Support available for achieving WMO Strategic Objective 1.2

Broaden the provision of policy- and decision-supporting climate information and services

WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

WMO OMM

World Meteorological Organization
Organisation météorologique mondiale

Maxx Dilley, Director
Climate Prediction and Adaptation Branch
Climate and Water Department

Outline

- National Meteorological and Hydrological Services baseline climate services capacity
- Global operational system for climate services: The Climate Services Information System
- Global Framework for Climate Services
- Climate services for policy

National Meteorological and Hydrological Service Climate Services Capacity

Climate Services Value Chain and Checklist

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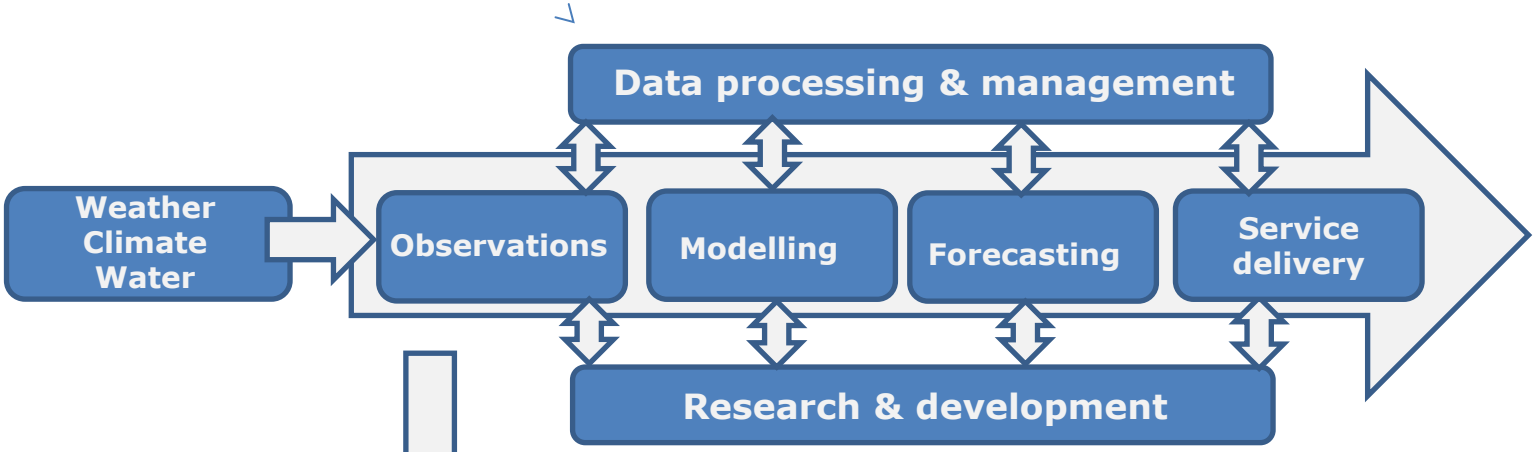
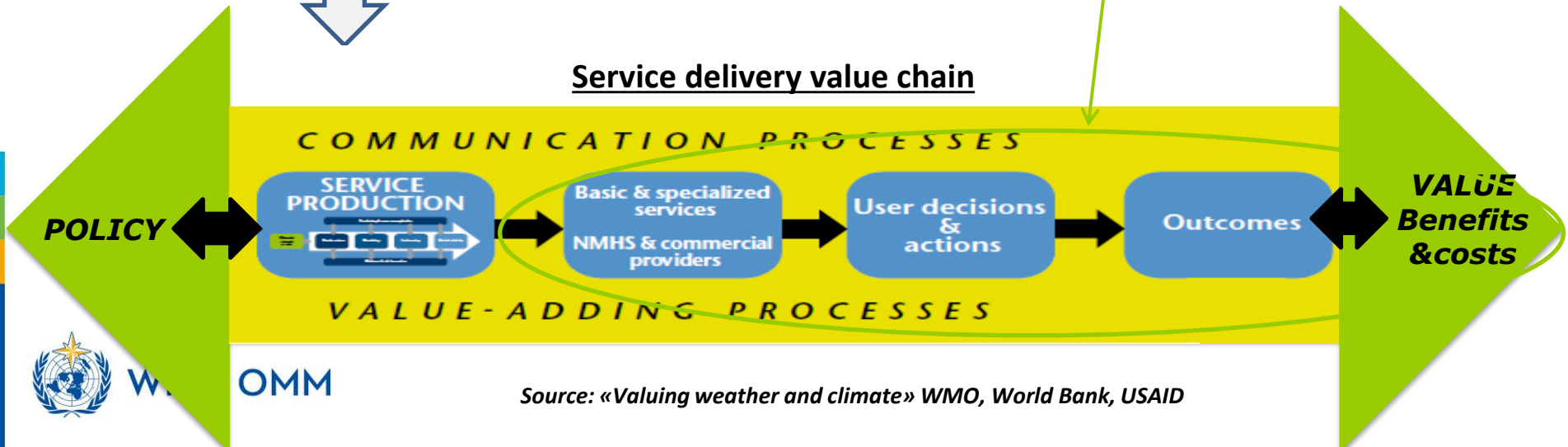
SO 1.2 Broaden the provision of policy- and decision-supporting climate information and services

Service delivery operational system



GFCS

Service delivery value chain



Source: «Valuing weather and climate» WMO, World Bank, USAID

Climate services capacity categories

Category	Criteria
0	Does not fully meet the criteria for Category 1
1	Basic – Design, operation and maintenance of national observing systems; data management including quality assurance; development and maintenance of data archives; climate monitoring; climate diagnostics and climate analysis; climate assessment; dissemination of climate products via a variety of media; and, participation in regional climate outlook forums and some interaction with users.
2	Essential – Meet the criteria for Category 1; Develop and provide operational monthly and longer climate predictions including seasonal climate outlooks; conduct or participate in regional and national climate outlook forums; interact with users in various sectors to identify their requirements and, provide advice on climate information and products.
3	Full – Meet the criteria for Category 2; Develop and/or provide tailored and downscaled climate products on timescales ranging from seasonal to climate change in order to meet the needs of major sectors; engage at least with some user communities; provide a strong user interface along with technical expertise for training climate specialists and for developing curricula; and, provide some level of regional cooperation and support.
4	Advanced – Meet the criteria for Category 3; Provide advanced climate services with research and modelling capabilities for climate and applied climate studies underpinned by a high level of global/regional cooperation and support.

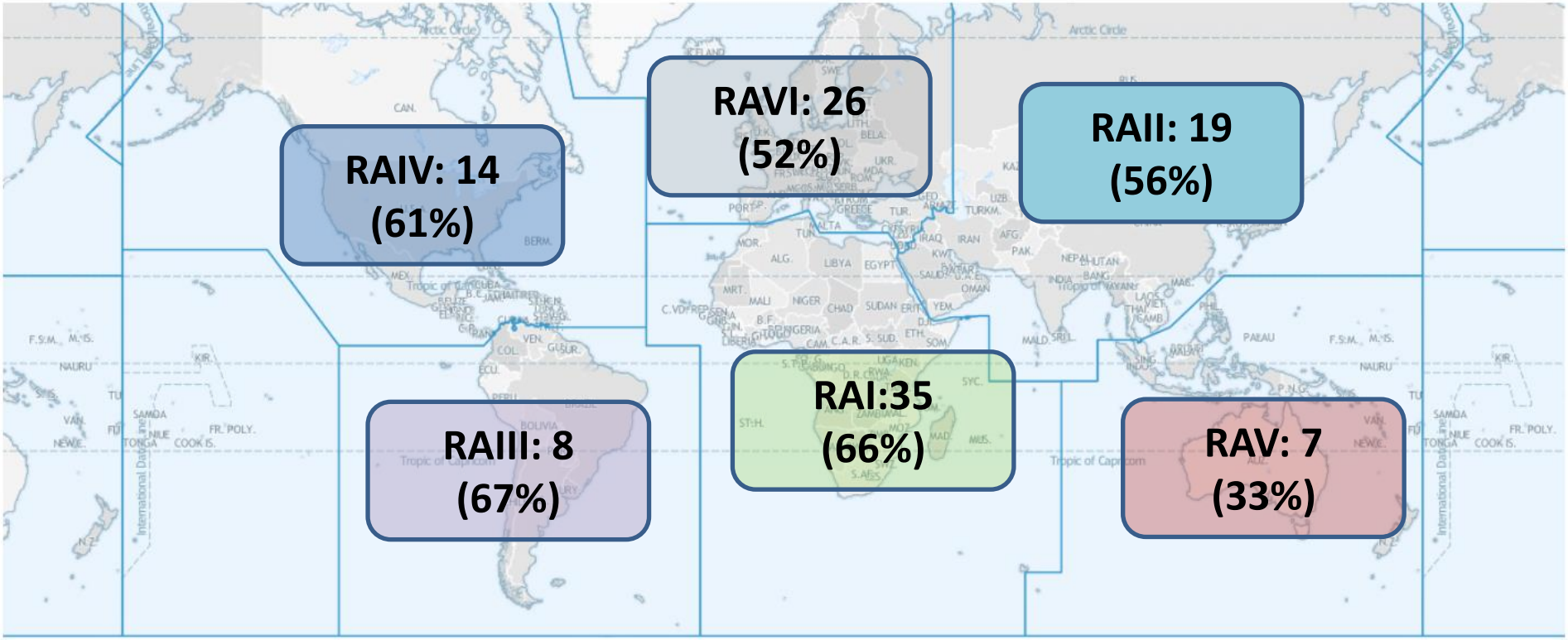
Member climate services checklist overview

