Unlocking the Potential of Groundwater for the Poor

UPGro is funded by:
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Introducing UPGro

UPGro: A social and natural science approach to enabling sustainable use of groundwater for the benefit of the poor

Richard Carter

Welcome to UPGro

Unlocking the Potential of Groundwater for the Poor (UPGro), is a seven-year international research programme (2013-2020).

Its overall aim is to improve the **evidence base** around **groundwater** availability and management in **sub-Saharan Africa** (SSA) to enable developing countries and partners to use groundwater in a sustainable way in order to **benefit the poor**.

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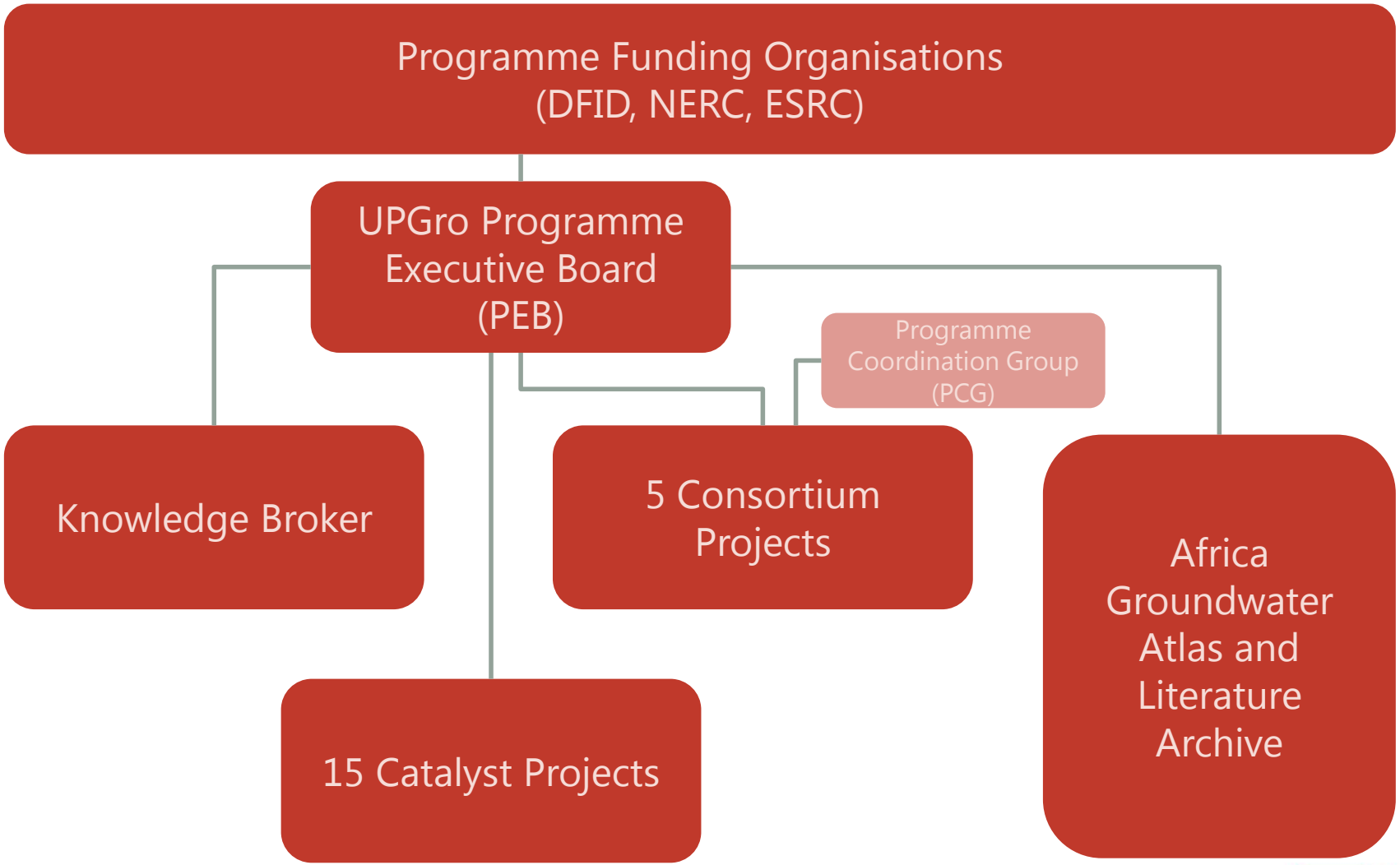
Programme structure



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The Catalyst projects (2013-2015)

Awarded a Consortium Grant to continue work (2015-2019)

ET Optimizing Road Development for Groundwater Recharge and Retention — wr, inf, gov

KE Groundwater Risks and Institutional Responses for Poverty Reduction in Rural Africa — wr, gov, ag, inf, min

KE Assessing Risks of Investment in Groundwater Resources in Sub-Saharan Africa (ARIGA) — wr, gov

MW, ZW Resource limitations to sustainability of groundwater well-points in basement complex regions of sub-Saharan Africa — wr

Africa-wide Groundwater recharge in Africa: identifying critical thresholds — wr, inf

