# RIMES Initiatives and Platforms

Capacity Building on National and Subnational Planning
for Sustainable Disaster Risk Reduction, Climate Change Adaptation, and Mitigation
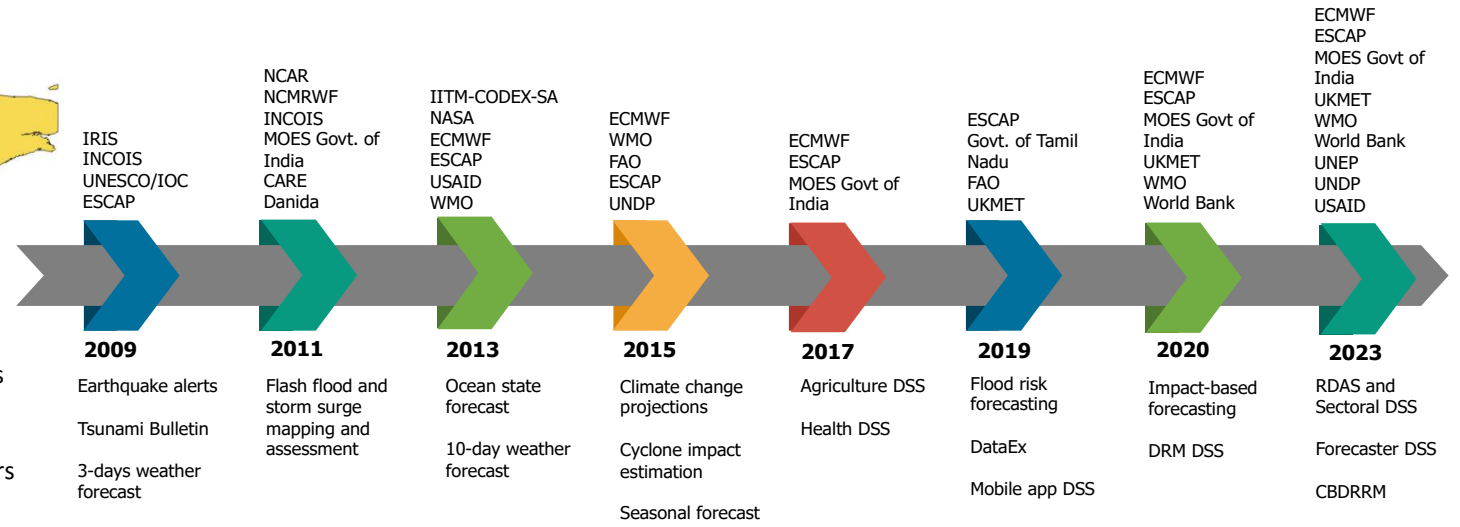
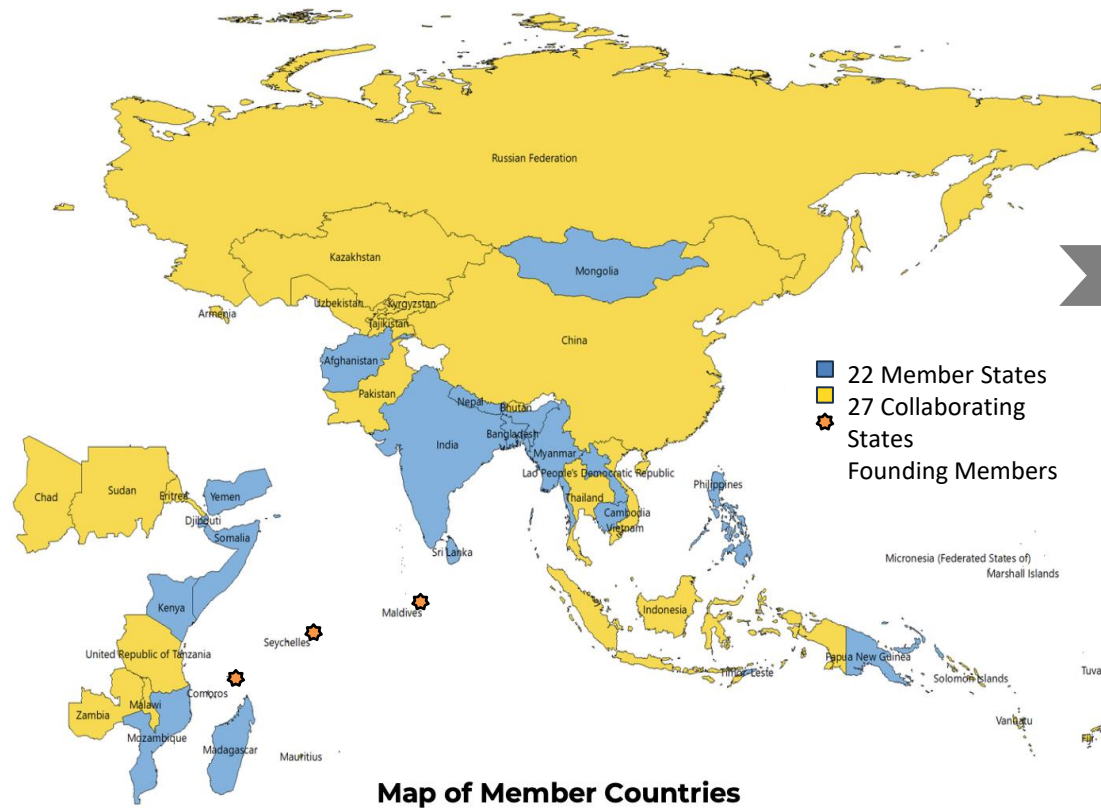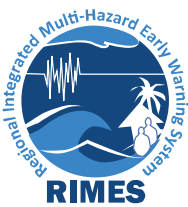31 January 2024

# Presentation Outline

'So without a natural warning, without an official warning and with no history of tsunamis, hitting coastlines full of people, that's the perfect combination to cause a lot of death and destruction."

