

THE CHALLENGE



Groundwater is critical for water security, agriculture, and ecosystems—yet it remains largely unmonitored.



Climate variability, recurring droughts and increased human pressure are increasing pressure on groundwater systems.



Monitoring networks are often sparse, fragmented, or unavailable, especially in developing regions and FCV context.

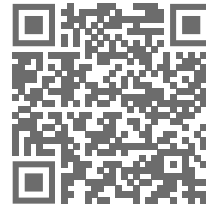


Understanding of recharge, storage, and availability remains limited in many countries.



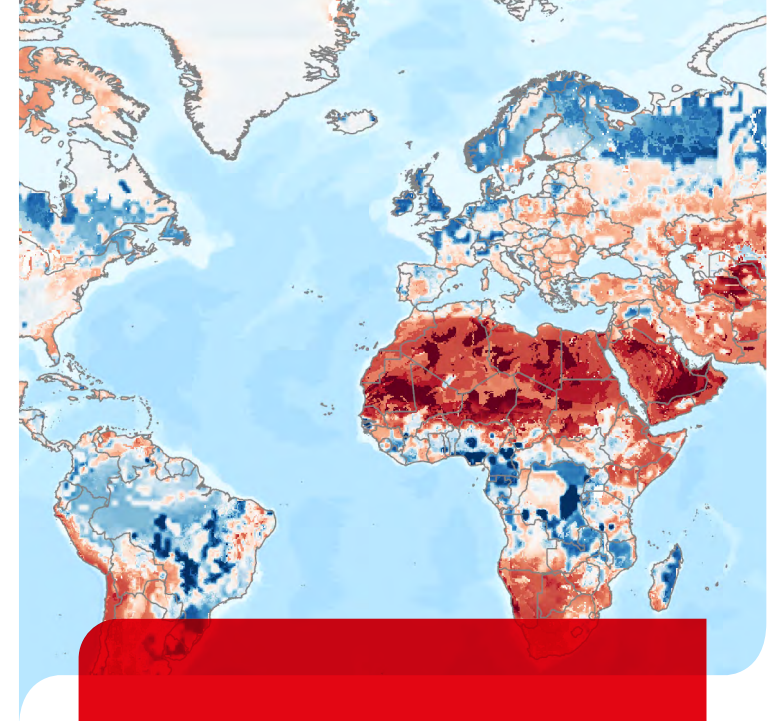
Decisions are made without clear visibility of groundwater dynamics.

Empowering smarter water decisions anywhere in the world



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Groundwater intelligence

FOR SMARTER WATER DECISIONS

Satellite-based insights for water security, drought response, and climate resilience



