

CLIMATE DATA FOR RA-I

RAIDEG/RA-I Climate Services and Application Working Group (CSA)

Meeting April 2017 and Follow-Up

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Synthesis results of the survey on Climate
information and data
in
Western, Central, Southern, Northern, eastern
African countries through NMHS
Regional Climate Centers (ICPAC – NARCC- SADC)

SURVEY KEYS POINTS

- **What are the key climate services that are already provided by RCC?**
- **What are the new services that are already identified as needed now?**
- **What are the key changes that will realistically happen over the next 4 years?**
- **New services being delivered – what service and to who?**
- **What input data are required now at regional level?**
- **What input data are required for the 4 year horizon?**

Key climate services that are already provided by the NMHS or responsible organisation

- **Daily temperature and rainfall charts**
- **Seasonal temperature and rainfall**
- **Monthly outlook of climatology bulletin**
- **10-days agro-hydro-meteorological bulletin for crops fields management**
- **Onset- mid- and end crops yield assessment bulletin**
- **Marine forecast for fisheries**
- **Daily technical assistance to end users for climate sensitive sectors**
- **Climate data for research and education**
- **Climate information for media**
- **Solar radiation, potential ET and dry spell periods**
- **Early warnings (alert) of extreme weather events**

New products that are needed now but not yet available

- **Rainfall estimation**
- **Cloudiness**
- **Short- and long-wave radiation**
- **ET and water balance**
- **Vegetation status (NDVI, SAVAT)**
- **Forest fire risk indexes**
- **Soil moisture**
- **Cloud mask**

New products that are needed now but not yet available

- **Land use**
- **Heat waves and impacts on health**
- **Air pollution level**
- **Water for pastures and livestock**
- **Environmental management and protection**
- **Climatological atlases**
- **Climate projections**
- **Climate index for insurance**

What are the key changes that will realistically happen over the next 4 years

- **Improve Service delivery, appreciation and utilization of meteorological and climatological products:**
- **Enhance the skill of climate forecasts**
- **Improved the translation of meteorological and climatological products and the delivering of the benefits of these products in a more comprehensive manner.**
- **Survey on and promotion of users appreciation and utilization of our products.**
- **Enhance the Production and Delivery of Weather and Climate Services for Sustainable Development.**
- **Operationalization of National Framework for Climate Services (NFCS)**
- **weather forecast for country specific areas**

New capabilities that could be available over the next four years

- **Downscaling weather and climate products at subnational scale**
- **Sector-specific forecast for: energy, health, DRR, water and agriculture/fisheries**
- **Modernization of observing system (AWS)**
- **Improvement of technical and human capacity**
- **Commercialization and marketing of climate services**
- **Climate projections**

Data requirements at NMHS

- *Lightning*
- *Fog and haze*
- *Wind velocity and direction*
- *Rainfall intensity and frequency*
- *Humidity and temperature*
- *Solar radiation*
- *Air pollution*
- *Extreme weather forecasts.*

What are the key climate services that are already provided by RCC?

- Provision of products based on the operational long-range forecasts (LRF) generated at the Global Producing Centers (GPC)
- Coordination and tenure of Seasonal climate outlook
- Provision of operational support for climate monitoring and data archiving
- Training for using on elaboration of climate products and services

What are the key climate services that are already provided by RCC?

- training on gridding station data and blending in situ and satellite obs
- Data sharing and accessibility
- Platform for climate information dissemination
- Data rescue
- Development of Climate Data Management System (CDMS)
- High-resolution regional climate change projections
- Strengthening the capacity of NMHSs in downscaling and climate services
- Strong collaboration with GPCs to improve forecast skill in Africa
- Implementation of IGAD strategy
- Engaging users at RCOFs
- Producing prototype climate services (PCSs)
- Generation of climate change scenarios.

