



# SECOND SAHF EXECUTIVE COUNCIL MEETING

19-20 SEPTEMBER 2022, THAILAND

## RIMES Initiatives in the Region

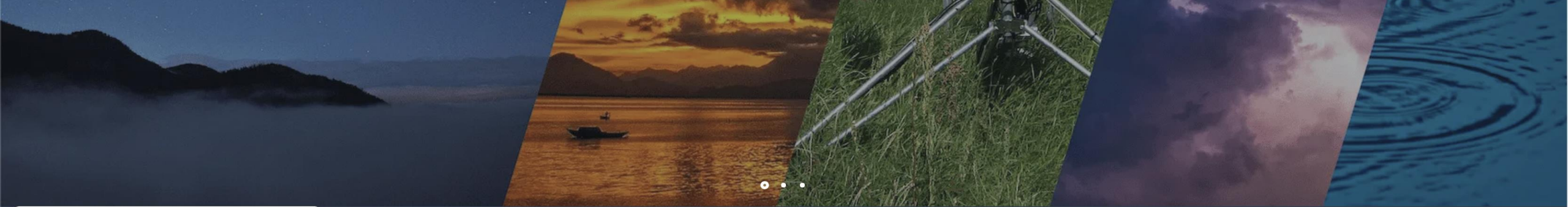
Itesh Dash and Anshul Agarwal



**GFDRR**  
Global Facility for Disaster Reduction and Recovery



Foreign, Commonwealth  
& Development Office



Enhancing Data Availability



Modeling and Forecasting



Transforming Data into Actionable  
Information



Community Outreach & Feedback



Capacity Building, Research &  
Development

## • Climate Services Value Chain

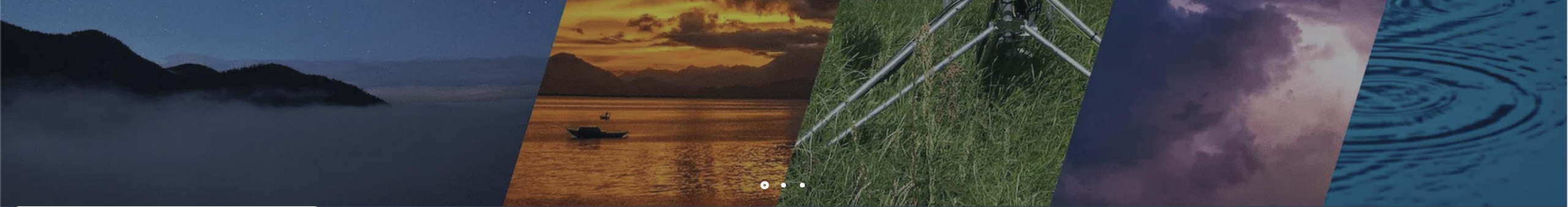
- Enhancing Data availability
- Modeling and Forecasting services
- Transformation of Data to Actionable information
- Community Outreach
- Capacity building



