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WMO Regional Climate Centres: Concept and implementation status

WMO OMM
World Meteorological Organization
Organisation météorologique mondiale

Wilfran Moufouma-Okia and Anahit Hovsepyan,
World climate applications & services Division
Climate Prediction & Adaptation Branch
Climate & Water Department

Outline

- Concept and rationale for regional climate centres
- WMO infrastructure for delivery of climate Services
- Practical issues
- Current status of implementation

Changing climate's context

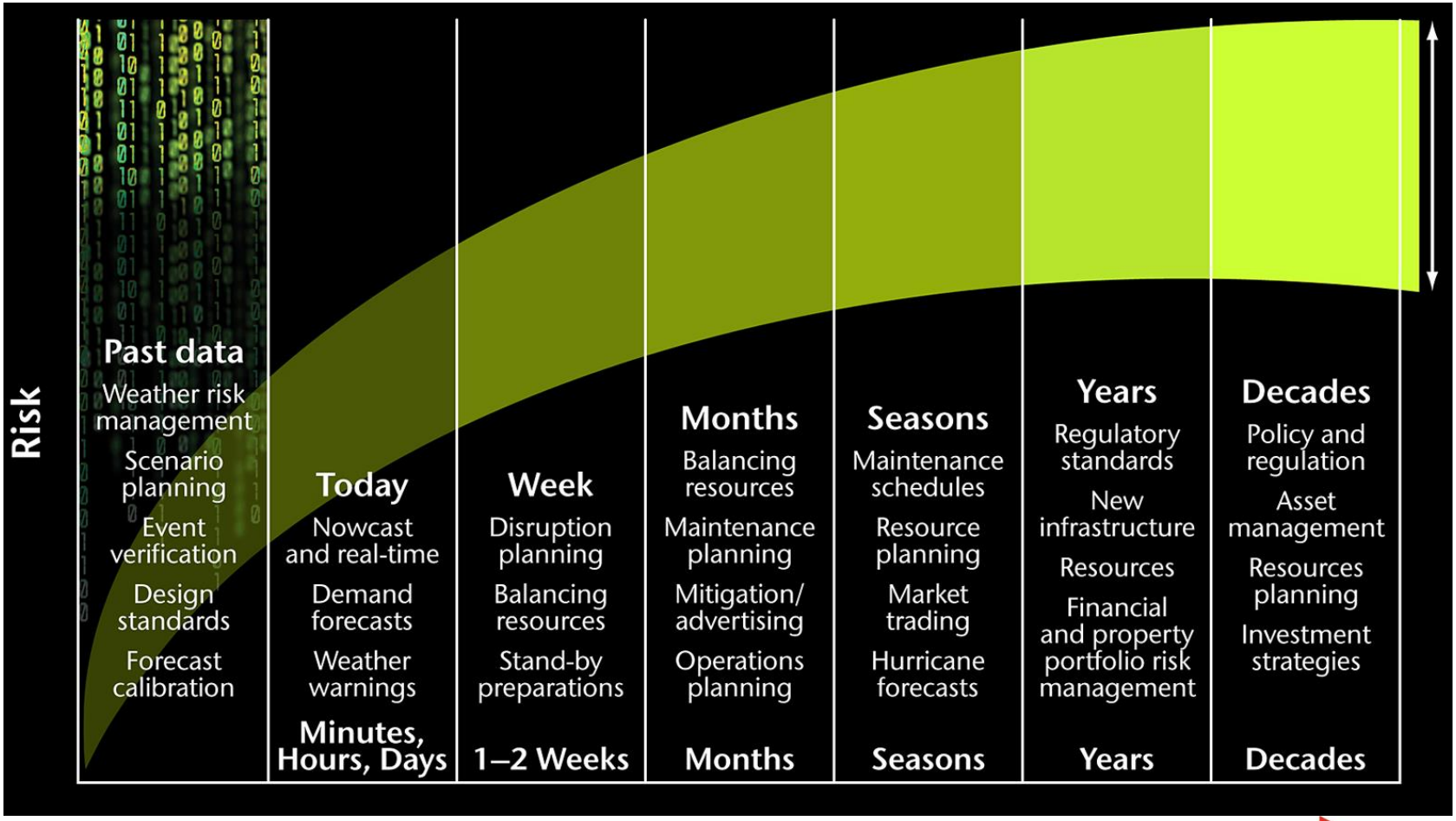
Perceptible changes worldwide: Warming from past anthropogenic emissions will persist for centuries to millennia affecting people, ecosystems and livelihoods.

