PUBLIC SEMINAR

WHEN: Monday, 28th November 2016
TIME: 02:00 PM
VENUE: ZOOLOGY LAB

An investigation into the role of storage in water scarcity indicators: Evidence from the Great Ruaha River Catchment, Tanzania

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Abstract

Global water resources are subject to increasing pressures, whose impacts are popularly assessed through indicators of water scarcity and stress. Over the last three decades water scarcity metrics have evolved from simple thresholds to holistic measures characterising human environments and freshwater sustainability. However, there is a marked absence of research evaluating whether these metrics of water scarcity are meaningful. In this seminar we present preliminary findings on an investigation into the demand and supply-side assumptions that inform these commonly applied metrics. Firstly, we find that renewable freshwater availability is characterised by estimations and calculations of Mean Annual River Runoff (i.e. river discharge). This historical reliance on fluxes neglects the role that surface and subsurface storage components play in contributing to freshwater availability, and ignores hydrological variability thus assuming global hydrological stationarity. Secondly, water demand is informed by the assumption that domestic water requirements must be at least 100 L/person/day (lpd). With this in mind, we undertake a case-study investigation of water scarcity in the Great Ruaha River Catchment, a catchment which is characterised as water scarce in order to test the robustness of the assumptions that inform water scarcity metrics. Quantification of water scarcity through popular metrics reveal a very low degree of measured water scarcity. Furthermore, our work on what constitutes domestic requirements show that daily per capita usage falls below 100 L. The seminar will go on to propose an alternative framework for an indicator, which considers water scarcity through the lens of storage, which we will apply in the study-site. Finally, we also set out to better understand the linkages between the evolution of water scarcity metrics and the lack of consideration for storage which is important in light of their role in informing policy objectives such as Sustainable Development Goal 6.4.

Biography

Simon is a Ph.D. candidate at University College London's Institute for Sustainable Resources where he is supervised by Professor Richard Taylor (Department of Geography). Simon has a B.Sc. in Environmental Geography from University College London (UCL) and a Masters of International Environmental Law & Sustainable Development from the School of Oriental and African Studies (University of London). His ongoing interdisciplinary research addresses the underlying assumptions of metrics and indicators that measure water scarcity and highlights the need for more focus on the historically neglected role that storage should play in water scarcity assessments. This work is part of the DfID-NERC funded project *GroFutures* (Groundwater Futures) where Simon is attached as a Research Associate to the Tanzania observatory at Sokoine University of Agriculture under the guidance of Prof. Japhet J. Kashaigili. Simon has 10 years of engagement with water, environment and development in Africa (Ghana, Uganda (Danida), Tanzania, Zambia) and is involved in promoting the role of youth in international water decision-making. Currently, Simon is co-president of the UCL Water Research Group and Coordinator of the Water Youth Network Water Governance Working Group.