## • SAHF Thematic Areas

- Observation Network
- NWP Support
- IBF Support
- Capacity Enhancement





Enhancing Data Availability



Modeling and Forecasting



Transforming Data into Actionable Information

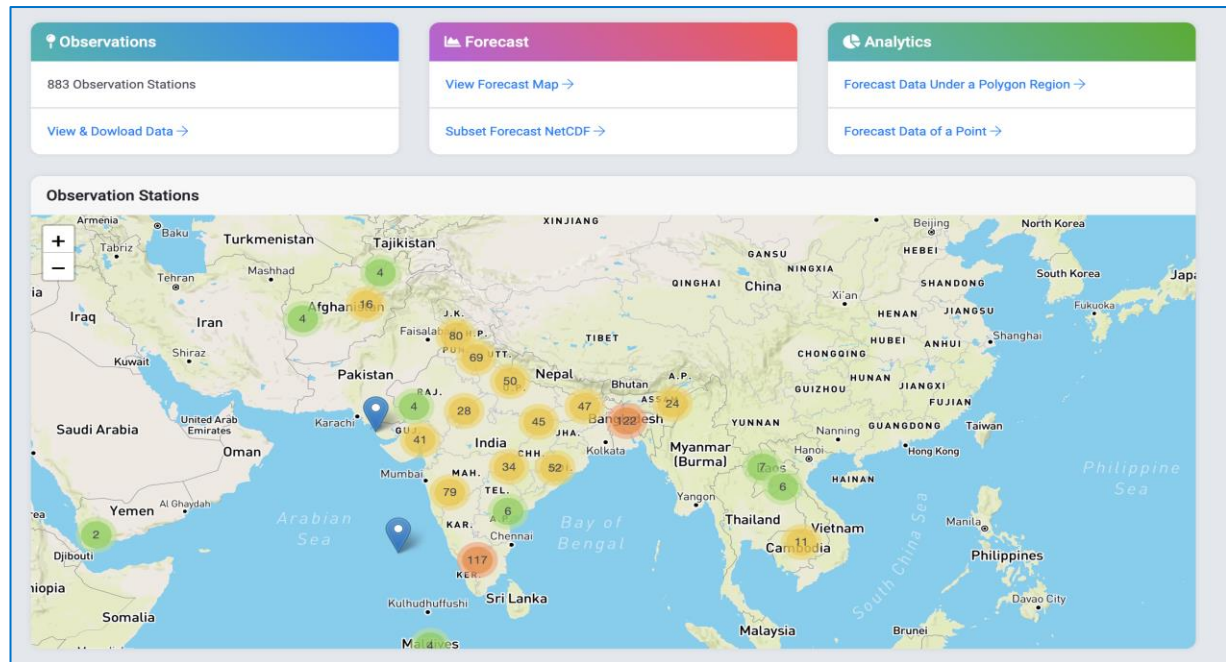


Community Outreach & Feedback



Capacity Building, Research & Development

- Data Ex – enhancing exchange of regionally relevant data amongst RIMES Member countries
- Making available a variety of Satellite derived and reanalysis data sets





Enhancing Data Availability



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Community Outreach & Feedback



Capacity Building, Research &  
Development

- NWP Model development support – Short range
- Climate Services Toolkit Development – Extended Range [Bhutan - WMO]
- Forecast Customization System – Long Range [SA Region – ARRCC]
- Regional Data Analytics System RDAS – [WB CARE]
- Data Exchange Platform – [WB-SAHF]
- Hydrological and Hydraulic modelling [Bhutan, Bangladesh, Nepal, Sri Lanka, Myanmar, India, Pakistan]



