



WORLD METEOROLOGICAL ORGANIZATION

RCOF REVIEW 2008 : AN INTERNATIONAL EXPERT REVIEW MEETING ON REGIONAL CLIMATE OUTLOOK FORUMS Arusha, Tanzania (3-7 November 2008)

Hosted by
Tanzanian Meteorological Agency

CONCEPT NOTE

1. Introduction

Regional Climate Outlook Forums (RCOFs), an innovative concept conceived, developed and supported as part of WMO's Climate Information and Prediction Services (CLIPS) project in partnership with the National Meteorological and Hydrological Services (NMHSs), regional climate institutions and other agencies, has completed ten years of successful operation in different sub-regions of Africa, in parts of South America and the Andean region. RCOFs in various forms and sizes are now in operation serving more than 10 sub-regions around the world, and concerted efforts are being made to extend the concept to several other regions. Despite the challenges of resources and human and infrastructural capacities, some of the RCOFs have achieved remarkable progress in regional networking and user liaison, and substantially contributed to capacity building and user awareness.

An international expert review meeting on RCOFs being coordinated by WMO, hereafter called *RCOF Review 2008*, has been conceived to undertake a comprehensive global review of the RCOF process, share experiences, highlight successes, address the challenges and pave the way forward. The long RCOF experience, coupled with the varied strategies adopted by each of the RCOFs suiting their own local needs, will be of immense value to guide and develop such initiatives. This review is built upon the similar review that took place during 16-20 October 2000 at Pretoria, South Africa and will provide opportunity to revisit the recommendations of the previous review and assess how the RCOF concept has taken them into account and how the RCOFs have evolved in response to the changing needs and perspectives of regional climate outlooks.

2. RCOF Concept

Recognizing that climate information including predictions/outlooks could be of substantial benefit to many climate sensitive sectors in different parts of the world in adapting to and mitigating the impacts of climate variability and change, WMO has helped establish RCOFs across the world with an overarching responsibility to produce and disseminate a regional assessment (using a predominantly consensus-based approach) of the state of the regional climate for the upcoming

season. National and regional capacities are varied, but certainly inadequate to face the task alone. Built into the RCOF process is a regional networking of the climate service providers and stakeholders including user-sector representatives. Participating countries recognize the potential of climate prediction and seasonal forecasting as a powerful development tool to help populations and decision-makers face the challenges posed by climatic variability and change. In parallel, NMHSs and some decision makers have come to realize the potential benefits to be gained and have played larger roles in the processes. Ownership now lies largely with national and regional players, but there is a continuing need for support at all levels to ensure that the momentum gained to date is maintained.

RCOFs bring together national, regional and international climate experts, on an operational basis, to produce regional climate outlooks based on input from NMHSs, regional institutions, Regional Climate Centres (RCCs) and Global Producing Centres of long range forecasts (GPCs) and other climate prediction centres. Through interaction with sectoral users, extension agencies and policy makers, RCOFs assess the likely implications of the outlooks on the most pertinent socio-economic sectors in the given region and explore the ways in which these outlooks could be made use of. RCOFs also review impediments to the use of climate information, experiences and successful lessons regarding applications of the past RCOF products, and enhance sector-specific applications. These RCOFs then lead to national forums to develop detailed national-scale climate outlooks and risk information including warnings for communication to decision-makers and the public at large.

3. RCOF Process

The RCOF process, pioneered in Africa, typically includes the following components:

- Meetings of the regional and international climate experts to develop a consensus for the regional climate outlook using national, regional and global information, typically in a probabilistic form;
- The Forum proper, that involves climate scientists, representatives from the user sectors as well as the media, for identification of impacts and implications, and the formulation of response strategies;
- A training workshop on seasonal climate prediction to strengthen the capacity of the national and regional climate scientists;
- Special outreach sessions involving media experts, to develop effective communications strategies.