- Jose Borrero, a tsunami expert, on the 2004 Indian Ocean Tsunami that took 230,000 lives across 14 countries

Photo Credits: CHOO YOUN-KONG/AFP/GETTY IMAGES

# RIMES Journey, Partners and Support



Map of Member Countries

- 22 Member States
- 27 Collaborating States
- Founding Members

**2009**
IRIS
INCOIS
UNESCO/IOC
ESCAP

Earthquake alerts

Tsunami Bulletin

3-days weather forecast

**2011**
NCAR
NCMRWF
INCOIS
MOES Govt. of India
CARE
Danida

Flash flood and storm surge mapping and assessment

**2013**
IITM-CODEX-SA
NASA
ECMWF
ESCAP
USAID
WMO

Ocean state forecast

10-day weather forecast

**2015**
ECMWF
WMO
FAO
ESCAP
UNDP

Climate change projections

Cyclone impact estimation

Seasonal forecast

**2017**
ECMWF
ESCAP
MOES Govt of India

Agriculture DSS

Health DSS

**2019**
ESCAP
Govt. of Tamil Nadu
FAO
UKMET

Flood risk forecasting

DataEx

Mobile app DSS

**2020**
ECMWF
ESCAP
MOES Govt of India
UKMET
WMO
World Bank

Impact-based forecasting

DRM DSS

**2023**
ECMWF
ESCAP
MOES Govt of India
UKMET
WMO
World Bank
UNEP
UNDP
USAID

RDAS and Sectoral DSS

Forecaster DSS

CBDRRM

- Established on 30 April 2009 with the Signing of the RIMES Cooperation Agreement in Male, Maldives

- RIMES establishment facilitated by UNESCAP

- Registered with the UN under Article 102 of the UN Charter

- Intergovernmental, owned and managed by its Member States

- Programme Unit serves as an operational unit on a day-to-day basis, coordinating with partners and donors

# Key Services
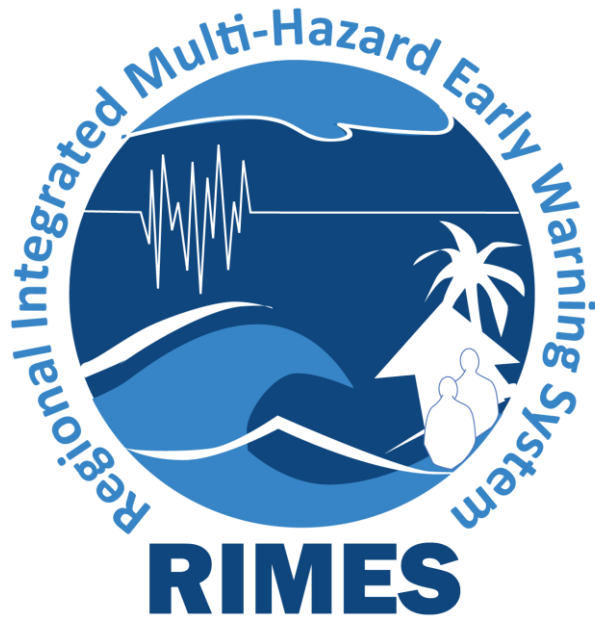


Enhancing data and availability

Modelling and Forecasting

Transforming Data into Actionable Information

Community Outreach and Feedback

Capacity Building and R&D

# Platforms and DSSs
## Data sharing for improved modeling and forecasting

## Data Exchange Platform

- A meteorological data exchange, visualization and analytics system

- Promote sharing of real-time and historical meteorological and hydrological data at regional level and provide access to forecast products of global producing center like ECMWF

- Data from NMHS synoptic stations
  – Rainfall, temperature (min, max, mean), wind speed, wind direction, wind run, vapor pressure, solar radiation, relative humidity