Enhancing Data Availability



Modeling and Forecasting



Transforming Data into Actionable Information



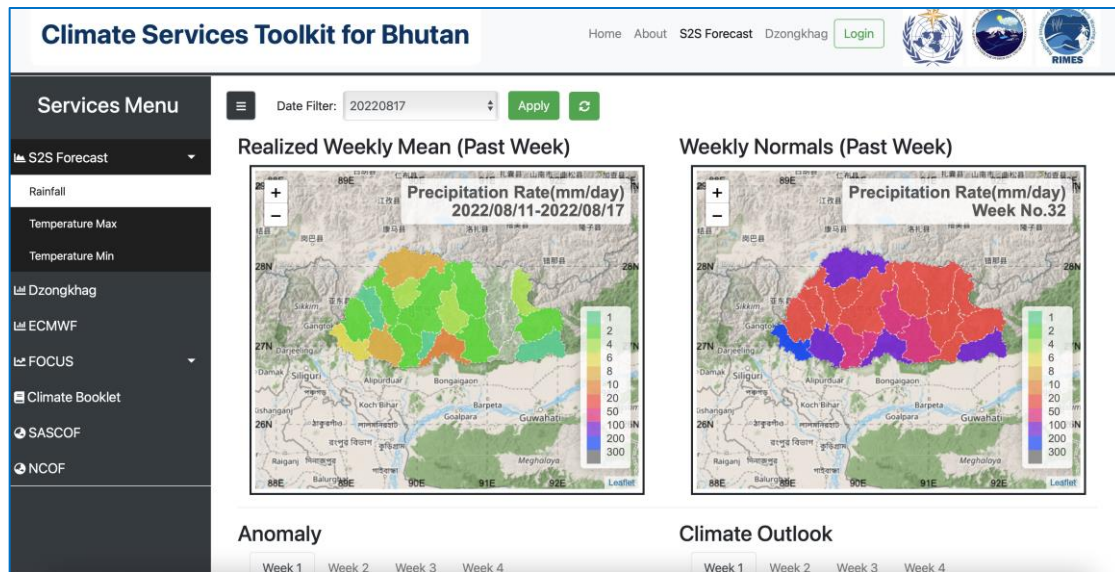
Community Outreach & Feedback



Capacity Building, Research & Development

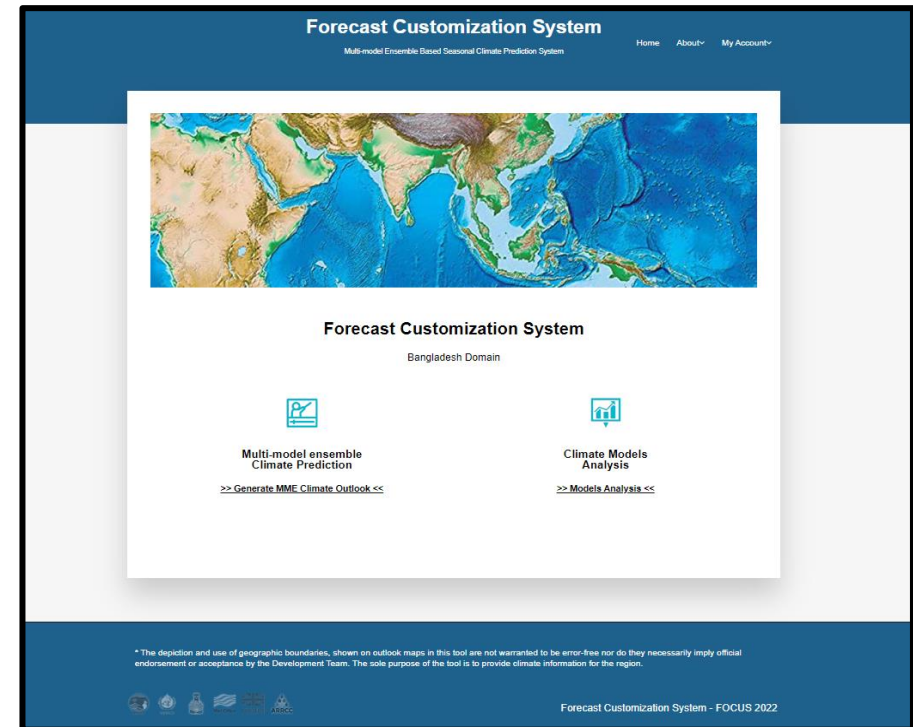
# Climate Services Toolkit

A toolkit for the provision of extended range forecast support to Bhutan



# FOCUS

a tool to support NHMSs in the generation of seasonal forecasts and consensus Monthly and seasonal outlooks





Enhancing Data Availability



Modeling and Forecasting



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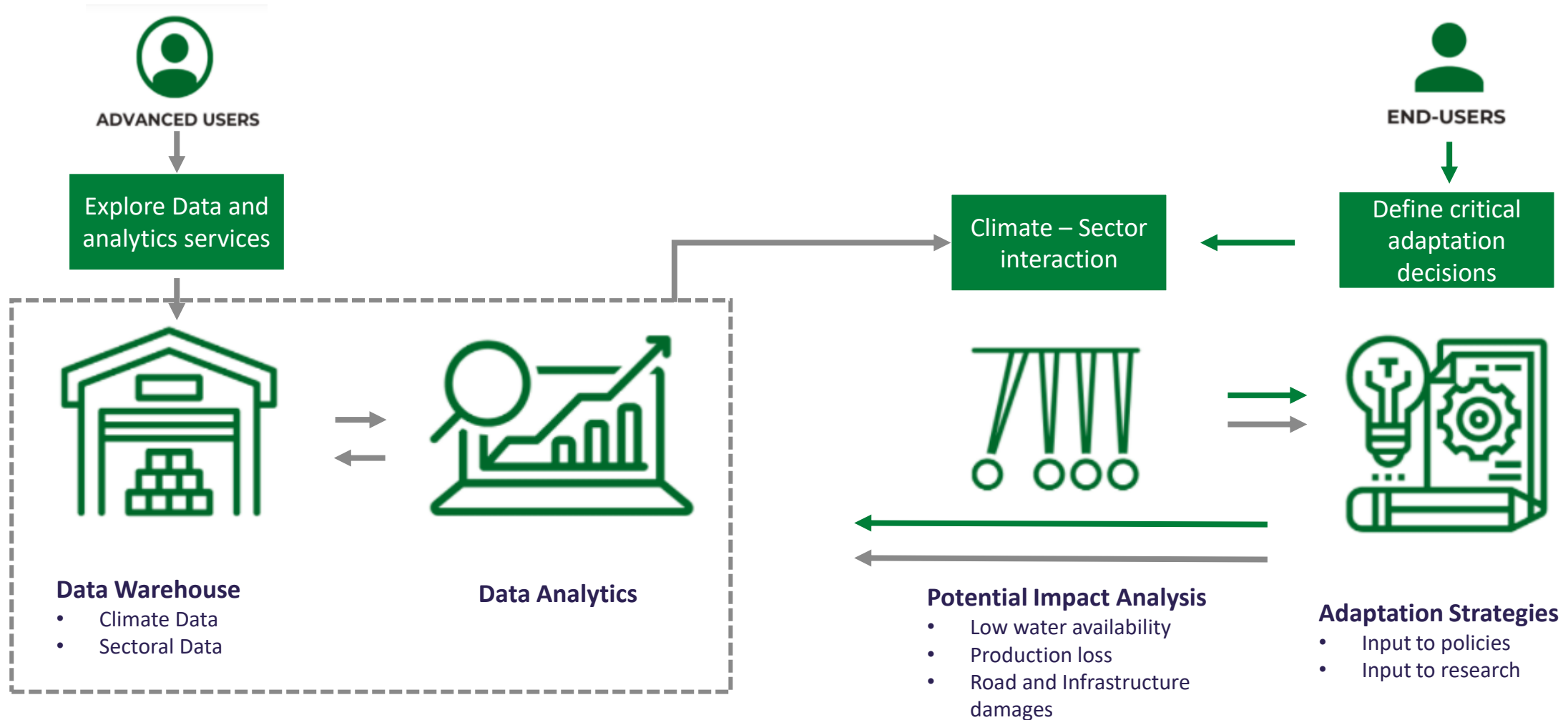


Community Outreach & Feedback



Capacity Building, Research & Development

# Regional Data Analytics Services







Enhancing Data Availability



Modeling and Forecasting



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Community Outreach & Feedback



Capacity Building, Research &  
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# Decision Support Systems

Reliable, accurate, and actionable hazard information is key to supporting decisions, adaptation, and preparedness at all levels: communities, governments, regional organizations, development professionals, and other sectoral stakeholders.