- 137 yes/no questions in six groups
- Questions are
  - Grouped to align with outputs of objective 1 in a results based framework for WMO contributions to the GFCS
  - Categorized according to CCl climate services capacity levels

GROUPS	
1	Governance
2	Basic Systems:
	- Observing networks
	- Data and data management
	- Monitoring
	- Forecasting systems
3	User Interface
4	Capacity Development
5	Provision and Application of climate services
6	Monitoring and Evaluation

LEVELS (Qs groups 2-6)	
0	NA
1	BASIC
2	ESSENTIAL
3	FULL
4	ADVANCED

Member climate services checklist responses to date



Respondents: 109 Members

(Six Regional Associations) as of 15 May 2018

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Results of the Analysis (n=109): Basic Systems

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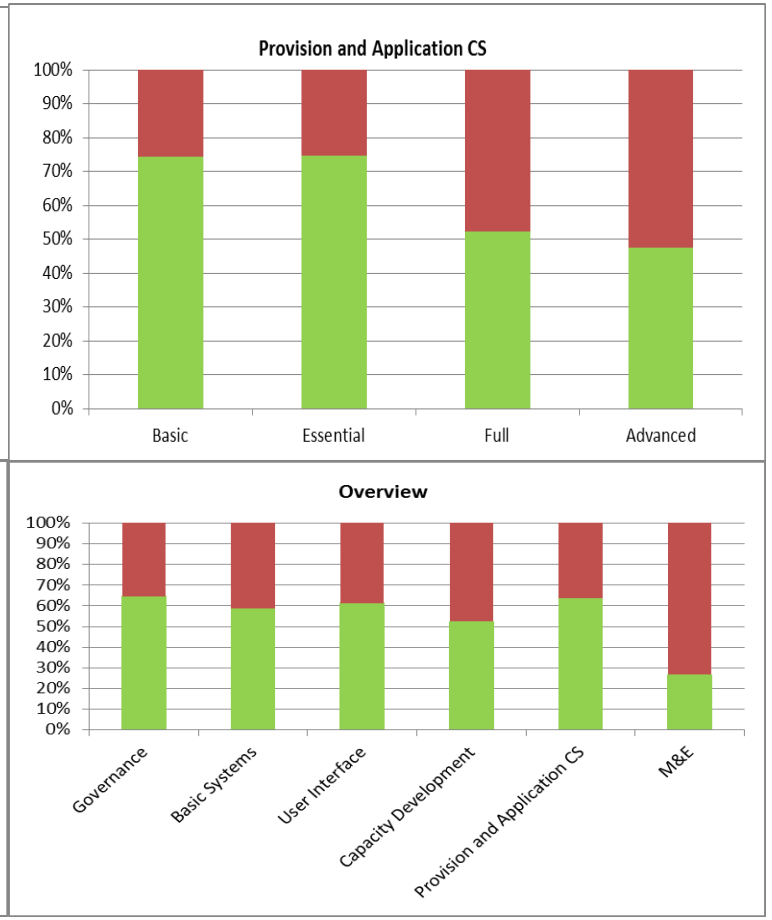
Results of the Analysis (n=109): Service Delivery and Overall



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Capacity development resources

"Capacity building for climates services is best achieved through drawing together local and regional knowledge, user-provider engagement, national commitment and global partnerships"

COMMISSION FOR CLIMATOLOGY

GUIDELINES FOR NATIONAL METEOROLOGICAL AND HYDROLOGICAL SERVICES ON CAPACITY DEVELOPMENT FOR CLIMATE SERVICES

WORLD METEOROLOGICAL ORGANIZATION

Guide to Climatological Practices

2011 edition

Guidelines on Quality Management in Climate Services

2018 edition

Annex to Resolution 5 (EC-68)

COMPETENCIES FOR PROVISION OF CLIMATE SERVICES

Competency 1: Create and manage climate data sets

Competency 2: Derive products from climate data

Competency 3: Create and/or interpret climate forecasts, climate projections and model output

Competency 4: Ensure the quality of climate information and services

Competency 5: Communicate climatological information with users.

Summary Report on Regional Climate Outlook Forums (RCOFs) Activities Worldwide

An assessment based on RCOFs status reports

WMO Workshop on Global Review of Regional Climate Outlook Forums

Guayaquil, Ecuador

5-7 September 2017

Current steps

- Completed checklists from all Members
- Roll-out of systematic support through Climate Coordination Panel and extra-budgetary projects
  - NMHS “twinning”
  - Climate Services Toolkit
  - Guideline on NMHS capacity development
  - Training

Climate Services Information System (CSIS)

