

# Links to other regional fora and platforms - Role of SAHF in supporting WMO strategies & summary of role and future direction of WMO platforms

SAHF Planning workshop on Impact-Based Forecasting and Climate Services  
21-24 January 2025, Bangkok, Thailand

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WMO Regional Office for Asia and the South-West Pacific

## 1 – WMO

structure, strategic plan,  
programmes & systems,  
regional fora & platforms  
recent & future developments

## 2 – Technical & Political Partners

e.g. ESCAP, WFP, IFRC, RIMES,  
ADPC, ICIMOD, IWMI

## 4 – Initiatives & Partnerships

e.g. EW4All, GFCS, Anticipatory Action,  
TCP (TC & PTC), GHHIN, IDMP, APFM

## 3 – Donors & Development Partners

e.g. CREWS, SOFF, Adatation Fund,  
ESCAP TF, UKMO



**WMO:**  
**193 Members, 6 Regions**

**1 HQ, 9 Regional/Representative Offices**



- WMO Headquarters
- ★ Regional/Rep Office
- ★ UN Affairs Office
- ★ EU Affairs Office

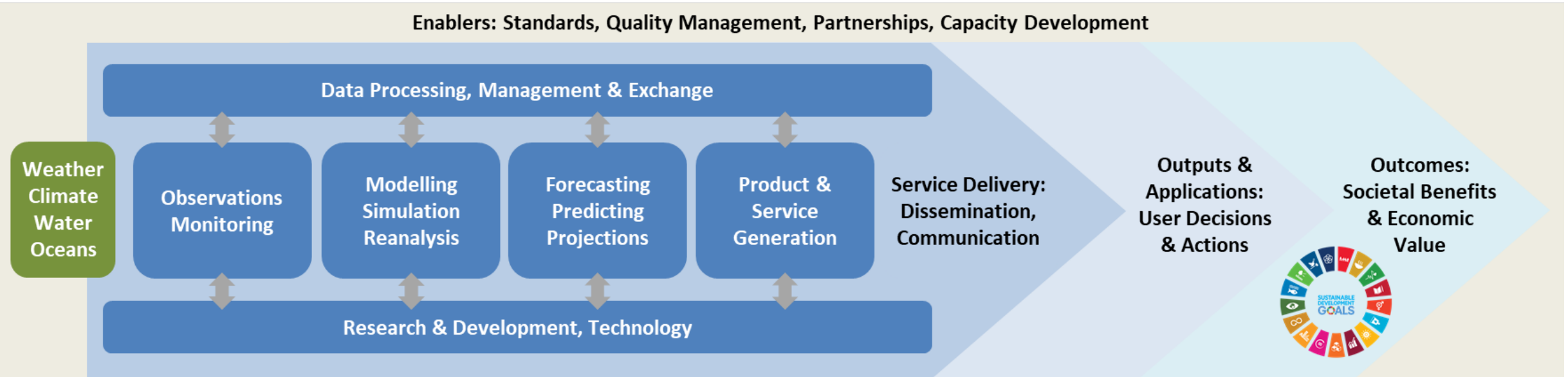
- Region I (Africa)
- Region II (Asia)
- Region III (South America)
- Region IV (North & Central America, the Caribbean)
- Region V (South-West Pacific)
- Region VI (Europe)



Note: Some Members participate in several RAs, such as the Russian Federation, France, the UK or the USA.

# WMO & the HydroMet Value Chain

**Our Mandate:** Facilitate worldwide **cooperation** to advance the delivery and use of high-quality, authoritative weather, climate, hydrological and related environmental **services** by its **Members** to improve the well-being of all, through the **exchange of data, information products, standardization, applications, research, and training.**



User Engagement, Feedback, Monitoring & Evaluation, Improvement



**Governance**

Congress

Executive Council (EC)

Hydrological Assembly

**Purpose**

Observations,  
Exchange, Standards

Operations,  
Applications

Research

**Capacity  
Development**

**Long-term Goal**

2

1

3

4

**Body**

Technical  
Commission:  
**Infrastructure**

Technical  
Commission:  
**Services**

Research Board

**6 Regional  
Associations, EC/CDP**

**Vision & mission  
implemented  
through  
Major programmes  
& systems**

Expanded World  
Weather Watch  
(WWW) Programme  
  
Space Programme

Weather, Climate,  
Hydrological, Marine  
and Related  
Environmental  
Services Programme  
  