- Enhancement of Agro-met Advisory System – SESAME – ARRCC – Bhutan CST - WB CARE
- Enhancement of Flood Forecasting System– FLoCAst – Bhutan CST – SATARK - WB-CARE
- Development of Transport DSS – WB CARE
- MHEWS system – SATARK and TNSMART



Enhancing Data Availability



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Community Outreach & Feedback



Capacity Building, Research & Development

- Development and Enhancement of Agro-met Advisory System – ARRCC – WB CARE

The screenshot displays the SESAME+ dashboard. At the top left is the SESAME+ logo, and at the top right is the text 'Sesame Plus' with a circular refresh icon. Below the header is a navigation menu with items: Dashboard, Application, Bulletin, Outlook, Climate, Crop, and Other. The main content area is titled 'Home' and contains a grid of 12 modules:

- Weather Forecast (sun and cloud icon)
- Weather Alert (cloud with red exclamation mark icon)
- Weekly Agromet Bulletin (hand holding a plant icon)
- Monthly Agromet Bulletin (hand holding a plant icon)
- Monthly Outlook (calendar with weather icons icon)
- Seasonal Outlook (four weather icons in a square icon)
- National Monsoon Outlook (sun, clouds, and rain icon)
- Regional Outlook (map with weather icons icon)
- Climatology & Climate Anomaly (globe with weather icons icon)
- Crop Alert & Advisory (leaf with beetle icon)
- Custom Crop Calendar (calendar with plants icon)





Enhancing Data Availability



Modeling and Forecasting



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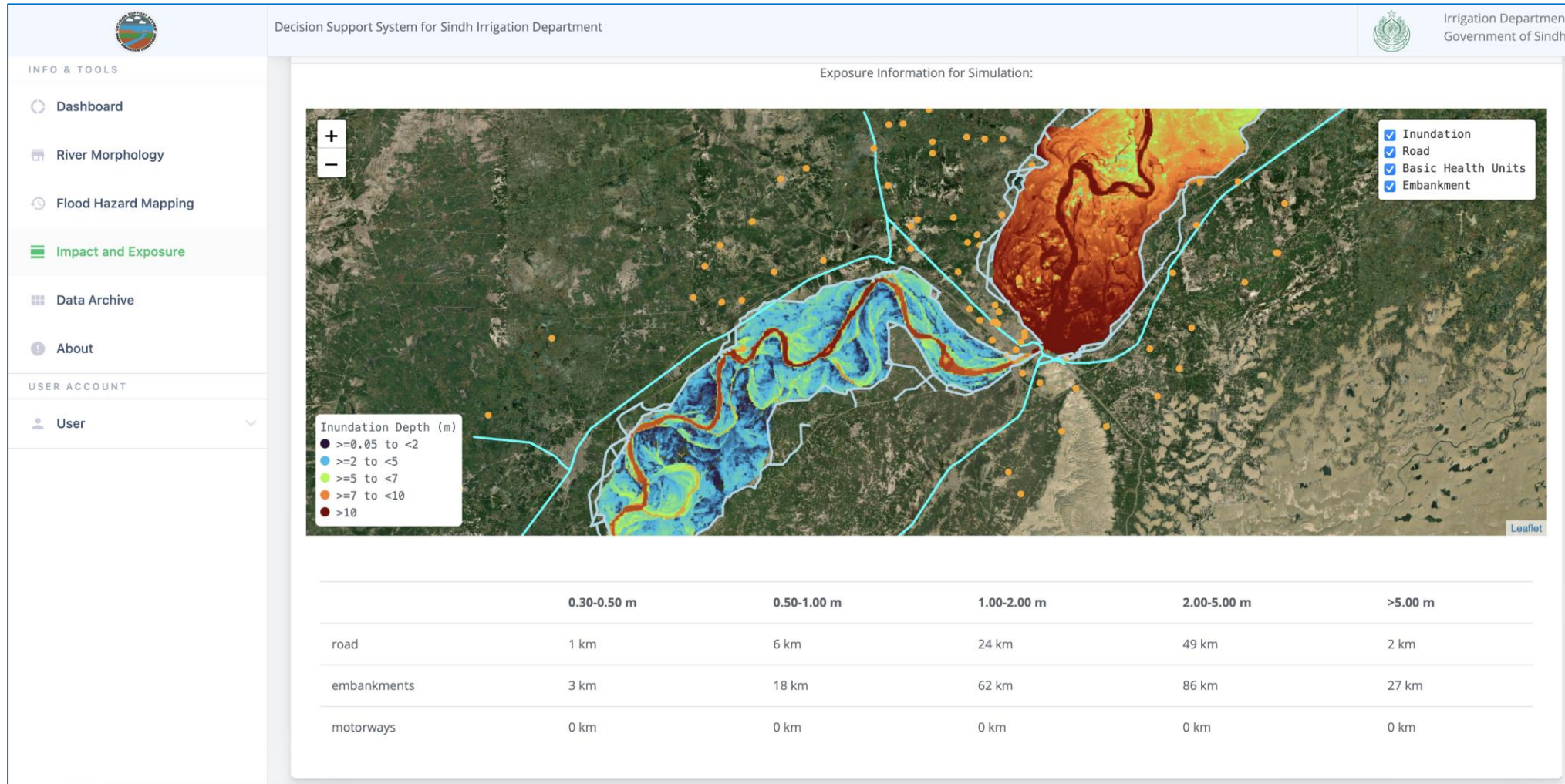