Architecture, functions and further operationalization

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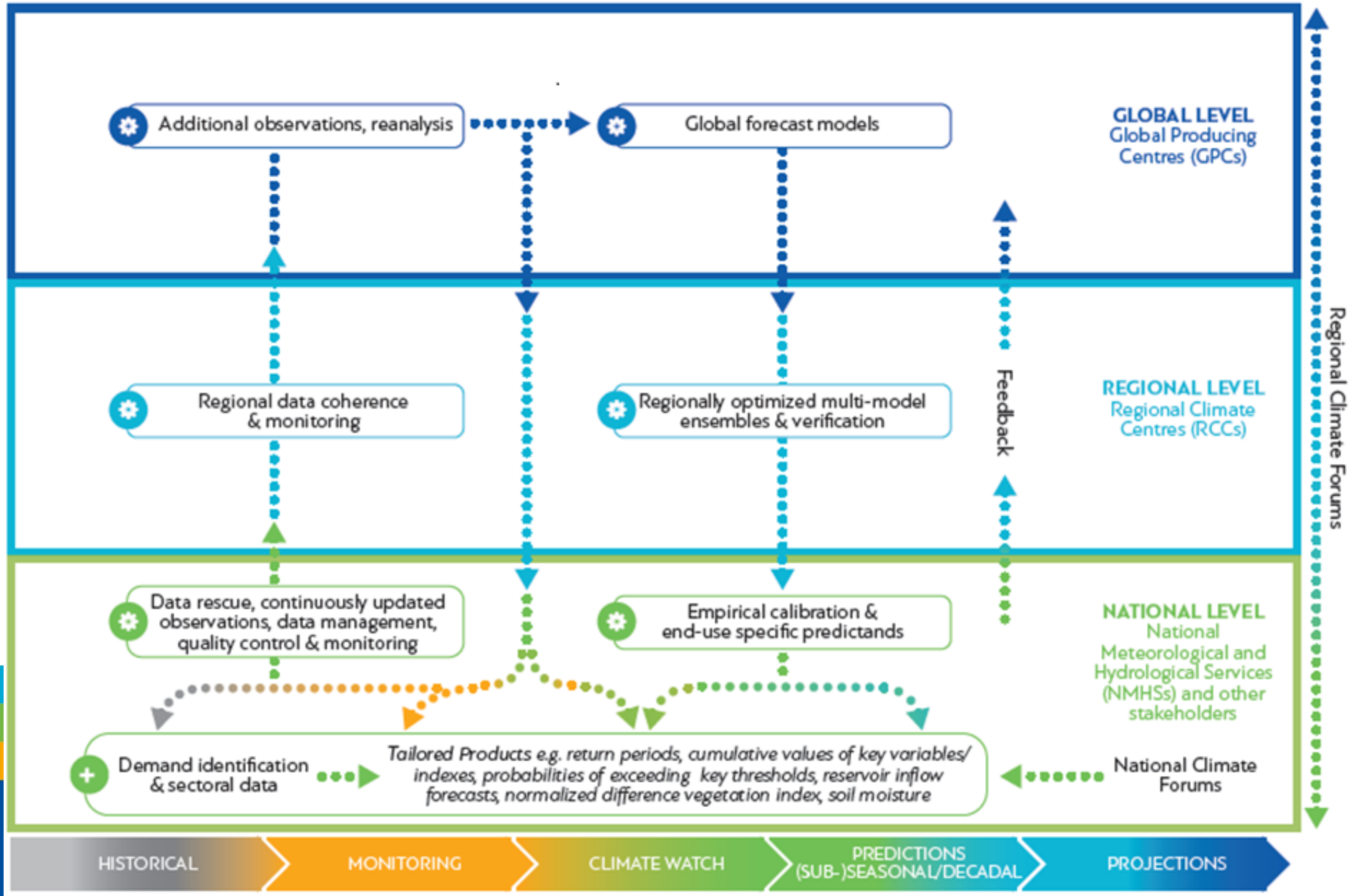
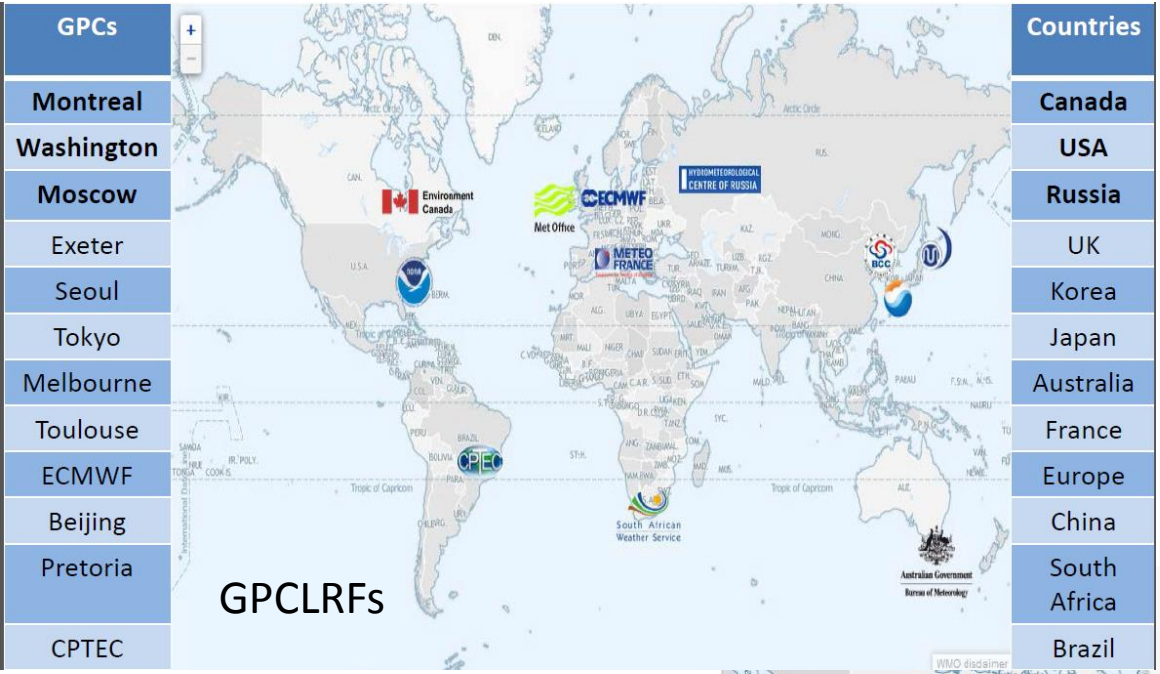
WMO

A Regional Approach to Implementing the Climate Services Information System (CSIS-R)

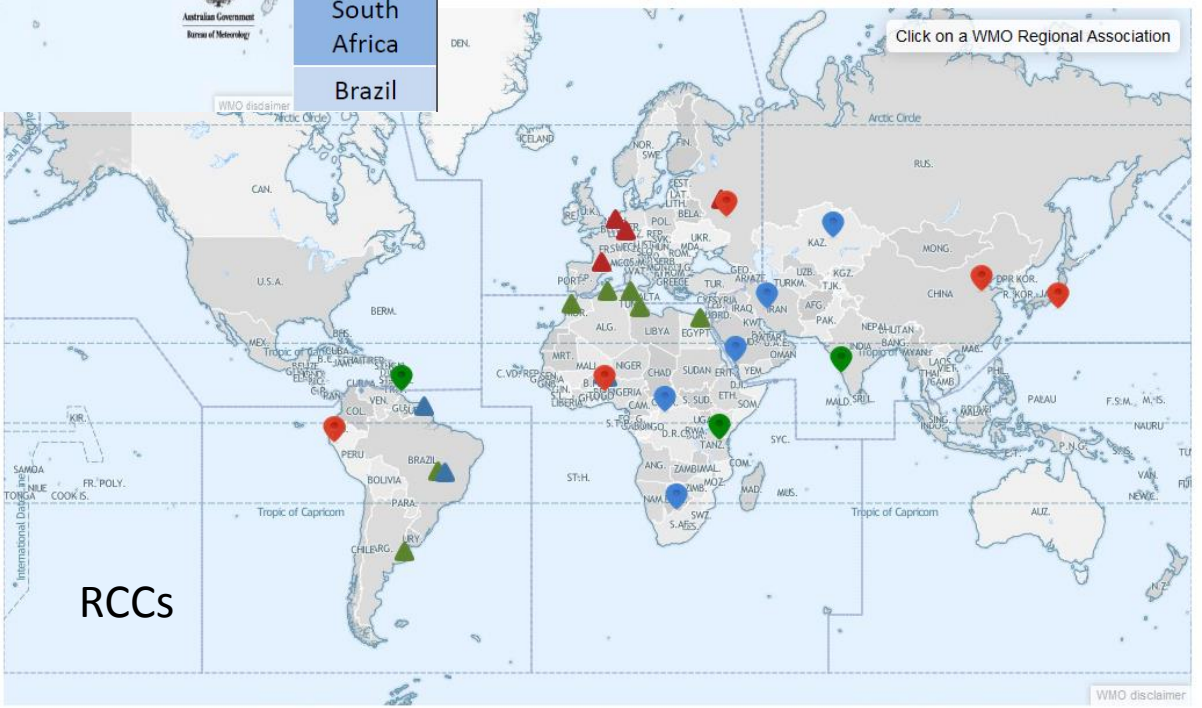


Global infrastructure

GPCs	Countries
Montreal	Canada
Washington	USA
Moscow	Russia
Exeter	UK
Seoul	Korea
Tokyo	Japan
Melbourne	Australia
Toulouse	France
ECMWF	Europe
Beijing	China
Pretoria	South Africa
CPTEC	Brazil



GPCLRFs



RCCs

- GPCLRF & RCC inventory of GFCS-relevant climate data and products (ECVs) 95+ pp.
- Not discoverable or organized in systematic form

Legend

designated RCC
RCC in demonstration phase
RCC proposed
designated RCC-Network
RCC-Network in demonstation phase
RCC-Network proposed