Tropical Cyclone  
Programme

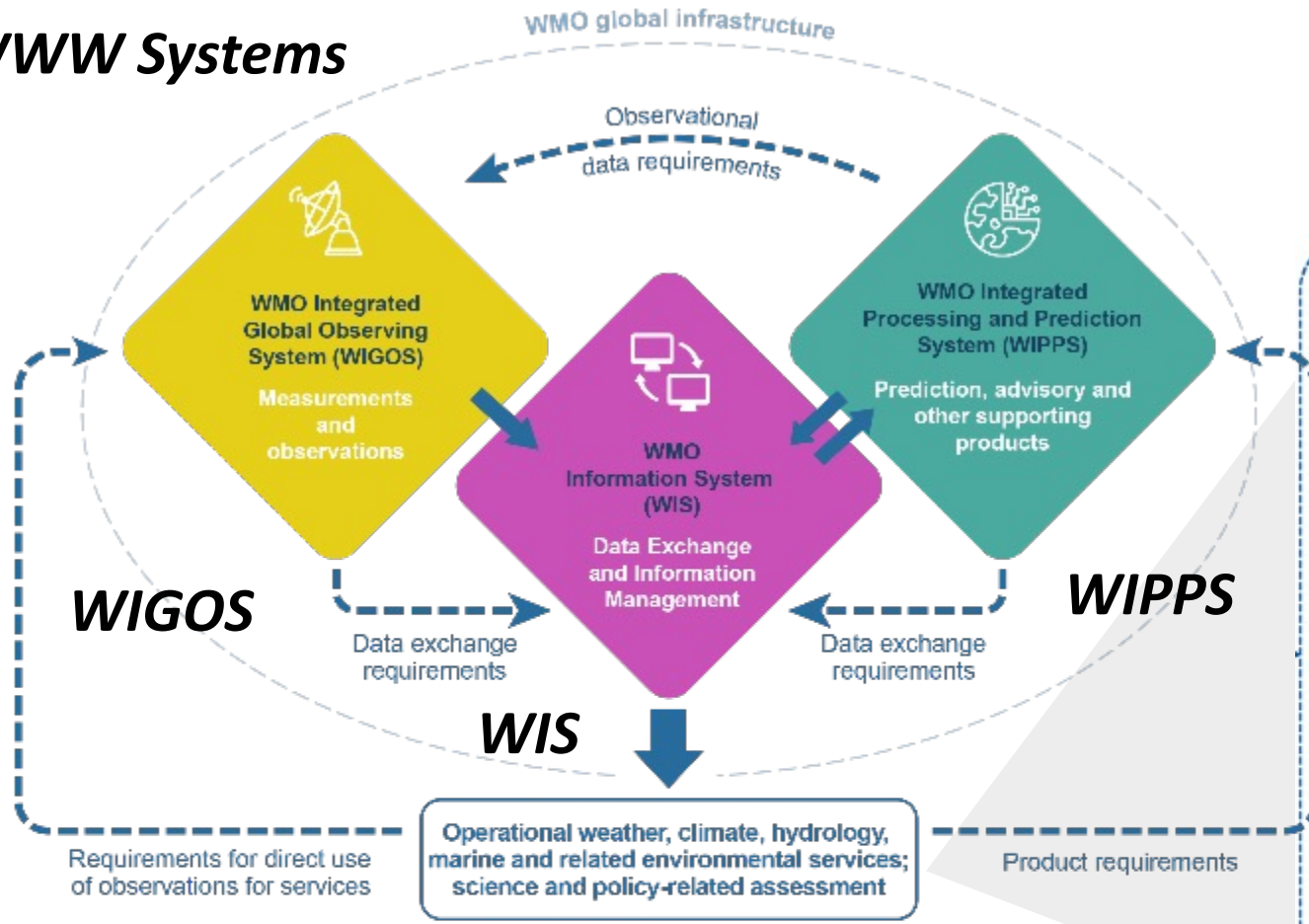
World Weather  
Research Programme  
  
World Climate  
Research Programme  
  
Global Atmosphere  
Watch

**Cross-cutting:  
Regional Programme  
  
Capacity  
Development  
Programme (incl. ETR  
& VCP Programmes)**

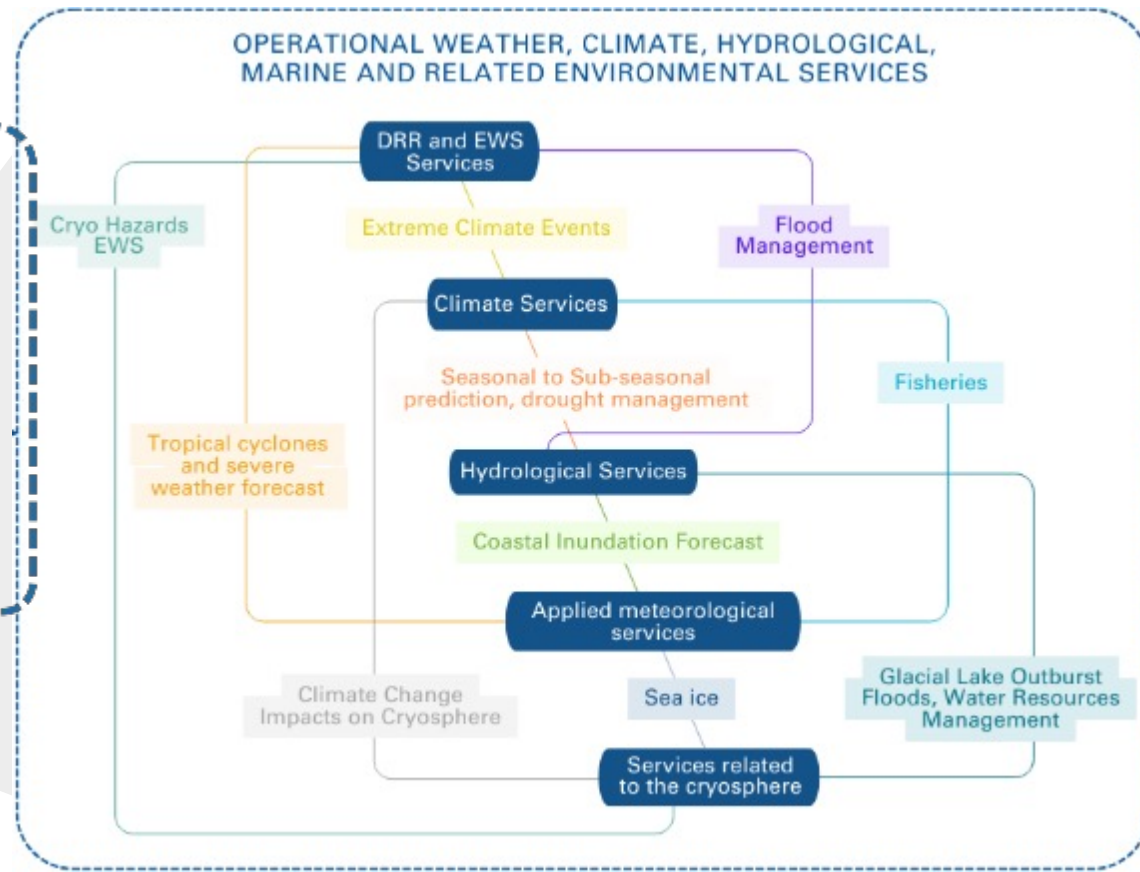




# WWW Systems



# Services



**Regional components (centres)!**



## End-users



## Application Areas

**Funding: In-kind, regular budget (fees) + ODA (essential)**

# Key WMO initiatives & capacity development

## Weather

**Severe Weather Forecasting Programme (SWFP), Tropical Cyclone Programme (TPC), education, training and competency for Services for Aviation, Impact-based Forecasting and Warning Services (IBFWS) programmes, Sand and Dust Storm Warning Advisory and Assessment System (SDS-WAS), Cataloguing Hazardous Events (CHE), etc.**