The consensus prediction process that underlines RCOF operations consists of the following elements:

- Determine the critical time for development of the climate forecast for the region in question;
- Assemble a group of experts:
 - o Large scale prediction specialists,
 - o regional and local climate applications and forecast/downscaling specialists,
 - o stakeholders representative of climate-sensitive sectors;
- Review current large scale (global and regional) climate anomalies and the most recent forecasts for their evolution;
- Review current climate conditions and their impacts at local, national and regional levels, and national-scale forecasts;
- Considering all factors, produce a forecast with related output (e.g. maps showing probabilities of temperature and precipitation anomalies) that will be applied and fine-tuned (downscaling) by NMHSs in the region to meet national needs;
- Discuss, with active involvement of stakeholders representatives of climate-sensitive sectors, applications of the forecast and related climate information to climate-sensitive sectors in the region; consider practical products for development by NMHSs;

- Develop strategies to effectively communicate the information to decision-makers in all affected sectors;
- Critique the session and its results:
 - o document achieved improvements to the process and any challenges encountered,
 - o establish steps required to further improve the process for subsequent sessions,
 - o verify the previous year forecast and evaluate its use,
 - o undertake some training session (in new techniques and methods)

4. RCOF Contributions

Close interaction between the providers and users of climate information and products has enhanced feedback from the users to climate scientists, and has catalyzed the development of many user specific products. The RCOF process has facilitated a better understanding of the links between the climate system and socio-economic activities. An increasing demand for climate services has been recorded in many parts of the world as a result of these developments. One of the pillars of RCOF activities has been capacity building, including development of curriculum for university education in climate applications.

Awareness has been created that climate information, including short-range climate predictions, is an essential element in mitigating against the impacts of climate variations. RCOFs have facilitated regional cooperation and networking, and have effectively demonstrated the immense mutual benefits of sharing of climate information and experience. RCOFs have fostered interactions and exchange of information between the climate scientists and users of climate information especially at decision making level. More importantly, they have facilitated the mainstreaming of regional cooperation and networking, and effectively demonstrated the immense mutual benefits of sharing of information and experience.

RCOFs have provided lessons and experiences that are critical for climate adaptation. The concept has the potential to be extended to develop our capacity to adapt to climate change. RCOFs can be effectively expanded to cater to the needs of developing and disseminating regional climate change information products. This concept is already being tested by some RCOFs (e.g., GHACOF). Regional assessments of observed and projected climate change, including the development of downscaled climate change scenario products for impact assessments, can be included in the product portfolio of RCOFs. This potential has already been recognized by the United Nations Framework Convention on Climate Change (UNFCCC) Subsidiary Body on Science and Technology Advice (SBSTA), and constitutes a key element of WMO's contribution to the Nairobi Work Programme on impacts, vulnerability and adaptation to climate change.

RCOFs are in operation in many parts of the world. These are:

Acronym	Number	Name
GHACOF	20	Greater Horn of Africa COF
SARCOF	12	Southern Africa COF
PRESAO	11	Prévision Saisonnière en Afrique de l'Ouest
PRESAC	04	Prévision Saisonnière en Afrique Centrale
PRESANORD	01	Prévision saisonnière en Afrique du Nord
FOCRAII	04	Forum On regional Climate monitoring, assessment and prediction for Regional Association II (Asia)
SSACOF	29	Southeast of South America COF
WCSACOF	08	Western Coast of South America COF
FCCA	26	Foro Regional del Clima de América Central
PICOF	11	Pacific Islands COF (Teleconference based)
ICU	--	Island Climate Update forum (Teleconference based, 8 years)
SEECOF	01	SouthEastern Europe COF

5. Role of RCOFs in Meeting Sectoral Needs

RCOFs stimulate the development of climate capacity in the NMHSs and do much to generate decisions and activities that mitigate adverse impacts of climate and help communities adapt to climate variability. Typically, RCOFs attract the participation of practitioners and decision-makers from sectors including:

- Agriculture and food security
- Water resources
- Energy production and distribution
- Public health
- Disaster risk reduction and response
- Outreach and communication

In many regions, the users benefiting from the RCOFs are true stakeholders, contributing to the organization and growth of the sessions, thus ensuring their sustainability, and applicability to meeting user needs.

