

A satellite with large solar panels is shown in space against a blue sky with white clouds. The satellite has a cylindrical body and several rectangular solar panel arrays extending from it.

# Africa Drought Monitoring and Advisory (ADMA)

User engagement

Collins Asega  
Geo-Web applications Developer, NORCAP



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# About Presenter

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Collins Asega background is in earth sciences, focusing on climate, agriculture, and hydrology.

He has developed skills in spatial data analysis and the application of machine learning and AI in environmental contexts, such as hazard mapping, Agtech and impact-based forecasting. His work has led him to engage in projects with organizations like International Centre for humanitarian affairs (ICHA), Locate IT, PULA.

He currently applies his expertise in geo-web application development as a NORCAP déployée at the African Centre for Metrological Applications for development and spends time building technologies for the geospatial ecosystem



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# The team Collaborators

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- Working Closely with JRC
- NORCAP Deploye'e's at ACMAD and WMO Addis Ababa
- ACMAD staff
- ICPAC



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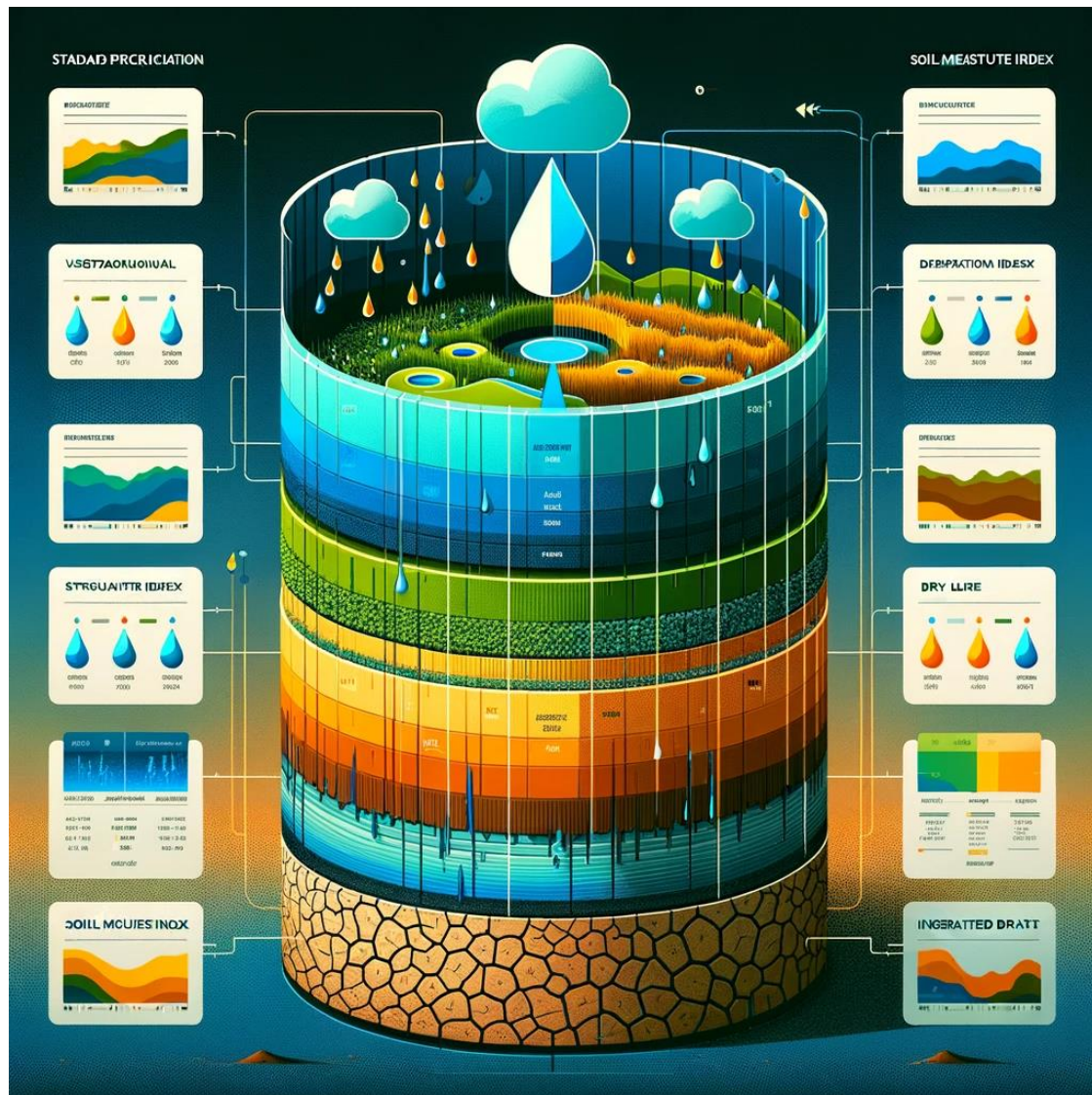
# Agenda