## Climate

**Global/Regional/National Frameworks for Climate Services (GFCS/Regional/NFCSs), incl. Regional Climate Centres (RCCs), Regional Climate Outlook Forums (RCOFs), Climate Watch System, WHO-WMO Joint Climate and Health Programme, El Niño/La Niña Updates, WMO Coordination Mechanism to support Humanitarian Activities (WCM), etc.**

## Water

**Flash Flood Guidance System (FFGS), Global Hydrological Status and Outlook System (HydroSOS), Associated Programme on Flood Management (APFM), Integrated Drought Management Programme (IDMP), Flood Forecasting Initiative (FFI), etc.**

## Ocean

**Coastal Inundation Forecasting Initiative (CIFI), WMO-IMO Worldwide Met-Ocean Information and Warning Service (WWMIWS), Marine Environmental Emergency Response (MEER), etc.**



*Funding: Mostly through ODA & in-kind*

*Key: working in partnership*

# Services Commission (SERCOM)



**SG-RENE**

**Chair**  
Alberto Troccoli (WEMC)

**Vice-chairs**  
Tobias Fuchs (RA VI)  
Lucy Mtilatila (RA I)

**JET-CRYO**

Joint Expert Team of SC-CLI and SC-HYD on Cryosphere related Services

**FFI-AG**

Flood Forecasting Initiative Advisory Group

**AG-SEB**

Advisory Group on Socioeconomic Benefits



# Regional mechanisms/platforms



**RCOFs:** SASCOF (RCC Pune), TPCF (TPRCC-Network China/India/Pakistan), ASEANCOF (SEA RCC-Network – Singapore/Philippines/Indonesia)

**HydroSOS** Regional Plan / future **South Asia Hydrological Outlook Forum?**

**SWFP:** SWFP-South Asia (Bangladesh, Bhutan, India (RSMC), Maldives, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand) → Myanmar not covered

**FFGSs:** South Asia FFGS (Bangladesh, Bhutan, India (Regional Centre), Nepal, Sri Lanka), Pakistan (Regional Centre) and Afghanistan Regional FFGS, Myanmar FFGS

**CIFI Bangladesh**

**ESCAP/WMO PTC:** Bangladesh, India (RSMC), Iran, Maldives, Myanmar, Oman, Pakistan, Qatar, Saudi Arabia, Sri Lanka, Thailand, United Arab Emirates, Yemen



Third Pole Regional Climate Centre

# Impact-based forecasting and warning services (IBFWS)

## WMO Guideline on IBFWS version 1

- Risk equation
- Risk Matrix
- Partner

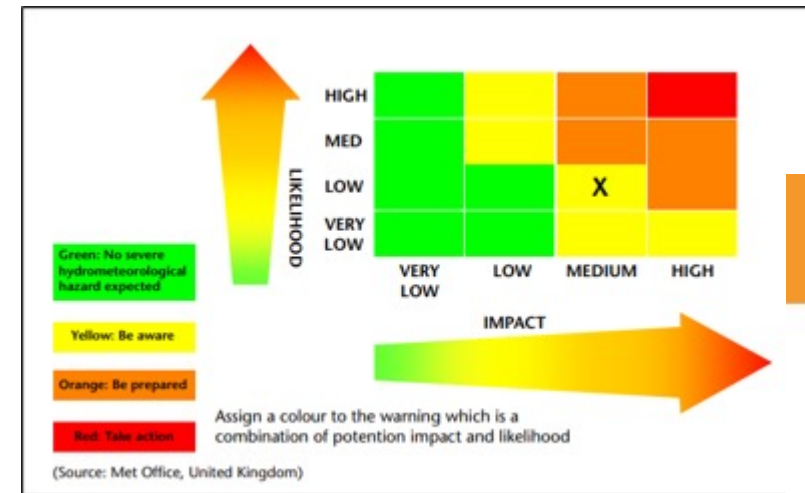
## WMO Guideline on IBFWS version 2

- Risk and media charts
- Show Case

## Manual for operationalizing IBFWS

## IBFWS self-directed eCourse

## Short-survey to adjust IBFWS implementation



### THE FUTURE OF FORECASTS: IMPACT-BASED FORECASTING FOR EARLY ACTION

By 2030, the global population of people living in coastal areas will reach 2.2 billion. This is a significant increase from the current population of 1.2 billion. The infographic highlights the need for impact-based forecasting to help communities prepare for and respond to extreme weather events. It includes a map of the world showing coastal areas and a list of key messages for decision-makers.

Regional Partners

# Working Structure of Regional Association II (Asia) Eighteenth Session

## Management Group (MG)

**President**  
To be elected

**Vice-president**  
To be elected

**Members**  
Executive Council Members from RA II  
Regional Hydrological Adviser (RHA)

**Early Warnings to All** **EW4All Task Team**



**Task Team on the Regional Concept (TT-RC)**

**Task Team on Regional Partnership (TT-RP)**

**International Advisors' network (INTAD)**

**Regional Network of WMO Operational Centres (WIPPS, RWC, RTC), including Capacity Development**

**WG Infrastructure**

**Expert Teams**

- WIGOS-N
- WIGOS-M
- WIPPS
- WIS
- **Hydrometry**
- Ocean Observations
- WICAP
- **RIC**
- **Radio Frequency**
- Satellite App