- Products from ECMWF
  – Atmospheric Model high resolution 10-day forecast (HRES)
  – Atmospheric model Ensemble 15-day forecast (ENS)
  – Seasonal 7-month forecast (SEAS)
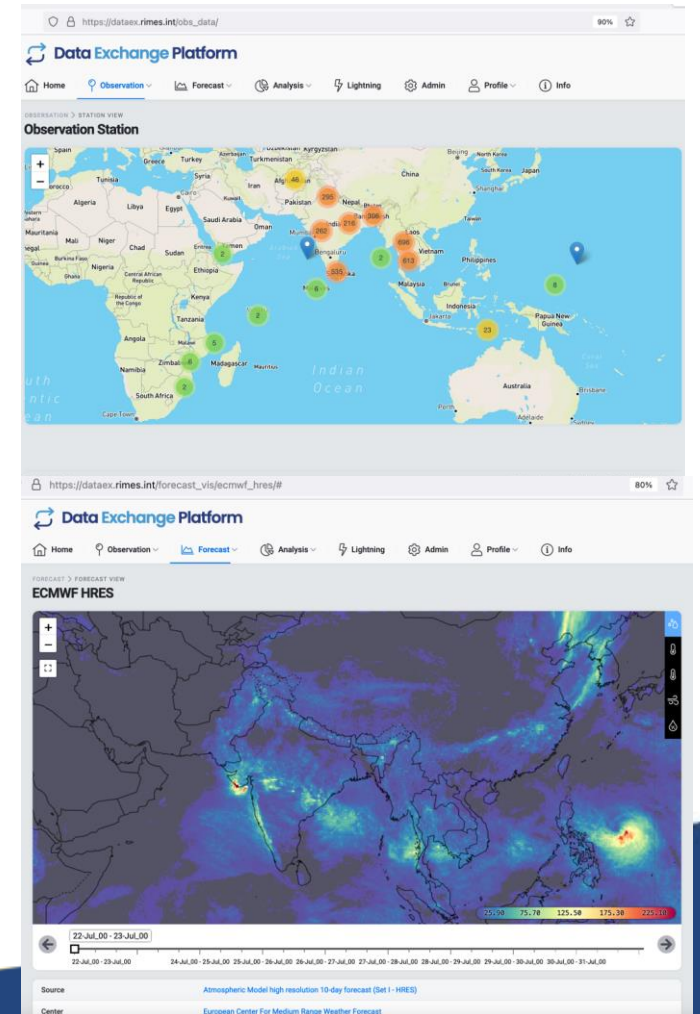
# Platforms and DSSs
## Data sharing for improved modeling and forecasting
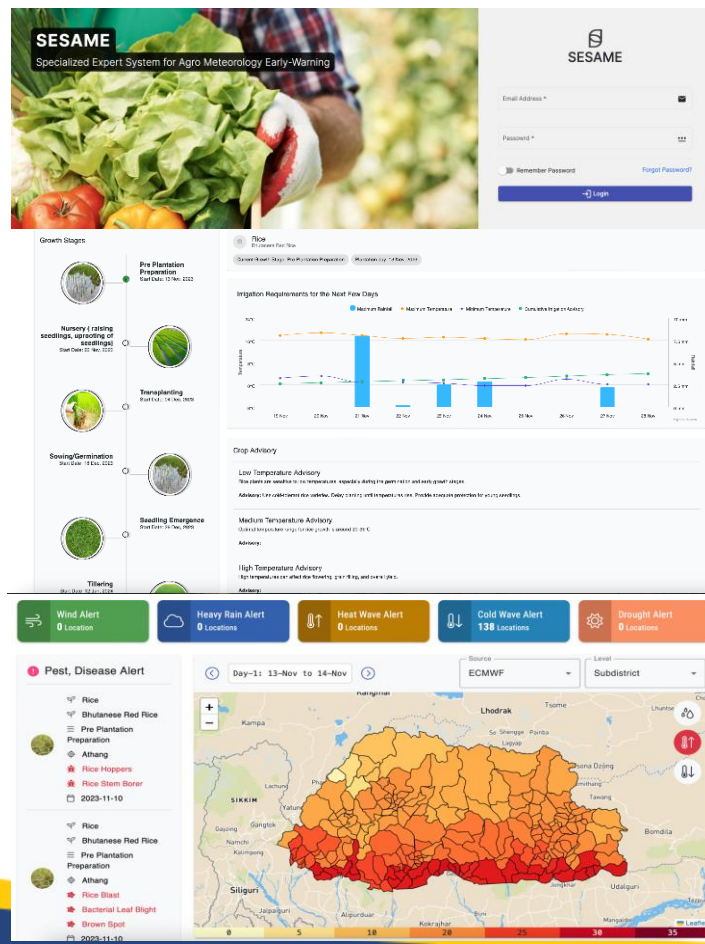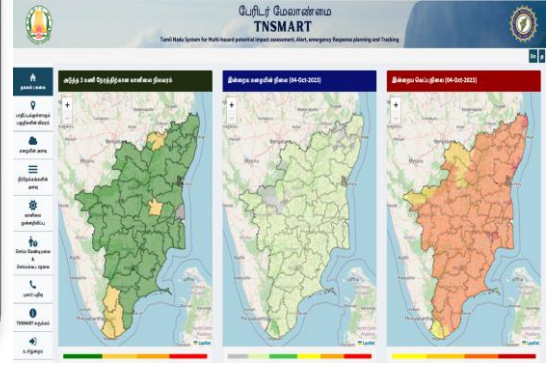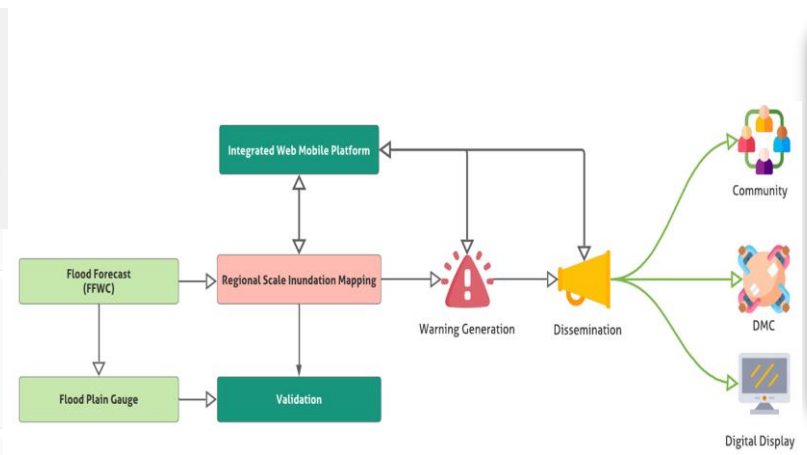
## Forecast Customization (FOCUS) System

