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# **RCC REVIEW 2018**

## **WMO INTERNATIONAL WORKSHOP ON GLOBAL REVIEW OF REGIONAL CLIMATE CENTRE OPERATIONS**

**12-14 November 2018**

**Pune, India**

### **CONCEPT NOTE**

#### **BACKGROUND**

The World Meteorological Organization (WMO) Regional Climate Centres (RCCs) are Centres of Excellence designated to create regional climate products, including data, monitoring and forecasting, to support and strengthen the capacity of WMO Members in a given region to deliver climate services. WMO has been making concerted efforts to implement RCCs, in close coordination with its Regional Associations, Commission for Climatology (CCI) and Commission for Basic Systems (CBS). All the six Regional Associations of WMO have committed to the establishment of RCCs/RCC-Networks in compliance with the WMO Technical Regulations, as detailed in the Manual on Global Data Processing and Forecasting System (GDPFS). WMO RCCs have been recognized as key elements of the Climate Services Information System (CSIS), a foundational pillar of the Global Framework for Climate Services (GFCS).

Since the adoption of the mandatory criteria for formal designation of RCCs in 2009, the coverage of RCCs has gradually expanded around the world. To date there are eight RCCs and three RCC-Networks formally designated, providing climate services and products to NMHSs in the concerned regions on an operational basis. There are also a number of RCCs in demonstration phase. More information could be found at <http://www.wmo.int/pages/prog/wcp/wcasp/rcc/rcc.php>.

The CCI-CBS Inter-Programme Expert Team on Regional Climate Activities (IPET-RCA) closely oversees and coordinates RCC designation and operation processes. The IPET-RCA also pursues standardization of RCC products and services, and has an ongoing role to provide guidance on the operational aspects of RCCs.

There have been major achievements during the last several years of the operation of WMO RCCs/RCC-Networks, and their critical role in the implementation of the CSIS on regional scale has been widely recognized. However, it must be noted that the formal RCC criteria and functions, both mandatory and highly recommended, were established nearly a decade ago. In the meantime, there have been considerable developments and scientific advances in data and monitoring, sub-seasonal to seasonal forecasting, downscaling techniques, impact based

forecasts, tailoring of climate products to user needs and communication technologies. CCI, at its seventeenth session in April 2018, adopted a resolution to work towards enhancing RCC operations and, *inter alia*, decided to revisit the mandatory and highly recommended functions of RCCs and the associated products and criteria, and propose suitable updates and revisions, keeping in view the emerging requirements of the CSIS, research/operational advances and the needs and capabilities of the existing as well as proposed RCCs. For this purpose, it is also necessary to review the status of operation, methodologies, products/services, and institutional arrangements of all existing RCCs/RCC-networks, in order to identify gaps and requirements, and to propose ways for smooth and future-oriented operations and sustainable development of RCCs, and to promote sustained uptake of their services and products by NMHSs.

It is with this background that a three-day WMO International Workshop on Global Review of RCC Operations (RCC Review 2018) is being organized from 12 to 14 November 2018 in Pune, India.. The Indian Institute of Tropical Meteorology (IITM), Pune, India, has kindly agreed to host and co-sponsor the workshop.

## **WORKSHOP OBJECTIVES AND SCOPE**

Given the vast majority of climate services are delivered at country level, RCCs have a key role to play in providing support to NMHSs, which are the key interface with country-level users. Strengthening this role includes such measures as increasing operational exchange of data and products between NMHSs and RCCs, with RCCs acting as an important intermediary in this regard with WMO Global Producing Centres. RCCs also play a critical role in the organization of regional climate forums – an exceptionally important platform for identifying areas of user demand, and for organizing and improving national-regional-global operational systems and the operational delivery of tailored products to support priority climate services in countries in the region. Moreover, RCCs are an important source of capacity development for NMHSs to perform their functions in the climate services value chain. To further develop their potentials, the Review will examine such priority areas as:

- The lessons learnt from nearly a decade of RCC operations, particularly the methodologies, criteria and functions and delivery of products and services to the NMHSs, as well as associated capacity development activities, and identify recent experiences, including achievements and constraints, as well as common approaches and good practices to improve RCC operations, products and services;
- Operational arrangements and practices of RCCs and identify practices that need to be standardized in order to ensure full compatibility with WMO basic infrastructure including WIGOS, WIS and GGPFS (and CSIS), and practices that need to be kept flexible in order to respond appropriately to regional needs;
- Consideration of emerging climate topics at regional and sub-regional scales such as Data stewardship and Maturity assessment, WMO regional climate Statements, and attribution of extreme events;
- The evolution of user requirements for support from RCCs in light of recent technological advances and initiatives emerged over the past decade, such as GFCS, Copernicus Climate Change Service (C3S), Resolution 60 (Cg-17);
- Revising/updating RCC Mandatory and Highly Recommended Functions and their associated products and criteria, and possible expansion of the RCC products and services portfolio;
- Identifying requirements and good practices for producing climate change projections on regional scales, including through highly recommended functions of RCCs, to

- promote these good practices and consistent approaches to produce, interpret and use high-resolution climate change projections regionally and nationally;
- Facilitating knowledge sharing and sustained evolution of RCCs/RCC-Networks incorporating good practices of proven track record, and promote mutual collaboration and operational coordination among RCCs and the associated Regional Climate Outlook Forums (RCOFs);
  - Identifying RCC support needed for the implementation of recommendations from the RCOF Review 2017, including development of objective sub-seasonal and seasonal regional forecasts, tailoring forecast products to specific user-requirements;
  - Identifying good practices and approaches to improve uptake and utilization of RCC products by NMHSs as the primary users of RCCs, including its key role in the implementation of the CSIS on regional scales and linkages with Global Producing Centres (GPCs);
  - Reviewing RCC' roles in NMHS capacity development and the potential for strengthening collaboration with WMO Regional Training Centres;
  - Identifying approaches to facilitate transition of climate predictability research results into operational use as well as communicating gaps and requirements from the operational to the research community