**Focal Point: **Radio Frequency****

**WG Services**

**Expert Teams**

- DRR
- Climate Services
- **Hydrological Services?**
- Marine Services
- Agriculture Services
- Aviation Services
- Urban Services
- **Health**
- **Energy**

**Joint Expert Team Environment TPRCC**

**CP Hydrology**  
*Thematic Coordinator on Hydrology and Water Resources*

**Joint Expert Team**  
**Hydrometry**  
**Hydrological Services**

**CP Research and Innovation**

- **AI**
- **Weather Modification**
- **PPAE**



Proposed WMO RA II-18 Working Structure

# WMO RA II Operating Plan

A primary platform of all regional activities under WMO

## WMO STRATEGIC PLAN 2020-30

### Long-Term Goals



PPE for Smart Meteorological Services in Mega-Cities

Categories of activities:

- **Implementation Projects (IP) – Request by Congress/EC**
  - Strengthen Multi-Hazard Early Warning Services (GMAS-Asia)
  - Promote Impact-based Forecast and Warning Services
  - Improve climate, agricultural, aviation, coastal/marine, hydrological and services
- **Demonstration Projects (DP) - Capacity Development**
- **Pilot Projects (PP) – Innovation and Try-outs**

- RA II Operating Plan considers the WMO Strategic Plan and **regional priorities**, and identifies the tasks requested by **Congress** and **Executive Council** to the **regional associations (RAs)**.
- It is a **living document** updated from time to time by RA II WG/CP and approved by RA II MG.
- It is **aligned and synergistic** with the WMO Annual Operating Plan through interactions with INFCOM, SERCOM and the Research Board.
- Cg-19 requested **RAs** to ensure that **focused** actions on the implementation of the **EW4All initiative** falling within their ToR are **prioritized** in their respective work plans for the next financial period.



# 2 – Technical & Political Partners

**ESCAP** → TCP, EW4All, IBF, State of the Climate Reports, trainings → renewed MoU (2024)

**IFRC** → EW4All, WCM, CREWS, Anticipatory Action

**RIMES** → renewed MoU, WMO-RIMES Joint Strategy and Action Plan

**ADPC, ICIMOD, IWMI** → MoUs & collaboration in projects

Other agreements and joint work plans with UN agencies and international/regional organisations

# 3 – Donors & Development Partners

## ● ● ● Alliance for Hydromet Development

Launched at COP25 (2019), brings together major international development, humanitarian & climate finance institutions, committed to scale up and unite efforts to close the hydromet capacity gap by 2030 - idea for SOFF + Hydromet Gap Report + **Country Hydromet Diagnostics (CHD)**, a peer2peer standardized approach to assess NMHSs – 12 in 2023



Supports **collection and international exchange** of highly essential **surface-based weather observations** (global public goods) in compliance with international standards to **improve weather forecasts**

**WMO has a growing pipeline of projects (Central, South & Southeast Asia, e.g. HydroSOS BaNe project)**



Provision of technical expertise to support operations and countries, through direct contracting by WB or governments, use of EW4All and WMO climate metrics in WB upstream analytics for policy dialogues and adaptation monitoring



Unique and specialised fund for EWS in LDCs and SIDS  
12 funders, 3 (soon 5) implementing partners (same as EW4All Pillar leads), CREWS Accelerated Support Window (ASW), GCF and CREWS Scaling-Up Framework



**Proposals for 2 national and 2 regional projects in South Asia!**

# (WMO) Partner Coordination Mechanism

## RATIONALE

Development Partners aiming for:

- Better coordination and collaboration
- Access to updated project and programme information

PCM aims to link development partner efforts with Members' requirements for support

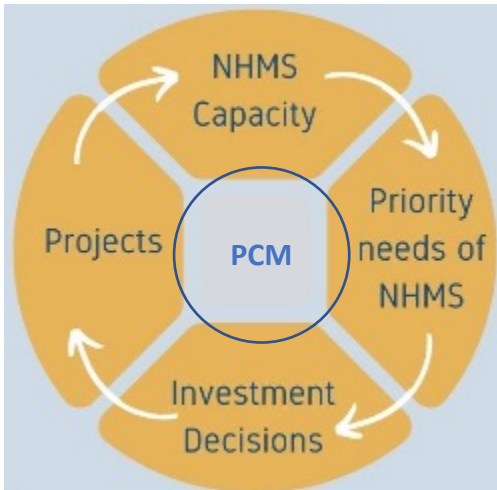
Development Partners

WMO PCM

WMO Members

## PCM GOALS

- Platform for the **systematic exchange of project and programme information** to **enhance collaboration amongst development partners**
- **Harmonize** interventions and **avoid** duplication of activities at regional and national level
- **Facilitate alignment** of development partners' objectives with national and regional identified priorities and needs to ensure ownership of interventions and maximize impact and sustainability of investments.



# (WMO) Partner Coordination Mechanism

## Engagement Framework

### Annual Meetings

- Analyze projects and programmes
- Identify regional and national needs/priorities
- Collaborate on best practices and lessons learned