- Multi-model ensemble based seasonal climate prediction system

- Data from NMHS
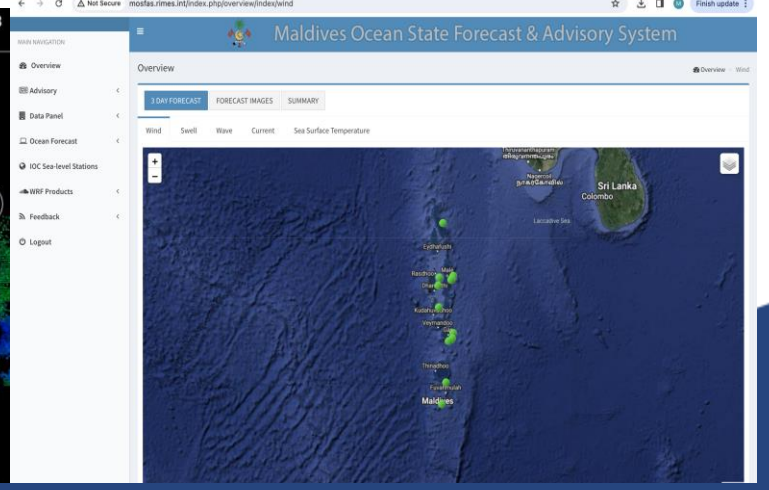  - Rainfall, temperature (min, max, mean)

- Model datasets
  - ECMWF
  - NASA-GEOSS2S
  - Meteo-France
  - GEM5-NEMO
  - CanCM4i-IC3
  - NCAR-RSMAS-CCSM4
  - DWD
  - CanSIPS-IC3
  - UKMO
  - CMCC
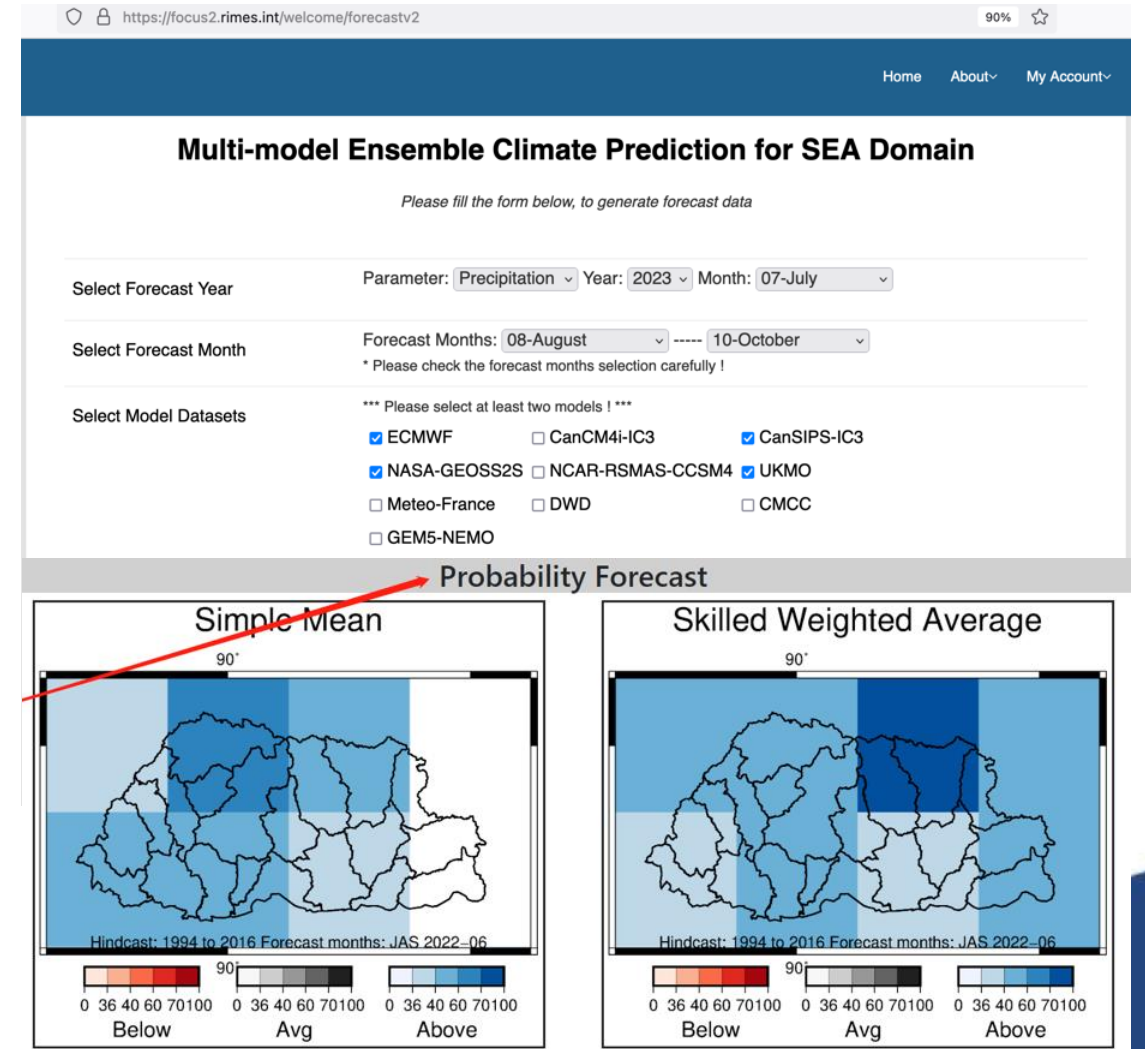
# Platforms and DSSs
## Sectoral Decision Support Systems

