Unlocking the Potential of Groundwater for the Poor

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

STUDY NAME	**Improving access to safe drinking water: prospection for low-fluoride sources**
RESEARCH ORGANISATIONS	British Geological Survey (BGS), Addis Ababa University (AAU), MetaMeta Research (MMR)
RESEARCH TEAM	BGS: **Pauline Smedley (PI),** Jennifer Bearcock, Lorraine Field, AAU: Seifu Kebede MMR: Frank van Steenbergen, Asefa Kumssa Afeta
RESEARCH AIM / HYPOTHESIS	*To investigate the distributions of fluoride in groundwater in a selected area of the Ethiopian Rift in order to obtain a better understanding of spatial (including depth) and temporal variability, of the main controlling processes, and of the most effective ways to translate this knowledge ultimately into improved provision of safe drinking water.*
STUDY DESCRIPTION	Fluoride in drinking water is one of the most significant water-quality problems affecting populations in Africa. Long-term use of drinking water with fluoride significantly above the WHO guideline value of 1.5 milligrams per litre can have serious effects on health, in particular dental and skeletal fluorosis. The Rift Valley of Ethiopia is an arid, groundwater-dependent region with well-established links between fluoride in drinking water and fluorosis. Despite the recognised fluoride anomalies on a regional scale, local-scale variations and their controls are poorly defined and understood. This pilot project aims to investigate the spatial and temporal distributions of fluoride in groundwater in a selected study area of the Rift. The project will characterise the variability, evaluate the underlying causes and determine whether the variations show sufficient predictability to be of practical benefit in providing guidance on improving abstraction strategies. The institutional arrangements governing water management and supply (regulation, policy, funding, capacity and prioritisation) will be assessed in order to understand the governance context of water supply in the area investigated.

UPGro is funded by: NERC SCIENCE OF THE ENVIRONMENT, E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL, UKaid from the British people

Through these combined approaches, the project aims to define the most effective ways to translate an improved knowledge on fluoride distributions into improved access to sources of safe, low-fluoride drinking water.

WHERE?

Ethiopia

WHERE TO FIND OUT MORE:

Contact Pauline Smedley: pls@bgs.ac.uk

UPGro is funded by: NERC SCIENCE OF THE ENVIRONMENT, E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL, UKaid from the British people