#### Department of Meteorology Responsibilities And Tasks RIMES 17<sup>th</sup> Council Meeting Venue: Colombo, Sri Lanka - 7th May,2025



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(Grant Aid Project by Japanese Government)

## 1. Current Responsibilities of the Department of



# Weather forecast



![](_page_3_Picture_2.jpeg)

#### Weather analysis

#### Weather forecast

![](_page_3_Picture_5.jpeg)

![](_page_3_Picture_6.jpeg)

#### Information publish

# Weather forecast

## Satellite Products are used in weather forecasting

![](_page_4_Picture_2.jpeg)

![](_page_4_Picture_3.jpeg)

![](_page_4_Picture_4.jpeg)

![](_page_4_Picture_5.jpeg)

Himawari-Japanese CMACAST-Chinese

![](_page_4_Picture_7.jpeg)

INSAT-Indian MIMIC-NOAA(USA)

![](_page_4_Figure_9.jpeg)

Global NWP Model out puts are used in weather forecasting/warning activities

![](_page_5_Figure_0.jpeg)

Development of Forecast of Different Timescales in Sri Lanka Based on Stakeholder Demands Enhancements in spatial resolution were also introduced by Dom; forecast for specific sectors evolved

![](_page_5_Figure_2.jpeg)

- ✓ Forecasting for Agricultural parameters - growth & development of Crop, yield, optimum sowing rate, etc..
- Application of climatological parameters
- ✓ Specialized Weather Forecasts for Agriculture
- ✓ Agricultural Weather Forecast/Alert

![](_page_5_Picture_7.jpeg)

## Monsoon Forum

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Summary : Consensus Seasonal Rainfall outlook for June, July, August (JJA) Season 2018

Table 2: SUMMARY of MODEL FORECAST for JJA season for SRI LANKA

Season	WMO LC MME	WMO GPC	CPT	Final
JJA season 2018	N Northern and No signal elsewhere	No signal	No signal	No signal
June2018	N Northern and No signal elsewhere	No signal	BN Eastern Coast NN central parts No signal elsewhere	BN Eastern NN central No signal o
July2018	BN	BN		BN
August2018	No signal	No signal		No signal

BN: Below Normal N: Normal AN: Above Normal CP: Climatological Probability

Summary of Model Forecasts for Sri Lanka

#### Agricultural Weather

#### **Seasonal Forecast**

## According to the IPCC guidelines

Statistical & Dynamic Downscaling of Climate Projections (CMIP5 & CMIP6) for Sri Lanka (1985-2100)

# Multi-model Ensemble projection for FIM Rainfall

![](_page_6_Figure_3.jpeg)

#### Moderate Emission Scenario

Negative anomaly is evident in 2020-2040 Slightly Negative anomaly is evident in 2040-2060 Positive anomaly is evident in 2070-2090

**High Emission Scenario** 

Negative anomaly is evident in 2020-2040, 2040-2060 and 2070-2090

#### Climate Field School: Future farming

![](_page_6_Picture_9.jpeg)

- ✓ El-Nino outlook
- ✓ Drought Monitor

- Offer guidance to the police on national activities
- Advise faímeís on agíicultuíal weatheí.
- Reseaích agíicultuíal weatheí in local aíea.

### 2. Co-production of Impact Based Decision Support Services (CIDSS) with the assistance of the RIMES

#### **Objectives**

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- To facilitate stakeholder and user institutions in sharing data with the DOM to ensure the automated transformation of DOM forecast data into user-relevant information.
- To enhance the forecast services to impact based forecast services through co-production of impact-based decision support services (CIDSS) with the participation of all Monsoon Forum partner agencies.
- To enhance capacity of DOM experts and user sector participants in generating IBF.

#### **Expected Output**

- To strengthen hazard preparedness and response through the generation of impact-based forecasts for specific hazards.
- Enhanced cooperation and data sharing between DOM and user sectors.
- Web-based decision support systems for sector-specific applications.
- Capacity building of DOM and sectoral participants in using the DSS and generating IBF forecasts.