Based on the needs of specific sectors, specialized, sector-oriented outlook forums, such as the Malaria Outlook Forums (MALOFs) are being held in conjunction with RCOFs in Africa. Based on the seasonal temperature and rainfall predictions, and using the present soil moisture conditions, river run-offs for the season are predicted in some of the RCOFs. This information is very useful for water managers and helps them in making decisions on water allocations within various uses and the hydropower generation planning. Regional agriculture and food security outlooks are now regularly produced based on the climate outlooks after the RCOFs in some regions. This information is very important in planning food-grain reserves and distribution.

6. Strengthening and Sustaining the RCOF Process Worldwide

Among the challenges identified in the process to date, a key area is the design and delivery of climate information and prediction products that satisfy the needs of end-users. Achieving this will require concerted efforts to demonstrate benefits. This challenge, together with that of sustainability, indicates the continued need to improve the scientific underpinnings of the forecasts, for capacity building, and for sustained support.

NMHSs, the regions and the users of the products must contribute to the sustainability of RCOFs (e.g., demonstrate utility of the forums and value of the products to those who need the information). Additionally, research capacities at the regional level need to be enhanced, to assess the forecast skills as well as to work towards their improvement. Media has an important role to play in the RCOF process, which needs to be effectively used, particularly in local languages.

In addition to directly supporting the RCOFs along with other partners, WMO has been making concerted efforts to put in place a number of global and regional mechanisms that would further strengthen the RCOF activities. WMO has established formally designated Global Producing Centres (GPCs) of Long Range Forecasts, which provide real-time global seasonal forecasts accessible to all WMO Members. WMO, along with its Regional Associations, is also at an advanced stage of establishing several Regional Climate Centres (RCCs) to cater to the special needs of regions.

Recognizing that there are several countries that are yet to benefit from the RCOF process, WMO in collaboration with other partners has also been making concerted efforts to extend the RCOF network worldwide, with particular emphasis on regions with developing and least developed countries vulnerable to climate variability and change. After a series of climate-related disasters including drought, forest fires, heat waves, storms, floods, etc. around the world, it is becoming increasingly obvious that the RCOF process has a unique role in bridging the gap between scientific advances in climate knowledge and adaptation planning and practices.

7. RCOF Review 2008 Objectives

RCOF Review 2008, being coordinated by WMO as part of the CLIPS project, has the overarching objective of considering the processes currently in vogue at various RCOFs and to determine if they could be made more effective in delivering climate products for decision making in a sustainable manner. All aspects of the interpretation, creation and dissemination of regional climate outlooks as handled through the RCOFs will be reviewed and necessary changes in the approach will be considered. Future needs for product provision, training and networking (including user liaison) will be assessed and opportunities explored. Integration of RCOFs within the WMO framework for the provision of climate services will also be considered. In specific terms, some of the issues to be taken up at *RCOF Review 2008* are outlined below:

- Review the lessons learnt from 10 years of RCOFs from their inception:
 - o Assessment of impacts on the decision making in various socio-economic sectors;
 - o User perceptions of RCOF operations;
 - o Linkages to sector-specific outlooks (e.g., MALOF)
 - o Compilation of success stories;
 - o Identification of impediments;
 - o Overview of methodologies and approaches;
 - o Evaluation of socio-economic benefits;
 - o Standardized verification of RCOF products;
 - o Capacity building
 - o Resource mobilization and sustainability
- Identify opportunities and new approaches for RCOFs over the next decade
 - o Development of new forecast products tailored to specific user-requirements (including the prediction of intra-seasonal variability), and mechanisms for the provision of regular sub-seasonal updates;
 - o Regional climate change assessments and projections;
 - o Longer-term climate outlooks;
 - o Integration of weather prediction products with RCOF products to best support on-the-ground decision making process.
 - o WMO GPC-RCC-NMHS framework for climate services;
- Develop strategies for effective application of RCOFs in climate adaptation, disaster risk reduction and sustainable development.
- Sustained training and capacity building of both climate experts and user representatives, including the development of training curricula.
- Formulate strategies to effectively promote the RCOF concept, fill the existing gaps and improve and standardize the RCOF process.
- Highlight the RCOF concept at the forthcoming World Climate Conference-3 (Geneva, Switzerland, 31 August - 4 September 2009),.

