

The Global Groundwater Monitoring Network

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*December 2017, Geneva
HydroHub & IAHS-MOXXI
Innovation in Hydrometry - from ideas
to operation*

IGRAC - Global Groundwater Centre

IGRAC is UNESCO's and WMO groundwater centre

facilitates and promotes sharing groundwater information and knowledge required for sustainable groundwater management

Focusing on

- *transboundary aquifer assessment*
- *information & knowledge management and*
- *groundwater monitoring*

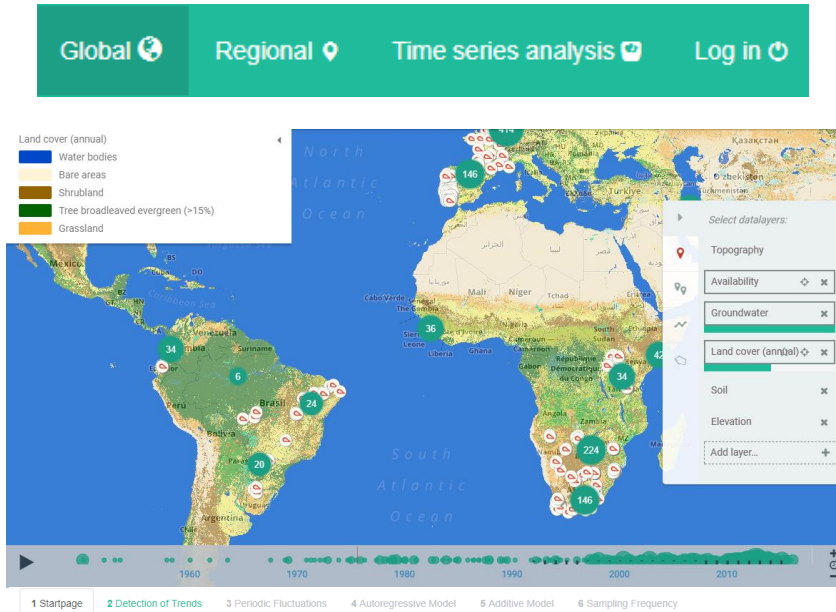


Why Groundwater Monitoring?



- Increased pressure on groundwater and increased need for informed decision-making and management of groundwater
 - *Global lack of groundwater knowledge and data*
 - *Limited accessibility and availability*
- Regional Groundwater Management
 - *Scattered and fragmented data among countries / institutes (Involvement of many stakeholders)*
 - *Diversity of data protocols, regulations, institutional settings*
- Global Groundwater Monitoring Network (GGMN) Programme
 - *to improve quality and accessibility of groundwater monitoring information and hence the knowledge on the state of groundwater resources.*