Satellite data you can rely on



Actionable insights you can trust

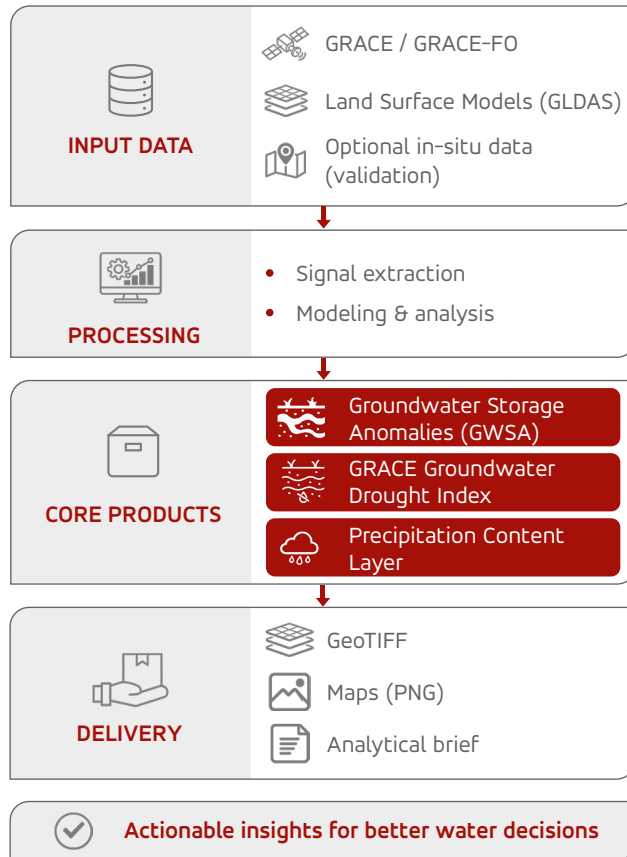


Decisions that build community resilience



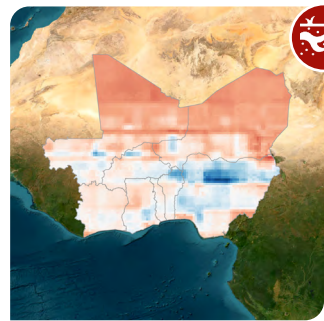
OUR SOLUTION

We provide globally scalable, satellite-based groundwater analytics delivering consistent, objective, and decision-ready insights—even in data-scarce environments.



APPLICATIONS

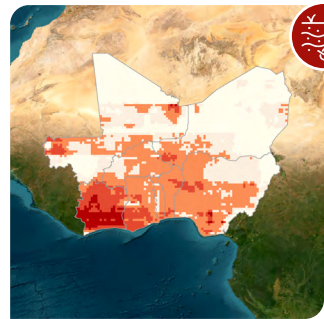
- Project Planning**
Baseline groundwater assessments
- Monitoring & Evaluation**
Track water resources over time
- Drought Response**
Identify hotspot areas and prioritize intervention
- Water Security**
Support resilience strategies



GROUNDWATER STORAGE ANOMALIES

- Identify long-term trends, seasonal and interannual variability
- Detects recharge areas and abnormal patterns

Supports sustainable water resource planning water decisions



GROUNDWATER DROUGHT INDEX

- Standardized indicator of groundwater drought severity
- Enables comparison across regions and time

Supports early warning systems and drought response planning



PRECIPITATION CONTEXT LAYER

- Links rainfall patterns to groundwater resources
- Helps distinguish natural vs. human-driven variations

Improves understanding of drivers behind groundwater changes.

SCALE OF APPLICATION



SPATIAL

- Spatial resolution:** 25 km
- Recommended scale of application:** regional to national (>200,000 km²)



TEMPORAL

- Temporal resolution:** monthly
- Temporal products aggregation:** monthly, seasonal, annual, and multi-annual

PRODUCT VALUE

- Improved Decision-Making**
and intervention targeting
- Comparable metrics**
Supports cross-regional analysis and benchmarking
- Scalable & Global**
Applicable anywhere without reliance on field infrastructure
- Early Warning Capability**
Identifies emerging groundwater stress before critical thresholds are reached

EXTENDED GROUNDWATER ANALYTICS

GROUNDWATER QUANTIFICATION

- Groundwater Recharge Estimation**
Quantifies the natural replenishment of aquifers
- Groundwater Abstractions Quantification**
Estimates groundwater extraction patterns and pressure on aquifer systems

GROUNDWATER MANAGEMENT

- Groundwater Availability Assessment**
Provides user-friendly estimates of available groundwater resources
- Water Harvesting & MAR Suitability Maps**
Identifies appropriate areas for water harvesting and managed aquifer recharge

DEVELOPMENT FINANCE USE

- Botswana — Emergency Water Security and Efficiency Project (P160911)**: Used during groundwater status assessment to provide a national overview of groundwater conditions and support dialogue with government stakeholders.
- Yemen - Second Integrated Urban Services Emergency Project (P175791)**: Used to support basin-level prioritization and guide decision-making in a data-scarce and crisis-affected context.
- IFAD-Water for Peace (2000004756, West Africa)**: Informed pastoralist community on water availability.