishi bhavan, Kunnamthanam | | | | Agriculture | | 9.424777 | 76.602811 | Yes | Site proposed in Kunnamthanam village, Block no 15, Survey number 291/08 where Krishi bhavan worked now being shifted to another site. Site didn't have Government offices nearby and internet availability now. |
| 42 | Poothankara | Pathanamthitta | Adoor | Enadimangalam | KIP | | 9.138856 | 76.813383 | Yes | Site proposed is near GPM UPS School, Poothankara |
| 43 | Seethathode | Pathanamthitta | Konni | Seethathode | KSEB | AE 944646660 6 | 9.1675 | 76.767778 | Yes | The land includes in Survey No. 640/1 in the bank of Kakkad Aar in Seethathode village under the possession of KSEBL. |
| 44 | Kochu Pampa | Pathanamthitta | Ranni | | KSEB | Dam safety 949601195 5 | 9.388056 | 77.156667 | Yes | The land lying in west side of KSEB Inspection Bungalow at Kochupampa. |
| 45 | Kanjikkuzhy | Alappuzha | Cherthala | Kanjikkuzhy | Revenue | Village Officer , Mob No: | 9.62032 | 76.33155 | Yes | |

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|----|--------------------------------|-----------|-------------|----------|---------|----------------|----------------|----------------|-----|---|
| | | | | | | 854761220 9 | | | | |
| 46 | Leprosy Sanitorium, Noornad | Alappuzha | Mavelikkara | Nooranad | Revenue | | 9.1735752 6 | 76.622763 6 | Yes | Only a part of the land area comes under revenue ownership, will have to visit the site again to identify a suitable site |

Conclusion

After examining the existing network and the gaps, we are recommending 46 more sites with this phase 2 report.

Pathanamthitta

1) Kunnamthanam PHC



2) Kinfra Park, Kunnamthanam



3) Krishi bhavan, Kunnamthanam



4) Poothankara



5) Seethathode



Kottayam

- 1) RIGHT SIDE VACANT PLOT AT MINI CIVIL STATION, W GATE RD



- 2) MES GROUND, MES Venkuriji , Erumely



3) POONJAR ENGINNERING COLLEGE, POONJAR, THEKKEKAR



4) GOVERNMENT MODEL HSS, KACHERY RD



Kollam

1) Karunagapally



2) Pathanapuram, Behind LP School



3) Pathanapuram, Behind GVHSS



4) Kottarakkara



5) Kollam



6) Kunnathur



KASARGOD

1. Kallar – Village Office Compound



2. Vellarikund



3. Badoor – Minor Irrigation Site



4. Muliyar



Wayanad

1) Kabanigiri Water Treatment Plant



2) Swargam Kunnu Water treatment Plant



3) Thirunelly Village Office



4) Wayanad Collectorate



5) Padinjarathara Dam Site



6) Kuttiyamvayal



7) Banasura Dam Site



Kozhikode

1) Kakkayam



2) Vilangad



3) Chembukkadavu



4) Urumi



Palakkad

1) Mangalam Dam Site



2) State Forest Training Institute



3) Govt A.L.P School, Karimpuzha



Malappuram

1) Vettilappara - Oakkayam G.U.P.S



2) Paravvana - TMG College



3) Perumanna (proposed Vilage Office Site)



Thrissur

1) Lower Sholayar



2) Lower Sholayar Area in the garden downstream



3) Kannamkuzhy – KSEB proposed site



4) Chavalakkad Taluk (Kadappuram Village)



5) Kodungallur – Azheekode village



6) Kodungallur - Munnackkal Beach area



7) Kodungallur – Poyya Village



8) Chalakkudy Taluk – Kadukutty Village



9) Chalakkudy Taluk – Kodakara village



10) Poringalkuthu (KSEB)



Alappuzha

1) Kanjikkuzhy Village Office



2) Leprosy Sanitorium, Noornad