# On-going & Future Initiatives

RIMES Cloud Services
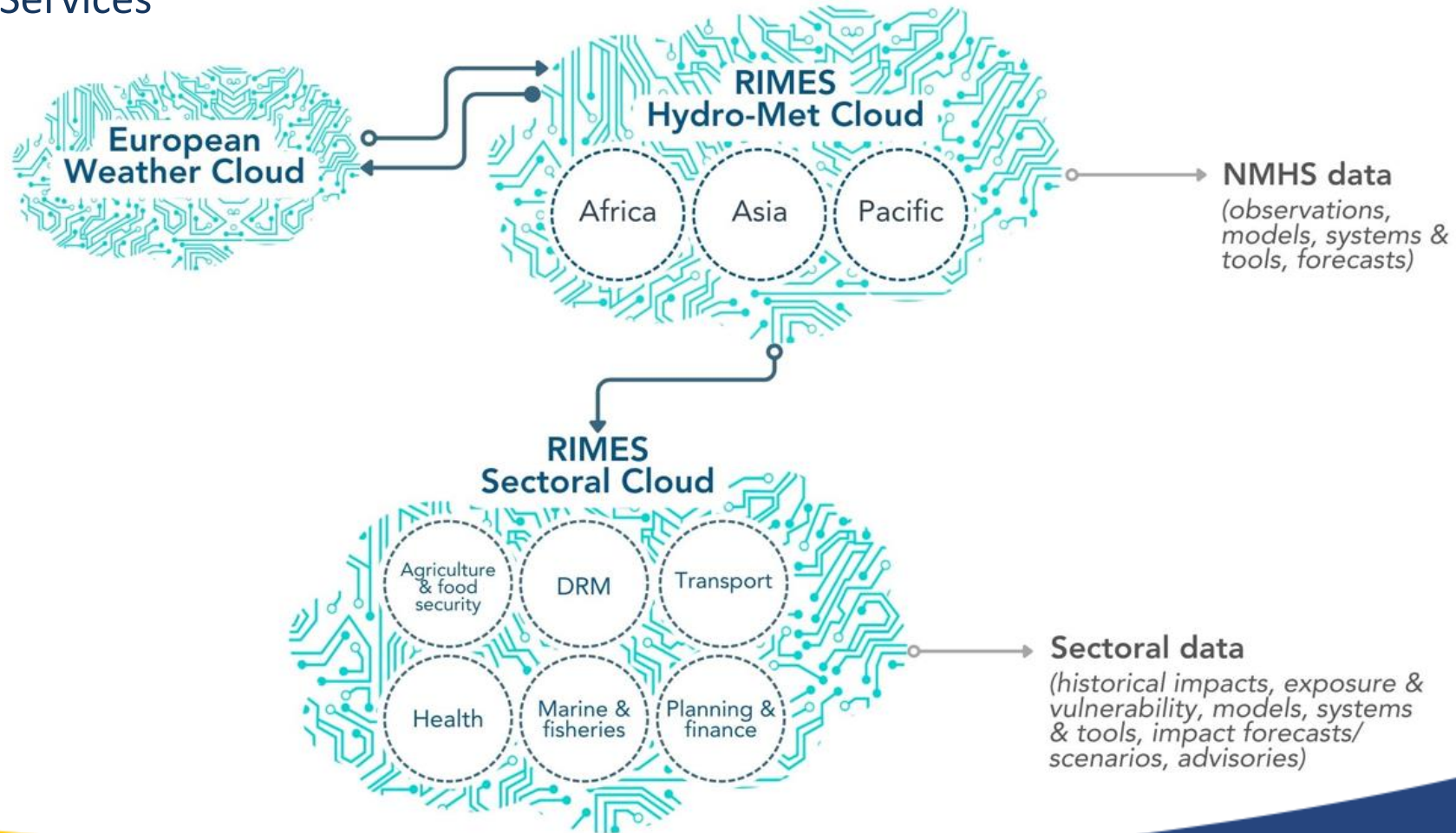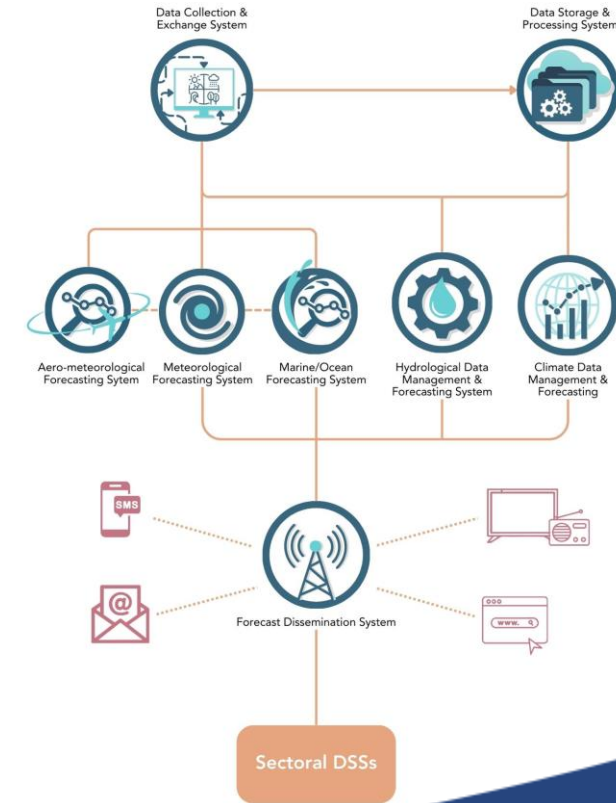
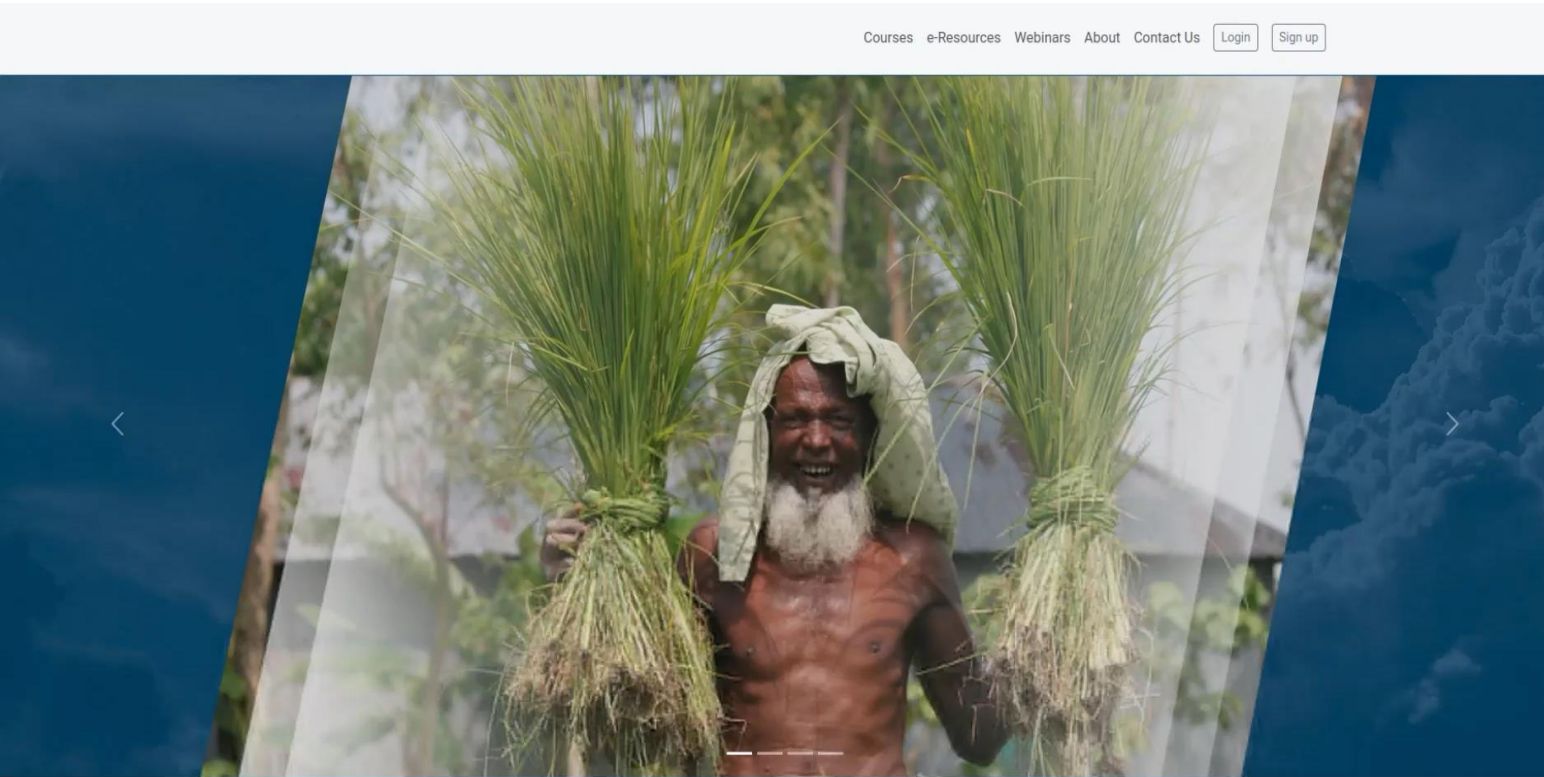