

## Authors

Michael Kremer  
The University of Chicago

Jessica Leino  
Stanford University

Edward Miguel  
University of California, Berkeley  
Center for Effective Global Action (CEGA)

Alix Zwane  
Global Innovation Fund

### SPRING CLEANING: RURAL WATER IMPACTS, VALUATION, AND PROPERTY RIGHTS INSTITUTIONS\*

MICHAEL KREMER  
JESSICA LEINO  
EDWARD MIGUEL  
ALIX PETERSON ZWANE

Using a randomized evaluation in Kenya, we measure health impacts of spring protection, an investment that improves source water quality. We also estimate households' valuation of spring protection and simulate the welfare impacts of alternatives to the current system of common property rights in water, which limits incentives for private investment. Spring infrastructure investments reduce fecal contamination by 66%, but household water quality improves less, due to insect infestation. Child diarrhea falls by one quarter. Travel-cost based revealed preference estimates of households' valuations are much smaller than both stated preference valuations and health planners' valuations, and are consistent with models in which the demand for health is highly income elastic. We estimate that private property norms would generate little additional investment while imposing large static costs due to above-marginal-cost pricing, private property would fund less better at higher income levels or under water scarcity, and alternative institutions could yield Pareto improvements. *JEL Codes: O13, H75, O13, Q25, Q51.*

#### I. INTRODUCTION

Movement toward private property rights institutions has been called critical to successful economic development (De Soto 1989; North 1990). Yet social norms and formal laws often create communal property rights in natural resources. In Islamic law, for

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improves less, due to recontamination. Child diarrhea falls by one quarter. Travel-cost based revealed preference estimates of households' valuations are much smaller than both stated preference valuations and health planners' valuations, and are consistent with models in which the demand for health is highly income elastic. We estimate that private property norms would generate little additional investment while imposing large static costs due to above-marginal-cost pricing, private property would function better at higher income levels or under water scarcity, and alternative institutions could yield Pareto improvements. JEL Codes: C93, H75, O13, Q25, Q51.

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