Investigating causes of failure for future success

More than 30% of new groundwater supplies are non-functional within 5 years and many more unreliable. Extending and sustaining access to safe and reliable water services remains central to improving the health and livelihoods of many rural communities in Africa.

This four-year research project aims to build a robust, multi-country evidence base on groundwater supply failure, to build knowledge for future success.

The project will involve researchers from the UK, Africa and Australia and draw on leading natural and social science methods.

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

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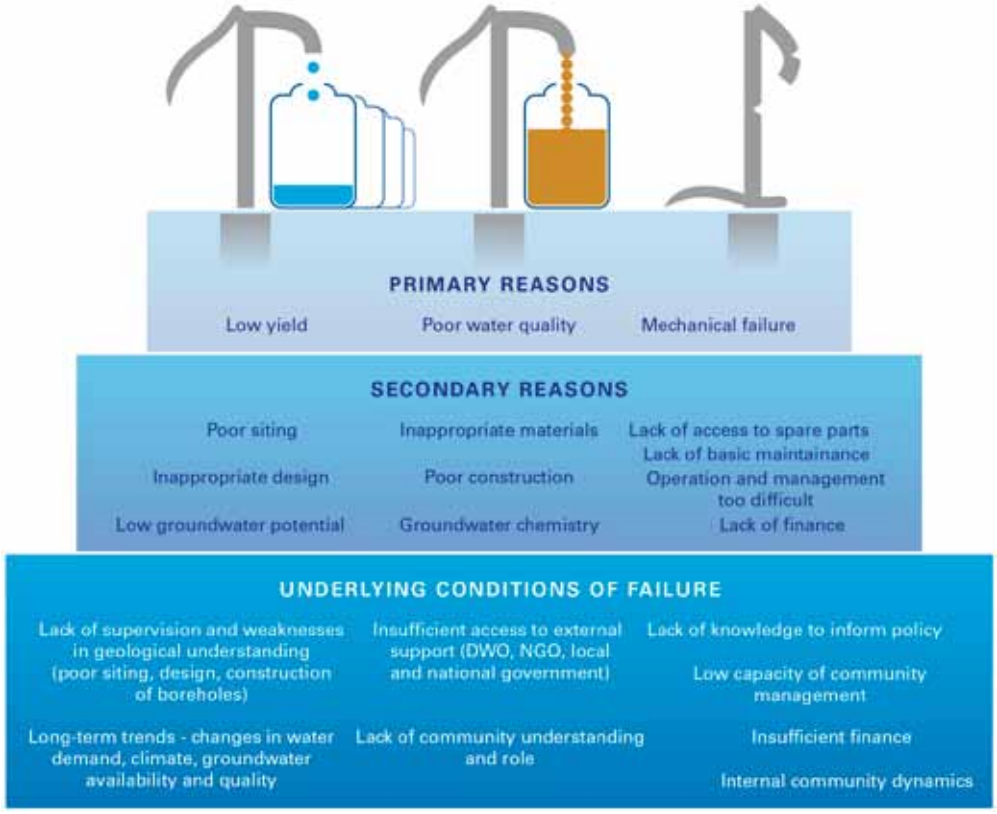
A Hidden Crisis: unravelling current failures for future success in rural groundwater supply

An interdisciplinary four-year research programme to develop a robust multi-country evidence base to deliver a step-change in reducing rural groundwater supply failure in Africa

Causes of failure

Failure is not a simple problem which can be solved by capacity building alone, additional finance, or a new design of pump.

The reasons for failure are instead multi-layered and involve: **primary causes** such as mechanical failure, poor water quality or quantity; **secondary causes** such as poor siting, lack of spare parts, or changing local governance arrangements; and, **underlying conditions**, such as the wider institutional and governance arrangements, lack of knowledge, and insufficient access to external support.



Research approach

Our underlying hypothesis for the research is:

"The underlying causes of the rapid failure of approximately athird of African rural groundwater sources are complex and multi-faceted, but can be understood, diagnosed, and ultimately anticipated and mitigated with the appropiate knowledge".

To tackle this research we bring together an interdisciplinary consortium of leading UK, African and Australian researchers in water governance, hydrogeology, and systems engineering with WaterAid, a global authority in the policy and practice of developing rural water supplies.

The fieldwork will be undertaken in Uganda, Malawi and Ethiopia.

(above and right) Detailed fieldwork investigations at failed water points in Uganda, as part of the catalyst research to this project in 2013-14; (left) some of the many reasons thought to contribute to failure

Project activities

- Develop a more nuanced definition of functionality of water points which can be used for tracking future progress in achieving the Sustainable Development Goals.
- Undertake large-scale surveys in Uganda, Malawi and Ethiopia to develop an empirical database of existing functionality.
- Undertake detailed innovative fieldwork on the multiple factors governing water point failure and success, collating social science, natural science and engineering data.
- To examine future trajectories of change
- To develop an approach for developing resilient access to water

Project timescale

Start date, May 2015
Fieldwork, 2016-2018
Annual project workshops
End date, May 2019

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