Parliamentary Publication Series No. : 222

Name of Institution : Department of Meteorology

Submission to the Parliament the observations of the Hon. Minister and the steps taken under Standing Order No. 119 (4) regarding the reports tabled by the Committee on Public Accounts of Parliament.

Parliamentary Publication Series : 222

Name of Ministry : Ministry of Defence

	Shortcomings identified by the Committee	Action taken by the Institution to rectify the shortcomings/current status
01	**Staff** The attention of the Committee was paid on the vacancy in several posts inclusive of the approved post of Additional Director General of the higher level of the Department of Meteorology. The Accounting officer (A.O.) stated that even though the post of Additional Director General was approved in the year 2022 the approval for the Scheme of Recruitment has not received up to date and as a result the vacancy in the post further remains. The officer who represented the Department of Management Services of the General Treasury stated that it is the responsibility of the Department of Meteorology to get filled the vacancy getting liaised with Ministry of Public Administration, Home Affairs, Provincial Councils and Local Authorities as it is not necessary to have a Scheme of Recruitment since the Service Minutes is available for the relevant posts.	The Scheme of Recruitment for the Executive Service Category of the Sri Lanka Scientific Service and the Scheme of Recruitment for the Senior Executive Service Category of the Sri Lanka Scientific Service have been approved in the year 2025 and recruitment activities are in progress. The Additional Director General (Actg.) has already been appointed and appointments to the posts of Director and Deputy Director are being made.
02.	**Establishment of Audit and Management Committees and Number of Meetings Held** Out of the 18 Audit and Management Committee meetings to be held in 2019, 2020, 2021, 2022 and by 30 June 2023, only 2 were held, and the last Audit and Management Committee meeting had been held on 20 December 2020. Furthermore, the Chief Accounting Officer (C.A.O.) / A.O. stated that since there is no Internal Auditor in the Department, there is no Audit Committee and departmental issues are being discussed only at the Audit Committee of the Ministry. The Committee directed the C.A.O. to take necessary steps taking the Ministry the responsibility for holding Departmental Internal Audit Committees.	I would like to inform you that an Acting Officer has been appointed from 17.10.2023 for the post of Internal Auditor which was fallen vacant in the Department of Meteorology and thereafter, 02 Audit and Management Committee meetings for the year 2023, 04 Audit and Management Committee meetings for the year 2024, and 02 Audit and Management Committee meetings that should already have been held for the year 2025 have been held duly in terms of the Audit Act. In addition, you are further informed that participation will be made for the Audit and Management Committee meetings held by the Ministry.
03	**Departmental Methodology for Obtaining Information on sudden Meteorological Changes** Only 70 out of 122 automated rain gauges installed by the Department were in operational condition as at 31st May 2023. Two (02) automated meteorological stations had not	There are 458 traditional rain gauge sets at present, out of which 407 are receiving data continuously. The relevant persons have been informed for the remaining 51. Accordingly, arrangements have been

	been installed out of the 38 and 12 have been repaired as to receive data of all standards. The batteries of the remaining stations were not in operational condition as expected. There are 453 sets of traditional rain gauges and out of them there were 72 rain gauges from which data were not being received continuously as at 31st May 2023. The Accounting officer stated that data is currently being obtained through both automated rain gauges and the traditional rain gauge system. However, he further stated that there are issues with the accuracy of the data in the traditional system that the service of the persons carrying out the measurements is a voluntary service and therefore, the necessary provisions required to provide training for these persons are expected to be obtained from the upcoming budget. The A.O. stated that the automated system established in the year 2018 is a system of obtaining data every 10 minutes, and breakdowns occur during the events of thunderbolts. The AO stated that procurement activities have been initiated to obtain batteries for the battery units which have become inactive under this system. The CAO / AO stated here that the rainfall is measured using the traditional rain gauge system and the relevant data are obtained through mail. The Committee expressed its displeasure with this slow methodology of obtaining data and instead emphasized that data should be obtained in a more practical and faster way according to the existing technology. The Committee, which raised questions about the effectiveness of the out dated traditional rain gauge system, asked to determine whether such system was further required and instead pointed out that a more accurate automated system should be used more for meteorological forecasts, and it was also pointed out that the support of the Ministry of Defence should be sought for this purpose. **<u>Recommendations</u>** The Committee directed the C.A.O. / A.O. to submit a report to the Committee before 10.09.2023 containing a system which may be	made to carry out further action. The Department possesses 131 automated rain gauges at present, out of which 124 are in operational condition. The equipment at 04 stations has to be removed due to the insecurity prevailing at such locations. They are to be established at other identified locations. Since the remaining 03 stations are in need of repair at present, their repairing activities are also to be carried out in the future. In taking in to consideration the 38 automated meteorological stations, these are more than 15 years old and the manufacturer has stopped manufacturing work since 2019. Due to this reason, spare parts cannot be get supplied. Accordingly, 02 Committee reports have proposed to remove these systems. A new system is expected to be purchased under the World Bank project and development work is being carried out under the JICA and World Bank project to maintain this system until then and to install and maintain further this system at the cooperation stations and other identified stations after purchasing the new system. Since the CResMPA project had decided to modernize the Meteorological Department, it was expected to use modern technology to improve the methodology of data acquisition through the project. Therefore, no provisions were got allocated for this purpose in the budget of year 2024 with the objective of minimizing local funds. Action is being taken to modernize the methodologies holding discussions with the consultancy company with the intention of obtaining meteorological data through new technology under the CResMPA project at present. It is expected that many of these issues will be solved through the modernization of the Department in the future.

	implemented to update all the existing traditional rain gauges and obtain data swiftly. The necessary provision plan required for obtaining data from traditional rain gauge sets has been sent bearing No. IAU/COPA/Committee/2023/07 dated 10.10.2023 and it has been informed that the project could be implemented upon the receipt of provisions. The Committee directed the C.A.O. / A.O. to prepare a report on the present-day status of 122 automated rain gauges, 38 automated meteorological stations, 453 traditional rain gauge sets, an arrangement to be followed to remove unnecessary units or to re-implement the necessary units and to submit a report to the Committee before 10.10.2023 containing the dates and periods on its implementation. A comprehensive report has been sent by the letter of Director General of Meteorology No. IAU/COPA/Committee/2023/07 dated 10.10.2023. The rough estimate required for the method of obtaining traditional rain gauge data through mobile phones on the same day has been submitted. It has been informed that 122 automated rain gauges would be implemented before 28.02.2024 and 38 automated meteorological stations would be implemented before the end of June 2024. It has also been informed that plans were being made to obtain data through traditional rain gauge sets.	
04	**<u>Implementation of Gongala Radar System</u>** A sum of Rs. 402 million has been spent for this project, which was implemented in the year 2008 and a sum of Rs. 322,926,702 had been remitted to the Department of Meteorology in December 2019, for the sum of Rs. 320 million deposited in the World Meteorological Union Trust Fund. Out of the amount received on 24th December 2019, Rs. 1 million had been retained by the Department and the balance had been remitted to the Treasury. It was revealed here that the Sri Lankan Government had spent a sum of Rs. 78 million approximately for constructions, trainings and other administrative affairs related to this, the crane used to install the Radar system had been collapsed and thereby the project was hampered, the relevant equipment had been damaged due to being left	At the investigation conducted by the Commission to Investigate Allegations of Bribery or Corruption in this respect, as it was not revealed any facts as to committing an offence under Section 70 of the Bribery Act, you are kindly informed that the investigation conducted under the direction of the Commission has been finalized and the documents taken into the custody of the Commission have been returned on 03.03.2023. **(Annexure - 01)**