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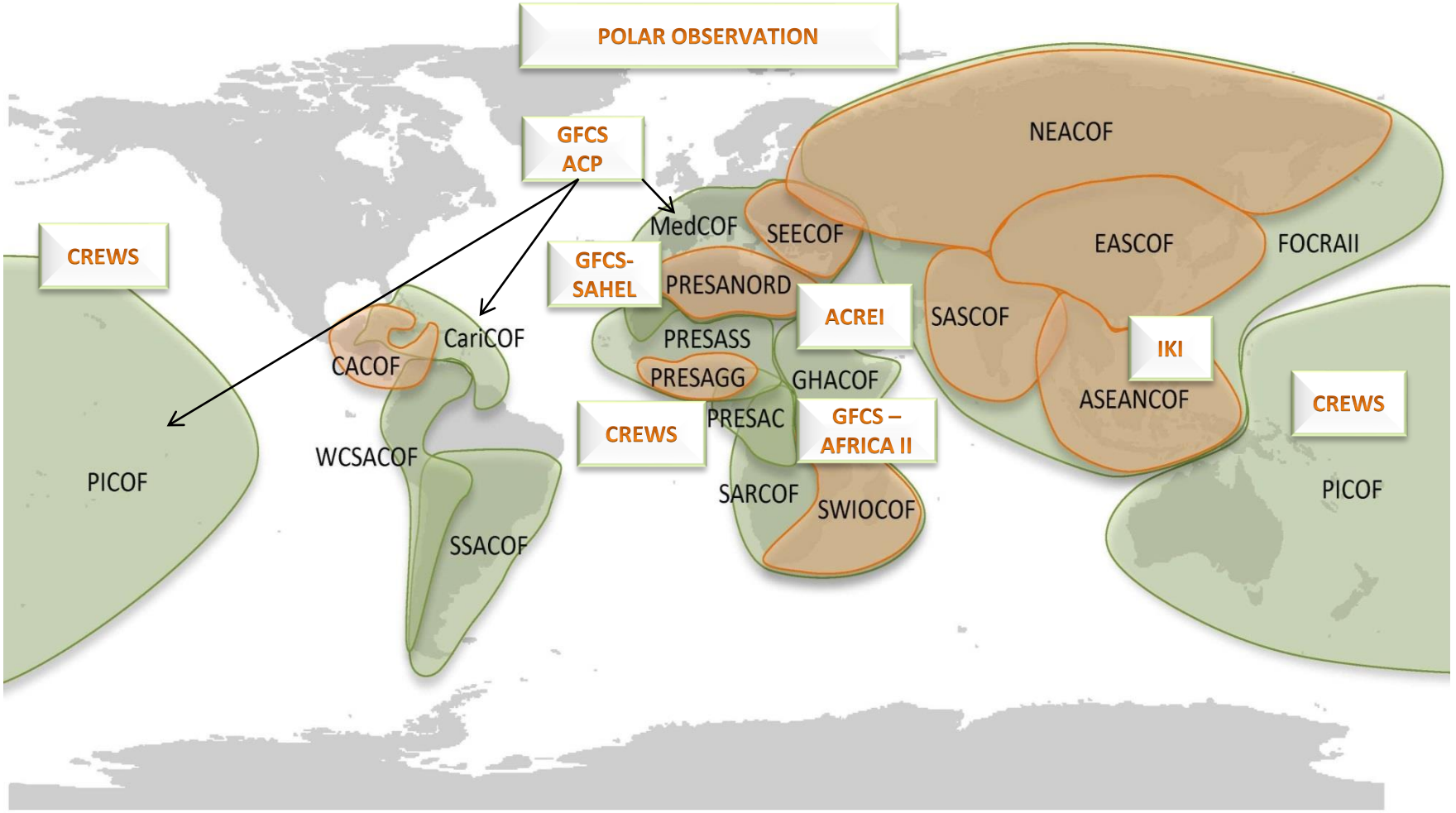
Regional Climate Forums



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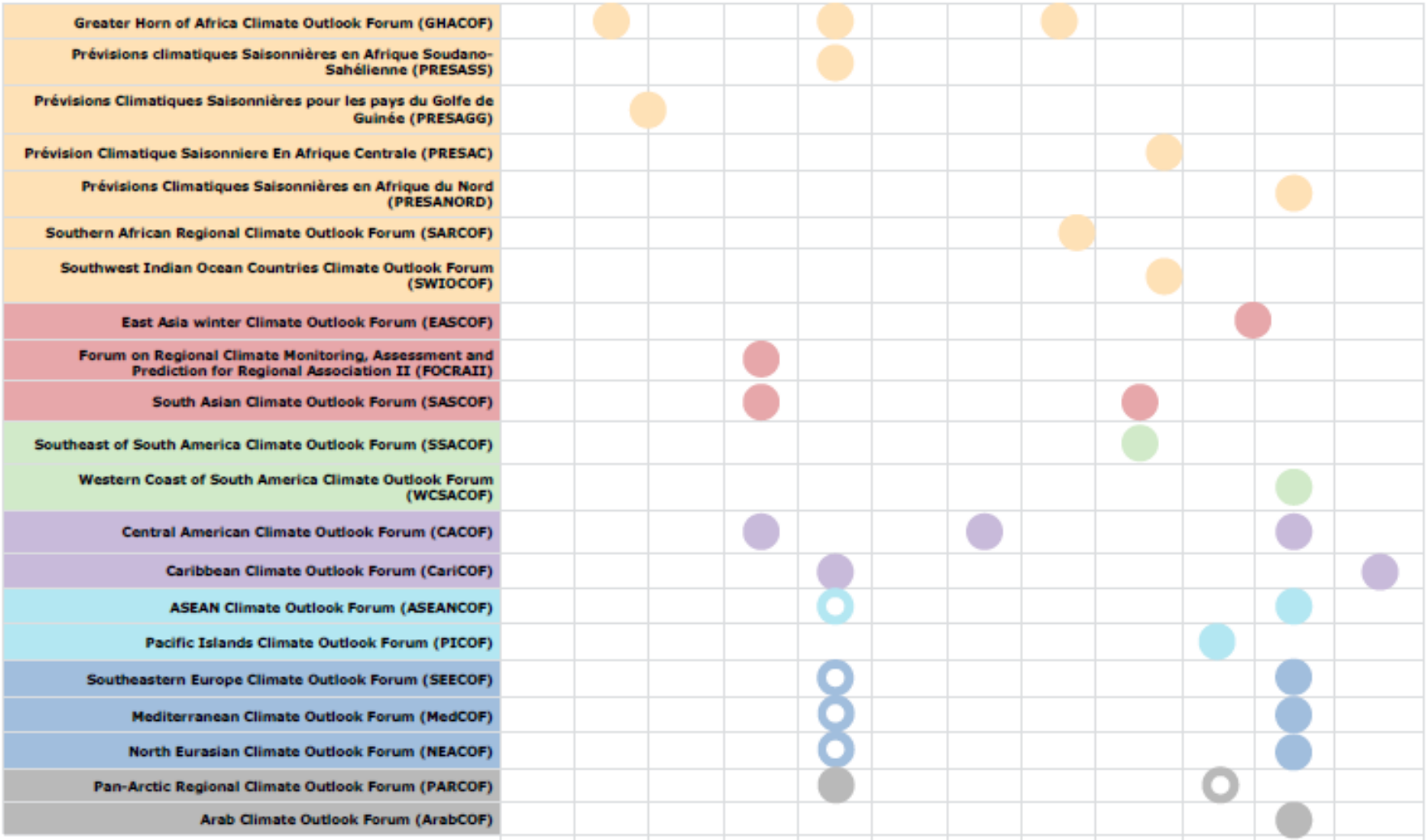
REGIONAL CLIMATE OUTLOOK FORUMS

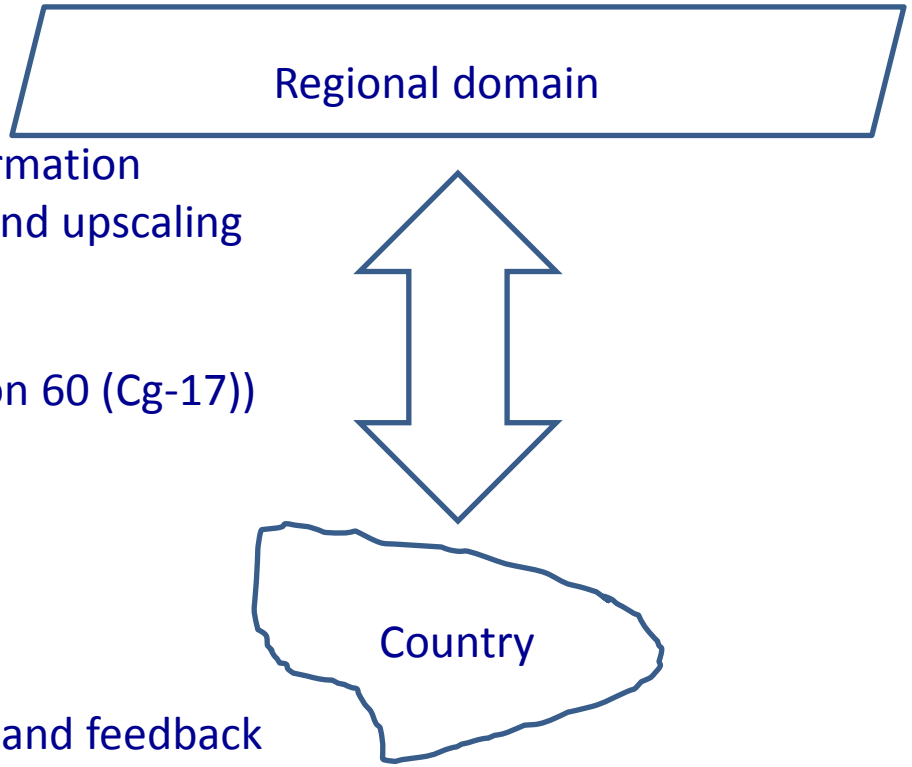


Legend: Forum Online events

RA I: Africa
RA II: Asia
RA III: South America
RA IV: North America, Central America and the Caribbean
RA V: South-West Pacific
RA VI: Europe
Inter-regional