Planetary response to climate change: (Paris Agreement) Holding the average global temperature to « well below 2°C above pre-industrial levels and to pursue efforts to limit temperature increase to 1.5°C », and perform a 5-yearly global stocktake

Climate information services and science:

Moving away from the known and probe further into influence of climate condition on the habitability of earth?

Managing climate risk and opportunities



Observations

Confidence in models

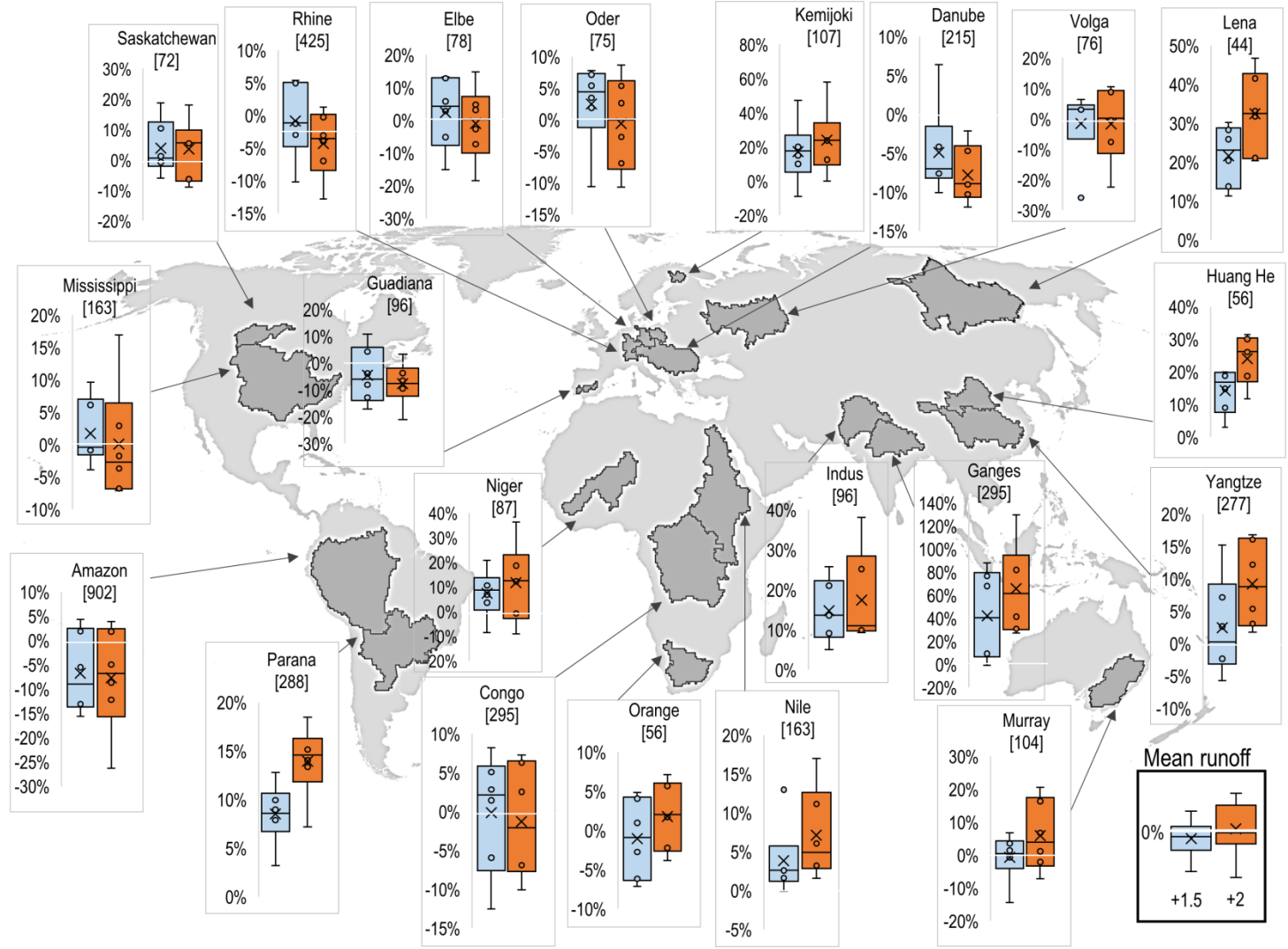
Process based understanding

More sophisticated models

Multiple lines of evidence

Example: projected runoff changes in the world's major rivers

HAD
GEM
Rfmean



Climate services information system

Decides (Cg-XVI, resolution 17) :