	idle, that it would be spent about United States Dollars 1.1 million for the repair of this radar machine which cost about US$ 1.6 million, subsequently the technology of the relevant equipment had become obsolete and therefore the entire project had been failed. It was further revealed that equipment worth Rs. 9,146,765 which had been allocated for the Gongala radar affairs in January 2016 had also been gone missing. Furthermore, an official from the Department of Meteorology had inspected these machines before the equipment related to this project was brought to the country and informed that they were not in working condition. No details of this transaction were disclosed in the financial statements. It was stated here that the Commission to Investigate Allegations of Bribery or Corruption is conducting an investigation on the missing machinery valued approximately Rs. 9.1 million and that the accused officials had not yet been identified.	
05	**Establishment of the Pottuvil Meteorological Centre** The Japan International Cooperation Agency (JICA) had signed an agreement with the Government of Sri Lanka on 30th June 2017 to provide a grant of Japanese yen 2,503 million for this project. The Government of Sri Lanka had to bear a sum of Rs. 486.6 million approximately for this purpose and even though 5 years had lapsed since the year 2017, construction work had not yet been commenced. Furthermore, the land of the Pottuvil Meteorological Station where Pottuvil Radar Tower was to be built had not been get transferred to the Department of Meteorology. As the reasons, the Accounting officer stated that the project has been further delayed due to reasons beyond the control of the Department. He further stated that procurement process could not be commenced in the year 2020 due to the Covid pandemic condition and even though the work was commenced in 2021, the tender process was stopped midway due to insufficient amount estimated in the year 2017 and that it was expected to commence the project in Puttalam in the year 2024. The Committee paid attention on not getting	At the inception of this project it was proposed to install a radar system at both meteorological stations, viz. Puttalam and Pottuvil. However, JICA decided to install only the Puttalam radar system due to increase of costs as a result of the COVID pandemic and the global economic crisis. The delay to implement the Puttalam Meteorological radar project was due to reasons beyond the control of the Department. The project was delayed due to the Easter attacks in April 2019 and the health restrictions due to the COVID-19 pandemic. The international tender was held in Japan in 2021 and only one company has responded for the same. That company also subsequently withdrew the tender taking in to consideration the business risks due to global price increase and economic instability. Since this project was based on JICA grants, it should be considered as a tax-free project. Accordingly, local taxes (e.g. VAT, NBT, PAL) here shall be paid by the Government of Sri Lanka. Even though the request was made for the allocation of provisions required for the purpose, the monies could not be spent after the failure of the procurement process initiated in 2021. JICA resumed the procurement process in the year 2024.

	transferred to the Department the possession of about 10 lands where the Regional offices of the Department of Meteorology had been established inclusive of the site where the Puttalam Doppler Radar was to be installed.	As per the revised agreement signed on 26.04.2024, the period of the same has been extended up to 15.07.2028. Accordingly, JICA resumed the work of this project and the production of the radar system and the construction of Puttalam are being carried out within a stipulated time frame at present. Furthermore, the transfer certificates of the land in Puttalam and 03 other lands have been obtained at present and the transfer activities of the remaining lands are in the final stage.
06.	**Asset Management** Action had not been taken to get transferred to the Department ten lands where the Meteorological Regional Offices of Pothuvil, Anuradhapura, Batticaloa, Katugastota, Mahailuppallama, Mannar, Ratnapura, Kurunegala, Vavuniya, and Mullaitivu are located. The Accounting officer stated that Department had taken action to obtain transfer certificates for these lands from the Divisional Secretariats and delays have been caused in the process.	Out of the Meteorological Regional Offices mentioned herein, the land transferring process for Pottuvil, Ratnapura and Batticaloa offices has been finalized at present and the transferring process of the remaining offices is in the final stage.
07	**Asset Management** Out of the 38 automated meteorological systems worth Rs. 570 million received in the year 2009 under the Japanese assistance (JICA), 18 (M type) have been installed in the premises of the stations of Meteorological Regional Offices and 17 (C type) have been installed in the premises of stations of other institutions. Two (2) out of 20 M type systems have not been installed and 1 out of 18 C type systems had become completely inoperative. The Accounting officer stated that only 12 out of 38 automated meteorological systems are of expected operational level at present and data from 14 systems is being received by the Head office.	Taking into consideration the 38 automated meteorological stations, these are more than 15 years old and the manufacturer has stopped the production work since 2019. Therefore spare parts have not been procured. Accordingly, it has been proposed to remove these systems through 02 Committee reports. (Annexure - 02 and 03). A new system is expected to be purchased under the World Bank Project and development work is being carried out under the JICA and World Bank Project to maintain this system until then and to install and maintain further this system at the cooperation stations and other identified stations after purchasing the new system.
08	**Monsoon Forum** The Accounting officer stated that the Department of Meteorology takes action to make a weather forecasting at a Monsoon Forum, which is conducted twice a year before every Monsoon period with the liaison of about 52 relevant Government and Non-government institutions inclusive of the Department of Irrigation, Mahaweli Authority of Sri Lanka, Tea, Coconut, Paddy Research Institutes, Agricultural Insurance Board, and	Answers for this is submitted in Annexure - 04.

	Disaster Management Centre. **<u>Recommendations</u>** The Committee pointed out that there is a need to enact an Act to make legalize the activities of the Department of Meteorology regarding these forecasting. The Committee directed to make an arrangement mentioning dates and periods with an appropriate legal background for establishing a mechanism to coordinate the relevant institutions until then and including the roles and responsibilities of the relevant government institutions as well as the Department of Meteorology, the information to be exchanged, management of information and manner of utilization of the information and to submit a report in that respect to the Committee before 10.09.2023. A detailed report has been sent to the Committee through the letter of Director General of Meteorology No. IAU/COPA/Committee/2023/07 dated 08.09.2023. It has been informed that action is being taken with the leadership of the Minister to draft an Act for the Department and action is being taken to formalize this mechanism until then.	
09	**<u>Global Ranking of the Department of Meteorology of Sri Lanka</u>** The Committee directed the C.A.O. / A.O. to submit a report before 10.09.2023 to the Committee on the position (World ranking) of the Department of Meteorology of Sri Lanka as per the world rankings compared to the international standards and on the percentage of accuracy of the weather forecasts issued by the Department of Meteorology. It was informed that the World Meteorological Union had been consulted on the position of the Department of Meteorology of Sri Lanka a per the world rankings. It was also informed that the provisions allocated to this subject in Sri Lanka are not sufficient compared to the world. Reports on temperature and rainfall verification have been sent.	There is no specific world ranking system that ranks National Meteorological Departments or services at present. However, the following information may be provided regarding the position of Sri Lanka in the International Meteorological community : Sri Lanka has been a member of the World Meteorological Organization (WMO) since the year 1951. It includes 193 members, inclusive of 187 Member States and 6 Regions. The Director General of the Department of Meteorology of Sri Lanka serves as the Permanent Representative of Sri Lanka to the World Meteorological Organization and actively participates in the international meteorological cooperation. The Department of Meteorology of Sri Lanka collaboratively takes action regionally and internationally in the preparation of meteorological forecasts. Sri Lanka actively contributes to the Global Meteorological Observation System and fulfils the international data exchange obligations. This

		simultaneous data exchange is very crucial for global weather forecasting models and supports the international cooperation in meteorological services. Rather than a formal world ranking, meteorological services are generally assessed based on their technical capabilities, forecasting accuracy, coverage and compliance with WMO standards. However, specific comparative rankings among national meteorological services are not usually published. The lack of widely available world rankings for the Departments of National Meteorology often mostly reflects the fact of contributing to the world meteorological data exchange system coordinated by WMO while primarily rendering services for their local needs. The present day modernization project takes action to improve the capabilities of the Department to meet international standards.
10	<u>Payment of membership fees/subscriptions to international institutions from which disaster-related information is required.</u> It was revealed that membership fees / subscriptions have not been paid to institutions from which disaster-related information is required to be obtained internationally. The Committee inquired whether non-payment of these subscriptions would not create an issue in obtaining relevant information. It was stated that annual membership fees have been paid to the World Meteorological Organization and that subscriptions have not been paid to 3 other institutions. The Committee instructed the Chief Accounting officer / Accounting officer to follow a specific methodology in making payment of subscriptions.	Annual membership fees are being paid to 05 organizations inclusive of the World Meteorological Organization and information on world meteorological data is being obtained from those institutions.