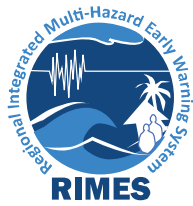# On-going & Future Initiatives
DSS for Hydrometeorologists and Operational Forecasters
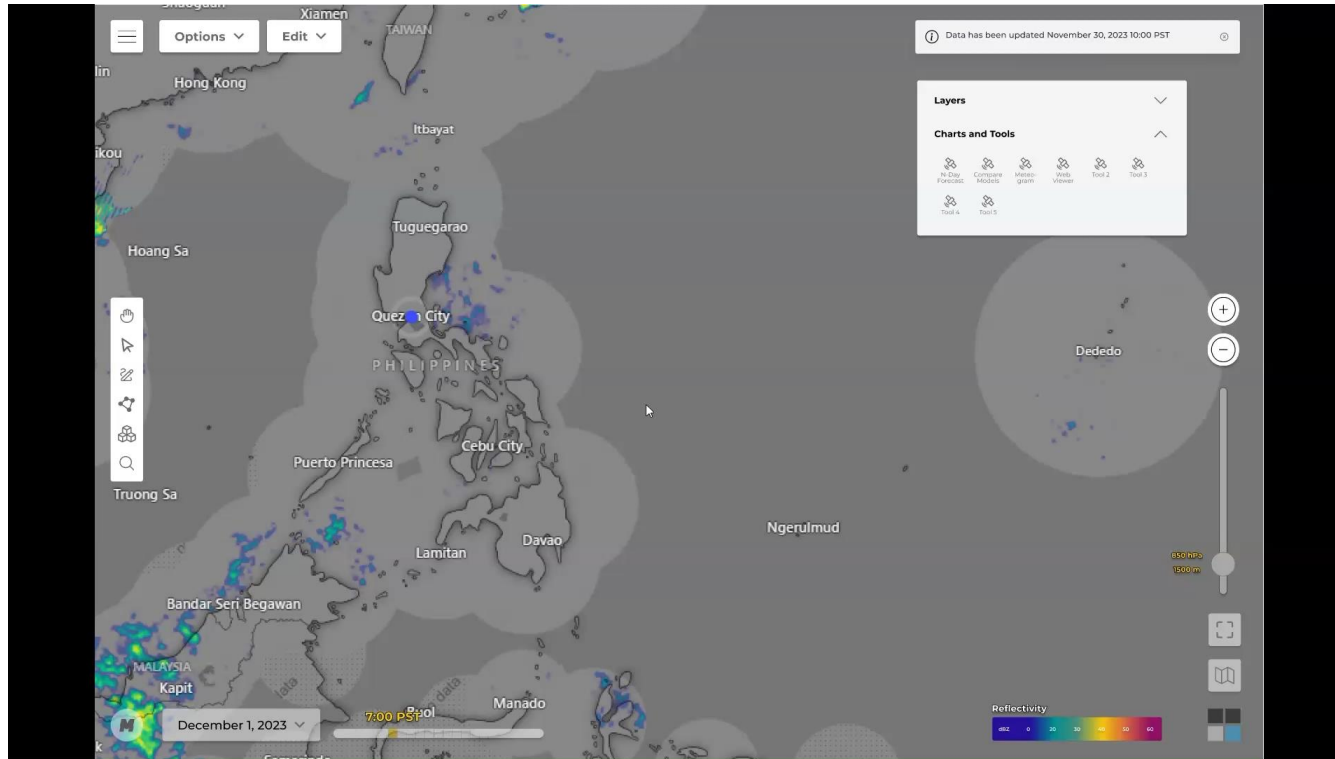
# On-going & Future Initiatives