- To establish a CSIS with global, regional and national entities providing operational climate information (incl. data, monitoring and prediction products within the Global Framework for Climate Services);
- Implementation of CSIS to be guided by the Commission for Climatology;
- Core operational CSIS products to be standardized in terms of production, presentation, delivery and verification;
- CSIS to be guided by the long-term vision of providing an authoritative source of climate information required for climate services at global, regional and national scales;

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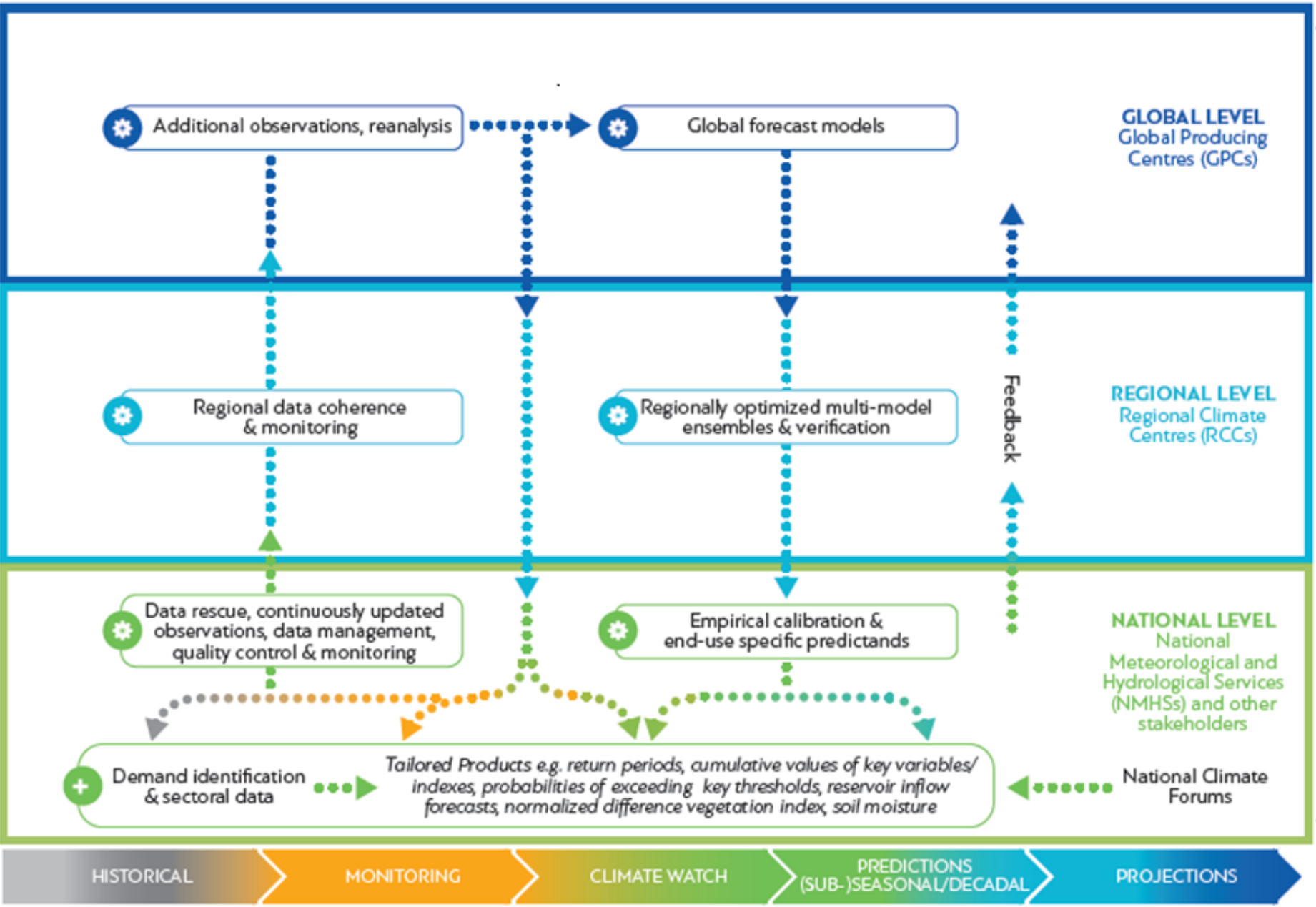
A Regional Approach to Implementing the Climate Services Information System (CSIS-R)



WMO Regional climate centres

Concept: institutions mandated to generate high-quality regional-scale products and strengthen the capacity of WMO Members in the delivery of improved climate services to national users.

