

Towards sustainable groundwater supplies in sub-Saharan Africa



Today, over 500 million people in sub-Saharan Africa (SSA) depend upon groundwater supplies; within a generation, that will rise still further, to close to a billion.

Groundwater resources are considered more resilient to climate variability and currently the volumes of this water being used are generally small compared with the average amount of rain that percolates through the soil to the aquifers. Groundwater therefore may provide an important water resource to help adapt to changing climate and land use. There is evidence, however, that in areas of SSA where the rocks store a relatively small amount of water that, during extended periods of low rainfall, groundwater supplies can fail. For this reason, together with the absence of long historical records of borehole levels, it is unclear whether the planned development of groundwater resources to meet increases in demand is feasible in all areas of sub-Saharan Africa.



Safe and reliable access to water by the rural poor is a key critical factor in achieving Millennium Development Goals in this region, in particular the target of halving the proportion of people living in extreme poverty and hunger. As most poor people in Africa depend upon farming for their livelihoods, developing resilient agricultural water supplies is clearly an essential first step. The BRAVE project will reduce risk and improve water security resilience of rural communities in sub-Saharan Africa by combining better understanding and planning of groundwater supplies with practical communication and knowledge exchange at all levels, from individual smallholder farmers to national government and regional bodies.

BRAVE partners include



BRAVE project - Bridging science-practice-policy to build livelihoods resilient to drought

Key objectives of the BRAVE project

- ✓ **Incorporating new scientific knowledge** within Earth System models to develop appropriate tools for water resource planning at range of scales
- ✓ **Pilot new groundwater planning tools** in eight communities: focus on irrigation from groundwater, together with active monitoring
- ✓ **Evaluation of impact of new tools** on the livelihoods of some of the poorest communities in Burkina Faso and Ghana against a co-designed set of vulnerability metrics
- ✓ **Knowledge brokering** to generate cross-level interactions and support and strengthen institutional structures for effective development planning
- ✓ **Production of seasonal groundwater status reports** linked into Rainwatch-AfClix, a newly operational Drought Early Warning System in Burkina Faso and Ghana, and the Farmers' Voice radio platform
- ✓ **Key characteristics** – across-scale partnerships, synergistic collaborations, truly interdisciplinary

Who is behind this project?

BRAVE has brought together an interdisciplinary team of internationally recognised natural scientists, social scientists and knowledge exchange experts with an established track record of productive collaboration in Sahel research and development, together with humanitarian and development organisations and networks with extensive experience working in Africa and international reach. The team is composed of leading (land surface) meteorologists, hydrogeologists and environmental scientists with governance, livelihoods and decision-making assessment expertise, and partners in both African and UK institutions.



Pilot case studies will address connected problems of unsustainable land management, extreme weather events and low agricultural productivity: by providing farmers with field training and information to promote local climatic adaptive measures, the farmers will increase their resilience to weather shocks. The pilots will be participative and consultative, integrating national/local water resource planning departments, specialist institutes and partner NGOs, to ensure local needs are met, and building capacity for sustainability and equitable groundwater resource management.

For more information

- www.afclix.org
- Contact ros.cornforth@afclix.org
- Tel. +44 118 378 5755
- Further details about the UPGro programme at www.upgro.org
- [@afclix](https://twitter.com/afclix)