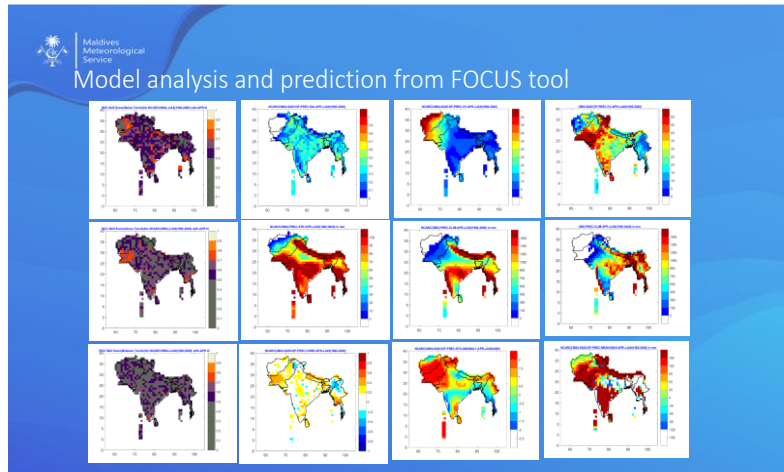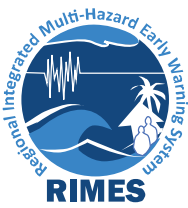RIMES Knowledge and E-Education (KEEn) Portal
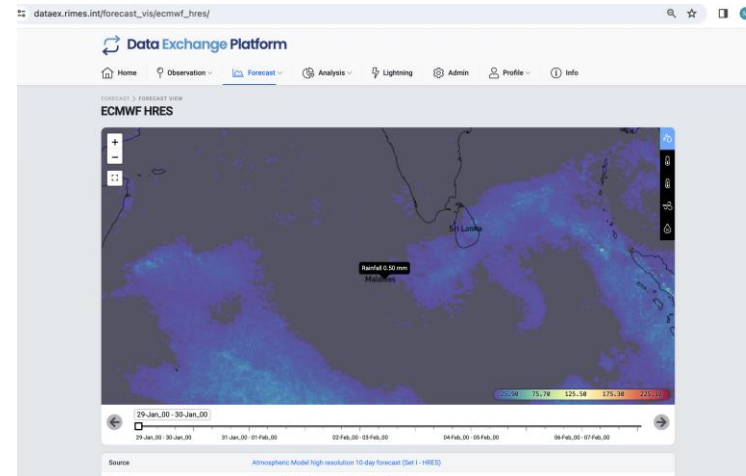
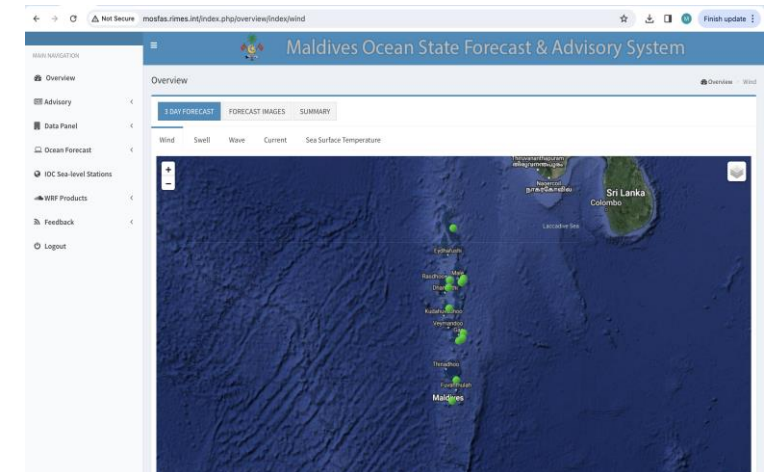# RIMES Initiatives in Maldives