Signed by;
Anura Kumara Disanayake
Minister of Defence

ඇමුණුම - 01

අල්ලස් හෝ දූෂණ චෝදනා විමර්ශන කොමිෂන් සභාව
இலஞ்சம் அல்லது ஊழல் பற்றிய சார்த்துதல்களைப் புலனாய்வு செய்வதற்கான ஆணைக்குழு
COMMISSION TO INVESTIGATE ALLEGATIONS OF BRIBERY OR CORRUPTION
තැ.පෙ. 1431, 36, මලලසේකර මාවත, කොළඹ 7. • த. பெ. 1431, 36, மலலசேகர மாவத்தை, கொழும்பு 7. • P. O. Box 1431, 36, Malalasekera Mawatha, Colombo 7.
දුරකථන අංක / தொலைபேசி / Telephone: 2596365, 2596360/1954 ෆැක්ස් / பெக்ஸ் / Fax: 2595045

මගේ අංකය : BC/Sec/15/2023-VIII
ඔබේ අංකය : DoM/DGM/GDR/2019-II
2023.07.14

කාලගුණ විද්‍යා දෙපාර්තමේන්තුව
30 JUL 2025

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කාලගුණ විද්‍යා අධ්‍යක්ෂ ජනරාල්,
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<u>කාලගුණ විද්‍යා දෙපාර්තමේන්තුවේ අරමුණු ඉටුකර ගැනීම සඳහා ශිල්පීය ක්‍රම භාවිතා කිරීමේ කාර්යසාධනය</u>

උක්ත කරුණ සම්බන්ධයෙන් ඔබ විසින් මෙම කොමිෂන් සභාව වෙත යොමු කරන ලද ඔබේ සමාංක හා 2023.05.16 දිනැති ලිපිය හා බැඳේ.

02. එමගින් විමසුම් කර ඇති බීසී/723/2015 ගොනුවට අදාලව සිදු කරන ලද විමර්ශනයේදී, අල්ලස් පනතේ 70 වන වගන්තිය ප්‍රකාරව වරදක් සිදුව ඇති බවට කරුණු අනාවරණය නොවූ බැවින්, කොමිෂන් සභාවේ විධානය යටතේ ගොනුව සම්බන්ධයෙන් සිදු කරන ලද විමර්ශන කටයුතු අවසන් කර, කොමිෂන් සභාවේ භාරයට ගෙන ඇති ලේඛන 2023.03.03 වන දින නැවත භාරදී ඇති බව කාරුණිකව දන්වා සිටිමි.

කොමිෂන් සභාවේ නියෝග පරිදි,

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දුරකථන/தொலைபேசி/Telephones:
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பணிப்பாளர் நாயகம்
Director General 2694104
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2691443

කාලගුණ විද්‍යා දෙපාර්තමේන්තුව
வளிமண்டலவியல் திணைக்களம்
DEPARTMENT OF METEOROLOGY

මගේ අංකය
எமது இல.
My No. EB/PRJ-MDN/2019
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Your No.
වෙබ් අඩවිය
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බෞද්ධාලෝක මාවත, කොළඹ 07, ශ්‍රී ලංකාව/ புத்தாலோக மாவத்தை, கொழும்பு 07, இலங்கை. / Bauddhaloka Mawatha, Colombo 07, Sri Lanka.

21.01.2020

Project Director,
Climate Resilient Improvement Project (CRiP),
Project Management Unit,
11, Jawaththa Road,
Colombo 05.

Dear Sir,

Appointment of a committee to recommend on the serviceability of the Current Automatic Weather Stations (CAWS) in the Department of Meteorology (DoM).

Meteorological observations are vital for weather forecasting, disaster warnings and climatological services. As a consequence, one of the key components of the modernization program of the DoM is to strengthen the existing weather observation network through repairing/replacing the CAWSs and establishing New Automatic Weather Stations (NAWS).

The CAWS were provided through the support from the Japan International Cooperation Agency (JICA)as a major component of the grant aid project titled "A comprehensive disaster early warning system in Sri Lanka". The objective of the CAWS was to upgrade the 20 synoptic meteorological stations (where readings are taken manually) to Automatic Weather Station (AWS) status and to install 18 new AWS at locations crucial for weather forecasting. The installation of the CAWS was completed in 2009, and included real time satellite-based communication facility (VSAT)to collect and receive continuously all the weather observations at the Headquarters of DoM, and a Central Operating System (COS) to display the data and to review the status of the sensors.

A number of difficulties arose which seriously affected the functionality of the CAWS; difficulties which were beyond the control of the DoM. Among these difficulties are the termination of communication service from the satellite configured for VSAT communication, an end to the manufacturing the spare parts by the manufacturer (Meisei) after 2017, and outdated software and operating systems on the monitoring PC and COS (which poses a network security risk, of course). Attempts to develop alternate communication modes have not been entirely successful either. As a result, the most of the CAWS are practically standalone stations at present, with no effective communication back to the National Meteorological Centre (NMC) which therefore does not receive real time data from the majority of the stations.

Mr. Gerald Fleming, the International Expert in Meteorology working under the CRiP has studied the issues relating to the system and provided a brief report(annex-1), which recommends replacement of this system along with a new AWS network to strengthen the observation network (the report is attached).

In view of this, a decision has to be made whether the CAWS is to be upgraded and retained, or replaced with new systems along with the establishment of a new AWS network under the component of Strengthening the Meteorological Observation within CRiP.

Therefore, I wish to propose appoint a technical committee to study the viability of retaining the CAWS, considering sustainable operational and maintenance efficacy, and to recommend the best course of action to be taken.

The report should be based on the following facts:-

a. Potential of utilizing the CAWS after upgrading;
b. Integration of the latest available communication systems to CAWS;
c. Potential of integration of the same communication system to the proposed new AWS sites (NAWS);
d. Potential of integrating observations from CAWS and NAWS on a common platform;
e. Long-term sustainability of CAWS after upgrading along with the communication mode proposed and
f. If, retaining CAWS is not viable, how the AWS equipment might be re-purposed for nationally useful activities.

The following officials are recommended to serve in the committee for the proposed technical study.

1. Mr. A.L.K. Wijemannage, Director, Department of Meteorology (Chairman),
   (Contact Nos : 0716333088, 0112685566, E-mail : ajithlkw@gmail.com)

2. Mr. M.M.P. Mendis, Deputy Director, Department of Meteorology,
   (Contact No : 0716442801, E-mail : merilmdi@gmail.com)

3. Mr. Kelum Piyadarshana, Electronic Engineer, Department of Meteorology,
   (Contact No : 0716894485, E-mail : kelump@gmail.com)

4. Dr. Wasantha Senadheera, Senior Scientist, National Building Research Organization,
   (Contact No : 0716874668, E-mail : wasantha.senadeera@gmail.com)

5. Mr. R. Ananda Perera, Senior Civil Aviation Inspector, Civil Aviation Authority of Sri Lanka,
   (Contact Nos : 0714016031,0112358852 E-mail : scaiatmtech@caa.lk)

Yours faithfully,

A.K. Karunanayake
Director General of Meteorology

CC. 1.Secretary, Ministry of Defence - For your information, please
2. Additional Secretary, Ministry of Defence (Disaster Management division) For your information, please
3. Mr. Suranga Kahandawa , Specialist/Task Team Leader, South Asia Disaster Risk and Climate Change Unit, World Bank-For your information and facilitation, please

Technical Evaluation Committee to Provide Recommendations on the serviceability of the current Automatic Weather Station (CAWs) of the Department of Meteorology

Introduction

Automatic Weather Station (AWS) Network has been installed in 2009 which is a grant aid from Japan International Cooperation Agency (JICA). The initial communication media is VSAT. AWS was manufactured by the Meisei Electric Company Japan and satellite communication equipment's by Gilat Israel. Satellite service was provider Sri Lanka Telecom (SLT) and terminated on 2016 due to end of life of the satellite. No replacement satellite introduced by the service Provider. Cost of changing to a different satellite is very high. Therefore it was decided connect the system with IPVPN. But selected service provider was unable to fulfill the necessary requirements. Therefore most of stations are working as standalone.

