RCOF Review 2017

[Regional Climate Outlook Forum for Central Africa- PRESAC]

Status Report

Specific Climate features of concerned region

This region typically covers the equatorial region of Africa including Cameroon, Central Africa Republic, Gabon, Congo, Democratic Republic of Congo, Equatorial Guinea, Sao Tome and Principe, Rwanda and Burundi. The regional climate is dominated by convective activity and precipitation in the InterTropical Convergence Zone (ITCZ) with October-November-December as the main target season.
Major sources of seasonal climate variability and predictability in the region include Sea Surface Temperatures (SSTs) of the equatorial Pacific (ENSO region), tropical northern and southern Atlantic and equatorial western Indian Oceans. Uncertainties on SST forecasts over tropical Atlantic and the equatorial Indian Ocean as well as limitations on the representation of interactions between the Congo Basin, the regional and global atmosphere are not well documented.
Improvement of understanding and representation of processes and interactions in models are required to provide better inputs to operational seasonal prediction for the region.
Floods, dry and wet spells, anomalous onset and cessation of rains are the main climate hazards of the region. Water borne diseases, roads and other infrastructure damages, loss of lives and properties are associated with heavy precipitation, strong winds and floods. Losses in food production (up to 30%) due to heavy rains occurring during harvesting period increasing humidity leading to losses or damages in crops are noted over the area.

The RCOF background

The RCOF started in the early 2000s. It has been held once a year usually as a physical or online event in late September with October-November-December as the main target season. NMHSs of the region, WMO Global Producing Centres for Long Range Forecasts are the major collaborating partners.
The forum product is discussed during a briefing and a consensus outlook generated for users. Discharge outlooks for the Congo basin and vigilance maps for heavy precipitation are additional products provided.
The African centre for Meteorological Applications for Development (ACMAD) is the main coordinating institution.
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The RCOF process

The RCOF implementation process includes:

- A pre-COF training workshop on seasonal climate prediction to strengthen the technical capacity of national and regional climate experts;

- Meeting to present and interpret available real-time climate monitoring and assessment, seasonal prediction products from WMO global data and monitoring centres, GPC-LRFs and RCCs as well as the country-level forecasts, assess the skills of forecasting systems, and develop the consensus seasonal climate outlook statement for the region;
- Verification of past outlooks by NMHSS and ACMAD/RCC,
- Share recent studies and findings on regional climate variability, predictability and climate change and discuss their integration into forecasts operations;
- Updates of the consensus product generated

The approach for seasonal forecasting involves analysis of climate variability and predictability in the region, assessment of outputs from global single and multimodel ensemble forecasting systems, statistical seasonal forecasting tools, analogue years, persistence, composites and trends analysis as well as available findings from climate studies at local, national, regional and global levels. Interpretation of models outputs rely on relevant predictability and skill products. A technical note is prepared and discussed during a briefing involving climate experts. A consensus outlook statement is provided after the briefing targeting experts in sectors impacted by climate variability.

The verification of past year's climate outlook is done as an operational activity of ACMAD/RCC using simple visual verification and the Ranked Probability Skill Score. The verification information is communicated during the RCOF session.

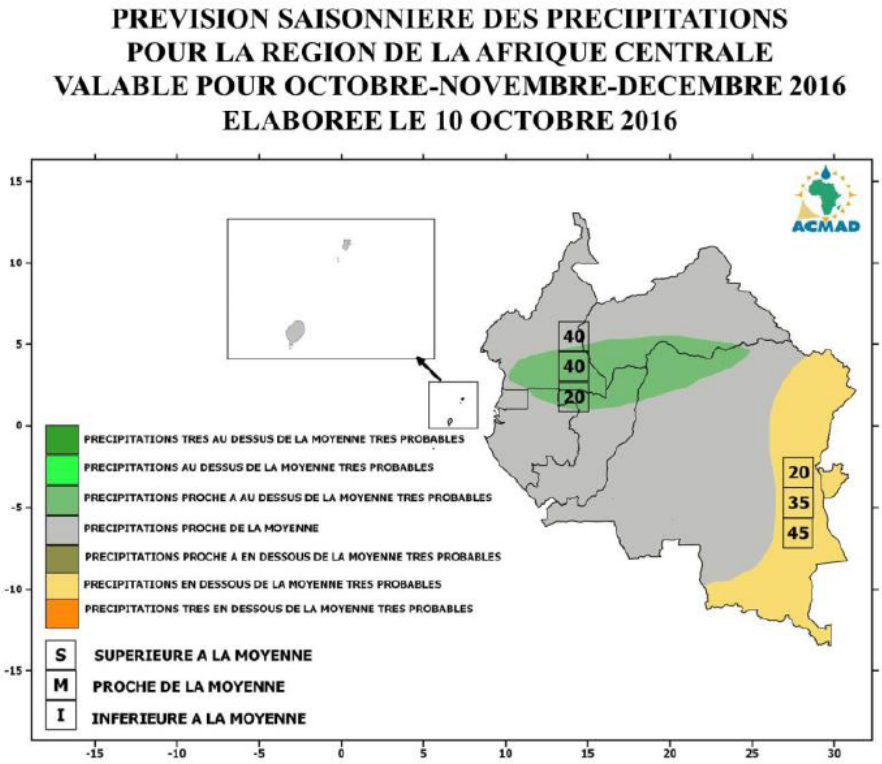

Figure 1: Seasonal Precipitation forecasts issued on October 10, 2016 and valid for October-December 2016 over Central Africa.