Data requirement at Regional Climate Centers (RCC) levels

- **Dataset of in-situ precipitation, temperature and wind**
- **Gridded dataset from satellites**
- **Climate scenarios**
- **Crop and cropping area data**
- **Soil and ET data**
- **Temperature and rainfall at 25km resolution**
- **Bias corrected precipitation forecast at 3hr time resolution and 10 days lead time**

Some general comments on the subregional presentations

- More collaboration is needed among the countries in Central Africa given that there is no functional RCC in this subregion
- Roles and relationship between regional and national levels need to be better understood
- Energy sector demands need to be better represented in data requirements
- Research on data analysis and integration for generation of skillful products is a key requirement
- Need for guidelines and standardized methodologies for using the global datasets should be addressed in order to avoid fragmentation of efforts
- Communication and awareness raising campaigns should be integrated in the climate services activities.

Breakout groups were formed in order to define a comprehensive list of users of climate information and subsequently to identify the data needed in support of their decision processes

- **grouping the climate users and data needs in each African sub-region ;**
- **focused on the high-priority climate sensitive sectors, in order to consolidate a refined list of user-oriented climate data and products;**
- ❖ **A synthesis of the ~~types of data and products~~ needed across all sectors (Energy, Water, agriculture, health, livestock, fisheries, disaster risk reduction, Transports, infrastructure, adaptation and mitigation to climate change) drawn from the table, is provided in Appendix VI**

User	Decision	Data	Areas in need of implementation support
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Several common issues were highlighted in the open discussion that followed the work of the groups:

- training on gridding station data and blending in situ and satellite obs
- Research, assessment and improvement of products (fitness-for-purpose, utility, feedbacks) should be integrated in the implementation
- Communication of uncertainty of products, adapted to user's needs and level of understanding is a key element
- Resolution of forecasting models is currently not adequate to address needs of small islands. Downscaling of model output is another requirement currently not addressed.
- Bandwidth and storage capacity for monitoring and nowcasting products from weather radar, lightning sensors, is often insufficient in Member countries.
- Near-Real Time (NRT) and delayed-mode requirements for data should be addressed separately when discussing dissemination
- Develop smart ways to make climate data (e.g. ECVs) accessible in inventories and archives (e.g., by building upon existing ones such as in Europe, U.S., etc... since national resources are often too limited)
- Integration of national data at national level requires data sharing
- Analysis and visualization tools are very important to make data valuable.
- Training on impact-based forecasting in the various sectors is needed
- Platforms for integrating various data sources are necessary (e.g., to combine meteorological and other environmental data).

Actions

and

Recommendations

- **ACTION 1:** WMO / EUMETSAT to write a letter to EC (DG GROW / DEVCO) regarding the priority data and support needs of African climate services within GFCS, to be taken into account by the Copernicus programme and C3S in particular.
- **ACTION 2:** RAIDEG together with RA I CSA to validate the list of data gaps identified, between now and the next RAIDEG meeting. EUMETSAT to identify what is not on EUMETCast already.
- **ACTION 3:** RAIDEG request EUMETSAT (for the next baseline update) to investigate the inclusion of WMO SDS WAS data and CMSAF cloudiness / cloud cover monthly mean
- **ACTION 4:** EUMETSAT and services in Senegal & Mauritius to investigate how to distribute the radiation dataset, including EUMETCast dissemination.
- **ACTION 5:** WMO/EUMETSAT to inform the GFCS-ACP project development process about the outcome of this meeting.
- **ACTION 6:** The CSA/RAIDEG Chairs to provide a report on the outcome of this meeting to the GFCS-ACP meeting in Dakar (Senegal) in the week of 29 April 2017. (Vincent Gabaglio to facilitate) (busy schedule, I haven't just an opportunity to make a ppt presentation - just an oral information about the results and the report that have been well appreciated by the participants- that is why I asked that the report be translated in French for more dissemination)
- **ACTION 7:** WMO Space program to ask IPWG for a plain language document on the usefulness of various datasets (in situ, satellite, reanalysis data) for developing climatologies and seasonal monitoring products in sub-saharan Africa at 200 km and 5 km.

Thanks for your kind attention