GGMN Portal functionality



Groundwater well: Wondergat - GWmMSL

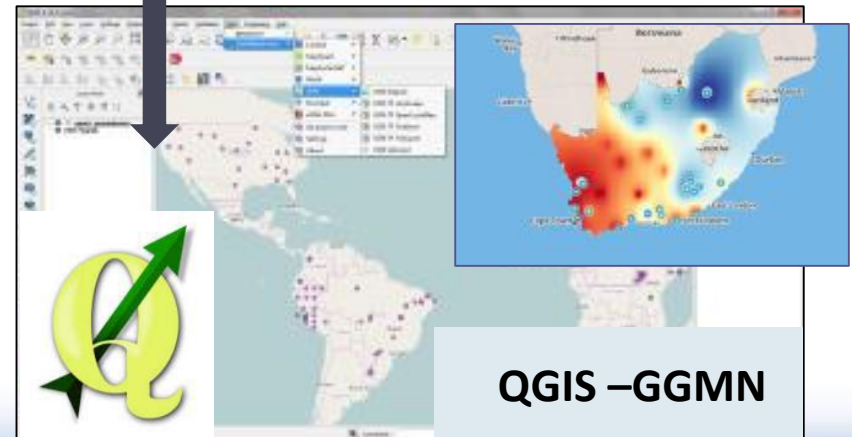
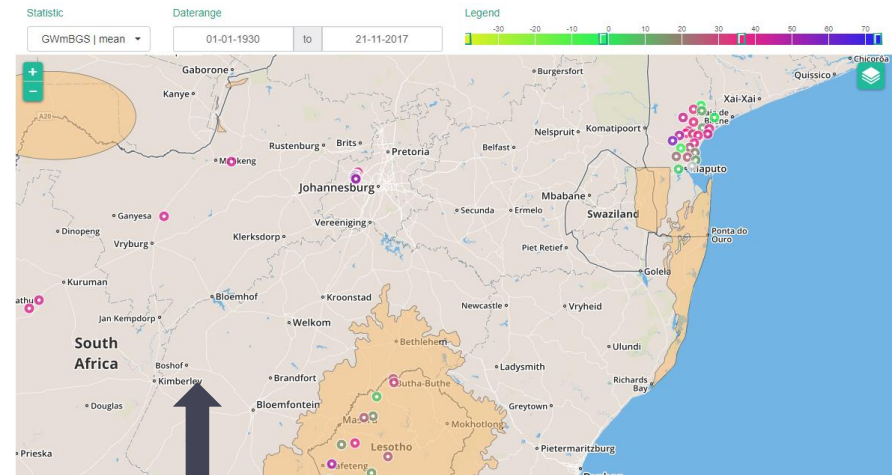
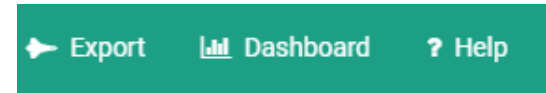
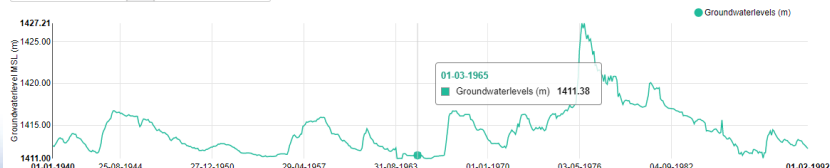
This FREQ-tool consists of a time series analysis for groundwater level data followed by analysis of optimal monitoring frequency. Time series analysis assist to better understand the functioning of the groundwater system, and to identify the effect of abstraction and climate change on groundwater resources. The time series analysis is a step-by-step procedure to identify trends, periodic fluctuations and autoregressive model. These components together form the additive model.

Based on the time series analysis, an identification of the optimal monitoring frequency can be obtained. Monitoring frequency is one of the key parameters for groundwater monitoring network design.

[More information](#)

Daterange

01-01-1940 to 01-03-1992



QGIS –GGMN

GGMN & Future Innovations

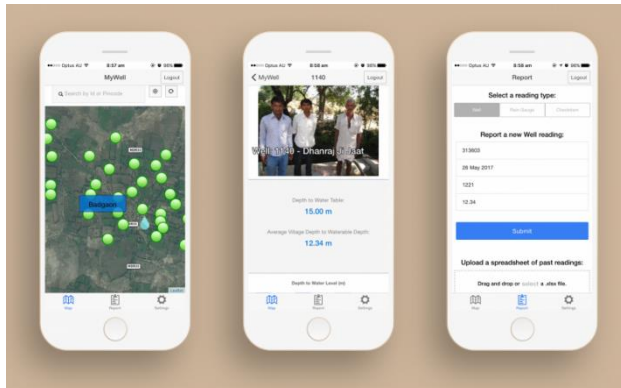
Sensor Observation Service (SOS)

- Direct connection with partners/countries



Groundwater Markup Language (GWML)

- Designed to enable a variety of data exchange scenarios



MyWell app

- Crowd-sourcing data
 - *Immediate feedback, visualization of trends*





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United Nations
Educational, Scientific and
Cultural Organization



International
Hydrological
Programme



World Meteorological
Organization



Government of
The Netherlands