

Special Session on EO 4 Hydrology

16th EUMETSAT User Forum in Africa

HIGHLIGHTS – 11 October 2024

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EO is key for Hydrology – call for more cooperation

- 1) Key role of EO to support activities of the River Basin Authorities (RBAs) in Africa (lack of ground measurement, extent of the basin)
- 2) Need for RBAs to ensure transition to MTG, and to ensure they can benefit from H-SAF and TAMSAT data and products
- 3) Willingness of RBAs to share knowledge and experience on use of EO to support their respective mandate, under AUC / AMCOW coordination

8 presentations:

Title	Institution
Outcomes of the workshop on EO for Hydrology (March 24)	AUC and EUMETSAT
Recent progress in EO for WRM in Africa	University of Western Cape
Contribution of EO data and HSAF products for Hydrology	HSAF
TAMSAT Climate Services: Monitoring	University of Reading
Use of EO in the Congo Basin	CICOS
Use of EO in the Niger Basin	NBA
Projet AquaExplore	SIRIUS Association
Using Satellite monitoring for DRR: Daniel Tropical Storm case	Egyptian Meteorological Authority

1 Panel discussion

Workshop March 24 on “Engaging on use of EO for Hydrology and River Basin Management in Africa”

-> Roadmap elaborated



Recent progress in Research thanks to Int. initiatives (e.g GMES&Africa)

But limited in-situ affect cal/val of EO products
Future research should focus on multi-source data integration, assimilation, big data analytics and ML techniques.

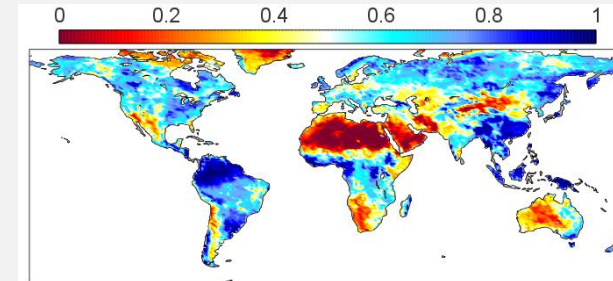


HSAF and TAMSAT products



H SAF generates and archives satellite products to estimate:

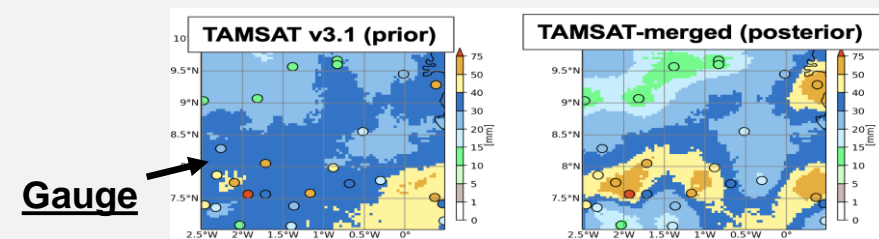
- ✓ **precipitation** (rate and accumulated);
- ✓ **soil moisture** (surface and root zone);



H SAF ROOT ZONE SOIL MOISTURE: 1992 to present, 1-day, 16 km

TAMSAT provides:

- Rainfall pducts incl. with Real-Time gauge in some areas
- Full colomn soil moisture products
- TAMSAT-ALERT soil moisture forecasts.





EO support to navigation on Congo River and subsidiaries

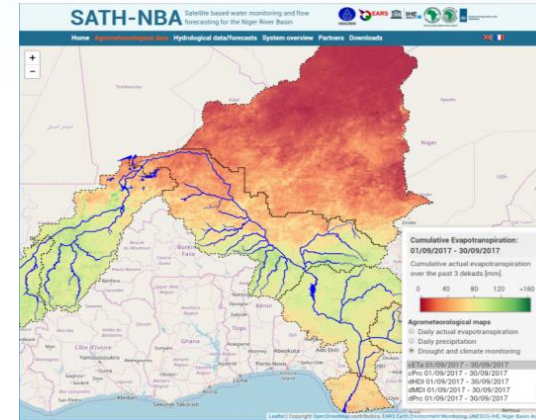
RADAR altimetry in support of navigation safety



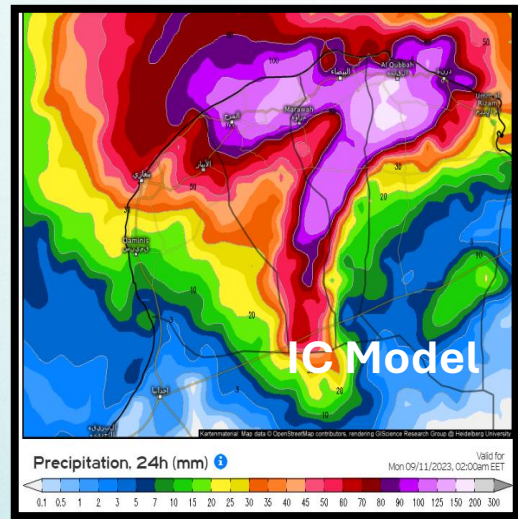
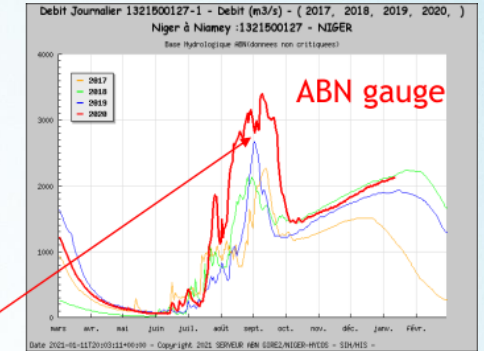
Low water Level Alert Bulletin



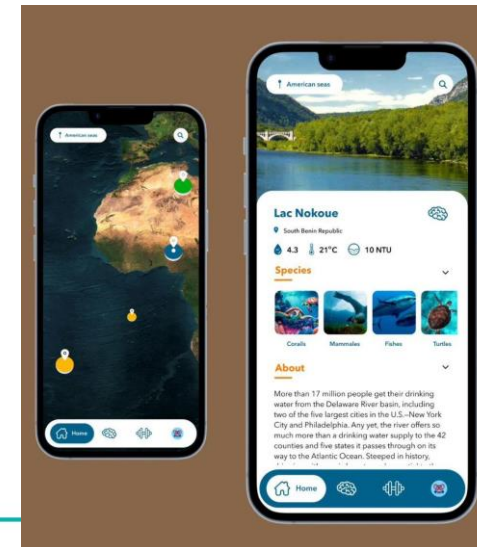
Contribution of MSG data to estimate and forecast Niger River Discharge



<http://www.sath.abn.ne/>



Storm Daniel forecasted and monitored / MSG and Models in Sep 2023



Sirius Space Association in support to monitor and manage the evolution of waterways and marine biology using EO data

Questions addressed:

- Key barriers in accessing EO data,
- Collaboration btw the scientific community, water resource managers, and EO data providers,
- Contribution of EO data to extreme hydrological events forecasts,
- Cal/Val activities to be undertake,
- Role of AI and ML with EO data for better water resource management,
- Capacity-building needs for African institutions to effectively use EO data for water resource monitoring.