## **WORKSHOP FORMAT AND PARTICIPATION**

The workshop will be guided by the CCI/CBS Inter-Programme Expert Team on Regional Climate Activities (IPET-RCA) under Focus Area on Climate Services Information System Operations (FA 2) in collaboration with other CCI Focus areas, namely Focus Area on climate data, assessment and monitoring. The World Climate Applications and Services Division at the WMO Secretariat will provide the overarching technical and logistic support.

The review process will start with a survey on the current status of RCC operations, including the details on technical and organizational aspects, to be completed by each existing RCC/RCC-Network, both designated and in demonstration phase. WMO Secretariat will provide a template for this purpose.

It will be followed by the three-day International Workshop mentioned above. Participation will be by invitation only, and will bring together Technical/Organizational coordinators from all existing RCCs/RCC-Networks, including those in demonstration phase. Workshop participants will also include selected CCI, CHy and CBS experts, including the co-chairs of CCI FA2, co-leads of the CCI/CBS IPET-RCA, a few GPCs-LRF, WMO Regional Association representatives on climate matters, as well as experts from other institutions generating real-time global LRF products, international and regional partners, e.g. Copernicus Climate Change Service (C3S), and from WMO Secretariat. Representatives from a few NMHSs will also be involved to review their experiences with RCCs and understand their needs and priorities including capacity development.

The Workshop will comprise keynote talks on the overall status and the role of RCC in CSIS implementation, overview on emerging topics at regional level in relation to high level climate policy agenda, presentations by each RCC/RCC network, discussion sessions on RCC functions, recent research advances and possibility of incorporating additional demanded and region specific products and services (including sub-seasonal to decadal predictions), open discussions through break-out groups to recommend a set of key actions as an outcome of the workshop to advance RCCs operation.

## EXPECTED OUTCOMES

RCC Review 2018 is expected to deliver a number of important outcomes, such as:

- i) Overview of current performance, including achievements, challenges and gaps, as well as strengths, weaknesses, opportunities and threats for RCCs going forward, and priorities for addressing them;
- ii) Overview of the current uptake of RCCs/RCC-Networks products and services by Members, user engagement and feedback mechanisms (if any), and proposals on practical approaches to optimize national access to, and uptake of, RCC products and services, including capacity development of NMHSs;
- iii) Proposals for further developments of the RCCs/RCC-Networks products and services including revisions/updates to RCC functions, products and criteria, incorporation of new “demand-driven” services;
- iv) An outline for next steps for enhancing the RCC operations in response to Members’ needs taking into account ongoing developments;
- v) Recommendations on approaches to facilitate mutual collaboration between (neighbouring) RCCs/RCC-Networks;
- vi) Identification of complementary roles/collaboration of RCCs with other emerging sources of climate information including, *inter alia*, Copernicus Climate Change Service (C3S).
- vii) Recommendations on revision of technical documents updating RCC establishment criteria and functions, both mandatory and highly recommended
- viii) Recommendations on approaches via RCCs to strengthen collaboration and feedback mechanisms between operational and research community

The workshop is expected to establish a network of RCCs/RCC-network focal points, as well as to produce a tangible action plan with set of recommendations aiming to improve the RCCs operation, facilitate coordination, sharing good practices and harmonizing the functions of RCCs/RCC-Networks.

## OUTLINE OF THE WORKSHOP AGENDA

### Day 1

- Background, objectives and goals of the RCC review
- Introduction of the CSIS and the positioning of RCCs in CSIS/GFCS
- Current status of WMO operational centres, including RCCs operation worldwide
- Overview of CCI, EC decisions to be addressed by RCCs
- Overview on high level policy emerging climate issues
- IPET-RCA guidance on RCC operational activities
- SWOT analysis of the RCC operations
- Brief presentations of individual RCCs around the world (based on the survey, including aspects of coordination, operational aspects, capacity development; a template will be provided)

### Day 2

- Overview of Mandatory and Highly Recommended Functions
- Technical aspects of RCC operational practices
  - Climate Data services
  - Climate monitoring

- Long Range Forecasting
- Capacity development
- Role of RCCs in RCOFs, Global RCOF Review recommendations and implementation
- OCP Workshop outcomes on RCCs research needs
- Breakout group discussions on key topics, such as:
  - Potential new approaches to regional climate data and monitoring
  - Potential new approaches to regional climate prediction and projection
  - Optimal utilization and regionalization of global climate information
  - RCC-NMHS linkages
  - Standardization of RCC product user interface

### **Day 3**

- Break-out group reports
- NMHSs feedback on RCCs: understanding their needs and priorities, ways on improving delivery and uptake of RCC products and services
- Role of RCCs in view of recent and ongoing developments, in particular Copernicus Climate Change Service (C3S)
- Regional Climate Forums (RCFs)
- Proposals for revision/updates of RCC functions, products, designation criteria and the associated aspects of the Manual on GDPFS and CSIS Technical Reference
- Technical guidance on RCC operations
- Action Plan on the Way Forward for enhanced RCC operations
- Conclusions and Recommendations