ET, ZA, GH Adaptive management of groundwater resources for small-scale irrigation in sub-Saharan Africa (AMGRAF) — wr, ag, gov

KE, KM, TZ Towards groundwater security in coastal East Africa — wr, cc

TZ IN-GROUND: Inexpensive monitoring of Groundwater pollution in Urban African Districts — pol, urb

UG A hidden crisis? Strengthening the evidence base on the sustainability of rural groundwater services — ws, inf

NG, ZM Mapping groundwater quality degradation beneath growing rural towns in sub-Saharan Africa — pol, urb

KE Sustaining groundwater safety in peri-urban areas — pol, urb

BF, GH Building understanding of climate variability into planning of groundwater supplies from low storage aquifers in Africa (BRAVE) — wr, cc

GN, SN Use of remote sensing and terrain modelling to identify suitable zones for manual drilling in Africa and support low cost water supply — wr, inf

ET Improving access to safe drinking water: prospection for low-fluoride sources — pol, wr, gov

ET, TZ, GH Groundwater Futures in Sub-Saharan Africa (GroFutures) — wr, ag, inf, gov, cc

RESEARCH THEMES

- ag: agriculture
- gov: water governance & risk
- min: mining
- urb: urban groundwater
- cc: climate change
- inf: infrastructure planning and performance
- pol: groundwater quality and pollution
- wr: water resources and aquifer properties

Observations from the Catalyst phase

Most projects were led and strongly driven by the natural sciences. The degree of integration with the social sciences was limited.

The natural science mainly focused on groundwater recharge and groundwater quality (and better ways of measuring it).

Several projects touched on issues of groundwater management.

Only one project specifically focused on groundwater for irrigation.

James Sorensen

Frank van Steenbergen

The Consortium Projects (2015-19)

BRAVE

Hidden Crisis

T-GroUP

Gro for GooD

Grofutures

Working in **Benin, Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Niger, Nigeria, South Africa, Tanzania, Uganda**

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BRAVE (Reading University & BGS)

Building understanding of climate variability into planning of groundwater supplies from low storage aquifers in Africa

THE BIG IDEA

We can build better ways to model and communicate the complex environmental changes in the Sahel region of West Africa. We can use these to improve the long term planning of groundwater abstractions and provide early warnings of groundwater shortages so that the most vulnerable families and communities are more resilient to drought.

RESEARCH AIM / HYPOTHESIS

That by using integrated governance, the long term use of groundwater can reduce the vulnerability of poor people in the Volta River Basin, in West Africa, in the face of a variable climate and changes to the local environment, society and economy.

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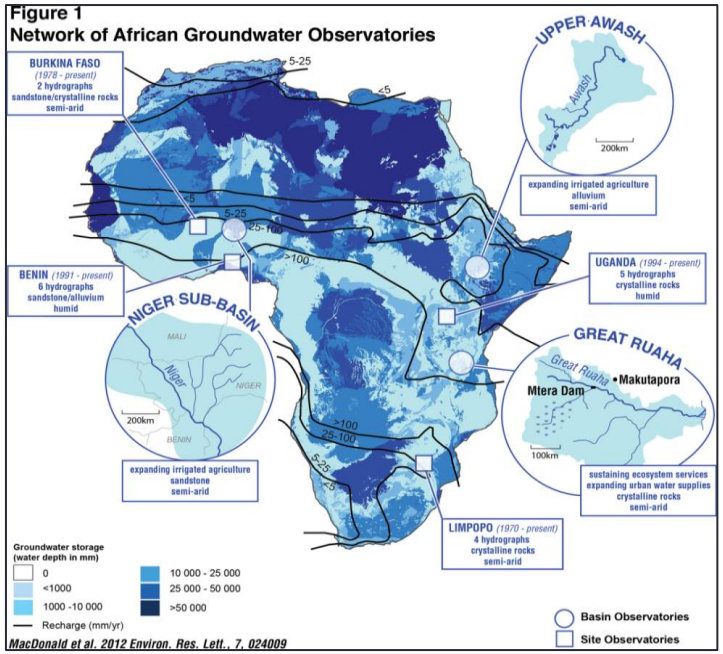
Grofutures (University College London)

Groundwater Futures in Sub-Saharan Africa

THE BIG IDEA

We can bring together science, government and citizens so that they can understand and manage their groundwater resources for the benefit everyone in Sub-Saharan Africa and the reduction of poverty.



RESEARCH AIM / HYPOTHESIS

The overall aim of *GroFutures* is to develop the scientific basis and participatory management processes by which groundwater resources can be used sustainably for poverty alleviation in Sub-Saharan Africa.

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Gro for GooD (Oxford University)

Groundwater Risk Management for Growth and Development

THE BIG IDEA:

Groundwater is essential for economic growth and can contribute to human development if resources are used sustainably to benefit the poor. New approaches need to be found to balance growth and development goals.

Water users in Kwale District, Kenya (Univ. of Oxford)

RESEARCH AIM / HYPOTHESIS

To develop a Groundwater Risk Management Tool that will help government and groundwater users balance the demands of human development and better health, economic growth and groundwater sustainability so that the poorest benefit.