Committee appointed by Project Director , Climate Resilience Improvement Project, by his letters, reference CResMPA/P-1/PD/Com-1/DOM dated 21-01-2020, to provide recommendation on the serviceability of the current Automatic Weather Station (CAWs) of the Department of Meteorology, comprise of following members.

Members of the Evaluation Committee	Capacity
A.L.K Wijemannage **Director,** Department of Meteorology	Chairman
M.M.P Mendis **Deputy Director,** Department of Meteorology	Member
W.P.K Priydharsena **Electronic Engineer,** Department of Meteorology	Member
Wasantha Senadheera Senior Scientist, National Building Research Organization	Member
R Ananda Perera Senior Civil Aviation Inspector, Civil Aviation Authority	Member

Committee meeting was held on 14-02-2020 at the conference hall of the Department of meteorology.

Objectives

The main objective of the committee is to study the viability of remaining CAWS considering sustainable operation and maintenance efficacy and to recommend the best course of action to be taken. Following facts are considered during the study.

a. Potential of Utilizing the CAWS after upgrading
b. Integration of the latest available communication system to CAWS
c. Potential of integration of the same communication system to the proposed new AWS sites
d. Potential of integrating observation from CAWS and NAWS on a common platform
e. Long term sustainability of CAWS after upgrading along with the communication mode proposed
f. If retaining CAWS is not viable how the AWS equipment might be repurposed for nationally useful activities

Documents used

Technical Evaluation Committee (TEC) were referred following documents during its study.

a. Note on the existing network of Automatic Weather Station (AWS) operated by the Department of Meteorology in Sri Lanka (Mr.Gerald Fleming International Expert- Meteorology)
b. Request to appoint a committee to recommend on the serviceability current Automatic Weather Station (CAWS) in the department of Meteorology (Director General Department of Meteorology)

Evaluation

The AWs system was installed in 2008 and it is closed to the end of life. The AWS manufacturer informed that the production of the data logger is discontinued from year 2018. The manufacturer introduced a new data logger. Spare parts for this data logger will be not available with manufacturer. Department is maintaining a buffer stock of data logger spare parts and sensors. It is only possible to maintain the network for further period of 2 or 3 years by using available resources.

Considering the sensors; system uses sensors manufactured during year 2008. Department is maintaining a buffer stock of sensors. The technology is advanced during past ten years. Manufacturing of these sensors may be ceased in near future. Therefore it is not worthwhile to use same sensor for the new system.

Central operating system (COS) of the AWS system uses windows server 2002 .Windows XP is used for the monitor PC's at synoptic stations. Both of these operating systems are obsolete and there are no security and other essential updates provided by the Microsoft. Hardware of these systems is not supported with the new operating systems. The application software's designed for this AWS system is not compatible with the new operating systems. Therefore it is compulsory to replace and upgrade COS server and monitor PC's.

The original communication media of the system is VSAT. The data logger has only one Ethernet port for the communication. System designed as private network. The firmware of the system does not support for the backup link (Redundant) or connection of external modems. Therefore it is not possible to connect internet based communication media to the system. System requires both way communications to transfer data from Colombo head office to synoptic stations. The voice call facility (VOIP) was available with the system.

It was noticed that the IPVPN facility is not targeted only for the AWS communication. AWS communication is taking a small part of the bandwidth allocated to the station. Local area network (LAN) and VOIP is connected via IPVPN network between head office and regional station. The band width of the IPVPN can be reduced if only using it for the AWS.

The best communication media for the AWS network is VSAT (with solar power). The network does not affect with any external impacts. The terrestrial communication links are more vulnerable for the disasters. The reliability of the AWS communication network should be very essential during disaster situation. There are some satellites, provide space segment free of charge for the meteorological purposes.

IPVPN service is a dedicated connection. It is fixed bandwidth and offers identical upload and download speeds and is not subject to contention with other users. The delivery is guaranteed even in congested situations.

GPRS is not a dedicated connection. It is variable bandwidth, asymmetric, (faster for downloads than for uploads) and subject to contention with other users. The delivery is mostly best effort. It is not possible to communicate during congested period. Cost of the service is low comparing to other IP based communication medias.

UHF Radio data communication is used in some countries as a communication media of the AWS network. The service is almost free of charge after Initial cost of radio network. However considerable cost should be bear for the maintenance of the network.

It was revealed that the metal structures of present AWS system was corroded specially in coastal belt.

Mr. Gerad Fleming the international expert in Meteorology working under the CRIP project has provided a report, which recommends to replace the existing system and expand the network with new AWS.

TEC is in view that the mix of existing equipment and new equipment will be increased difficulty in maintenance during long run. It is sustainable and reliable to have a one network with same type of equipment. Interchangeability of spare parts and expertise in the system is beneficial for the long run.

Conclusions

Present AWS network is in operation for more than ten years. The system manufacturer announced that the manufacturing process was ceased for data logger. The software and hardware in existing network is outdated and no further support of critical updates provided. The present data logger support only for Ethernet and one communication media. It is compulsory to have a redundant communication link for the system.

Recommendation

TEC decided to recommend following recommendation regarding the current CASWs of the Department of Meteorology.

a. Totally replace the existing AWS network with expansion
b. VSAT communication is the best option for the data communication of AWS. The second and third options are IPVPN and GPRS respectively. It is recommended to have redundant communication media from different service provider.
c. Equipment of existing AWS can be used for the educational purpose. The system can be run standalone.
d. Seek possibility of the obtaining satellite space segment (free of charge) specially from Indian Meteorological Department (IMD), Japan Meteorological Agency (JMA). Korea Meteorological Administration (KMA) and China Meteorological Administration (CMA)

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Some comments on the capacity of the Department of Meteorology in Sri Lanka

In common with most National Meteorological Services in developing countries, the DoM is seriously underfunded. The individual capacities of the professional and technical staff members is very good, but there are too few of them to run a full operational forecast and warning service in a sustainable manner. The current provision of services depends on many people making exceptional personal efforts to maintain service, but this is not sustainable – people burn out and leave (an indeed can usually get better salaries in the private sector). For a middle-income county, the investment of the Government of Sri Lanka in the Department of Meteorology is at a very low level.

Although Sri Lanka is a relatively small island country there is a great variability in the weather conditions that are experienced by the different regions. This is true in the larger scale (some areas get very heavy rain and floods, while others suffer regularly from drought) and on the smaller scale (one village can get a heavy downpour while a neighbouring village can stay dry). This pattern of high variability of weather is a consequence of the tropical situation of the island combined with the topography, with the very high ground in the centre-south contrasting with the flat ground in the north and around the coast.

Sri Lanka is also a country of many small river catchments, most of them running just a short distance from the high ground down to the sea. Therefore it is very important to know in exactly which catchment the rain is likely to fall, so that the water levels can be properly managed and flooding can be warned for. This means it is important to know with precision where the rain is falling, how much rain is falling, and where it is likely to fall in the coming hours and days.

At the most basic level, a National Meteorological Service has about five fundamental tasks:

1. To know that the weather is doing right now over the national territory (observing the weather)
2. To investigate and understand the behaviour of the weather (understanding the science)
3. To know how the weather and climate is likely to evolve in the future – hours, days, weeks, months, seasons, years.... (understanding the science and understanding the mathematical modelling of weather)
4. To build up an archive of knowledge and information about the weather patterns over the national territory (climatology)
5. To communicate weather and climate information – forecasts, warnings, seasonal outlooks etc – to the public, to specialised users, and to key decision-makers etc. (helping people to make good weather-informed decisions).