### Special Programme Focus Sessions

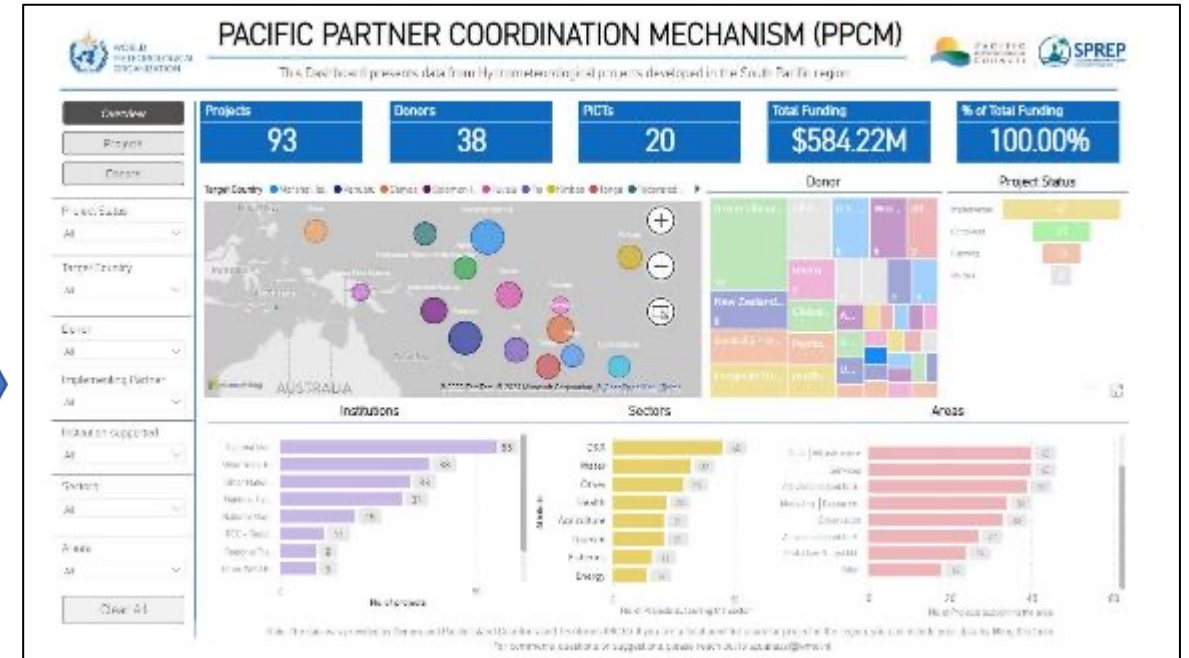
- Peer Review of upcoming projects and programmes

### Ad-hoc Discussions on specific topics

- Public-Private Engagement
- SEB
- Sustainability
- Gender
- Monitoring & Evaluation

### Projects Data Analysis Dashboard

- Collect & share data and information on hydromet projects and programmes



**Africa Partner Coordination Mechanism (APCM)** -> 2021&2022 Annual Meetings. 2023 WISER Africa Special Programme Meeting. Developed the APCM Dashboard [APCM Dashboard](#)

**PMM3** -> Endorsed the establishment of the **Pacific Partner Coordination Mechanism (PPCM)** for the Pacific Meteorological Council. Developed the [PPCM Dashboard](#)



# 4 - Initiatives

**UN SG Early Warnings for All (EW4All) initiative**

**Anticipatory Action (AA)**

**Global Framework for Climate Services (GFCS)**

**Global Heat Health Information Network (GHHIN)**

# Early Warnings for All (EW4All) is a groundbreaking initiative that aims to protect everyone everywhere by 2027



- Announced by UN Secretary General Antonio Guterres on **23 March 2022** (World Meteorological Day), **launched at COP27** that year as part of his **Acceleration Agenda**
- Aligns with the priorities of the **Paris Agreement**
- Supports key provisions of the **Sendai Framework for Disaster Risk Reduction 2015-2030**, particularly **Target G** on availability and accessibility of multi-hazard early warning systems
- Contributes directly to the UN's **Sustainable Development Goals** (SDGs), on poverty, hunger, health, water, clean energy, climate action and sustainable cities
- **NOT a new, standalone programme or project! → rather a campaign, initiative, partnership, new way of working**
- → EW4All builds on existing or previous initiatives and partnerships (IEWP/ PPEW, IN-MHEWS, REAP, CREWS, etc.) & events (EWC I-III, MHEWC I-III)

**Pillar 1:  
Disaster Risk Knowledge**

Ensuring all countries have access to reliable, understandable and relevant risk information, science and expertise

**Pillar 2:  
Detection, observation,  
monitoring, analysis,  
forecasting of hazards**

Ensuring all countries have robust forecast and monitoring systems, enabling policies to support optimization and sustainability of hazard monitoring and early warning systems

**Pillar 3:  
Warning Dissemination  
& Communication**

Using a people-centred approach to ensure that early warnings are effectively and timely disseminated to reach everyone, especially those most at risk

**Pillar 4:  
Preparedness & Response  
Capabilities**

Ensuring local governments, communities and individuals at risk have the knowledge and means to take preemptive early actions to prepare for and respond to incoming disasters upon receiving warnings



**Built on four Pillars with  
Inter-Pillar Domains**



# Key Inter-Pillar Areas





# Planning & Programmatic Approach

## Global Level

- High-level **Executive Action Plan** published at COP27 in 2022
- **Advisory Panel** & technical-level **inter-pillar coordination mechanism**
- Pillar-wise and cross-cutting **programmatic framework and M&E**
- **Global Dashboard** on country progress, Early Warning **Maturity Index**, Progress Reports at COPs
- **Communication & resource mobilization strategies**

## Regional Level

- **Regional inter-pillar coordination mechanism, incl. regional organisations**
- **Complementarity with existing regional strategies, plans and initiatives** – e.g., WMO Regional Operating Plans, potential **ASEAN EW4All Roadmap aligned with AADMER**; **Weather Ready Pacific (WRP) Programme** as key implementation vehicle for EW4All,

## National Level

- **Roll out initially in 30 countries** → **Toolkit** to support national-level implementation
- **Catalytic Phase** (Assessments, Kick-off workshops, National Task Force, EW4All/MHEWS Roadmap development)
- **Sustained Action Phase** (Implementation of EW4All Roadmaps, Coordination Mechanism, Governance Strengthening, Maintenance, Monitoring & Evaluation, Reporting)



# EW4All national roll-out process



CLIMATE RISK & EARLY WARNING SYSTEMS



ADAPTATION FUND

Weather and climate data for resilience



GREEN CLIMATE FUND



Sustainability

# Status – EW4All Dashboard

## PAGES

### Progress

Global indicators

Implementation

### MHEWS Capacity

Global overview

Country/territory

## PAGE FILTERS

### REGION UNDRR

All

### WMO REGIONAL ASSOCIATIONS

All

### INCOME GROUP

All

### FRAGILE & CONFLICT-AFFECTED

All

### SIDS/ LDC/ LLDC

All

## Implementation

The indicators below monitor global key indicators designed to measure implementation of the EW4All Pillar Implementation Strategies.