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- Introduction to ADMA
- Focus on products available
- New features implemented
- Demonstration
- Future developments

# Africa Drought Monitoring & Advisory system

- Collection and storing of Drought related and vegetation observed indices.
- Visualization of the products.
- Report generation



# ADMA Homepage

Africa Drought  
Monitoring and Advisory

[HOME](#)
[GEOPORTAL](#)
[INDICATORS](#)
[ABOUT](#)
[PARTNERS](#)
[CONTACT](#)

## Drought Situation in Africa

Overview of Latest Drought Indications : 2nd Ten Days of Dec 2023

**Legend:**

- NO DROUGHT
- Watch: Rainfall Deficit
- Warning: Soil Moisture Deficit
- Alert: Vegetation stress following rainfall/ soil moisture deficit

**Drought Stress Levels per Country**

Country	High	Medium	Low
Algeria	High	Medium	Low
Botswana	High	Medium	Low
Chad	High	Medium	Low
Cote d'Ivoire	High	Medium	Low
Equatorial Guinea	High	Medium	Low
Guinea	High	Medium	Low
Madagascar	High	Medium	Low
Mauritania	High	Medium	Low
Mozambique	High	Medium	Low
Niger	High	Medium	Low
South Africa	High	Medium	Low

ADMA is a near-real-time system that uses Earth Observation and Weather information to monitor drought conditions in Africa. It contains drought-relevant information such as maps of indicators derived from different data sources (e.g. precipitation measurements, satellite measurements, and modelled soil moisture content). Different tools, like Dashboards that allow for displaying and analysing the information and drought reports, give an overview of the situation in case of imminent droughts. When installing a Drought Monitoring system in a regional meteorological agency, the system offers the possibility to automate data-inception, control, interpolation, computation of anomalies, and high-quality web mapping.

Geo-spatial Data

Historical Geo-spatial Data

Description of Geo-spatial Products

Near Real Time Monitoring

Africa Centre of Meteorological Applications for Development

Address: PL6, 55 avenues des Ministeres  
Tel: +227 20 73 49 92  
Email: [contact@acmad.org](mailto:contact@acmad.org)  
X: @acmad\_org  
Web: [www.acmad.org](http://www.acmad.org)

Useful Links

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# Reach of the System

Users from 10 Countries

52 new users



# Tools



Graphical user interface tools



Data integration to produce drought combined index



Ability to download raster file (tiff format)