Demonstrated full-value chain service delivery in priority sector(s) in selected sub-region/country combinations

Access to data and products
Tailored product development
Operational provision of relevant information
Coordination, capacity development and upscaling



Data and products exchange (Resolution 60 (Cg-17))

Demand identification
Stakeholders
Value-added tailored products
Service delivery, results validation, and feedback

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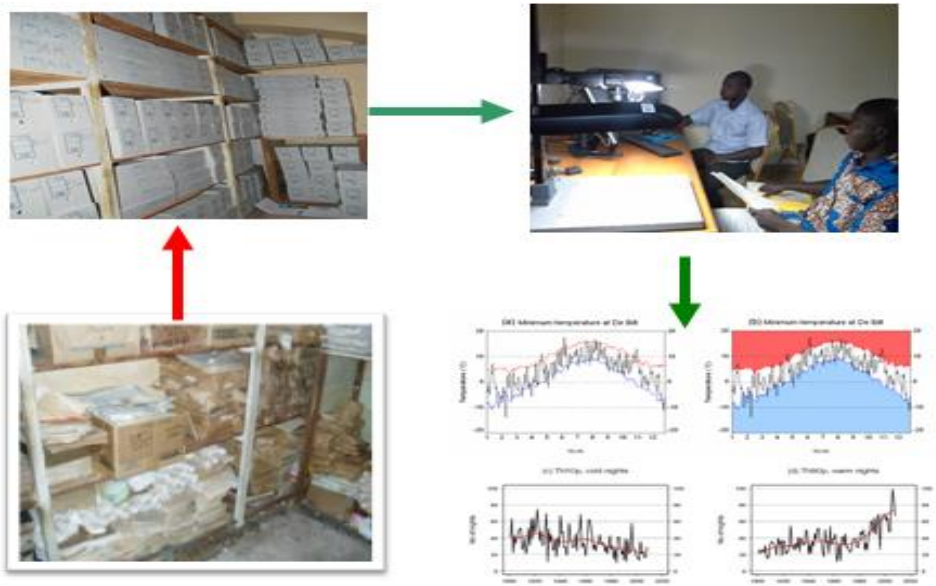
Special Topic: Data applications

1. WMO Climate Data programme
   - Climate Data Management Systems
   - Climatological Standard Normals
   - Centennial stations- *Climate heritage*



- ***International Data Rescue Portal:*** *Access and sharing Data Rescue resources: guidance, tools and project identification. Ready for Members registration and input)*
- ***Open Source CDMS project*** *(ongoing)*

2. Support to the implementation of data rescue projects at regional and national levels
   - WMO guidance
   - expert advice
   - Workshops
   - partnerships

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Special Topic: Agricultural Meteorology

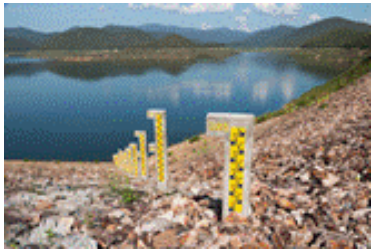
- Assist WMO members in developing agrometeorological services related to crops, livestock, rangelands, forestry fisheries
  - RA VI Center for Agrometeorology (Romania)
  - GFCS Focal Point on AG and Food Security Priority area
- Commission for Agricultural Meteorology (up until Apr 2020) then Standing Committee on Agrometeorological Services for New Commission on Services (2020 onwards)
  - Review and Update Technical materials (Guide to Agromet Practices)
  - Scientific and technical advice (Soil Moisture, Project implementation)
  - Development of Global Drought Indicator (18th WMO Congress - GMAS and UNCCD)
  - Communication (World Agrometeorological Information Service)
  - Capacity Development – Agromet Training Material

Special Topic: Agricultural Meteorology

- Drought Issues with Integrated Drought Management Programme (IDMP) –
  - Co-sponsored with Global Water Partnership (GWP) with over 35 partner organizations
  - Training and capacity building on drought monitoring and EWS

- Develop and implement projects related to agrometeorology
  - Currently 7 projects across South America, Africa, and Pacific
  - WMO can assist countries in developing and implementing projects

- Partnerships with FAO, WFP, UNCCD, CBD, and GEO to Assist members with weather and climate applications for agriculture



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Special Topic: Climate services for energy

Three Main Areas for Country Support:

- Climate **resilience and adaptation** across the sector, due to its fundamental importance for development
- The important role of **efficiency and reduction of energy consumption** with consequent emissions reduction in support to mitigation targets
- The **renewable energy** sub-sector, given the apparent climate sensitivity of renewables on the one hand and the policy priority accorded to them due to their GHG emissions reduction benefits on the other

Energy

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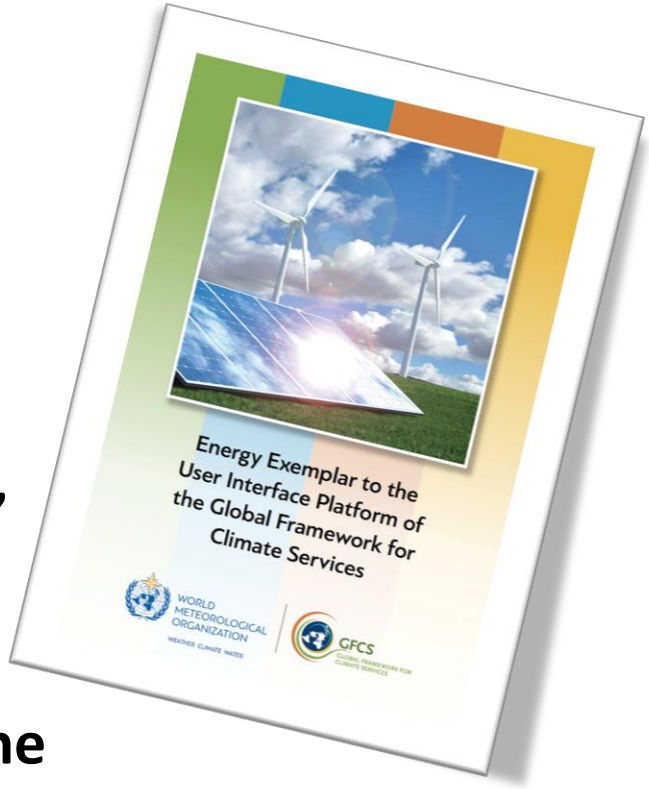
Special Topic: Climate services for energy

- Focal Point to assist WMO Members
- Development of Partnerships in the countries (Public and Private Sectors)
- Project Developments (Adaptation Fund, Green Climate Fund, European Union Framework, etc…)
- Energy Example – Available on-line On the GFCS webpage