Community Outreach & Feedback



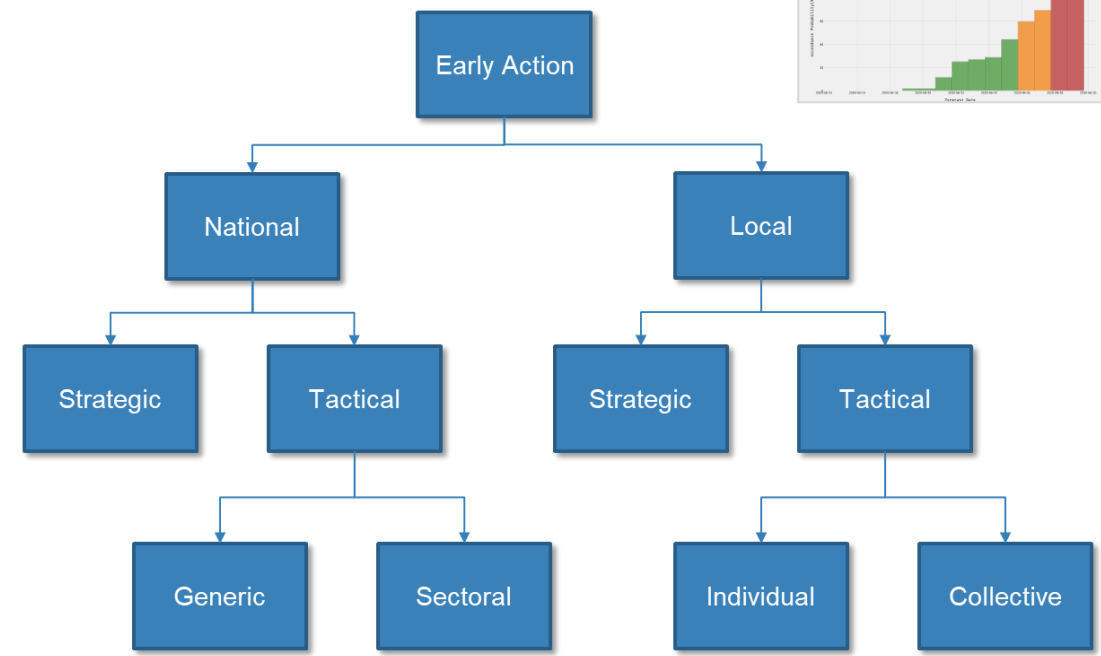
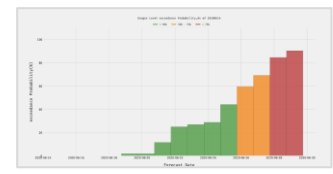
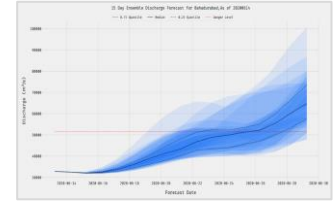