Rationale:

- Climate processes have strong inter-scale linkages going beyond borders of individual countries.
- There is an urgent need for WMO Members to have access to the best possible climate services in support of climate risk management and adaptation.
- Global climate predictions and projections provide an increasing amount of information available to underpin climate services across multiple timescales.
- Regional interpretation of the global climate information requires clear linkages between the global centres and local climate experts
- A WMO RCC serves primarily the NMHSs whose areas of responsibility lie fully or partly within the RCC's region of interest

Historical perspective

- **1999:** First call for RCCs given by 13th World Meteorological Congress
- 2000-01: Establishing the Inter-Commission Task Team on RCCs
- 2003: CCl Ad-hoc ET on the Organization and Implementation of RCCs
- 2006: Advent of GPCs-LRF
- 2007: Next steps on RCCs decided by 15th Session of Congress
- 2007: CCl Implementation Coordination Team agrees on the RCC designation process
- **2009**: CBS recommends and EC approves RCC designation criteria (BCC and TCC become the first formally designated RCC)
- 2009: RCCs recognized as key mechanisms for GFCS at the World Climate Conference Three (WCC-3)
- **2010-18:** RCCs/RCC-Networks spread into all six WMO Regions

Role of regional climate centres

- Backbone for the development and maintenance of NMHSs' climate services
- Contribute to capacity building of NMHSs and conduct training activities
- Support regionalization of global climate products and access to and application of tools e.g. software and models for regional and national analyses
- Provide infrastructural support e.g. archiving services
- Stimulate regional research and development agenda
- Promote resource mobilization, based on the requirements in the respective RCC's region of interest.
- Provide online access of their products to NMHSs and other regional users, including the Regional Climate Outlook Forums (RCOFs)
- Provide regional data, products and feedback to GPCLRFs and associated lead centres for respective verification and product optimization of the global-scale information

Functions of regional climate centres

Mandatory Functions:

- Operational Activities for LRF
- Operational Activities for Climate Monitoring
- Operational Data Services, to support operational LRF and climate monitoring
- Training in the use of operational RCC products and services

Highly Recommended Functions:

- Climate prediction and projection
- Research and development
- Coordination functions
- Non-operational data services

Models of regional climate centres

- **Multifunctional RCC:** centre that fulfils all the required functions of a WMO RCC for the entire Region, or for a sub-region defined by the Regional Association
- **RCC-network:** group of centres performing climate-related activities that collectively and in cooperation fulfil all the required functions of a WMO RCC
- Recipients of RCC products and services are NMHSs, other WMO RCCs and international institutions endorsed by the concerned Regional Associations and are referred to as 'RCC Users'.
- WMO RCC is expected to perform prescribed functions using procedures proposed in the WMO Guide to Climatological Practices (WMO, 2018) and in other relevant WMO Guidance documents.
- Additional requirements for RCC functions may vary in detail from Region to Region.
- It is essential that the Regional Association endorses a proposed RCC structure prior to any implementation phase