Current steps

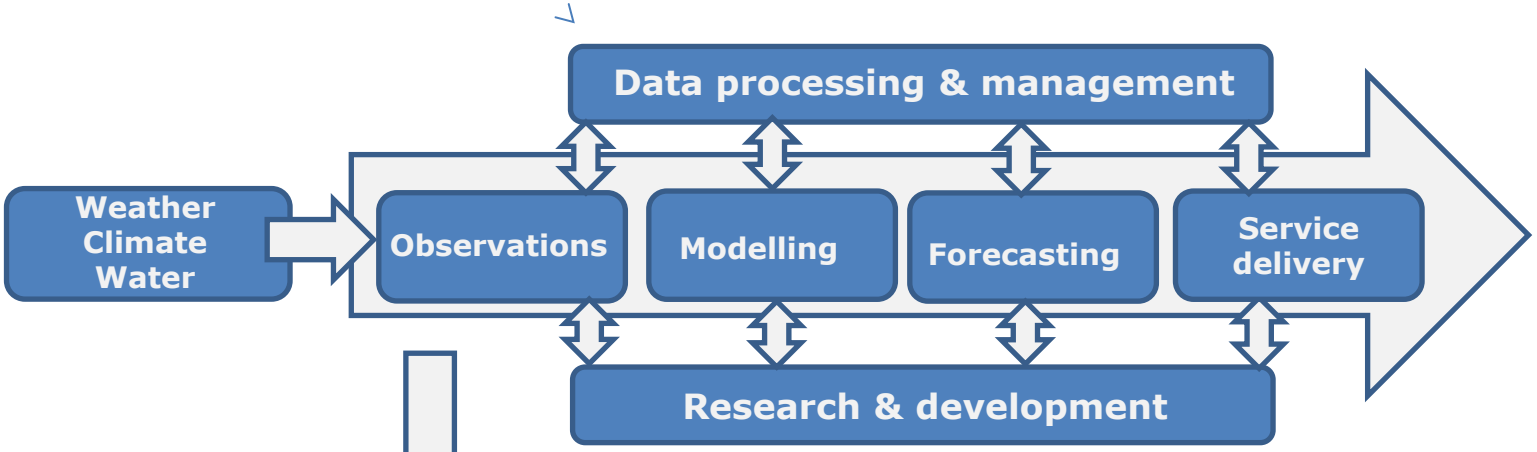
- Transition to objective, operational regional (sub)seasonal forecast system through which
  - Skill can be systematically verified and communicated to users
  - Methodology can be continually improved as measured by skill verification
  - Tailored forecast products and flexible presentation (entire PDF) are generated operationally and delivered at country level operationally
- Identification of country end-use priorities common across the regional domain (through GFCS ↓)
- Co-design and operationalization of tailored products via RCFs
- User feedback, systematic evaluation of socio-economic benefits

Global Framework for Climate Services

WMO OMM

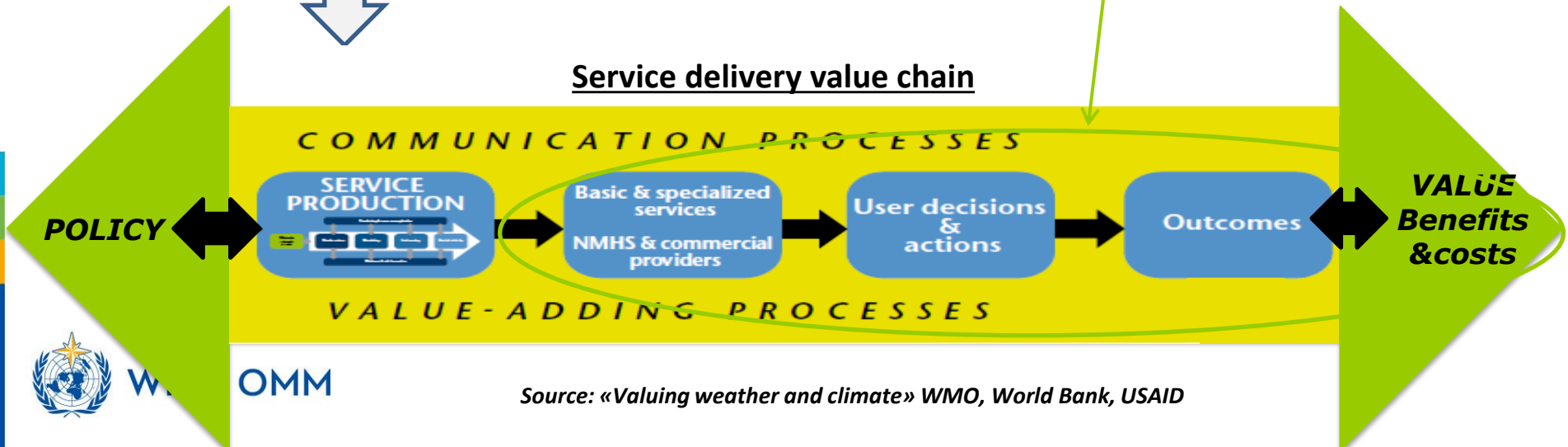
SO 1.2 Broaden the provision of policy- and decision-supporting climate information and services

Service delivery operational system



GFCS

Service delivery value chain

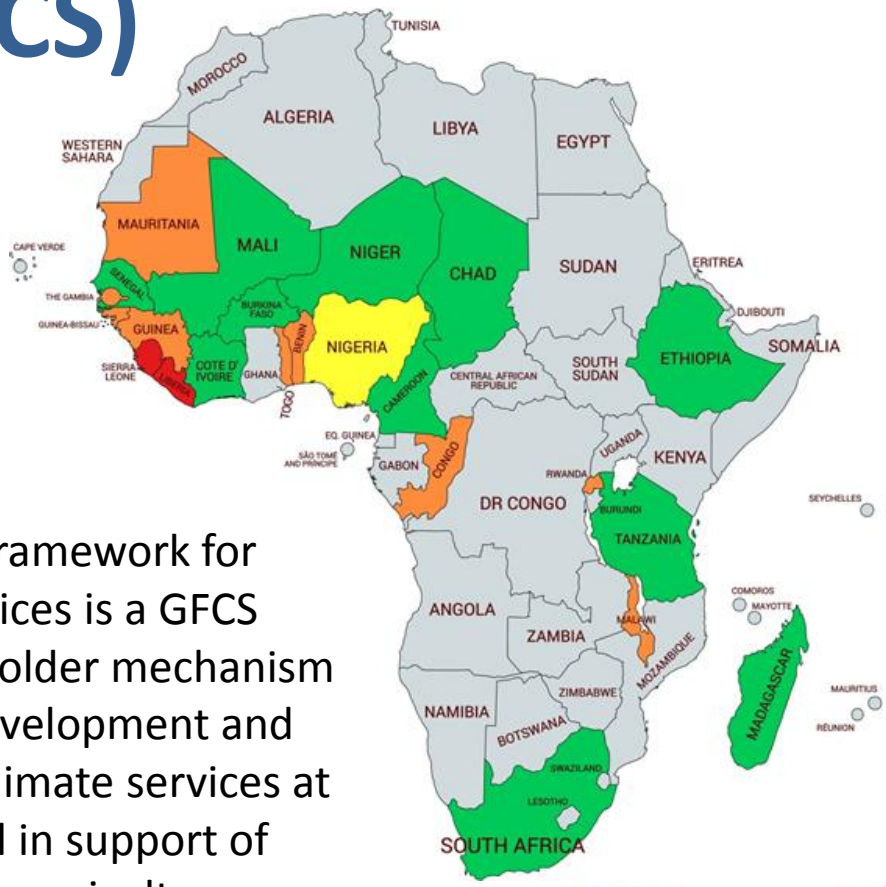


Source: «Valuing weather and climate» WMO, World Bank, USAID

Priority tasks 2020-2023

- Partnership and inclusion – coordination of initiatives and communication regarding climate services in GFCS priority areas with key partners and stakeholders including private sector
- Technical coordination support – identification of capacity development needs and support to Members for the provision of climate services, applications and climate information
- Monitoring and review – improving monitoring and regular assessments of service delivery at global, regional and national scales and publishing a “State of climate services”
- Resource mobilization – promote, enable, articulate and facilitate countries’ and regions’ access to climate finance

Global Framework for Climate Services (GFCS)



A National Framework for Climate Services is a GFCS multi-stakeholder mechanism to enable development and delivery of climate services at country level in support of adaptation in agriculture, water resource management, health, energy, disaster risk reduction and other climate-sensitive sectors

GFCS
GLOBAL FRAMEWORK FOR CLIMATE SERVICES

Status of NFCS Implementation

- Conduct Comprehensive Baseline Capacity Assessment for Development of Climate Services
- Support NHMS to Develop Strategic Plan & Engage in a National Consultation process for Climate Services
- Develop National Action Plan
- Begin Implementation of Action Plan, Launch National Framework for Climate Services
- Countries with NFCS providing advanced services

System operationalization track	Service delivery track
Assess NMHS and RCC systems to identify capacity development and technical assistance needs	Identify priority needs common to the region (e.g. from NDCs, national plans)
Design/propose measures to enhance data availability, NMHS and RCC operational systems and practices	Conduct regional sector-specific user forums for priority sectors, to more precisely identify requirements to develop tailored product specifications
Use Regional Climate Forums to develop/enhance the integrated global-regional-national operational system and develop priority tailored products	Prepare additional national (non-climate) datasets as needed for tailored products
Introduce priority products operationally at national level, with support from the RCCs and Global Producing Centres of Long Range Forecasts	Establish/strengthen country-level service delivery system/communication channels through NMHS partnerships with sector stakeholders
Assimilate feedback for forecast system and tailored product improvements	Deliver tailored products and obtain user feedback
Assess country-level climate services capacity improvements	Assess socio-economic benefits