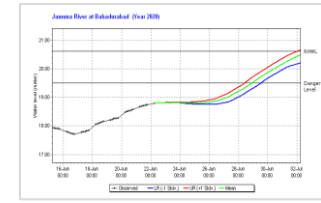
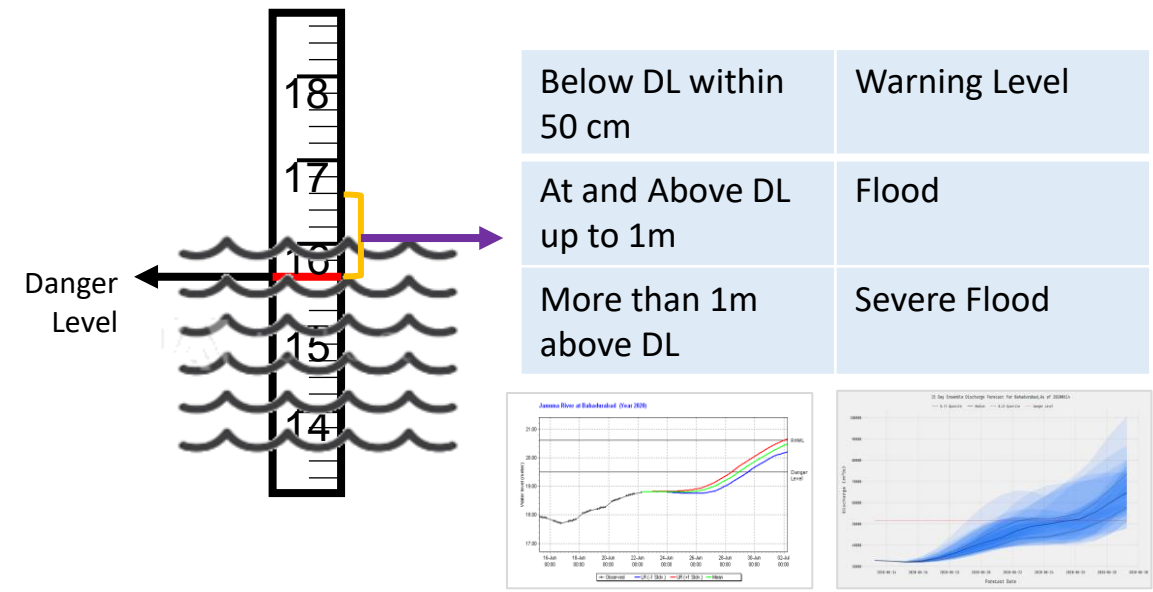
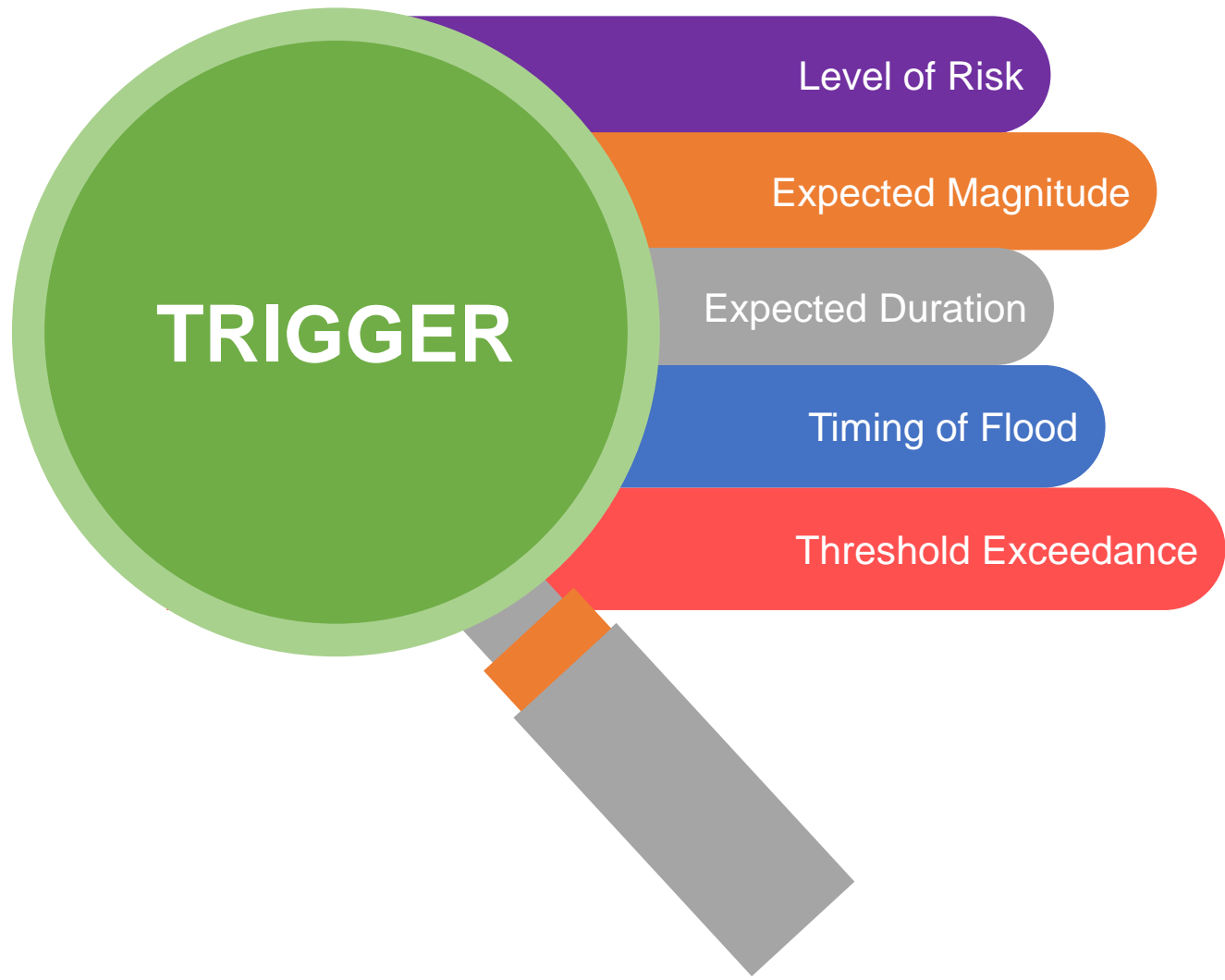
Capacity Building, Research & Development