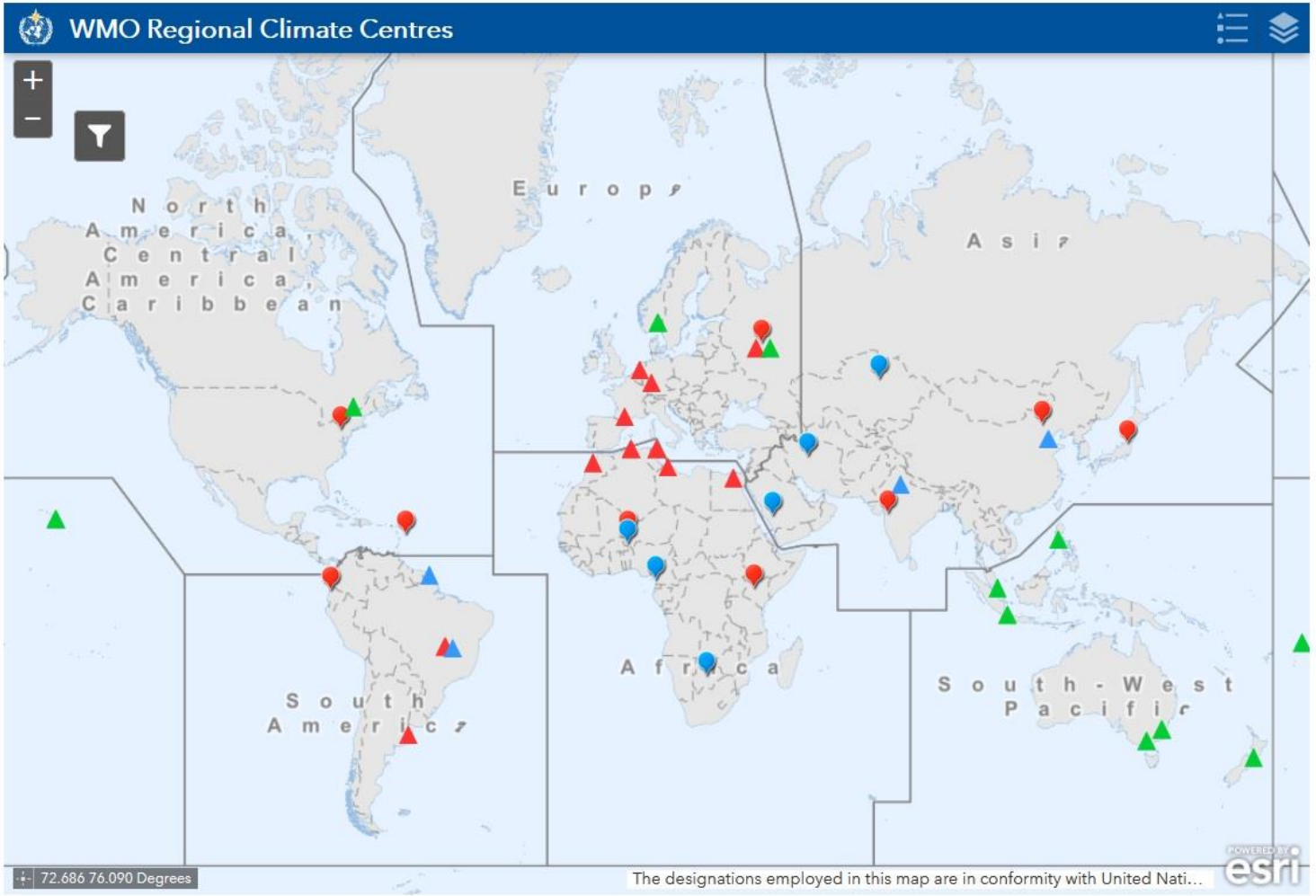
Some issues to be considered by candidate

- **Clear mandates:** from the WMO Permanent Representative of the host country or countries and the relevant WMO Regional Association to undertake and to sustain high-quality, consistent, climate activities for the benefit of a region or sub-region;
- **Appropriate resources :** to set up and run the centre, including physical infrastructure, communications systems and human resources
- **Demonstration phase**: In all cases, RCC candidates take part in a demonstration phase during which they build their capacity to perform the mandatory functions, undertake any other functions of high priority in the region
- **WMO information system (WIS)compliance:** RCC operations must comply with the applicable WMO Information System (WIS) standards
- **Data exchange policy:** WMO RCCs adhere to the WMO principles on the exchange of data and products

Recommended steps for RCC designation

- **Survey on regional needs:** Regional Associations (RAs) are encouraged to conduct a survey of Members on regional needs for and capacity to deliver RCC services
- **Contact P/RA :** RCC candidate to express its intent to be designated as a WMO RCC and to begin a demonstration phase
- **Assess the implementation plan**: P/RA to approve beginning of the demonstration phase, based on its positive assessment
- **Demonstration phase:** Candidate(s) will implement the demonstration phase and improve/revise its functions until the end of the determined durations, in contact with the relevant coordination group of the RA
- **Compliance with the mandatory functions :** At the end of the demonstration phase, the candidate(s) will submit a status report to P/RA for an assessment of the compliance with the mandatory functions of a WMO RCC.

Regional Climate Centres worldwide



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Thank you

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