Disaster risk knowledge



Detection, Monitoring & Forecasting



Warning Dissemination & Communication



Preparedness to respond



Cross-cutting

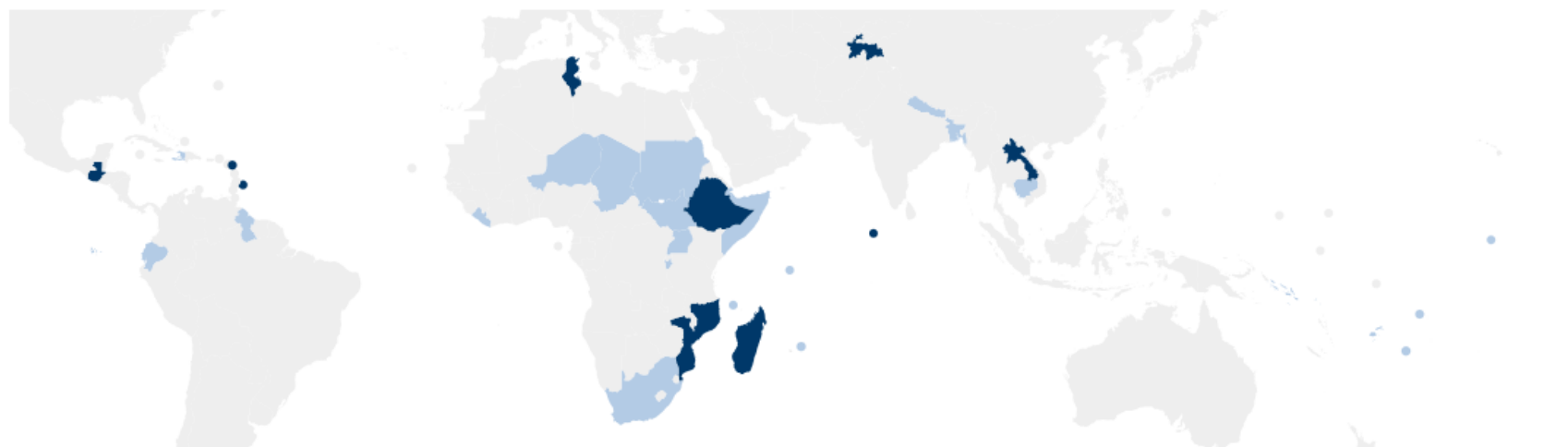


Roll-out

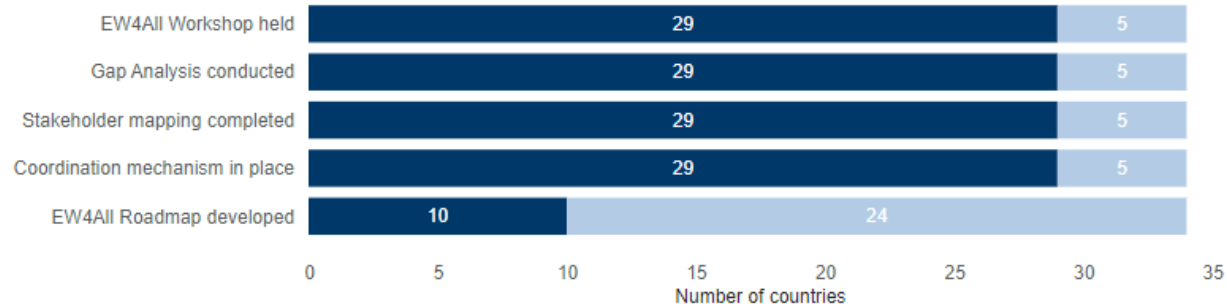
### INDICATOR

EW4All Roadmap developed

● Yes ● No



## Global roll-out progress



### COUNTRY/TERRITORY

Antigua and Barbuda

- Yes
- Yes
- Yes
- Yes
- Yes



SCAN ME

# Anticipatory Action (AA)

## Asia Pacific Technical Working Group – Subgroup on AA Triggers

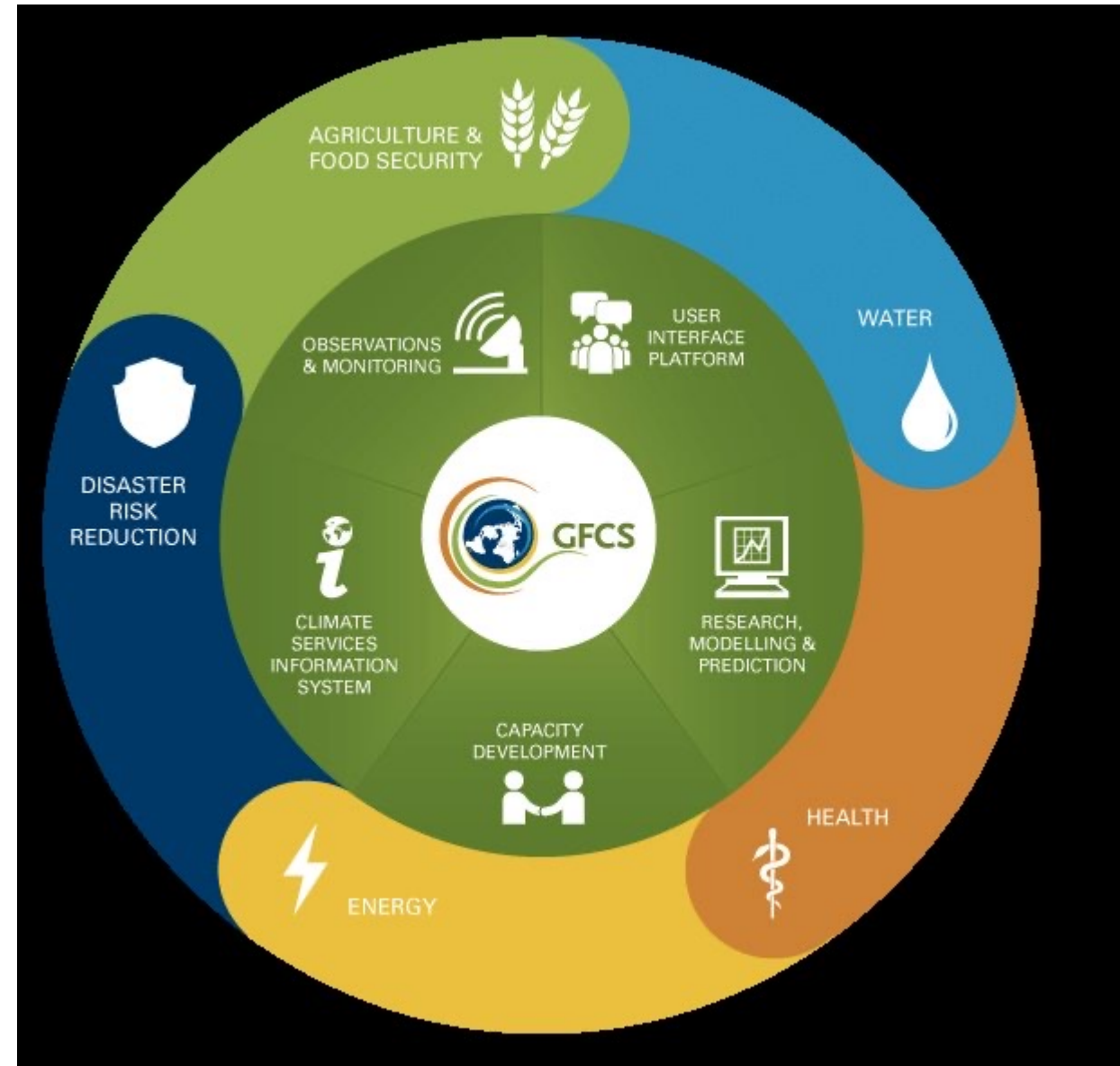


Priority activities	Confirmed interest	Scope and end-product?	Status?
<b>1.1. Document and synthesise evidences on how triggers for AA are developed in the region, harmonisation of triggers within a country for a given hazard</b>	FAO, American Red Cross, IOM	Technical expert to help? Country-level documentation exercises?	Assessment tool could be developed by trigger sub group
1.2. Establish a communication mechanism to allow sharing of timely information on potential hazards	UNICEF		
1.3. Development of policy briefs on data sharing between ministries (forecast, risk data) to help build national trigger	UNDRR		