8. Structure of RCOF Review 2008

RCOF Review 2008 will be essentially conducted with the help of a limited number of invited climate experts and various stakeholders including

- Technical/Organizational Leads from the existing RCOFs worldwide;
- Experts from NMHSs, regional climate institutions and international institutions actively engaged in RCOF operations and capacity building activities;
- Representatives from user sectors, climate adaptation, disaster risk reduction and climate risk management communities including regional and international partner agencies;
 - o Relevant UN agencies
 - o Developmental agencies including NGOs
 - o Economic groupings in the region (e.g., IGAD, SADC, ECOWAS, etc.)
- Communication experts and media;
- Experts from Global Producing Centres (GPCs) of long-range forecasts;

- Representatives of prospective Regional Climate Centres (RCCs);
- Representatives of relevant WMO programmes (including co-sponsored programmes) and Technical Commissions
- Funding agencies

RCOF Review 2008 is structured around a few key issues central to the RCOF operations and further development, and around the development of position papers devoted to each of those issues. Topics for position papers include the following, with the lead coordinators indicated in parentheses:

- RCOF Operational Practices (J-P Ceron)
- User Liaison in RCOFs, including sector-specific outlook forums (R Martinez)
- Verification of RCOF Products (S Mason)
- Integration of Research into RCOFs : Approaches and Research Prioritization (F Semazzi)
- Capacity building in RCOFs (J Pahalad)
- Sustainability of RCOFs including resource mobilization, regional ownership and cost-effective practices (L Ogallo)

The Scientific Organizing Committee (SOC) formed for the purpose will guide the process of developing the agenda, identify key speakers and develop position papers. The agenda will consist of review talks by the various RCOF leads and other related experts, and also include several sessions of open discussions. The position papers are expected to include recommendations to the regional and national stakeholders, and to the WMO and its international partners as well as sponsoring agencies. The SOC will frame the key questions to be addressed in the position papers, draft versions of which will be developed through email consultations prior to *RCOF Review 2008*.

The lead coordinator identified for each of the position papers will initiate discussions among the peers and develop the papers in an iterative process. The position papers will be presented at the end of *RCOF Review 2008*, discussed and adopted by the meeting.

Scientific Organizing Committee (SOC)

To guide in planning the scientific organization of the workshop as well as the mobilization of resources and also actively steer the workshop proceedings, a Scientific Organizing Committee (SOC) has been constituted. The SOC for *RCOF Review 2008* essentially consists of the leads of the existing RCOFs and other related experts. The SOC will function through email consultations and teleconferences,. The following members have agreed to serve on the SOC:

1. Dr B Nyenzi (WMO), Chairman
2. Prof L Ogallo (ICPAC)
3. Dr B Garanganga (SADC DMC)
4. Mr M Kadi (ACMAD)
5. Dr R Martínez (CIIFEN)
6. Ms J Pahalad (BoM)
7. Dr P Ramirez (SICA)
8. Dr S Mason (IRI)
9. Mr J-P Ceron (Meteo France)
10. Mr P Luganda (Network of Climate Journalists)
11. Dr W Thiaw (NOAA)
12. Mr P Tibaijuka (TMA), Local Coordinator
13. Prof F Semazzi (NCSU)
14. Dr R Kolli (WMO)

Collaborating Organizations

1. WMO
2. TMA
3. ICPAC
4. ACMAD
5. SADC-DMC
6. UNFCCC
7. EAC
8. IRI
9. ADPC
10. CMA
11. NOAA
12. UKMO
13. Meeo France

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