Current steps

- Repositioning on a higher strategic level
  - No more project implementation
  - Multi-stakeholder programme analysis
  - Greater focus on the value-chain right hand side
  - User demand
  - Applications
  - Documentation of socio-economic benefits
  - Knowledge sharing and communication to inform practice and investments
- Integration into new WMO governance structure – the Climate Coordination Panel

Climate Services for Policy

Architecture, functions and further operationalization

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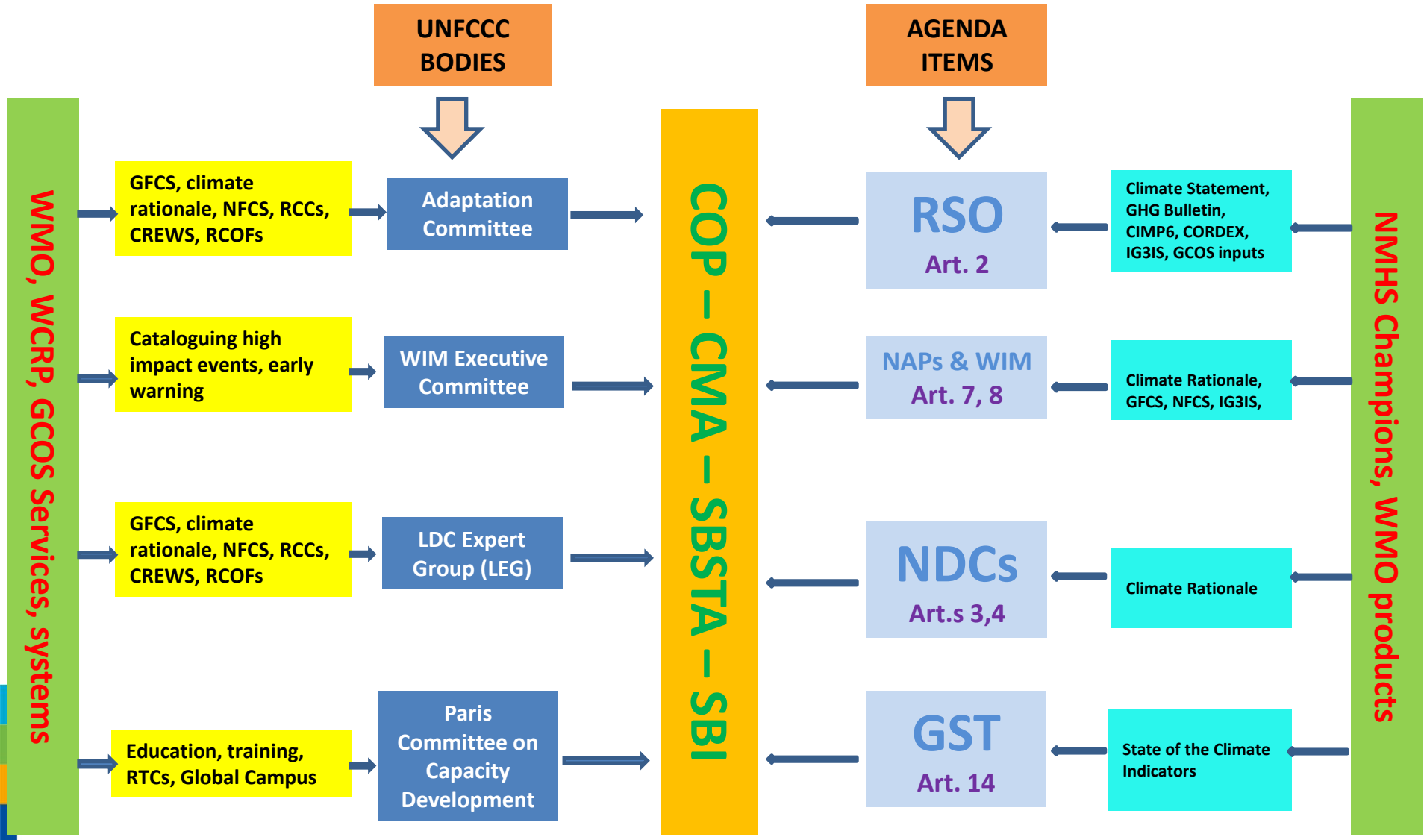
Mapping WMO-UNFCCC climate activities



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UNFCCC SECRETARIAT (MoU)

WMO statement on the state of the Global Climate

Contributions from

- NMHSs
- UN agencies
- International data and analysis centres
- Leading climate scientists

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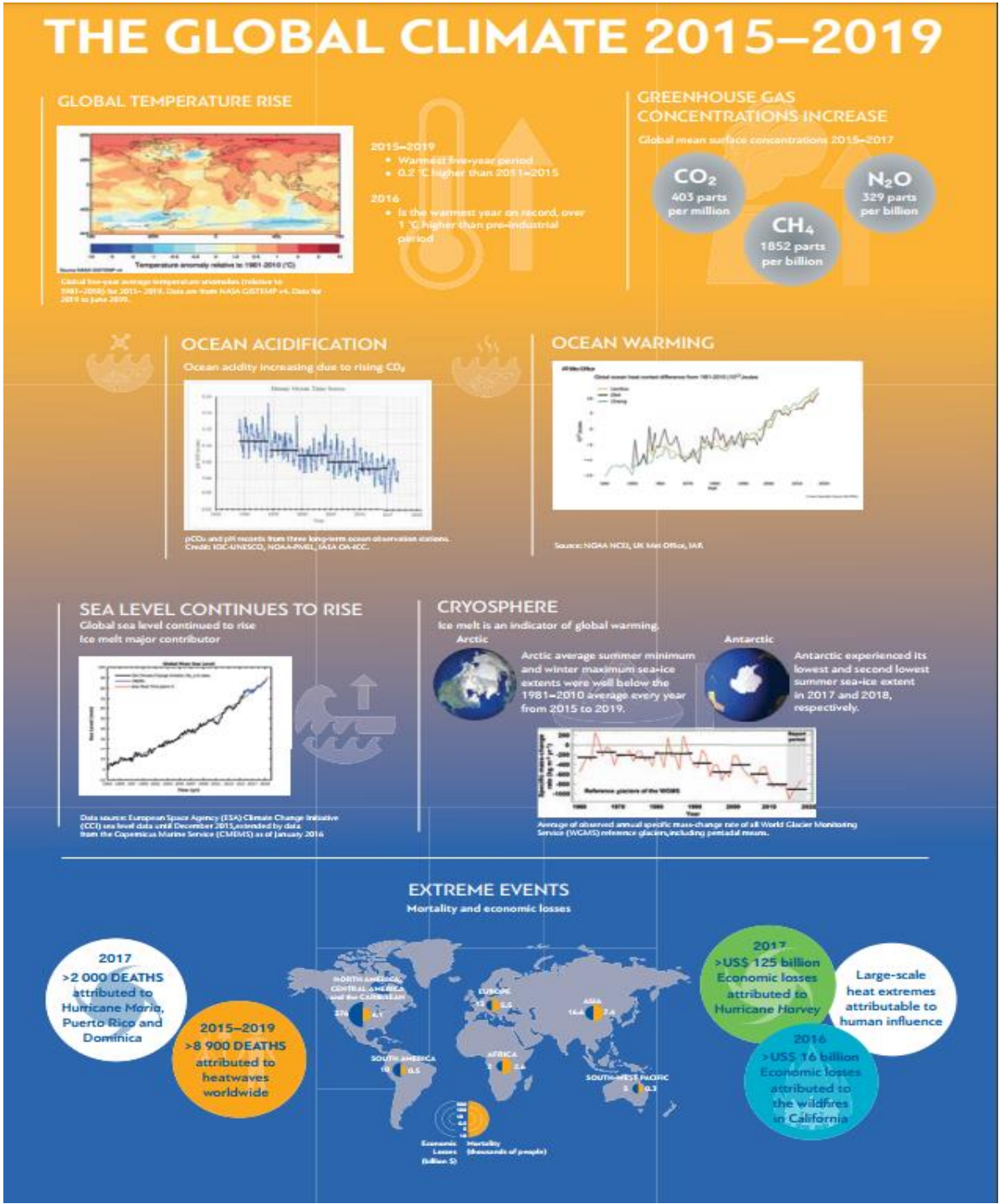