## • Development and Enhancement of Flood Impact-based Forecasting – WB-CARE



# Dynamic Flood Risk Mapping in Bangladesh - SUFAL

## Dynamic Risk Assessment: Anticipation to Action





Enhancing Data Availability



Modeling and Forecasting



Transforming Data into Actionable Information



Community Outreach & Feedback



Capacity Building, Research & Development

# • Development of Transport DSS – WB CARE

**TDSS** ☰ **Transport Decision Support System**

- Dashboard
- Weather >
- Climate >
- Transport Network >
- Disaster Risk Map >
- Advisory >
- Special Bulletin
- About Us
- Contact Us

Heavy Rainfall Alert

428

Heat Wave Alert

0

Cold Wave Alert

0

Wind Alert

432

No. of Accidents

--

No. of Injuries

--

No. of Fatalities

--

No. of Blackspot

--

**Road Map Bangladesh**





Enhancing Data Availability



Modeling and Forecasting



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Capacity Building, Research & Development

# MHEWS System – SATARK and TNSMART

What – Hazard?	When - it Occurs?	Where - it Occurs?
Heatwaves	April - June	Widespread over the state
Floods	Monsoon season (July-September) and during cyclone seasons	Along the major rivers and the tributaries
Cyclone	October-November and April-May	Bay-of-Bengal, East coast of India
Lightning	April- September	Widespread over the state
Drought	Months to even multiple seasons	Widespread over the state

Choose Module to Proceed

See Today's and Next 10 days Weather Forecast →  
IMD-GFS

Heatwave and Coldwave Advisory System

Agriculture Risk Monitoring and Management System

Lightning Advisory System

Ocean State Information System

Flood Monitoring System

Road Accident Monitoring System

Earthquake Monitoring and Tsunami Risk System

Cyclone / Storm Surge Monitoring System

Snakebite Monitoring System

**தேரிடர் மேலாண்மை TNSMART**  
Tamil Nadu System for Multi-hazard potential impact assessment, Alert, emergency Response planning and Tracking

TNSMART is a web-based system to utilize weather forecast products to assess potential impacts, and evaluate and disseminate impact management options with a robust data management system for managing and processing weather, disaster risk, and emergency response resources data

**\*\*Weather conditions for the next 3 hours in Chennai**

**Today's Weather Condition**

Tiruvallur	Chennai	Kancheepuram	Vellore	Dharmapuri	Tiruvannam
Light rain	No rain	Light rain	Light rain	Light rain	Light rain
34.22 °C	33.09 °C	34.29 °C	34.38 °C	33.44 °C	34.64 °C
-273.15 °C	-273.15 °C	-273.15 °C	-273.15 °C	-273.15 °C	-273.15 °C



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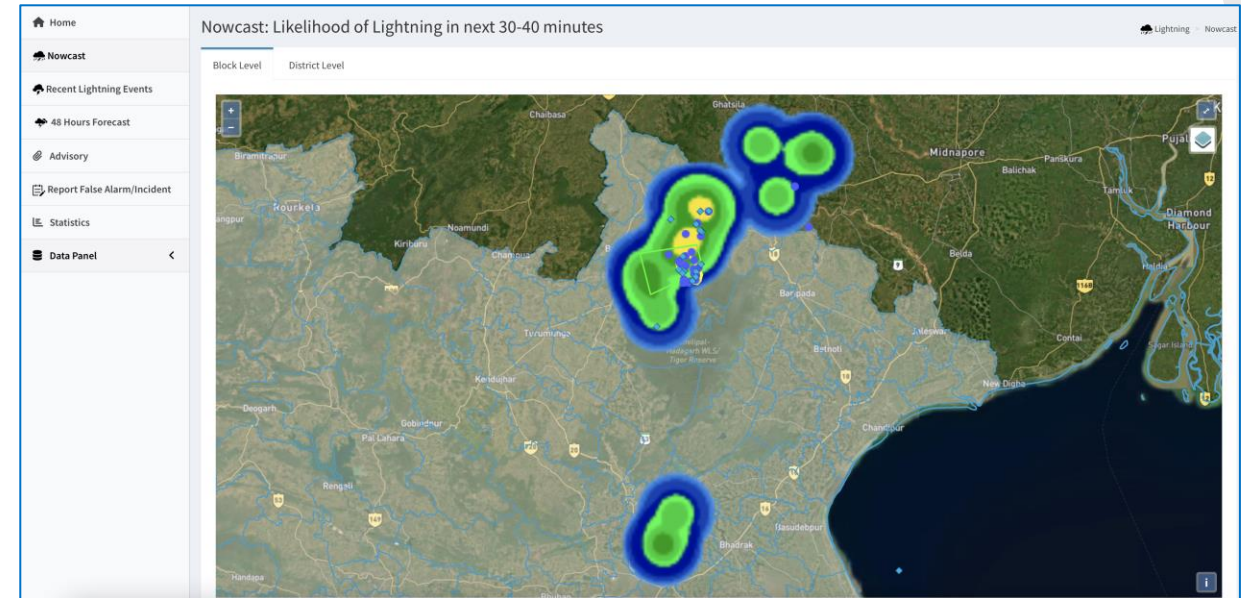
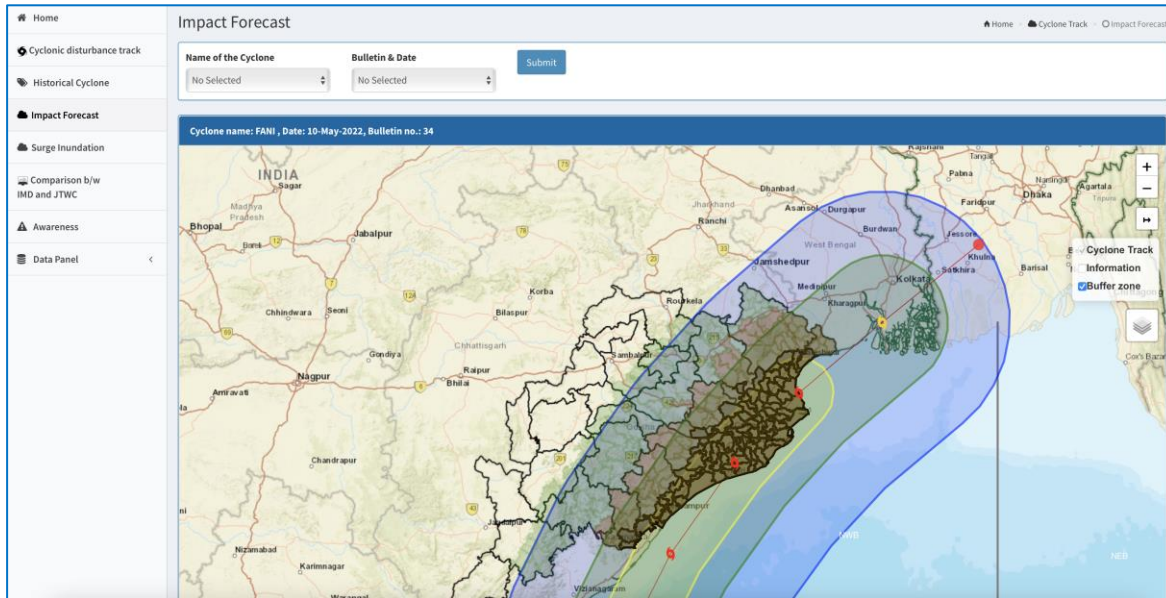


