RCOF Review 2017

[Regional Climate Outlook Forum for the Gulf of Guinea region of Africa - PRESAGG]

Status Report

Specific Climate features of concerned region

This region typically covers the area below 10°N down to the Atlantic coast of the Gulf of Guinea. The regional climate is also dominated by the West African monsoon typically occurring during northern hemisphere spring (typically from March to May).
Countries involved are Guinea-Conakry, Liberia, Sierra-Leone, Côte d'Ivoire, Ghana, Nigeria, Togo, Benin, Cameroon and Equatorial Guinea. The regional climate is dominated by the InterTropical Convergence Zone (ITCZ) and the African monsoon.
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 as well as the Equatorial Atlantic. Uncertainties on SST forecasts over the equatorial and tropical Atlantic, understanding and prediction of processes and phenomena embedded in the ITCZ and the African monsoon during the target season 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.
Dry and wet spells, strong winds and heavy rains, anomalous onset of the rains are the main climate hazards of the region. Disruptions on the planting periods, damages to infrastructure (eg. roads, electricity distribution systems,…) due to heavy rains and storms are noted over the area.

The RCOF background

The RCOF started in 2014. It is held once a year usually in late February or early March with March-April-May as the main target season. Physical and online forums are considered. It involves the countries mentioned above. NMHSs of the region, WMO Global Producing Centres for Long Range Forecasts are the major collaborating partners.

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 made and discussed during a briefing involving climate experts. A consensus outlook statement is prepared after the briefing targeting experts in sensitive sectors. Sessions for hydrologists and agrometeorologists are organized in parallel generating discharge outlooks and agrometeorological advices presented at the forum plenary.

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 RCOFs.

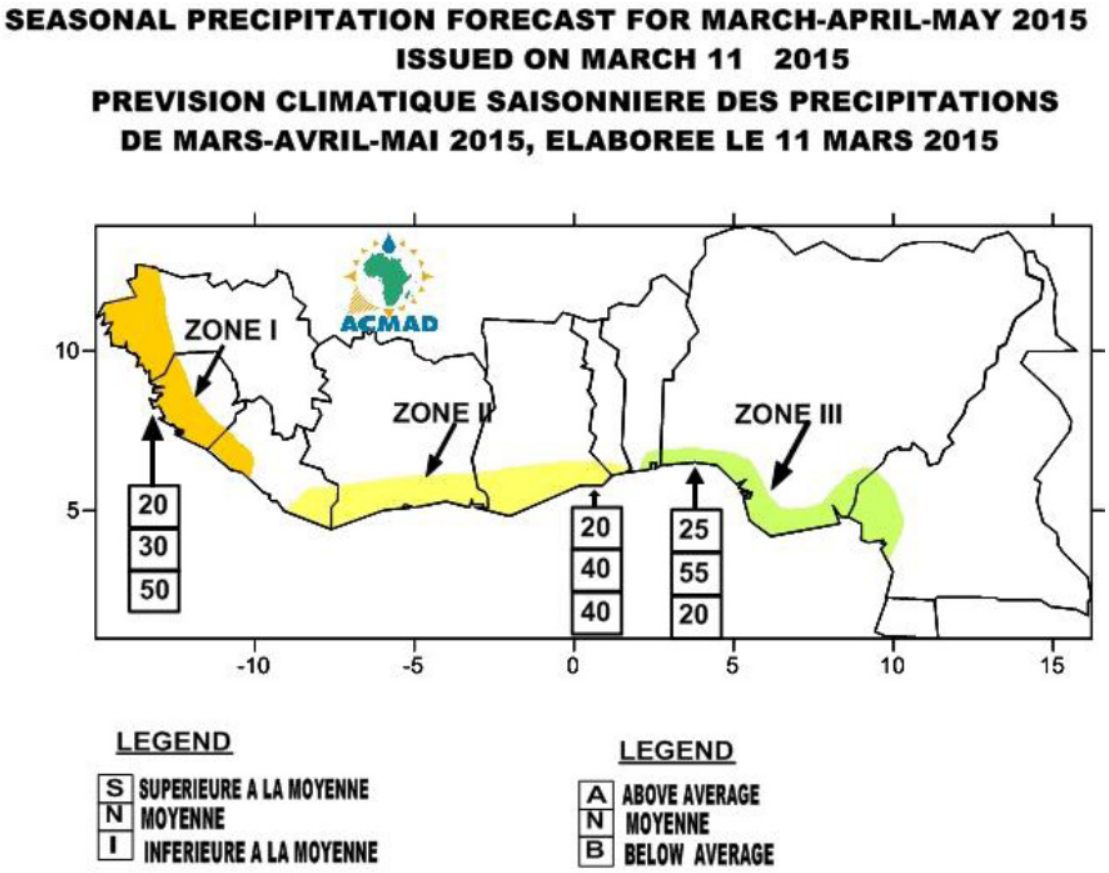

Figure 1: Seasonal Precipitation forecasts issued on March 11, 215 and valid for March-May 2015.

The African centre for Meteorological Applications for Development (ACMAD) is the main coordinating institution.
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Figure 2: Participants at the first RCOF for the Gulf of Guinea Countries in Africa, March 10-15, 2015 Abidjan-Côte d'Ivoire

Capacity needs

Major stakeholders involved in the RCOF are NMHSs of the region, ACMAD and AGRHYMET. High speed internet for access to data by NMHSs, capacity to format and quickly communicate with 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, dialogue with OCHA, IFRC, AGRHYMET 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 the Gulf of Guinea are required to reach out more actors in climate sensitive sectors.

User involvement

Liaison at policy level with the Regional Economic Community (ECCAS) and Regional platform for DRR in Central Africa are well established. Sessions at RCOF dedicated to dialogue with DRR 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 at regional and national levels.

SWOT analysis

The RCOF is still under development with little experiences with potential to generate benefits and success stories.

The major weakness is the limitation in staff number and technical capacity in NMHSs 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 the 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 and the gradual involvement of the private sector at a time when the activity lacks standards and recommended operating procedures for climate services provision 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 west and relevant central African countries as well as the Regional Economic Communities (ECOWAS and ECCAS) involved. The RCOF has been funded by WMO and the African Development Bank through the African Development Fund. 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) had been the main project supporting the RCOF. 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, format and apply climate information, document and record benefits.

Way forward

Scientific research on ocean-land-atmosphere modeling, new predictors for statistical forecasting tools, forecasts assimilation options and optimal combination of forecast models direct outputs, local and regional climate variability and trends studies, assessment of regional performance of forecasting systems including their strengths and weaknesses in predicting regional climate processes and phenomena are proposed to improve consensus outlook products.

Substantial effort is needed to study the spring season climate in the region. Specifically, better understanding and prediction of the Gulf of Guinea and tropical Atlantic SSTs, their interactions with land and the atmosphere are required. Studies of climate variability and predictability with a focus on the African monsoon and the ITCZ during the spring season are needed.

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.