Reviewing the products and services provided currently by the Department of Meteorology in Sri Lanka, some immediate deficiencies are noted:

(a) The forecasts are very general in nature and provide very little precise detail of where or when rainfall / thunderstorms etc will occur;
(b) The forecasts do not provide sufficient information for good decisions to be made;
(c) Weather warnings are similarly very general and most people do not take them into account, or take any action.

The problem is not the quality of the forecasters – they are well-trained and do their work as best they can. They do not have the proper tools available to them to provide useful forecasts and warnings. Weather observations come only once every three hours from the manual stations; this is completely inadequate. There is no weather radar, which should be a high priority for the detection

and tracking of heavy showers and thunderstorms. The use of the global weather models (which have driven a huge improvement in weather forecasting in other parts of the world) has improved in recent years but there is still a lot of improvement possible through calibration, bias correction, and similar techniques which need local knowledge and input to apply. The communication tools available to the forecaster are poor; the website needs to be refreshed, there is no DoM Weather App and the links with traditional media (TV and radio) are weak.

Clearly, any plan to modernise the DoM must identify a path to balanced improvement. For example, it would not make any sense to put significant effort into increasing circulation to the public of DoM forecast and warning output until the quality of that output had been raised to a level that was fit-for-purpose to meet user needs.

The technical areas that require improvement are as follows:

1. Improve and extend the surface observing network through the installation of a new network of at least 50 Automatic Weather Stations which provide real-time reports every 10mins, incorporating lightning detection networks as available
2. Establish a unified rain-gauge network which gathers together all of the data flowing from existing rain-gauge networks operated by the DoM, ID and NBRO, and make this amalgamated real-time data freely available to all partners.
3. Upgrade the upper-air observing systems to enable twice-daily balloon ascents to be conducted in Colombo and Trincomalee, with datasets from the ascents to be shared internationally.
4. Establish one or two weather radars in Sri Lanka and arrange with the Indian Met Department to get data from their weather radar network also.
5. Improve the reception of weather satellite data at the DoM (if possible, gain access to the Indian Weather Satellite data; it is the best-located weather satellite for Sri Lanka).
6. Improve the capacity for using global weather models (training and staff resources) and developing local weather models (extra staff and better computing resources).
7. Build secure Local and Wide Area Networks of sufficient bandwidth to support full connectivity between offices (local and remote) of the DoM, and to facilitate the sharing of weather data in real time with other relevant agencies.
8. Establish a Data Communication / Message Switching System to manage the data flows from all of the Sri Lankan meteorological and hydrological observing networks, route data to internal and external users, and manage the international exchange of data.
9. Build a Forecast Operations Database that gathers together real-time observation data, data from weather satellite and radar, and data from global, regional and local weather models.
10. Build a Forecast Visualisation System which will allow forecasters to view and configure all available weather information to facilitate clear and timely analysis of developing and anticipated weather conditions over and around Sri Lanka.
11. Develop Forecast Production Systems that enable weather forecast and warning information to be prepared in text, graphic or other means and transmitted to users with minimal delay.
12. Build a fully featured climatological database/archive that will enable the permanent, secure storage of all Sri Lankan weather data and support the development of climate services.
13. Develop freshly-designed DoM websites and apps to facilitate the distribution of high-quality and well-presented forecast and warning products to the Sri Lankan public.

Side by side with the technical developments, staff resources with the appropriate skills to manage and operate this system will be needed. Some of this requirement could be met by re-training existing DoM staff whose work would be subsumed into the new automated systems.

Other elements of the staffing requirements, such as specialists in radar meteorology, satellite meteorology, or in the development of weather modelling, would need to be met via the recruitment of additional meteorologists, either to directly fill those specialised posts or to release current staff into these posts from rostered duties. A detailed workforce and training plan has been developed (by myself, working under the Cres MPA project) to address these needs and also the current under-staffing of the forecasters' rosters.

Gerald Fleming

International Advisor to DoM, 2019/2020

Meteorological Consultant to the World Bank (WB) and World Meteorological Organisation (WMO)

Chair, WMO Group on Public Weather Services, 2005-2020

25th August 2023

8. මේ වන විට අනාවැකි පළකිරීම පිළිබඳ ව කාලගුණ විද්‍යා දෙපාර්තමේන්තුවේ කටයුතුවල නිත්‍යානුකූල භාවයක් ඇතිකිරීම සඳහා වන පනතේ කෙටුම්පත සකස් කර ඇති අතර, එම පනත සකස් කිරීම සඳහා අමාත්‍ය මණ්ඩල අනුමැතිය ලබා ගැනීමට යොමු කර ඇතත් අනුමැතිය ලැබී නොමැති බැවින් නැවත සංශෝධන සහිතව අමාත්‍ය මණ්ඩල සංදේශය යොමු කිරීමට කටයුතු කරනු ලැබේ.

කාලගුණ සහ දේශගුණ තොරතුරු ලබා දීම සඳහා පාර්ශවකාර ආයතන සමග කාලගුණ විද්‍යා දෙපාර්තමේන්තුවේ සම්බන්ධීකරණය සඳහා දැනට පවත ආකාරයේ යාන්ත්‍රණයක් පවතී. දැනට ආරම්භ කර ඇති දෙපාර්තමේන්තු නවීකරණය යටතේ මෙම කටයුතු වඩා විධිමත් කිරීමට කටයුතු කෙරෙනු ඇත

	කාර්යය	අරමුණ	පැවැත්වෙන ආකාරය	ප්‍රතිලාභ
1	මෝසම් කතිකාවත	• පාර්ශව ආයතන වල කාර්යය භාරය සැලසුම් කිරීම සඳහා අවශ්‍ය ඉදිරි දේශගුණ සහ කාලගුණ තත්වයන් පිළිබඳ දැනුවත් කිරීම • දෙපාර්තමේන්තුව විසින් නිකුත් කරනු ලබන සේවා සහ අනාවැකි පිළිබඳ ඔවුන්ගේ නිරීක්ෂණ සහ නිර්දේශ ලබා ගැනීම	• ප්‍රධාන මෝසම් දෙකට පෙර වසරකට දෙවරක් පාර්ශව ආයතන කැඳවා මෙම තොරතුරු දැනුම් දෙනු ලබයි	• ඉදිරි කාලගුණ සහ දේශගුණ තත්වයන්ට අනුරූප වන ආකාරයට ජල කළමනාකරණය, කෘෂි කාර්මික කටයුතු සහ විදුලිබල ජනනය ආදී කටයුතු සැලසුම් කිරීමෙන් එම කාර්යයන් උපරිම කාර්යක්ෂමතාවයකින් කිරීමේ හැකියාව සහ ආපදා කළමනාකරණ කටයුතු සඳහා පෙර සුදානම් වීමෙන් විය හැකි ජීවිත සහ දේපළ හානිය අවම කිරීම සහ වැඩි වගා අස්වැන්නක් ලබා ගැනීමෙන් රටේ ආර්ථිකය නැංවීම සඳහා දායක වීම • සපයන සේවාවන් වැඩි දියුණු කිරීමෙන් පලදායි සේවාවක් ලබාදීම
2	කෘෂි උපදේශනය පිළියෙළ කිරීම සඳහා වන තාක්ෂණික උපදේශන කමිටුව	• ඉදිරි කාලගුණ සහ දේශගුණ තත්වයන්ට අනුරූප වන ආකාරයට, කෘෂි කාර්මික කටයුතු සැලසුම් කිරීම් සඳහා කෘෂිකාර්මික ප්‍රජාව සඳහා උපදේශන ලබාදීම	• කෘෂිකර්ම දෙපාර්තමේන්තුවේ ස්වභාවික සම්පත් කළමනාකරණ මධ්‍යස්ථානය මගින් මෙම තාක්ෂනික උපදේශන කමිටු රැස්වීම සෑම මාසයකම පළමු සතිය තුල මාර්ග ගත ක්‍රමය ඔස්සේ පවත්වනු ලබයි.	• ඉදිරි කාලගුණ සහ දේශගුණ තත්වයන්ට අනුරූප වන ආකාරයට කෘෂි කාර්මික කටයුතු සැලසුම් කිරීමෙන් ඉහළ අස්වැන්නක් ලබා ගැනීමෙන් ආහාර සුරක්ෂිතතාවය ආරක්ෂා කිරීම • ආන්තික කාලගුණ සහ දේශගුණ තත්වයන් මගින් වියහැකි වගා හානි අවම කිරීමෙන් ආහාර සුරක්ෂිතතාවය ආරක්ෂා කර ගැනීමෙන් රටේ ආර්ථිකය නැංවීම