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Hidden Crisis (BGS)

unravelling current failures for future success in rural groundwater supply

THE BIG IDEA

Millions of pounds of investment by water users, charities and tax-payers are wasted each year by water points failing soon after construction. Getting a more complete understanding of how to keep water flowing from boreholes will reduce waste and improve water services for Africa's poorest communities.

RESEARCH AIM / HYPOTHESIS

The underlying causes of rapid failure of approximately a third of African rural groundwater sources are complex and multi-faceted, but with interdisciplinary approaches can be understood, diagnosed and ultimately anticipated and mitigated.

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T-GroUP (IHE Delft)

Experimenting with practical transition groundwater management strategies for the urban poor in Sub Saharan Africa

THE BIG IDEA

Improving access to safe water in slums is really complex and challenging. Transition Management theory embraces that complexity to find radically new and collaborative ways of using and managing urban groundwater.

RESEARCH AIM / HYPOTHESIS

What social, technical and political changes are needed to make the shift towards sustainable urban groundwater management in Sub-Saharan Africa – and how can those changes be achieved?

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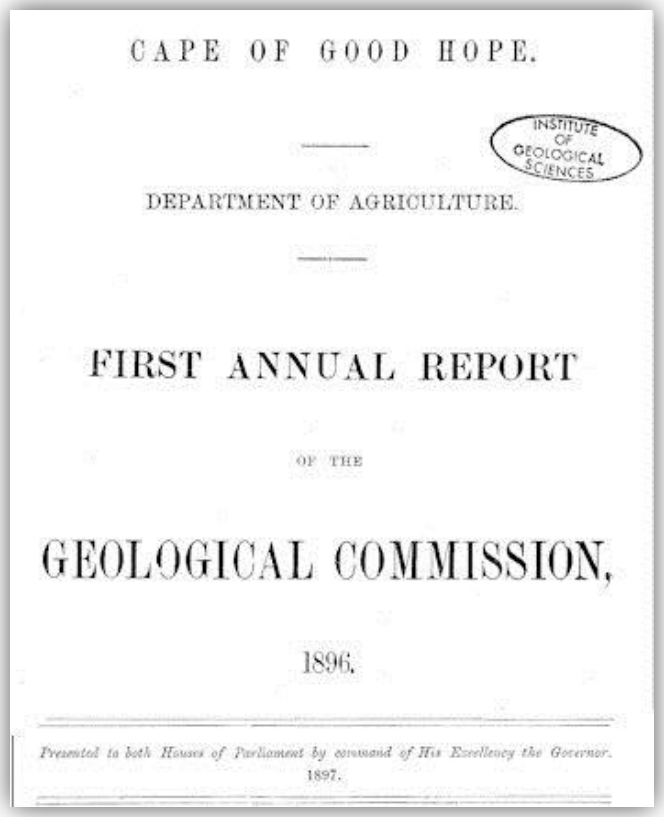
The Africa Groundwater Atlas and Literature Archive

- The most comprehensive catalogue yet available of groundwater literature for Africa.
- more than 3000 of the indexed documents link to either the full text document or an online abstract.
- The Atlas will have country-by-country overviews of groundwater and geology.


CAPE OF GOOD HOPE.

DEPARTMENT OF AGRICULTURE.

FIRST ANNUAL REPORT

OF THE

GEOLOGICAL COMMISSION,

1896.

Presented to both Houses of Parliament by command of His Excellency the Governor.
1897.

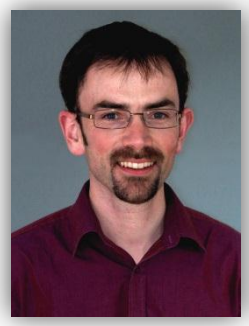
www.bgs.ac.uk/africagroundwateratlas

The Knowledge Broker Team

The UPGro Knowledge Broker is charged with facilitating the uptake of the research findings into policy and practice.

The Knowledge Broker team and the Consortium Programme Coordination Group are together developing a knowledge management strategy for the programme.

Richard Carter
Sean Furey
Kerstin Danert
Bertha Camacho




RWSN
skat_foundation

Rural Water Supply Network Secretariat &
Sustainable Groundwater Development Theme

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Observations regarding the Consortium Phase

On the face of it there will be a much stronger attempt to integrate natural science, social science and governance issues within each project (compared to the catalyst phase).

The work of the PCG and the Knowledge Broker (and the continuing work of the Atlas/Archive) represent serious attempts to deepen, interpret and communicate research findings and knowledge both across and beyond the programme.

The single greatest opportunity for collaboration with ODI and IWMI lies in the area of water use in agriculture (implications of more effective use of green water, monitoring and management of groundwater in agriculture, the dominant place of agriculture in water use …).

skat Swiss Resource Centre and Consultancies for Development
RWSN

UPGro Knowledge Broker:
Skat Foundation, Vadianstrasse 42, CH-9000, St Gallen, Switzerland
in association with the Rural Water Supply Network (RWSN)

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