Platforms and DSS



FOCUS Tool

Data Exchange

OSFAS

# RIMES Initiatives in Maldives

On-going and Future Projects

## ESCAP

*Economic and Social Commission for Asia and the Pacific*

*Enhancing Weather and Climate Resilience in RIMES Member States through Capacity Building on Impact Forecasting – Phase 2*

- Conduct of IBF and NMHS trainings
- Technical support to monsoon forums

## USAID / UCAR

*Strengthening Last-Mile Communication in South Asia Region*

- Support to National Framework for Climate Services
- Support to Establishing End-to-End, People-Centered Multi-Hazard Early Warning

## SOFF

Systematic Observations Financing Facility – Weather and climate data for resilience

*Systematic Observations Financing Facility (SOFF) for Maldives*

- GBON Institutional and human capacity development
- Setting up of GBON Infrastructure
- Sustaining Compliance with GBON

# RIMES Initiatives in Maldives

Expert advisory services on climate outlooks and sectoral applications



- Support to National Monsoon Forums
- Integration of multi-timescale climate information into seasonal planning
- Enhanced partnerships between producers and users of climate information

| Customized Products | Climate Applications | User Demands & Recommendations |
|---|---|---|
| - *Identification of probable area for rain harvesting* | - Water resource management by irrigation departments and hydropower producers | - Grid-based 10-day forecast for flood modeling |
| - IBF integration in flood warnings | - Planning for agronomic activities and issuance of agromet advisories | - % probability identification in seasonal forecast for better water management |
| - *More downscaled seasonal forecast using FOCUS tool* | - *Disaster Management* | - River basin level monthly forecasts for better hydro operations planning |
| - SMS and voice message-based weather and warning service for fishermen | - Health-related response | - *Customized forecasts for agri sector* |
| | - *Sea transport management* | |

# RIMES Initiatives in Maldives
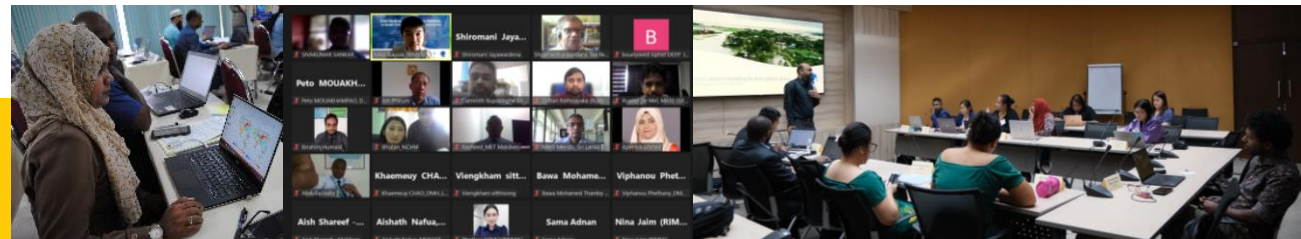
## Capacity Building Activities

## Trainings on IBF and Risk Analysis
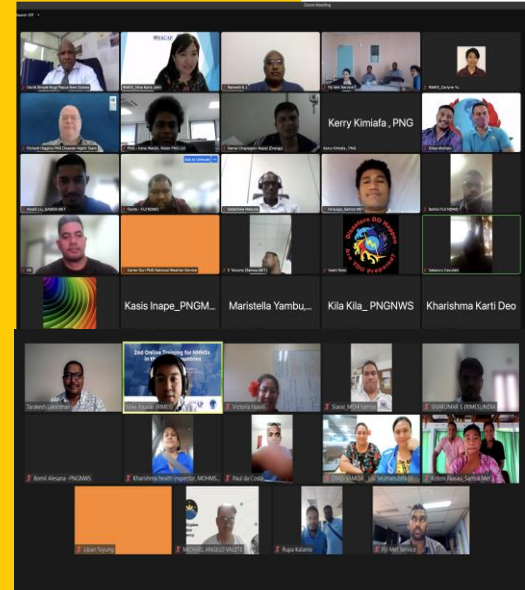


**Weather and Climate**
Weather and climate drivers

**NMHS and Sector Discussion**
NMHS products and services and sectoral applications

**Impact Forecasting**
Concepts, methodological framework and approach, and ICT tools

**Developing IBF System**
Sector-specific impact forecasting system/service

**Communicating IBF**
Communication, Dissemination & Verification of IBF and warnings

## Trainings for NMHSs to meet user demands

| Weather and Seasonal Forecasting | Hydrological Modeling and Flood Forecasting | Weather Forecasting and Climate Prediction |
|---|---|---|
| • Numerical weather prediction<br>• Short-range to seasonal forecasting<br>• Communicating forecasts including uncertainties. | • IBF in water resources management<br>• Basin delineation and meteorological data preparation<br>• Hydrodynamic modeling and impact assessment | • Handling satellite data and use for data assimilation<br>• Forecast verification<br>• Visualization and graphical presentation of forecasts<br>• IBF for extreme |

*"The meteorology and climatology field is constantly growing and improving. So, as forecasters, we also need to keep updating our knowledge and our skills. The 5-day training has been very useful."*

*"The training would be highly beneficial in our daily work, particularly in areas such as data quality control, data preparation, topography, stream networks, and satellite-based forecasting"*

# Thank you for your attention!