Enabling tools: report generation



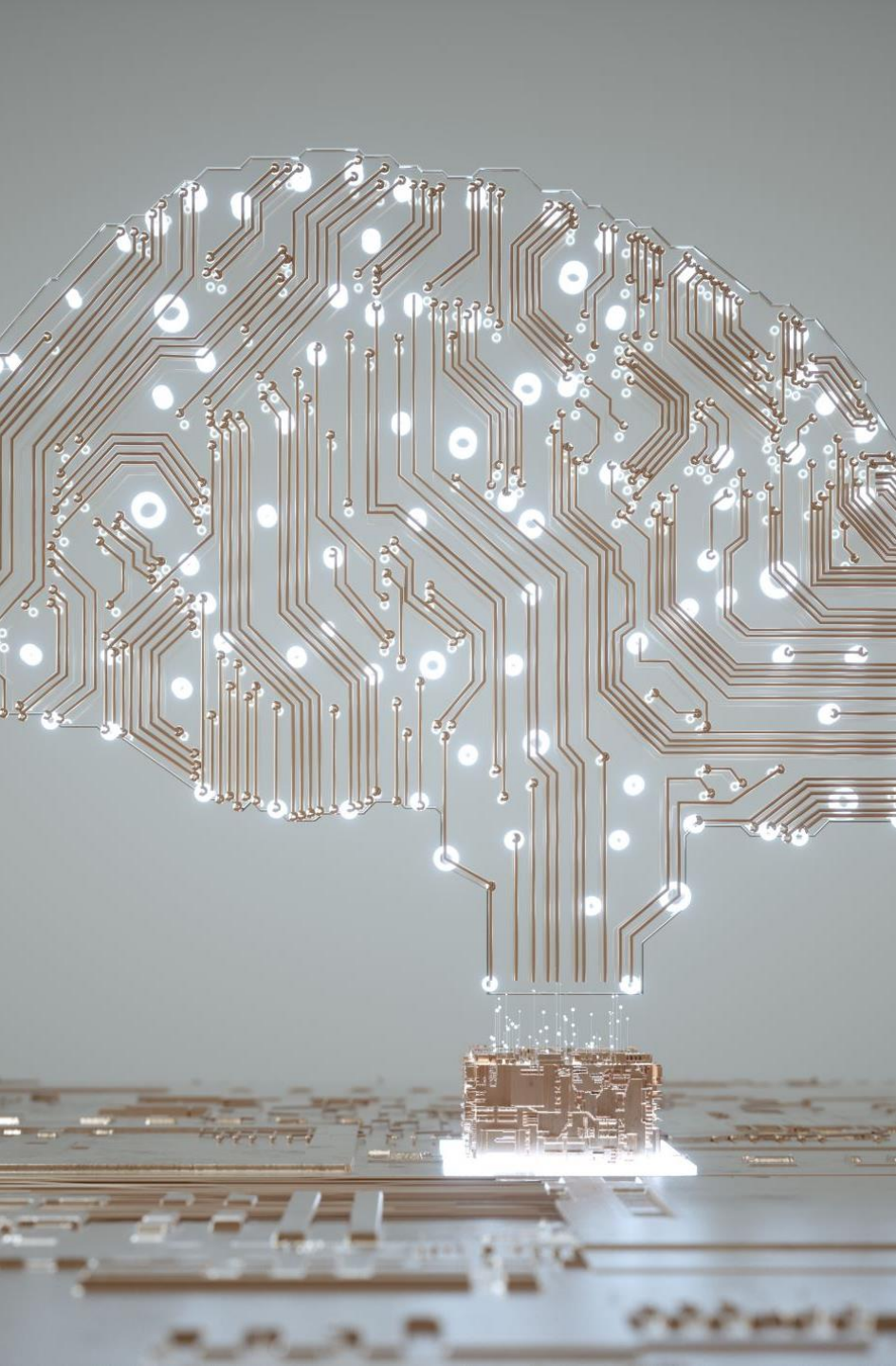


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# Products available

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- Standard Precipitation Index
- Monthly precipitation
- Vegetation index (NDVI)
- Land Use
- fAPAR anomaly
- fAPAR absorbed
- Soil moisture Anomaly
- Combined drought index



# Applications who needs this



Everyone



Climate and environment related institutions



Agriculture departments



Disaster planning and monitoring units



Climate scientists and practitioners

# Planning for future updates



Integration of Forecasting products in the generation of Forecasted Drought index



Machine Learning and AI integration in the reporting Component



Integration of Social Economic Layers



Wider consultations with stakeholders through user engagement



Communication and Collaboration (subscription for Alerts)



Continuous Learning and Adaptability



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# Current Future Trends

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- Integration of AI and Advanced Machine Learning: Further enhancing data analysis, predictive modelling Language model for Geospatial applications, and automation in GIS applications.
- Googles Deep mind: Graph Cast AI model for faster weather prediction
- Advancements in Real-Time Data Analysis: Enabling faster decision-making and response in areas like disaster management and urban planning.

# Thank you!

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