			• මේ සඳහා කෘෂි කාර්මික කටයුතු වලට අදාල සියලු පාර්ශවකාර ආයතන ලෙස කාලගුණ විද්‍යා දෙපාර්තමේන්තුව , මහවැලි අමාත්‍යාංශයේ ජල ලේකම් කාර්යාලය, වැවිලි කර්මාන්ත අමාත්‍යාංශය, වාර්මාර්ග දෙපාර්තමේන්තුව, ගොවිජන සේවා දෙපාර්තමේන්තුව තේ /වී /රබර් /පොල් පර්යේෂණ ආයතන සම්බන්ධවන ආයතන අතර ප්‍රමුඛ වේ	
3	ජල කළමනාකරණ රැස්වීම කෘෂි කර්ම පශු සම්පත් ඉඩම් සහ වාර්මාර්ග අමාත්‍යාංශයේ මහවැලි අධිකාරිය යටතේ පවතින ජල පාලන ලේකම් කාර්යාලය මගින් පවත්වනු ලබන ජල කළමනාකරණ රැස්වීම සඳහා ප්‍රධාන පාර්ශව කරුවකු ලෙස කාලගුණ විද්‍යා දෙපාර්ත මේන්තුව	• ඉදිරි කාලගුණ සහ දේශගුණ තත්වයන්ට අනුරූප වන ආකාරයට, ජල කළමනාකරණ • කටයුතු සැලසුම් කිරීම් සඳහා • විදුලිබල කටයුතු සඳහා අදාල සැලසුම් කිරීම් සඳහා	• කෘෂි කර්ම පශු සම්පත් ඉඩම් සහ වාර්මාර්ග අමාත්‍යාංශයේ මහවැලි අධිකාරිය යටතේ පවතින ජල පාලන ලේකම් කාර්යාලය මගින් මෙම කමිටු රැස්වීම සෑම මාසයකම පළමු සතිය තුල පවත්වනු ලබයි. • මේ සඳහා අදාල සියලු පාර්ශවකාර ආයතන ලෙස කාලගුණ විද්‍යා දෙපාර්තමේන්තුව, වාර්මාර්ග දෙපාර්තමේන්තුව, ගොවිජන සේවා දෙපාර්තමේන්තුව, ජාතික ජල සම්පාදන සහ ජලාපවහන මණ්ඩලය,	• ඉදිරි කාලගුණ සහ දේශගුණ තත්වයන්ට අනුරූප වන ආකාරයට ජල කළමනාකරණ කටයුතු සැලසුම් කිරීමෙන් කෘෂිකාර්මික කටයුතු, පානීය ජල අවශ්‍යතා සහ විදුලි බල නිෂ්පාදනය බාධාවකින් තොරව උපරිම කාර්යක්ෂමතාවයකින් ඉටුකිරීමෙන් රටේ ආර්ථිකය සහ ආහාර සුරක්ෂිත තාවය ආරක්ෂා කිරීම • ආන්තික කාලගුණ සහ දේශගුණ තත්වයන් මගින් වියහැකි හානි අවම කිරීමෙන් ආර්ථිකය නැංවීම

	සම්බන්ධවේ		කෘෂි කර්ම දෙපාර්තමේන්තුව, විදුලි බල මණ්ඩලය සම්බන්ධවන ආයතන අතර ප්‍රමුඛ වේ	
4	ජාතික විභාග පැවැත්වීම, මැතිවරණ පැවැත්වීම සඳහා ආපදා පෙර සුදානම් වීම සඳහා අදාළ පාර්ශවකාර ආයතන සමග පවත්වනු ලබන රැස්වීම් සඳහා ප්‍රධාන පාර්ශව කරුවකු ලෙස කාලගුණ විද්‍යා දෙපාර්තමේන්තුව සම්බන්ධවේ	• ජාතික විභාග සහ මැතිවරණ පැවැත්වීම කටයුතු සඳහා ආන්තික කාලගුණ සහ දේශගුණ තත්වයනට මුහුණ දීම සඳහා පෙර සුදානම් සැලසුම් කිරීම සඳහා	• ආපදා කලමනාකරණ මධ්‍යස්ථානය මගින් මෙම රැස්වීම් සංවිධානය කරන අතර මේ සඳහා අදාල පාර්ශවකාර ආයතන ලෙස විභාග දෙපාර්තමේන්තුව සහ මැතිවරණ කාර්යාලය සමග කාලගුණ විද්‍යා දෙපාර්තමේන්තුව සම්බන්ධවේ	• ජාතික විභාග සහ මැතිවරණ පැවැත්වීම කටයුතු සැලසුම් කල පරිදි බාධාවකින් තොරව පැවැත්වීමට
5	අයහපත් කාලගුණ තත්වයන් දැනුම් දීම	• කාලගුණ සහ දේශගුණ ආපදා සඳහා පෙර සුදානම් වීම සඳහා	• මෙම විශේෂ අවස්ථා ඇතිවීමට පෙර සහ ඇතිවෙමින් පවතින විට එම තත්වයන් පිළිබඳ දැනුම් දීම සඳහා කාලගුණ විද්‍යා දෙපාර්තමේන්තුව මගින් මෙම රැස්වීම් සංවිධානය කරන වාර්මාර්ග දෙපාර්තමේන්තුව, ආපදා කලමනාකරණ මධ්‍යස්ථානය, ධීවර දෙපාර්තමේන්තුව, ගොඩනැගිලි පර්යේෂණ මධ්‍යස්ථානය කැදවනු ලබයි	• කාලගුණ සහ දේශගුණ ආපදා මගින් විය හැකි ජීවිත සහ දේපළ හානිය අවම කිරීම

6	ආපදා සඳහා පෙර සුදානම් වීම සඳහා අදාළ පාර්ශවකාර ආයතන සමග පවත්වනු ලබන රැස්වීම් සඳහා ප්‍රධාන පාර්ශව කරුවකු ලෙස කාලගුණ විද්‍යා දෙපාර්තමේන්තුව සම්බන්ධවේ	කාලගුණ සහ දේශගුණ ආපදා සඳහා පෙර සුදානම් වීම සඳහා	• ආපදා කලමනාකරණ මධ්‍යස්ථානය මගින් ප්‍රධාන මෝසම් දෙකට පෙර සියලු පාර්ශව ආයතන කැඳවා මෙම රැස්වීම් සංවිධානය කරන අතර මේ සඳහා අදාල පාර්ශවකාර රාජ්‍ය ආයතන, ත්‍රිවිධ හමුදාව පොලිසිය සහ අරමුදල් සපයන රාජ්‍ය නොවන සංවිධාන සමග කාලගුණ විද්‍යා දෙපාර්තමේන්තුව සම්බන්ධ වේ	• කාලගුණ සහ දේශගුණ ආපදා මගින් විය හැකි ජීවිත සහ දේපළ හානිය අවම කිරීම

08. தற்போது வானிலை முன்னறிவிப்புகளை வெளியிடுவது தொடர்பான வளிமண்டலவியல் திணைக்களத்தின் செயல்பாடுகளில் சட்டப்பூர்வத்தன்மையை ஏற்படுத்துவதற்கான வரைவு சட்டமூலம் தயாரிக்கப்பட்டுள்ளதோடு, அந்தச் சட்டமூலத்தை தயாரிப்பதற்கு அமைச்சரவையின் அங்கீகாரத்தைப் பெற்றுக்கொள்வதற்கு சமர்ப்பிக்கப்பட்டுள்ள போதிலும் அமைச்சரவையின் அங்கீகாரம் கிடைக்கப்பெறாத காரணத்தினால் மீண்டும் திருத்தங்களுடன் அமைச்சரவை விஞ்ஞாபனத்தை சமர்ப்பிப்பதற்கு நடவடிக்கை எடுக்கப்படும்.

