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Modelling for climate resilient water infrastructure in Tanzania

Fiona Johnson (1), Alfred Boniphace (2), Danlu Guo (1), Fatuma Matwewe (2), Jacqueline Thomas (3), and Dickson Wilson (2)

(1) University of New South Wales, School of Civil and Environmental Engineering, Sydney, Australia (f.johnson@unsw.edu.au), (2) Environmental Health and Ecological Sciences, Ifakara Health Institute, Ifakara, Tanzania , (3) School of Civil Engineering, The University of Sydney, Darlington, Australia

In 2013 the United Kingdom Department for International Development (DFID) funded a research project to build adaptation to climate change in health in least developed countries though resilient water, sanitation and hygiene. The World Health Organization (WHO) led the project and Tanzania was one of the four selected focus countries. Through this project, water quality monitoring for local water sources and local climate and weather data have been collected during a 12-month field program in 2016 and 2017.

The data collected in the monitoring program have been analyzed through hierarchical Bayesian models to establish relationships between climate and water quality at the community and household levels. Clear differences are evident in the water quality (Total coliforms and E. Coli) at the source and household levels, with significant additional contamination present within houses compared to water at source. The established relationships between water quality and climate variables have been used to consider the likely sensitivity of the performance of different water infrastructure choices to possible climate futures.