<b>1.4. Invest in strengthening the NHMS capacities to provide skillful forecasts for priority AA areas</b>	WMO, Red Cross Climate Center, Finnish Met Service, FAO	Guidance for NMHSs how to engage with AA actors, guidance for AA actors how to engage with WMO/NMHSs?	
<b>1.5. Develop training on IBF, possibly through a a massive online open course (MOOC)</b>	Red Cross Climate Center, WMO, ESCAP, WFP		Initiated in 2021 but not completed
1.6. Conduct research on vulnerability curves and damage functions of different structures, crops, etc. against different hazards	RCCC, ADPC		
1.7 Note on links between EW4All & AA	FAO, WMO, ??		



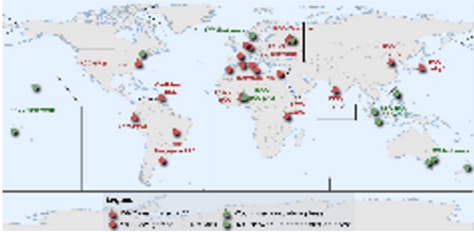
# The Global Framework for Climate Services (GFCS)

- **Partnership** of governments and organizations since 2009
- Strengthens and coordinates the **development, delivery and use** of climate services
- Incorporates **science-based climate information and prediction** into planning, policy and practice.
- Addresses climate-related risks at **global, regional and national scales**
- Built around **five components**, representing elements of the climate services value chain
- Develop and deliver operational climate services in **five priority areas**
- Ensures **availability and access** to climate services for all countries