வானிலை மற்றும் காலநிலை தகவல்களை வழங்குவதற்காக தொடர்புடைய நிறுவனங்களுடன் வளிமண்டலவியல் திணைக்களத்துடன் ஒருங்கிணைப்பதற்கான பின்வரும் பொறிமுறை தற்போது காணப்படுகின்றது. ஏற்கனவே ஆரம்பிக்கப்பட்டுள்ள துறைசார் நவீனமயமாக்கலின் கீழ், இந்த நடவடிக்கைகளை நெறிப்படுத்த முயற்சிகள் மேற்கொள்ளப்படும்.

	செயற்பாடு	**நோக்கம்**	**நடைபெறும் முறை**	**நலன்கள்**
1	பருவகால மாற்றங்களுக்கான கலந்துரையாடல்	• பங்குதாரர்களுக்கு அவர்களின் பணிகளைத் திட்டமிடுவதற்குத் தேவையான எதிர்கால காலநிலை மற்றும் வானிலை நிலைமைகள் குறித்துத் அறிவித்தல் • திணைக்களத்தினால் வழங்கப்படும் சேவைகள் மற்றும் முன்னறிவிப்புகள் குறித்த அவர்களின் அவதானிப்புகள் மற்றும் பரிந்துரைகளைப் பெறுதல்	• இந்தத் தகவல்கள், இரண்டு முக்கிய பருவமழைகளுக்கு முன்பு, வருடத்திற்கு இரண்டு முறை பங்குதாரர்களுக்குத் தெரிவிக்கப்படுகிறது.	• எதிர்கால வானிலை மற்றும் காலநிலை நிலைமைகளுக்கு ஏற்ப நீர் முகாமை, விவசாய நடவடிக்கைகள் மற்றும் மின் உற்பத்தி நடவடிக்கைகளைத் திட்டமிடுவதன் மூலம், அதிகபட்ச செயல்திறனுடன் அந்தச் செயல்பாடுகளைச் செய்யும் திறன் மற்றும் அனர்த்த முகாமைத்துவ நடவடிக்கைகளுக்குத் தயாராக இருப்பதன் மூலம், உயிர் மற்றும் சொத்து இழப்புகளைக் குறைத்து, அதிக பயிர் விளைச்சலைப் பெறுவதன் மூலம் நாட்டின் பொருளாதாரத்திற்கு பங்களித்தல். • வழங்கப்படும் சேவைகளை மேம்படுத்துவதன் மூலம் பயனுள்ள சேவைகளை வழங்குதல்.
2	விவசாய ஆலோசனைகளைத் தயாரிப்பதற்கான தொழில்நுட்ப ஆலோசனைக் குழு	• எதிர்கால வானிலை மற்றும் காலநிலை நிலைமைகளுக்கு ஏற்ப விவசாய நடவடிக்கைகளைத் திட்டமிடுவது குறித்து விவசாய சமூகத்திற்கு ஆலோசனை வழங்குதல்.	• இந்தத் தொழில்நுட்ப ஆலோசனைக் குழு கூட்டம், விவசாயத் திணைக்களத்தின் இயற்கை வள முகாமை மையத்தால் ஒவ்வொரு மாதமும் முதல் வாரத்தில் ஆன்லைனில் நடத்தப்படுகிறது. • இதற்காக, வளிமண்டலவியல்	• எதிர்கால வானிலை மற்றும் காலநிலை நிலைமைகளுக்கு ஏற்ப விவசாய நடவடிக்கைகளைத் திட்டமிடுவதன் மூலம் அதிக விளைச்சலை அடைவதன் மூலம் உணவுப் பாதுகாப்பை உறுதி செய்தல். • தீவிர வானிலை மற்றும் காலநிலை நிலைமைகளால் ஏற்படும் பயிர் சேதத்தைக் குறைத்து உணவுப் பாதுகாப்பை உறுதி செய்வதன் மூலம் நாட்டின் பொருளாதாரத்தை மேம்படுத்தல்.

			திணைக்களம், மகாவலி அமைச்சின் நீர் செயலகம், பெருந்தோட்டக் கைத்தொழில் அமைச்சு, நீர்ப்பாசனத் திணைக்களம், விவசாய சேவைகள் திணைக்களம் மற்றும் தேயிலை/காய்கறி/ இரப்பர்/தெங்கு ஆராய்ச்சி நிறுவனங்கள் போன்ற விவசாய நடவடிக்கைகளுடன் தொடர்புடைய அனைத்து பங்குதாரர்களும் சம்பந்தப்பட்ட நிறுவனங்களில் முக்கியமானவர்கள்.	
3	நீர் முகாமைத்துவ கூட்டங்கள் விவசாய, கால்நடை, காணி மற்றும் நீர்ப்பாசன அமைச்சின் மகாவலி அதிகாரசபையின் கீழ் உள்ள நீர் முகாமைத்துவ செயலகத்தால் நடத்தப்படும் நீர் முகாமைத்துவக் கூட்டத்தில் வளிமண்டலவியல் திணைக்களம் ஒரு முக்கிய பங்குதாரராக ஈடுபட்டுள்ளது.	• எதிர்கால வானிலை மற்றும் காலநிலை நிலைமைகளுக்கு ஏற்ப நீர் முகாமைத்துவ நடவடிக்கைகளைத் திட்டமிடுதல். • மின்சார நடவடிக்கைகள் தொடர்பான திட்டமிடல்.	• இந்தக் குழுக் கூட்டம், விவசாயம், கால்நடை, காணி மற்றும் நீர்ப்பாசன அமைச்சின் மகாவலி அதிகாரசபையின் கீழ் உள்ள நீர் முகாமைத்துவ செயலகத்தால் ஒவ்வொரு மாதத்தின் முதல் வாரத்திலும் நடத்தப்படுகின்றது. • இதற்காக, வளிமண்டலவியல் திணைக்களம், நீர்ப்பாசனத் திணைக்களம், விவசாய சேவைகள் திணைக்களம், தேசிய நீர் வழங்கல் மற்றும் வடிகாலமைப்புச் சபை,	• எதிர்கால வானிலை மற்றும் காலநிலை நிலைமைகளுக்கு ஏற்ப நீர் முகாமைத்துவ நடவடிக்கைகளைத் திட்டமிடுவதன் மூலம் நாட்டின் பொருளாதாரத்தையும் உணவுப் பாதுகாப்பையும் பாதுகாத்தல், விவசாய நடவடிக்கைகள், குடிநீர் தேவைகள் மற்றும் மின்சார உற்பத்தி ஆகியவை இடையூறு இல்லாமல் அதிகபட்ச செயல்திறனுடன் மேற்கொள்ளப்படுவதை உறுதி செய்தல். • தீவிர வானிலை மற்றும் காலநிலை நிலைமைகளால் ஏற்படக்கூடிய சேதங்களைக் குறைப்பதன் மூலம் பொருளாதாரத்தை மேம்படுத்தல்.