## **CIDSS - Dashboard**

![](_page_8_Figure_1.jpeg)

### **Major Activities**

- Assessment of user requirements: DOM and RIMES are designed to collaborate with essential stakeholder agencies to ascertain the information requirements of both intermediary and end users.
- Participatory system development: The CIDSS application framework has been developed and rendered operational by RIMES in co-ordination with DOM experts. Staff from DOM and other key stakeholder agencies will work with RIMES experts to enhance the CIDSS capacities. This joint work will help them learn the technology, build skills to maintain and improve the system, and encourage system ownership
- Capacity building of users (sector-specific): Training of admin users on DSS operation and maintenance; Training of intermediary users on understanding and analysis of DSS products, for use in planning, decision-making, and in guiding investments; Training of end users (e.g. farmers, fishermen, etc.); Workshop with policymakers on familiarization with CIDSS products, for use in climate risk-informed policymaking and investment planning.
- System transfers: To DOM and Sectors
- **Operation and demonstration:** of product application, Back-up systems shall be supported by RIMES until all CIDSSs are fully integrated into operations.
- **Refinement**: CIDSS refinement, based on CIDSS performance evaluation and user feedback.

"Upgrading DOM's forecast services to a co-production model for Impact-Based Decision Support Services (CDISS) with RIMES support."

![](_page_10_Figure_1.jpeg)

![](_page_11_Figure_0.jpeg)

#### Establish co-production forecast services for Impact-Based Decision Support (CDISS) with RIMES at the 2026 Northeast Monsoon Forum

#### Department of Meteorology as the Focal Institution,

being the mandated national institution for weather, climate (and earthquake and tsunami) services in the countries

Stakeholders Are key institutions in the country mandated for productivity and risks

management

- Both in the context of resources and risks management
- > Multi-hazard
- Multi-timescales

![](_page_12_Figure_7.jpeg)

## 3. The implementation of the DOM Modernization Project

(CResMPA) with the assistance of the World Bank

#### Foreign Funds

Start to Implementation of Modernization Project of the DOM (CResMPA project with the assistance of the World Bank)

## Part 01

 improving infrastructure facilities in the Head Office and Regional Meteorological Offices for improving the Observational Network.

## Part 02

 System Intergradation for the modernization of the Department of Meteorology( Only 18<sup>th</sup> month)

### Part 03

New Weather Forecasting Building

## **Component of DoM Modernization activity**

## New Weather Forecasting Building

## Improve Observation and Communication system

## **Capacity Building**

Improve forecasting capabilities/Numerical Weather Prediction

### **Overview of DoM Meteorological Network Integration**

![](_page_15_Figure_1.jpeg)

## Weather Information and Forecast Production System

Smart Met Workstation includes following features:

### TV-Studio for weather presentations

![](_page_16_Picture_3.jpeg)

![](_page_16_Picture_4.jpeg)

![](_page_16_Picture_5.jpeg)

Recording

and editing

Publishing and dissemination

![](_page_16_Picture_7.jpeg)

![](_page_16_Picture_8.jpeg)

![](_page_16_Picture_9.jpeg)

![](_page_16_Picture_10.jpeg)

SmartMet

SmartAlert

mobile weather application, data produced with SmartMet and warning information with SmartAlert

### **Proposed New Weather Forecasting Building**

![](_page_17_Picture_1.jpeg)

# Progress of the new building construction activities up to now.

- Permission for demolishing unused old building, has been obtained from our line ministry and Department of Archeology.
  - \* Architectural design has finished.
  - Survey Department has being preparing the plan of the DoM land
  - The design company will take local authority approval for new building from CMC, ones it gets above all documents.

Request for a no-cost extension of at least one year (until December 2027) for system integration in the modernization of the Department of Meteorology.

### පුත්තලම පුදේශයේ ඩොප්ලර් රේඩාර් වාාාපෘතිය (JICA)

#### New Technology

#### Doppler Radar Project (Grant Aid Project by Japanese Govt)

![](_page_18_Figure_3.jpeg)

## 4. Doppler Radar Project(JICA)

Grant Aid Project by Japanese Government)

## Now we can apply it in Radar nowcasting and aviation activities

Source

of

Finance

![](_page_18_Picture_7.jpeg)

Government of Japan: Two Billion six Hundred sixty Three Million Japanese Yen (JPY 2,663,000,000) Government of Sri Lanka: 550,000,000 Rupee

Duration: JULY 31, 2027

## Medium Term (3-10 Years)

Improvements in lead time and accuracy of weather and climate forecasting at all-time scales and early warning capability Making DOM a great place to work

## Long term (Over 10 Years)

"A Centre of Excellence in Weather, Climate and related Early Warning Service"

## Thank You !