# GFCS - Cascading strategy for implementation

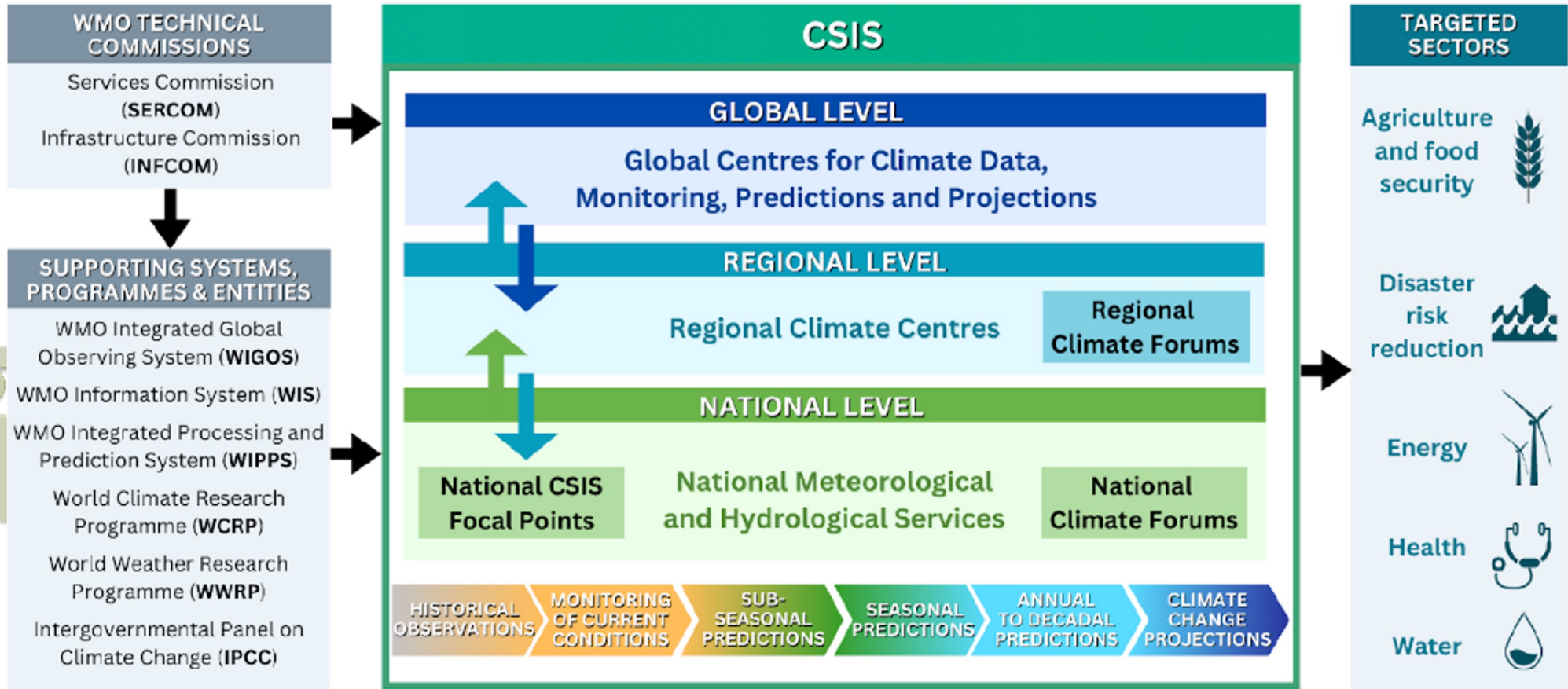
## RCCs



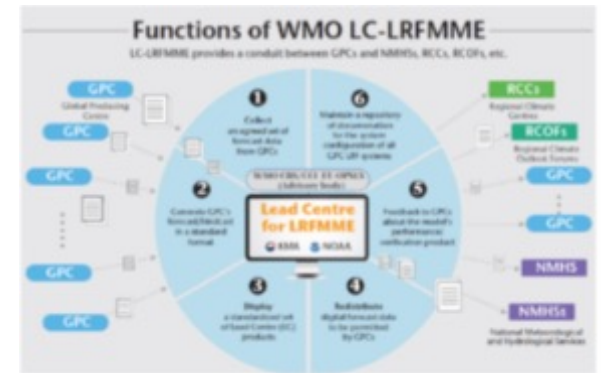
## RCFs



## NCOFs



## GPCs



*Vision: Enable society to better manage the risks and opportunities arising from climate variability and change*

1

## Strengthen climate service capacity and capability, particularly in NMHSs

- Improve availability of, access to, and use of, climate information, providing scientific and technical support
- Establish National Frameworks for Climate Services, and National Climate Fora, and link to regional structures



2

## Support climate policy and finance with authoritative scientific information

- Produce regular reports and advice to support adaptation and mitigation (such as Global and Regional State of Climate & State of Climate Services reports; ENSO Bulletins; Climate Updates; Build on IPCC knowledge)
- Provide tools and expertise to help incorporate climate science into actions and investments



3

## Develop Standards, Quality Management and Training

- Assess and develop Climate Service capacities (basic ⇒ essential ⇒ full ⇒ advanced) and needs
- Produce guidance on standards and competencies (through WMO's SERCOM and INFCOM)



4

## Develop the climate services value chain/cycle

- Scientific capability (including Obs., data, WCRP) ⇔ climate services information ⇔ user engagement
- Generate value and enable actions



5

## Improve visibility and effectiveness of GFCS, promote coordination

- Climate services are essential for society. Needs global-regional-national coordination





# Global Heat Health Information Network (GHHIN)



The banner features the GHHIN logo at the top left, followed by the text 'GLOBAL HEAT HEALTH INFORMATION NETWORK'. To the right are the words 'Learn' and 'Act'. Below this, the logos of the World Health Organization and the World Meteorological Organization are displayed. The main text reads: 'Extreme heat is a global health emergency. Billions of people are at risk of preventable death and illness from extreme heat. The Global Heat Health Information Network is helping to increase awareness and capacity to better manage and adapt to the health risks of dangerously hot weather in a changing climate.' The background shows people in a hot, dusty environment.

GLOBAL HEAT HEALTH INFORMATION NETWORK Learn Act

World Health Organization WORLD METEOROLOGICAL ORGANIZATION

**Extreme heat is a global health emergency.**

Billions of people are at risk of preventable death and illness from extreme heat. The Global Heat Health Information Network is helping to increase awareness and capacity to better manage and adapt to the health risks of dangerously hot weather in a changing climate.



The poster is orange and features a map of Southeast Asia in the background. The text reads: '07 - 10 JAN 25 SINGAPORE FIRST GHHIN SOUTHEAST ASIA HEAT HEALTH FORUM'.

07 - 10 JAN 25 SINGAPORE

**FIRST GHHIN SOUTHEAST ASIA HEAT HEALTH FORUM**

GHHIN Southeast Asia Hub

**Plans to establish a GHHIN South Asia Hub** → call for a host organisation going out soon

# Take aways

- Reflect SAHF priorities in the WMO RA II Operating Plan and working bodies, and align with and contribute to them as much as possible
- SAHF to build on, leverage and improve existing WMO programmes, systems, platforms, fora, and guidance, contributing to achieving WMO's strategic long-term goals
- Collaborate with WMO partners and donors within the general frameworks of EW4All, GFCS, Anticipatory Action, GHHIN, etc. towards achieving the 2030 Agendas



# Thank you

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<https://wmo.int>

<https://earlywarningsforall.org>