			விவசாயத் திணைக்களம் மற்றும் மின்சார சபை போன்ற அனைத்து தொடர்புடைய பங்குதாரர்களும் சம்பந்தப்பட்ட நிறுவனங்களில் முக்கியமாக பங்கெடுக்கின்றன.	
4	தேசியப் பரீட்சைகள் மற்றும் தேர்தல்களை நடத்துதல் போன்ற அனர்த்த நிலமைகளுக்குத் தயாராவதற்கு தொடர்புடைய பங்குதாரர்களுடன் நடத்தப்படும் கூட்டங்களில் வளிமண்டலவியல் திணைக்களம் ஒரு முக்கிய பங்குதாரராக ஈடுபட்டுள்ளது.	• தேசியப் பரீட்சைகள் மற்றும் தேர்தல்களை நடத்தும்போது தீவிர வானிலை மற்றும் காலநிலை நிலைமைகளுக்குத் தயாராகி திட்டமிடுதல்.	• இந்தக் கூட்டங்கள் அனர்த்த முகாமைத்துவ மையத்தால் ஏற்பாடு செய்யப்பட்டுள்ளன, மேலும் வளிமண்டலவியல் திணைக்களம், பரீட்சைத் திணைக்களம் மற்றும் தேர்தல் அலுவலகத்துடன் தொடர்புடைய பங்குதாரர்களாகத் தொடர்பில் உள்ளது.	• தேசியப் பரீட்சைகள் மற்றும் தேர்தல்கள் திட்டமிட்டபடி இடையூறு இல்லாமல் நடைபெறும்.
5	சீரற்ற காலநிலை தன்மையை அறிவித்தல்	• வானிலை மற்றும் காலநிலை அனர்த்தங்களுக்கு முன்கூட்டியே தயாராதல்	• வளிமண்டலவியல் திணைக்களம் இந்தக் கூட்டங்களை ஏற்பாடு செய்து, நீர்ப்பாசனத் திணைக்களம், அனர்த்த முகாமைத்துவ மையம், மீன்வளத் திணைக்களம் மற்றும் கட்டிட ஆராய்ச்சி மையம் ஆகியவற்றைக் கூட்டி, இந்த சிறப்பு சூழ்நிலைகள் ஏற்படுவதற்கு முன்பும், ஏற்படும் போதும் அவற்றைப் பற்றித் தெரிவித்தல்.	• வானிலை மற்றும் காலநிலை அனர்த்தங்கள் மூலம் ஏற்படக்கூடிய உயிர் மற்றும் சொத்துச் சேதங்களைக் குறைத்தல்.

6	அனர்த்தங்களுக்குத் தயாராக இருப்பதற்காக தொடர்புடைய பங்குதாரர்களுடன் நடத்தப்படும் கூட்டங்களில் வளிமண்டலவியல் திணைக்களம் ஒரு முக்கிய பங்குதாரராக ஈடுபட்டுள்ளது.	வானிலை மற்றும் காலநிலை அனர்த்தங்களுக்கு முன்கூட்டியே தயாராதல்	• இரண்டு முக்கிய பருவமழைகளுக்கு முன்னர் அனைத்து பங்குதாரர்களையும் அழைத்து அனர்த்த முகாமைத்துவ மையம் இந்தக் கூட்டங்களை ஏற்பாடு செய்கின்றது. இதற்காக, வளிமண்டலவியல் திணைக்களம் தொடர்புடைய பங்குதாரர் அரச நிறுவனங்கள், முப்படைகள், பொலிஸ் மற்றும் நிதி வழங்கும் அரசு சாரா நிறுவனங்களுடன் தொடர்பு கொள்கின்றது.	• வானிலை மற்றும் காலநிலை அனர்த்தங்கள் மூலம் ஏற்படக்கூடிய உயிர் மற்றும் சொத்துச் சேதங்களைக் குறைத்தல்.

Annexure - 04

8. The draft of the Act has been prepared at present to establish a legality in the affairs of the Department of Meteorology regarding the forecasting and even though it has been referred seeking the approval of the Cabinet of Ministers to prepare the Act and the approval has not been received action is being taken to submit the Cabinet Memorandum again to the Cabinet of Ministers with the amendments.

There is a mechanism as below at present for the coordination of the Department of Meteorology with the stakeholder institutions for the provision of weather and climate information. Action will be taken to make the affairs more formal under the departmental modernization which has already been commenced.

	Task	Objective	Manner of conducting	Benefits
1.	Monsoon Forum	• To make aware the stakeholder institutions about the future climate and weather conditions necessary for planning their role • To obtain their observations and recommendations on the services and forecasts issued by the Department	• Stakeholder institutions are invited twice a year before the two main monsoons and inform them of this information.	• The ability to carry out the water management, agricultural activities and power generation activities with maximum efficiency by planning them in compliance with the future weather and climatic conditions, minimizing the possible loss of life and property by prior preparation for disaster management affairs and contribution for the upliftment of economy of the country by obtaining a higher yield from cultivation. • Provision of an effective service by improving the services rendered.
2.	Technical Advisory Committee for the Preparation of Agricultural Counselling	• To provide advice for the agricultural community for planning agricultural activities in compliance with the future weather and climatic conditions	• This Technical Advisory Committee meeting is held online by the Natural Resources Management Centre of the Department of Agriculture in the first week of every month.	• Protection of food security by planning agricultural activities in compliance with future weather and climatic conditions and by obtaining higher yields

			• For this, Institutions such as the Department of Meteorology, Water Secretariat of the Mahaweli Ministry, Ministry of Plantation Industries, Department of Irrigation, Department of Agrarian Services, and the Tea / Paddy / Rubber / Coconut Research Institutes as all stakeholder Institutions related to agricultural activities are prominent among the related institutions.	• Upliftment of the economy of the country minimizing the possible crop damage due to extreme weather and climatic conditions and protecting the food security.
3.	Water Management Meeting The Department of Meteorology involves as a key stakeholder in meeting to be held by the Water Management Secretariat which is under the Mahaweli Authority of the ministry of Agriculture, Livestock, Lands and Irrigation.	• To plan water management activities in compliance with the future weather and climatic conditions • To plan the relevant electricity affairs	• This committee meeting is held in the first week of every month by the Water Management Secretariat which is under the Mahaweli Authority of the Ministry of Agriculture, Livestock, Lands and Irrigation. • For this, Institutions such as the Department of Meteorology, Department of Irrigation, Department of Agrarian Services, National Water Supply and Drainage Board, Department of Agriculture, Ceylon Electricity Board as all stakeholder Institutions are prominent among the related institutions.	• Protection of the economy of the country and food security by planning water management affairs in compliance with future weather and climatic conditions and performing agricultural activities, drinking water requirements and power generation uninterruptedly with an maximum efficiency. • To uplift the economy by minimizing the damages which may be possible due to extreme weather and climatic conditions

4.	The Department of Meteorology involves as a key stakeholder in meetings held with relevant stakeholder institutions for the prior preparation for disasters in conducting national examinations and elections.	• To plan for the prior preparation to face extreme weather and climatic conditions in the affairs of conducting national examinations and elections.	. • These meetings are organized by the Disaster Management Centre and the Department of Meteorology involves with the Department of Examinations and the Elections Office as the relevant stakeholder institutions.	• To hold national examinations and elections as scheduled without interruption
5.	Information of adverse weather conditions.	• For the prior preparation for weather and climatic disasters	• The Department of Meteorology organizes these meetings and invites the Department of Irrigation, Disaster Management Centre, Department of Fisheries and Building Research Centre to inform them about these special conditions before and when they are being occurred.	• To minimize the loss of life and property that may be caused by weather and climatic disasters.
6.	The Department of Meteorology involves as a key	• For the prior preparation for weather and climatic disasters	• The Disaster Management Centre organizes these meetings by inviting all the stakeholder	• To minimize the loss of life and property that may be caused by weather and climatic disasters.

	stakeholder in the meetings held with the relevant stakeholder institutions in prior preparation for disasters.		institutions before the two main monsoons, and the Department of Meteorology participates in with the relevant stakeholder Government institutions, Tri-forces, Police and Non-governmental organizations that provide funding for the purpose.	