Community Outreach & Feedback



Capacity Building, Research & Development

- A web/smart-phone based Decision Support System that aids in provision of timely early warning information for different hazards
- Generates risk based alerts/warnings with a fully automated dissemination platform





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Capacity Building, Research &  
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## Regional cooperation workshop for enhancing forecasting, monitoring and preparedness for Floods and Droughts in South Asia (6<sup>th</sup> session held in August 2022)

Bangladesh: *BMD, FFWC*

Bhutan: *NCHM*

India: *IMD*

Nepal: *DHM*

Pakistan: *PMD, PANCID, SID*

Sri Lanka: *DOI, DOM and DMC*

- UNESCAP
- UKMO
- WMO
- IWMI
- ICHARM
- ICIMOD
- RIMES





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Community Outreach & Feedback



Capacity Building, Research & Development

## • Monsoon Forum

- Institutional forecast product sharing mechanism between the NHM providers and users of forecast products
- Obtaining and prioritizing recommendations for enhancing forecast/climate risk information generation and applications



**8th National Monsoon Forum held in Islamabad, Pakistan**

July 07, 2022



**Maldives holds its 7th National Monsoon Forum in Male**

June 12, 2022



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Community Outreach & Feedback



Capacity Building, Research & Development

- Bangladesh – Winter Forum (ARRCC)  
Co-designing National Products & Enhancing User Experience



## Summary

### June - September 2021

Rainfall of June-September 2021



As per the available climate model outputs, below normal rainfall is expected in Sylhet and Mymensingh divisions (light to dark brown shaded area). Rainfall may be slightly below normal over Rangpur, Rajshahi, Dhaka and adjoining districts. Normal rainfall may be experienced at some places of Khulna, Barisal, Chattogram and its adjoining areas (light grey shaded area).

Temperature of June - September 2021



Available climate model outputs suggest that the temperature is likely to be near normal over Rangpur, Mymensingh, Sylhet, Barisal and adjoining areas. during this period. It may be above normal at other parts (light to dark brown shaded area) of Bangladesh.





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## Empowering last mile users in early warning information delivery and application



Strengthening Last Mile  
Communication in South Asia  
Region: Bangladesh, Nepal,  
Pakistan and Sri Lanka

Supported by USAID through  
UCAR





Enhancing Data Availability



Modeling and Forecasting



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Capacity Building, Research & Development

# Supporting flood forecast action and learning in Bangladesh- SUFAL Phase II



Promoting Forecast-based Early Action through SUFAL II



Enhancing Data Availability



Modeling and Forecasting



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Community Outreach & Feedback



Capacity Building, Research &  
Development

- ARRCC [Bangladesh, Nepal]
  - Agro advisory, Seasonal Forecasting
- WMO-CST [Bhutan]
  - Flood modeling and NWP modeling
- ESCAP [Bhutan, Cambodia, Timor Leste, Maldives, PNG, Fiji, Samoa]
  - Impact Based Forecasting, NWP, and Weather modeling
- Sindh DSS with AIT [Pakistan]
- WMO [Myanmar]
- Joint Research with BIRRI Bangladesh
  - A pilot has been conducted to evaluate the performance of climate service at the field level.
  - This research was jointly carried out for the rice variety BIRRI Dhan-29 and BIRRI Dhan-89.





# Application Of Multi-time Scale Forecast In Bangladesh Under ARRCC Program



Regional Integrated Multi-Hazard Early Warning System for Africa and Asia







**SOUTH ASIA**  
**HYDROMET FORUM**

**PROGRAM TO SUPPORT SOUTH ASIA REGIONAL DEVELOPMENT IN  
OPERATIONAL FORECASTING AND SERVICE DELIVERY**