Figure 2: Participants at the Regional Climate Outlook Forum for Central Africa organized in Libreville-Gabon from September 23 to 27, 2013.

Capacity needs

Major stakeholders involved in the RCOF are NMHSs of the region, ACMAD, ECCAS and its Regional platform for Disaster Risk Reduction(DRR). High speed internet for access to data by NMHSs, capacity to format and quickly communicate climate information to users, sub-seasonal and seasonal forecasting training on methods, tools and products interpretation for NMHSs, establishment of formal and operational sub-seasonal to seasonal forecasting teams at national and regional level to exchange, build trust and facilitate the application of seasonal forecasts were identified. ACMAD organizes and implement on the job and workshop trainings for NMHSs. To further address capacity needs mentioned above, sessions and consultations at meetings of Regional Committee for Disaster Management, regional agriculture, water management, diseases surveillance and food security events in Central Africa are required to reach out more actors in climate sensitive sectors.

User involvement

Liaison at policy level with the Regional Economic Community (ECCAS) and the Regional platform for DRR in Central Africa are well established.

Sessions at RCOF events dedicated to dialogue with users are organized to collect and analyze feedbacks. The main key message from these sessions has been the requirement for legal and operational frameworks for effective service provision in the form of help desks or clearing houses.

Users from agriculture, water, disaster management and media communities are invited to the forum for exchanges, interactive discussions on the historical, current and expected climate conditions, related impacts, advices and recommendations to cope with negative impacts or increase benefits linked to possible opportunities due to favorable climate conditions.

SWOT analysis

With the strong collaboration with ECCAS, coming ECCAS humanitarian policy and action plan development process will be guided by climate information from the PRESAC network.

The major weakness is the limitation in staff number and technical capacity in NMHSs and regional Centres involved to effectively absorb advances in climate science and technology and communicate effectively climate information at regional, national and local levels. Optimal number of support staff to operate RCOF and expand its functions and product portfolio is lacking.

Advances both in climate science (observations, understanding of processes and phenomena, modeling and prediction, forecasting and impacts) and technology (i.e internet technology and computing), development and emergence of open platforms and systems for collecting, processing, sharing data and climate knowledge are opportunities supporting further evolution of the RCOF.

Some threats to RCOF include high level of competencies required for operational sub-seasonal to seasonal forecasting, the gradual involvement of the private sector at a time when the activity lacks standards and recommended operating procedures for climate services in different sensitive sectors. Even though seamless forecasting advantages are now well recognized, the lack of organizational set up for effective seamless forecast operations in NMHSs and Regional Centres is a threat for expansion of RCOF products and services portfolio.

Sustainability of RCOF

The RCOF should be sustained as an operational activity of ACMAD/RCC. It is well recognized by central African countries as well as the Regional Economic Community (ECCAS). The RCOF has been funded by the African Development Fund at the African Development Bank. The RCOF is led by ACMAD/RCC with planning, mobilizing resources, preparing and organizing sessions and reporting as its main functions. Institutional Support to African Climate Institutions (ISACIP) is the main project supporting the RCOF with additional contribution from WMO. The long term sustainability of the RCOF relies heavily on efforts to be undertaken to strengthen valuation of seasonal forecasts and associated climate information and relevant sector advices. Valuation of climate services is shown by demonstrating evidences of benefits due to the use of climate services, promoting broad awareness and acceptance of seasonal forecasts, improving NMHSs and user organizations capacity to develop and interpret forecasts, tailor or format climate information, apply climate information , document and record benefits.

Way forward

Scientific research on ocean-land-atmosphere modeling, new predictors for statistical forecasting tools, local and regional climate variability and trends studies, assessment of regional performance of forecasting systems including their strengths and weaknesses in predicting regional climate features are proposed to improve consensus outlook products. Specifically, better understanding and prediction of the Gulf of Guinea SSTs and interactions between land and the atmosphere, variability of the ITCZ and interactions with the Congo Basin are required.

Predictions at subseasonal timescales and advances in seamless prediction are ongoing efforts to improve forecasts of anomalous onset and cessation of the rainy season, wet and dry spells during the rainy season. ACMAD/RCC team will be expanded to carry out sub-seasonal outlooks for Africa covering one to two weeks ahead. For medium to long term policies and plans, climate scenarios and decadal climate forecasts, related impacts and vulnerability assessments are required as outputs of future RCOFs for use in disaster risk management and climate change adaptation strategies and programmes.

ACMAD/RCC has developed a procedure for seasonal forecasting and will contribute in emerging efforts for standardization of climate forecasting practices. For the Disaster Risk Management sector, seasonal climate forecasts has been expanded to hazards outlooks, potential impacts expected and

suggested preparation and early response measures. Such developments of sensitive sector dedicated services are being planned for the agriculture, health and water sectors.

Participation of climate service providers in user forums namely contingency planning meetings, disaster management consultation meetings, agriculture season planning workshops, vulnerability assessment and water forums is important for effective and wide exchanges, awareness raising, interactions and consensus building on sector relevant impacts, adaptation measures, advices and recommendations.