Flagship products for United Nations policy and joint action

- Climate statement
- El Nino bulletin
- Global Seasonal Climate Update

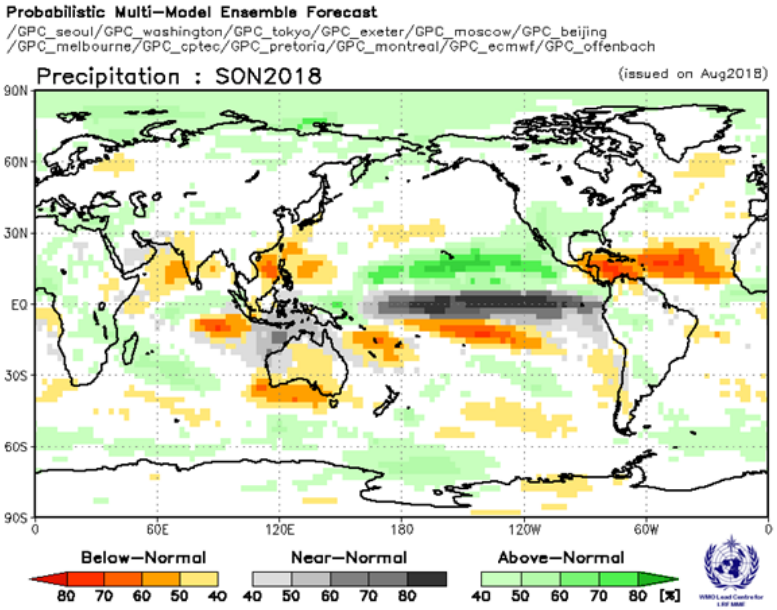


Figure 2 Probability of September-November temperature being in the above-, below-, or near-normal third of the historical temperature range for that period in each location

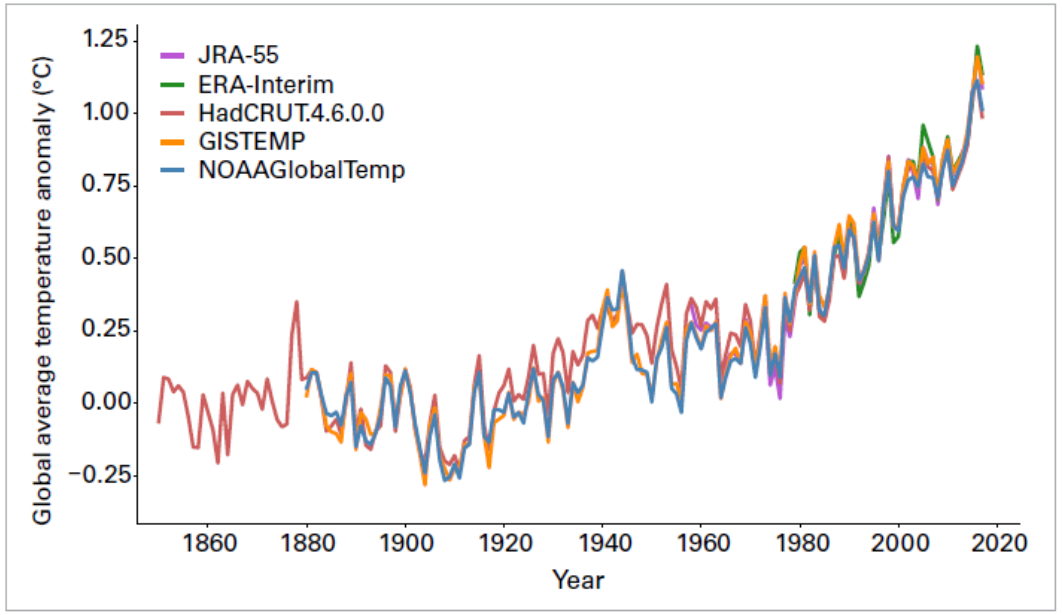
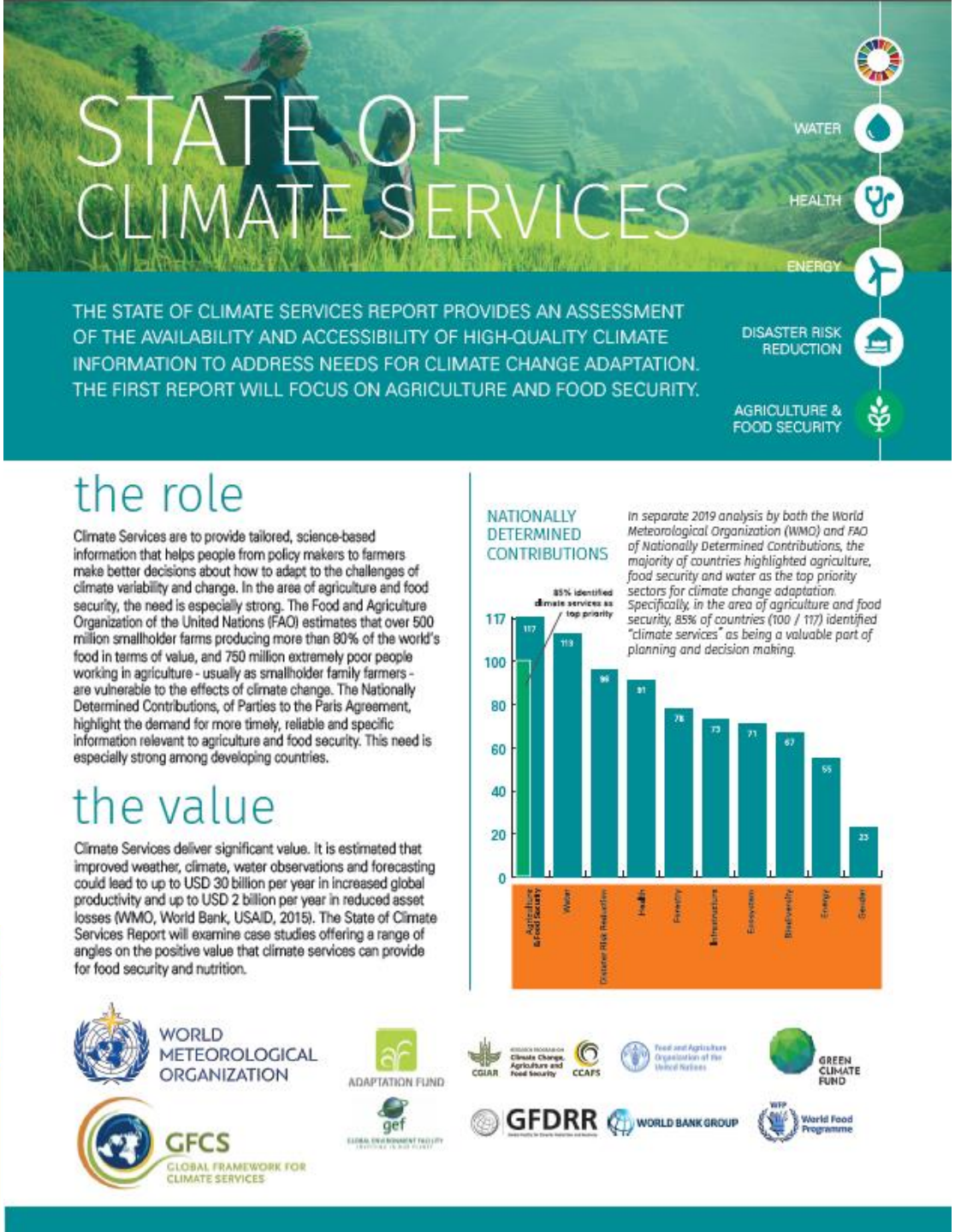


Figure 1. Global mean temperature anomalies, with respect to the 1850–1900 baseline

- World Weather Records
- Climate watches
- Rapid attribution



GFCS statement on the state of climate services

Invitation from the Conference of the Parties service as the meeting of the Parties to the Paris Agreement

Current steps

- Integration of WMO science contributions with those of partner organizations
- Global statement on the state of climate services (GFCS-lead)
- Guidance from expert negotiators on other inputs

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TEMPS CLIMAT EAU

Thank you

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